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The Institute of Soviet-American Relations is a voluntary public organization uniting cultural, scientific, trade union, cooperative, sports and other public organizations; economic enterprises; educational institutions; as well as individuals in all vocations and walks of life.

The Institute of Soviet-American Relations seeks to further promote mutual understanding, confidence, cultural cooperation and friendship between the peoples of the USSR and the USA; to promote establishment of contacts between the representatives of the public of both countries; and to exchange the experience accumulated by the two peoples in the various fields of creative endeavor.

The Institute of Soviet-American Relations seeks to give the Soviet people a comprehensive picture of the history, economy, science and culture of the United States, and to give the people of the United States a better understanding of the economic, scientific and cultural progress in the Soviet Union and of the everyday life of the Soviet people.

From the Statute of the Institute of Soviet-American Relations

"Dear American Friends, *May peace, friendship and cooperation become the basis of relations between our two countries.* This is the call of the times!"

AN OPEN LETTER
FROM THE INSTITUTE OF SOVIET-AMERICAN RELATIONS
TO ALL AMERICANS

Dear American Friends,

The New Year always holds new promise. In the coming year the people hope to see their most cherished hopes realized. And this new year, as in every previous year since the Soviet Union has been in existence, the most earnest hope of the Soviet people is for international cooperation that will further world peace and happiness.

The primary aim of our Institute of Soviet-American Relations, established with the active participation of broad sections of the Soviet public, is to promote this cooperation and friendship. That is why we are writing to tender our respects and cordial greetings to the readers of USSR *Illustrated Monthly and to all Americans, with the hope that sooner or later there will be nothing to prevent us from getting to know each other better.*

We believe that our desire to develop and strengthen friendly relations between the peoples of our two countries will strike a responsive chord in the hearts of the American public. Americans often say: "We want to pull down the wall of suspicion and prejudice that still divides us." We are more and more convinced that this is so when we read the many letters the Institute has received from Americans in which they voice approval, offer advice and demonstrate their eagerness for cooperation.

This shows once again that no differences in political opinions, ideologies, world outlooks and customs need stand in the way.

Our faith and conviction stem from both the past and present history of the relations between our two countries. It was only yesterday that American and Soviet soldiers shed their blood together in the fight against German nazism, the common enemy. The years have passed and wounds have healed, but we have not forgotten our friends.

Today we see notable examples of peaceful cooperation and truly good-neighbor relations between American and Soviet researchers who are studying Antarctica together, between scientists, cultural workers and athletes.

We prize all this particularly because the new year holds so much for us. It will be the first year of the great peaceful program of progress planned by the Twenty-second Congress of the Communist Party of the Soviet Union. We hope you will not be offended when we say that we plan to overtake and outstrip your country in per capita production and standard of living, that we plan to raise the level of our science, culture, and education still higher. We believe you will understand and sympathize with our peaceful aspirations.

In the large and complex world of today, with its conflicting

(Left to right) Linus Pauling, his wife, Institute President Nikolai Blokhin and Vice Presidents Nina Khrushcheva and Yevgeni Fedorov at a meeting.

trends, traditions and outlooks, the relations between our two great nations may in many respects determine the road all of mankind will take. Will it be one of progress and prosperity or one of adversity and anxiety? This new responsibility we bear compels us to take a more thoughtful and objective view of the surrounding world.

We believe that we have the power and that there is every possibility for forging a stronger friendship between the Soviet and American peoples. We believe, too, that the good examples of both past and present cooperation demonstrate this possibility and should serve to inspire our joint striving for cooperation and peace.

Dear American Friends,

May peace, friendship and cooperation become the basis of relations between our two countries!

This is the call of the times!

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TWENTY YEA

BY MARK VISTINETSKY

IT'S a clear, frosty, winter day in 1980 and we've just met, you and I. You've arrived on one of the Washington-Moscow cosmic tourist flights. We're close neighbors now; the trip by cosmic jet liner takes only an hour or two, so that we're able to visit back and forth more often.

You've spent the day taking in the sights of Moscow and, like so many of your fellow tourists from the States, you stop at a corner café to rest your tired feet. Congenial globetrotter that you are, you strike up a conversation with the man at the next table. It happens to be me. Twenty years hence I'll certainly not be as young as I am now, in 1962, very likely not as handsome. But I'll be no less glad to show you the traditional Russian hospitality.

After some small talk to break the ice, you'll probably ask, "Tell me, how are you folks getting along, now that your twenty-year program has been carried out? You called it, if I remember correctly, your program to build communism."

And I'll say, "Look around. Can't you see the answer?"

"Well, what I see looks good. Moscow is quite a city. I'd hardly think, to look at all these new streets and houses, that your capital is 850 years old. But I've seen such signs of progress in other countries, big and small, especially the new ones. The point I'm getting at is this: Are your people living better than twenty years ago?"

"Better than ever."

I see your mustache is hiding a smile. You say, "It would be nice to believe it. Could you be a little more specific?"

"To be specific, I have to quote you some figures. Here's how they add up. In the early sixties our annual industrial output was greater than that of Britain, France, Italy, Canada, Japan, Belgium and the Netherlands put together, even though these were all well-developed countries at the time with an aggregate population of 280 million to our 220 million. We were second only to the United States. In the past twenty years we've developed our production to the point where we can say that we've expanded our industrial production to five times and our agricultural output to twice that of the Soviet Union of the 1960's."

"Well, that's fine for over-all volume. How about per capita production?"

"There we were still a good way behind the leading countries twenty years ago. But today we are first in per capita output also. And bear in mind that these other countries have not been marking time either. That's what we mean by peaceful economic competition between different systems."

"Everybody's known about the high rate of Soviet economic progress for a long time, but that still doesn't answer the question I have in mind," you persist. "What does that give the individuals whose talent and labor go into this general progress?"

"Now we're getting down to brass tacks. We don't produce just to produce or to line the pockets of a handful of rich people, but to raise living standards for everybody, for every single family. And we're perfectly willing and ready to go on with this peaceful competition with countries that have a different economic system than ours. We are perfectly willing to let life itself demonstrate which system has more to give the ordinary man."

"That's fair enough," you admit.

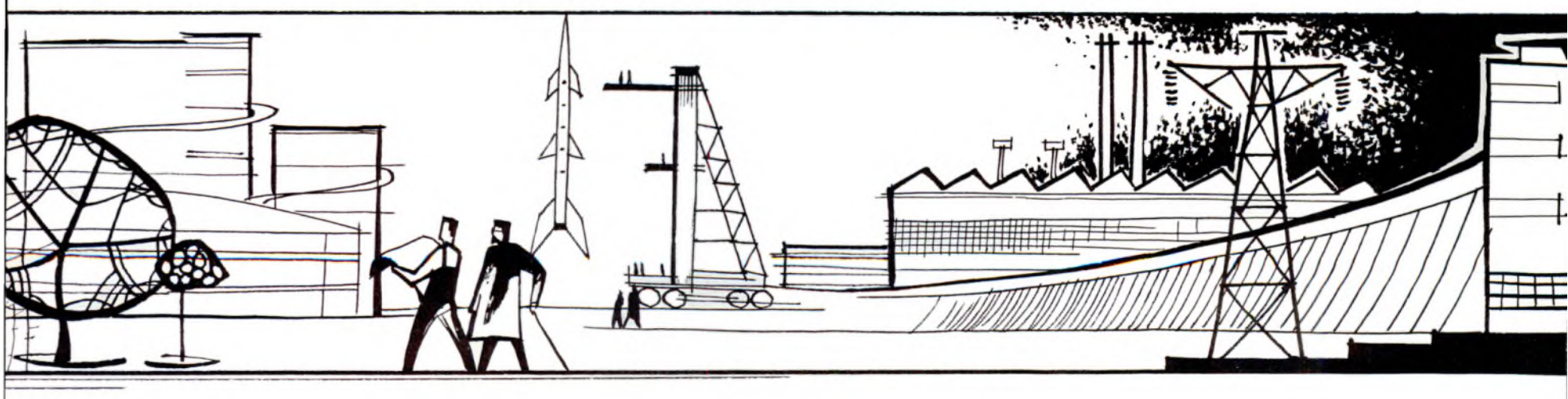
"When we challenged the West twenty years ago to peaceful competition in industrial and agricultural output and in raising general living standards, we met with a good deal of skepticism, to put it mildly. We were neither surprised nor offended. We had heard from the same prophets of doom before, in the thirties when we got started on our five-yea plans. There's no denying we had a har time of it. We had to build up our indus tries from scratch, without anybody's help True, we used to invite foreign expert to help our specialists and we bough machinery from other countries. But w had to pay for it in hard cash and den ourselves necessities."

"Why dig back into history?" you sa impatiently. "We're talking about now."

"We owe what we now have to pas achievements when we were building so cialism. Each five-year plan was an impor tant milestone. With these plans w emerged from ignorance and poverty t take our rightful place among the worl powers. That was the point of departur for our 1959-1965 seven-year plan and sub sequent plans to build a communist societ of plenty based on the principle 'Fro each according to his ability, to each ac cording to his needs.'"

"When analyzing the different stages o Soviet economic development, many com mentators stress the priority you gave t heavy industry. How do you reconcile tha with the rising living standards you kee talking about?

"We always gave priority to heavy in dustry. But we never counterpoised it t our efforts to boost the living standards o our people. On the contrary, we started t build up our heavy industry in the thirtie so it would give us the stable base w needed for all our other industries an for agriculture, for economic progress ger erally, and, in the final analysis, for highe living standards. In spite of the difficultie in industrialization we firmly pursued ou charted policy and have been repaid hundredfold for all our temporary priva tions and sacrifices. We built a socialis economy that guaranteed everyone th right to work and equal pay for equa



RS FROM NOW

work regardless of sex, age or race, and ended forever the threat of unemployment. You have to agree that this in itself is a very important gain when you're talking of living standards.

"What else did you get besides full and regular employment?"

"We got free education, free medical care and comprehensive social insurance —that includes disability relief, old-age pensions and a sizable list of other benefits paid for entirely by the state—long before we adopted our twenty-year program of communist construction. You can call these various free social and cultural services 'invisible' items of income that, either directly or indirectly, supplement the budget of every single family. So far as these items are concerned—and they're by no means negligible—we moved way ahead of the leading Western countries long ago."

"In what respects was the USSR behind the United States twenty years ago?"

"In average consumption and real income per capita. But don't forget how little we had to start with after the 1917 Socialist Revolution and what the war and postwar recovery cost us, something the United States did not experience."

"What has your twenty-year program given you in this respect?"

"Real income per capita now, in 1980, is 3.5 times as great and more. Consumption rates have grown correspondingly. Now, though these may seem like dry statistics, they hide the solution of a crucial social problem. Ours was the first society in history to do away fully and completely with the low-income category. Furthermore, our productive capacity is large enough to satisfy the greatly increased consumer demand. Of course, every Soviet citizen is glad that living standards in other countries have also risen in these twenty years. We have been fortunate that they have been happy and productive years, without wars, and we look forward to continued peace and even greater prosperity for people everywhere. But we do take pride in the fact that our living standards are the highest in the world and have no intention of yielding that first place. This is the kind of competition, I'm sure you will agree, in which nobody stands to lose."

"What does all this statistical talk of real income and rates of consumption boil down to in plain language?"

"That people earn more and also get more goods and services for what they earn. In our society it's more than just high earnings, however. Over the past twenty years augmented public consumption funds have been an increasingly important factor in raising living standards. These funds come from national and local budgets as well as from allocations made to factories, collective farms, trade unions and other organizations. The individual citizen does not contribute a kopeck to this fund. Everything he gets from these funds supplements his earnings."

"Wouldn't it have been simpler just to raise wages?"

"We did raise the wages of various categories of factory and office workers these past twenty years, with the lower paid workers getting the biggest increases—one of the reasons the different wage levels are closer together now. We didn't do this because we wanted to see everybody scaled down to the same earning level. What happened was that with technical progress, skilled labor, which is of course better paid, kept pushing out unskilled labor more and more. Other factors involved were steadily falling prices and the abolition of income taxes after 1965."

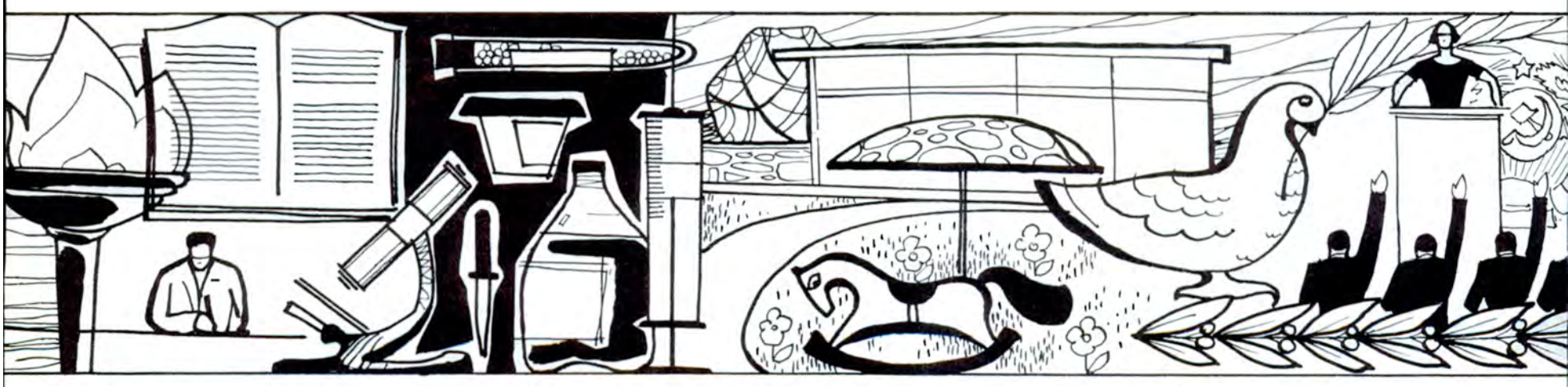
"What made it possible for you to do all that?"

"The steady growth in the country's wealth that came with expanded production and, more particularly, the greater labor productivity made possible by scientific and technical progress. Another reason for our progress—and a very important one—is the attitude of our workers. They not only try to get the most out of the job they themselves do but feel personally responsible for the output of their factory and the entire industry. Because of rising labor productivity we are able to keep cutting the workday and workweek. Back in the seventies, we cut the workweek to 35 hours in general and to 30 hours for some job categories—underground, hot shop, and so on. And we'll keep on cutting the workweek even though it's now the world's shortest."

"But back to the public consumption funds you talked about. Your statistics show that they grow faster than individual earnings. Why?"

"Let me explain first that these funds are distributed freely to every person, regardless of his contribution to the common effort. We are moving toward the communist practice of distribution according to need, in contrast to the socialist practice of distribution according to work done. Thus far, we still do not have that abundance of material and cultural values needed for full-scale communism. Therefore, to provide incentives, we still have pay differentials, depending on the quantity and quality of the work done. However, although in absolute terms wages have risen over the past twenty years, the relative proportion of wages to real income has decreased. The reason? The annual volume of the public consumption funds is more than ten times as large. Today these funds make up nearly half the total real income of our population."

"You said that long before you had adopted your 20-year program, you provided your people with a considerable number of free social and cultural serv-



ices paid for out of these public consumption funds. What's happened since?"

"We've increased these funds every year since and thereby augmented these free services. In 1940, for instance, we spent 4.2 billion rubles; in 1960, we spent 24.5 billion; and today the total is 265 billion. The figures mean that steadily growing numbers of people are getting these free services and also that more and better services are available to every Soviet family. The major development in the past 20 years has been the program to maintain children, old people and everyone else unable to work, entirely at public expense. Introduced gradually, it covers grants to large families; nurseries, kindergartens, boarding schools and other child facilities; textbooks, clothing and lunches for schoolchildren; larger pensions; and sundry other items."

"I'd call that a very humane and very civilized project indeed—to provide a livelihood for those unable to maintain themselves. What else is done with public consumption funds?"

"We've had free schooling and free medical care for a long time, as I said before, and we're continuing to enlarge and improve these services. We've also added such items as rent-free housing, free public utilities and free municipal transportation."

We have been chatting for quite a while now, perfectly natural when people from different countries get together. We want to know more about each other, as we did 20 years ago. Since you're my guest, you ask the questions and I'm very glad to answer them. We've already covered a lot of ground, but there's still plenty to talk about.

There are several new apartment houses we can see from the café windows. You say, "I remember 20 years ago you people used to say that the building crane was a sort of national symbol."

"It was, in a sense. We did a lot of building, both industrial and residential. I remember reading somewhere that in the early sixties we built twice as many housing units for every thousand of the population as did the United States and France, even though they were in the middle of a construction boom at the time. But we still didn't have enough housing."

"That was pretty much your basic problem then—the housing shortage, wasn't it?"

"Well, if not the basic problem, certainly a very thorny one. The Second World War left us with 25 million homeless people and the postwar industrial development swelled the urban population enormously. This quite aside from the woefully inadequate housing we inherited from czarist times. In the past 20 years we tripled the number of dwelling units, and in the seventies we ended the housing shortage once and for all. Today every family has a modern apartment, and that includes newlyweds."

"That's certainly one area in which communism is ahead of any other social system. I bought my home, near Chicago, about 20 years ago and I've only just finished paying off the mortgage. Did I understand you to say that you get your houses or apartments rent-free and that you don't pay for utilities—gas, electricity and heating?"

"Quite right. We always did have the world's lowest rent. Even 20 years ago it was never more than 4 or 5 per cent of a family's income. Rent-free housing is one of those 'invisible' items added to the income side of the family budget I mentioned before. We don't have to pay bus and subway fares either—that's another saving."

"I found that out when I took a trip in your subway. I hunted around quite a while for ticket offices and turnstiles. I asked one chap and he told me if I wanted to see them, he'd be glad to direct me to the 'Museum of Oddities.'"

"You'd find a nice collection there. Also the cash registers of public restaurants. They're no longer used. Nowadays anyone can get a free lunch at his factory, office, collective farm or school."

"Suppose I don't like what they serve?"

"That's up to you. There are plenty of cafés and restaurants where you'd have to pay less for a meal than if you prepared one at home."

"That's true. I've tried your restaurants. The choice is wide and the cooking excellent. But no matter how cheap it is, you still have to pay for it. Aside from those things you get free, there are still things for which a person needs money."

"We have money, enough for our needs. We still operate in terms of payment for work done. As time goes on, however, the public consumption funds will grow so much larger than the wages fund that money will no longer be important and will ultimately mean nothing. The whole idea is to rid people of material worries; let society shoulder them. Our goal is to prevent these daily cares from interfering with a person's life and work. Don't look surprised. I did say 'work.' It wasn't a slip of the tongue. Work takes on a new meaning under communism. It becomes a psychological, rather than a material, necessity. We believe that each person ought to do what he can for society, and society ought to do what it can for each person. Think back to the earliest Utopian Socialists, the Englishman Thomas More and the Italian, Tommaso Campanella, who said that the ideal society of the future would not be an assembly of idlers but a world in which people would find it impossible to conceive of life without work."

"That's true enough, except that there's more to life than material things."

"No question about it. But without material well-being one's full cultural development is hampered. Our idea is to make it possible for every individual to develop all his talents, abilities and inclinations. Our motto is: Dare to create; scale the heights of science and art."

"How does it work out in practice, this idea of developing everybody's creative talent, let's say, in the arts?"

"This may give you an idea. Twenty years ago, for every professional musician, actor and painter we had tens of thousands of amateurs. We had some 600 amateur theaters, more than half a million groups of amateur performers and about a thousand amateur film studios. Nowadays, art, theater, composing, film-making is every man's hobby, as popular and widespread as sports."

"Well, that isn't especially new. It's done by people in other countries too—using their leisure time for some form of self-expression. But there is something that is novel to Westerners like myself—the civic consciousness you people have, the way you all participate in government, in administering your society."

"And thereby hangs a tale. Our Soviets which developed out of the Revolution as organs of the people's struggle for power gradually evolved into an all-embracing organization, a sort of practical and active school of government for the millions. Even 20 years ago we had some two million elected deputies with another two million or more doing active volunteer work in the standing committees of the various Soviets. But we warned everyone to take part in discussing and solving the country's problems of government—local and national, economic and cultural. Today nearly every adult citizen is active in some phase of public affairs. Many of the matters which two decades ago national or local state bodies used to handle are now the responsibilities of various public organizations."

"You call that communist self-government, I gather."

"We still have a way to go before we reach full communist self-government, but that's where we're headed. Our state

which emerged as a state of the dictatorship of the working class, is now a state of the whole people and has been for a long time. Under full communism, the state as we know it today, with all its administrative organs, will gradually wither away, to be replaced by communist self-government incorporating the Soviets, the trade unions, the cooperatives and other public organizations. They will discharge the functions previously performed by state organs."

"But that requires a very high level of social organization, civic consciousness and self-discipline in every member of society."

"Indeed it does. Under full communism society will be a highly organized community of working people where human relationships will be regulated by a generally accepted Code of Communist Ethics. People will abide by the code, not because they have to but because they want to, because of inner compulsions and attitudes they have learned. Our moral principles have long been based on collective living, on the humanist concept, 'All for one and one for all! Man is a friend, comrade and brother to man.'"

"Your ideals, of course, are fine. Whether they're all realizable—I doubt. But then you people live by these ideals, and I come from a world with totally different concepts. I'm trying to understand them, that's why I'm here—to see whether the information I learned from books squares with the facts, to see with my own eyes."

While we've been talking, the early winter twilight has come and the lights go on in the city. There are many more people in the café now. As we leave, I ask where you would like to spend the evening as my guest.

"At the Bolshoi Ballet, of course!" you exclaim with the same enthusiasm you would have shown 20 years ago.

*

Dear reader, do you think I have been letting my imagination run wild? I really have not. This is the logic of our history I have been giving you. The 20-year program which the Communist Party adopted at its Twenty-second Congress is the natural sequel to that great and never-ending process of social betterment for our people that the Great October Socialist Revolution initiated. Ambitious, it is true, but no less practical than the earlier plans that brought a backward and beggared Russia to its present peak of progress. ★

THE WORLD IN 20 YEARS

International Questionnaire of the Novosti Press Agency

NOT LONG AGO the Novosti Press Agency (APN) sent hundreds of letters to people in many countries. They were addressed to prominent public figures, scientists, artists, writers, journalists. All were asked: "How do you envisage the world and your own country 20 years hence?"

The people who received our questionnaire are of different ages, of different political and religious views, sympathies and antipathies; and they will, of course, give different replies. But before answering, each person will have to decide for himself whether he believes that world peace is possible.

The Soviet people are firmly convinced that war is not inevitable. The APN letters emphasize: "We proceed from the conviction that by the joint efforts of the nations war will be averted and mankind will be able to progress in conditions of peace."

We think that the question asked by the Novosti Press Agency will interest our readers as well.

How do you see the world and your own country two decades hence? How will your town or community, your work and your home change? What do you hope your children will be?

Answer these questions in your own way, in any way you care to—not only in content, but in form as well. Your answer can be a letter or an article, a drawing or a poem, a fantasy story or scientific forecast. Address your replies to: ***Peace Questionnaire, Novosti Press Agency, Moscow.***

Twenty years. . . . Not such a long time, really. The majority of the people on earth today will still be alive in 1981. Those who were born in 1961 will not yet have finished their college course. No need for only dreaming to imagine the world 20 years hence; start with the facts of today.

We have already received the first replies to our questionnaire. From the United States, for instance, have come replies from well-known orchestra conductor Leopold Stokowski; industrialist Cyrus Eaton; *New York Times* reporter Harrison Salisbury. Answers to the APN questionnaire have come, among others, from Britain from the outstanding international lawyer Dennis Noel Pritt, the journalist Gordon Shaffer. From France have come replies from former Senator Jaques Debu-Bridel, director of *Horizons* Pierre Cot, and others. Replies to the APN questionnaire are pouring in from various parts of the world. The answers are of great interest and will be compiled in a book entitled *The World in 20 Years.*

By answering the APN questionnaire you too may become a contributor to this book.

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FRONT COVER—The state flag of the Union of Soviet Socialist Republics.

NOVOSTI PRESS AGENCY

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SUPPLEMENT

MAP OF THE UNION OF SOVIET SOCIALIST REPUBLICS

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THE FUTURE AS CHILDREN SEE IT

BY YELENA DOROSHINSKAYA

"SHALL WE DISCUSS the questions with the children before they start working on their compositions?" teachers of Moscow District School Number 1 in Leningrad asked themselves at a faculty meeting.

The answer was, "No."

"How about letting them do it at home?"

"And have the parents helping? No. Let the children answer entirely on their own."

The questions were: "How do you picture life under communism? What would you like to be under communism?"

And here are excerpts from the compositions on that subject written by boys and girls in the fifth and sixth grades. These are eleven- and twelve-year-olds whose parents work in a wide variety of jobs.

Seryozha Lugovtsev, 11 (father—shipbuilding mechanical engineer, mother—housewife):

Under communism people will have a much easier life than today. Nobody will work more than four hours a day. There will be plenty of time to devote to sports. Everybody will have a university education. Money will gradually disappear, and everything will be free of charge.

There will be a Metro running under the whole Soviet Union, with trains going at a speed

of from 800 to 1,000 kilometers per hour. There will be air taxis—little helicopters will fly over the streets and take passengers to all parts of the city. What I want to be under communism is an air taxi driver.

Oleg Speransky, 12 (father—army officer, mother—dress cutter):

Man's life span will increase to 200 years. People will make robots do most of their work. Lightning will not be dangerous any more; it will provide towns with electricity and be carried by special installations.

There will be different means of transportation, from midget cars with tiny atomic motors to giant flying vehicles. By then we shall have traveled to all the planets of the solar system. I am going to work at designing an interstellar spaceship for a flight to Venus.

Tanya Yershova, 12 (father—fish warden, mother—hotel manager):

Under communism all people will be honest. Kids will come out of school feeling happy and jolly. If they find it hot outdoors, they will run to the corner shop and get all the ice cream they want. There will be artificial sunshine, rain and wind. If the soil is too dry, a farmer will walk over to a machine, press a button, and there will be rain. And the rain will come down in the fields only, without the farmer even getting wet.

My sister Natasha and I want to be ballerinas under communism. We'll dance in the Leningrad Theater of Opera and Ballet and travel from one country to another. On weekends when we're at home we'll take Mom and Dad on trips to the moon and back. Our cabin in the spaceship will have a table, chairs and other furniture to make it as comfortable as at home. Daddy will read his paper, Mother will be busy with her needlework, my sister and I will read books. We will stay at a moon hotel and go sightseeing.

Kolya Kolesov, 12 (father—engineer, mother—teacher):

Work will be a joy to all people. All people will be equal. Wars will be done away with forever. All people will live happily. I want to be a cosmonaut under communism and discover new worlds. Perhaps on one of the planets we will find human beings like ourselves. We could then live there and build factories and houses.

Lena Dmitrieva, 12 (father—full-time official of the Communist Party, mother—engineer):

Life under communism must be beautiful. Nobody will be thinking of only himself but of all his fellow-citizens. All people throughout the world will live in peace with no thought of war. Children will be asking their parents: "What were atom bombs?"

I am not sure that Mother and Dad will be working under communism. They will be pretty old by then, but I know I shall work for I cannot imagine living without working. I should very much like to be a philologist. And when I get to be one I shall teach, doing my best to make my pupils love my subject and understand its importance.

Seryozha Rassokhin, 12 (father—airline pilot, mother—housewife):

I picture communism as a society of great knowledge and brain power, in which people will never quarrel over trifles and will live in plenty. Work will be extremely enjoyable and people will put all their heart into their jobs. What will I be under communism? I have not decided yet. But I know that everybody will strive for the best, and so shall I.

Misha Golovlev, 12 (father—foreman at a shipbuilding yard, mother—assistant manager of a stationery shop):

My idea of life under communism is that all men will be friends and brothers. Plants will be equipped with automatic and cybernetic machines. Working people will have more leisure. I hope to be a space flyer. If I am not accepted, I shall go to work at an aircraft plant and help to build rocket liners.

Dima Buravlev, 12 (mother—sales clerk, father is dead):

Communism means the best kind of life. But it does not mean that all we will be doing is think what theater or movie to go to. Everybody will work according to his abilities and everybody will have a right to the job he likes best. I cannot as yet say what I shall be. The Soviet poet Mayakovsky said in one of his poems: "All jobs are good; choose one to suit your taste." This will be all the more true under communism.

Larisa Portugalova, 12 (father—lathe operator, mother—movie cashier):

Each one will work not only for himself but for the good of all humanity. There will be no money. You step into a shop and everything there is at your disposal, but that does not mean that you should take with you as much as you can carry. You should take what is necessary for your needs. I have read many books about flight to the stars. I should like very much to be a cosmonaut and fly to other planets.

Tanya Arkhangelskaya, 11 (father—works in a vocational school, mother—housewife):

I want to be a doctor and treat people so that they can live long and happily. I should like to discover new medicines. It is something that I began to dream about one summer at a Young Pioneer camp, where I belonged to a first-aid squad. I remember one of the little girls cutting her hand and my bandaging it for her. It made me very happy when her cut healed and she was able to play and run about again.

Galya Revenkova, 12 (father—labor safety inspector, mother—kindergarten superintendent):

When I think of communism I imagine it to be summer all year round. Perhaps what explains this is that life will be radiant and happy with the sun shining all the time.

When I was a very little girl I wanted to be a kindergarten teacher. When I grew older I wanted to be an artist and later a puppeteer. The work in a puppet theater seems very interesting to me. I am fond of history too. And I like daring people, and that makes me want to be a flyer. There are really so many wonderful professions. I should also like to go on long voyages to different lands.

Seryozha Masyutin, 11 (father—senior technician, mother—factory worker):

When communism is built up, there will be a life of peace, joy and happiness for all. That does not mean, of course, that people will just sleep and eat. Under communism I should very much like to be a truck driver. I like riding down a village road in a truck. I think it's great fun making the engine start and hearing it puff and roar like a living thing. It is quite settled that I am going to be a driver when I grow up. But I do not only want to get something out of life, I want to do my bit for the common good too. ★

Tanya Yershova dreams of fame as a ballerina and weekend trips to the moon with her family.

Seryozha Masyutin loves to hear the roar of an engine. He'll make truck-driving his career.

First choice for Seryozha Lugovtsev is air taxi driver; and for Misha Golovlev, spaceship pilot.

SEVASTOPOL MAR

Please tell me about Sevastopol. I spent two days there and fell in love with the city. It's a beautiful place and the people who live there must be especially nice.

From a letter to the Editors.

CHES INTO THE FUTURE

BY ANDREI SAKHAROV

Sevastopol goes in for displays of art reproductions like this one on Nakhimov Prospect.

The reason the city's so spick and span? Everybody's a volunteer street cleaner.

Directors of the volunteer retail trade department: Emilia Danchuk, Ivan Bogatyrev and Alexei Slobin.

THERE are many beautiful cities in the Soviet Union and plenty of congenial people living in them, but Sevastopol always strikes visitors as rather unusual.

In Soviet newspapers and magazines Sevastopol is often cited as a model town, and more and more cities are following its example. The war left the lovely Black Sea city in a pile of ruins. Houses, the railroad station, theaters, docks were demolished by shells. The chestnut trees lining the shore boulevard were scorched. Hardly any people remained in the city—some had joined the army, others had been evacuated to the East.

When the war ended and the people returned, they went about rebuilding their city. Everybody put his heart and soul into the collective job. Perhaps that is why Sevastopol's citizens feel so close to each other. It is surely the reason that even though it is 178 years old it is considered one of the country's young cities. What accounts for that youngness is not so much the new streets and buildings as the spirit of the city.

Where's the Militia?

My own introduction to Sevastopol did not exactly do me credit. I had flicked away my cigarette stub and it landed on the pavement a few inches from the trash can. I gave the stub a rueful glance and was just about to go on when a voice behind me asked, "Are you a stranger here, sir?"

I turned around to face a little girl.

"Why, what makes you think so, child?"

She answered me by pointing an accusing finger at the cigarette stub, conspicuous on an otherwise spotless street.

I felt very uncomfortable.

Then there was another characteristic scene. As a car came speeding down the street from the direction of Nakhimov Boulevard, a pedestrian raised his hand like a traffic cop and barred the way. The car's brakes screeched to a halt, and the driver poked his head out of the window.

Said the pedestrian: "You'd better slow down, friend. At the speed you're going you'll knock someone off his feet."

The driver did not ask the pedestrian what right he had to stop him. Obviously, there was nothing unusual about the occurrence. All he said was, "I'm sorry but I'm in an awful hurry," and drove off at a more moderate pace.

My first thought was—where's the militia? Isn't it their job to regulate traffic and keep order? I later found out that many of the militiamen's beats had been eliminated as unnecessary; the citizens themselves see to it that law and order is maintained.

Everybody's Job

After a few days in Sevastopol you take all this for granted. It seems like the normal order of things. The citizens of Sevastopol have the idea that a city should be a clean, beautiful, well-ordered, pleasant place to live in. They see to it that their city is.

It's everyone's job—no exceptions—to keep the city clean. On Sundays the whole population takes turns putting the streets in order and volunteers from among the pensioners, housewives and school children keep a sharp eye on the blocks and courtyards assigned to them. Just try dropping a match on the sidewalk.

In the spring Sevastopol is a big flowering garden. Bushes and flowers by the millions have been planted in the past few years. Every courtyard has its flower beds, and every street—let alone the waterfront area and the main boulevards and squares—looks like a beautiful park.

Some of the trees have little markers to notify all and sundry that "Natasha Piskunova, 12, tends this tree" or that "The Smirnovs take care of the trees on this block." These "private property" signs warm your heart, for they show that the people are not working for themselves but for the benefit of everyone who lives in the city.

Every fall they hold a flower festival, and the whole city is fragrant with dahlias, asters and iris. Nowadays, with buildings popping up all over the city, the bright fresh colors show up even more sharply against the new white fronts. The 3,000 apartment units that survived the war are now supplemented by 24,000 new ones, and more are finished every day.

Faith in Man

The war left thousands of orphaned children on the streets. There was a good deal of hooliganism and theft—the heritage of nazi occupation, hunger and destruction—a nightmare period the people of Sevastopol still remember. The militiamen were a busy lot those days.

Not long ago the Electro Station District of the city cut out its last remaining militiaman's beat. Some people objected."Wasn't the step premature?" they asked. Warehouseman Alexander Molokov, who headed the volunteer people's squads, thought there was nothing to be worried about. "If a hooligan turns up from somewhere," he said, "we'll be able to take care of him."

The first *druzhinniki*, as these volunteer squads are called, were formed several years ago. They hammered away at violators of public order. When persuasion didn't help, then social pressure did. And when neither worked, the law stepped in.

In 18 months the *druzhinniki* had the city in shipshape order and the militiamen began to think of learning new trades.

Interesting changes are now taking place among the volunteer patrol squads. Not long ago a group of 45 doctors and nurses from the city hospital took turns patrolling the streets for two-hour periods after work. Now they have begun to make use of their professional know-how to check on sanitary conditions of yards, stores, streets and public buildings. They divided into groups of three, and each covers an inspection district.

Sevastopol people have developed so strong a sense of civic responsibility that growing numbers of municipal enterprises feel they can operate with complete trust and confidence in the people's honesty. At many factories and stores employees make up their own wage envelopes; there are no payroll cashiers. Trolleys and buses no longer need conductors. Movie houses, likewise, have no ticket sellers. Cafeteria diners make out their own checks. Library readers check out their own books. These may seem like small things, particularly since they have been introduced in many cities of the Soviet Union, but in Sevastopol they have become an integral part of the city's life.

There are flowers everywhere you look—in shops, outdoor stands, streets, courtyards.

Dicarded cigarette stub? Somebody's sure to remind you it belongs in the trash can.

There is no need for militiamen in many districts. Volunteer people's squads do the job.

No conductors to collect the fare on this city's buses. Sevastopol believes in the honor system.

You Know? Teach Others

In Sevastopol there is a man by the name of Nikolai Muzyka. He is 30, leader of a construction team, and every year of the 11 he has been on the job, he has formed a new team. He has trained several hundred pupils. They really are his pupils because he always picks green graduates of factory trade schools or workers who did poorly at other jobs on the construction site.

He teaches by personal example and by friendly understanding. After a year with him the pupil is not only a better worker but a better person. They call Muzyka a born teacher, but that isn't the reason for his extraordinary patience and friendliness, for the fact that he gives so much and so liberally to other people. Muzyka believes that people can be helped to grow and develop in knowledge, understanding and character, to become men worthy of a communist society.

He does not get oratorical on the subject when he is asked why he puts himself out so much for others. He says simply, "I'd be bored to death otherwise. I suppose I could have thought of myself all these years. I'd certainly have made more money sticking with a crack team. But that isn't my idea of happiness. It gives me a real sense of accomplishment to know that the houses I helped to build are standing all over the Crimea—in Sevastopol, Balaklava and Simferopol—and that my pupils are doing a good job everywhere. It's living for others that makes for an interesting life."

Every team Muzyka has led strives for the honored title Communist Work Team. The members of his teams are the record setters, they learn from and help one another. Many of them take correspondence courses. There are 600 Communist Work Teams at the city's factories and construction sites.

More and more Sevastopol people have this creative attitude toward work and people, with no mercenary element or motive involved. "Pass on what you know to others." "Now that you know how—teach the others." These are guiding rules in factories and on construction sites, in the grade schools and the professional institutes.

This wish to pass on skills, arts, learning of all kind, to create and build for friends, neighbors and kinfolk also accounts for Sevastopol people setting up a tuition-free Sunday music school, 18 People's Universities of Culture, 9 amateur film studios, and several people's theaters.

Self-Government

The citizens of Sevastopol administer their city not only through but with their elected deputies in the district and city Soviets.

Every apartment house has a tenants' committee to work out general house problems and children's recreation programs. Public control committees check the quality of products and service of the city's retail stores and restaurants. Permanent production conferences in the factories, formed with the direct participation of the local trade union organizations, help to plan production schedules and keep an eye on management. Parents' committees work with the teachers and district departments of education in matters pertaining to child rearing and the organization of recreation and sports. Pensioner clubs, Comrades' Courts and volunteer workers on the various municipal standing committees all help to make their city a better and more beautiful place to live and work in.

The new Communist Party Program adopted at the 22nd Party Congress in October proposes that "efforts should be made to reduce salaried government staffs and to see to it that ever larger numbers of people participate in administration so that government work will eventually cease to constitute a profession."

The citizens of Sevastopol are doing everything they can to see this goal realized just as quickly as possible.

Volunteer Town Administrators

One of the most recent Sevastopol innovations in government is the Soviet at Kamyshevo Bay. This is where the biggest fishing piers, canneries and refrigeration plants on the Black Sea are located. When the town was being built, the people decided not to wait for the Soviet to be formed but to organize one on their own. It was their idea that instead of the usual, full-time paid staff, this body would consist of a staff that would work on a volunteer basis.

They held a general meeting of all the inhabitants in the community—fishermen, construction workers, teachers and employees of the ocean fishery offices. In electing their Soviet, they considered not only the candidates' desire to hold public office but their general suitability and professional competence for certain posts. Their Soviet has been functioning ever since, and none of its personnel receives wages.

The Public Health Department of the Soviet is headed by a physician, Zoya Golovka; teacher Yuzef Oiks heads the Department of Education; the manager of the ocean fishery offices, Alexander Buryachenko, heads the Department of Industry and Building, and so on. The chairman of the Soviet is engineer Konstantin Leinert.

In the short time this Soviet has been in office it has opened a polyclinic, a new library, a bookstore and a People's University of Culture which offers courses in literature and the arts.

One of the Soviet's very important functions is distribution of new apartments. The Soviet supervises the construction of all new housing and has the final say about the assignment of available apartments. This can be, and sometimes is, a troublesome problem. But the Soviet has acted with such commendable fairness that its decisions are not even questioned.

The various departments of the Soviet—town improvement, trade, industry, municipal economy, building, socialist jurisdiction, public education and public health—work efficiently, effectively and democratically.

In matters large and small, the Soviet operates as a genuinely representative people's body, responsive to public and individual needs. The members are available daily to any citizen with a problem, complaint or suggestion.

Soviets like the one at Kamyshevo Bay—now being duplicated in other sections of Sevastopol and in other cities—are the reason the Program of the Communist Party declares with such certainty that in time all the functions of the state will pass into the hands of the public. That will signify the highest form of democracy under communism. ★

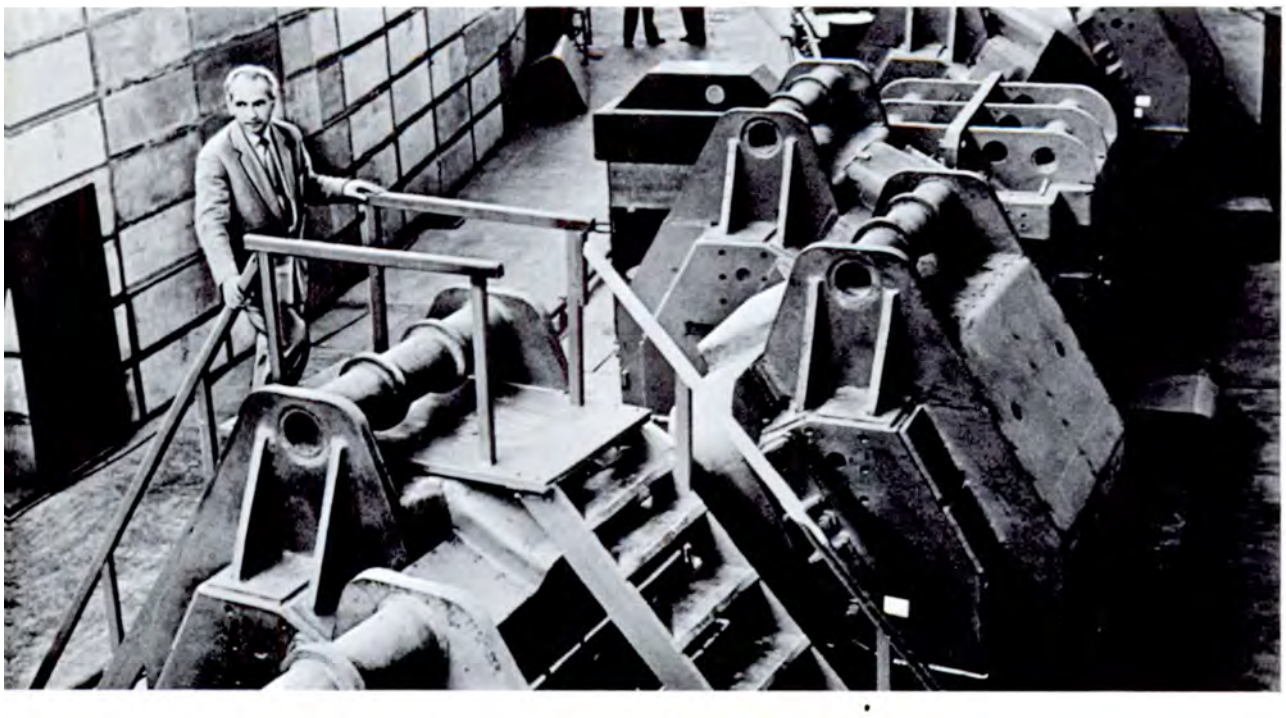
EVENTS AND PEOPLE

Electric Railroads

The 3,410-mile Moscow-Baikal rail line, the world's longest, has been completely electrified. At a press conference on the occasion of its completion, USSR Minister of Railways Boris Beschev said, "The electrification of the Trans-Siberian Railway trunkline is an integral part of the plan for the reconstruction of railways throughout the country. Ten years from now we will have some 25,000 miles of electrified lines. That will double our traffic-handling capacity. The replacement of steam locomotives with electric ones on the Moscow-Baikal line alone will save some 20 million tons of coal a year."

Electrification these days also means automation. The dispatching posts on the Moscow-Baikal line are now all automated. One operator controls the switches on a 125-mile section. Train movements on some sections are controlled entirely by computers. Soviet-made electric locomotives can travel at high speeds.

With the Moscow-Baikal trunkline—the first half of the Trans-Siberian Railway—finished, construction is moving ahead on the second half. The power lines are already up beyond Lake Baikal and are going up on the final stretch of the line, to Vladivostok.



Powerful Proton Accelerator

"Ready!" And the new seven-billion-electron-volt proton accelerator at the Institute of Theoretical and Experimental Physics was put into operation. It will be used to study the structure of nucleons—particles that make up the atom's nucleus. At the first trial the protons were given an energy of 5.8 billion electron volts.

The new accelerator incorporates the latest achievements in nuclear engineering. The 112 electric magnets form a ring having a circumference of a sixth of a mile. They are only one-tenth the weight of their counterparts at the Dubna Joint Institute for Nuclear Research. The plant is surrounded by a wall 26 feet thick to protect the researchers from the effects of radiation.

The principal underlying the accelerator is that of the so-called strong focusing of particles, certain to yield new discoveries in nuclear physics. The same principle underlies the superpowerful 50-70 billion-electron-volt accelerator presently being built in the Soviet Union. The new machine at the Institute of Theoretical and Experimental Physics may be considered a working model of the giant superpowered accelerator.

Polio Conquered

There was no guard against crippling poliomyelitis until the American doctor Albert Sabin developed his famous vaccine—a live but weakened virus. Physicians were somewhat wary, reasoning that the virus might recover its potency in the body.

In the Soviet Union Professor Mikhail Chumakov, director of the Poliomyelitis Institute, championed Dr. Sabin's vaccine and urged that it be used on a nationwide scale. In the fall of 1959 production of the vaccine was begun under the professor's supervision. By the end of the year some 15 million children and adults had been vaccinated. In the same year Professor Chumakov and a group of scientists went to Estonia where the polio rate had risen to 82.8 cases per 100,000 population. After mass vaccination the epidemic abated, to 4.9 cases per 100,000; in 1960 there were no cases.

Last year more than a hundred million Soviet people had polio shots. Soviet-made vaccine helped to wipe out the polio epidemic in Japan.

Scientists who attended a recent session at the institute headed by Professor Chumakov declared that the threat of polio epidemics in the Soviet Union has been eliminated for all time.

Rockets to Stop Hail

There is a watchful silence at the meteorological station. Instruments are pointed at a dark cloud in the sky approaching the Alazan Valley in Georgia. The cloud carries hail, and hail spells destruction to the grapevines in the valley.

The moment the cloud's black shadow reaches the edge of the valley, the command is given to fire. A score of rockets shoot toward the cloud. A deafening explosion, and the dense cloud loses its clear outlines and begins to disperse in the air. A minute passes, then another, and the bright blue sky appears where the menacing cloud had hung low over the horizon.

Hail used to batter down thousands of acres of vineyards every year in this valley. But not any longer. Georgian scientists have put rockets to work for the winegrower. They fill the rockets with silver bromide, which has the property of breaking up cumulo-nimbus clouds.

Soviet Pilot Wins Aviation Crown

Pilots call the record flight over a closed 100-kilometer circuit the "royal aviation crown." It's the most difficult to achieve of the four international records. It calls not only for bullet-like speed but for jeweler's precision as well.

Soviet test pilot Alexander Fedotov made the run in an E-66, a plane that resembles a rocket. He took off on a fine, sunny morning from one of the airfields. The plane tore into the stratosphere as though hurled by a mighty hand. After he had gained altitude, the pilot traced a great spiral in the sky. It took him just 150 seconds to do the 100 kilometers.

He flew at an average speed of 2,385 kilometers (1491.9 miles) an hour, topping the official world record by 148 kilometers (91.9 miles) per hour. At times during the flight the plane did 2,730 kilometers (1696.3 miles) an hour. When the film shot by means of a cinetheodolite was developed, it was found that the flight trajectory was precisely as mapped.

Alexander Fedotov is 29 years old. He is a Communist Party member and has been a test pilot for four years. He attends the evening division of the Aircraft Institute. Interviewed after the flight, Fedotov said, "Some day I hope to test a plane that has the speed of a rocket."

Master of Numbers

"Oh, great holy priest and master of numbers!"

This was the salutation on a birthday card sent to Academician Ivan Vinogradov by his pupils. It was written in the ancient Mayan, which they had just deciphered.

Mention the name Vinogradov to a mathematician in any country and he'll associate it with Goldbach's theorem. This two-century-old unsolved theorem was brilliantly proved by the Soviet mathematician and now bears the name of Goldbach-Vinogradov.

There are men whose names are almost synonymous with a field of knowledge—the Russian mathematician Lobachevsky, for example, with non-Euclidian geometry. Similarly, with Vinogradov it is the analytical theory of numbers, since he laid the cornerstone of that theory.

This leader in the field of Soviet mathematics is a very young seventy. Witness the fact that the mass of birthday messages and gifts sent him were crowned with an alpine ice ax and a coil of rope—a present from fellow mountain climbers.

He Likes Czech Beer

Five years ago the world's first passenger airliner—the TU-104—had been placed in service on the Moscow-Prague run. And now the silver liner was being readied for the anniversary flight and passengers were boarding it.

One of them was rather special—a shaggy little brown bear, waddling clumsily across the concrete landing field and led by a rope held somewhat nonchalantly by Czech journalist Irzhi Plakhetka. Baikal the Bear was a gift to the Czech Pioneers from the children of Kultuk, a village on the shore of Lake Baikal.

As he stopped onto the ramp, the funny little passenger suddenly changed his mind and wouldn't get on. Perhaps he didn't want to leave his native land. Plakhetka took a bottle of Pilzen beer from his bag, put a rubber nipple on it, and gave it to the bear cub. "He likes Czech beer," said Plakhetko casually.

Baikal finished the bottle and then went up the ramp, a happier bear. On the way to Prague he finished off a few more bottles of his favorite beer.

Whaling Fleet Flagship

Three Soviet whaling fleets are plying the stormy waters of the Antarctic. The fourth, with the new flagship *Sovietskaya Rossia*, recently left port for those waters.

The dimensions of the *Sovietskaya Rossia*, built at the Nikolayev shipyards, are amazing. The new whaling base is 715 feet long, 91 feet wide and has a displacement of 45,000 metric tons. Her three decks have more than 800 different facilities—from a fully automated recovery plant to hundreds of comfortable state rooms for the crew.

The ship generates enough electricity for a town of 300,000 people. If necessary, it can make several round-the-world cruises without touching port for refueling, for fresh water or provisions.

Sovietskaya Rossia will provide the country every year with thousands of tons of whale fat, liver, fodder meal, leather, and ambergris for fine perfumes.

THE LIFE OF IGOR KURCHATOV

BY YEVGENI RYABCHIKOV

RESEARCH in physics, primarily in atomic physics, takes top priority in today's science, and Soviet investigative genius is making momentous contributions to our growing knowledge of the atom.

In the pleiad of Soviet atomic physicists, Igor V. Kurchatov properly holds first place. Member of the Presidium of the USSR Academy of Sciences and deputy to the Supreme Soviet, he was three times awarded the Hero of Socialist Labor decoration. To him fell the honor of being the chief scientific leader in building the country's atomic industry and atomic engineering. In accordance with a Party decision, in collaboration with other Soviet scientists, he laid the foundations of the atomic might of the Soviet Union.

His portrait, with fresh flowers always at the foot of it, hangs in the main building of the Kurchatov Institute of Atomic Energy, where he worked for many years. Under it, carved in stone, are his words: "I am happy that I was born in Russia and have dedicated my life to the atomic science of our great land of Soviets. I profoundly believe and I am absolutely sure that our people, our government will apply the achievements of this science only for the good of mankind."

A narrow staircase takes us to long quiet corridors on the first floor, past the laboratories, to Kurchatov's office. We enter the waiting room and go through the heavy oak door of his office. The room, with four large windows, is simply furnished, severe, with nothing superfluous to distract attention—a carpet on the floor, a big desk and a round table on which are several telephones. It looks more like the office of an army colonel at headquarters than a scientist's study.

Leading out of this room is a smaller study furnished with a small desk and a still smaller table for scientific magazines and newspapers. This is where Kurchatov retired to think through important decisions and to write.

But he was a man of ebullient energy, always among people; even while working he could not bear to be alone for long. He liked people and they liked him, this modest and simple man. They came to see him at all times of the day.

Kurchatov lived on the institute grounds; he had no time for traveling to and from work. His "cottage," he called it—a small house in the garden —was a constant magnet for scientists. Inside, on the porch, in the garden, his voice could be heard till late at night; there was music, and there were debates that resolved some of the most important problems of atomic physics. These were the hours when Kurchatov was supposed to relax and rest. But there was really very little difference between the time he "rested" and the time he worked.

He rose early in the morning and almost immediately sat down to work. First he telephoned the men on duty at the experimental unit to find out how the experiments had progressed during the night. People used to say about him, "The atomic reactor has started to work."

Whether he was in a good mood or obsessed by doubt, whether he was tired or feeling indisposed, annoyed about an unsuccessful experiment or the mistake of an assistant—outwardly he always appeared cheerful and pleasant.

Exactly to the minute, this tall man with the long, graying beard walked into his office. At the institute they called him the "punctual man," the "speed man." His appointment list was always drawn up beforehand; no one ever sat long in his waiting room, no one's time was wasted. He received people and made his laboratory rounds always at the appointed time.

He often began his conferences, talks and seminars with the question, "How shall we glorify science?"

He Wanted to Build Ships

Kurchatov was born in the Urals, in the village of Sim, formerly part of Ufa Province. In old Russia, Ufa was considered a remote and forgotten province, and Sim was, of course, even more so.

His father, Vasili Alexeyevich, worked as a forester's assistant. He loved the woods and spent most of his time there. When a new teacher, Maria Ostroumova, came to the parish school, Vasili transferred his affections. They were married, and in 1903 their son Igor was born.

The family grew; somehow or other the Kurchatov managed to make ends meet. By whatever means, their children had to get an education. When the father was appointed a land surveyor in Simbirsk on the Volga, Igor went to high school. But only a year later one of the daughters fell ill and the family moved to Simferopol, in the Crimea, on the doctor's advice.

Igor graduated from the Simferopol high school with a gold medal. This was when the Soviet Army was pushing back Wrangel and sweeping the remnants of the interventionist forces into the sea. During the very difficult years that followed the Civil War, Igor studied mathematics at the Crimean University. He worked his way through school—taught in a children's home, clerked in a garage, was a watchman at a state farm orchard, and became an assistant in the university's physics lab.

At the time Kurchatov did not dream of being a physicist; he wanted to build ships. And in the spring of 1923, in order to hasten that future the impatient student took all his third-year exams in mathematics at one time, studying the fourth year's work independently at the same time; did his diploma thesis; and thus graduated from the university ahead of time. This was so uncommon an achievement, and he had worked with such intensity, that everyone was astounded.

That fall he entered the Petrograd Polytechnical Institute as a student of shipbuilding. Here, too, he had to make a living and took a job as observer at the Pavlovo Magnetic-Meteorological Observatory. Here he did his first independent experimental research—investigation of the radioactivity of falling snow. The great accuracy and the complex mathematical computation required in this type of research appealed to him. For the first time he perceived the full physical meaning of such abstract physical concepts as radon decay and alpha absorption. Physics captured him completely.

He Finds His Research Area

In the fall of 1924 Professor Semyon N. Usaty invited Kurchatov to become his assistant in the physics department of the Azerbaijan Polytechnical Institute. There he became interested in nonconductor research, and a year later he went to the Leningrad Physicotechnical Institute to continue his research activity. He had found his place in research.

The young physicist was fortunate. At the Physicotechnical Institute

the eminent Soviet scientist Abram F. Ioffe had created the kind of research environment all investigators dream about—bold, vigorous, enthusiastic. Kurchatov got to know the leading scientists of the older generation. He became a senior scientific worker, a senior engineer-physicist, and head of a laboratory. He was a new type of scientist—not only a researcher but also an organizer.

With a number of other young scientists Kurchatov worked on the problem of high-voltage insulation. His studies in ferroelectricity helped to open up that new branch of science. For his work in the field of the physics of nonconductors he was awarded the degree of Doctor of Physico-Mathematical Sciences by the Learned Council of the institute.

But Kurchatov was already preparing to abandon this field of study. In fact his friends accused him of squandering his energy. Ioffe, however, understood. He knew that Kurchatov was searching for the most important scientific secret of our time.

Western historians assert that in the thirties there were only five human magnets in nuclear research—Rutherford at Cambridge; Niels Bohr at Copenhagen; and Max Born, James Frank and David Gilbert at Goettingen University. But they are forgetting the Soviet Union.

By the early thirties important and successful atomic research was under way in a number of Soviet cities, including Kharkov with its then new physicotechnical institute.

Soviet nuclear physics needed powerful sources of fast particles capable of causing a nuclear reaction. This job was very much to Kurchatov's taste. Having completed a series of experiments in Kharkov, he returned to Leningrad where he started the first cyclotron in Europe, at the Radium Institute. Immediately thereafter he set about arranging for the construction of a giant cyclotron at the Leningrad Physicotechnical Institute. The largest in Europe, it was built on the eve of the Second World War.

In 1934, working with neutrons, Kurchatov established the phenomenon of the branching of nuclear reactions. During fast neutron bombardment of the mono-isotopic element of phosphorous, two periods of half-decay were observed. The same occurred with another mono-isotopic element, aluminum.

In the spring of 1935 Igor Kurchatov, together with Boris V. Kurchatov, Lev V. Mysovsky and Leonid I. Rusinov, made a major discovery in nuclear physics—the isomerism of artificial radioactive nuclei. Igor Kurchatov knew that the neutron was the key to atomic fission.

Wartime Research

The thought of releasing the gigantic store of energy contained in the atom gave Kurchatov no rest. But the war broke out and all peacetime research stopped. Kurchatov went to his friend at the institute, Anatoli P. Alexandrov (now Academician), and told him, "I know that you have discovered a way of protecting ships against mines—a very important thing. The staff of our laboratory is completely at your service!"

Alexandrov and Kurchatov moved their laboratory to where the fleet was. At first on the Baltic, then in Sevastopol, under enemy fire, they worked on naval anti-mine equipment. More than once the scientists faced death during enemy air raids.

Meanwhile the war took its toll. Kurchatov's father died in blockaded Leningrad; his mother, evacuated from the besieged city, also passed away.

By order of the command, Kurchatov was evacuated by sea from burning Sevastopol to Poti. Later he was sent to Baku and then to Murmansk.

At the height of the war the Party and the government decided to resume work on uranium fission. Nuclear physicists were hurriedly recalled from the front. Kurchatov returned to Moscow to help select a site for an atomic institute in the suburbs. In the summer of 1943, when the fascists were making their last desperate try at the Kursk bulge to reach Moscow, a special laboratory of the USSR Academy of Sciences, headed by Kurchatov, began functioning in the capital.

In 1947 the Soviet Government announced to the world that no longer was the atom bomb a secret, which meant that the USSR had the atomic weapon.

Quite some time has elapsed since that announcement, but people still remember how intensely Kurchatov worked on the project. The busy "center of atomic affairs" moved from Moscow to the proving ground. From there Kurchatov maintained contact day and night with countless laboratories, factories, academies, experimental stations and design offices. The scale of the work was so large it hardly seemed possible for one man to cope with it.

Tension grew as the day of the test approached, and with it Kurchatov's incredible energy reserve. His coworkers asked, "When does he sleep, rest? Where does this volcanic energy of his come from?"

The test was successful. "Now we have an atomic sword," said Kurchatov. "Now we can think of the peaceful uses of the atom."

Jokingly he told friends he was "splitting himself." He was working simultaneously on a hydrogen bomb; on the world's first atomic power station; on a new institute in Dubna for atomic research; and on the new, growing problem of control of thermonuclear reactions.

"The atom for peace—that is our aim," he declared. "Bombs are only a forced necessity."

It took several more years of hard work, and then the Soviet Government announced, in August 1953, that the USSR had successfully tested a hydrogen bomb. The Soviet Union was ahead in the arms race into which it had been forced. It was not before 1954 that the United States was ready to test its hydrogen bomb on the Eniwetok atoll.

Atoms for Peace

There was more time now for atomic research for peace. On June 27, 1954, the world's first atomic power station, with a capacity of 5,000 kilowatts, was put into operation. This power unit near Moscow, built around a uranium-graphite reactor, was Kurchatov's pet creation.

With other Soviet scientists he was challenged by the idea, new then, of thermonuclear control. Swift thermonuclear reaction had been achieved in the hydrogen bomb. Now science and engineering were working to tame and control it. This would make it possible to utilize hydrogen—an inexhaustible source—for nuclear fuel.

Kurchatov was past fifty, but he turned to the problem with youthful enthusiasm. "There was a turn of events toward the nucleus, its fission," he said. "Now nuclear fission has been studied; it is passing into the field of engineering, of industry. And we must take up a new problem, make another turn, steer a new course, the course for synthesis, for control of thermonuclear processes. The future lies in them."

In 1956 Kurchatov accompanied Nikita Khrushchev on his good-will trip to Britain and read a paper at the Harwell scientific center on the work done by Soviet scientists on controlled thermonuclear reaction. The paper created a sensation and was reported widely in the world press. It appeared that no one had even suspected that physicists in the USSR had gone so far in this complex field.

Kurchatov's report was another demonstration of Soviet scientists' desire for peace, friendship and common effort in solving the fundamental problems of modern science.

"I Have a Lot to Tell You"

Kurchatov's mind, strength, will power, his experience and knowledge as a Communist and a great scientist are embodied in the world's first atomic power station, in the grand plan for the creation of a Soviet atomic-power engineering industry, in the first atomic icebreaker *Lenin*, in the Dubna Institute, in the numerous nuclear reactors built and installed in the Soviet Union and elsewhere in the countries of the socialist camp, and in the comprehensive development of controlled thermonuclear research in our country.

During the winter of 1960 Kurchatov had several meetings with Nikita Khrushchev. He always returned home from these meetings happy, inspired, full of bold new plans. After one such visit in February 1960, he wrote an article for *Pravda*, summing up the work already done and outlining the course of future research.

On the morning of Sunday, February 7, 1960, Kurchatov phoned Kiev, spoke with the Secretary of the Central Committee of the Communist Party of the Ukraine to urge that atomic research in the Ukraine—in Kharkov and Kiev—be speeded up, promising to go to Kharhov soon to see his old friends. Then he went to a rest home in Barvikha.

On the way he admired the snow-covered trees. He was in a happy mood. When the car entered the park, he jumped out with youthful agility, and with quick, energetic steps went to see a friend who was vacationing there. He found him, and they strolled along the snowy walks. Kurchatov stopped at a bench, swept the snow off and said, "Let's sit down, I have a lot to tell you." Those were his last words.

Yes, Igor Kurchatov had much to tell people: about the secrets of nature still to be uncovered, about the future he saw with the prophetic eyes of a great scientist. ★

BETWEEN COAL AND ORE

BY ABRAM STARKOV

METALLURGISTS have an everlasting problem—where to locate a plant when the ore and coal sources are far apart. The problem was solved in an unusual way in the northeastern part of the Soviet Union, where a steel mill was located, with the consumers of the metal being the deciding factor rather than the raw material sources.

The site chosen was Cherepovets, 310 miles east of Leningrad. Cherepovets is more or less equidistant from the iron ore deposits of Olenegorsk on the Kola Peninsula, 960 miles to the north, and the coal mines of Vorkuta on the Pechora River, 1100 miles to the northeast.

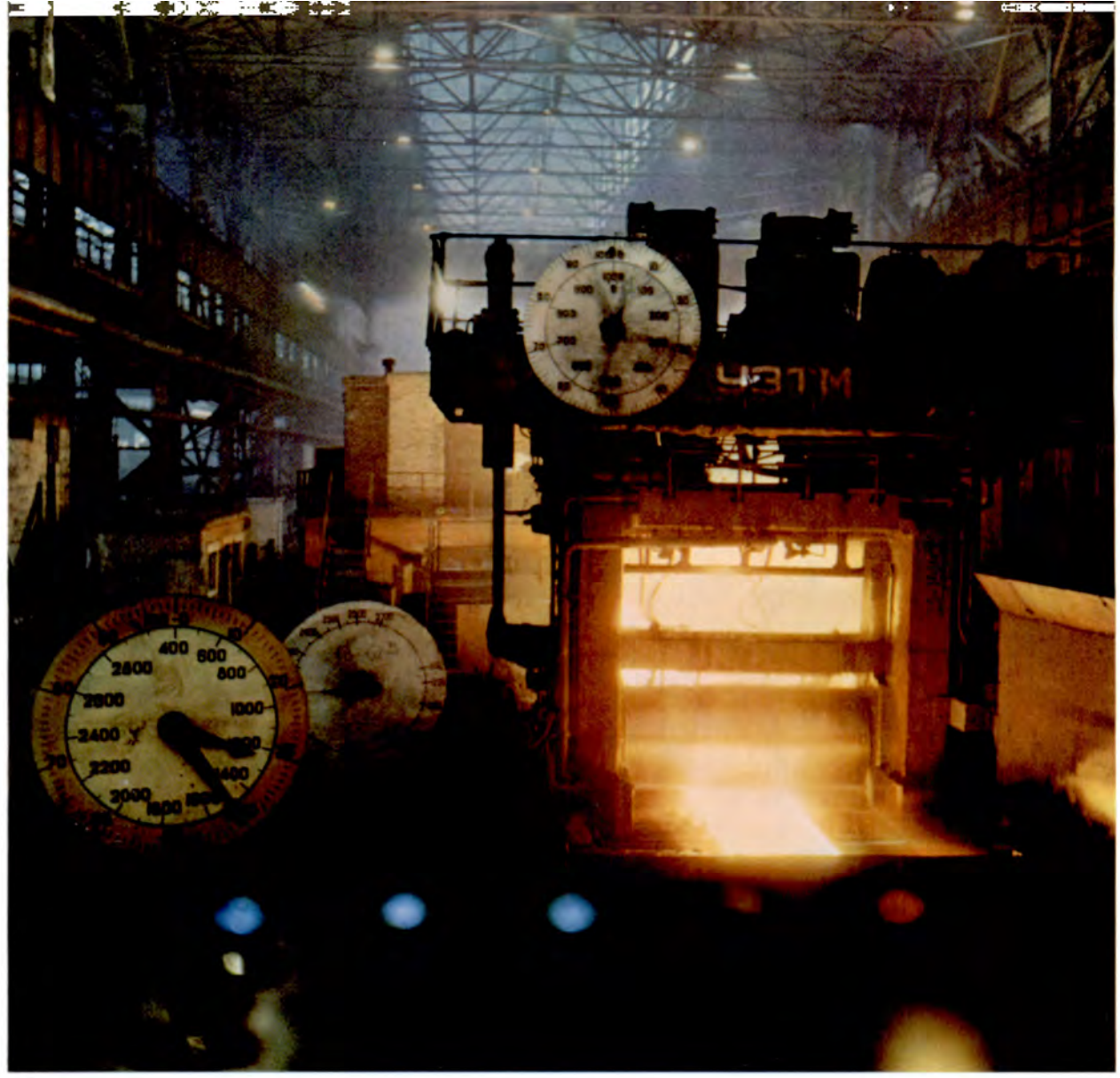
There was some thought of building the mill in Vorkuta. But then the iron ore would have been some 1500 miles away from the coal at Olenegorsk, aside from the fact that because blast furnaces take about twice as much ore as coal, pig iron transport would have been that much more expensive.

Other considerations ruled out building on the Kola Peninsula, a region of tundra, swamp and rock beyond the Arctic Circle. To build blast and open-hearth furnaces and rolling mills in country like that would also be too expensive.

Therefore the mill was built close to Leningrad, Yaroslavl and Gorky with their many machine-tool and engineering plants. Cherepovets was the site finally selected, although the particular town was not important. The idea was to build the mill in that general area because previously metal had to come from the Urals and the Ukraine.

And here we are at the Cherepovets Steel Mill, in Director Ivan Filichkin's office. On the wall hang charts of the mill's growth. The sections drawn in blue are already in operation. Those in red will be built by 1965, the end of the seven-year plan period. The mill's output then will be three times greater than originally planned. The broken lines on the chart indicate a plan for expansion in the more distant future.

The Cherepovets mill is a comparatively



The "2800" rolling mill at Cherepovets uses the latest automation and remote-control techniques.

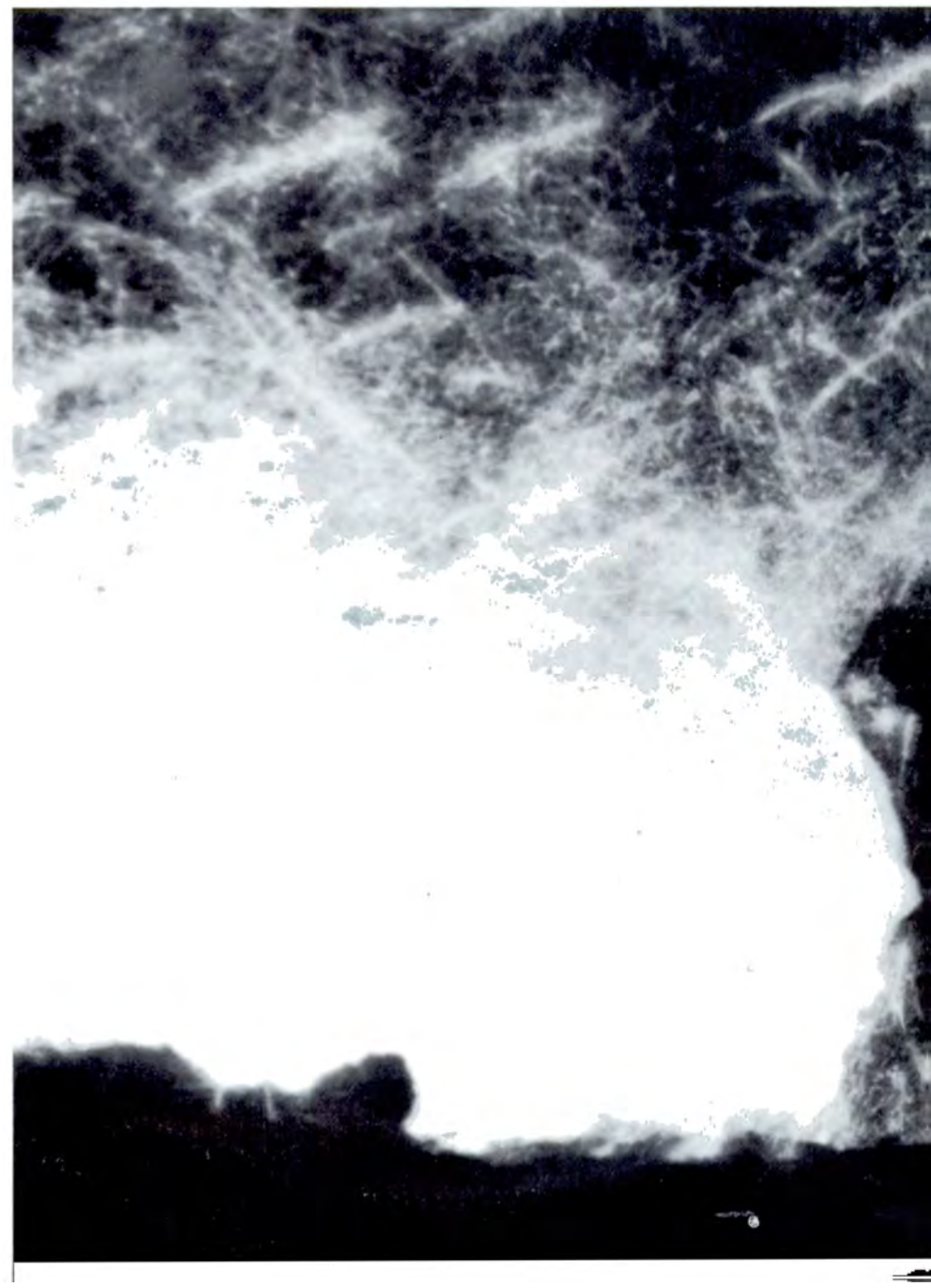
new one. It produced its first metal in 1955. Since then it has been growing rapidly, adding new blast and open-hearth furnaces and rolling mills.

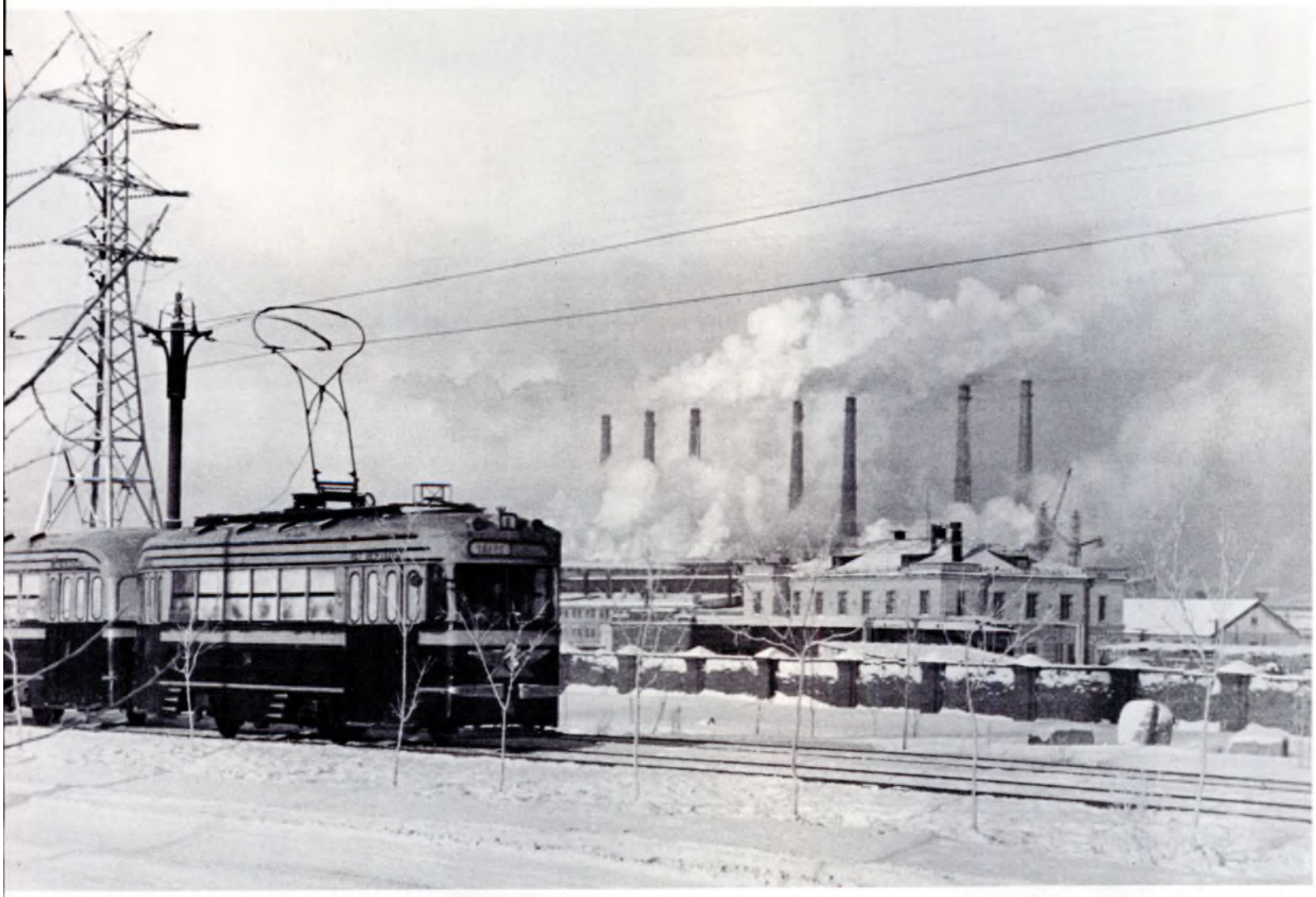
Director Filichkin has to divide his thoughts and energy between present productivity and future growth. He tells us, only half-joking, "I often dream about the mill. Part of the night I dream of blast furnaces; they're working all right, and so I sleep soundly. The other part of the night I dream of open-hearth furnaces, and then I sleep poorly. We are building more and more of them, and we're running short of gas. We have to burn mazut in furnaces designed for gas, and they work unevenly. We're waiting for natural gas from Estonia; the pipeline is nearing Cherepovets. When the gas starts flowing, I'll sleep soundly all night."

"That Wonderful Fuel"

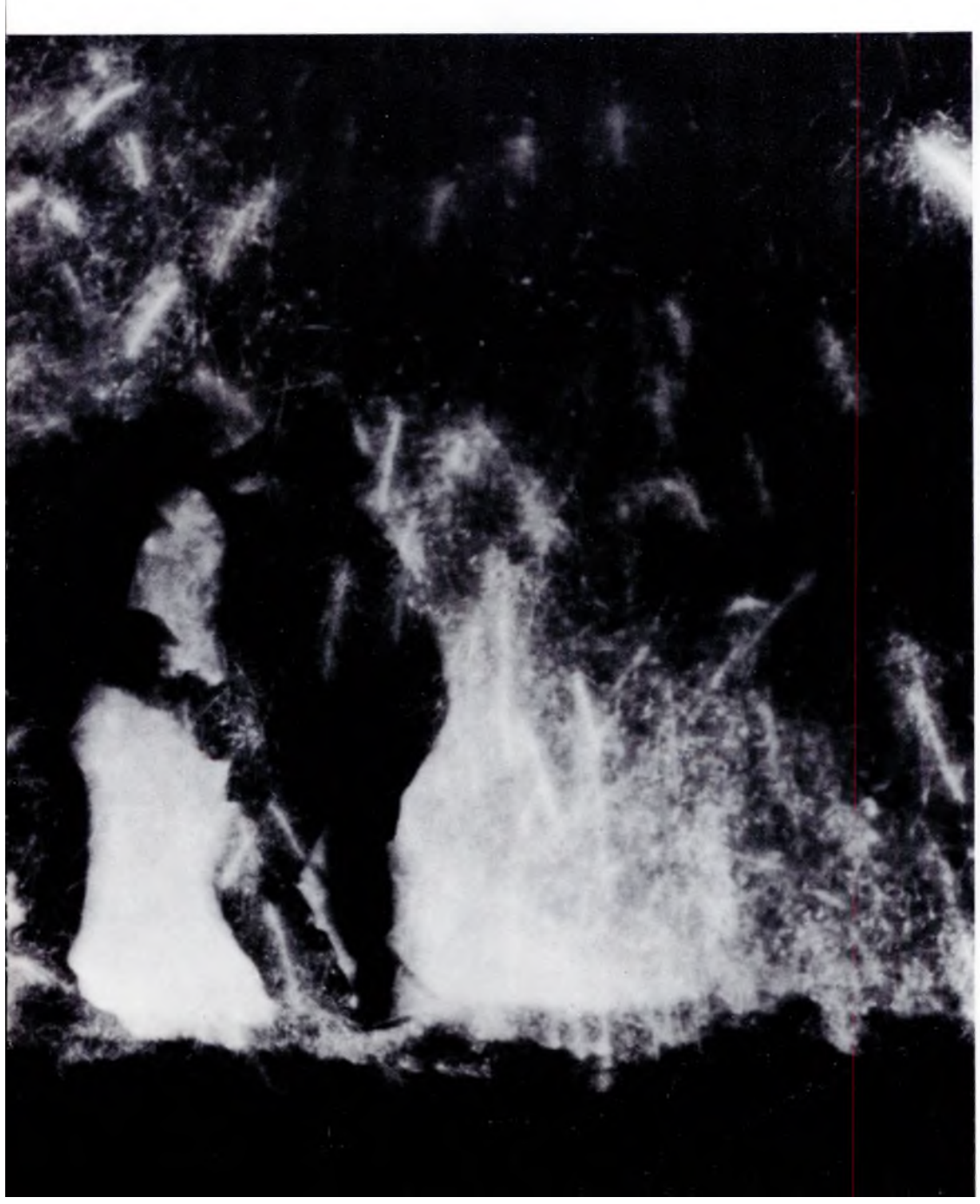
He shows us the mill's flow sheet. The process begins with the coke ovens. Without coke —"that wonderful fuel," he calls it—for reducing iron, neither the furnaces nor the rolling mills would work. The coal from which coke is made is washed, screened, pulverized, carried to the top of a tower and poured into an oven heated to a very high temperature with all air excluded, so that the coal does not burn but is baked into the coke needed for blast furnaces.

Cherepovets coke is of the highest quality. It has very little sulphur—important for the blast furnace process—is strong enough to





Cherepovets was a quiet settlement before the mill was built. Now it is a big industrial center.



The workers pour a record two metric tons of metal for each cubic meter of furnace volume.

A six-hour workday leaves plenty of time for fun. One of the parties held at the local club.

An amateur quintet of molders, lathemen and forge-press operators pounds out the jazz.

withstand the high pressure inside the furnace, and since only just over half a ton is needed to produce one ton of pig iron, it is economical. "The best coke in the country," is how Director Filichkin sums it up.

Unlike other mills, the blast furnace shop at Cherepovets has no railway tracks, no diesel locomotives, no rail trucks for loading ore, no derricks. All loads are carried on belt conveyors along closed galleries and trestles.

Cherepovets furnacemen are proud of their record—they produce almost two metric tons of metal per cubic meter of blast furnace volume. They top the high coefficient of blast furnace utilization reached by Magnitogorsk.

On our tour of the mill we stop at the pyrometric laboratory. This is the nerve center of the blast furnace department. None of the outside noise filters in here. The only sound we hear is the slight crackling of the instruments that check the processes going on inside the blast furnaces.

"Notice how evenly the blast furnace is working," head foreman Anatoli Olkhovnikov tells us, "how evenly the charge is distributed and how smoothly it moves toward the flow of gases from the bottom." The operation at Cherepovets is a great improvement over both the Magnitogorsk and Kuznetsk mills. The high quality of Olenegorsk ore concentrate and Vorkula coal is part of the reason, but only part—poor processing can spoil the best coal and ore.

Various other entertainment is provided by the club's amateur folk dancers, singers, and actors.

Tamara Solovyeva with three of her "twice born" children. If not for her method of altering their blood composition, they would have died soon after birth.

TWICE BORN

BY ANATOLI SCHVARTZ

BLOOD is the most hard-working tissue of the body. It carries oxygen and food to the other tissues, removes carbon dioxide and waste products, fights off microbe invasions and brings revitalizing elements to damaged parts of the body. Blood could well be a synonym for life.

But this vital fluid can also be terribly destructive. For a long time we have had mothers going through the terrible ordeal of losing their children a few hours after birth, not only once, but two, three and sometimes even four and five times. The newborn infants turned yellow, swelled and died.

Physicans considered all the possible causes. Blood poisoning? No. Internal hemorrhage? Not likely. Finally they began to suspect that the cause lay in the character of the blood itself. Their hypothesis proved to be correct. They found that the life-giving fluid carries death when the blood of the mother and that of the infant are heterogeneous, of a kind so different they cannot coexist. The proportion of these cases is about one to every 200 births—clearly, the figure is not so small.

Finding the hidden cause of a disease is a long step toward a cure. Tamara Solovyeva, Doctor of Biological Sciences, began her research with this in mind. She knew that besides the four different types, blood has another distinguishing factor. Having first discovered it in rhesus monkeys, scientists named it the Rh factor.

Transfusions of the same blood type, ordinarily quite harmless, are sometimes fatal; the red corpuscles agglutinate and then dissolve. Death is caused by the absence of the Rh factor in the blood. In medical language, when Rh-negative blood is mixed with blood that is Rh positive, the red corpuscles agglutinate, resulting in grave complications or death.

Dr. Solovyeva decided to find out whether the Rh factor had anything to do with infant fatalities. She began with a comparative study of the blood of mother and infant to find out whether they were always compatible so far as the Rh factor was concerned. She discovered that mothers who tended to lose their babies in the first hours after birth were, as a rule, Rh negative, while the babies were Rh positive, having inherited the factor from their Rh-positive fathers.

Dr. Solovyeva and her colleagues in the Leningrad Institute of Blood Transfusion worked on the problem. To change the hereditary properties of either of the parents was, of course, not possible. But it was possible to alter the composition of the infant's blood by transfusing other blood without the noxious properties. The infant's blood is "diluted" with compatible Rh-positive blood to the point where the blood is homogeneous and no longer a potential killer.

Now there is no reason for mothers who have repeatedly lost newborn babies to fear their next delivery. The infants will live, thanks to Dr. Solovyeva's work. Her research has been confirmed by clinical experience—the method has saved 140 lives to date.

Dr. Solovyeva has an album with photographs of these infants. Her "twice born," she calls them. She is the second mother, in more than a figurative sense, of these scores of healthy children. She prizes another collection—letters written to her by women who had given up all hope of having children. Many of them find it difficult to put their feelings into words. One writes, "I can find no words to express my heartfelt gratitude for the good you have done, for your work in saving the life of my child. Accept a mother's happiness and joy as my expression of gratitude."

Another patient of Dr. Solovyeva's writes, "Many thanks for my little girl. I will soon come to you for a son."

And another, "My warmest thanks to you and the other Leningrad doctors for taking such pains to save a little Muscovite." ★

A LETTER FROM THE VIRGIN LANDS

For the past several years, the world press has been writing about the virgin land program in the Soviet Union. Much of the material is contradictory; some of it is of questionable authenticity, inspired by rumor and bias, intended to belittle this epic program for reclaiming land areas that have lain fallow for centuries.

As regards the scope and significance of this program, the figures speak for themselves—in five years 105 million acres have been broken to the plow, more than the combined area sown to grain of Britain, France, Italy, the Federal Republic of Germany and six other European countries.

The soul of a people is best revealed in periods of great accomplishment. This is one such great accomplishment. Those who want to know our country and our people will find much that is illuminating in the virgin land story.

Who can tell the story better than those who pitched the first tents on the Kazakh steppes? We asked the virgin land pioneers to tell it. They sent us this letter.

IT WAS ONLY five years ago that we plowed the first furrow in the virgin land region in the East. Our part of the country, Tselinny Territory, has since developed into one of the largest grain-producing areas in the Soviet Union, with an annual yield of 59 million metric tons.

We who pioneered the virgin land were mostly young people. The pioneering period is now over and life in the Tselinny Territory has settled down. We can look back now and appraise the work we did with our own hands. Much has been done, and it is about the way that "much" was done and about life today on these once-barren steppes that we want to tell our American readers.

Our state farm is in the northern part of the Tselinny Territory, in Kazakhstan. It was built by Muscovites, factory and office workers from the Lenin District of the Soviet capital. That is why we decided to call it "Leninsky."

What was it that brought us thousands of miles from our Moscow homes, our relatives and friends and our well-paying jobs to plow these lands that had not been touched for ages? Romanticism? The urge to see distant lands? Yes, of course; but these were not the important reasons.

We live in a big country and all of it, from Chukotka Peninsla to Kaliningrad, belongs to

The small photo at the top, taken May 1955, shows start of construction at Leninsky State Farm. The photo below shows the same site a year later.

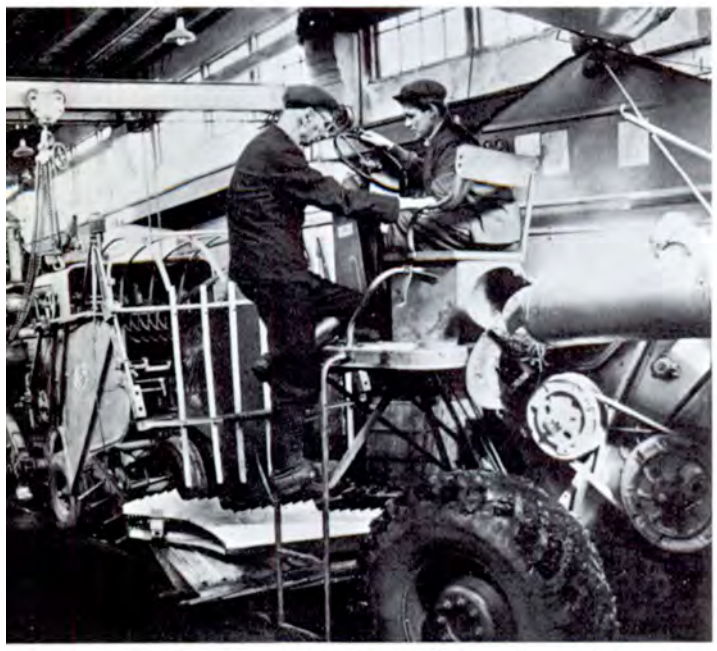
This was all bare and unproductive steppeland no more than half a dozen years ago. Part of the farm's fast-growing herd of purebred cows.

Rimma Melnikova is the vegetable expert. Agronomist Edmund Shtol left his Communist Work Team to pull another team up.

Originally set up to grow wheat, Leninsky is now also adding to the country's meat and milk output. A new poultry section.

The tens of thousands of arable acres of Leninsky State Farm require full mechanization to meet a tight sowing schedule.

Large farms like Leninsky require a good communication system. Teams working within a radius of a dozen miles keep in touch with the central office by radio.



With practically all the work done by machine, there is a good deal of servicing to do. During the spring sowing mobile repair shops are sent out to the fields.

One of the state farm's several cafeterias. There is always a variety of Russian and Kazakh dishes. Meals are taken out to the farmers working in the fields.

all of us and to everyone. We are building a happy life; we call it communism. We know that it can be built only with our own hands, and by striving individually and together to bring closer the time of communism. Every Soviet citizen understands that. When one of us goes to build a dam on the Angara, or to dig for diamonds in Yakutia, or to plow virgin soil in Kazakhstan, he does it to bring communism that much nearer, to build a better life for himself and everyone else. In our country the welfare of every individual is inseparable from that of the whole nation.

That is why, when our country's agriculture was in difficulty and the Communist Party called for volunteers to cultivate new lands, the call was answered by thousands of young people.

But not everyone was allowed to go—only those who were thought strong enough, who could leave things in good shape at home and who had no dependents who might suffer while they were away. These people were given Young Communist League passes, red leather-covered booklets which they were eager to get.

Did we have any difficulties? Of course we had, at first. The earth was hard as stone; the steel plows could hardly break through it. We had to plow and build at the same time. But we never felt alone. We had the whole country helping us, sending machines and all the other things we needed.

We got settled very quickly. The first house was finished a month after we drove in the first stake. Then appeared the second, the third. . . . We got help from the big construction trust that put up the buildings of the East Siberian Branch of the USSR Academy of Sciences.

Our houses have all modern conveniences, and we have cafeterias, a two-story school, a bakery, a club, a hospital and stores.

Our settlement is a small-size town, much like those in other parts of the country. We have our clothes made in our own dressmaking and tailoring shop. We show the latest films in our club. Just as everywhere else, our young people argue jazz versus classical music, enjoy the ballet, and dance modern Western dances as well as Russian folk dances.

Last year we spent 470,000 rubles on housing and public buildings. We are now building fifty new houses and a Palace of Culture. Our farm is not the exception here. In the past five years the state farms in the Tselinny Territory built 300,000 apartment house units; and the collective farms, 80,000.

There are still places in Kazakhstan where you see canvas tents and smoke rising from field-kitchen chimneys. These are the new state farms set up in 1961. But it won't be long before the tents are replaced by permanent buildings.

A few words about the five of us who wrote this letter:

Yuri Kornishin used to work in a Moscow radio factory. He first came out here to work as a builder. He puddled clay, sawed timber and worked in a stone quarry. But now he's back at his favorite occupation, operating the state farm's radio station.

Edmund Shtol knew agronomy before coming here. He headed up the first team in the Tselinny Territory to win the honored title of Communist Work Team. But he asked to be transferred to a backward team, sacrificing the high wages he had been making, to help pull that group up.

Meiram Edrisov graduated from an agricultural institute and was offered a chance to do postgraduate work in Alma-Ata, but he turned it down for the virgin lands. He wanted to see wheat grow on the Kazakhstan steppes. So instead of going on with his studies, he came to work on our state farm as an agronomist.

Rimma Melnikova, our vegetable expert, is a graduate of the Penza Agricultural School. She was a little doubtful about how she would take to this life, whether she would miss the bustle and gaiety of the city. But now she smiles when she thinks back on it. In this new land she has learned what gratification a person can derive from creative work.

As for entertainment, we have plenty of that here. The whole country is interested in the work we're doing and we have the best of the capital's theatrical companies, orchestras, writers, poets, painters, film people coming out here all the time. When we work, we do a good job of it; the same is true of our leisure-time activity.

Victor Kutyin's biography is somewhat different from the rest. He was a young tractor driver in Eisk. His pass and money arrived after his party had already left. Instead of waiting for the next one, Victor decided to go by himself. When he arrived in Kazakhstan, he was offered several jobs by the local Department of Agriculture. He chose to work with us Muscovites, beginning as a machine operator and working himself up to chief mechanic. He has designed many new implements that are used on the farm.

We could name hundreds of our comrades of whom the Tselinny Territory is justly proud. They are building a new life on the steppe.

We have finished the first stage of virgin land development and are starting on the second. At the Twenty-second Party Congress, Nikita Khrushchev said that now that the Tselinny Territory has provided the country with additional billions of bushels of grain, the next job is to provide additional millions of tons of meat, milk and other products.

We will solve this problem as we did the first.

Edmund Shtol, *team leader*
Yuri Kornishin, *radio operator*
Meiram Edrisov, *agronomist*
Rimma Melnikova, *agriculturist*
Victor Kutyin, *mechanic*

Leninsky State Farm, Tselliny Territory

★

THE GEOLOGISTS MOVE ON

BY ALEXANDER MARIAMOV

NOT LONG AGO I compared two books on industrial development in the Komi Autonomous Republic, which lies to the north in the European part of the USSR. One of the books had been published in 1948, the other in 1956. Each of them carried a map, but these maps, published only eight years apart, were very different. The more recent one showed new towns, settlements and railways, all built in the interim.

The prerevolutionary Encyclopedia Granat mentions only one town in the Komi region, the provincial seat Ustsysolsk—today known as Syktyvkar—with a population of about 5,000 in 1913. It was a typical provincial Russian town, with no industry to speak of. Vladimir Rusanov, a scientist exiled to the Komi area by the czarist government, wrote at the time, "To this day not a single step has been taken to make any sort of serious study of the natural wealth of the northeastern territories."

On July 13, 1918, a few months after the October Revolution, at a session of the Council of People's Commissars, Lenin asked the Higher

This huge marble deposit, now being quarried, was found near Lake Baikal, Siberia.

Council of National Economy to plan coal and oil prospecting in the Perchora basin.

Its extensive coal reserves have been exploited industrially for some thirty years now. The early settlements have long since developed into towns with populations in the tens of thousands, and the first temporary tracks have been replaced by modern rail lines and highways. The Komi Autonomous Republic also produces oil, gas and timber. Factories, mills, mines and power stations now stand where formerly geologists rigged up their small prospecting derricks and set up their green tents.

And the geologists moved on. They always move on; there is no time for them to stop. They are the ones who enter corrections on the vast map of the Soviet Union every year. It is their prospecting that leads to the foundation of new industrial communities and power projects.

They are the passers-through, and in their wake rise new industrial communities and power projects. I have found traces of their presence in all sorts of out-of-the-way places. Beyond the Arctic Circle, for instance, you can follow the route they took by the large settlement of Nickel, which has grown up around the Pechenganikel concentrating mills; the town of Monchegorsk with its broad streets; the apatite works in Kirovsk with its high smokestacks; and the big mining complex going up in the town of Zhdanovsk.

These new centers of industry reminded me of Tirnyauz, a new city in the North Caucasus that grew up around the molybdenum mines; of the new towns in the Ukraine and around Moscow; mills at the iron ore deposits near Kursk and in the Urals; the oil derricks in Baku, Grozny and Bashkiria; and the natural gas installations in Saratov.

Siberia is fantastically rich. It has almost every mineral known to man. Geologists, dropped by helicopter, set out to explore the Kolyma marshes..

The Road Lies Eastward

The geologists move on. Today their path lies eastward, across the great steppes of Kazakhstan, through the Siberian taiga, across the Central Asian deserts and the green hills of the Maritime Territory. Along this easterly route they have left the freshest and most numerous tracks.

A young Moscow geologist wrote in his field diary: "Thousands of miles of riddles await me in the East; each must be solved, for our future demands it." I read the lines at a campfire around which sat four prospectors in the East Siberian taiga. Where are they today? Along what paths are they trudging, their knapsacks loaded down with the precious rock specimens which can answer some of these "thousands of miles of riddles?"

We are finding the answers every day. "South of the Sokolovsko-Sarbai iron fields a prospecting party has discovered a new rich deposit," reports the radio. I remember the open quarries of the Sokolovsko-Sarbai mine in Kazakhstan, the big excavators scooping up buckets of rock, the long lines of dump trucks loaded with ore. I remember the first houses in Rudny, the miners' town, the streets, schools, movie houses, shops, the local historical museum and the big park in the center of town. I even remember the registration book at the Rudny maternity hospital. By the middle of last year the names of six hundred new babies had been entered. And this town is only four years old.

The geologists moved on to discover new ore deposits. Very soon another town with broad streets, parks, theaters and schools will be rising south of Rudny. And soon after, there will be similar entries in the registration book of the maternity hospital of that town, too.

Everything Is Big in Siberia

A tall, thick-set man points to a map of Eastern Siberia hanging on his office wall. He is Igor Mineyev, chief of the Geological Administration of Irkutsk Region. "Within the boundaries of our region are 300,000 square miles," he says, "and our geologists literally have to study every foot of it. Prospecting parties check through an area of 25-30 thousand miles every year. That's not large as things go in Siberia, but it's larger than, say, a country like Denmark."

The concept of "large" and "small" changes here in Siberia. Figures that are very large elsewhere shrink to insignificant proportions. This is a big country, in territory, in ideas, in plans.

There are some 10,000 people employed in the Irkutsk Geological Administration. "That is not very many," says Mineyev. "Siberia is fantastically rich. It has almost all the minerals known to man, from coal and oil to gold and diamonds. All we need are people to locate this natural wealth and put them at the service of man. We realize that the great tasks facing us call for new approaches. . . ."

Three years ago young geologists in the Irkutsk Administration suggested that it arrange field expeditions of amateur geologists. That is one of the new approaches that Mineyev was speaking about.

Today tens of thousands of people go prospecting in their leisure time. These include hunters who roam the taiga; fishermen who live along the Siberian rivers; foresters, high school and college students on hiking trips; factory workers on vacation. Everywhere in Siberia today you find people of all ages and occupations tramping through the woods, knapsacks on their backs and carrying a geologist's pick.

100,000 Assistant Geologists

Every day the radio operator at the Administration's offices brings Mineyev reels of telegraph tape with news from every corner of the region. Rock specimens are brought into Irkutsk daily, many of them marked "amateur field trip."

"Those amateurs are fine assistants," says Mineyev. "It is for them that our geologists delivered close to 4,000 lectures over the past three years, organized exhibitions and radio programs, and wrote articles for the newspapers and a number of pamphlets giving, in popular form, elementary knowledge about prospecting methods."

There were 1,387 finds made in the past three years, ten times the number made in the previous two decades. Some 100,000 men and women are voluntarily helping the geologists of Irkutsk Region. They reflect the pattern of Siberian life today and the creative interest and activity so characteristic of Soviet people. These people will be living under communism, declares the new Program of the Communist Party. The features of that future are clearly discernible today in the way these people live and work.

Siberia is a land of construction sites. It would be hard to say how many there are or single out which are the most important. Hydropower stations and towns, mills and industrial communities—every year sees more and more of them entered on the map. They are the fruit of the efforts of the geologists and the thousands of amateur prospectors who are laying bare the secrets of the earth. People come to uninhabited places and begin to build them up, to cultivate the land and make steel and machinery. They work and study, marry and have children. They settle down for good in places that once were wild and deserted.

And the geologists? They move on.

One of nature's steam boilers blowing off. Kamchatka geologists drilled a third-of-a-mile hole as vent for overheated subterranean volcanic waters.

Pick in hand and knapsack loaded with precious specimens, the geologist breaks new trails and moves on. In his wake rise new industrial centers.

BY ANATOLI VOLKOV

THE Guzuls

IN THE SAD STRAINS of the Guzul shepherds' *sopilkas* at dawn or the gay tunes of the *kolomyiki* (ditties) sung at eventide, or in the boisterous jigs—the *guzulka*—danced by Guzul youths, there is something of the wild beauty of the Carpathian mountain country. The Guzuls have lived there since time immemorial.

Even more impressive is the art of these Ukrainian highlanders, an art inspired by the beauty of their native scenery and handed down from father to son. Many of these craftsmen are artists of stature who are members of the Soviet Artists Union.

The Guzul woodcarvings have long been famous. The inlaid jewel boxes, vases, plates, inkwell sets, powder boxes, cigarette cases, bracelets and buttons were admired by many visitors to the Brussels World's Fair in 1958.

The oldest, and primary, method of decoration in the Carpathians is that of carving. The ornamentation is strictly classical and of the same polished wood. An additional touch of colored beads is the second Gazul method of embellishment, and inlay is the third and most popular. In the latter, bits of polished wood, mother-of-pearl and strips of brass and aluminum set off the yellowish or rosy tones of the beech or pearwood article.

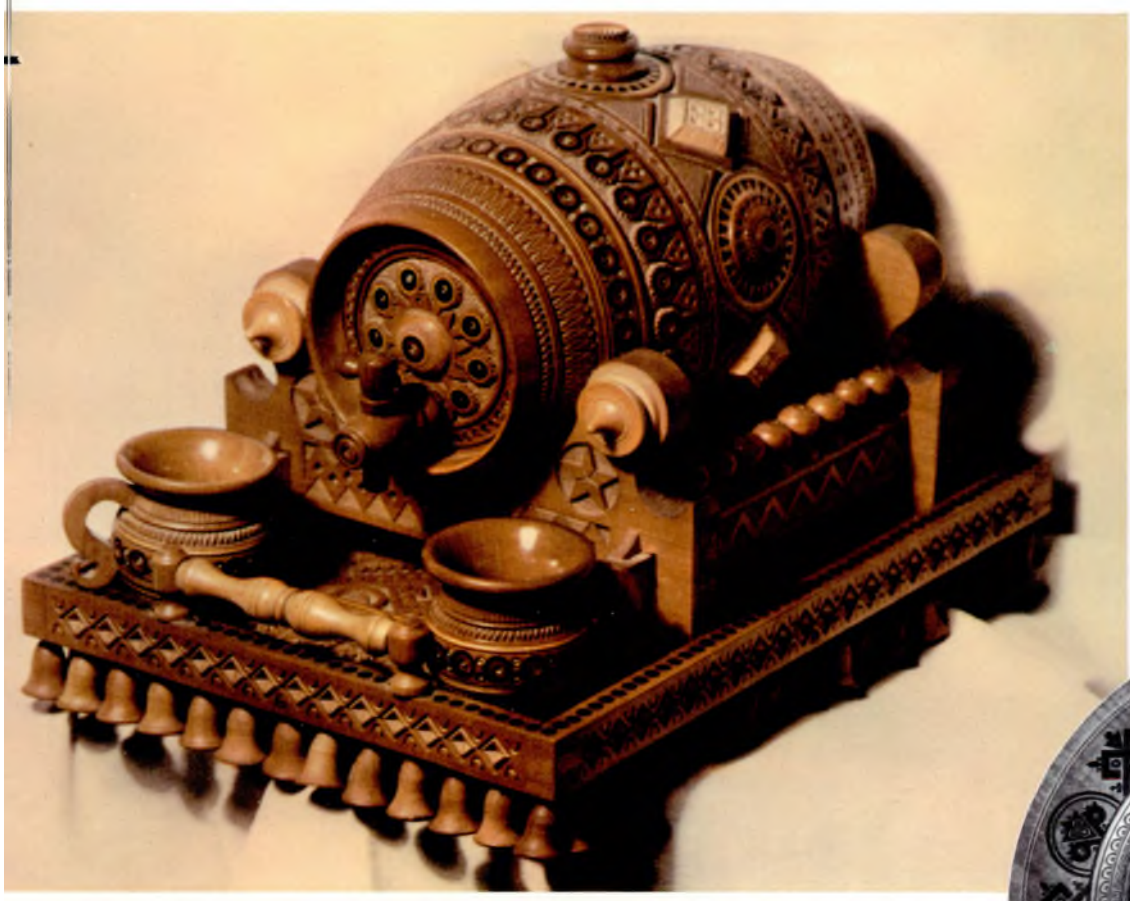
No less interesting are the clay articles reflecting the old customs. In every Guzul home you will find single-handled clay jugs called *bliznyatki*. These used to be much bigger and were used by the Guzul women for carrying dinner to their menfolk working in the mountain forests.

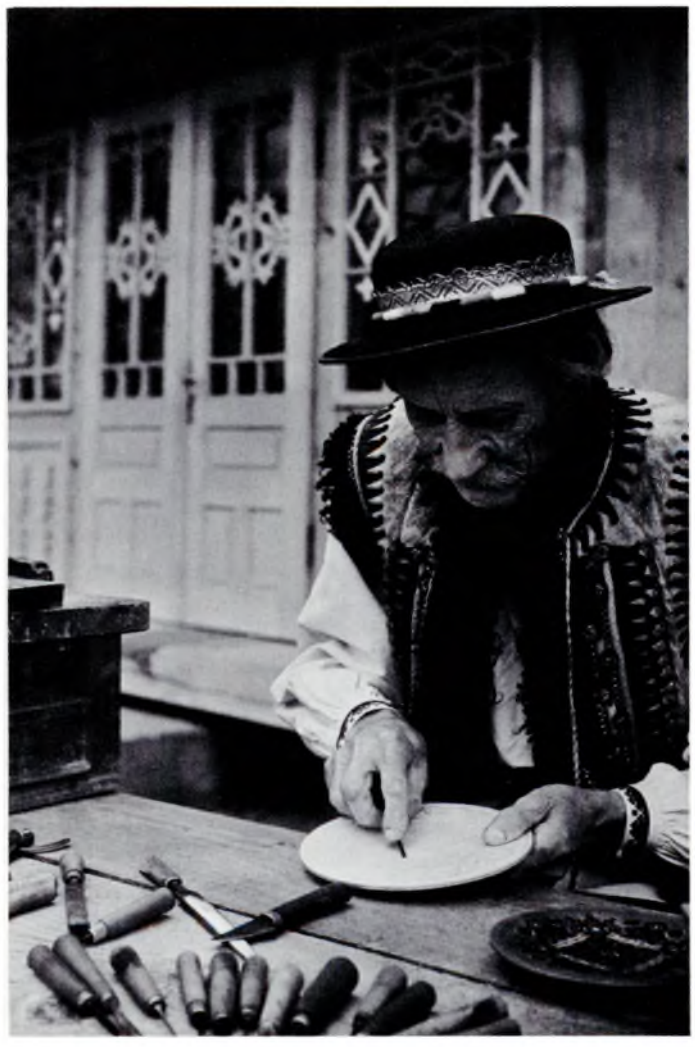
At every fair you'll find eggs with ornamented shells and figures of birds and animals made of pressed cottage cheese, which are bought for the children. Guzul embroidered shirts, skirts and sashes are masterpieces of needlework.

Every village is partial to a particular color scheme. This is not mere fancy or accident but a reflection of the natural colors of the locale. The village of Kosmach, for instance, is tucked away in a valley surrounded by beech and oak woods. Hence the golden-yellow and red shades of the local embroideries, borrowed, as it were, from the autumn foliage. The mountain villagers of Zhabye favor the dark greens of the surrounding pines, the browns of the tree trunks and the blacks and whites of the snowcapped mountaintops.

. . . Eternal is the beauty of the Carpathian Mountains. And just as eternal is the art of the Guzuls.

The Guzul highlanders, long famous for their wood carving, ceramics and hand-woven rugs, live in these Carpathian mountain villages.





One of the oldest and best known of the folk artists, Vasili Kartonyuk. The traditional skills have been passed on from father to son for generations.

Children's Art Show

BY GALINA VASILYEVA

THIS WORLD of ours is a big place for a small child, and each youngster sees it differently. In any collection of children's arts and crafts this is very apparent, particularly in that of Soviet children which will be on display in New York, Washington and Minneapolis January through March of 1962. The exhibits will range from the creations of four-year-olds to those of high school seniors, representing such a broad geographical distribution as Moscow and Leningrad, Siberia and the Far East, the Central Asian republics and the Baltic area, the Caucasus and Moldavia.

Take the drawings, plasticine figures, ceramics and playthings done by the children of Moscow Region. The animal figures, though childishly naive, are very interesting. How lifelike they are! In what amusing poses these foxes, wolves and reindeer have been created! Or take the carved wooden jewelry by preschool children in Lithuania—rings, pins and necklaces. These have been made by children either in the home or at kindergarten.

Marika Juerimae, a seven-year-old kindergartner from Estonia, did this very engaging portrait of herself in water color.

In the summer the kindergartens usually leave the city for the countryside. What horizons open up here for the children! Walking with them in the woods, the teachers say: "Children, let's gather leaves and roots of different plants which remind us of some object or animal." And every such find is an inexplicable miracle to them. A knot that almost looks like an owl! A cone that would make a wonderful turtle! And can't we make a hedgehog of pine needles like the one we saw scampering into the bushes? You look at these figures and you can almost smell their woodsy fragrance.

A petal, a piece of bark, a wild flower—almost anything will serve to give children a sense of the beauty and wonder of nature.

Consider the contributions of Georgian youngsters—Forest Gnomes, they call them. How cleverly cones, walnut shells, acorns and moss have been used. The old musician is made out of an acorn. He is poised on a mushroom, playing a fiddle with a straw bow. An exquisitely graceful dancer is fashioned of pink flower petals.

Teen-Age Artists and Craftsmen

The older children learn arts and crafts at the more than 3,000 Young Pioneer Palaces throughout the country—it is the rare town that doesn't have at least one. They all have workshops for painting, wood-carving, clay-modeling, photography, film-making, etc.

The first Young Pioneer Palaces were set up way back in 1922, in the hard and hungry years brought on by the Civil War. Two hundred youngsters came to the first Palace, in the Lenin District of Moscow, bringing with them their own brushes, paints and tools, and their enthusiasm and unfailing resourcefulness. Many of these early Young Pioneers are now famous painters, Heroes of Labor, actors, engineers and architects. Subsequent Young Pioneers have been no less enthusiastic and resourceful.

Many items made in Young Pioneer Palaces are in the

Our People on the Moon, *a popular theme nowadays. The water color is by 14-year-old Nikolai Alyautdinov of Moscow.*

exhibition. From Ivanovo Region have come wooden boxes decorated with Russian folk motifs, ivory carvings from far-off Yakutia, wooden dishes from Moldavia, ceramics from Latvia and Estonia.

Sire Koidu, eleven-year-old Young Pioneer from Parnu, Estonia, did a clay bas-relief of a little girl with a white dove in her hands, running out of a birch grove into a sun-lit meadow.

The drawings and paintings are especially exciting. Children use pencils, brush and crayon with such extraordinary perception and freshness to describe the world around them. Here is *We Are Celebrating*, the effort of five-year-old Verochka Pozdneva of Leningrad: in bright colors, with outsize people and large balloons—this is a thrilled yet very observant little girl watching a holiday parade.

The children draw and paint all sorts of things—fairy tale figures, landscapes, a familiar street, school, scenes from everyday life. *First Excursion to the Factory* by 12-year-old Lida Gordeyeva of Moscow and *Corn Harvest* by first-grader Tanya Kitova of Leningrad are just two of a number of sketches that reflect the work-study emphasis in Soviet education. Naturally there are drawings of spaceships and cosmonauts.

Evident in much of this work is the apparently successful effort of kindergarten teachers, art instructors and Young Pioneers workshop leaders to develop in each child individuality of expression while teaching him form, color and an appreciation of the aesthetic.

Children in Tbilisi, Georgia, made this lovely dancer. She's all flower petals.

Still life done in gouache by 17-year-old Tatyana Mikhailova of Leningrad.

Young Technicians

"Contact!"

The first man-made, Soviet sputnik, followed by the second and third, fly across a backdrop of starry sky to the sound of music; then *Vostok I* and *II* flash by. Simultaneously figures are flashed on the screen showing the date of their launching, their speed and altitude. This ingenious table panorama of Soviet achievements in science and technology was made by teen-agers in Ulan Ude, capital of the Buryat Republic.

A tableau, *The First People on Venus*, was sent by children of the town of Glazov in the Udmurt Republic: Cosmonauts in space suits are leaving their spaceship to explore the planet. Venus is indignant—see how the crater of one of its volcanoes boils and rages.

Young Pioneers of the city of Perm sent a working model of an ionic spaceship; and embryo space engineers from Novgorod, a model of a lunar automatic station.

Our children, living in an age of technology, learn its principles at an early age. Their playthings are model cars, electric trains and jet liners. As they grow older, they begin to make their own models—first out of paper and cardboard, then of plywood and plastics. With many, the hobby grows into an absorbing and productive career.

Technically-minded children join extracurricular school clubs where equipment, tools and materials are provided without charge. Most schools have such groups in physics, chemistry, astronomy, plane and ship model-making, radio, photography and movie-making. Lately, among the most popular are those for hopeful future astronauts. These clubs are led by qualified parents or even competent senior students.

The exhibition will contain laboratory equipment, instruments and tools used in school workshops, all made by stu-

Fairy tale characters made out of pine cones and grass by Georgian children.

BIS FILEOUT

The favored hobby of Yakut children is carving. They work in wood and bone.

Figures from a fairy tale by Leo Tolstoy modeled by children in Leningrad.

Khrushchev's visit to America as pictured by 12-year-old Tolya Kukharchik.

Twelve-year-old Seryozha Savchenko from Siberia did this wintry picture.

dents, and working models of ships, planes and machines.

School children of the Volga cities of Astrakhan and Volgograd are represented by models of the new hydrofoil ship as well as the more usual type of river vessels.

Lyonia Barkharovsky, 14-year-old Young Pioneer, lives in Udmurtia. His town is surrounded by thick forest, but he has a love for the sea. He built a model of the marine school training ship *Tovarisch* with such loving care that you can almost see the sails belly with the wind as the vessel heads out to sea.

Petrozavodsk children built a wooden boat with sails and four oars, fastened only with willow twigs. In the olden days in Karelia such boats were called *kizhanka*. Now you see them only in museums.

Members of the Young Technicians Club of Taganrog made a model of a self-propelled harvester combine, an exact replica of those manufactured at the local farm machinery plant.

Models of this kind are more than toys; they are the first, independent creations of questing and inquisitive youngsters who are learning the ABC's of modern technology.

Future Aircraft Designers

I met one of them on a visit to the Young Pioneer Palace in Moscow. "What's your name?" I asked him.

"Seryozha."

"What are you making?"

" A model plane. Want to see it?"

We walked past the rooms where "shipwrights" and "carpenters" were working busily, to the aircraft shop where we were surrounded by propellers, wings and planes. Some were clamped to the tables, others hung from the ceiling like suspended dragonflies.

Seryozha led us to one of the benches. "There," he said, "that's my model, an IL-18. Like it?"

The planes at the exhibition are not only models of today's aircraft, but of its predecessors too. Fourteen-year-old Pavlik Andronov of Yaroslavl submitted a miniature replica of the first Russian plane, built by Mozhaisky.

Young Pioneers of Yaluga, Konstantin Tsiolkovsky's home town, are exhibiting a scale model they made of the house where the founder of rocket construction theory lived and worked.

Models of the atomic icebraker *Lenin*, cosmic rockets and new types of tractors attest to the skill and know-how of these aspiring engineers and designers.

Special facilities have been set up for the young technicians' groups—there are 300 of them in various parts of the country. These groups organize contests, arrange exhibitions, hold science forums and lectures, publish blueprints and directions for modelers. Some two million Soviet children belong to applied science clubs in schools and Young Pioneer Palaces. There are children's railroads, ship lines and automobile centers where youngsters learn how to run locomotives, handle small boats and drive cars.

The young technicians hold national meetings and contests at frequent intervals. A million of them took part in the last contest, held in 1960, displaying some 120,000 instruments and models. The contest was publicized nationally in the press and children's magazines and attracted many thousands of new members to the young technicians' clubs.

Olya Pavlova entitled her blustery water color Rain. *This 11-year-old painter lives in Leningrad.*

Art class in a kindergarten run by the Bolshevik Confectionary Factory for the workers' children.

Cosmic travel notwithstanding, Soviet boys still love to model these sailing ships of earlier days.

A View of a Part of My City *is the work of a 17-year-old painter from Zaporozhye in the Ukraine.*

A grave young student of the arts at the Tretyakov Gallery in Moscow. She's visiting with her class.

TO COMMEMORATE THE 22nd PARTY CONGRESS

THIS COMMEMORATIVE SET of five large and attractive postage stamps was issued in honor of the Twenty-second Congress of the Communist Party of the Soviet Union held in October. The varicolored denominations, all of the same design, are inscribed "22nd Congress of the CPSU, 1961" and bear the slogan "Forward to the Victory of Communism." They were printed in offset. The comb perforation is 1.5:12.

ANSW ON

QUESTION: Can a Soviet worker quit his job of his own free will if he chooses to?

ANSWER: Certainly. The only requirement is that he give two weeks' notice. After the two weeks have expired, the management has no right to hold him if he wants to leave.

QUESTION: Why is religion losing ground in the USSR? Is it because religious observance is prohibited or because of some other reason?

ANSWER: The Soviet Government does not prohibit religious worship nor are churches, synagogues or mosques closed down. The Constitution of the Soviet Union grants every citizen freedom of conscience. He has the right to believe, or not to believe, in God, as his conscience dictates. Nor does the state interfere in clerical matters; all religious groups have the right to worship freely. Churches, mosques, synagogues, chapels, theological schools, monasteries and convents are open, and religious groups publish their own books, newspapers, magazines and other types of printed material. The church in the USSR is separated from the state, and the school from the church.

The breakaway from the church is a result of education and enlightenment—the wide diffusion of scientific knowledge, the laws of nature and of social development. This is true not only in the USSR. Wherever there is widespread public education, belief in the supernatural and in religion tends to wane and church attendance falls off.

Education is the only means used in the USSR to wean people away from religion. Neither churches nor communicants are persecuted. The antireligious propaganda that is carried on is required to state the case for rational thinking without offending the sensibilities of believers.

ERS TO QUESTIONS SOVIET LIFE

QUESTION: What sections of the population have the largest numbers of believers?

ANSWER: There are believers in all sections of the population. According to Soviet law, religion is a private affair. We therefore collect no statistics on the subject nor can we make any inferences except for this one—obvious to anyone who visits a church, synagogue or mosque—it is mostly the elderly people who attend places of worship.

QUESTION: Does the USSR have much of a problem with unduly early marriages?

ANSWER: We do not have such a problem. There are very few instances of marriage at an unduly early age. We do have some, of course. There are couples who cannot even wait days, let alone years, to get married. But we try to teach the young people not to confuse infatuation with love, something every parent strives to do. Our schools and the Young Communist League also teach young people self-discipline, consideration for other people, and the responsibilities of friendship and of love. All this serves to check premature and ill-considered marriages.

QUESTION: Is divorce permitted in the Soviet Union? If so, how do people go about getting one?

ANSWER: Divorce is permitted. It is the legal procedure for dissolution of a marriage. Before a People's Court will consider an application for divorce, the couple must publish notice to that effect in the local newspaper. The court establishes the grounds for the divorce and tries to patch up the quarrel and reconcile the couple. But if they insist upon separating, then the regional, district or city court grants the divorce.

QUESTION: What is the old-age pension system in the Soviet Union?

ANSWER: Our pension system retires women at the age of 55 after 20 years of service and men at 60 after 25 years of service. Those working underground and in hot shops have more favorable retirement provisions.

The minimum payment is 30 rubles, and 120 rubles is the maximum. The amount is based on average earnings over a period of the last 12 months of employment or of any consecutive 5 years out of the last 10 employed. The pensioner may do two-months' paid work a year and still draw his full pension. Pensions are not taxable.

The pension granted to a worker who has reached retirement age but does not have the required 20 to 25 years of service is proportionate to his length of service, but in no case is it less than one-quarter of the full pension.

People on pension continue to get medical services and hospitalization free.

QUESTION: How is new housing distributed?

ANSWER: Every city in the USSR has a large-scale construction program. In 1961 some 119,000 Moscow families moved into new apartments. Available housing is distributed by the district Soviets strictly in order of need and without charge.

Every district Soviet has a housing committee composed of deputies and representatives of the trade unions and other public organizations. Anyone living in the district—even though he works in another district—may submit an application for a new apartment. Applications are reviewed by the housing committee and approved or disapproved by the executive committee of the district Soviet.

Preference is given to disabled war veterans, to families of men who were killed in the war, to large families, newlyweds and those suffering from tuberculosis or other chronic diseases. Rent averages about 5 per cent of earnings.

QUESTION: Which foreign languages are taught in Soviet schools and how is their study organized?

ANSWER: Most of the world's languages are offered in Soviet colleges and universities. The secondary schools all give English, German and French—the three most widespread European languages—and a number teach Spanish, Chinese, Hindi, Urdu, Arabic and Persian. Schools add foreign language courses when there is sufficient parental demand.

The language-study aims are practical—to teach children to speak and to read a foreign text with understanding. Senior-grade students are expected to translate a fairly difficult text with the help of a dictionary.

There are schools in all parts of the Soviet Union where a foreign language is used in instruction. Language study is begun in the second grade, and in the sixth grade history, geography or literature is taught in the foreign language. Some 400 of these schools will be opened in the USSR in the next ten years.

Interest in foreign-language study has been growing with scientific and cultural international exchanges.

QUESTION: Do Soviet college students pay tuition?

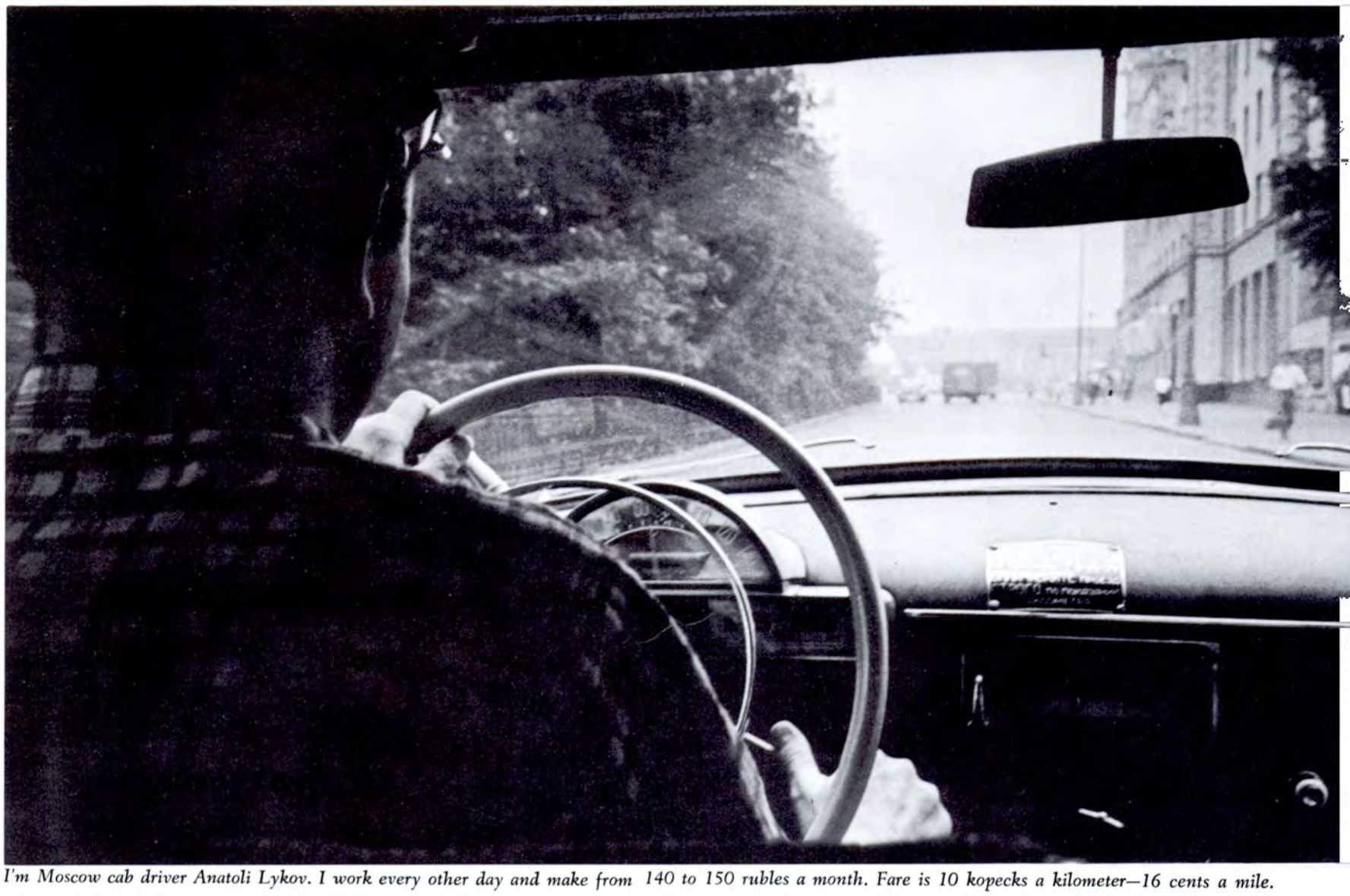
ANSWER: They do not. Tuition is free in all colleges and professional schools. Moreover, students get maintenance scholarships ranging from 30 to 80 rubles a month, depending on years of study and grades. Out-of-town students pay very little for dormitory accommodations—one ruble a month for a room and 50 kopecks for linens.

QUESTION: In how many languages are books published in the USSR?

ANSWER: In 1960 books were published in 96 languages—64 of them spoken in the Soviet Union and 32 foreign.

MOSCOW TAXI DRIVER

BY LEONID DUGAN



I'm Moscow cab driver Anatoli Lykov. I work every other day and make from 140 to 150 rubles a month. Fare is 10 kopecks a kilometer—16 cents a mile.

TAXI DRIVERS must be a special breed of people. It's amazing how much alike they are, whether the cab you hail is on the Champs Elysée in Paris, Gorky Street in Moscow, or Broadway in New York. They're genial and chatty—will talk about anything under the sun. Your driver may be younger than you, but he has an air of sophistication, of having experienced life.

The hero of our story, Anatoli Lykov, lives in Moscow. Like his counterparts in busy metropolitan centers the world over, he has the characteristic features and traditions of his trade. And like most of Moscow's drivers, he handles his car well.

And, of course, he is an excellent guide. He knows every corner of the city and what's doing there. Want to see a new building project, the latest play, a football game? Just say the word. He'll discuss a recent soccer game or listen to your troubles with a sympathetic ear, with only an occasional glance at the meter.

A short haul or a long one—it's all in the day's work. Money is money, but people are more important, and certainly more interesting. A good cab driver, Anatoli will tell you, has to combine the talents of a chauffeur, guide, psychologist and even an ambulance doctor. There was the fare he picked up last week who had slipped and gotten pretty badly banged up. He had the man stretch out on the seat, made him comfortable, and rushed him to the hospital.

That's why Muscovites are so fond of their taxi drivers. They even have a popular song about the "green light of a taxi." Unfortunately, one doesn't see those green lights—for "unoccupied"—as often as one would like, especially on rainy evenings. Lately taxis have become very popular with the Muscovites. They are so much faster and more convenient than bus or subway, and the fares are not high. Up to a short while ago, the fare depended on the type of car; now there is a standard fare of 10 kopecks a kilometer—16 cents a mile.

Different fates, different characters pass in succession before the taxi driver. So it is not surprising that he becomes a good "psychologist," a tactful and sympathetic person.

(Upper left) I'm also an unofficial traffic inspector. It is sometimes necessary to caution drivers against speeding.

(Lower left) Two of my regular fares. I drive Svetlana to kindergarten and her mother to work at a designing office.

Between fares I generally go through the newspaper. When riders ask me what's in the news, I like to make sense.

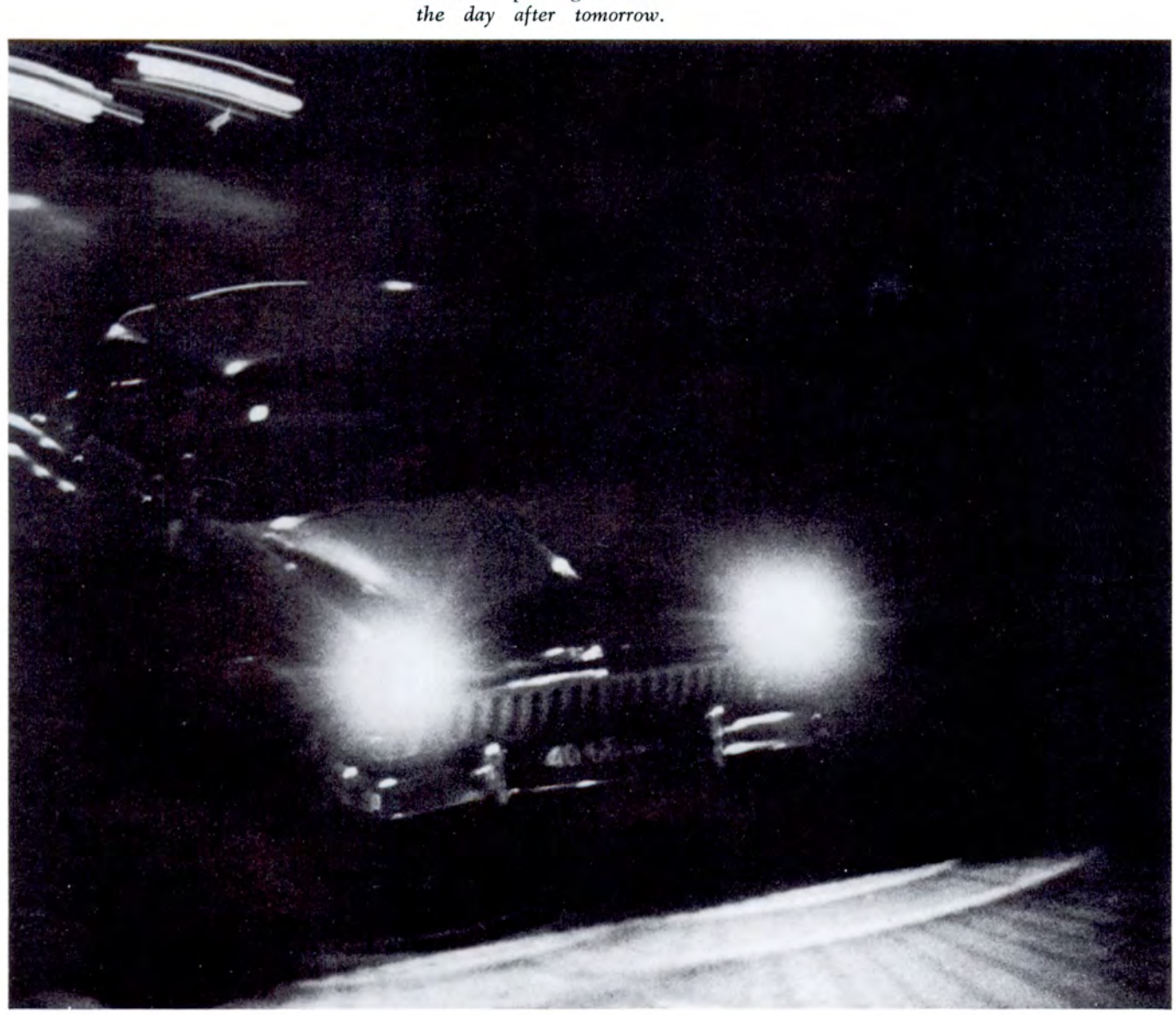
On such occasions my cab is more than a vehicle. It's a magic carpet for the couple starting out on a new life.

After Svetlana and her mother go, I take on two fares en route to Sverdlovsk. I hope I've made the between-stations ride pleasant.

Time out to check my Volga. With care and luck, it can go 75,000 miles before it has to be overhauled.

An unusual occurrence for me—a lecture and a fine. My fare was in a hurry and I went through a stop sign.

At the end of the day my cab goes to the garage, and I don't report again until the day after tomorrow.



Winter

NOTES BY DMITRI ZUYEV
PHENOLOGIST

THE CLEAR LIGHT of a cold sun cheers the heart after a long winter night. The fresh snow, a soft white mantel over the tree tops, dazzles the eye. The pale violet sun rides low in the sky, the blurred disk ringed by a rainbow—forecast of heavy frost on the way.

A spellbound landscape, not a single cloud in the clear sky as the dry snowflakes—diamond stars, crystals of cold, frost flowers—circle and fall gently.

Give me summer nights, spring afternoons and autumn evenings; but in winter the morning is the best time of day, with the red bilberry dawn in the east beginning to light up the world and the silver-curled birch trees still in tranquil, enchanted slumber. A wondrous sight for the skier—the silver birches with their hoary white trunks standing like pearl fountains frozen in motion. They are magnificent, these typically Russian trees.

The white morning is delightful—a Russian fairy tale pictured in hoarfrost. The fir tree standing alone is Grandfather Frost. Entering this magic realm of winter woodland, one recalls the magic years of childhood.

In the early morning hours of a weekend, anglers plow their way to favored spots for ice fishing, their skis heaving like bellows underfoot. Hunters tread swiftly along narrow white trails in search of fox, wolf and bear. These readers of nature's white book scan the constellations of hare tracks and interpret the cuneiform of fox tracks with a scholar's eye. They can read the addresses—the wolf dens and the hiding places of fox and hare—written in this snowy book by animal paws.

The furs these hunters bring back are the world's best. A heavy snowfall and nipping frost means more of the famed Soviet fur for the well-dressed woman everywhere. It is no accident that Russian furs never go out of fashion and that a pound of Russian sable is worth more than its weight in gold.

The falling snow is like countless flocks of white doves, birds of peace, gathering on the Russian plains. The forest groves turn into crystal palaces in a gleaming kingdom where "Sleeping Beauty"—Russian nature—lies in a white marble tomb. As many years as one lives, each winter and each fresh snowfall seems to be the first.

The new year begins in the middle of the Russian winter. January is the coldest month, the very heart of winter, a month of glittering stars, white paths and blue ice fields. The average January temperature in Central Russia and the Moscow suburbs is 14 degrees Fahrenheit.

In the past 70 years of weather observation seven of the eight days that had temperatures of minus 40 and minus 43.6 degrees Fahrenheit were recorded in mid-January. Last January was surprisingly warm, days without frost and very little snow.

The Russian countryside in winter is a lovely sight, with the woods dressed in white armor like Bova the Strongman, the sleeping fairy tale giant. On New Year's Eve the snow adorns the slender fir trees with pearl *kokoshniks* (woman's headdress) and white ermine robes with fluffy, silvery brocade fringe, and a New Year's star shines over each of them. In the day the sun lights up the fir trees; and at night, the stars.

Russian winter is the season of enchantment.

PERMAFROST LAND

BY YURI GRAFSKY

NORILSK, to hear some people describe it, is a town built on piles with straight streets and open squares.

To quote others, it is a town beyond the Arctic Circle blanketed with snow 250 days a year.

Still others speak of it as a town where the thermometer drops to 22° below zero, where for 100 days in the year there are winds blowing at more than 35 miles an hour.

Norilsk is the world's northernmost city, 69° North Latitude—the same as that of Wivok and Corwin stations in Alaska and Tununuk and Shingle Point in Canada.

And since Norilsk is northernmost, everything in and about the city is northernmost. It has:

—the world's northernmost railroad through the tundra;

—the world's northernmost television station;

—the world's northernmost professional theater.

Very likely, because they have these, the people of Norilsk do not feel their "northernmostness." They do not think they are remote or isolated from the rest of the country.

This city on piles stands in a valley enclosed on three sides by brown, sloping hills. On the fourth side, stretching from the very doorsteps of the new houses, is the tundra—vast, bright-green marshland spotted with blue lakes.

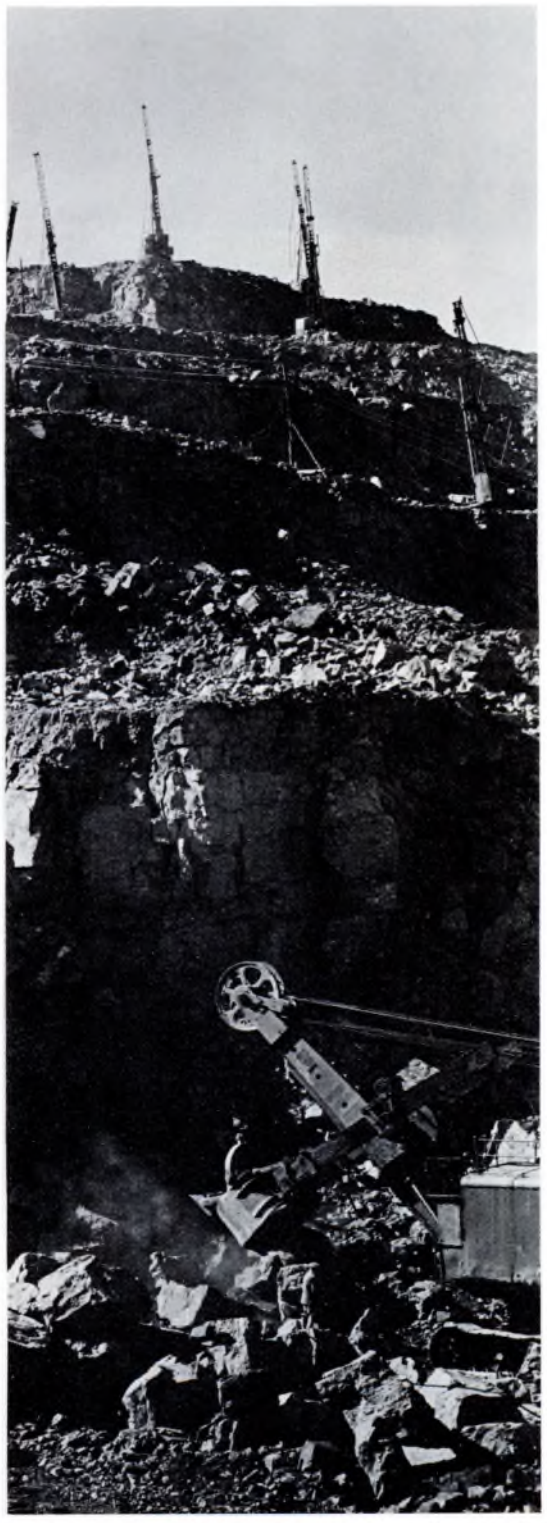
The casual visitor may find the tundra beautiful—smooth and white in winter and soft, with a pink down of flowers spattered on a bluish foam of moss and fungi, in summer. But to the people who built Norilsk the tundra is a treacherous swamp.

They told us that the first brick houses sank into the ground. The foundations were laid in winter, in permanently frozen ground. When summer came, the upper layer thawed, the soil settled, and so did everything on it.

We were shown the first dwelling in Norilsk, kept as a museum piece, a log cabin with its roof askew. The shack seemed

Norilsk, lying beyond the Arctic Circle on 69° North Latitude, is the northernmost city in the world.

Shop at the Norilsk Metallurgy Works. The plant was built 25 years ago, at the same time as the city.



Open-cut mine near the city in the Taimyr Mountains. Norilsk is one of the country's big metal centers.

Pyotr Fyodorov (center) leads the work's crack drilling team. Manning nine rigs, it can drill 13,000 feet of rock monthly.

Copper worker Fyodor Tikhonin came to Norilsk 15 years ago for a look around, liked what he saw and settled down.

Staff researchers of the Norilsk Institute of Far Northern Agriculture Louisa Michurina and Nikolai Kratkovsky are studying silver-fox breeding.

Anna and Yevgeni Frantsuzov both came from Moscow in 1956. Norilsk is a town of young people. They set the tone and pace.

to be removed from the nearby multi story brick apartment houses not only by 300 yards but by as many years.

The coal and ore miners, the engineers and geologists, prospectors and building workers who came to Norilsk were not fazed by this wild Siberian North country.

They drove concrete piles through the thawing layer and built on the solid base of permanent frost. The houses were raised above the surface of the ground to leave space for the wind to blow through. This was done to keep the temperature below the freezing point, so that the top layers would not thaw and the structures would stand firmly on their permafrost foundations.

This is now standard building practice in Norilsk. Instead of digging foundation pits, several dozen 60-foot ferroconcrete piles are driven into the ground. They are spanned by a foundation plate on which the brick block walls are erected.

Standing on such concrete piles are 90 medical buildings, 30 libraries, a number of nurseries and kindergartens, a theater and a House of Culture. Norilsk was laid out according to a plan. Streets lined with apartment houses, stores, restaurants and movie houses branch from a wide, central avenue. In the center of the city, opposite the movie theater, is a swimming pool. Norilsk has two large stadiums, several children's athletic centers and a House of Physical Culture with gymnasiums and rifle ranges. Sports are popular; one out of every six citizens is an active participant.

Siberian Settlers

The people of Norilsk say their town stands on two bedrocks —permafrost and the Norilsk Mining and Metallurgy Works. The large industrial complex, where coal and ore are mined and processed and finished metal shipped to machine-building plants, is 25 years old, the same age as the city.

Pyotr Fyodorov came to Norilsk with his wife and two children from Anzhero-Sudzhensk, western Siberia, where he had worked as an excavator operator. This was in 1950, when he was 25.

"What brought you to Norilsk?" we asked Fyodorov. "What made you decide to leave your old home and job?"

"Well," he said, "for one thing, every other person sailing down the Yenisei seemed to be heading for Norilsk. It was something new, building from scratch; people wanted to get in on the ground floor. And then, the pay was good." He pushed his cap back on his head, squinted as though peering back into the past, and told us about the different kinds of people who poured into Norilsk by plane and boat—enthusiasts and adventure-seekers, romanticists and the moneygrubbers. The city did not pick and choose; it took them all in, welcomed them all with biting winds and blizzards and snowdrifts as high as the lamp-posts. It was no place for the faint-hearted and the grabbers and the self-indulgent—they found that out soon enough. But those who came with generous purpose, to build up the northern land, stayed.

Pyotr Fyodorov was one of them. He was not panicked by having to live at first in an old shack or even a tent, nor was he frightened by the snowdrifts and the long polar nights. What bothered him most at the time was that there was nothing for an excavator operator to do. So he chose a new trade, learning to handle a drilling rig.

Fyodorov's drilling team is considered the best at the works. The group mans nine rigs and drills as much as 13,000 feet of hard rock a month. That's a lot of drilling.

The men on the team make good wages. Workers in the Far East and Far North have an augmented bonus system. Fyodorov, for example, gets standard driller's pay multiplied by 1.8, plus a 10 per cent increment for every year in the North. He makes 400 rubles a month.

He has four children now, all of them at school, tuition free,

АЭРОФЛОТ
1801

Norilsk chief architect Larissa Nazarova looks over a new housing project. Houses are built on ferroconcrete piles driven deep into the permanently frozen ground.

of course. He also gets free medical care, like all other Soviet citizens. The rent for his three-room apartment—small, but he hopes to get a larger one before too long—is only six rubles a month.

"Added up: a good job, a good home and a good family. I can claim to be a happy man," Fyodorov concluded.

The Young Folks Set the Pace

Fyodor Tikhonin came to the city earlier than Pyotr Fyodorov. He was also a good deal younger. He followed his sister out, but she couldn't take it; she gave up her job at the works and went back home. Fyodor stayed on. He finished his trade school course and began working at the copper mill. Then he took advanced training courses for a higher qualification rating. He began to make good money, but it was not the money that kept him in Norilsk. He liked the rhythm of the life. This is a city predominantly of young people, who set the tone and the pace. The chief engineer of the works is only 38; the director of the copper mill is 29.

The proportion of young people rose sharply after 1956 when 7,000 of them came to expand the works and then settled into permanent jobs. Norilsk is a city of perpetual weddings and housewarming parties. Its 4,200 births a year give it the highest birth rate in the country.

Every other Norilsk inhabitant is a student. There are 30 general schools with an enrollment of 13,000. Every year there are two more schools and a thousand additional students. Norilsk has one of the Soviet Union's biggest mining and metallurgy schools, with an enrollment of 1,250, and a branch of the Krasnoyarsk Nonferrous Metals Institute, where 300 of the people at the works attend school part-time.

Fyodor Tikhonin is one of the many thousands of Norilsk workers who take courses to improve their skills and learn new trades. More than 800 of the city's population study at the Moscow Correspondence Polytechnical Institute. In addition there are those doing graduate work by correspondence and those in organized self-study groups—all of which brings the number of Norilsk adults getting schooling up to more than 60,000.

Hydroplanes make triweekly flights to distant fur-breeding farms and reindeer breeders to deliver drugs, mail, books and automobile gas.

Flying Over the Tundra

Three times a week a plane takes off from Norilsk's hydroplane port and heads for the tundra with scientists from the Institute of Far North Agriculture aboard.

The institute was transferred to Norilsk from Leningrad several years ago to be closer to the tundra and to field work. It drew researchers from other parts of Siberia and the North.

Galina Dryagina comes from the area near Krasnoyarsk. Working jointly with Alexander Saitburkhanov, she experiments with onions and radishes in open soil in tundra and permafrost conditions. Saitburkanov concentrates on herbicides while she looks for ways to make the plants channel nutritive substances to their roots instead of their flowers.

Professor Andreyev, Nikolai Kratkovsky and Louisa Michurina are investigating scientific methods of breeding reindeer and of hunting and trapping wild game.

Hydroplanes also make regular triweekly flights to fur-breeding farms and reindeer herds, some of them hundreds of miles from Norilsk. They fly hunters from place to place and deliver drugs, books and laboratory analyses to reindeer herdsmen and zootechnicians. Scientists are doing much to combat reindeer pests—gadflies, mosquitos and midges. During each trip to the tundra they verify their experiments and set up new ones.

Science as well as industry are advancing in the tundra, with Norilsk as the bridgehead.

(Above) The peace marchers arrived in Red Square on a clear autumn day and were greeted by hundreds of Muscovites. Among those who received them were Nina Khrushcheva (below), officials of the Institute of Soviet-American Relations and Mikhail Georgadze, Secretary of the Presidium of the USSR Supreme Soviet. (Left) On their way through Byelorussia they were frequently given flowers and welcomed by the Soviet people. (Upper right) All along the route they distributed their booklets, leaflets and copies of their Appeal. (Lower right) They had a lively discussion on disarmament at the Soviet Peace Committee's offices.

from SAN FRANCISCO to MOSCOW

BY OLEG FEOFANOV

STATISTICAL details of an unusual march across two continents to spread the ideas of peace and disarmament:

7,000 miles by foot
10 months on the road
300 pairs of shoes worn out

The walkers for peace carried their plastic banners through the United States from coast to coast and across Europe—through Britain, Belgium, the Federal Republic of Germany, the German Democratic Republic and Poland—on to Moscow.

It was a hard march, not because of the rain, snow and heat—which were to be expected—but rather because the idea of peace is not everywhere officially recognized. But the plain people in city streets and village squares in all the countries welcomed the marchers, shared their aspirations for peace, and helped them with money and other things they needed.

But there were some who asked, "Why are you demonstrating here? Why don't you go ahead and try parading in Red Square in Moscow? They won't let you get anywhere near it."

The marchers got to Moscow. And when they stepped into the autumn sunlit Red Square in their worn-out tennis shoes, knapsacks slung over their shoulders, banners held high, they were cheered by crowds of Soviet people and received a hearty welcome.

Among the 30 marchers who reached the Soviet capital were several from European countries who joined them on the way. The youngest was Nils Gleditsch, a 19-year-old Norwegian; the oldest was Regina Fischer, 48-year-old mother of the American chess prodigy Bobby Fischer.

These walkers for peace included artists, students, a model, a plumber, teachers and clergymen, a housewife and a museum attendant.

Among them were Catholics, Lutherans, Quakers, Unitarians and Moslems, as well as agnostics and atheists, all united by the danger of the atomic holocaust that threatens the world's future.

They were pacifists, these marchers, and with all due respect to their work for peace, the Soviet people could not go along with them all the way on the methods they proposed for averting war—the reason for a couple of days of lively discussion and argument.

The marchers spent a week in Moscow. They were received twice by the Soviet Peace Committee. Said author Nikolai Tikhonov, the chairman, after congratulating the marchers on the successful completion of their trek: "There are different ways of fighting for peace. By your great deed you have demonstrated your devotion to the cause of peace. Both you and we are ready right now to vote for universal disarmament and for an atom and hydrogen bomb ban."

The Soviet people, like people of good will everywhere, are grateful to these marchers for peace, now back in their own countries, and for this reminder to the world that all nations must bend every effort to achieve a world without arms, without war.

POETRY DAY

Poetry Day meeting at the Gorky Street bookshop. Poet and reader get to know each other at such gatherings held throughout the country each year.

Yevgeni Yevtushenko, one of the younger poets, is often asked to address workers' groups at literary evenings as well as students' groups in the schools.

A new anthology put out by the Writers Union especially for the occasion includes hitherto unpublished works by both old and new poets.

POETRY DAY is an occasion in Moscow, celebrated by versifiers, a muster of readers, and bookshops whose counters are crammed with attractively illustrated books of nursery rhymes for the very young, and more sedate volumes of poetry for older readers from 7 to 70—lyric, satiric, serious and comic—about peace, work, love and the many other themes that touch the poet.

Poetry Day is observed annually, on a Sunday. This was the seventh. As usual, poets went to the bookshops to meet their readers, autograph their books, recite their verses and talk about works they had in progress.

Peter Viereck, an American poet and writer touring the Soviet Union, visited one of the bookshops in the capital with Soviet poets Alexander Bezimensky and Nikolai Aseyev. He was impressed, he said, with the love Soviet readers have for poetry, and he thought the arts are the medium through which all people can get to understand one another.

For Poetry Day hundreds of bookstalls are set up along the principal streets, and bookmobiles travel around the city. Traditionally,

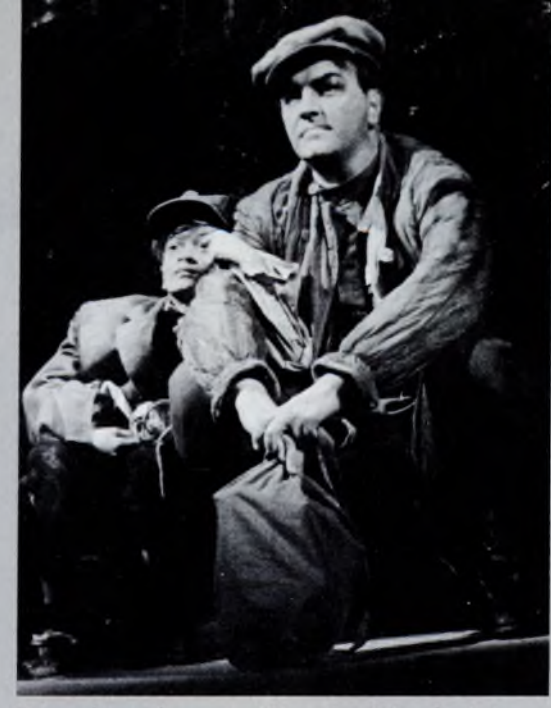
On that day poets help sell their books. Here Grigori Sannikov autographs copies of his works for some of his admiring readers.

this has now become the publication day for many new books of verse.

Most popular among them proved to be *Poetry Day, 1961,* with verses by poets of Moscow, Leningrad, Sverdlovsk, the Far East and the many Soviet republics. One section of the volume, "The Voice of Friends," introduced the reader to the work of foreign poets. Among the selections were "Poem of the Sea" and "Wounded Motherland" by the Ecuadorian, Vanegas Andrada; "Hiroshima" by the Italian, Salvatore Quasimodo; poems by Vojtek Migalik and Vilema Zavada of Czechoslovakia, Maurice Carem of Belgium, Angel Todorob of Bulgaria, and many others.

On the evening of Poetry Day, readers—mostly young people—gathered around the bronze statue of Vladimir Mayakovsky, poet of the Revolution, in Mayakovsky Square, and by the spotlight that illumines the statue poets read their verses aloud. This year listeners were particularly moved by the poems of Yevgeni Yevtushenko, Victor Bokov and Robert Rozhdestvensky. The readings lasted, as on every Poetry Day, until the small hours of the morning.

THREE FATES OF A STORY



Scene from the opera Fate of a Man *by Ivan Dzerzhinsky, based on Mikhail Sholokhov's story and staged by the Bolshoi Theater Company. Victor Nechipailo sings Andrei Sokolov.*

BY VLADIMIR SHATSKOV

AN ARTIST whose creation has caught the spirit of his time will live on in the future. His work is the truth from which the chaff of accident has been winnowed. It not only touches the eye and the heart, but it grips the mind. Sholokhov's story *The Fate of a Man* is such a work.

The author lives, loves and suffers with Andrei Sokolov, the character created by him. As a result, the story is true to life and optimistic despite its tragedy. Sholokhov concludes this story of a man who endures the horrors of a nazi prison camp, the destruction of his family, the death of his son on the last day of the war, with a moving testament of faith in the future.

The film version by Sergei Bondarchuk follows the story very closely. "What is the subject of a tragedy? Man and the people. The fate of a man and the fate of the people." This is tragedy as Pushkin defined it. Sholokhov embodied the definition in his story, and Bondarchuk in his film.

Ivan Dzerzhinsky's opera, based on the Sholokhov story, recently had its première at the Bolshoi Theater. The composer did not follow the text closely, he used the ideas it suggested to him. The essential theme, however, is the same—the fight of a people not only for their country but for their future.

Dzerzhinsky builds his opera on contrasts—sharp blacks and whites, sorrows and joys. There are many in the story. The composer uses them sparingly and somewhat differently than Sholokhov. He does not counter the grief and hardship of prison life with the happiness of a short flight to freedom, but contrasts inner emotions — the prisoner recalling his freedom. This was the more difficult treatment, but the composer chose it as the more musically dramatic.

In the first two acts we hear Andrei Sokolov in endlessly confused argument with himself. He moves from despair to hope, from weakness to strength and back again. The music that expresses his shifting moods is jerky, unmelodic, perhaps too much so. These sharp contrasts in mood do not call for melodic songs; nevertheless, as opera, a somewhat more emotional musical expression would seem to be justified, a closer relation to the words sung rather than musical expression as an end in itself.

In the third act Dzerzhinsky's music suddenly gains strength and depth. Sokolov's dream of meeting his son, expressed in a lilting and free-flowing aria, is cut short by a requiem—the son has fallen in battle. This requiem is no solemn chorale. It rages; it flows over into the auditorium. The whole orchestra is involved in it—such grief has no bounds. The black sounds of the requiem are carried into the mournful emptiness on the edge of which Sokolov stands. Bare steps lead off the stage—symbolic of the road a man walks who has lost all that is near and dear to him.

Great banners are slowly lowered to frame the gaping void. The guard of honor stands motionless on the steps in tribute not only to this one soldier but to all the others who have fallen. The memorial song is not only for the son of Sokolov.

The war is won. The chorus pours forth a hymn of victory. The orchestra rejoices. The red banner flies over the Reichstag. Sokolov stands at the edge of the stage. He stands with the chorus but he also stands alone.

This is only the first turn in the road, and Sokolov will find happiness later when he meets a young boy who, like himself, is walking this lonely road. The finale is hopeful, buoyant.

The third act shows the heights which the opera could have reached had Dzerzhinsky also imbued the first two with that spirit of time and the future that Sholokov captured in his story.

MYSTERY

of the

Tungus Meteorite

BY YURI DAVYDOV

ON JUNE 30, 1908, a red-hot, cosmic body of tremendous size, shaped like a cylinder with one end tapered, flashed across Siberia, southeast to northwest, leaving a fiery trail in its wake. It fell into the taiga with a tremendous explosion, followed by a pillar of fire and smoke that rose high into the sky.

The seismographs of the Irkutsk Observatory registered an earthquake and barographic instruments in London recorded an air wave that circled the globe twice. West Siberia, Europe and North Africa had three nights of unusual brightness, and bright luminescent clouds were observed at an altitude of 51 miles. American observatories detected atmospheric turbidity, a phenomenon usually associated with volcanic eruptions; only there were none in 1908.

It was not until much later that all these facts were collated. After the Revolution the Academy of Sciences, with financial support from the Soviet Government, organized its first expedition for the collection of meteorites. This was in 1921 and the Civil War was still raging in the Far East.

The expedition gathered a great deal of data on the 1908 Siberian explosion which at that time led to the assumption that it had been caused by a giant iron meteorite. As many as 2,500 questionnaires were distributed by the Academy's Meteorite Committee. The approximate place where the strange body fell was established at a point 560 miles north of Irkutsk, near the hunting base of Vanavara, on the Podkamennaya Tunguska River, a tributary of the Yenisei.

Later another expedition was organized, this one to search for the Tungus meteorite. Headed by Professor Leonid Kulik, it made its way through the taiga wilderness and finally reached the spot. What they saw was incredible. The trees over an enormous stretch of the taiga had been felled and burned. Over a radius of 19 miles trees lay in rows which fanned out from the spot where the cosmic body had fallen. Never before had such a radial fall of trees been observed after the fall of a meteorite. By some miracle the trees in the center of this dead fan had remained upright, their trunks, stripped of bark and branches, like telephone poles.

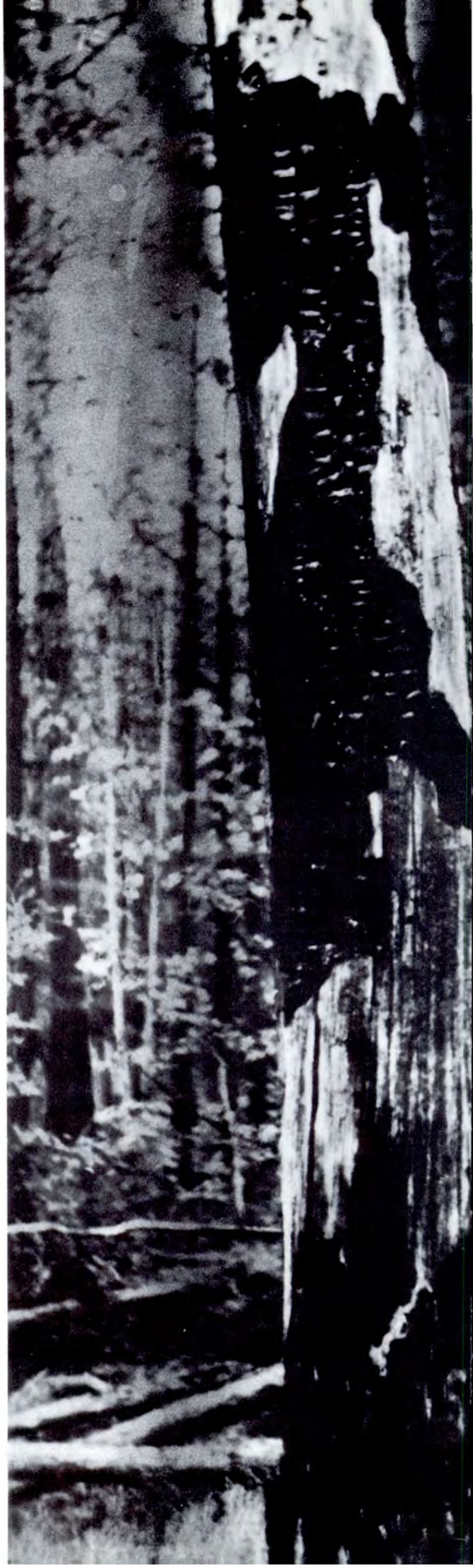
Professor Kulik had no doubt that an iron meteorite had fallen in that spot, one of those giants that reach the earth once in a millennium. And since it was a meteorite, he thought, there must be some fragments around and one or several craters resulting from the impact. He looked for them with tireless persistence.

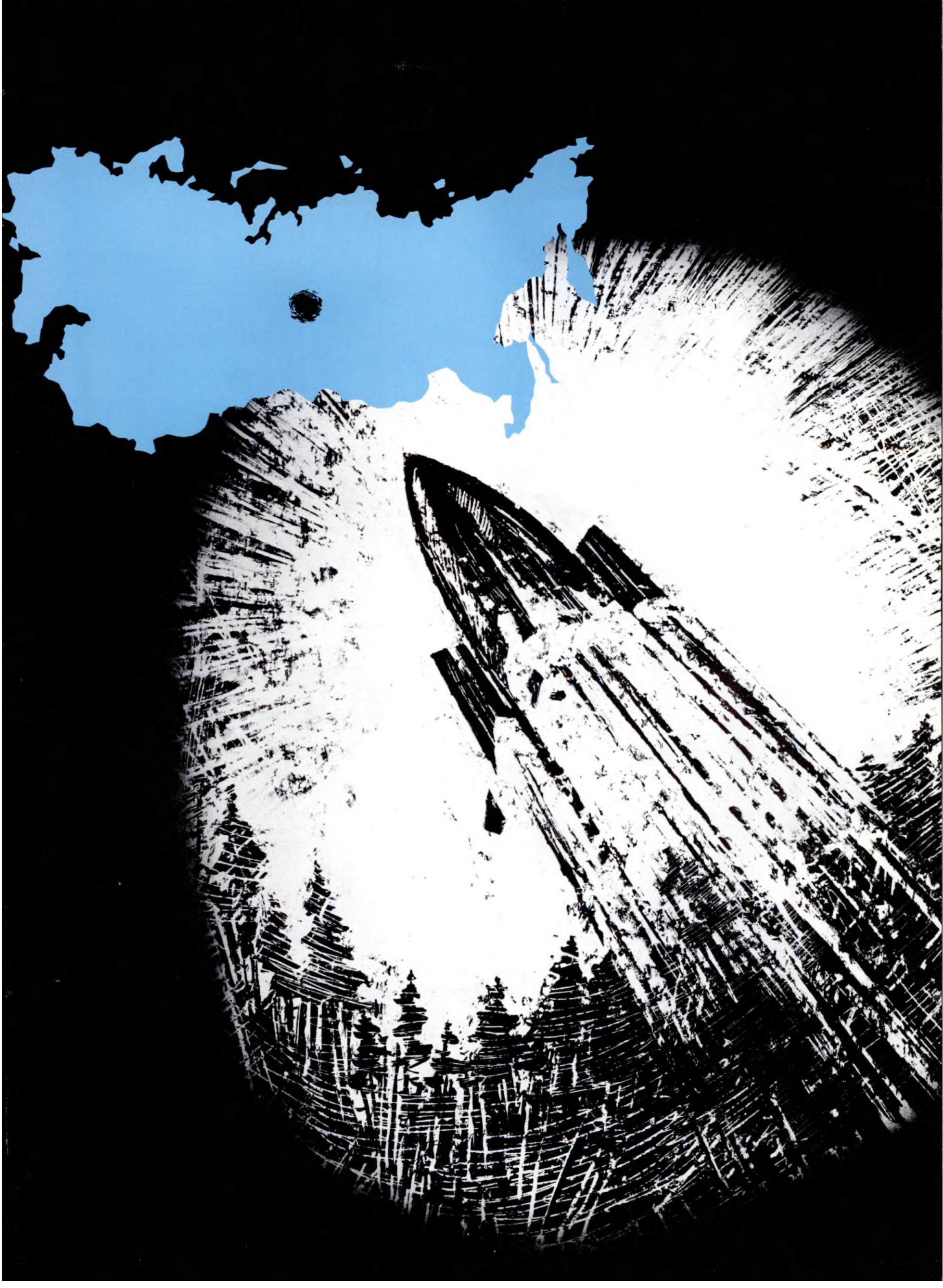
Before the Second World War six expeditions, almost all headed by Professor Kulik, were sent to this part of the taiga. He kept expanding the area of search but, strangely enough, found no trace of meteoric iron.

Kulik did not give up. He was equipping another expedition when the war broke out. He volunteered for frontline duty and was killed in 1942. The search for the meteorite stopped, the mystery no nearer solution.

In 1946 engineer and science fiction writer Alexander Kazantsev advanced another explanation. He noted that the Tungus explosion was in many ways similar to an atomic blast. A nuclear explosion over the earth could provide an explanation of many of the facts. The fire ball and the pillar of smoke sound very much like the mushroom cloud of an atom bomb explosion. The trees in the center of the blast remained intact, say advocates of the nuclear explosion theory, because the air wave struck them from above and only sheared off their tops and branches. The luminescence in the sky was caused by the rising fallout of radioactive material. A burning body in our terrestrial atmosphere can turn into gas only when subjected to temperatures as high as those of an atomic explosion. The trees were burned not only by a forest fire but by the direct effects of irradiation.

Could it have been a uranium meteorite that exploded over the taiga? Not likely. Thus far "pure" uranium has not been





Annual rings of a larch killed in the blast (top) were 4 mm. apart. Larches born after 1908 (bottom) grew faster. Rings are 7 mm. apart.

found in nature. And even if such uranium rock does exist, it would explode as soon as it were formed.

If we accept the premise that this was a nuclear explosion, we have to accept the corollary that the radioactive substance that exploded was artificially produced. But how was that possible in 1908, when no one even dreamed of uranium reactors?

Kazantsev ventured a bold conclusion bordering on the fantastic. For many years, he speculated, a giant spaceship roamed the universe, flying from sun to sun looking for a planet inhabited by intelligent beings. It sped through our solar system, past Uranus, Pluto, Saturn—all dead planets. The ship flew closer and closer to the sun. Suddenly it saw the earth ahead, the soft blue haze of its atmosphere on the horizon. Through the portholes these voyagers from some distant world looked down admiringly at the earth's flourishing continents, its glittering oceans, its polar ice caps.

They probed the villages and cities of our planet with invisible rays. They were very wise and understanding, these strange cosmonauts, fully aware that their stellar ship might destroy lives and property if it landed in a heavily settled region. Therefore they looked for an uninhabited place. Most suitable for their purpose were the flat Mongolian steppes.

But the terrestrial atmosphere proved more dense than the space travelers had thought—the stellar ship missed its mark and zoomed low over the forests of Siberia. They had no choice but to land in the taiga. The ship braked itself with retro-rockets and began to descend. Suddenly the atomic engine went dead and the ship went out of control. The cosmonauts made a desperate attempt to break its downward plunge, but it was futile. The atomic fuel began to disintegrate and the terrible blast followed.

That is how Kazantsev pictured the Tungus explosion. His hypothesis was supported by Boris Lyapunov, well-known essayist on space problems; the Polish writer Stanislaw Lem; and many young scientists and engineers.

Scientists have no objection to it in principle. Yuri Gagarin and Gherman Titov have proved that space flight is real, not fantasy. And although earth dwellers have only just now begun to explore the cosmos, we may reasonably assume that there are planets with older and far more developed civilizations than ours where flights to other galaxies have long ceased to be a novelty.

The scientists' main objection to the nuclear idea is that there is very small likelihood of a stray stellar ship reaching our planet. Academician Fesenkov estimates that there is only one planet with some form of life to every billion stars; the ratio of planets with a space-traveling civilization is, of course, still smaller.

Soviet astronomer Ariy Shternfeld also takes exception to the nuclear explosion theory. His point is that a stellar ship flying from outer space would naturally land by traveling in the wake of our planet in order to cushion its speed so it would not be burned up as it passed through the upper layers of the atmosphere. We have been assuming all this time that the unknown body flew head on toward the earth. It is hardly credible, writes Shternfeld, that a being intelligent enough to create and pilot a stellar ship would make such a suicidal mistake.

Kazantsev and his supporters precipitated a lively discussion of the various Tungus explosion theories that appeared in some 30 publications, including all the Moscow newspapers. The debate continues, and only time will tell which theory is correct.

With the support of the East Siberian Branch of the USSR Academy of Sciences and of several Moscow institutes, advocates of the nuclear explosion theory organized several Tungus expeditions and gathered many new facts to support their theories. Among other things they noted the accelerated growth of trees in the area following the 1908 explosion. This was particularly apparent in sections of century-old trees that had survived the blast. Before 1908 there were four millimeter (.16 inch) spaces between the rings; after that the spaces were twice the size. It is generally accepted that radioactive treatment accelerates growth in some plants. Could it have been a nuclear explosion that stimulated the growth of these trees?

Engineer Alexei Zolotov, member of one of these expeditions, discovered another interesting fact. The amount of strontium-90, one of the products of atomic fission, in the 1908 annual rings is twice the normal amount. But—and this is a large "but"—there was no increased evidence of atomic radiation in the soil at the center of the explosion, something Kazantsev's supporters had counted on most of all to support their theory.

The Academy's Meteorite Committee in recent years has sent several other expeditions to comb great areas of the taiga for the iron or stone meteorite. No trace of the cosmic body has been found.

Most scientists have therefore rejected the theory of an earth-meteorite collision in favor of the hypothesis that the Tungus explosion took place in the air. This does not mean, however, that they generally accept the atomic explosion explanation.

Lately scientists have been inclining to a hypothesis advanced by our Professor Igor Astapovich and British researcher Francis Whipple. They maintain that it was the nucleus of a small comet consisting of frozen gases and water with an admixture of iron and silicon particles that exploded over the Tungus taiga.

Since the cosmic body flew head on toward the earth, it could only have been a comet. When it entered the earth's atmosphere at enormous speed, the process of fission began, a high temperature was generated and the explosion resulted. The substances that composed the nucleus of the comet changed to gases. The bright nights following the explosion were caused by the reflection of the sun's rays from the dust particles of the comet's tail.

The comet hypothesis does explain many of the facts, but instances of collisions of comets with the earth are just about as rare as stellar ship landings. Besides, the hypothesis is based on estimates of the speed and direction of movement of a possible meteorite, calculations which cannot be considered as accurately established.

Each Tungus expedition has searched for evidence that would confirm its own particular theory. Kulik hunted for the remnants of an iron meteorite, and the advocates of the nuclear explosion theory hoped to find increased evidence of atomic radiation at the center of the explosion.

In November 1960 a 70-man expedition of the USSR Academy of Sciences, which had been working in the area of the Tungus catastrophe, returned to Moscow. The scientists represented different specialties and were proponents of diverse hypotheses. The expedition explored the taiga over an area of close to 4,000 square miles.

The new data points to the probability that the Tungus meteorite was a small comet that had flown into the earth's atmosphere. Geochemists are now busy studying the samples of soil taken in the area of the catastrophe. Laboratory analysis will make it possible to establish with greater certainty the composition of the cosmic body that had penetrated into the atmosphere and the reasons for its explosion in the air.

The mystery of the Tungus meteorite will be solved by the joint efforts of many scientists. ★

Special for Women

BY GALINA VASILYEVA

GOOD HOUSEWIVES and mothers are not born with their varied and useful knowledge, they have to learn it. Thus, as in other countries, there are many books published by the Soviet Union which help teach women the many things they have to know in order to successfully keep house and raise a family.

There are scores of books for young mothers bearing such titles as *Mother and Child, Physical Exercises for Children, How to Improve a Child's Pronunciation, Advice to Parents,* written by teachers and pediatricians.

Almost every Soviet housewife has a copy of *Useful Advice* at hand. It tells how to remove stains, how to sew a dress, how to hang curtains, how to set a table, how to apply makeup, and scores of other such useful bits of information. Similar information is available in a series of booklets entitled *For You, Women.*

Would-be knitters and embroiderers learn from such books as *Lace Napkins, Embroidery, Silhouette, How to Knit a Sweater,* and, of course, fashion magazines.

The Book on Tasty and Wholesome Food and *1,000 Dishes* are only two of a large number of cookbooks for the preparation of everything from boiled eggs to culinary works of art. Many of them give the recipes for national dishes—Russian, Georgian, Ukrainian, etc., some simple enough to prepare in minutes, other that take considerable time and culinary artistry. Cookbooks translated from foreign languages are also popular.

For those who study on their own, a "People's University" series of pocket books covers every field of science and art. Authoritatively written, they cost only three to five kopecks—fine for reading on the subway or while pushing a baby carriage.

OUR INTERVIEWS

"We have many good friends in America" SAYS IGOR MOISEYEV

The Folk Dance Company of the USSR, better known to the many thousands of Americans who saw them perform as the Moiseyev Dancers, are back home after a triumphal five-month tour of cities on the North American continent. In this interview director Igor Moiseyev gives his impressions of the tour and the company's plans for the immediate future.

Were you pleased with your tour?

It was a most interesting tour, especially so because this was the second time we were performing for American and Canadian audiences. Everyone in the company felt that the audiences were even warmer than they had been during the first tour, in 1958. Our dancers, I am happy to say, surpassed themselves. They were awarded the Silver Statuette, *Dance Magazine's* first prize. The scroll that came with the prize noted that our company had helped to bring the USSR and the USA closer by promoting cultural rapport between the two countries.

Did you have a chance to meet people outside the theater?

Yes, this was what made our tour so stimulating. On our first visit we made many friends, and this time we found their number had grown several times over. Americans are genuinely hospitable, very warm people indeed. They were always inviting our dancers to their homes. We also have very pleasant recollections of the many receptions given in our honor by such well-known people as film star Elizabeth Taylor and writer Mitchell Wilson.

What are your company's plans for the future?

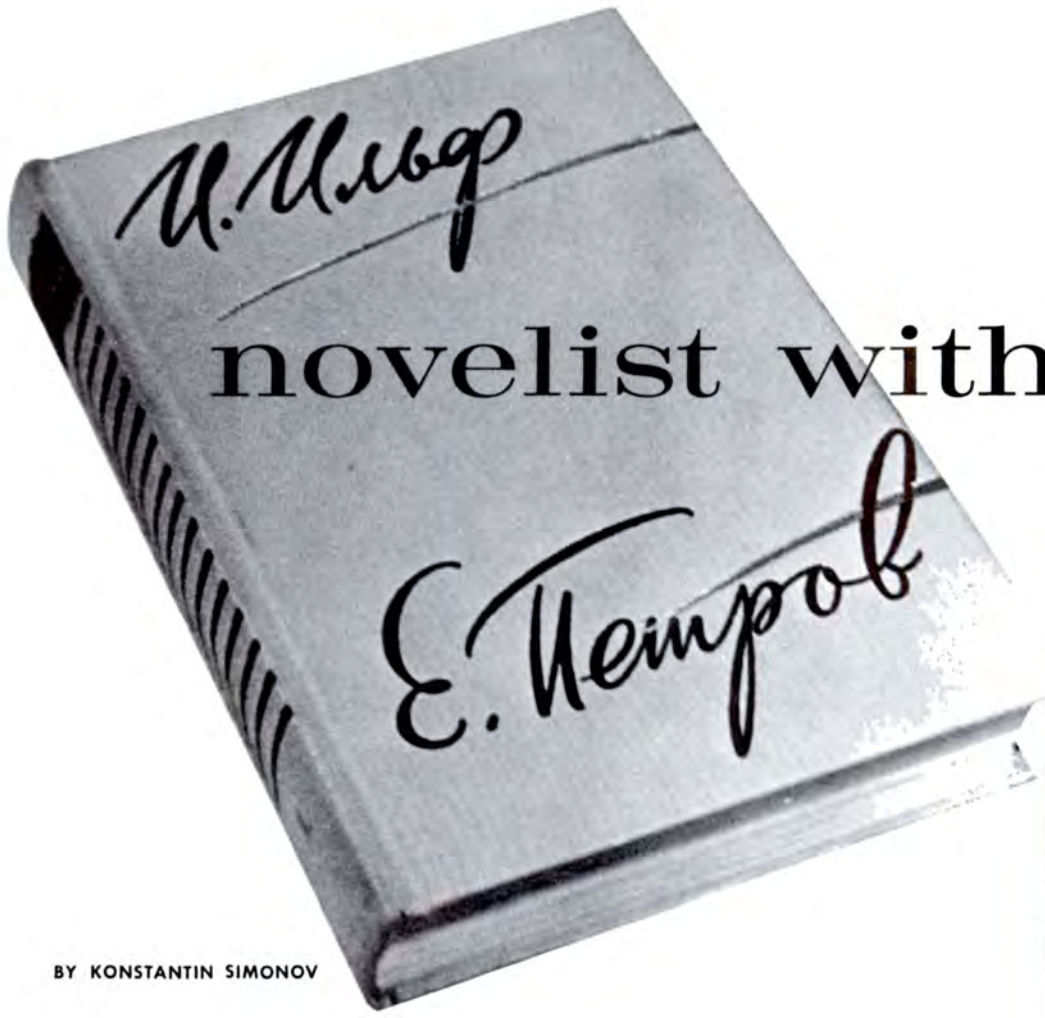
We are now preparing a program for our twenty-fifth birthday celebration in Moscow on February 10. For the occasion we will be presenting choreographic scenes based on Igor Stravinsky's ballet music *Petrushka,* to show the wide range of our creative work. We also plan to add to our repertoire new dances to Aram Khachaturyan's music.

Where will you be performing in the next few months?

After a dance series in Moscow, we expect to make a tour of the various Soviet republics. After that we'll be performing again in the major countries of Europe.

Is there any message you would like us to give our American readers and your American admirers?

I should very much like, on behalf of the whole company, to thank our American friends once again for their cordial reception and send them our warmest greetings.



novelist with a doub

Ilya Ilf (right) and Yevgeni Petrov. (Above) The first book of a five-volume collection of their works.

BY KONSTANTIN SIMONOV

THE FIRST NOVEL by Ilya Ilf and Yevgeni Petrov, *The Twelve Chairs*, was published 35 years ago, and *The Golden Calf* appeared four years later. The situations they held up to ridicule are now long gone and many of the character types they portray no longer exist, but nevertheless the books have lost none of their cogency and interest.

The books were written by people who loved everything we love and hated the things we hate, people with faith in the victory of a bright and rational socialist society. But above and beyond all this, they were gifted men who wrote wonderfully amusing books.

Ilf and Petrov wrote their first novel evenings after work. They were both on the staff of the newspaper *Gudok (The Whistle)*.

The Twelve Chairs has a conventional plot. Two rogues are roaming the country searching for diamonds they know were sewn into the upholstery of a chair by a woman of the old regime. The plot gives the authors the freedom to move naturally from one situation to another, their sharp, satiric pens making short work of the old life. The story ends on a characteristic, even symbolic, note. The former "marshal of nobility" Vorobyaninov, who has lost all semblance of a human being, comes to the new workers' club to learn that a watchman had found the diamonds and that the money they brought had gone to build the club—an unhappy ending only for the principal character.

The satiric element in the book predominates, but there are sections that are simply and gloriously funny. Some of this broad, healthy humor, in the Mark Twain tradition, is so extravagant that it is almost believable.

"The Golden Calf"

Ostap Bender, rogue, adventurer and "great schemer," one of the principal characters in *The Twelve Chairs*, also appears in the second novel, *The Golden Calf*. With three other colleagues of lesser talents, Bender hunts for the fortune of secret millionaire Koreiko.

Just who is this Ostap Bender? He is a swindler who makes his living not by work but by all sorts of dishonest deals that just manage to skirt the Criminal Code. He is a cunning and resourceful cheat who trades on people's credulity and artlessness. A creature of the old world himself, he is most ingenious when scheming against people of that same world.

But Bender, who carries on his machinations over the four-year period covered by the two novels, finds his activities increasingly curtailed by the developing socialist society in which people of his kind do not prosper. He is careful not to covet public property; that would be placing his neck under the ever threatening sword of justice. But he feels no such qualms about laying a hand on private property.

In the last chapters of *The Golden Calf* Bender is a "rich person." But he finds that bein a millionaire in a society with socialist valu does not entitle one to respect or admiratio Quite the contrary, it places the "happy" mi lionaire in all sorts of impossible situations. T get a room, he has to hide his identity, preten ing to be an engineer, a doctor, a writer, or th son of the famous Lieutenant Schmidt.

Bender reflects bitterly. "That's what it to be a millionaire. Where is respect, hono glory, power?"

The authors' point of view is clear and u equivocal. They do not continually protest the love for Soviet society and the Soviet way of lif but the reader feels it in every line. Like ma ters of satire, they ridicule the absurdities an the weaknesses that are part of the process growth, but they attack with passion the burro ing moles of the old society.

Most of the characters they portray are ba nacles clinging to the ship sailing toward th socialist future. It is on this socially doome world of theirs that the satirists focus their a tention. At the same time, they expose the crac in which the colonies of parasites find it easie to take root. But we always feels that it is, aft all, only a little world, that there exists a bi real world, and that when that little one com into decisive conflict with it, the parasites a inevitably defeated.

Two millionaires, the "timekeeper" Korei and the "son of a Turkish citizen" Bender, in

e name

rk freight car, the air in which was "as stuffy
l stagnant as in an old shoe," conduct their
t deal; and outside the car the southern and
rthern sections of the Turkestan-Siberian
ilway meet, in a noisy holiday atmosphere.
new workers' club is built with the money
ained from Madame Petukhova's diamonds.

"Little Golden America"

n 1935 Ilf and Petrov visited the United
tes. *Little Golden America*, the American pub-
ation title, is an account of that visit. The
erica of the skyscrapers has been described
quently. They wrote of a different America,
small towns, farms and endless automobile
hways. They admired its people's industrious-
s, ingenuity and efficiency.

After they finished this book, Ilf and Petrov
rked on the newspaper *Pravda*, the central or-
of the Communist Party, writing brilliant
forcefully critical articles.

This literary collaboration ended unexpectedly
ile the talents of both these men were still in
l bloom. In 1937 Ilf died after a serious ill-
s, and in 1942, at the height of the war,
rov, then a special correspondent for *Pravda*,
s killed on his way back from besieged
astopol. Although Ilya Ilf and Yevgeni Pet-
worked together for only a short ten years,
y left an indelible mark on Soviet liter-
re. ★

THE INTERPLANETARY CHESS CONGRESS

(From *The Twelve Chairs*, novel by I. Ilf and Y. Petrov)

Ostap Bender, a swindler of parts, and his junior partner Hippolyte Vorobyaninov, a former marshal of nobility, are hunting the country for diamonds that Madame Petukhova sewed into the upholstery of a chair. Put off a steamer without a kopeck to their names, these lightfingered gentlemen find themselves in the district town of Vasyuki. Ostap Bender gives birth to an ingenious scheme for bilking the residents of Vasyuki without violating the Criminal Code.

AT AN EARLY HOUR a tall old man wearing a gold pince-nez and paint-splashed boots went around the town of Vasyuki putting up notices on the walls. The placards were written in a large bold hand.

The champion chess player had lost no time. He had rented the club for three rubles and then had gone to the chess section. There he found a man with one eye, reading a novel by Spielhagen.

"I am the chess champion, Ostap Bender," he said, perching himself on a corner of the table. "I'm arranging a chess exhibition here."

The single eye of the Vasyuki chess player opened wide.

"One moment, comrade," he said. "Sit down, please. I'll be back in a minute," and he ran out of the room.

Bender looked around the chess section. Photographs of race horses hung on the walls and a dusty report titled "Achievements of the Vasyuki Chess Section for the Year 1925" lay on the table.

The head of the chess section returned with a dozen citizens of varying ages. They each came up to Bender, introduced themselves and shook his hand respectfully.

"I'm on my way to Kazan," said Bender curtly. "Yes, yes, the exhibition is tonight. Please excuse me now. I'm not in good form; I'm rather tired after the Carlsbad tournament."

The Vasyuki chess players listened to him with awe. Bender was in his element. He felt a spurt of fresh energy, and innumerable ideas about chess came into his head.

"You simply wouldn't believe me," he said, "if I were to tell you what fresh developments there are in the game. It's quite impossible to play with Lasker these days. He does nothing but puff his cigar in your face, and he smokes cheap ones so the smoke will be really unpleasant. Take my word for it, the chess world is very disturbed about his behavior."

The champion then passed on to more local themes.

"Now, why is there so little chess in the provinces? Take your chess section, for instance. Why do you call it a section? That's dull, my friends; why not give it some typically chess name? You'd get far more members if you did. Why not call it the Four Knights Chess Club? It sounds better, doesn't it?"

His suggestion met with success. "Why shouldn't we give our section a new name?"

Ostap drew an emblem for them with four knights and an appropriate motto.

"Chess," continued Bender. "Do you know what chess is? It not only helps advance culture but economics also. Do you

realize that your Four Knights Chess Club, if properly organized, could completely revolutionize the town of Vasyuki?"

Bender hadn't eaten anything since the previous day, and as a result he was unusually eloquent.

"Yes!" he declaimed. "chess enriches a country. If you go along with my project, you will have marble steps leading to your pier and Vasyuki will be the capital city of ten provinces. Now, whoever heard of Semmering before the international tournament was held there? And now it is both rich and famous. Therefore I say to you, we must arrange an international chess tournament in Vasyuki."

"How?" they all cried.

"It's quite an easy matter," said the champion. "My personal connections and your self-confidence are all that is necessary to organize an international Vasyuki tournament. Capablanca, Lasker, Alekhine, Nimzowitsch, Boguljubow, Rubinstein, Maroczi, Tarrasch, Vidmar and Doctor Grigoriev will most certainly come here. And I promise you my support too."

"But where will we get the money?" groaned the Vasyuki citizens. "They'll want to be paid. Why, it would cost thousands!"

"The money will be forthcoming."

"But the citizens haven't got the money."

"Of course not. The citizens won't be asked to pay any money. They'll be taking in money. It's quite simple. A tournament in which such stars are taking part will attract chess lovers from all corners of the earth. Hundreds of thousands of rich people will stream into Vasyuki until the river boats won't be able to cope with the number of passengers. A direct railway line will have to be built between Moscow and Vasyuki, and hotels and skyscrapers will spring up to accommodate the visitors. There will be an enormous agricultural development for a radius of a thousand miles, since the visitors will have to be supplied with vegetables, fruit, caviar and chocolates.

"A palace will be built for the tournament and garages will have to be built for the visitors' cars. A powerful radio station will have to be erected so as to announce the results to the whole world. The Moscow-Vasyuki railway will not be able to handle the people who will want to come here. We shall have to construct an airport with regular plane service to all parts of the earth, including Los Angeles and Melbourne.

"Don't worry! My scheme will give your town an amazing boost. Picture to yourselves what will happen when the tournament ends and the visitors depart. The citizens of Moscow, suffering as they do from a housing shortage, will flock to your magnificent town, and automatically Vasyuki will become the capital of Russia. The government will move to Vasyuki. Vasyuki will cease to be Vasyuki. It will be called New Moscow, while Moscow will be called Old Vasyuki. The citizens of Kharkov and Petrograd will grind their teeth in rage, but they will be helpless. New Moscow will become the most fashionable city in Europe and soon after that—of the whole world!"

"Yes, of the whole world," Bender went on, "and subsequently of the whole universe. Chess, after transforming a humble provincial town into a world capital, will become an applied science which will bring about the discovery of interplanetary communication. Signals will be sent from Vasyuki to Mars, Jupiter and Neptune. Communication with Venus will be simpler than a journey from Vasyuki to Moscow. And then—who knows?—perhaps in eight years' time there will be an interplanetary chess congress in Vasyuki, the first in the history of creation."

Bender mopped his noble brow. He was so hungry that he would gladly have eaten a roasted pawn.

"All right," said the one-eyed man as he looked around the room, "but how can we put your theory into practice? How can we, so to speak, build a foundation for your structure?"

The members gazed at Bender.

"The practical side of the question rests entirely on your self-confidence. I repeat, I will take the whole of the organization onto my own shoulders. There is absolutely no material expenditure required except, of course, for a few telegrams."

He paused a second, then continued, "Well, what do you say?"

"We'll do it! We'll do it!" shouted the citizens. "How much money do you want for the telegrams?"

"A paltry sum," said Bender, "a hundred rubles."

"We've only twenty-one rubles and sixteen kopecks in our treasury."

The champion said: "That's all right. Give me the twenty rubles."

"Is that enough?" asked the man with one eye.

"It will do for the present," said Bender. "It will do for the first few telegrams, and after that voluntary contributions will simply pour in. Why, we won't know what to do with the money."

He put the money into his pocket, reminded his audience of the lecture and simultaneous chess exhibition on one hundred and sixty boards, bade them an amiable farewell, and left them staring after him. He went to the Carboard Workers Club, where he met Hippolyte.

"I haven't sold a single ticket," said Hippolyte.

"Never mind. They'll all flock in this evening. The town has already contributed twenty rubles toward an international chess tournament."

"Then why must we have the simultaneous exhibition this evening? You may lose, whereas with twenty rubles we can get our tickets. The steamer *Karl Liebknecht* has just come in, and we can travel in peace to Stalingrad and wait there for the theater company. Perhaps we'll manage to get hold of the chairs, find the diamonds, and then you and I will be rich men."

"You shouldn't talk such nonsense on an empty stomach," said Bender. "It has a negative effect on the brain. We might get as far as Stalingrad on twenty rubles, but who'll pay for our food? Vitamins, my dear friend, are not given out gratis. But we may be able to pluck some thirty rubles from these generous citizens of Vasyuki."

"But they'll beat you," said Hippolyte dolefully.

"Yes, that's a risk," said Bender. "They may even beat your face in. Still, I have one little idea that may save you, but about that later. Meanwhile, let's go and sample the local dishes."

Six o'clock that evening the champion came up to the cash desk at the club. He had had a good meal. He was shaved and he smelled of eau de cologne. Hippolyte, who was also feeling and looking much better, was doing a brisk trade in tickets.

An hour later there were thirty-five rubles in the till. The crowd in the clubroom was getting excited.

"Now, shut the cash desk. Hand over the money and listen to me. Here are five rubles. Go to the dock, rent a boat for two hours, and wait for me by the shore a short distance beyond the warehouse. You and I will then go for a row somewhere around midnight. And, whatever you do, don't worry about me; I'm in very good form."

The champion walked into the clubroom. He was feeling very pleased with himself, for he knew that his first move P-K4 presented no difficulty. He was very hazy about the other moves, but that did not disturb the great schemer. He had learned how to save his skin in more difficult situations.

The champion was met with applause. The room had been decorated with a number of multicolored paper flags left over from a party held by the Lifesaving Society.

Bender bowed, held up his hand to check the applause, and walked up on the platform.

"Comrades!" he said eloquently. "Comrades and chess brothers! The subject of my lecture today is the same as the one I delivered a week ago in Nizhni-Novgorod, not without considerable success, if I may say so. The subject of my address is 'The Fruitful Idea.' Now, comrades, what is an idea? An idea is human thought expressed in a logical chess form. With almost negligible talent you can gain mastery over the chess board. Everything depends on the individual. For instance, look at that blond man over there in the third row. Let us assume that he plays well. . . ."

The blond man in the third row blushed scarlet.

"Now that dark man over there. Let us suppose that he plays badly. . . ."

The audience craned their necks to look at the dark man.

"What do we see? We see that the blond man plays well and the dark-haired man plays badly, and no amount of lectures will alter these facts unless each individual has constant practice in checkers—er—I mean in chess. And now, comrades, I will give you a few helpful stories from the experiences of our respected superplayers Capablanca, Lasker and Doctor Grigoriev."

Bender told the audience a few very well-known anecdotes and then concluded his speech.

Everyone was a little surprised at the brevity of the lecture,

and the one-eyed head of the chess section looked at Bender suspiciously.

The chess exhibition began. Thirty amateur players sat down to play the champion. Many of them were very nervous and kept referring to chess manuals, with whose aid they hoped to keep the champion from beating them before the twenty-second move.

Bender glanced at the players, went up to the first board and moved the king's pawn P-K4. The player immediately clapped his hands over his ears and began to concentrate, while a whisper traveled down the line that the champion had moved P-K4. Bender did not favor his opponents with a variety of moves, but made the same move on each of the twenty-nine other boards. One after another the amateurs ruffled their hair and plunged into deep thought. The spectators watched the champion with awe. The only amateur photographer in the town had clambered onto a chair and was about to light the magnesium when Bender began to wave his arms furiously. Interrupting his play, he yelled in a loud, angry voice: "Throw that photographer out! He is distracting me!"

"Why should I leave a record of myself in this absurd place?" he thought to himself. "Besides, I don't want to get mixed up with the militia."

"Sh!" said the indignant players, and the photographer was forced to give up the idea of photographing the champion. Indignation was so great that he was thrown out.

At the third move it was quite clear that the champion was playing the Ruy Lopez on eighteen boards and was adopting a rather obsolete but fairly good reply to the Philidor defense on the other twelve. Had Bender known that he was playing such involved games, he would have been surprised indeed, for the fact of the matter is that the great schemer was playing chess for the second time in his life.

At first the players were awed by the champion. The dark-haired man felt like giving up, but with great effort he forced himself to continue playing. Five minutes later a cloud gathered on the horizon.

"Mate!" muttered the dark-haired man after Bender had sacrificed piece after piece. "Mate, Comrade Champion."

Bender analyzed the situation and haughtily congratulated the young man on his victory.

"Time to get out," he thought as he moved from board to board moving the pieces any which way without thinking.

"You've placed the knight on a wrong square," said one of the amateurs. "The knight doesn't move like that."

"Pardon! Pardon!" said Bender hastily. "My mistake. I'm rather tired after my lecture."

In the next ten minutes the champion lost another ten games.

Cries of astonishment were heard in the chess club. The conflict was ripening—Bender lost fifteen games one after another, and then three more. The last player left was the one-eyed head of the chess section, who had made a number of bad moves at the beginning but was now bringing the game to a triumphant end. When no one was looking, Bender took one of the pieces from the board and slipped it into his pocket.

The crowd surged around the two players.

"My knight was standing here a minute ago and now it's gone!" shouted the one-eyed player.

"Well, if it's not here now, it means that it wasn't here before!" retorted Bender rudely.

"What d'you mean it wasn't here before? I know it was here."

"You know nothing of the sort!"

"Well? Where's it gone to? Did you win it?"

"I did."

"When? Which move?"

"Why all this unnecessary talk about the knight? If you want to give up the game, then say so."

"Excuse me, comrade, but I've taken note of all the moves. It's positively disgusting! Give me back my knight."

"Will you or will you not give up the game?"

"Give-me-back-my-knight!" yelled the one-eyed man. The

champion saw it was no good delaying matters any longer. He took a handful of pieces and flung them at his opponent.

"Comrades!" roared the player. "Look what he's doing to me!"

The Vasyuki chess players were dumbfounded.

Without wasting any more precious time, Bender hurled a chessboard at the lamp. There was a crash of glass and the room was plunged into darkness. Bender dashed into the street, and the Vasyuki chess players, jostling one another furiously, rushed after him in hot pursuit.

Bender ran down to the edge of the river, turned to the right and feverishly searched for Hippolyte and the boat.

Hippolyte was there. Bender jumped into the boat and began to row wildly away from the shore. A minute later a shower of stones fell on them. The chess players were pelting them from the shore. A stone hit Hippolyte's face, an inch above his boil. He ducked, tried to hide his head, and began to moan.

"What a coward!" said Bender. "My head has nearly been torn from my shoulders, but I'm still happy and bright. Remember that we've got fifty rubles clear profit; we haven't done too badly."

Meanwhile the chess players realized that the plan of transforming Vasyuki into New Moscow had crashed and that the chess champion was disappearing with fifty rubles of the town's money. They jumped into a large boat and rapidly rowed out to the middle of the river, yelling threats across the water. There were about thirty in the boat, each anxious to have a personal reckoning with the champion. The one-eyed man was in command of the expedition.

"Come on, fellow," urged Hippolyte. "If you don't row faster, they'll overtake us, and I don't want to think of what they'll do to us."

Both boats were going downstream and the distance between them was rapidly diminishing. Bender's strength was beginning to give out.

"You cheat!" the chess players shouted. "You're not going to escape from us!"

Bender had no time to argue with them but kept rowing frantically. Hippolyte was in despair. The enemy were almost upon them, trying to force their boat to shore. A sad fate appeared in store for the chess swindlers. The Vasyuki players rejoiced and moved over to the right side of their boat, ready to hurl themselves on Bender as soon as they caught him.

"Watch your glasses!" shouted Bender to his partner, as he threw an oar overboard. "We're in for it!"

"Gentlemen!" he shouted, "surely you're not going to beat us!"

"We certainly are!" shouted the chess players, getting ready to jump into the other boat. But at that moment their own boat lurched over on its right side and the water rushed in.

"Steady there!" shouted the one-eyed captain. But it was too late. So many of the players had crowded to the right side of the Vasyuki dreadnought that the center of gravity was displaced and, in full confirmation of the laws of physics, the boat capsized.

There were wails of despair as all thirty chess players fell into the water. They rose rapidly to the surface again, and one after another tried to scramble onto the overturned boat.

"Cowards!" shouted Bender. "Why don't you beat the champion? Wasn't that your original intention? Why, I could drown you one by one, but I will spare your lives. Go on living, citizens; only for heaven's sake, stop playing chess! You simply don't know the first rules of the game. Poor fools! Come along, Hippolyte, we must be going. Good-by, dear amateurs. I'm afraid Vasyuki will not become the center of the universe. I don't think the international champions would visit such idiots, not even if you begged them on bended knees. Good-by, friends. Three cheers for the Four Knights Chess Club!" ★

Winter FUN

BY LYDIA KLIATSKO

A RUSSIAN winter is so lovely you feel like gazing at it for hours. But *Ded Moroz*—Grandfather Frost, that is—won't let you. He nips your nose and ears red in minutes. There's no joking with him.

But when he's in a good mood, or rather, when you're in a good mood, you don't mind him at all. *Ded Moroz* gets along fine with good-humored people, especially if they're young and full of pep, vim and vigor. And they with him, particularly in his snowy moods.

That's when the snowballs fly, when every school playground rings with laughter and eyes are bright and sparkling. And should a snowball chance to land on the head of an elderly passerby, he's more likely to smile than frown, recalling his own snowball throwing days.

In almost every yard you pass you see a snow man, with eyes of coal, a carrot for a nose, a whisk broom under his arm, and everybody from little Vanya to Granddad Ivan standing around admiring their handiwork.

Practically every slope becomes an impromptu ski run. That's where *Ded Moroz* goes in for practical jokes, landing you face down in a pile of soft, fluffy snow which can even find its way down the back of your neck.

Those who know say there's nothing like a ride in a *troika* sleigh—speeding over the glistening snow, the horses' manes flying in the wind and the sleigh bells tinkling merrily. Try it, they say, and you'll find out how wonderful a Russian winter can be.

ICE FISHING

BY DMITRI SAMARIN

SERIOUS anglers don't let winter stand in their way; they fish under the ice. Cold notwithstanding, you'll find them huddled over holes chopped through the thick ice of any number of Russian rivers and reservoirs. Some use floats, the more sporting use spoon bait. In the deeper spots live bait is favored for pike, perch and zander—the last, a kind of walleyed pike.

Mormyshka fishing is also very popular and is based on simulation of the movements of the mormysh. The mormysh is a type of crustacean native to the Urals and Siberian lakes and the main food source for the fish that abound in these waters. It rises from the bottom to the surface in short jerks and usually clings to the underside of the ice,where the fish get at it.

The mormyshka is a plummet six to fifteen millimeters (.2 to .5 inch) long made of tin, lead, brass, copper or silver. It is streamlined, has a welded hook and a hole for the line. Mormyshkas are made in various shapes—"drops," "buckshot," "beetles," etc. You use the heavier ones in deep water so they can pull down the long lines by their own weight. Bait is mosquito larvae, worms, bird lungs or small perch eye membranes. A thin line—.0061 or .0047—is used. The rod is short and has a flexible rubber tube at its tip through which the line extends down into the water. When the tube jerks, you know you have a bite.

The mormyshka tantalizes the fish by its movements, either twitching slightly near the bottom, or climbing upward in swift jerks, or dropping down, or quivering in one spot. In other words, it is a test of the patience of the fish and the angler.

You can take my word for it when I say that mormyshka angling, a constant and successful method in winter, is fascinating.

WARRIOR OF THE SIKSIKI TRIBE

BY TAMARA ZOLOTUKHINA

IT HAPPENED about a year ago in a small village in Montana on the shore of the Missouri River. In the Big Fire Square were the honored elders of the Siksiki, decorated with the totem signs of the tribe and the scars symbolizing the struggle of their forefathers with the beasts of the wilderness. Behind them stood the younger men; and behind them, the *Uti*—the male children, who in earlier times received their names only after they had demonstrated their prowess as hunters and warriors.

The ritual fire had been kindled on the Chief's orders for the Big Decision ceremony. But the purpose of the men's gathering was not to accept as a warrior a youth who had passed all tests and was to be given a worthy name. The person talked about in the Big Fire Square, the one for whom the headgear of blue and white feathers had been prepared, already had a name—one well known to the Siksikis. It was Kornei Chukovsky, veteran Russian writer, whose words had found their way to the hearts of the Siksiki people. Siksiki children recite Chukovsky's verses in English just as enthusiastically as their far-off Soviet friends do in Russian.

The fire crackled in the Big Fire Square, and the muffled beat of the Big Drum echoed the sound. The drum announced to the village that the Big Decision had been made by the elders and that the Chief was smoking the Big Siksiki Pipe with them as a token of consent. Kornei Chukovsky had become an honorary warrior of the tribe.

When the splendid headgear, symbol of his membership in the tribe, arrived in Moscow, Chukovsky decided to show it to his young friends in an appropriate setting—at a traditional children's bonfire festival in Peredelkino, near Moscow, where he lives.

Hundreds of youngsters from Peredelkino, Bakova, Kuntsevo and Moscow came to see their favorite author. He greeted them in his Siksiki headgear, its blue and white feathers cascading down his back. The children were enchanted. Imagine—a real Indian warrior's headgear! And you could touch it; with luck, even try it on.

The sight must have brought the brave and daring characters of James Fenimore Cooper to mind, assuring the children that the Indians of our time, who had sent that token of respect and friendship to the writer, were just as courageous.

THIRTEEN IS MY LUCKY NUMBER

BY VALERI BRUMEL

MANY PEOPLE are bothered about the number 13; they are superstitious about things that happen, or might happen, on that day of the month. I know there are buildings in some countries that have no thirteenth story. So far as I'm concerned, I have no complaints to make about "the baker's dozen." On the contrary, I have many pleasant associations with that number.

To begin with, I was born on the night of the thirteenth. It's true that my grandmother did manage to register my birth for the fourteenth—that's what my birth certificate says—but I made my way into the world a few hours earlier.

This happened in the spring of 1942, in the Trans-Baikal village of Tolbuzino. A few weeks later my parents bundled me up and headed for a small taiga settlement where my father worked as a geologist.

The years passed swiftly. My father got a transfer to the Ukraine, and the family moved to Lugansk.

My school courses I grouped into two categories—interesting and uninteresting. Physical training was in the uninteresting category, although I did like to attend all the meets at the local stadium. How or why I developed a passion for the high jump I don't know, but I decided to have a try at it.

I set my first school record when I was thirteen (!) years old. I used the Western-roll style and cleared 5 feet 1 inch. Coach Pyotr Shein heard about it and asked me to join his training group at the Lugansk Children's Sports School.

I didn't care too much for him at first, because he made me run, throw the discus, and do gymnastics—no jumping. It was a while before I realized the importance of all-round conditioning.

We moved indoors late in the fall and started to learn the fundamentals of the "belly-roll" style, with which Igor Kashkarov of Moscow had set several records. At the time he was competing in the Melbourne Olympic Games. He brought home a bronze medal—first notice to the world that our jumpers were ready for a crack at the world record.

My greatest ambition then was to jump like Kashkarov. I worked hard at gym practice. The following summer Yuri Stepanov of Leningrad cleared 7 feet 1 inch to become the first Soviet world recordholder in the high jump. Spurred by his achievement, I made a bid for the Lugansk junior title and won it. But this feat of mine left coach Shein quite unimpressed.

"You can—and you will—jump higher," he said, and for two hours he went on to point out all the mistakes I had made.

Invisible Pacer

In February 1958, the newspapers reported that John Thomas, a sixteen-year-old American schoolboy, had jumped 6 feet 7½ inches for the national indoor championship title—a good half-foot better than I had done. The idea that I was trailing so far behind spurred me on to train harder.

I cut the gap between Thomas and myself in half by the beginning of the summer. All I got for it was a scolding from Shein. My immediate goal was 6½ feet, his was all-round physical conditioning for me. He added weightlifting to my track and gymnastics schedule. I tried to talk myself out of this initiation into the "Iron Game," but my coach turned a deaf ear to my arguments, and I had to sweat it out with the bar bell.

By the spring of 1959 there was only an inch between my score and John Thomas' high school record. But he hadn't waited for me to catch up. By then he was a freshman at Boston University and had jumped nearly 7 feet. The only consolation I had was that I was 13 months younger.

Then came the sad news that Thomas had crushed his foot in an elevator accident. I felt badly for him, and for myself, too, because I had lost a fine pacer. I didn't have too much luck either, that season—I moved up only half an inch.

Then followed a period in which I had no time to think of athletics. I was preparing to enter college and went from city to city hunting for an "interesting" institution of higher learning. But I spent too much time choosing and found that I was too late to apply anywhere. This wasn't news I was in a hurry to rush home with, so I stayed on in Lvov, took an office job temporarily, and devoted my leisure time to athletics.

The Rome Olympiad

Came the 1960 Olympic Year and with it dreams of making the Soviet team, which would be leaving for Rome. My chances were practically nil. Nevertheless I trained like a man possessed. I started off well, but then came trouble. I hurt my swinging leg, and the injury knocked me out for six weeks, during which time my rivals gained on me.

I was staggered by the progress Thomas had made. He had recovered from his accident and, as though making up for lost time, kept sailing over the bar higher and higher until he reached the "impossible" world-record height of 7 feet 3¾ inches.

I was in a sad state. I sweated down to 163 pounds—I'm 6 feet 1 inch tall—but that only made me weaker. The national team coach lost whatever hope he'd had for me. In his press forecasts on the Rome Olympics he did not even mention my name.

Naturally this was quite a blow for me, but I took it like a sleepy horse does his driver's whip. I began to practice with renewed vigor, and, curiously enough, I now took heights which seemed impossible before with the most fantastic ease.

On August 13—notice the number?—I set a new Euporean high, 7 feet 1½ inches, at a Lenin Central Stadium track meet to celebrate USSR Physical Culture Day, and with it won a ticket to Rome. I remember that the thought flashed through my mind: Now I would have a chance to match my jumping against that of John Thomas and the "impossible" high record he had set.

Fortunately I am immune to precontest fever and slept soundly on the eve of my appearance in the Olympic arena. To try to keep my mind off the forthcoming contest, I took Wilkie Collins' "The Moonstone" with me to read.

I had to force myself to open the novel, but the story had me so interested that at times I even forgot where I was. After my turn at the bar, I hurried back to the bench to get on with the book. That was until the bar went up to the 6-foot 10-inch mark.

I guess every sports fan remembers the dramatic finish of our competition for the Olympic medal. I finally succeeded in out-jumping Thomas, my pacer for so many months, but the gold medal went to my fellow countryman, Robert Shavlakadze of Georgia. We both cleared the same height, but he did it on his first try, while I did it on the second.

I did not do much training when I returned to Moscow, but in spite of that I found jumping surprisingly easy. In October of that year my continental record went up to 7 feet 2½ inches. Having made up my mind to become a physical training teacher, I entered the Central Physical Culture Institute.

It was a short respite, however; I was invited to New York for the U.S. Indoor Championships.

Leningrad, New York, Sofia

I passed my mid term exams and dashed up north to Leningrad for the student championships, having no idea that I would be clearing 7 feet 4½ inches for a new world indoor record. I roamed Leningrad's quiet streets all night after the meet; I literally did not know how to use up my excess energy.

The next day brought the news that Thomas had cleared 7 feet 3 inches in Boston—outdoors, not on a board floor—a sure sign that he had picked up the challenge and that the fight was not going to be an easy one.

On February 13—that "unlucky day" again—I flew to the United States. Frankly, I didn't feel too good because of the time difference and the humidity. It was a tough contest at Madison Square Garden, as I had expected, but I won the meet.

For the coveted title, I am indebted in many ways to Thomas. He got me to train hard. It took me two and a half years to catch up with him, and now that I have, it means more hard training to stay there.

I have to keep a wary eye on John all the time. He has amazing possibilities, and I would not be surprised if he outjumped me tomorrow. He came close to doing that at the USA-USSR matches in Moscow. We both tried for 7 feet 4 inches. John made it on his second try but nudged the bar with his foot on the way down. I doubt that I would have set a world record then if John had made the jump.

When I met my rival and good friend a half-hour after the event, he was just as cheerful—joking with everyone—as though he had won. A genuine sportsman.

At the World Students Games in Sofia I broke the world indoor and outdoor records by clearing 7 feet 4½ inches. I have my eye on 7 feet 5 inches now. I still remember how the Americans chanted that figure at Madison Square Garden. I'll try to live up to their expectations.

In the meantime, I'm thinking more of my approaching exams at the institute and how to furnish my new apartment. By the way, the apartment number is—you've guessed it—13.

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USSR

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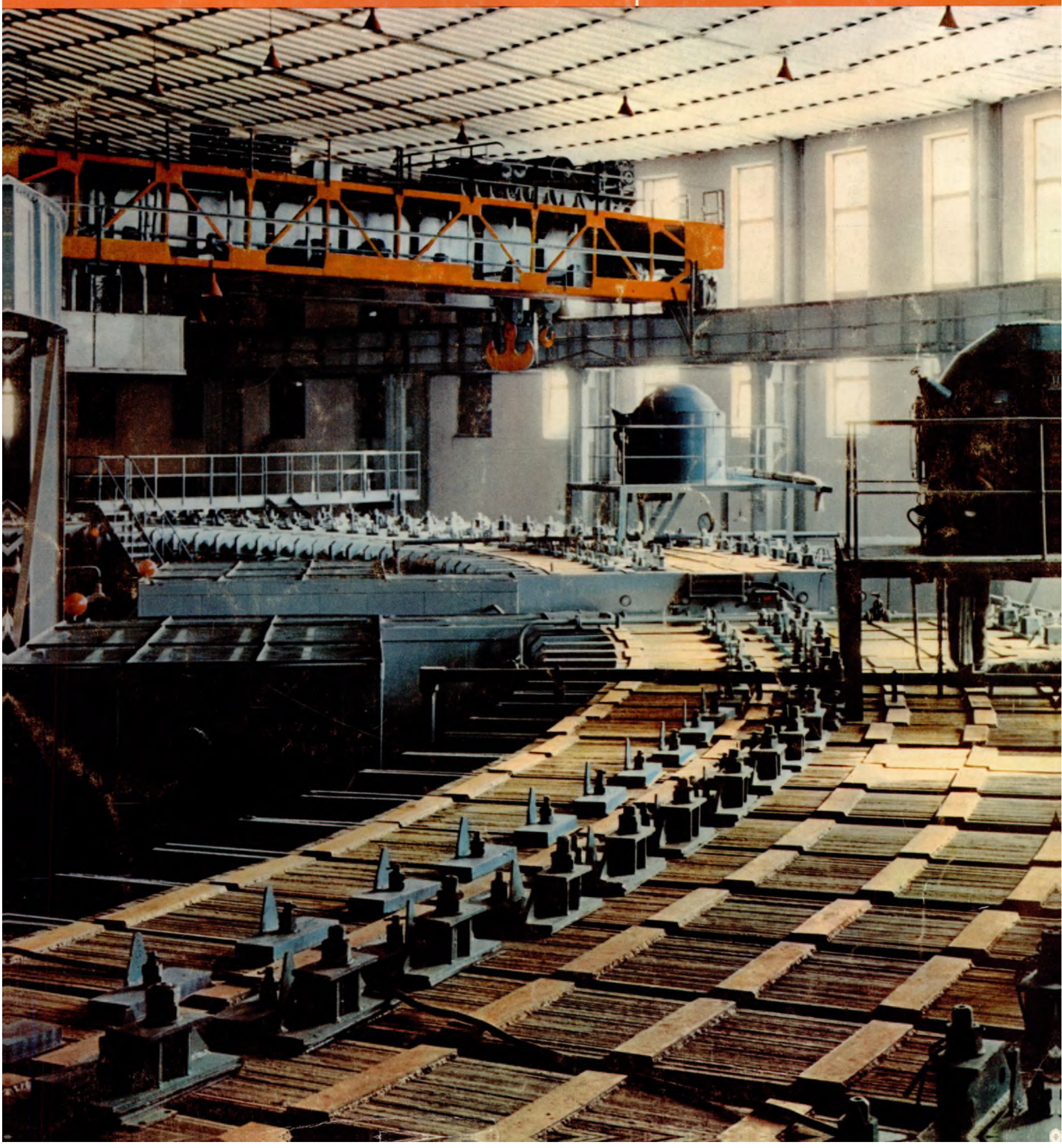

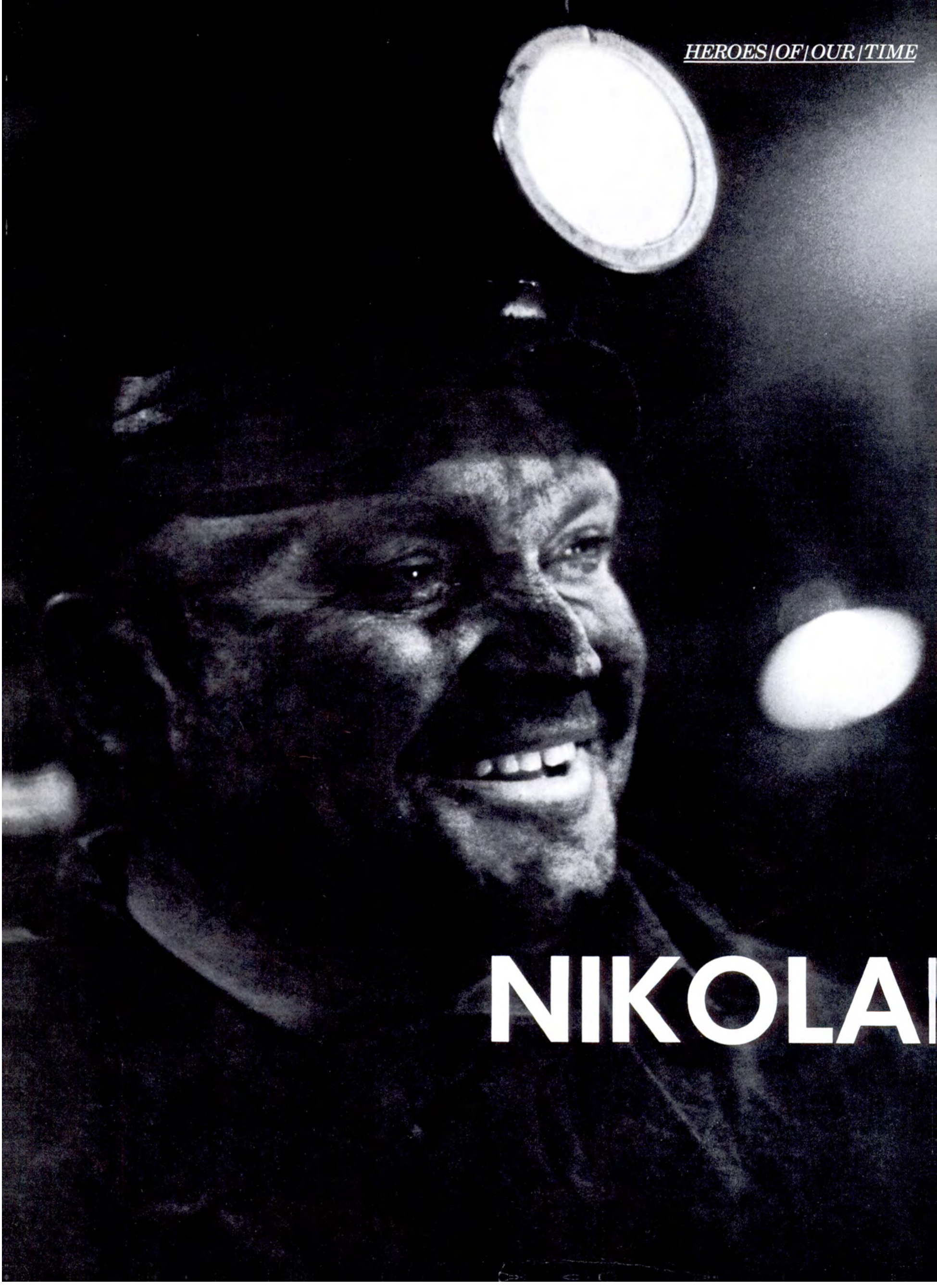
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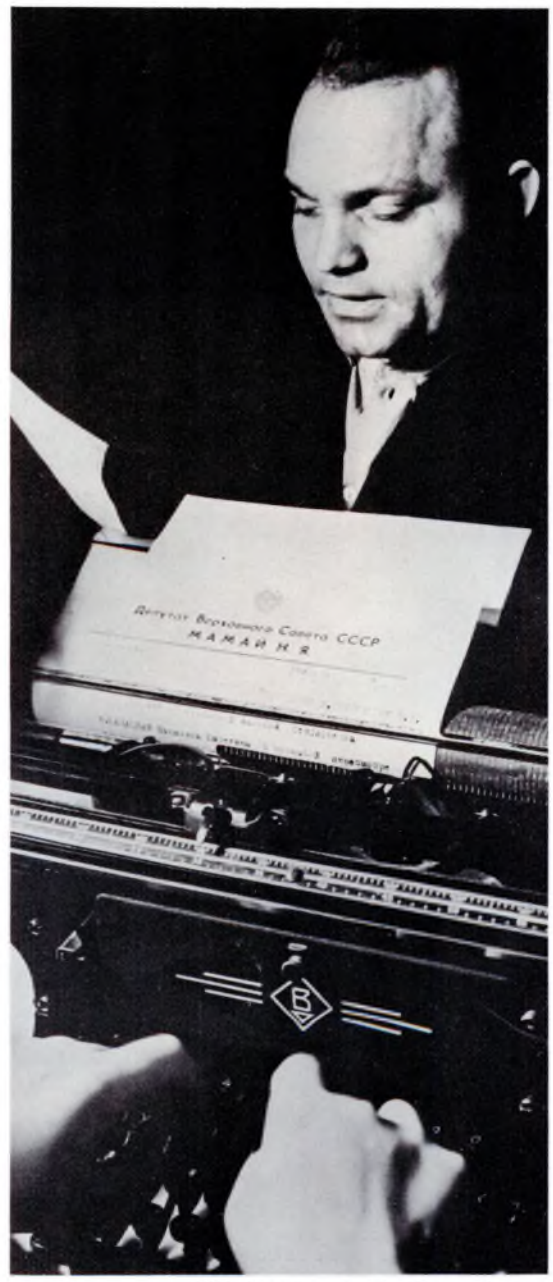

Nikolai Mamai—Donbas coal mine team leader and lawmaker, deputy to the USSR Supreme Soviet.

MAMAI

BY YURI DAVYDOV

THE ENVELOPE was addressed in a child's hand to "Famous Coal Miner Nikolai Mamai, Sukhodolskaya-I Mine, Krasnodon, the Ukraine."

The letter was from a schoolgirl in Kamchatka. It read:

"Dear Comrade Mamai: My name is Galya Danova and my class at the Klyuchevskaya Secondary School is going to have a discussion on the topic 'What Is Happiness?' We decided to ask the most famous people in our country to answer the question. I am writing to you. If you would like to hear about the results of our discussion, I will be glad to let you know. Best wishes. Galya Danova."

Mamai showed the letter to friends. "Not a simple question to answer," he said, "especially when it is asked by children. They want a direct and uncomplicated reply. I've been puzzling over it for some time."

"And are you happy?" his friends asked him.

"I haven't thought about it in such yes-and-no terms," he replied. "I'd say yes. Not that I haven't had my share of problems and disappointments. But I'm sure that the road I traveled was the right one."

Millions of people traversed this road in our country.

When Nikolai Mamai came out of the army, he chose coal mining as his trade. He took a preparatory course that lasted several weeks and reported for work as a cutter.

That first day was one he's not likely to forget. He worked with old and practiced operators who handled a pneumatic pick as though it were an extension of their own arms; his merely hissed and scraped along the seam. The other men cut huge lumps of coal from the face; he cut hardly enough to fill a decent-size hat. Nor was his state of mind improved when his daughter Nina asked him that first evening, "Daddy, is your picture soon going to be on the Honor Board?" This is the usual tribute paid to leading workers.

The next day was no better. But at this very low point in Mamai's estimate of his own capabilities came a friendly word and a helping hand for which he will be eternally grateful.

The secretary of the mine's Communist Party group stopped him. "You're wasting your strength," he said. He took a long time patiently showing the new man how to attack the seam, made him go through the same motions time and time again. The following day he put him through the paces once more.

Gradually Mamai got the swing of the work. His pneumatic pick began to rattle away fiercely as it cut at the black face. It gave him enormous satisfaction to hear the big lumps of coal drop with a great clatter.

As he grew more skilled, Mamai caught up with, then outdistanced, the older operators. And one day his daughter Nina stood proudly in front of her father's picture tacked to the Honor Board in the center of town.

Mamai studied evenings to prepare for technical school, was appointed team leader, earned more money, bought a car. Everybody thought he was doing fine, but Mamai himself felt he should be doing much more. He had the capacity for it, and he had acquired the knowledge and experience.

The country's growing industry, he knew, needed more coal. Big blast furnaces were going up in the Urals, the Ukraine and Siberia. But

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The last three years Mamai cut enough coal over and above his norm to fill a half-mile-long train.

the Donbas coal fields were not in step, not moving ahead fast enough. The Severnaya-2 Mine, where Mamai's team worked, owed the country thousands of tons of valuable fuel.

Mamai wasn't the only one bothered by the fact that the mine was behind schedule. It came up whenever the men got together after a shift. The talk became very concrete one time when Nikolai Kursa, the youngest cutter on the team, suggested taking a crack at the record. "Mamai will cut," he said, "and we'll do the timbering after him."

Mamai objected, "All of you work, while I get the glory. Nothing doing. Besides that won't solve the problem. How about everyone setting a record for himself?"

Ivan Sidorov laughed, "You want the glory pieced out, eh?"

"Why not?" said Mamai. "There's plenty to go around. Suppose every cutter on the team cuts one ton more than his quota. That shouldn't be too hard, and it will get more coal cut than a dozen records."

Anton Babushkin is the oldest man on the team and therefore considers it his responsibility to act as devil's advocate. He interjected, "Some of us here will probably be able to cut not one,

This is the third poorly producing team that he has worked with and pulled up to record-setting caliber.

(Photo on left) Mamai tests out a new type of coal-cutting combine that works on steep-angle seams.

but three extra tons a day. But there are people who won't find it so easy. How about them?"

"Well," Mamai suggested, "why can't we do this? Suppose we agree that none of us will cut more than one ton above the norm. When we get that done we'll use the time left over to help those who are slow."

"You're willing to do that?" Babushkin asked. "How will your wife feel when you bring home a thinner pay envelope?"

"She's a very understanding and a very principled woman—and she doesn't ask nearly as many obvious questions as some people I know," Mamai parried with a smile.

The following day, working in this new way, the team cut ten tons of coal above plan. The day after, they did the same. The word got around and soon other teams followed suit.

Every evening the miners grouped around the board where the day's output was tacked up to check performance.

"Who's ahead today? Mamai?"

"No, Sidorov. He's certainly pushing ahead."

"Who's going to be the winner?"

Mamai, asked the question, would probably have answered, "The country is going to be the

At the 22nd Communist Party Congress, to which the coal miner was a delegate, Director Nikolai Okhlopkov asks Mamai how he liked his new play.

He lives in a small brick house in a community about four miles away from the mine, as do all of the men. They travel to work by car or bus.

Mamai reads and answers every one of the 20 to 30 letters he receives each day.

Young Pioneers at a boarding school for miners' children Deputy Mamai worked hard to get set up express their gratitude by electing him an honorary member.

winner." His idea was caught up by thousands of miners in the Donbas and elsewhere. By the end of that year the Donbas had produced its first million tons of coal above plan. The idea spread to other areas of industry, to construction and transport. Everyone wanted to contribute his small brick to the edifice of communism now being built.

In three years Mamai alone gave the country 2,500 more tons of fuel than his norm. A train loaded with this quantity of coal would stretch for more than half a mile. Figure the number of people it kept warm, furnaces it fired, steel it smelted.

Once the team got under way the thinner pay envelopes Babushkin had been afraid of got thicker again. Mamai made 55,000 old rubles for the year; Ivan Sidorov, 45,000; and even skeptical Babushkin made about 40,000 rubles.

The title of Hero of Socialist Labor was conferred on Mamai, and the Donbas miners elected him their deputy to the USSR Supreme Soviet. He became famous. People wrote to him and sought him out. But he remained the same unassuming, modest man he had always been, with this one difference, that he demanded more of himself than he ever had before. Fame to Mamai was a debt he owed to the people, an obligation to the future.

Mamai keeps an eye out for everything that will make his a better team. When the universities of culture began to grow up around the country, he persuaded all the men to enroll for courses in the music and literature departments. Babushkin, as expected, made a wry face and said with a condescending smile, "I don't think it pays, fellows." But the members of the team beat him down, and he got so interested once he started that he didn't miss a single class.

At one of the plenary meetings of the Central Committee of the Communist Party to which outstanding innovators in industry and farming are usually invited, Mamai met Valentina Gaganova, a textile worker from Vyshny Volochok. She had been the leader of a record-breaking team and had voluntarily transferred to one of the most poorly producing groups in the mill. This meant a temporary loss in pay and a good many new worries until she whipped the new team into shape.

After he talked to Gaganova, Mamai began to ask himself questions. Why hadn't he done the same thing? He had built a good team but that was all. There were low-producing teams working right alongside his and all he had done to help was to criticize them at meetings. What he should have done was to take over the leadership of one of these teams, as Gaganova had, and prove that the trouble lay in poor organizers, not in poor faces or poor tools.

It was no easy group that Mamai took over. The men complained of the difficulties they were having with the seam they were cutting. Actually it was no worse or better than any of the others. What they needed was a large dose of self-confidence, and that's what Mamai supplied.

The first day, working on a lower shelf, Mamai cut his usual quota plus the one-ton additional. He did the same each day that followed. He had to contend not only with hard coal but with human nature, sometimes an even much less malleable material.

There are people who laugh infectiously; Mamai works infectiously. This is the only explanation for the way men on the team began to copy his confident movements. One of them exclaimed involuntarily, "That man works beautifully."

The team somehow took shape, began to work as a collective, surprised even the men with the amount of coal they cut. Mamai had reason to be proud of the job he had done, but he did not rest on his laurels. He went on to another poor team, and after that, to another.

Then a different problem arose. The country's

best coke comes from the Donbas, but the seams in the region do not always run horizontal to the surface; they often drop at a steep angle. Horizontal seam work was completely mechanized and therefore highly productive; but for seams running at an angle to the surface, there were no good machines available.

Mamai, speaking at the Twenty-first Congress of the Communist Party, called on the country's engineering brains to build coal combines that would work on steep seams. The call was heeded and the task assigned to several institutes working simultaneously. A year later a model of such a combine was ready.

Mamai agreed to test the new machine on the job. The combine gave an endless amount of trouble at first. One thing would be fixed and another would go out of kilter. After the remote control system was gotten to work smoothly, the steel cables began to break. When that problem was solved, something else happened. The mine superintendent groaned when he saw the team's output report and wanted the experiment discontinued, but Mamai insisted on more time.

He stayed at the face continuously through two of the regular six-hour shifts with the designers and some of his team members working over the capricious machine. Finally the steel mechanism gave in and began to work smoothly. Mamai had never seen such productivity. The machine cut four and five times the quantity of coal the whole team did working with pneumatic picks. "This finishes the pneumatic pick for good," Mamai said, happy but very weary as he left the face.

He did not have much chance to work with this combine. Another mine, equipped with the newest machines, was opened in Krasnodon. Mamai was asked to teach the operators how to work the new combine. It was a pull leaving the men he had worked with so long, but he was asked by the people who had elected him to the USSR Supreme Soviet. Could Mamai, a Communist, refuse them?

The same people chose Mamai to be a delegate to the Twenty-second Congress of the Communist Party, held last October. The historic gathering in Moscow left him with the feeling that he had made a grand tour of the country and had seen how big and powerful it was, how much alive with the fever of construction.

He thrilled, as did all the delegates, to the proud statement in Nikita Khrushchev's report. "The present generation of Soviet people shall live under communism." And with the whole country he rose to Khrushchev's appeal that resounded throughout the hall at the concluding session, "To work, Comrades!"

A great deal has been done but more, much more, waits to be done, was the thought Mamai brought to the miners when he returned home. The country's output is 500 million metric tons of coal yearly; in 20 years that figure has to grow to 1.1 billion tons.

After a day's work, he drove from one end of the region to the other in his black Volga, reporting on the Congress to miners, building workers, collective farmers, school children.

At one of these meetings—this was in a boarding school and he was telling the youngsters about the new Palace of Congresses where the sessions had been held and about Yuri Gagarin and Gherman Titov—he remembered the letter the Kamachatka schoolgirl had sent. He read it to the children. Then, a little nervous before this most critical of audiences, he answered the question.

"I believe," he said, "that life's greatest happiness is the knowledge that your work brings joy to others, that what you do helps people live better. When a person works for the happiness of others, he himself becomes a better, nobler, and richer human being."

These are not words in the abstract; they sum up Nikolai Mamai's way of life. ★

Mamai is very insistent that all the men on his team continue their schooling. He sets the pattern. Here he is preparing to take entrance exams to a specialized secondary school for miners.

We must raise coal output to 1.1 billion tons in the next twenty years—was the message Mamai brought back from the Party Congress.

Reading from left to right, we have seven-year-old Tanya, five-year-old Kolya and nine-year-old Nina. Nina is the family's stamp collector.

In his 12 years of mining Mamai has trained many excellent team leaders. One of them, Ivan Sobolev (right), bids fair to surpass his teacher.

USSR SUPREME SOVIET

THE SUPREME SOVIET of the USSR is the country's highest organ of state power, the only body empowered to make laws for the Soviet Union as a whole.

The Supreme Soviet of the USSR determines the country's domestic and foreign policy, represents the country in international relations, decides questions of war and peace. It approves plans for the development of the national economy and the single state budget of the country.

The Supreme Soviet of the USSR is elected for a four-year term. All citizens who have reached the age of 18, irrespective of race, nationality, sex, religion, education, domicile, social origin, property status or past activities, take part in the election of deputies to the Supreme Soviet. The elections are held on the basis of universal, equal and direct suffrage by secret ballot.

The Supreme Soviet of the USSR presently in office has 1,378 deputies, of whom 831 are workers and farmers.

It is composed of two chambers with equal rights—the Soviet of the Union and the Soviet of Nationalities.

The Soviet of the Union represents the common interests of all the working people of the USSR, regardless of their specific nationality. Deputies to this chamber are elected on the basis of one for every 300,000 of the population.

The Soviet of Nationalities represents the specific interests linked with the national features of the different peoples living in the USSR. Deputies to this chamber are elected on the basis of 25 from each Union Republic, 11 from each Autonomous Republic, 5 from each Autonomous Region, and one from each National Area.

At a joint session of the two chambers, the Supreme Soviet elects its Presidium, consisting of a President; 15 Vice Presidents, one for each of the Union Republics; a Secretary; and 16 members. The Presidium of the Supreme Soviet of the USSR exercises supreme state authority in the country between sessions of the Supreme Soviet.

At a joint session of the two chambers, the Supreme Soviet forms the government of the USSR—the USSR Council of Ministers—and also elects the USSR Supreme Court and appoints the Procurator-General of the USSR. ★

IN THE INTERESTS OF SOCIETY AND EACH CITIZEN

FUNDAMENTALS OF SOVIET CIVIL LEGISLATION AND CIVIL LEGAL PROCEDURE

BY SEMYON GERSON, Lawyer

NEW FUNDAMENTALS of Civil Legislation and Civil Legal Procedure for the Soviet Union and its constituent republics, adopted at the recent session of the USSR Supreme Soviet, will go into effect on May 1, 1962.

Civil law, more than any other aspect of the legal system, mirrors and helps buttress the social and economic structure of a country. The civil code in force until now was drawn up some 40 years ago and is largely outdated. Although it was several times supplemented and amended in the intervening years, it has not kept pace with the rapid march of history.

These past four decades have seen the complete and final triumph of socialism in the USSR, culminating in the endorsement by the Twenty-second Congress of the Communist Party of the Soviet Union of the full-scale program of communist construction.

Soviet civil legislation must facilitate the building of communism. Its purpose is to protect the socialist economic system and make certain that the rules of conduct and the moral principles laid down by a socialist society engaged in building communism are adhered to.

The Fundamentals of Civil Legislation regulate the property and concomitant non-property mutual relations of socialist organizations, the mutual relations of citizens and socialist organizations, and of citizens among themselves.

Soviet civil law distinguishes between three types of property: state property (property belonging to the whole people), collective farm and cooperative property and personal property.

The state owns the land and its mineral wealth, the forests and waters; the factories, mills and mines; the country's transport and housing.

Collective farms and other cooperative organizations own the structures, machines, cattle and other kinds of property required in carrying on their activities.

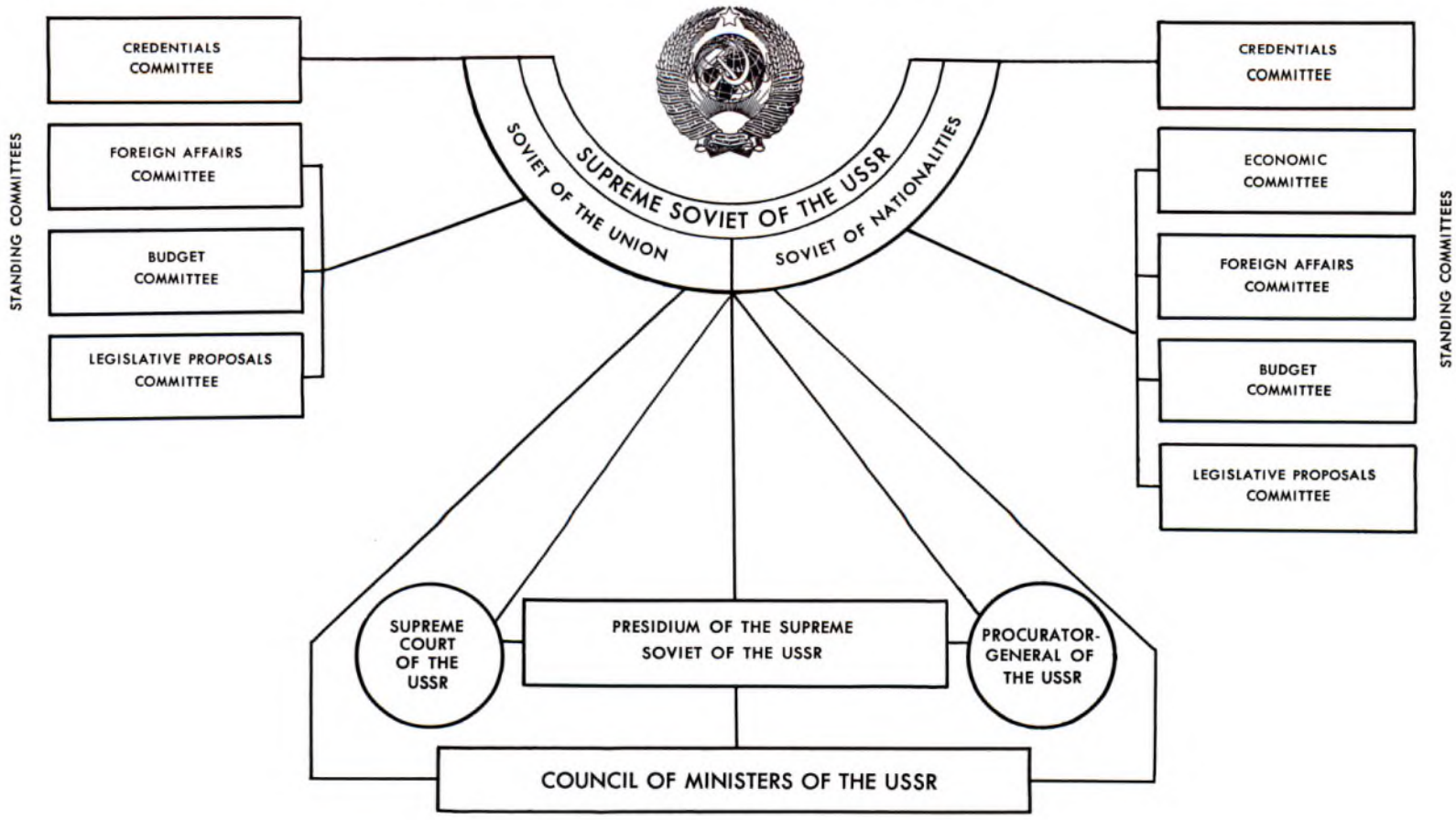
The trades unions and other public organizations own the buildings and equipment that their houses of culture, clubs, resorts and sanatoriums need for successful operation.

Finally, citizens own their personal property—such things as wages and savings, dwellings or portions thereof, auxiliary husbandries, household furnishings and equipment—everything that serves to satisfy the individual's material and cultural requirements. Personal property, the law emphasizes, may not be used for deriving unearned income.

Civil rights are safeguarded through the courts and arbitration tribunals, and in certain specified cases, through informal citizens' courts of honor—Comrades' Courts—and administrative bodies.

Civil law protects the rights of all citizens whom the Fundamentals define as legally capable and responsible, and all juridical persons, *i.e.*, organizations that own property and are capable of exercising the functions prescribed by their charter or official status. The law requires, however, that civil rights be exercised in a manner that does not violate the principles of a socialist society.

SUPREME ORGANS OF STATE POWER OF THE USSR



The new Fundamentals provide that citizens or organizations may look to the courts for legal redress should they feel that their honor and reputation have been unjustly attacked and injured. The nature of the redress is to be decided by the courts. It may, in the case of a libelous report published in the press, for example, require a retraction.

The Fundamentals deal in detail with the law on liability, defining types of contracts and the penalties for their violation. Specially stressed is the obligatory character, for all parties, of contracts bearing on the execution of national economic plans.

Following are some of the principle types of contracts defined in the Fundamentals. They reflect the principles basic to a socialist economy:

a) sale and purchase—containing special guarantees of the quality of the commodities for sale;

b) procurement—the basic type of contract ensuring the fulfillment of the national economic plan;

c) state purchases of produce from collective and state farms—also made according to the national economic plan;

d) capital construction—exceptionally important because of the great volume of current building;

e) transportation;

f) state insurance.

A housing lease is a particularly important type of contract. The law guarantees the tenant the right to renew his lease and to change his apartment. He may be evicted only by court order and only in the event he is provided with other adequate housing.

A new juridical principle—a product of the growing civic consciousness of Soviet people—has been formally incorporated in the Fundamentals. Time and again Soviet citizens, though not required to by law or ordinance, have risked life and limb to salvage socialist property threatened by fire or other hazards. The law makes it mandatory for the organization, that is, the juridical owner of the property in question, to compensate the salvager for any injury sustained or to compensate the dependents in the event of his death.

The law regulates the copyright for works of literature, art and science, and the patent rights for discoveries, inventions and pioneering innovations. Patents as such have no practical value inside the Soviet Union, since inventions are not sold—they are in the public domain. The patent right identifies the inventor and, in the event the government uses his invention in actual production, he is entitled to compensation, the sum varying with the value of the invention.

The Fundamentals safeguard the citizen's inheritance rights and, by comparison with the law in force up to now, extends them. A Soviet citizen may bequeath his property to any person he chooses. But the Fundamentals specify that in the event the bequest is to others, his non-working dependents (children under age, parents, etc.) shall inherit at least a two-thirds share of the property to which they would be legally entitled in the ordinary course of events.

The civil legal procedure specified in the new Fundamentals is designed to settle civil disputes equitably and expeditiously. Its basic aims are to protect the social structure of the Soviet Union, socialist property, the rights and lawful interests of the citizen and of public organizations, and, in process, to strengthen socialist legality by educating the public in the spirit of observance of Soviet laws and the rules of conduct essential for a socialist society.

The legal procedure is simple, extremely democratic and within everyone's reach. Oral, direct, controversial and public, its determining and operative principle is to establish the objective truth in all cases. The court is therefore bound, in order to make its examination as exhaustive as possible, not only to hear the argument and evidence presented by the parties but to probe into all the circumstances of the case and to explain to the litigating parties their rights and duties.

The democratic nature of Soviet legal procedure is underscored by the provision that permits representatives of public organizations and working people's groups to participate in the examination of all cases and present their opinion to the bench. The Fundamentals also specify those cases which may be heard by the informal people's tribunals, the Comrades' Courts.

Soviet legal procedure is free from the so-called attorney's monopoly—the need to resort to a lawyer to argue a case—although litigants have every right, if they so choose, to be represented by counsel.

All judges, elected by the people by secret ballot, are completely independent and subject only to the law. Examination in all cases is collective. Courts of first instance have a judge and two people's assessors; courts of second instance, three judges. All cases on appeal must be argued before at least three judges.

The procurator general (public prosecutor) plays an important part in Soviet legal procedure. His duties are prescribed by law. He may take part in the examination of any case, should it be deemed necessary to protect the public interest or the rights of an individual citizen.

Parties in a dispute must submit to the bench arguments and evidence to support their claims. The bench assesses the evidence in the light of Soviet law and the socialist concept of justice.

Civil cases are normally heard by a court of first instance and, should the parties appeal or the prosecutor protest a decision, by an appellate court. The court of appeals may accept new evidence not presented to the court of first instance. It may also exercise supervisory powers and review decisions which the presiding judge or the procurator protests as serious violations of the law or as based upon insufficient grounds. Cases may also be reviewed whenever new material comes to the fore, not known to the court and the parties when the case was first tried.

The new Fundamentals of Civil Legislation and Civil Legal Procedure will serve as the basis for the civil codes to be framed by the constituent republics. ★

THE 1962 STATE PLAN

FACTS AND FIGURES

The USSR gross national product in 1962 will increase by *26 billion rubles* over 1961. In this one year the Soviet Union will produce more than 80 per cent of all the wealth Russia possessed in 1913.

The average annual increase in industrial output for the first four years of the seven-year plan period will be *9.6 per cent*. This corresponds to the rate of development of industrial production foreseen by the 20-year plan set down in the new Communist Party Program.

In 1962 gross industrial output will be running ahead of 1961 by *8.1 per cent*.
Consequently:
heavy industry production will grow by *8.8 per cent*;
machine building and metal-working industries production will grow by *12 per cent*;
the production of the means of production for the light and food industries and agriculture will grow by *17 per cent*.

Consumer goods output will be *6.6 per cent* greater in 1962 as compared with 1961.
There will consequently be:
12 per cent more TV sets;
13 per cent more furniture;
20 per cent more refrigerators;
38 per cent more washing machines.

Also a total of:
56 million metric tons of cast iron;
76.9 million metric tons of steel;
59.2 million metric tons of rolled metal.

These are the target figures for 1962 of Soviet iron and steel workers. They presume a record increase in the output of ferrous metals. For steel, they mean 6 million additional metric tons a year, 50 per cent more than all of Russia's iron and steel plants produced in 1913.
In gross output of rolled metal, the USSR by 1962 will have reached the production level scheduled for 1963, the fifth year of the seven-year plan.

Soviet power stations will generate *366 billion* kilowatt-hours of electricity in 1962. The year's increment—nearly 39 billion kilowatt-hours—will be 20 times more than the annual output of electricity in prerevolutionary Russia.

Chemical industry output will be stepped up very considerably, with:
the production of synthetic fiber and mineral fertilizer boosted *12 per cent*;
synthetic rubber by *21 per cent*;
synthetic resins and plastics by *26 per cent*;
synthetic ammonia by *28 per cent*.

Oil output in 1962 will rise by *19 million metric tons*—double that of prerevolutionary Russia—and gas output by *406.1 billion cubic feet*.
The share of oil and gas in the country's total fuel production will rise to *45.5 per cent* in 1962 as against 32 per cent in 1958.
Coal output will grow by *6.4 million metric tons*, largely through the development of more economical opencast and hydraulic mining techniques.

Cement output for the year will reach *57-odd million metric tons*, sufficient to meet all the country's requirements, and will surpass the present level of the United States.
The production of precast concrete, the basis for industrial construction, will rise to 51 million cubic yards.

During the year *3,240 mechanized, continuous-flow and transfer lines* will be operating, 800 more lines than were set up in 1961.
The 1962 inventory of metal-cutting machine tools and forge presses will be *2.7 million*, roughly 90 per cent of the present stock of such machines in the USA.

THE PEOPLE WRITE THE LAWS

BY GRIGORI VODOLAZOV

Dmitri Polyansky, chairman of one of the committees, at a meeting of the Legislative Proposals Committees.

FOR THE COMMITTEES on Legislative Proposals of the USSR Supreme Soviet this is an uncommonly leisurely meeting. On the desk of each member is the completed Draft Fundamentals of Civil Legislation and Civil Legal Procedure, product of long days and sleepless nights of scrutiny and debate. They know the document by heart now, down to its last comma.

They sit back in their armchairs, relaxed. Two learned Doctors of Laws who have been arguing opposite points of view with considerable heat are now in peaceful conversation. Even the indefatigable public prosecutor is taking things easy.

At nine in the morning the chairmen of the Standing Committees on Legislative Proposals of the Soviet of the Union and the Soviet of Nationalities enter the Oval Chamber in the Kremlin's Government Mansion—Dmitri Polyansky, quick and lively, and sedate Djafar Rasulov. Both chair the meeting.

Polyansky says, "Comrade Bratus has the floor on the first item of the agenda. He asks for one hour." Polyansky smiles at the long faces of the committeemen. "I suppose we'll have to meet him part way. We'll give him ten minutes."

The joke and the laughter that greets it reflects the good mood that prevails at the successful conclusion of a long and painstaking job. What remains is a final review before the document is submitted to the current session of the Supreme Soviet for adoption.

These legislative committees are elected for a four-year term by the two chambers of the USSR Supreme Soviet. Their business is to study and draft new bills for submission to the Supreme Soviet. The committees have drafted many in the 24 years of their existence, the latest being the Fundamentals of Civil Legislation.

Why did the committees take so long to draft this law? How many people were involved in the

Labor productivity in 1962 will rise *5.6 per cent*, accounting for approximately three-quarters of the planned increment in output.
Labor productivity in the building industries will rise by 6.8 per cent.

The amount that will be saved in 1962 by reducing production and turnover costs is estimated at *3.7 billion rubles*, a large enough sum to maintain all the schools in the country with 40 million pupils attending for a full year.

In 1962 state procurement agencies will buy:
63.7 million metric tons of grain;
5.1 million metric tons of cotton;
8.7 million metric tons of cattle and poultry;
32.4 million metric tons of milk.
Collective and state farms will be getting:
216,000 tractors;
144,000 grain, corn and silage harvesting combines;
12,000 dredgers.

The national income, three-quarters of which is spent to meet the personal needs of the country's people, will grow by *8.6 per cent.*
The wage fund of industrial and office workers will increase by *6.5 per cent.*

The turnover of state and cooperative retail trade will be *86 billion rubles*, five times more than the 1940 turnover.

Three million apartments, more than a billion square feet of housing, will be made available during the year. This means that in 1962 the country will build housing equivalent to nearly two Moscows or three Leningrads.

There will be *920,000 children* studying in boarding schools in 1962;
1.2 million in day boarding schools and groups;
50 per cent more kindergartens and nurseries will be functioning than in 1961;
700,000 students will enter institutes and universities in 1962; and
860,000 will be enrolled in specialized secondary schools. ★

THE 1962 STATE BUDGET

FACTS AND FIGURES

The revenue for the 1962 State Budget is *81.9 billion rubles*, an increase of 3.6 billion over 1961. The increase alone would have covered more than 60 per cent of all state economic expenditures in 1940.

Expenditures for 1962 are budgeted at *80.4 billion rubles*, an increase of 3.7 billion over 1961.

Nine out of every ten budget rubles will come from state-owned enterprises, collective farms and cooperative organizations. Only 10 per cent of the revenue will come from taxes or loans from the population. The proportion of revenue from these latter sources has dropped by almost a half since 1955. During the same period cash incomes of industrial, office and professional workers grew by 62 per cent.

Soviet citizens will pocket an additional *800 million rubles* this year thanks to the law providing for the gradual abolition of taxes. By the end of 1965 taxes will have been abolished completely in the Soviet Union.

Funds for capital construction in 1962 will total *31 billion rubles*, double the entire sum spent for the purpose during the whole second five-year plan period (1933-1937).

An over-all *8.1 per cent* more will be invested in the Soviet national economy this year than last. This includes:
a *10.6 per cent* increase in the iron and steel industry;
an *11.2 per cent* increase in hydraulic and thermal power plant construction;
a *13.5 per cent* increase in the machine-building industry;
an *18 per cent* increase in the chemicals industry;
a *33.5 per cent* increase in light industry.

The 1962 budget allocates *7.6 billion rubles* for farm development, almost 50 per cent more than the sum invested in agriculture during the first postwar five-year plan period (1946-1950).

To meet the social and cultural needs of Soviet citizens, *28.7 billion rubles* are budgeted, more than twice the amount allocated for defense. In the past six years welfare expenditures—they include education, health, pensions, etc.—have increased by 85 per cent.

The budget allocates *12.4 billion rubles* for education, almost double the 1955 figure.

1.4 billion rubles are to be spent in expanding the kindergarten and nursery school setup to provide space for 5.5 million children, almost 700,000 more than in 1961.

1.8 billion rubles will be spent for secondary and college level education, 8 per cent more than last year. This will make possible a college and university student body of almost three million, more than half again as many as in all of Western Europe.

For science development *4.5 billion rubles* is allocated, 12 per cent more than for 1961. Expenditures on scientific research and development have more than doubled in the past five years.

State expenditures for free medical care will come to *5 billion rubles* in 1962. This is just slightly less than the total amount invested in the national economy in 1940.

The state social security and social insurance fund for 1962 is *11.3 billion rubles*, an increase over last year's by 700 million rubles.

More than 5 billion rubles have been assigned for housing construction in 1962, sufficient to build two-and-a-half times as many dwellings as were erected in the whole of the second five-year plan period (1933-1937). ★

process? The answer to these questions will answer another—why laws are adopted with such unanimity by the Supreme Soviet.

The committees first prepared a rough working draft of the future law, benefiting from the advice of experts in the field. The material was studied with particular care because of the very great importance of the legislation.

The draft law was also gone over by special government commissions, by the USSR Council of Ministers and by the Councils of Ministers of the constitutent republics. Other institutions involved were a number of ministries and departments, courts of law, arbitration tribunals, and the office of the public prosecutor.

Copies of the draft law were sent to all the universities, academies and law faculties of the republics, and it was published in six national periodicals and newspapers for the consideration of every Soviet citizen. It came up for discussion in all the Soviets at all levels.

The standing committees received thousands of letters from the public at large, each reflecting the people's interest in and concern for improving the nation's legislation and achieving ever better standards in all phases of life. The committees were fully aware that only the collective experience of the whole nation could help in avoiding mistakes in the building of new relationships and a new way of life. This collective wisdom of 200 million people amended many selections of the draft law and completely modified some of the articles, in some instances guiding the committees along altogether different lines.

For example, in October 1959, at the time of the publication of the fundamentals of the law enhancing the part played by public bodies in combating infringements of socialist legality and rules of socialist relationships, which was to be submitted for enactment to the USSR Supreme Soviet, the committee received many letters from people of different Soviet nationalities from all parts of the country, urging them to make certain specific recommendations for meeting the distinctive local requirements in the various national republics and suggesting that the proper procedure would be to submit the draft law to the Supreme Soviets of the constituent republics. Of course, the committees agreed with this and acted accordingly.

The diversity of background of the members of the Standing Committees on Legislative Proposals helps greatly to solve the multitude of problems to be met in framing laws for 200 million people. The committees include jurists, industrial workers, collective farmers, teachers—men and women from many professions and trades and with a spectrum of varied practical experience.

The committees are always hard at work on one piece of legislation or another. No sooner had they completed the draft of the Fundamentals of Civil Legislation and Civil Legal Procedure than they began work on a draft law on marriage and family relations. To do the preparatory study they formed special groups, made up of experts in jurisprudence and people with no legal training but with a wide background of experience—people like factory worker Vera Ivanova and mill director Anna Grinenko.

In time, another such meeting as we described earlier in this article will be held in the Oval Chamber of the Kremlin's Government Mansion and the finishing touches put on another draft law that will have been discussed and debated by the entire country. And it is a foregone conclusion that the Supreme Soviet will adopt it unanimously. In the Soviet Union, where every citizen is a statesman and a legislator and participates in administering the government, it is the people who write the laws. ★

A LINE FROM THE STATE BUDGET

BY ALEXANDER TSYBAKOV
DEPUTY, USSR SUPREME SOVIET

BY TRADE I'm a fitter. I work on a tractor assembly conveyor and pride myself on knowing my job.

When I was elected deputy to our country's parliament, the USSR Supreme Soviet, I knew what my responsibilities were there too—to represent my constituents and their interests honestly and conscientiously.

But I was not nearly so sure of myself when I was elected to serve on the Budget Committee. "What use could I be?" I asked myself. A budget is a very intricate business. Every figure dovetails; shift one and the rest are thrown out of line. This was a job for an economist. My function on the committee, I suspected, would be more honorary than anything else. I was mistaken, though.

The Budget Committee of the Soviet of the Union (one of the two chambers of the USSR Supreme Soviet) has 38 members—among them 9 Party functionaries, 12 government officials, 7 workers and collective farmers, 2 chairmen of constituent national republics, 2 diplomats, a trade union leader, a teacher and a pensioner. The committee is divided into subcommittees of two or three members each.

I am a member of the Subcommittee on the Russian Federation and Kazakhstan. We make a thorough study of the draft budgets and economic plans for the industry, agriculture, health, education, etc., of these two republics.

This is the procedure followed: Reports are made to the Budget Committees of both chambers—the Soviet of the Union and the Soviet of Nationalities—by the Chairman of the USSR State Planning Commission on the draft economic plan and by the USSR Minister of Finance on the draft budget. We listen, ask questions and make notes. Then representatives of the State Planning Commissions and the Finance Ministers of the Union Republics report to the subcommittee.

After that we get down to the detailed examination of all pertinent material. We check estimates and calculations, see how well the different industries are meeting their current plan figures, and make such amendments as we think necessary.

For example, when we were considering the draft budget for 1961, we decided that the USSR State Planning Commission, the State Committee of Building Construction and the Councils of Ministers of the Union Republics should be instructed to work out procedures to ensure that the production capacities of plants manufacturing building materials and structural elements be enlarged as needed. We also suggested that all surplus equipment be used up at construction sites, that the output of prefabricated ferroconcrete elements be speeded up, and several other such matters.

Then we checked the revenue and expenditure items in the state budget and found it necessary to increase the revenue by 113,211,000 rubles. Where did we get the money from? Simply by increasing the output of consumer goods in especially heavy demand. We assigned specific commodities to each of the republics.

Shortly thereafter we were informed by the Councils of Ministers of the various republics that they had taken required action on our recommendations. The Council of Ministers of the Russian Federation, for example, told us arrangements had been made to increase the output and sales of leather footwear by 500,000 pairs, furniture by 20 million rubles' worth, electric irons by 300,000, meat grinders by 350,000 and cotton cloth by 15 million rubles' worth.

Since we had increased income, we were able to increase expeditures. We went over the requests of the republics for additional funds and allocated the money as follows: an added million rubles to Kazakhstan for road repairs, almost eight million to the Russian Federation for housing renovation, four million rubles to the Ukrainian Republic for city and industrial township improvement. All told, we allocated an additional 88 million rubles.

There are, of course, also requests that we turn down. This year, for instance, Kazakhstan asked us to cut the republic's planned quota for copper production. We rejected the request, although only after a very stormy session. Not all of our meetings are peaceful and serene. We have many difficult problems to solve, and it is not always easy to arrive at an agreed upon solution.

On one occasion I had to fill in for our chairman who was home sick. It happened to be one of the hot sessions. To organize the meeting, I had to call on the heads of several ministries and the Chairman of the State Planning Commission. I guess I didn't do too badly since we managed to get our business done with only the usual amount of argument. ★

IN THE PRESIDENT'S

AN ENDLESS variety of people—of all ages, dispositions and walks of life, each one with a problem of his own—file through this large, pleasant reception room facing the Borovitsky Gateway of the Kremlin.

They come to see Leonid Brezhnev, President of the Presidium of the USSR Supreme Soviet, on important affairs of state, for help with purely personal problems, or for other reasons as many and as varied as the callers.

Some of the problems need close and lengthy study. Others, the more personal ones, can often be resolved on the spot. When the latter is the case, the irritable citizen of a few minutes past, grateful for the quick and courteous assistance, departs with a smile and an apology for his bad manners.

A man well on in years comes up to consultant Igor Sovkov's desk and announces belligerently, "My name is Strumpe. I have come from Kherson Region in the Ukraine to see about my pension."

The consultant hears him out and refers him to a specialist in charge of pension cases. "Kovaleva is the person to help you. You'll find her in Room 12 on the second floor."

Anastasia Kovaleva is an active, energetic young woman who seems to have a real feeling for people. She obviously thinks of her work as more than a job. There is a quality of dedication in her concern that her fellow citizens get all the benefits of old-age security to which Soviet law entitles them.

Anton Strumpe explains that he is 63 and has been working for more than 40 years. He holds a Master of Science degree and has written many studies in his field. He retired when he was eligible and received a pension. His friends gave him a farewell party, and his life took on a slower pace.

Then one day he was informed that his pension had been granted unlawfully. Overzealous officials in the local Social Security Office found that a 30-year-old entry in his work record had not been properly stamped. Strumpe tried hard to convince these officials that the stamp did not really matter since his work book listed every job he had ever held, but he was just wasting his breath. It was the same at the Social Security Ministry of the Ukrainian Republic. People who had known Strumpe for

The President's most pleasant duty is presenting government decorations. Leonid Brezhnev (left) congratulates chess champion Mikhail Botvinnik.

Shmavon Arushanyan, USSR Supreme Soviet Vice President, receives callers for Presidium President Leonid Brezhnev.

He receives foreign envoys. Mexican Ambassador Gabriel Lucio (right) has just presented his credentials.

OFFICE

BY ELENA ROSANOVA AND IGOR TSYGANOV

many years labored to persuade officialdom, but to no avail. For these functionaries the formal aspect of the affair overruled the actual facts. And so Anton Strumpe decided to come to Moscow.

He told this oft-repeated story of his angrily, but with Anastasia Kovaleva listening sympathetically, he gradually calmed down. A glance at his papers was enough to convince her that the elderly scholar had been wronged. She arranged an appointment for him for the following day with Andrei Andreyev, member of the Presidium of the USSR Supreme Soviet, who promised that the matter would be taken care of at once. And shortly thereafter Strumpe's pension was restored.

A great many people come to this office in person but even more write in from all parts of the country. Bagfuls of mail arrive daily. Each letter—whether it concerns a matter of national importance or a personal complaint—is given careful scrutiny and prompt attention. The people who handle this mail are chosen for their breadth of understanding. They have a rare gift—the ability to put themselves into the unknown writer's place, whether he lives in a remote village in the Siberian taiga or the far reaches of the Kazakhstan virgin lands, on the shores of the Arctic Ocean or in some Caucasus Mountain hamlet.

Letters that complain of bureaucratic indifference or neglect of people's needs are the subject of special investigation. The consultants will often visit the writers, regardless of where they live, to speak to them and verify the facts on the spot. None of the letters go unanswered.

Today Shmavon Arushanyan, Vice President of the Presidium of the USSR Supreme Soviet, is receiving visitors. All of Leonid Brezhnev's deputies —each is President of the Presidium of the Supreme Soviet of a constituent republic—take turns receiving callers for a month's period. Problems of special importance go to Brezhnev personally.

Nina Mizyukina's 15-year-old daughter is seriously ill. The doctors say if the girl is to live, her hand will have to be amputated. "Can't anything be done?" the grieving mother has come to ask this high-placed representative of the people. "Perhaps there are some new wonder drugs which could help. Won't you try and find out for me, please?"

Arushanyan, a tall Armenian with graying black hair and kindly eyes, says, "Don't cry. I'll find out whether there are any new drugs or anything else that may help. I promise you that everything humanly possible will be done to help your child. My daughter, too, has been bedridden for many months now with a serious ailment."

More grief, more tears—Zinaida Shtepa is petitioning for her husband's release from prison before his time is up. But it turns out that her husband Nikolai is a habitual criminal and a traitor. During the war he surrendered to the fascists and betrayed Soviet guerrillas and the people who helped them. After the war he became an outright bandit. He was tried and convicted on five separate occasions. Once he beat up a guard, escaped from a detention camp, and burgled a shop before he was caught.

Shmavon Arushanyan listened to the woman, but there was not a trace of sympathy on his face. Then he said, "No, he must serve his full sentence. A man like that does not deserve any leniency. He is a hardened criminal, nothing else. I can understand how you feel, but we must also think of all those who suffered so much because of your husband. He has to take his punishment. The people sentenced him, and I see no reason to shorten his sentence."

The next callers are physician Maria Eidinova and Professor Kuzminsky, who want to see a nationwide system of special schools set up for children with cerebral palsy and related disorders.

Dr. Eidinova says, "I am in charge of the medical consultation center of the Defectology Research Institute of the Academy of Pedagogy. I handle children who are afflicted with this grave condition. We give our little patients what help we can medically, but more needs to be done to help them become active, independent and useful members of the community. We haven't enough specialized schools of the kind necessary to train these youngsters."

Arushanyan says, "A very important matter." He promises to report this to President Brezhnev and to see that action is taken. They thank him and leave.

Other visitors follow them, and still others after them, in a continuous procession. ★

Believing contacts the surest way to better understanding Brezhnev spends much time visiting other countries.

EVENTS AND PEOPLE

NEW AMBASSADOR TO THE USA

WITH THE EXPIRATION OF Mikhail A. Menshikov's term as Soviet Ambassador to the USA, the Presidium of the USSR Supreme Soviet has appointed 43-year-old Anatoly Fydorovich Dobrynin to this post.

Dobrynin was graduated from a technical college before the Second World War and during the war was an engineer at an aircraft plant. In 1944 he entered the diplomatic service. From 1949 to 1952 he was assistant to the Deputy Minister of Foreign Affairs, and beginning with 1952 held the post of Counselor and then Minister Counselor at the Soviet Embassy in Washington, D. C.

After a stint with the USSR Ministry of Foreign Affairs from 1955 to 1957, Dobrynin was sent to the United Nations where from 1957 to 1960 he held the post of Under Secretary for Political and Security Council Affairs. Beginning with 1960, and right up to the time he was appointed Soviet Ambassador to the USA, Dobrynin headed the American Department of the USSR Ministry of Foreign Affairs.

Dobrynin took part in several major international conferences, including the UN jubilee session devoted to the organization's tenth anniversary (San Francisco—1955), the first conference of the heads of the Great Powers (Geneva—1955) and the Suez Conference (London—1956). He also attended the meeting between Nikita S. Khrushchev, Chairman of the USSR Council of Ministers, and John F. Kennedy, President of the United States, in Vienna in 1961.

The new Ambassador, who holds a Master of Science degree in history, combines his diplomatic work with extensive research activities and is considered one of the outstanding specialists in the field of Russian-American relations. For a number of years he gave a course of lectures on Soviet-American relations at the State Institute of International Relations in Moscow.

Anatoly Dobrynin's wife Irina had college training as an engineer. She accompanied her husband to the United States when he worked at the Soviet Embassy in Washington and at the United Nations in New York. She plays the piano, knows English and is interested in American literature and art. The Dobrynins have a 14-year-old daughter, Yelena, who is a seventh-grade pupil.

Dobrynin's hobbies are skiing and chess. He is also an avid amateur movie photographer.

SEA GULLS IN THE DESERT

THE TURKMEN saying has it, "Water in the desert is more precious than diamonds." The Kara-Kum (Black Sand), one of the world's great deserts, spreads over nine-tenths of Turkmenia, a union republic lying to the east of the Caspian Sea. The Kara-Kum is potentially fertile land; it can become a blossoming oasis.

Abdyk Annaliyev, Chairman of the Turkmenian Council of Ministers, described his republic's grand project for irrigating the desert in an interview with a correspondent of the Novosti Press Agency.

"For our republic," he said, "the current seven-year plan can be called the water plan. Our largest construction project is the Kara-Kum Canal. It begins near the city of Chardzhou on the bank of the deep Amu-Darya River, crosses the desert and ends near Ashkhabad, our capital—a distance of 498 miles. Never before has man tried to channel water so far. The canal will be navigable for its whole length and will irrigate 321,000 acres, doubling the output of Turkmenia's fine-fiber cotton.

"The first and second stages of the canal are finished. The waters of the Amu-Darya already reach 335 miles into the desert, bringing life to this sandy waste. White-winged sea gulls, never before seen here, now glide over the blue, glassy surface of the canal.

"The third stage, 160-odd miles, is nearing completion. The battle against the desert is presently being waged at the approaches to Ashkhabad. By the spring of 1962 the Amu-Darya water will have reached the capital."

EYE TO OUTER SPACE

A POWERFUL cross-shaped radiotelescope, installed recently at the Lebedev Institute of Physics, near Moscow, gives astronomers a new and far-seeing eye through which to observe outer space.

The 37 open-work supports, as tall as a seven-story house, constitute one arm of the cross. The other arm is made up of an equally long line of supports. Each support has a parabolic antenna with a 130-foot span. Electric motors at the top of each support turn the antennae in the direction given by a central control board.

Viktor Vitkevich, who designed the radiotelescope, says, "With this cross-shaped telescope we will be able to push out the boundaries of the universe we presently know, and penetrate much farther than we have into outer space. We shall come closer to solving the problem of the origin and evolution of galaxies. Data on the properties of interstellar and intergalactic matter, which today seem academic and abstract, will before very long have practical application in astronavigation in helping establish contact with intelligent beings on other planets."

GEORGIAN GIRL WINS TRY AT CHESS TITLE

FAVORITES to challenge Yelizaveta Bykova, the reigning queen of world chess, at the Vrnjacka-Banja, Yugoslavia, elimination tournament were the Soviet champion Valentina Borisenka, the Yugoslav master Nedelkovic, and C. Chaude de Silan. But Nonna Gaprindashvili of Georgia set the chess world on its head. She was the only one to go through the tournament undefeated.

Nonna is a 20-year-old student at the Tbilisi Institute of Foreign Languages. Nonna isn't the only one in her family who likes chess; it's also the favorite pastime of her mother, father and five brothers. Learning the fundamentals of the game at five, she soon won the family championship. At 12 she joined the chess club of the Tbilisi House of Young Pioneers and three years later took the women's title of the Georgian Republic.

In 1959 she won two medals—a silver one for graduating from secondary school with honors, and a bronze for placing third in the national chess competition.

Her playing matured from tournament to tournament. From spectacular attacks on the king and a tactical approach, she turned to over-all strategy. First place in the international tournament at Tbilisi won her a trip to the challengers' tournament in Yugoslavia.

Nonna has a fine memory, a keenly analytic mind and extraordinary stamina. Add to this her canny playing style and you have a worthy contender for the women's world title.

SOLID GASOLINE AND GAS

TELEGRAMS from all parts of the country are being received by the Institute of Mineral Fuels of the USSR Academy of Sciences addressed to the laboratory headed by Professor Boris Losev. They all read something like this: "Your briquettes indispensable, many thanks." The briquettes they refer to are round white or yellow chunks of solidified gasoline and gas.

In the Far North or in Antarctica, where ordinary fuel freezes because of the low temperatures, and in high mountain regions, where it is difficult to kindle a fire because the air is so thin, these solid fuels are a blessing to explorers, tourists and mountaineers.

The method Professor Losev developed for converting liquid and gas into solids makes fuel transportation simpler and cheaper. Gas and liquid fuels are usually carried in tank cars, cylinders or through pipe lines. The solid gasoline and gas can now be carried in trucks, ordinary railroad cars and ships.

A simple installation that operates on the principle of the ordinary meat grinder returns the solid gasoline to its liquid state.

YIDDISH LANGUAGE MAGAZINE

SOVETISH HEIMLAND (Soviet Homeland), the new bimonthly published in Yiddish, has been very warmly received. The first two issues were sold out in all the Soviet republics a few days after they appeared.

The large-size magazine, published by the Soviet Writers Union, has 130 pages and is issued in 25,000 copies. The price is 50 kopecks.

The editor-in-chief is the poet Aron Vergelis, and the board includes such other prominent Jewish writers as Niken Oislander, Abram Gontar, Girsh Dobin, Moisei Teif, Boris Miller, Ikhiel Falikman, Rebecca Rubin and Sofia Frey. On the list of present and future contributors are Jewish writers from all the republics and regions.

The material is both literary and topical, and the subjects treated are very diverse. The second issue carried the beginning of a hitherto unpublished novel by Sholom Aleichem, *A Mistake*, which the popular Jewish author wrote in the United States. The manuscript was provided by the State Archives of Literature and Art in Moscow.

The first two issues also carried a scholarly article on language in literature by the eminent Jewish philologist Ilya Flakovich.

TELEVISION TELEPHONE

WANT TO MAKE a face-to-face long-distance call? You can, at the Moscow videotelephone office. To the layman it looks like a TV studio. At the operator's signal spotlights go on, and the face of your friend in Leningrad smiles back at you from the screen.

The charge for a TV conversation is not much more than the cost of an ordinary long-distance call. The initial Moscow-Leningrad-Kiev line will soon be extented to Sverdlovsk, Kharkov, Simferopol, Rostov and other cities of the Soviet Union.

OLDEST RUSSIAN ACTRESS

THE FAMOUS Maly Theater actress Alexandra Yablochkina celebrated her ninety-fifth birthday a short while ago. She gave her first performance 90 years ago in an amateur show.

Yablochkina won the acclaim of Moscow theatergoers at the end of the past century for her portrayal of Liza in *Wit Works Woe*, a comedy by the Russian dramatist and poet Alexander Griboyedov. Today, despite her age, she still gives memorably sensitive performances as Becky Sharpe in Thackeray's *Vanity Fair;* teacher Goritsvet in *The Wings*, by the Ukrainian playwright Alexander Korneichuk; and a dozen other parts from the classical and modern repertory.

Asked when she intends to retire from the theater, Yablochkina likes to answer with this line spoken by one of the characters she has portrayed, "I am an actress . . . I want more than anything else to be on the stage . . . How can I live without the theater?"

She takes time from her very busy life for active participation in the Russian Theatrical Society. She has been chairman of the organization since 1915.

Yablochkina was awarded the honored title People's Artist of the USSR by the Soviet Government. The title is a fitting description of her many years of creative work.

WORLD TRADE UNION CONGRESS

FOR TWELVE DAYS the new Palace of Congresses in Moscow was the scene of the Fifth World Trade Union Congress. It was convened by the World Federation of Trade Unions, largest international organization of working people, with a membership of 107 million.

Many organizations not officially affiliated with the WFTU sent representatives. At the congress were 958 delegates and observers from 97 countries of five continents, representing some 140 million organized workers. The Moscow congress was the most representative convocation in the history of the world trade union movement.

Discussion focused on current problems and the growing movement for unity among working people. The 124 speakers who took part in the ten-day meeting presented a program of action for peace and general disarmament, the economic and social demands of working people, and the complete abolition of colonialism.

The program was so popular that while the congress was in session several formerly unaffiliated groups decided to join this largest of international working-class organizations.

YAROSLAVL AND ITS PEOPLE

BY ANDREI VERBIN

YAROSLAVL, one of the oldest cities in the Soviet Union, dates back to a pagan settlement called Bear's Nook that once stood on the steep shore of the Volga where the small Kotorosl River flows into it. Some 950 years ago the settlement was conquered by Prince Yaroslav of Kiev and renamed in his honor. When the prince tried to convert the pagans to Christianity, they set a bear on him. That is the reason, it is believed, that the city's emblem pictures a bear with a poleax.

Yaroslavl people take pride in their milennium of tradition, but they hold their present achievements of more consequence—the many new industries with their diversified contributions to the national welfare and the new residential districts built for the people of this old city who are making its modern-day history.

Yaroslavl seems to be burgeoning in all directions. You feel this when you visit people at work or at home; see them at a concert or on a dance floor; listen as they work out a complex technical problem at a factory conference, discuss the construction of a new oil refinery or debate international problems.

Last summer the Yaroslavl Philharmonic Society gave an outdoor symphony concert in one of the city squares. "We figured on a small attendance and hoped for a moderately good one," Vasili Timonin, the society's director, confessed to us. "It was an all-classical program. Imagine our delighted surprise when 4,000 people showed up and sat enthralled for the two-hour concert."

Interest in serious music has grown noticeably in recent years. When the Philharmonic Society, in response to popular request, announced that tickets for a concert series would be on sale at the factories, the entire lot was bought up in a week, and additional concerts had to be scheduled for those who had missed out on the first batch of tickets.

Timonin added, "Our people are more than just music listeners; they want to know the what and why of the music they're listening to. Some time ago we scheduled a music lovers' conference after a concert. The whole audience of 700 stayed, and for an hour and a half we discussed music and musicians. Among the speakers were a good many industrial workers, engineers and students."

Listening to Timonin, one would think that Yaroslavl is indeed a music center. But go to a major soccer game, and you may just as understandably conclude that the city has become an athletic center—Yaroslavl has four sports societies and a very large army of soccer fans. Or listen to a Yaroslavl educator's figures, and you'll be persuaded the city's major activity is in the field of education. Every second worker at the Krasny Perekop Textile Mill, he'll tell you,

Young citizens of Yaroslavl, one of the oldest Russian cities, dating back almost 1,000 years.

Session of the 15-member Executive Committee of the City Soviet. A discussion on schools is under way.

Boris Gontov, driver for a local steel mill, is one of the 450 deputies to the Yaroslavl City Soviet.

Yaroslavl is very music and art conscious and vocal about its likes and dislikes. A discussion on art.

is taking courses. The mill's evening school for young workers has an enrollment of 800, and the picture is pretty much the same at most of the city's other industrial plants.

Should you decide, after all this, that Yaroslavl, with its multidirectional development, is unique, its inhabitants will comment, "Why? It's just an ordinary Russian city."

The Novo-Yaroslavsky Oil Refinery, one of the largest of the seven-year-plan construction projects, is hidden beyond a tract of woodland a considerable distance from the city limits. There is a bus service connecting the site with downtown Yaroslavl, but we rode out there in a dump truck, knowing that we'd learn something about the project from the driver. He was a young Yaroslavl resident and had been on the job for about a year.

He told us the refinery had just shipped out its first trainload of gasoline. We asked what had happened to the construction workers.

He looked a little surprised. "The construction workers? Oh, the refinery isn't finished yet. There's enough construction work here for several years yet. They've just moved on to another section of the project."

We met them as we drove on and saw that there was still plenty of building to be done. "How about the operators to run all the complicated equipment?" we asked. "Where did they come from?"

He told us that had been carefully planned even before the ground was broken. Most of the operating personnel come from a technical school set up in the builders' community. The students are young people between the ages of 18 and 25 who have had ten years of schooling—the equivalent of a high school diploma. For ex-servicemen —there are many at the school because of the reduction in the armed forces in 1960—the age limit has been raised to 35. The course of study is ten months to two years, depending on the specialty chosen. The students get a monthly maintenance scholarship of 36 rubles, and those with marks of "Excellent" get a 25 per cent increment.

The building workers who take courses offered free by the management, acquire operating skills and stay on after the construction work is done constitute a second source of manpower. And finally, workers are invited from other refineries, mostly from the Urals and Siberia.

You often hear Yaroslavl workers say, "My plant gave me an apartment," or "My plant got me accommodations at a summer resort." These are usual occurrences, and the words "my plant," in connection with one thing or another, are quite natural for Soviet workers.

When he says "my plant," the Soviet citizen implies that the plant he works in belongs to the entire nation and not to an individual owner. The workers are the collective masters of their plant. The management is often composed of former benchworkers who, by reason of knowledge, experience and organizational ability, have been entrusted with the job of running the plant.

In every Yaroslavl plant one has the feeling that the workers are at the helm. They take an active part in management through workers' meetings and production conferences. In their trade union organizations they decide questions of working and living conditions. Through these and other channels they express their opinions freely. When their criticism is justified or their suggestions receive public support, the necessary changes are made as soon as possible. Here are two recent examples:

At a general meeting workers in the Lyubimsky Timber Enterprises were sharply critical of Chief Engineer Kasholkin for not paying sufficient attention to safety measures. As a result, the trade union committee proposed that he be dismissed from his post. The Economic Council approved, issued the order, and Kasholkin was dismissed.

Zavodskaya Pravda, newspaper of the Yaroslavl Tire Plant, suggested a plan that would save the factory seven million rubles, which could be used to build several more apartment houses than were scheduled. This received general support, and workers have already moved into the 11 new houses—eight apartments in each—on Sverdlovsk Street that this saving paid for.

Yaroslavl workers run their city, just as they do their industrial enterprises. The Vtorchermet Iron and Steel Mill is an example. Early last year the workers at the mill held a pre-election meeting to nominate one of their number for deputy to the City Soviet. The candidate had to be a man of the highest probity who would work energetically to carry out the mandate of the people who elected him.

At first steelworker Nikolai Seleznev was proposed. But there was some feeling that although in other respects Seleznev met the requirements admirably, he was too much inclined to take things as they came.

One of the older men then proposed truck driver Boris Gontov, who had worked at the mill for ten years and whom everyone knew as an active trade union member. He was seconded by people all over the hall.

After the discussion the vote was taken and he won by an overwhelming majority. It even seemed surprising that they had not thought of Gontov earlier.

An election campaign manager was then chosen to represent the candidate at voters' meetings.

On March 5 he was elected deputy to the City Soviet. He considers that a mandate to protect the rights and promote the interests of those who elected him. Gontov feels that for a deputy to be most effective he must be in close touch with his constituents, working right alongside a majority of them. He firmly believes that the deputy's job is to find out what the people need and then, with the help and support of the Communist Party, the trade unions and other public organizations, to set about meeting those needs.

He cites the following: "The tenants of three new apartment buildings came to me and complained that it was taking an impossibly long time for the houses to be equipped with gas and asked that I do something about it. I checked on the delay and found that the factory to which the houses belonged hadn't supplied the necessary piping. So I went to see the factory director. 'We'll try and do something about it,' he promised.

"But I thought the director had too many things to worry about and that it would be good to have somebody remind him. I went to the factory trade union committee. At the time, a collective agreement with management was being drawn up and I made sure to see that the item of the gas was included. Now we had a double check—through the trade union as well as through the City Soviet."

Gontov's major responsibility as a deputy is to supervise housing construction, maintenance and repair, and to see to it that apartments are distributed equitably. Like all other deputies, he has a specific field of municipal activity besides his general responsibilities.

These more general duties include such matters as administering the budget, initiating a new local bus line or other facility—for example, the bridge recently installed across the Kotorosl River—or voting funds for the construction of a large bridge over the Volga.

Who decides on these and other important municipal matters? The people, the voters, through the mandate they give to Gontov and the other deputies at election time. The voters judge the work of their representatives by the way their mandate is carried out. The deputy reports to his constituents at regular intervals, and if the voters feel that their representative has not justified their confidence, they are free to recall him.

The tie between voter and deputy is maintained throughout the latter's term of office. He is readily available to hear his constituents' proposals or complaints. Since he is not a professional politician but continues to work at his regular job, he always knows firsthand the problems that affect his constituents. They can write or visit the Executive Committee of the City Soviet to discuss any problem; the chairman of the Executive Committee, his assistants and secretary see about 120 people a week.

Such are the principles of the Soviet's work—on behalf of the people, in accordance with the mandate of the people, for the good of the people, and, finally, with the help of the people.

Pioneer Palace show. They'll probably be performers in the next act.

The five-year-old Tikhomirov triplets—a natural for a photographer.

Two dozen newspapers are published in this city with 450,000 people.

The Volkov Drama Theater of Yaroslavl is the oldest in the country.

BY YURI VERCHENKO
DEPARTMENT CHIEF, CENTRAL COMMITTEE
OF THE YOUNG COMMUNIST LEAGUE

THE KOM

1. Order of the Red Banner, conferred on the Komsomol in 1928 for courage in action at the front in the Civil War. 2. Order of the Red Banner of Labor, conferred in 1931 for work in rebuilding the country after the Civil War. 3. Order of Lenin, conferred on the youth organization in 1945 for valor in battle during the Second World War. 4. A second Order of Lenin, conferred in 1948 for the Komsomol's work to educate the youth and develop the economy. 5. A third Order of Lenin, awarded in 1956 for the pioneering efforts of the youth in plowing up the virgin lands.

THERE ARE MORE THAN 19 MILLION Komsomol members—energetic, cheerful, purposeful young men and women who love life and everything new and progressive that will enrich it. They set a high value on all things beautiful and loathe everything ugly. They all proudly wear a small red badge on their coat lapels. It bears a bas-relief of Lenin above the letters BΛKCM.

What do the letters mean? Who are these young men and women? For what reasons did these millions of young people of different ways of life, national traditions, temperaments and inclinations, professions and trades join the largest youth organization in the country?

United in the BΛKCM—the letters stand for Vsesoyuznyi Leninsky Kommunistichesky Soyuz Molodezhi (Leninist Young Communist League of the Soviet Union), Komsomol, for short—are the best of the country's present generation of young men and women. Their ages range from 15 to 28. The problems which their organization copes with are large in scope and infinitely varied in character—major economic, educational, cultural and recreational matters as they affect the lives of young people. It is this wide scope and variety of Komsomol activity that accounts for its membership of factory and farm workers, college students and teachers, scientists and artists, and people in public life. They come from all vocations and all the country's many nationalities.

The Komsomol helps the young scientist with his technical projects and the factory worker to improve his trade skills for a better job. It defends the interests of young workers when management acts arbitrarily or in violation of the law. It takes action to better the living conditions of young families.

Through a variety of ways and means, the Komsomol educates young people. It sets up local clubs and cafés, gyms and dance halls where

ISOMOL

young men and women, whether they are members are not, spend their free time discussing, reading, playing chess, dancing—to sum it up, having a good time doing what they like best.

The Komsomol calls itself a Leninist youth organization because its members look for example to Vladimir Lenin—his devotion to the people, the ethical principles he lived by, his innate modesty—all the characteristics of this great man which have grown into legend.

The Komsomol describes itself as a communist youth organization because its goal is to help build a society that will live by the communist principle: "From each according to his abilities, to each according to his needs," a society where all the material and spiritual wants of man will be met. The Young Communist League and the Communist Party both work toward the same goal.

At the very dawn of the revolutionary movement in Russia, their rights abused and their human dignity violated, young people moved spontaneously to struggle against the hateful czarist regime that suppressed everything new and forward-looking. The only political party that could offer them a program that embodied their ideas and furthered their aspirations was Lenin's party.

"Is it not natural," Lenin wrote at the time, "that our revolutionary Party is composed predominantly of young people? We are a Party of the future, and the future belongs to youth. We are a Party of innovators, and young people are always eager to follow innovators. We are a Party in selfless struggle against old refuse, and youth is always the first to take part in a selfless struggle."

During the grim days of czarist rule the Leninist Party proved with deeds, not with slogans and promises, that it was always ready to defend the interests of young people.

Here is one of many instances we could cite. At the Kartman Factory in St. Petersburg workers in their teens, many of them from the provinces, came out in protest against the unbearably hard work, the beatings and the starvation. The management decided to fire them. Without money, their families far off, these youngsters would have been destitute.

Only the Communists came to their defense; no one else bothered. The communist newspaper *Pravda* published an exposé of the arbitrary actions of the company, and the Communist deputy in the State Duma raised the question on the floor. The Communists also helped the young workers with money.

Immediately after the October Socialist Revolution Lenin's Party began to realize in fact all of the long-cherished hopes of youth. Young people were granted political rights. A six-hour day with full pay was declared for workers in their teens and they were forbidden by law to work on night shifts—this despite the country's urgent need for labor. The doors of all educational establishments were thrown wide open to the children of workers and farmers.

The young people, as would be expected, were grateful for these steps taken by the Communists in their behalf and the most responsible and most socially minded of them joined the Komsomol.

The entire history of the Komsomol bears witness to the self-sacrificing struggle waged by millions of young men and women to achieve the goals of communism. It was a hard and a stubborn struggle that had its successes and its mistakes. But it was always an open and honest struggle to achieve communist understanding and maturity. Some Komsomols, in the first years of the Revolution, demanded that personal life, love and such other human needs and emotions be rejected. To explain that one must understand their impassioned desire to give themselves completely to the

construction ot a new society. Young people excitedly debated whether or not ties should be worn, or lipstick. These discussions are now recollected with a smile, but one must pay homage to the bright ideals that sparked them.

Young people are as enthusiastic and direct as they are uncompromising, and one can forgive these fervent advocates of the "ascetic" way of life their mistakes, for they were ready, in all sincerity, to sacrifice not only the happy moments of life but life itself, if it would do away with the old and rotten ways of living any sooner.

In the hard days of the Civil War one often found this sign tacked on to the locked doors of Komsomol committee offices, "Office closed. Everyone at the front."

The first Komsomols tell about the youth meetings. called to decide who was to go to the front. No sooner had the speaker finished than voices were raised in a cheer from all corners of the hall. "We'll all volunteer for the front. We'll all defend the October Revolution." The meetings decided that for a Komsomol to have to be persuaded that his place was at the front was shameful. It was where everyone with courage and communist conviction belonged.

There were many Komsomols who did not come back from the battlefields. They died for their country's future, for the right to happiness, for the right of the generations that came after them to love, laugh, wear ties, use lipstick, all the things they had deprived themselves of.

In token of the people's profound gratitude to the youth who had fought to defend the Revolution, the Soviet Government honored the Komsomol with the Order of the Red Banner, the first of five orders it has been awarded.

"I Underestimated the Human Material"

Back in czarist days young people dreamed of a time when they would be free to build their own future and of a society that would give to those who produced the material values the fruits of their labor.

The sacrifices of young people in the Revolution and the Civil War made it possible to realize the dream. The Komsomols got down to the gigantic task of rebuilding ruined factories, flooded mines, farms laid waste, to the construction of the material foundations for a new society.

With their own hands they built scores of great industrial plants and erected new towns in areas that were previously desolate. This is what Morgan, an American consultant engineer, wrote about the Komsomols who worked on the construction of the Moscow subway. "My calculations on the structure of the soil," he said, "were right. What I underestimated was the human material, I misjudged the people. I want to underscore here the daring and energy of the Komsomol youth."

Once again the people paid tribute to the self-abnegation of the Komsomol with a second award, the Order of the Red Banner of Labor.

At the same time that they worked at economic reconstruction, the Komsomols were building the country culturally. They set up clubs and libraries in towns and villages where millions sat down to pore over textbooks.

In 1941 the peaceful work of our young men and women was interrupted by the treacherous attack of Nazi Germany against the Soviet Union. The Great Patriotic War began. In those years, so trying for people the world over, the Komsomols again distinguished themselves by feats of valor. A mere listing of the young heroes would need many volumes.

On February 23, 1943, Private Alexander Matrosov blocked the embrasure of an enemy pillbox with his body. He was killed, but he saved the lives of his comrades and ensured the success of the offensive. The award Hero of the Soviet Union was conferred on Alexander Matrosov posthumously. The unit commander wrote this citation on his Komsomol membership card: "Blocked with his body an enemy fire emplacement and made it ineffective —an act of great heroism." During the war years more than 200 other Komsomols repeated the same valorous action.

For the mass heroism of young people during the war years, the Komsomol was awarded a third order, the Order of Lenin.

After the victory over Nazi Germany the Komsomol turned to the work of reconstruction. There was much to reconstruct. The Nazis had blown up and burnt 32,000 factories, ruined 1,710 towns and 70,000 villages. The Komsomols undertook to rebuild 15 of the oldest Russian towns. About 5 million young workers volunteered for work in the country's industry.

On October 29, 1948, the thirtieth anniversary of its founding, the Komsomol was awarded a fourth order, the Order of Lenin, for its efforts in rebuilding the country's economy and its work in educating the youth.

More recently, the Komsomol undertook the task of developing the virgin and long-fallow lands. More than a million young men and women sent applications to Komsomol committees volunteering to work the virgin lands. In two years hundreds of thousands of Komsomols left their native cities and villages for these far-off regions. It was with their stalwart help that 100 million acres of new land were broken to the plow.

The first settlers braved the cruel frosts and blizzards of this bare country. They started their battle with nature from scratch, armed only with strength and courage. Now golden fields of wheat stretch as far as the eye can see. The great expanses of the virgin lands are dotted with cottages, schools, clubs. All of this is the work of the hardy pioneers who brought these once desolate and barren steppes to life.

For the courage and sacrifice of youth in this struggle with nature to give the people a life of plenty the Komsomol was awarded its fifth order, the Order of Lenin.

This is the history, in brief, of the Young Communist League of the Soviet Union, a history still being written by millions of young people—builders of the Bratsk Hydroelectric Station, corn growers in the Ukraine, sailors on the atomic icebreaker *Lenin*, and the first cosmonauts. It is a magnificent history, an epic of youth's great creative effort.

An Ideal Shared by Millions

There is a tradition here and an ideal shared by millions of Soviet young people, carried, as one does a baton in a relay race, from one Komsomol generation to the next. Listen to 16-year-old Volodya Zheirikhin, a Komsomol member. "It's hard for me to say what sort of person I am. It's always hard to talk about oneself. But I see how people around me have changed. They have become finer, better and nobler. This new type of man is a man of unusual beauty of spirit, a man who thinks, first of all, of others; the happiness of other people is more important for him than his own. We still have unpleasant things, difficulties, obstacles, personal misfortunes, unrequited love. Yet the new man is never unhappy, because unhappiness is the companion of loneliness."

What this Moscow schoolboy says goes far to explain the strength and vitality of the Komsomol.

The ideal of the Komsomol is a society in which every individual enjoys all the material and cultural benefits the society makes available, a society in which each individual strives, so far as his abilities and talents permit, to make his greatest contribution to the general welfare. This is a society that does not restrict but, on the contrary, helps the individual to develop his character and talents.

The very essence of Komsomol principles calls for maximum individual growth. The organization, in principle and fact, fosters the development of the personal tastes and qualities, individual interests and gifts in young people that go to make the creative man who, with millions of other men, is building a better world.

The Organization

The Komsomol is a non-Party, voluntary mass organization with its own rules and its own central and local organs elected by the membership.

Its funds come from modest membership dues. They are used to maintain the Komsomol press; for administration; for various young worker, farmer and student activities; and for cultural and sports facilities. Membership does not give a Komsomol any privileges other young people do not have. The fact that 19 million young men and women have voluntarily and without pressure or self-seeking motive joined the Komsomol attests to the magnetic attraction of its ideals and to the vitality of its principles.

One of the most important of these principles, so stated in the Komsomol rules, is the active and democratic participation of every member. The decision on all matters is made by the membership directly or by their elected representatives. All the leading bodies are elected, are in duty bound to report to the membership and can be removed if the membership so decides. Every member has the right to express his opinion freely and to make proposals with regard to the activities of the organization as a whole or any of its members.

Komsomol activities are not limited to Komsomol affairs. The membership has wide opportunities for active participation in the country's economic, political and cultural life. A Komsomol group may, and frequently does, express its judgment on one or another aspect, or on the general operation, of a plant, a collective farm, an institution. It may protest against negligence, mismanagement or manifestations of bureaucracy, or propose measures to improve industrial or governmental operation. The Komsomol has great influence and prestige, and its recommendations and proposals are always listened to and most often adopted.

The Komsomol occupies an important place in Soviet life. It has the confidence and trust of the people. More than 400,000 deputies to the local and national Soviets, almost a quarter of the total elected to office, are young men and women. Komsomol members also serve as representatives in trade unions, on economic management bodies and on government commissions.

The 19 million Komsomol members are the country's future. ★

KOMSOMOLSKAYA PRAVDA

KOMSOMOLSKAYA PRAVDA, by every reckoning, is a youth newspaper. Its staff is young, mostly newspapermen who learned their craft on other Young Communist League publications. Its readers are young, for the most part, the core of its very considerable circulation being 19 million Komsomol members—industrial and office workers, collective farmers, college and high school students. But there are also plenty of venerable artists and engineers, ship captains and surgeons who are regular readers. The paper is young in spirit and appeals to those who are like-minded. It is an interesting and provocative paper, one that makes its readers think their way through problems.

In *Komsomolskaya Pravda* you find articles and news items on everything —from ethics to economics, labor to leisure, daring exploits to daydreams. Readers write in to the paper on these and practically every other topic. The editorial office arranges a regular "interesting letters discussion hour." A "Readers Forum" and a "Public Opinion Institute," both regular departments, give young people the opportunity to discuss in public any question that agitates them.

Problems of ethics interest young people especially. Tens of thousands of them throughout the country aired their points of view in a discussion of contemporary spiritual values arranged by the paper. Articles and letters on the subject were discussed at factories, farms and school meetings, many of them attended by writers from the newspaper's staff.

Komsomolskaya Pravda is one of the most influential papers in the country, an influence it has earned by a consistent policy of constructive criticism. Its criticism is almost always well taken, and shortly after a critical article or item appears, the paper will have a report from the individual or the organization concerned telling what has been done to rectify the situation. These replies are published in a column "Reactions to Our Comments."

The paper carries articles by the country's leading political and cultural figures on work in progress in their various fields of endeavor, the problems at hand, and the contributions young people can make in their solution.

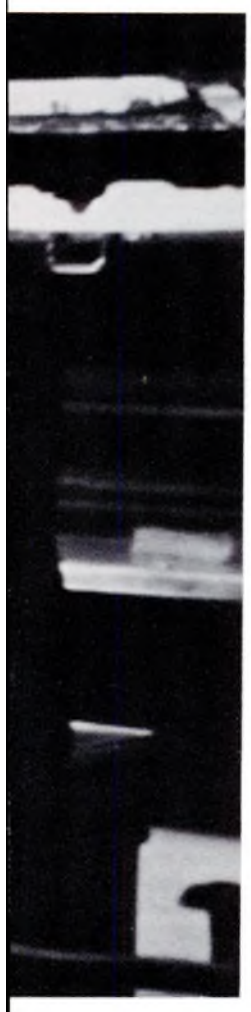
Komsomolskaya Pravda gives a good deal of space to international affairs. About a quarter of the paper is given over to foreign news. It publishes items of news and comment by its own correspondents and agency reports from every country in the world, with particular attention to the youth movement.

Photos for a story about young Siberian power workers. Komsomolskaya Pravda *is one of the most popular dailies among the young people.*

In 1943 the paper commended the rationalizer Nikolai Chikirev, a lathe operator. Today he is an engineer, head of a Moscow factory shop.

Komsomolskaya Pravda *correspondents cover the domestic and international scene to bring the news to the paper's 19 million readers.*

Letters from readers—a paper's most sensitive indicator. Komsomolskaya Pravda *received 200,544 of them in 1960 alone.*



The Working Youth Department is the paper's busiest one, with an endless flow of calls from factories and construction sites.

KOMSOMOL COMMITTEE MEMBER

BY ANDREI SAKHAROV

WHEN he's not studying, you'll almost always find this Komsomol Committee member with other students. He's a friendly, sociable person, easy to be with. When he's calm, he talks Russian with a typical Ukrainian accent; when he gets excited, he switches to his native Ukrainian, and it's hard for any Russian to follow him. Times like that his light eyes grow dark and a rebellious lock of his hair falls over his forehead. "As good as a barometer," his friends say. "Get ready for the storm."

He is 22, a history major at Kiev State University. This is his second term of office on the University Komsomol Committee.

Long before I met him I had heard him spoken of in all sorts of places.

At the District Komsomol Committee: "Lyonya Tupichenko? A nice fellow but quick-tempered. He'll bite your head off if you say a cross word about his friends. We have some hot arguments with him."

In the university corridors: "Looking for Lyonya Tupichenko? He was here a while ago. Try the student club. The dramatic group is rehearsing there today."

In the student newspaper office: "If you come across Lyonya Tupichenko, tell him he's due at the print shop to okay the galleys of his article."

At the construction site of a student dormitory: "Comrade Tupichenko, can you send some more lads over to give us a hand? The more help we get, the sooner you'll be moving in."

At the Kiev Arsenal Plant: "Thanks for the lecture, Comrade Tupichenko. The workers enjoyed it. We hope you'll come again soon."

The many and diverse interests of Leonid Tupichenko reflect the activities of the Komsomol organization on the campus. Each member makes his contribution to these activities in one way or another, depending upon where his interests lie. The university Komsomol Committee of 15 directs student activity. The Committee Secretary and Leonid represent the student body in the University Council, the university's governing body, just as their friends, members of faculty Komsomol committees, are members of faculty councils.

Prep School for Factory Workers

His lectures for the day over, Leonid checks through his activity schedule. He's a well-organized person—he has to be with all the things he's involved in. One is the school run by the university Komsomol Committee for young workers in the Kiev factories who are preparing for college entrance exams. The courses are taught by students majoring in physics, chemistry, history and philology.

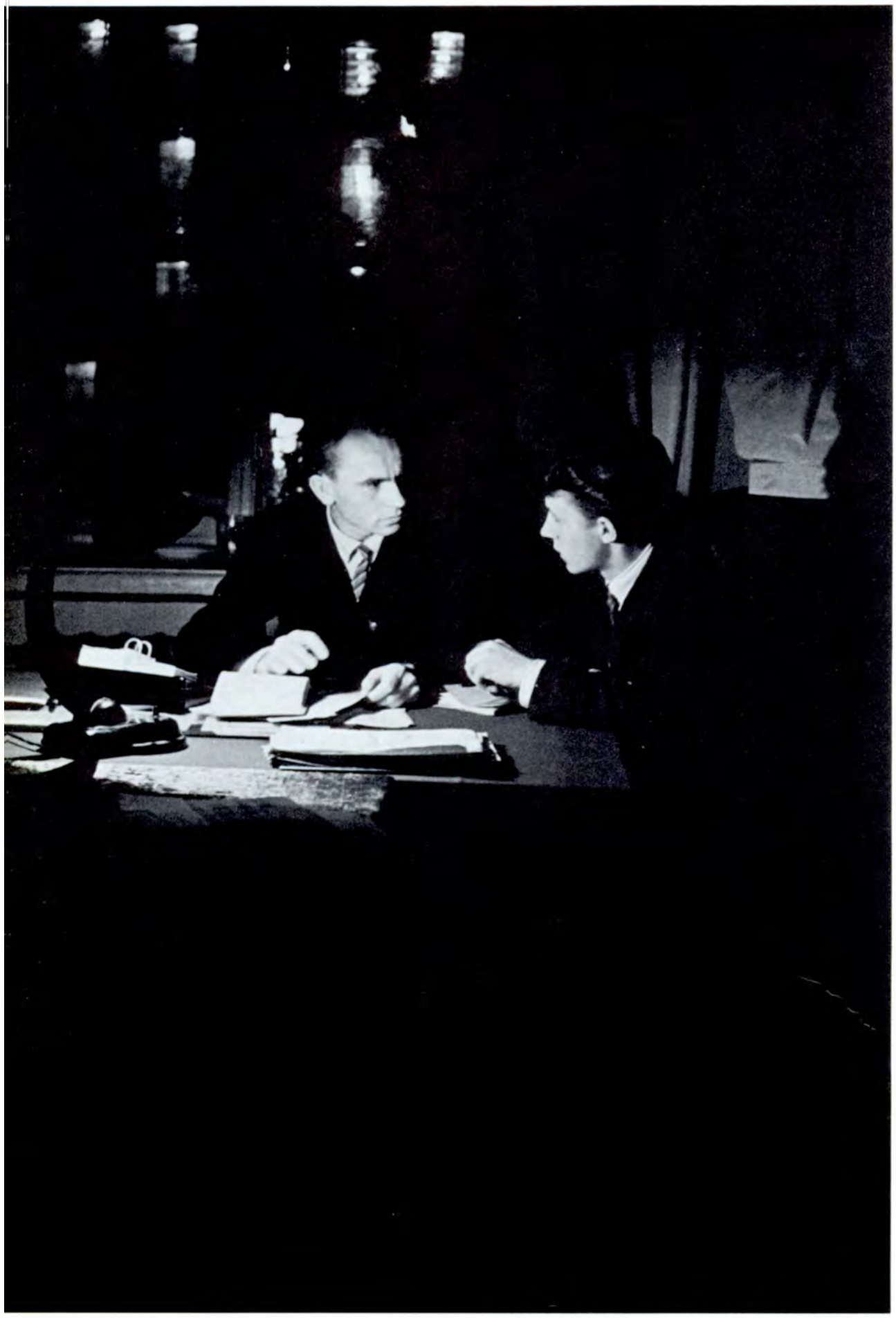
Leonid explains how the school got started. "Someone suggested it at a Komsomol membership meeting. Everybody thought it was a wonderful idea. Of course, nobody thought he knew enough to teach, but with the help of our pro-

Leonid Tupichenko, a history major, is an active member of the Komsomol Committee at Kiev State University.

Like all Komsomol members, Leonid puts in a great deal of effort to meet the exacting standards of his professors.

About 4,000 of Kiev University's 4,300 students belong to the Komsomol, which is involved in all aspects of student life.

Leonid does a regular stint in the print shop of the student paper, which discusses questions of study and campus activity.



After the club meeting Leonid and Ivan Nadolny, secretary of the university Komsomol Committee, remain to discuss how best to carry out the members' decision.

fessors we worked up study outlines and reading lists and sent announcements around. The response was enthusiastic. The workers had none of the doubts about our teaching abilities that we did—that helped a lot. So did their self-discipline. Last year 110 of the workers who took our preparatory courses passed their college entrance exams. We set up two more schools of the same kind this year—one at the Tochelektropribor Factory and the other at the Arsenal Plant."

These schools are a larger extension of the lectures university Komsomol members have been giving at Kiev factories and mills for so many years now that it has grown into a tradition. The talks range from the poetry of Taras Shevchenko to the quantum theory. The guiding rule of these students and teachers is: "All I know is yours, Comrade."

Komsomol students and members of the Communist Work Teams at the factories are on very close terms. They spend their summer holidays at the same camps, play soccer and ski together, hold joint forums and readers' conferences. They volunteer their free time for construction projects and work alongside people of many trades and professions, all motivated by the same wish

A Komsomol volunteer squad, identified by the arm bands, patrols the streets to keep public order—one of the Komsomol social work activities.

It's by no means all work and no play. Komsomol members have fun at parties, dancing and discussing the theater, the latest books, soccer games.

A university Komsomol Committee meeting. Leonid is speaking on behalf of a fellow student, Victor Boiko, who has applied for Communist Party membership.

—to speed the building of apartment houses, schools, stadiums, parks and playgrounds.

The fact that students and young factory workers spend their free time together is good for both. The students share their ideas and book knowledge, and the workers their background of life experience—the friendship enriches everyone concerned.

Social Activities Institute

Leonid's special pride is the Social Activities Institute. What is it? Leonid says to come along with him and we'll see. We walk through the university corridors. Lectures are over for the day, but the halls sound like a music school.

Leonid points to one of the doors, "That's our string ensemble rehearsing." Then to another, "And our dance group."

We go into a lecture room. Twenty-five or thirty students are sitting around listening to an older man on the platform. "That's a class for future emcees. Our students' interests are not limited to science, as you can see," explains Leonid.

"Our Social Activities Institute trains amateur dramatic, music and art group directors, athletic instructors, lecturers, discussion leaders. We have about 600 students. They get a certificate when they complete the course. The lecturers are prominent artists, stage directors, chorus conductors and athletic coaches. The Komsomol committee does whatever administrative work is involved. Our Komsomol organization set up the Institute."

Leonid heads the Organizational Committee that coordinates these various student activities. For Leonid himself that means there is practically no activity he's not involved in, one way or another—student debates and conferences, press, the Social Activities Institute, sports, and what not else. Besides all this, he keeps an eye open for new and interesting activities.

Most recently the philology department organized a series of "Wednesdays"—gatherings at which a person prominent in the public eye meets informally with the students. Leonid thought the idea was too good to be confined to the one department and suggested to a meeting of Komsomol representatives from the various university departments that this was an idea that was worth copying. They did, and now practically every department has its "Wednesdays."

Leonid says: "The activities, of course, are not ends in themselves. They're to help the student develop as a rounded individual. I see them as part of the educational process. My own aim," he explains in answer to a question, "is to learn enough history to be a good teacher of the subject."

Leonid is a member of the student research society of the university. He spends his summers delving into the archives of Ukrainian cities, collecting material for term papers. His term paper last year was "The Ukraine in the Seventeenth Century, after Reunification with Russia." The subject he has chosen for his diploma paper is "The Struggle of the Kherson Peasants to Enforce Lenin's Decree on Land."

He's trying to arrange his busy schedule so that he can go to Kherson and look through its archives. "A historian worth his salt," he says, "goes to the original source."

After his graduation he expects to be staying on at the university for graduate work. Afterward? Well, that's looking ahead too far, but there may be a possibility of teaching Ukrainian history at the university. ★

CINEMA

PEACE TO HIM WH

NOBODY knows where the road ends. The pessimist says there is nothing beyond the horizon. The optimist disagrees. He says we'll find the truth on the way and we may even be able to leave some of our troubles at the next crossroad.

While the optimists and pessimists stop to argue about what may be at the road's end, the obstinate walkers, trying to find out for themselves, trudge ahead in spite of fatigue, obstacles and their own doubts. These walkers do not merely talk about truth, they search for it. They do not merely travel the road, they survey it.

Young Soviet film directors Alexander Alov and Vladimir Naumov are people like that. Their work is provocative, startling, paradoxical. They astonish and disturb you at the same time, stopping, as they do, in mid-sentence and making you wait for its end. This is not because they do not have enough to say but because they have too much to say. They exhaust the material they use, but they cannot exhaust the well from which it

About to give birth, the German girl (played by Lydia Shaporenko) is found cowering in an abandoned streetcar by the shell-shocked Russian soldier Ivan Yamshchikov (played by Victor Avdyushkin) whose family was wiped out by the Nazis.

The American GI and the Soviet lieutenant miss Ivan on the way to the hospital. They search for him, not realizing that he jumped off the truck to cover them as they drove through Nazi-held territory. They continue without him.

is tapped. The pictures they have made are not sequels so far as plot or subject matter are concerned; they are sequels in artistic development.

Peace to Him Who Enters, which received the prize for originality at the Venice Festival, is a link in this chain of artistic growth. Realism and expressionism, impressionism and abstractionism —they are all there, supplementing and enriching one another. The directors mixed their colors disproportionately, first, because they had no special recipe and, second, because that was what the subject called for.

War cannot destroy man—it is not the essence of man, his meaning and purpose. The corpses stay in the trenches, but not the simple, plain, ordinary human feelings of men. They won't stay dug in. Man's world transcends blood and filth. He can defile his world, but he cannot lose it. That is a thought to ponder over, a very intricate thought, and to try to express it cinematically by means of a single technique would be to devitalize it.

Here we have a most unusual film, a complex thought expressed in a simple plot developed through a diversity of styles and techniques.

The ruins of a city bring back forgotten experiences; the maze of frontline roads leads to straightforward and sincere feelings; the war is set aside so that a child can be born. Four soldiers race against death and exhaustion to get a pregnant woman, the wife of a German, their enemy, to the hospital.

The Soviet lieutenant Shura Ivlev (played by Alexander Demiyanenko) and the young American GI (played by Nikolai Grinko) wear different uniforms, but there is no difference in the way they feel. The woman must get to the hospital, the child must be born. Human feeling in this moment of forgotten calm eclipses the war.

The German woman does not trust these men yet—they are still the enemy. But she is determined not to sacrifice her child to war.

The Russian soldier Ivan Yamshchikov lost his speech and hearing in the last battle; the Germans killed his wife and children. He can feel no friendliness for this woman, but she is in labor and he helps get her to the hospital. You see them together, in a pouring rain that does not let up all the way.

The roles are played by Victor Avdyushkin and Lydia Shaporenko.

The sharply opposing contrasts in the film are not used merely to create an original effect. They mirror reality. When the long, hard road comes to an end, the dazzling sun breaks through the murky rain. When the war ends, people dance and sing madly, almost hysterically. And when the new child is born, he is greeted by the sun.

Alexander Alov and Vladimir Naumov are seeking for new byways on that road we spoke of earlier. Sometimes they are carried away and lose themselves, but they are young and obstinate walkers and find the road again, one that is an extension of the roads paved by others. ★

D ENTERS

BY VLADIMIR SHATSKOV

Though the enemy has destroyed everything he holds dear, Ivan can think of nothing but getting the girl to the hospital in time. Life is the most important thing, and the blameless unborn child must be given a chance to live.

When they arrive at the hospital they hear the news—the war is over, and a few minutes later they learn that the German girl has given birth to a son. And so life begins anew—for the war-torn world, and for the child just born.

The map charts the contacts of the Dubna institute with research centers abroad. In 1960 the institute sent 250 reports on work in progress to more than 200 scientific institutions. Dubna physicists have participated in all international nuclear physics conferences, worked in foreign research centers and welcomed the scientists from other countries.

DUBNA PHYSICISTS' CITY

BY MIKHAIL LEBEDENKO

"I am greatly impressed with Dubna—the important experimentation being done here, and the excellent style characteristic of its research projects."

Isidor I. Rabi
Nobel Prize Winner (Physics)

"I am astounded by all I see here. Besides excellent accelerators, there is also a lot of the latest experimental equipment. As soon as you enter the institute's laboratories, you stop involuntarily —astounded by the vast scope of research work."

Harold C. Urey
Nobel Prize Winner (Chemistry)

THIS IS WHAT eminent American scientists said on a visit to the Dubna Joint Institute for Nuclear Research.

Dubna is a small and picturesque town two hours' drive from Moscow. It stands on the shore of the Volga where the Dubna River empties into it.

In 1949 a synchrocyclotron, then the world's most powerful accelerator of charged particles, was built here. This machine communicates an energy of 680 Mev to protons and is still one of the best accelerators of this type.

Dubna is famous for its international research center, complete with five large laboratories, where hundreds of scientists from many countries work. Modern science demands that kind of close collaboration. We are long past the time when great discoveries were made by men of genius working alone and isolated with simple instruments and comparatively simple calculations.

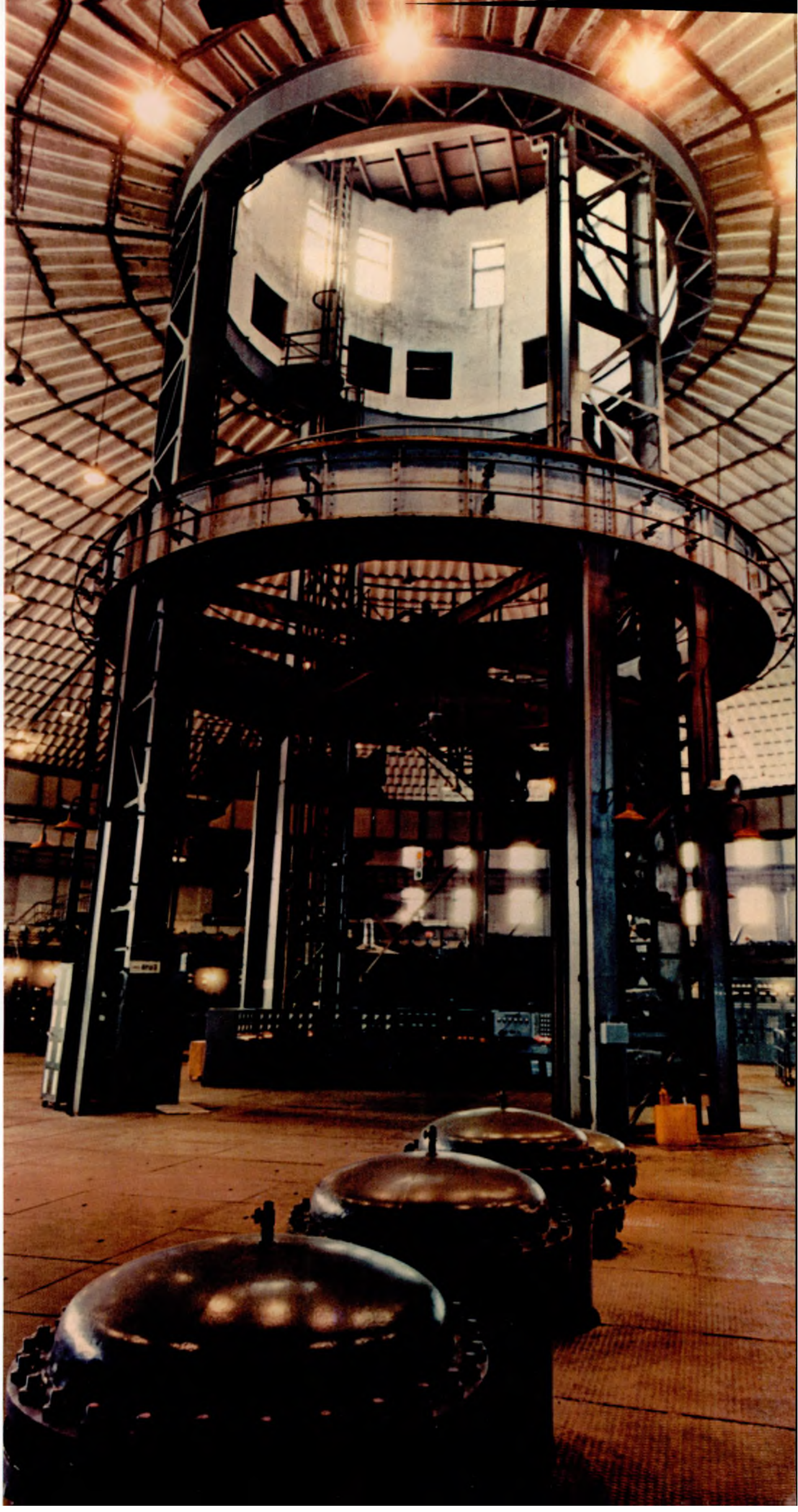
Research of physicists today is focused on elementary-particle physics. This is a science of the future, or better put, a science for the future. It is too soon to see the practical significance of high-energy physics research; thus far it remains "pure" science. But many leading scientists are of the opinion that here lies the secret of our mastery of energy resources so great as to seem fantastic at the present. In order to penetrate the depths of the microworld, experimental machines much more powerful and costly than anything hitherto produced had to be built. The enormously involved calculations and problem-solving that would keep human mathematicians busy for generations require computing centers with fast electronic "brains." Necessary also is the creative cooperation among scientists of many countries to analyze the enormous mass of new experimental data.

An International Research Center

To unite the research efforts of scientists from many countries, the Soviet Government sponsored the establishment of the Joint Institute for Nuclear Research at Dubna.

The agreement to set up an international institute was signed in Moscow in the spring of 1956. That autumn the new institute's charter was approved by the representatives of the governments of Albania, Bulgaria, China, Czechoslovakia, the German Democratic Republic, Hungary, the Korean People's Democratic Republic, Mongolia, Poland, Rumania, the USSR and the Democratic Republic of Vietnam.

The charter declares that "the institute will devote all its work to the uses of nuclear energy for peaceful purposes only for the good of all mankind."



The Dubna proton synchrotron is so huge that it cannot be shown in one photo. Part of the accelerator hall.

The institute's main tasks, as defined in the charter, are:

"To ensure joint research and development work in the field of nuclear physics.

"To promote the development of nuclear physics in the institute's member-countries through exchange of experience and achievements in research and development.

"To maintain contact with national and international research agencies and other organizations working in the field of nuclear physics development."

The funds for maintenance of the institute and the construction of its projects are contributed by the member-states, all of which have an absolutely equal voice in running the center and participating in its research program.

The institute's principal administrative body is the Committee of Plenipotentiaries of the governments of the member-states. The committee meets once a year and deals mainly with financial and basic administrative problems.

Research activities are directed by the Scientific Council, made up of leading physicists from the member-states, which meets twice a year.

The institute's director and deputy director are elected by the Committee of Plenipotentiaries on the recommendation of the Scientific Council. The Soviet physicist-theoretician and Corresponding Member of the USSR Academy of Sciences Dmitri Blokhintsev has held the post since 1956.

The present deputy director is Heinz Barvich, prominent German scientist. Previous incumbents have been Vaclav Votruba, Corresponding Member of the Czechoslovak Academy of Sciences; Professor Marian Danisz of Poland; Professor Wang Kan-chang of the Chinese People's Republic; Emil Djakov, Corresponding Member of the Bulgarian Academy of Sciences; and the late Professor Tudor Tenesescu of Rumania.

Giant Proton Synchrotron

The institute's first laboratory was the Laboratory of Nuclear Problems with the synchrocyclotron, turned over to the institute by the Soviet Government. It is headed by Professor Venedikt Djelepov.

At the same time, the USSR Academy of Sciences provided the institute with another large set of research facilities, incorporated in the High Energy Laboratory. Academician Vladimir Veksler heads this laboratory. Construction of a 10 Bev proton synchrotron, a mammoth accelerator of charged particles, was completed a year after the institute was organized.

The proton synchrotron's giant circular vacuum chamber has a 197-foot diameter. Air is sucked out of the chamber by 56 powerful pumps to create a vacuum measured in millionth fractions of a millimeter of the mercury column.

Protons, to which a preliminary energy of 9 Mev is imparted, are injected into the circular chamber. Stimulated by powerful electric pulses, the particles keep moving with increasing speed along a closed circuit in the gap of the electric magnet. By the end of the acceleration cycle, which lasts for 3.3 seconds, the particles reach a velocity almost equal to that of light. The movement of accelerated protons is controlled automatically by powerful electronic devices.

Low Energy Research

An important part of the institute's work is centered on low energy physics, studying reactions with atomic nuclei.

Dmitri Blokhintsev, institute director, is known internationally for his work in nuclear physics.

GDR Researcher Rudolf Pose gets instruction from Soviet physicist Spartak Korenchenko (left).

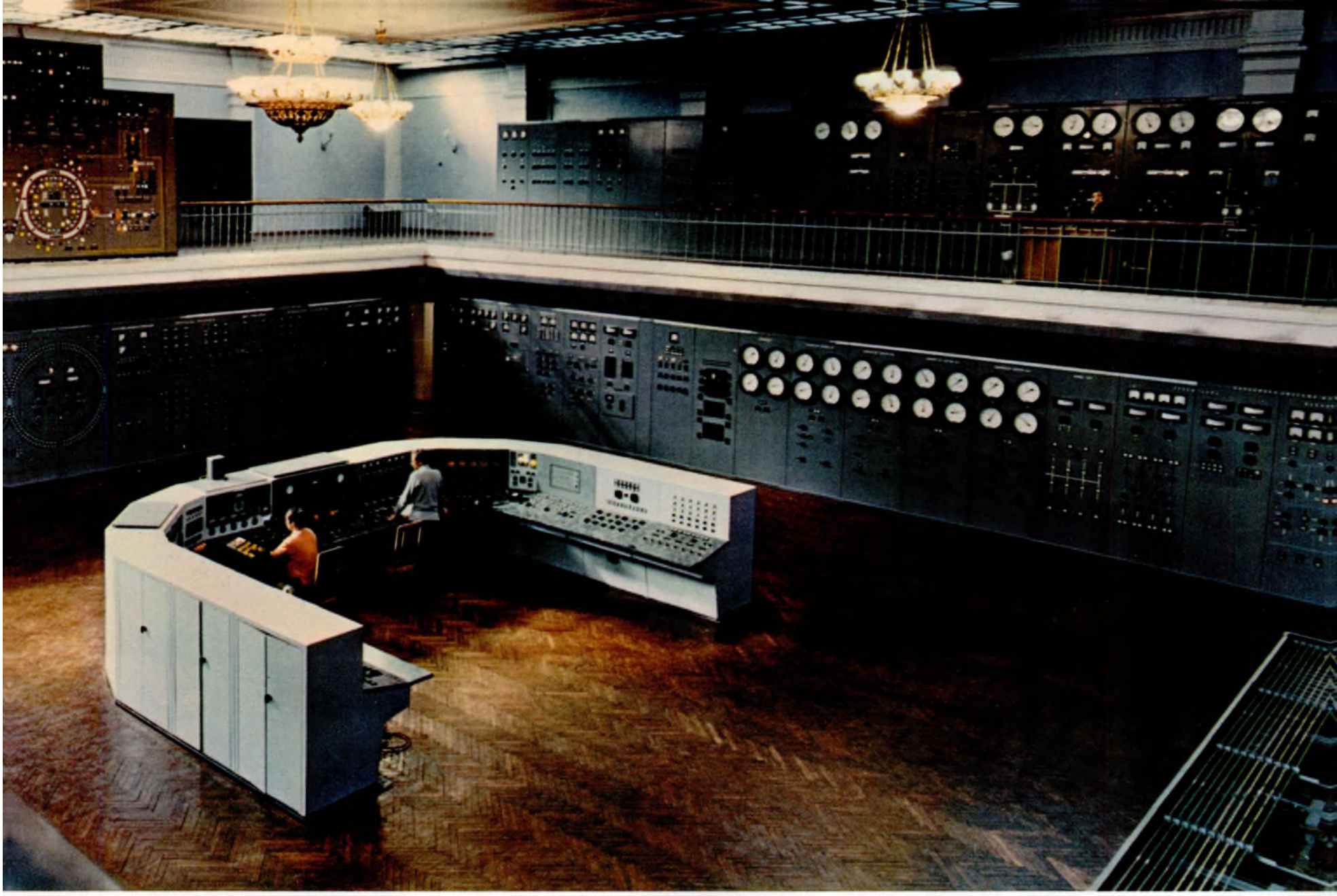
Academician Vladimir Veksler is head of the High Energy Laboratory with its proton synchrotron.

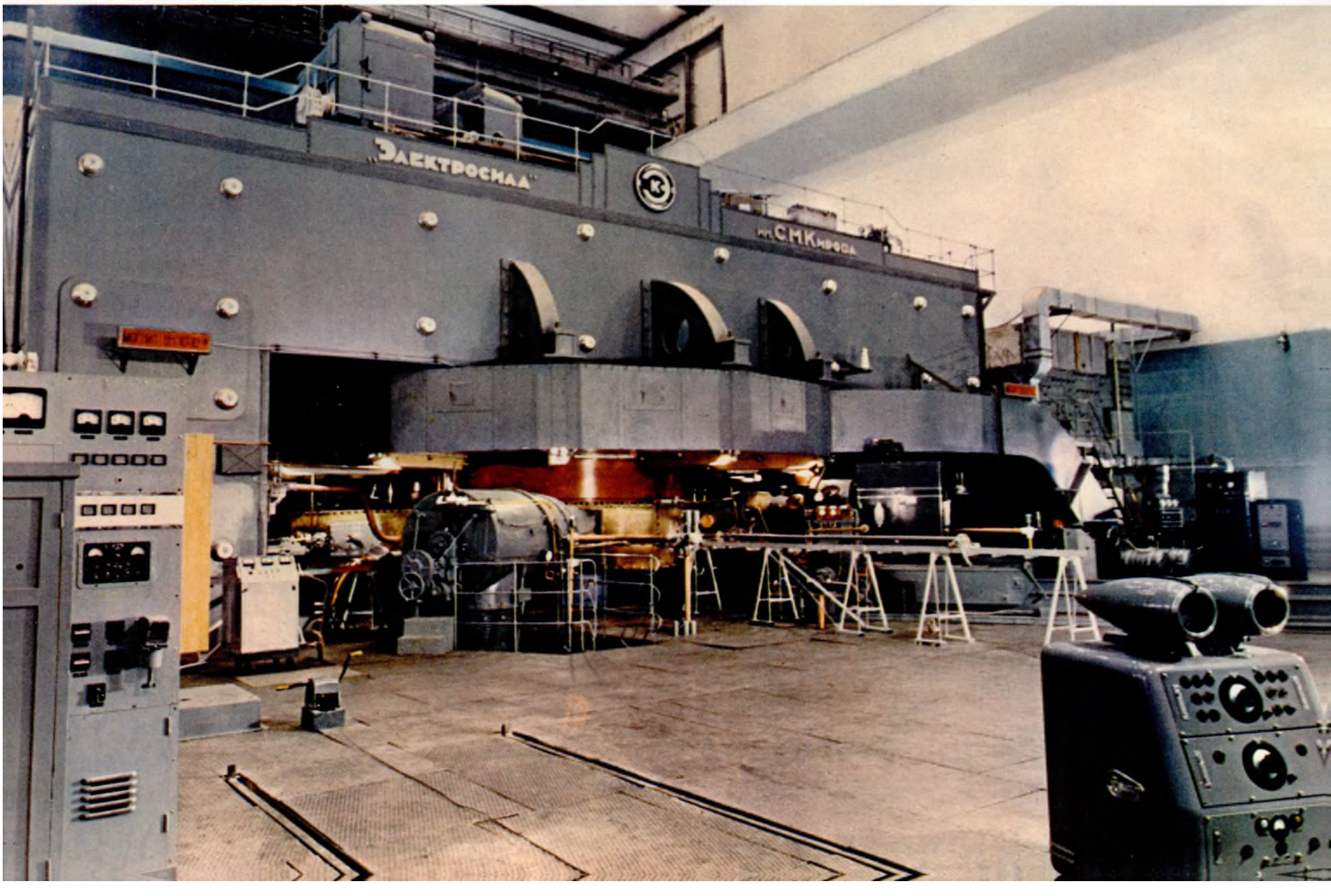
Academician Mikhail Mescheryakov directs the work of a group of Soviet and foreign physicists.

Visitor Dr. Prasad, head of the Indian Academy of Sciences, (left) with Professor Venedict Djelepov.

The proton synchrotron is operated by this control desk in another building.

The synchrocyclotron built in Dubna in 1949 is still one of the best of its type..




„Электросила"
им. С. М. Кирова

Two laboratories working in this field have been established at the Joint Institute for Nuclear Research.

The first, the Laboratory of Neutron Physics with Nobel Prize winner Ilya Frank at its head, is equipped with a fast neutron pulse atomic reactor of unique design, different from any other in the world. The fission reaction in this reactor is not discontinued at the critical level but goes much beyond it. This, however, lasts for only several thousandths of a second. Then the avalanche-like growth of the chain reaction is discontinued, bursting out later with new force. These bursts occur in a sequence of 5,000 per minute, placing at the physicists' disposal powerful beams of neutrons. The reactor's average capacity, however, is not very large, which makes for very economical operation and also offers other important advantages.

The second is the Laboratory of Nuclear Reactions. It has a recently completed cyclotron, built under the guidance of Georgi Flerov, Corresponding Member of the USSR Academy of Sciences, capable of accelerating multicharged ions of carbon, nitrogen, argon, etc. The bombardment of "heavy" element targets by multicharged ions will help in carrying out research on the production of new elements. Investigation will also be conducted in other important spheres.

The Joint Nuclear Institute also has a Laboratory of Theoretical Physics. The modern building provides everything necessary for research work: quiet rooms; spacious auditoriums for discussions, conferences and seminars; and a basic research library with publications in physics, mathematics and in many of the related sciences. Besides the Soviet scientific periodicals, the library receives some 250 foreign publications, 100 of which come from the United States.

The Theoretical Physics Laboratory has a large computing center with fast electronic machines. Head of the laboratory is Academician Nikolai Bogolyubov, who was elected an Honorary Member of the National Academy of Sciences of the United States in 1960.

Research Achievements

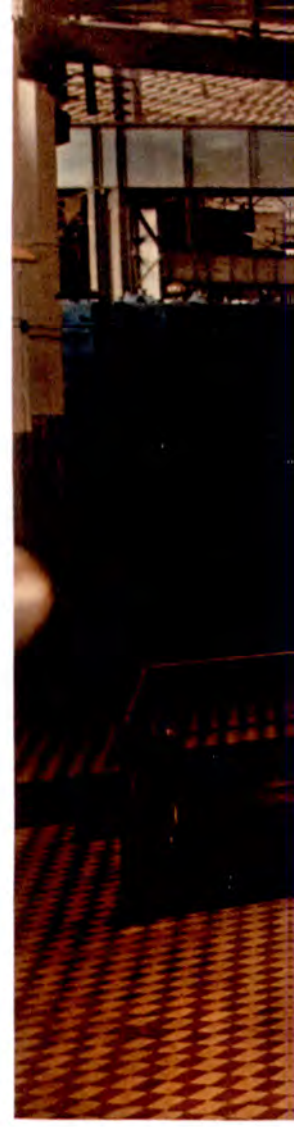
The researchers in the institute's laboratories are from its twelve member-countries. One of the most brilliant scientific achievements of the institute was the discovery of a new nuclear particle, the anti-sigma-minus hyperon. The discovery of the generation and decay of the particle was the result of very intensive work by a group of physicists from China, Korea, Rumania, the USSR and Vietnam working under the direction of Professor Wang Kan-chang and Academician Veksler.

The staff of the High Energy Laboratory has investigated many of the properties of the so-called "strange particles."

Familiar to physicists the world over is the long series of experiments done by the Dubna Laboratory of Nuclear Problems on determining the law uniting into a single system the strong interaction of similar but differently charged particles. Another research cycle in the same laboratory provided experimental proof of the validity of dispersion relations in the pi-meson-nucleon scattering.

One of the international research groups in this laboratory, working with intricate and sensitive electronic equipment, has ascertained a very important property, the so-called mu-minus-meson spin—a type of elementary particle

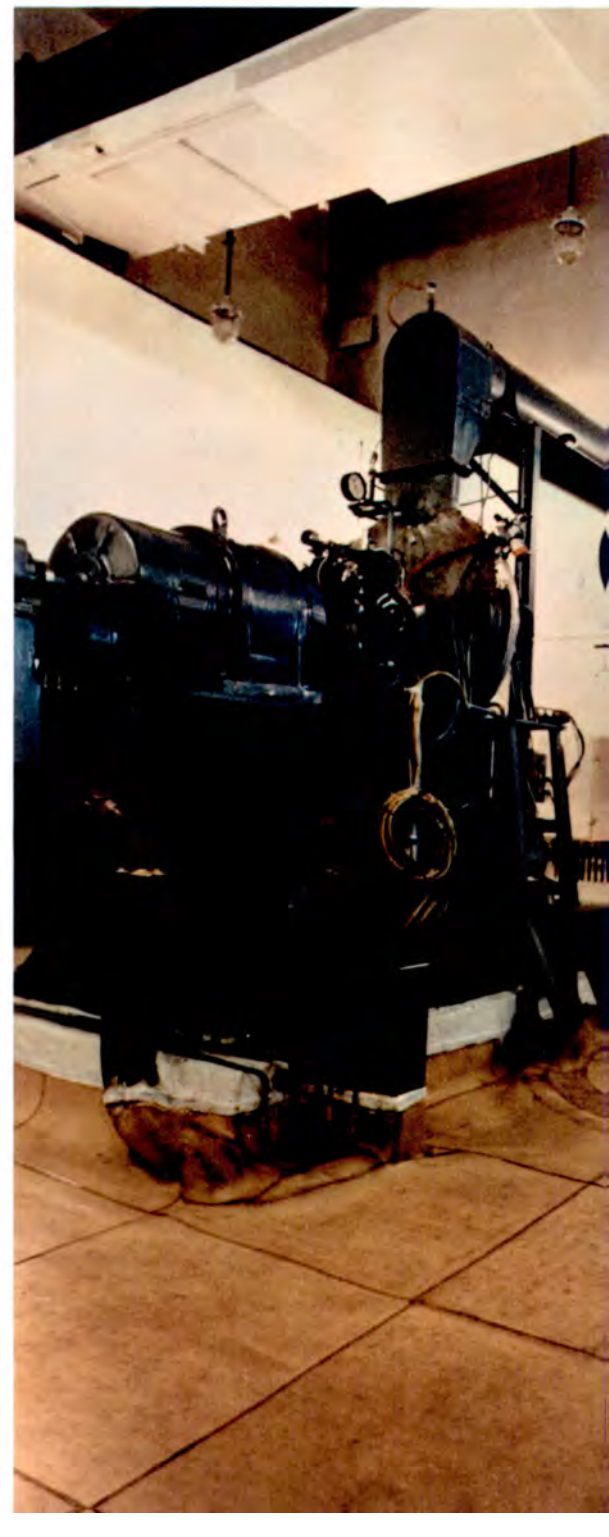
Dubna has laboratories for high and low energy research and a laboratory of theoretical physics. The equipment throughout is of the most advanced type available. Shown is one of the three machines in the institute's electronic computing center.

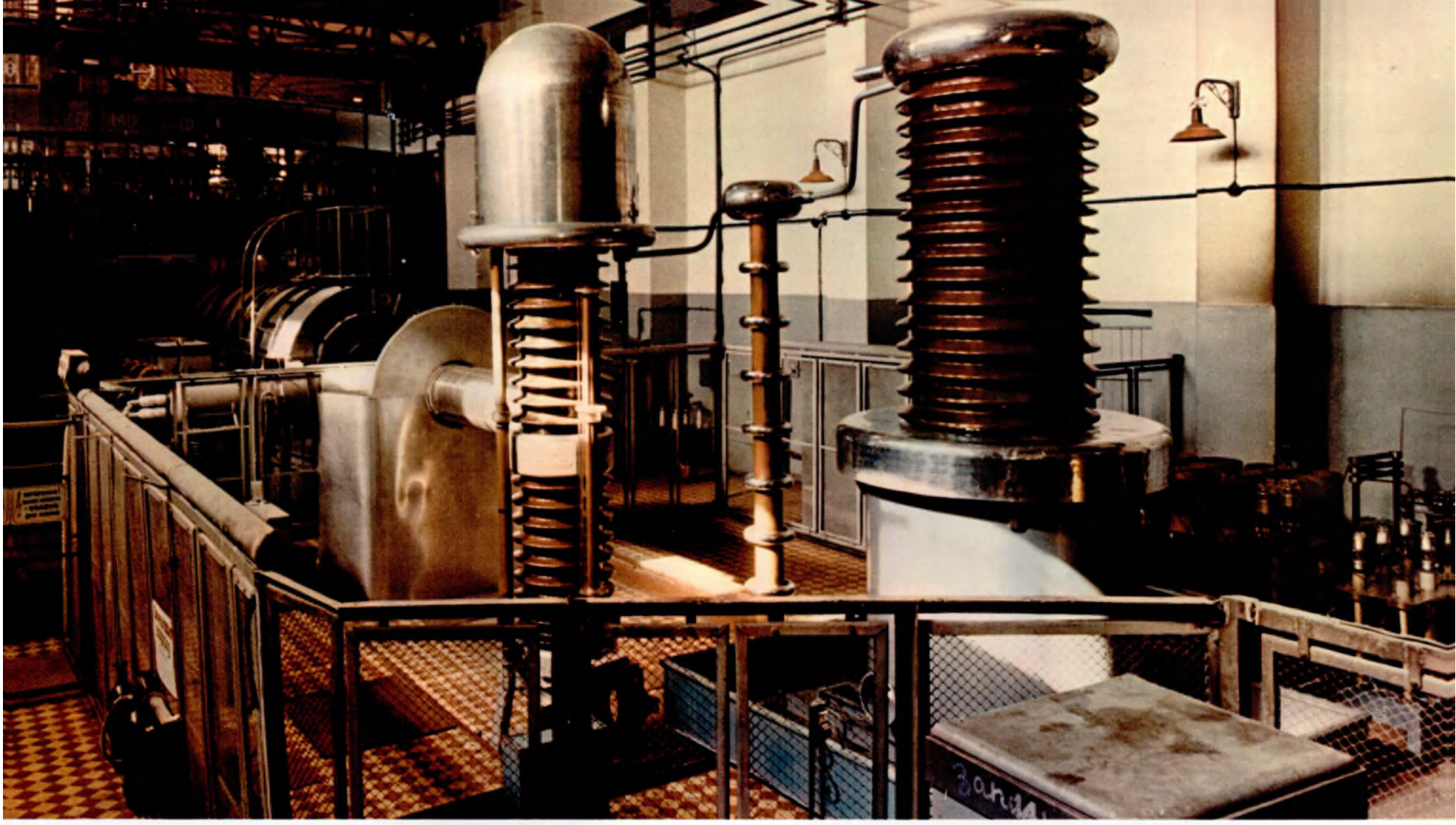


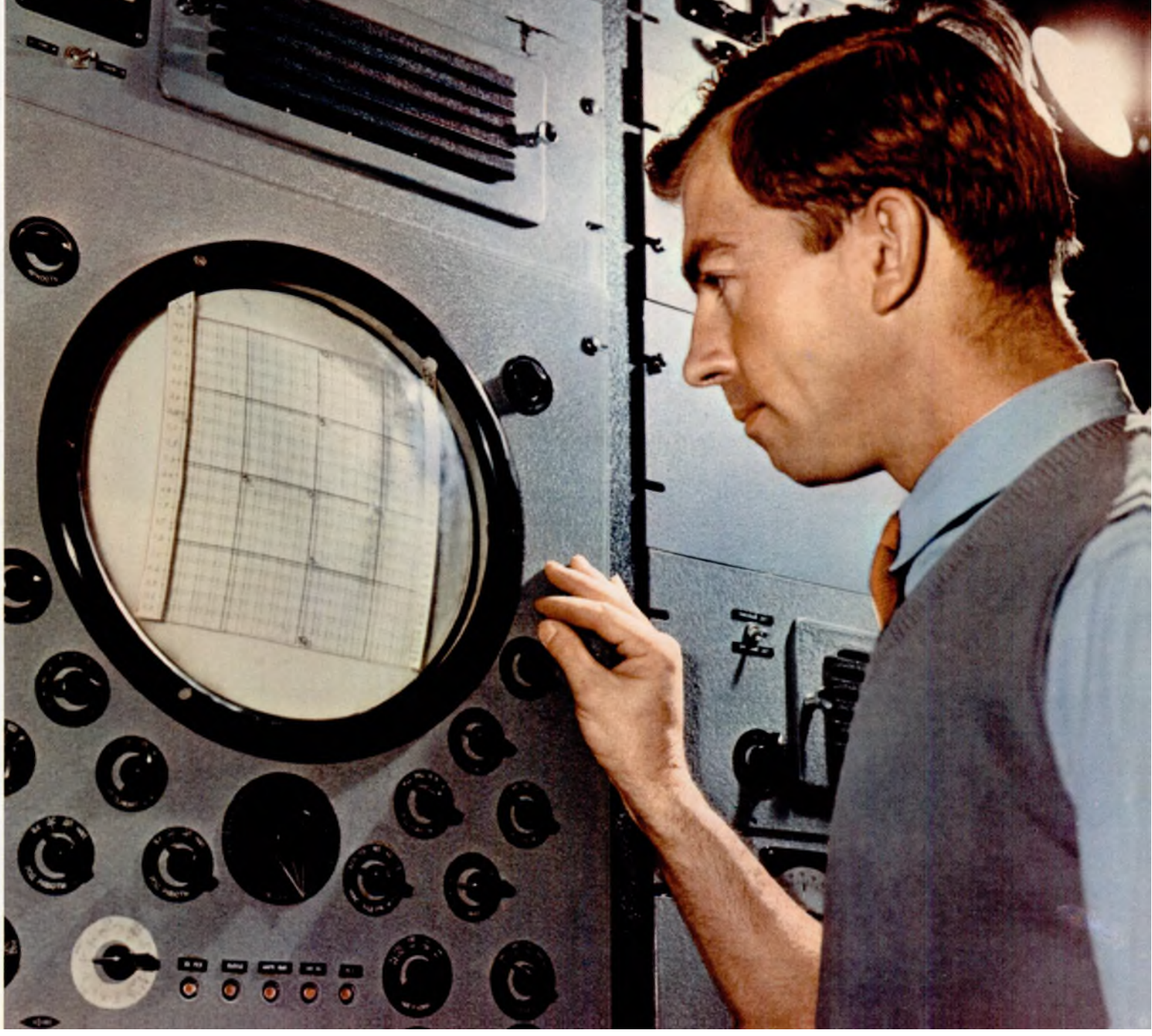
(Top right) Where the protons start their wild race. A pulse generator, ion source and a linear accelerator.

(Right) Impulse reactor with fast neutrons. This ingenious system reduces consumption of nuclear fuel.

(Far right) Chief engineer of the electronic hall Vladislav Perfeyev checks the complex control devices.







regarded by many scientists as one of the most mysterious.

Scientists of the Laboratory of Theoretical Physics have published a collection of papers on the theory of the neutrino, perhaps the most enigmatic of the particles. It is generally recognized that this particle can go through the earth's entire thickness and emerge without hindrance.

Another group of physicists and theoreticians, in a joint study with researchers of the High Energy Laboratory, proved that the nucleon consists of a denser section, the "core," and of a "pion-cloud" surrounding it. Physicists think this fact may be as significant as the discovery of the atomic nucleus.

Important too is the developmental research on Academician Bogolyubov's theory of superconductivity. The major principles and methods of the theory can now be applied to the study of the atomic nucleus.

Lively International Exchange

Dubna scientists readily share the results of their experiments with physicists in other countries. Last year, for example, the institute distributed 250 reports on its latest research to more than 200 of the world's major laboratories and science institutes, including Brookhaven, Rochester, Berkeley, the Argonne National Laboratory, the Enrico Fermi Institute in Chicago and scores of other American research centers. The lively exchange now going on confirms the statement made by Detlev Bronk, President of the National Academy of Sciences, when he visited Dubna in 1958: "American scientists are grateful for the research information this institute gives them. They are also glad to have the opportunity to furnish the scientists of this institute with materials on their work."

Articles by Dubna scientists appear regularly in such journals as ***Nuclear Physics, Nuclear Instruments*** and ***Nuovo Cimento.***

International conference participation by researchers in the different branches of nuclear physics is perhaps the most effective form of scientific exchange. Institute scientists have made significant contributions at the Rochester, Brookhaven, Kiev, Geneva and other conferences on high energy physics held in recent years.

Exchange visits to deliver lectures and work on short-term research projects constitute another important form of international scientific cooperation. Dubna physicists have lectured in the United States, Canada, Britain, Switzerland and Denmark. American physicists Francis Low, Ben Mottelson, Albert Giorso and other Western scientists have lectured at institute seminars.

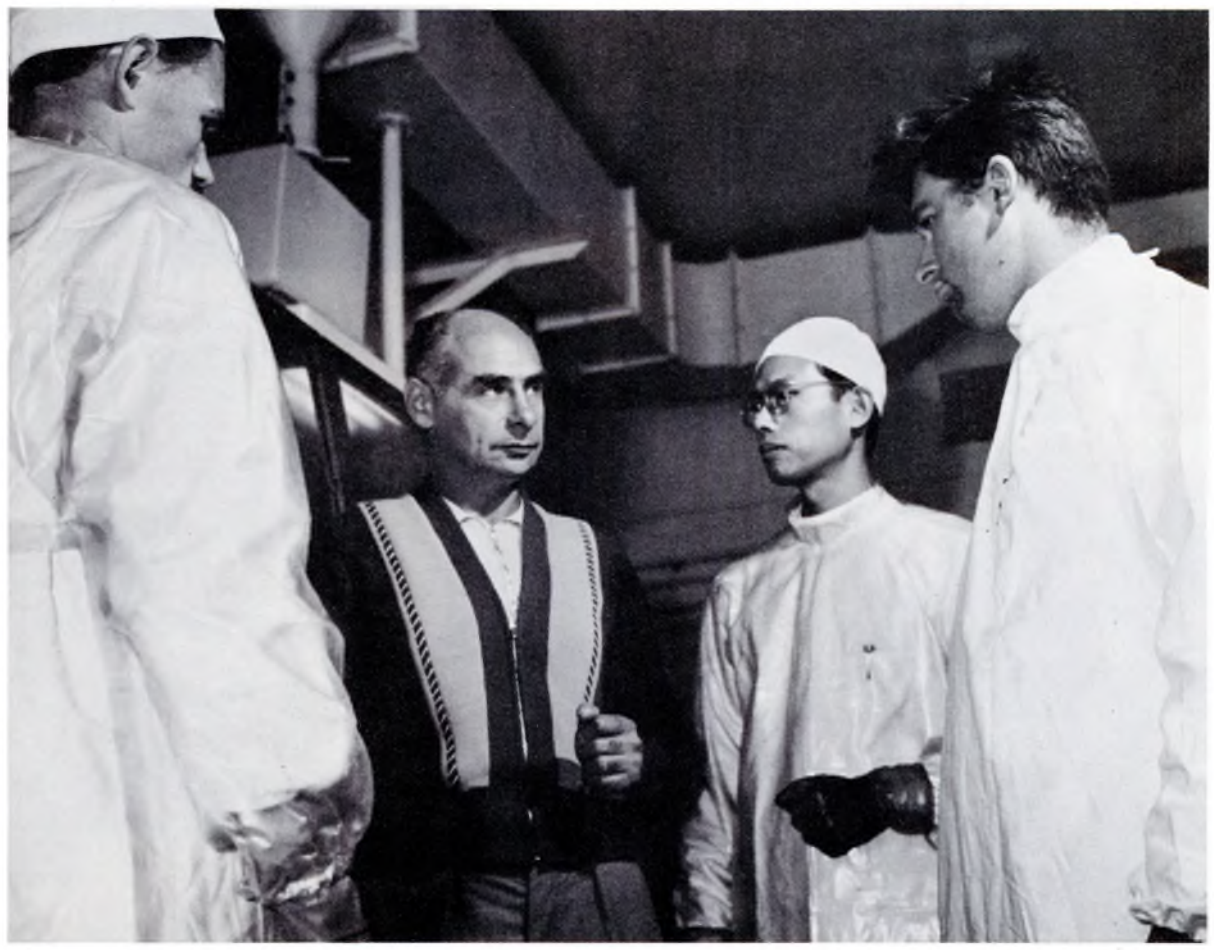
The institute keeps widening its research exchanges with scientists in the Western countries. Cooperation with research agencies in the member-states is particularly intensive. Dubna coordinates the joint work of many institutes in these countries on general subjects concerned with low and high energy physics.

People from the many nations represented at the institute work together in teams. The friendships they make continue outside the laboratories. They spend leisure evenings at their clubs, picnic and go touring together. All this is only partial evidence of the close relations that researchers at the Joint Institute have. It is the kind of cooperation and friendship, Soviet people think, for which scientists of all countries should strive. ★

An experimental school of a new type for the children of scientists from many countries working at Dubna. The agreement to set up this Joint Research Institute was signed in 1956 by representatives of 12 socialist countries. The charter pledges Dubna "to work only for the utilization of nuclear energy for peaceful purposes."

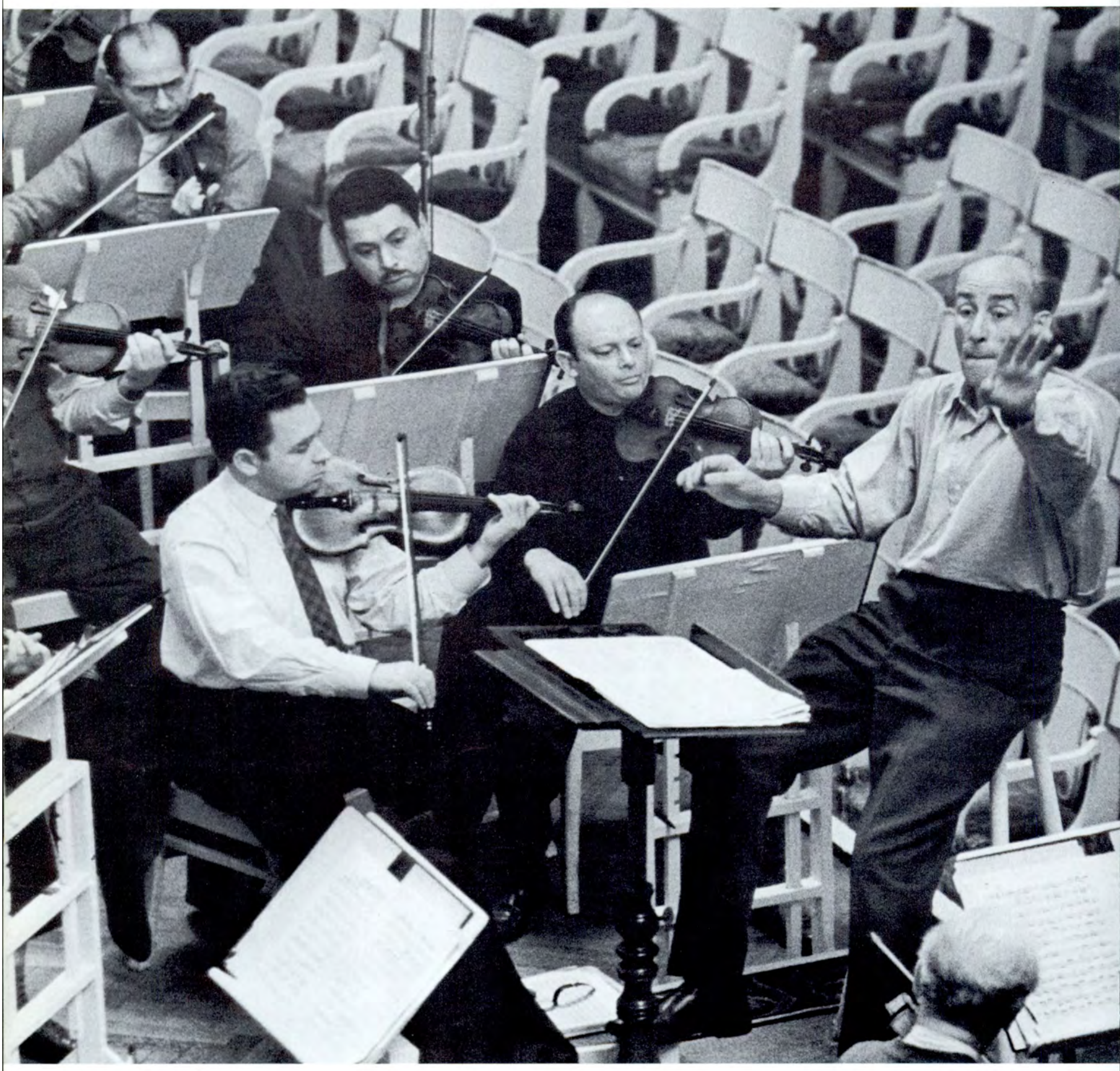
A residential community is growing up around the institute. Each of these modern houses is occupied by two families. The friendship of the researchers extends beyond the limits of the laboratory. The families spend their free evenings at the club, picnic and take sightseeing trips together.

Professor Heinz Barvich (GDR), U. S. Ambassador Llewellyn Thompson, and British Ambassador Frank Roberts.



Georgi Flerov, member of the USSR Academy of Sciences, heads the Laboratory of Nuclear Reactions.

Francis Low is one of several eminent American physicists who have lectured or taken part in the Dubna seminars.



Dmitri Shostakovich and his

THE deep silence in the white marble hall of the Leningrad Philharmonic Society was broken only by the gentle rustling of programs as Conductor Yevgeni Mravinsky lifted his baton for the opening bar of Shostakovich's new symphony, his twelfth, titled *The Year 1917*. Dedicated to Lenin, it was specially written for the Twenty-second Party Congress.

The first movement, "Revolutionary Petrograd," must have let loose a flood of memories for many people listening to this first performance. In the distinguished audience were workers who had fought on the barricades in the Vyborg and Petrograd districts, those districts of the city that covered themselves with revolutionary glory. There were venerable academicians who were students at the time, writers and actors who had dramatized the great events.

Shostakovich, too, must have felt a surge of memories when he attended the final rehearsal that morning and the première that evening. Leningrad is the composer's own city and the Philharmonic Society hall is very familiar and very dear to him. It was there that his First Symphony, written for his graduation thesis when he was a twenty-year-old conservatory student, was first played. Since that day his music has been enjoyed by audiences the world over.

It was here, too, that the fighting men of the besieged and hunger-stricken city listened to his Leningrad Symphony, written between air raids when, as a firewarden, Shostakovich protected these very walls from enemy incendiary bombs.

And ever since—although the composer now makes his home in Moscow, where his children and grandchildren live and where he teaches—every work of his has had its first performance in Leningrad, with Mravinsky conducting.

"Receiving Shostakovich's latest work," says Mravinsky, "is like getting a letter from a very close friend, with everything—the words and the thoughts—clearly expressed. It is unnatural to have to translate or explain in words the thoughts, reflections and dreams that one has expressed through music. It should be quite understandable why it is a torture for Shostakovich to have to talk about his compositions. Moreover, he is a lyricist and his works are always autobiographical. In a way, his epic Eleventh and Twelfth Symphonies, one devoted to the 1905 Revolution, the other to the 1917 Revolution, are exceptions. But even in these works the composer does not describe the events, but shares with the listener the thoughts they inspire in him. And what a wealth of

Twelfth Symphony

BY IDA VERSHININA

Backstage, Shostakovich listens to the first performance of The Year 1917, *his Twelfth Symphony.*

thoughts! Shostakovich is indeed a man of powerful thoughts and emotions, and yet infinitely gentle by nature."

The new symphony was played without an interval, since the four movements are welded together not only by theme and music but by the unity of the images, dynamic and unforgettable. The impetuous Allegro is preceded only by a brief overture in which the cellos, double basses, and later the brass section joins in the mighty flow of a Russian melody of great native force. The first movement presents a theme of powerful impact—the surge and rising tide of the revolutionary storm—in a great sweep of dramatic music.

The second movement is full of compassion and moral rectitude, naturally conjuring up the image of Lenin and his thoughts on the eve of the Revolution.

The third movement is in the nature of a scherzo, with the clear-cut rhythms typical of Shostakovich. Rolling waves of sound, now rising, now falling, grow into an overpowering flow of music.

Naturally and with logical force, the theme develops into the finale with its jubilant ode. The people have conquered, and this last movement is called appropriately "The Dawn of Humanity."

A strict logic unites the various colorful images of the broadly and boldly depicted musical pictures into a classically severe whole. This symphony reflects the dominant tendency in the composer's latest work—simplicity and clarity.

The Leningrad audience listened to the symphony with rapt attention. The thoughts and feelings of the listeners, different and varied but a short while ago, now breathed and beat in unison with those of the composer. ★

The jubilant last movement—"Sunrise of Mankind"—and an ovation for the composer and conductor Yevgeni Mravinsky.

Shostakovich on the way home to Moscow. During rehearsals in Leningrad he conceived his Ninth Quartet.

TOWARD THE HEART OF THE ARCTIC

BY SEMYON KHOMENKO

Installing one of the radio meteorological units. Stations like North Pole-10 make invaluable scientific contributions.

All set up and ready for business. To deliver the equipment by transport plane would have taken more than 500 flights.

Setting up North Pole-10, the latest of the Soviet Union's drifting research stations. These signs are to locate the various installations.

Unloading station equipment from the atomic icebreaker Lenin. *The site is in latitudes of the polar basin no other ship has ever reached.*

While the ship was being unloaded, three polar bears tried to raid the expedition larder. This one came to a sad end.

The work had to go on day and night, in all kinds of weather, in order to finish setting up the station before the blizzards began.

THE GREAT NORTHERN SEA ROUTE, the shortest route between European and Far Eastern Soviet ports, runs along the northern coastline of the Soviet Union. During the brief arctic navigation season steamship caravans rush deliveries of equipment and machinery for new construction projects as well as food, fuel and manufactured goods to Far Eastern and Northern ports.

All along the Great Northern Sea Route, polar stations—there are more than a hundred in the arctic—show these ships the way. They broadcast weather reports round the clock and transmit messages to Soviet and foreign vessels. The station personnel ascertains the thickness of the snow cover, the circulation of the air masses, the speed and direction of movement of ice in the coastal area.

However, these polar stations cannot provide sufficient information for accurate forecasts of ice conditions in the Arctic. What is required for sea and air navigation and radio communication is a wide-scale study of the ionosphere, the position of the earth's magnetic pole and the glacial movements, currents and weather in the deep-water central basin of the Arctic Ocean. That is why the Soviet Union has for several years now been setting up permanent research observatories directly on ice floes.

The first Soviet high-latitude expedition was landed on an ice floe in the North Pole area on May 22, 1937. The drifting research station the expedition set up was named North Pole-1. For nine months Ivan Papanin, Pyotr Shirshov, Yevgeni Fedorov and Ernst Krenkel made meteorological, oceanographic and geophysical observations in the face of severe weather and at the risk of their lives. After the ice floe had drifted about 1,250 miles, the explorers were picked up by the icebreaker *Murman.*

In April 1950 another expedition of 14 scientists headed by oceanographer Mikhail Somov was landed on an ice floe in the extreme eastern part of the Arctic Ocean. This one, North Pole-2, drifted for 374 days.

Since the spring of 1954 Soviet drifting research stations have functioned as the northernmost outposts for systematic and integrated Arctic research and have made invaluable scientific contributions. In the past three years they made more than 21,000 meteorological observations, sent more than 8,000 aerological radiosondes into the upper layers of the atmosphere and took more than 3,000 samples from the ocean depths. Automatic instruments made more than 100,000 recordings of the speed and direction of currents in different water layers of the ocean and took more than 40,000 water temperature readings.

Landing men and equipment from polar aircraft onto these floes in the depths of the polar basin is a formidable, sometimes a heartbreaking, job. This year several firsts were recorded in setting up North Pole-10 station: the expedition was landed from the atomic icebreaker *Lenin;* it was landed in the late fall rather than the spring; and the floating station was set up in the highest latitudes of the polar basin, never before reached by a ship.

During this year's Arctic navigation season the atom-powered *Lenin,* flagship of the Soviet icebreaker fleet, led several transport vessels through heavy ice and helped the veteran Arctic icebreakers *Krasin* and *Yermak* get free of pack ice. After escorting the transport caravans, the *Lenin* headed east.

Early in October the atom ship met the steamer *Levanevsky*

Unloading fuel and equipment for the long winter months when the hardy polar scientists will see nothing but the frozen landscape.

near the western ice ridge of Vilkitsky Strait. Tractors, building timber, fuel, tank gas for heating, foodstuffs, kitchen ranges and prefabricated houses were loaded on the *Lenin* under the glare of searchlights. Meteorological booths, portable electric generators, radio equipment—all marked "North Pole-10"—were packed in the holds. A transport plane would have had to make more than 500 flights to get all this material from the mainland to the ice floe.

With the loading completed and the research staff on board, the atomic icebreaker started for the heart of the polar basin. By that time heavy frosts had coated the Arctic waters with ice. Huge cakes of old ice, with the fresh ice welded on, armor-plated the ocean. The Arctic navigation season was over. Nothing, it seemed, could break that icy silence until spring.

But the atomic ship sailed easily and confidently in waters where even in summer it is not always possible for icebreakers to pass and to latitudes never before visited by exploratory ships.

The *Lenin* had to cope with massifs of heavy arctic ice 7 feet and more thick and with hummocks. The 44,000-horsepower engines did yeoman service and kept the *Lenin* moving day and night. The ship passed the region where the famous *Fram* of the Norwegian Fridtjof Nansen had once drifted and the spots where the Russian steamer *Sedov* was caught in ice and the ship *Chelyuskin* was crushed. But the atomic ship, master of these Arctic waters, moved irresistibly through the ice to its goal.

The *Lenin's* siren, echoing across the frozen expanses, signaled the completion of the first stage of this unparalleled voyage to the high latitudes of the Arctic Ocean. The atomic ship was moored to an ice floe selected earlier by aerial reconnaissance, and work was begun to set up the North Pole-10 drifting station.

It took several days to unload the equipment. Work went on day and night since everything had to be finished before the blizzards began. Orange-colored prefab houses were assembled in the center of the ice floe, a meteorological platform was mounted and a radio aerial raised.

The base camp was set up about a mile away from the mooring point. The atomic ship could have moved closer, but it was thought inadvisable for fear the ship might crack the ice floe.

Some days later the atomic ship's siren once again broke the silence of the Arctic night. Rockets shot high into the sky, and a rifle salvo thundered out. The wind unfurled the red silk of the Soviet Union's state flag fluttering on a mast in the center of the polar basin. The floating station made its first broadcast: "To all stations. North Pole-10 radio on the air. We are transmitting our first meteorological report."

The atomic icebreaker sailed westward through heavy pack ice. En route the ship's crew helped scientists set up automatic meteorological stations at different points in the Arctic Ocean. Without human intervention, they are reporting the temperature of the air and the speed and direction of the wind to the mainland. The information will help to determine the strength of the ice and the direction of its movement.

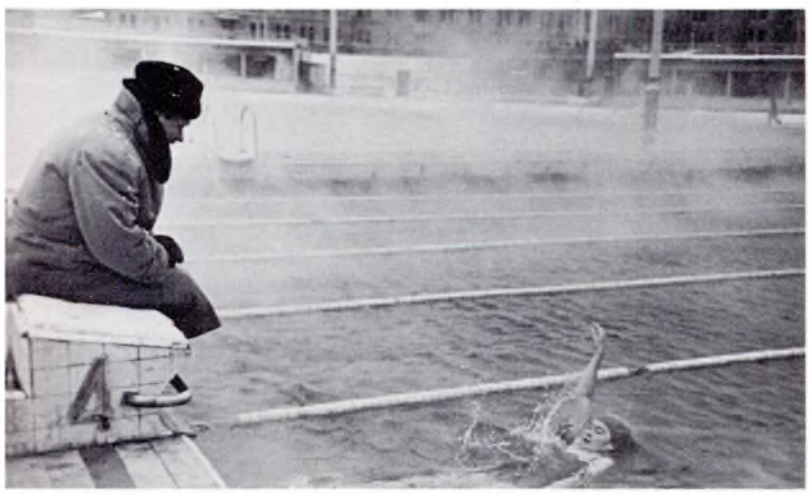
The several thousand miles through heavy ice covered by the atomic ship showed that the Arctic can be navigated continuously and at any time of year. The sailors and scientists aboard the *Lenin* are dreaming of voyages deeper into the heart of the frozen continent, to the North Pole. Such dreams will come true.

North Pole-10's first broadcast. Nikolai Kornilov (left) is in charge of the station.

The finishing touches on the radio mast are made with the help of powerful searchlights.

A notable occasion for these explorers of a remote corner of the globe, mail from home.

MOSKVA OPEN SWIM



AIR
MING POOL

YOU CAN SWIM the year round, no matter the weather, in this large open-air pool set right in the heart of the Soviet capital. In the summer the bright blue sky is reflected in the big bowl. In winter wisps of steam curl above the heated water.

This is where experienced swimmers practice, beginners learn, and swimmers generally—young, old and middle-aged—have a good time.

Where's the family going on this wintry day? To the Moskva swimming pool of course, as you can see by the flippers and other swimming paraphernalia. Have a good time there! ★

ARCTIC EXPLORATION PICTURED IN SOVIET STAMPS

BY ILYA ZBARSKY

THE CONTRIBUTIONS Soviet explorers and scientists have made to our knowledge of the polar regions have been commemorated in postage stamps issued in the Soviet Union. The first set of four airmail stamps—in denominations of 30 and 35 kopecks and 2 rubles—appeared in 1931. They bore polar landscapes sketched by veteran stamp designer Ivan Dubasov and honored the Arctic voyage of the icebreaker *Malygin*.

The Second International Arctic Year (1932), the first in which Soviet scientists participated, was commemorated by a two-stamp issue—50 kopecks and 1 ruble—also designed by Dubasov.

The expedition ship *Chelyuskin*, which became icebound and drifted toward the North Pole, and the stranded party's rescue by Soviet airmen, a glorious and dramatic chapter in the history of Arctic exploration, were pictured in a 1935 issue. Ten stamps, in denominations from 50 kopecks to a ruble, depicted episodes in the rescue. The artist was Vasili Zavyalov, another veteran stamp designer.

With the development of Soviet aviation, planes were used increasingly for Arctic exploration. The air expedition that landed four explorers on a drifting ice floe in the North Pole area in 1937 was commemorated in a four-stamp issue, in denominations of 10, 20, 70, and 80 kopecks, designed by Zavyalov. The data obtained by this drifting wintering party helped Soviet airmen accomplish the world's first nonstop flight from Moscow to the United States via the North Pole. Two sets of stamps were issued in 1938 to celebrate this air triumph.

The work of the North Pole-1 drifting wintering expedition is pictured in four stamps—10, 20, 30, and 50 kopecks—done by Dubasov. In 1940 another four-stamp issue—15, 30, 50 kopecks and one ruble—commemorated the drifting of the icebreaker *Georgi Sedov* in the high latitiudes of the Arctic Ocean on its 812-day expedition.

Two sets of stamps appeared in 1955 to commemorate the landing of North Pole-4 and 5 wintering parties from aircraft onto ice floes. The first set of 1- and 2-ruble airmail stamps carried the red overprint "North Pole-Moscow, 1955." The other set of three—in 40 and 60 kopecks and 1-ruble denominations—was designed by Igor Ruban. The picture on the 1-ruble stamp had been used in a souvenir sheet issued in 1953.

Last year the Soviet atomic icebreaker *Lenin* sailed to Arctic latitudes never before reached by any vessel. A 40-kopeck stamp issued in 1958 commemorated the world's first above-water vessel powered by atomic energy.

These Soviet postage stamps that chronicle the courage and daring of Arctic researchers and explorers would grace the album of any collector.★

QUESTI
THE SO

AN EXHIBITION of Soviet children's books was held last summer in three American cities—New York, Cleveland and Denver. People who came to the exhibition asked hundreds of questions of the most varied nature, a great many of them about the Soviet school system. The questions came not only from educators but from other visitors with a more general interest in the Soviet Union.

Zoya Malkova, who has a Master's Degree in Education and who worked as a guide in the textbook section of the exhibition, answers the questions she was asked most frequently.

QUESTION: Will you tell us something about the educational system of the USSR?

ANSWER: That was the question most people asked. We used the diagram at the right to answer it. I think your readers will find it helpful.

All schools, from the elementary grades to the university, are public; there are no private or religious schools in the Soviet Union.

The three most characteristic features of the school system are:

1. Tuition is free at all levels.

2. The system is uniform. There is an absolute continuity of the various rungs of the educational ladder. No school leads to a blind alley from which the student cannot progress to the university level.

3. Teaching is done in the students' native language. Soviet schools teach their students in 59 of the languages spoken by the peoples of the USSR. Textbooks and study aids are published in all these languages.

QUESTION: Is kindergarten compulsory?

ANSWER: No, it is not, but most parents are only too glad to have their children attend. Music, singing, dancing and drawing are taught by teachers especially trained for work on the preschool level. The regular schedule followed in the kindergartens—walks and exercise in the open air, long afternoon naps, four wholesome meals a day and systematic care by doctors and nurses—keep the children well and happy.

The kindergartens are also excellent for initial habit formation and character building. First grade teachers are all agreed that the children who come to their classes from the kindergartens are better behaved, have better work habits and get along with others more easily.

ONS AND ANSWERS ON VIET SCHOOL SYSTEM

Children who go to kindergarten are not denied maternal care and love, as some people seem to think. The child is away from home only during the hours when his mother is working.

Kindergartens are extremely popular with both children and parents in the Soviet Union. In spite of the speed with which new ones are built, there are still not enough to meet the requests that keep pouring in.

QUESTION: At what age do Soviet children begin school?

ANSWER: Seven.

QUESTION: When does the school year begin and end?

ANSWER: The school year begins on September 1 for all students. It ends at different times, depending on the grade. Up to the fourth grade children begin their summer vacation at the end of May, those in the fifth and sixth grades early in June, and those in the upper grades in mid-June.

QUESTION: What other school holidays are there?

ANSWER: The school year is divided into four semesters, with a recess at the end of each. The first quarter ends in November, with a short recess of five days. This coincides with the big national holiday, the anniversary of the Socialist Revolution. The second semester ends just before the New Year, with a 12-day winter holiday. There is a spring recess of ten days at the end of March. The long summer vacation of from two and a half to three months begins in May or June.

QUESTION: How many days do children go to school?

ANSWER: Six.

QUESTION: How long is the school day?

ANSWER: It usually begins at 9 in the morning; it ends at noon for the lower grades and at 1 or 1:30 for the upper grades. In some schools we unfortunately still have a double shift from the fifth grade on, with the second shift from 1:30 to 5 or 6 P.M.

Special all-day schools have been set up to take care of children both of whose parents work. At these schools the children are given their dinner when classes are over, after which they rest, do homework or busy themselves with one of several indoor and outdoor recreational activities provided by the school. After-school teachers keep an eye on things until the parents come after work to pick up their children.

QUESTION: Where do children go after they finish the required eight years of schooling?

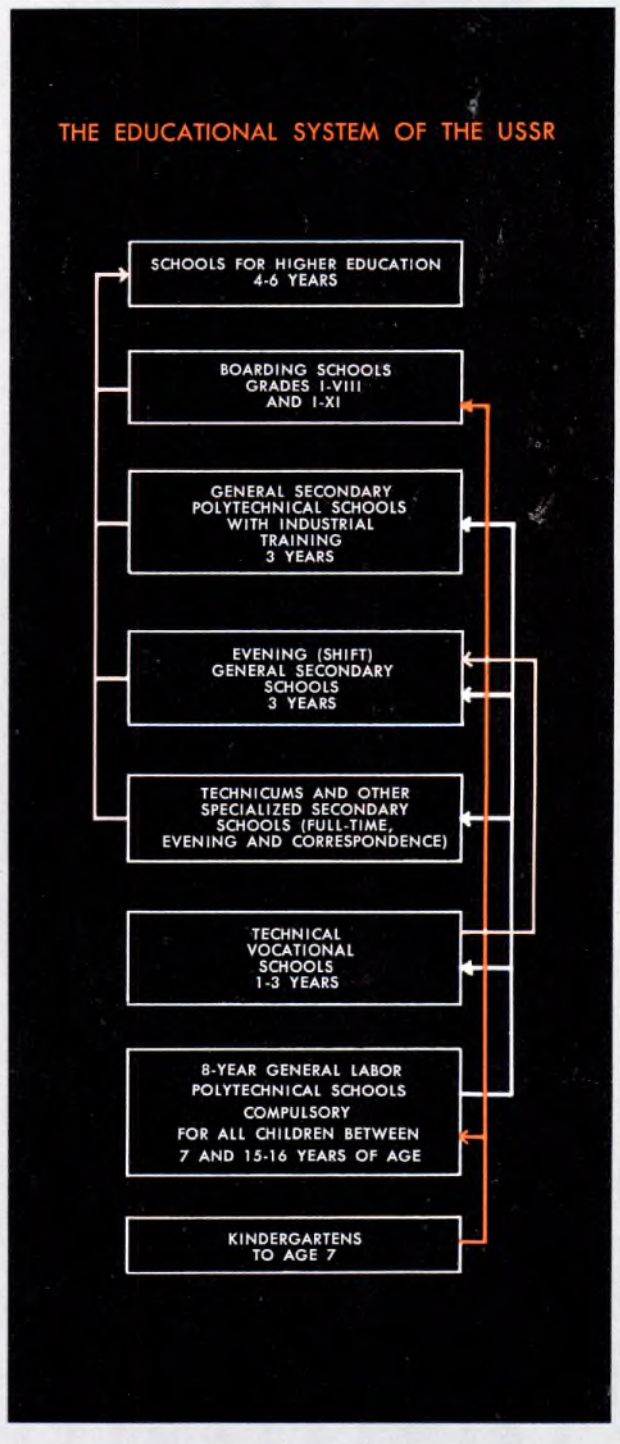
ANSWER: If you glance at the diagram, you will see that a youngster can go on from the eighth grade to one of three kinds of schools. The first is a senior high school, where, in addition to the general courses, all children receive training in productive work. The second is the technicum, diversified professional schools on the secondary school level for technicians, nurses, librarians and other trained junior personnel. In addition to completing the general secondary school course, the pupil receives intensive training in the field he has chosen for specialization. The third is a vocational school for skilled workers. The vocational school does not cover the full secondary school curriculum, but if he chooses, a student may subsequently qualify for university entrance by taking the evening or correspondence courses offered in all towns and cities and even in large factories.

The student's choice of any of these three types of schools is entirely up to him and his parents. There are no restrictions of any kind. Except for the technicum—the junior professional school—there are no entrance examinations. Tuition is free throughout. The technicums pay their students a monthly maintenance scholarship. Each of these three types of schools equips the student with a trade or specialty.

QUESTION: Do the humanities or the natural sciences get primary attention in Soviet schools?

ANSWER: There is no emphasis on one at the the expense of the other, as you will notice from the following time distribution pattern. In the 8-year schools the humanities get 43.3 per cent of the total number of hours; the natural sciences, 35 per cent; work and physical culture, 21.7 per cent. In the senior high schools the humanities get 30 per cent; the natural sciences, 31.7 per cent; work, 33.3 per cent; and physical culture, 5 per cent.

(*Other questions and answers in the next issue*)



Teacher Lilia Kanninen thinks her profession "the best in the world."

SCHOOL TEACHER FROM KARELIA

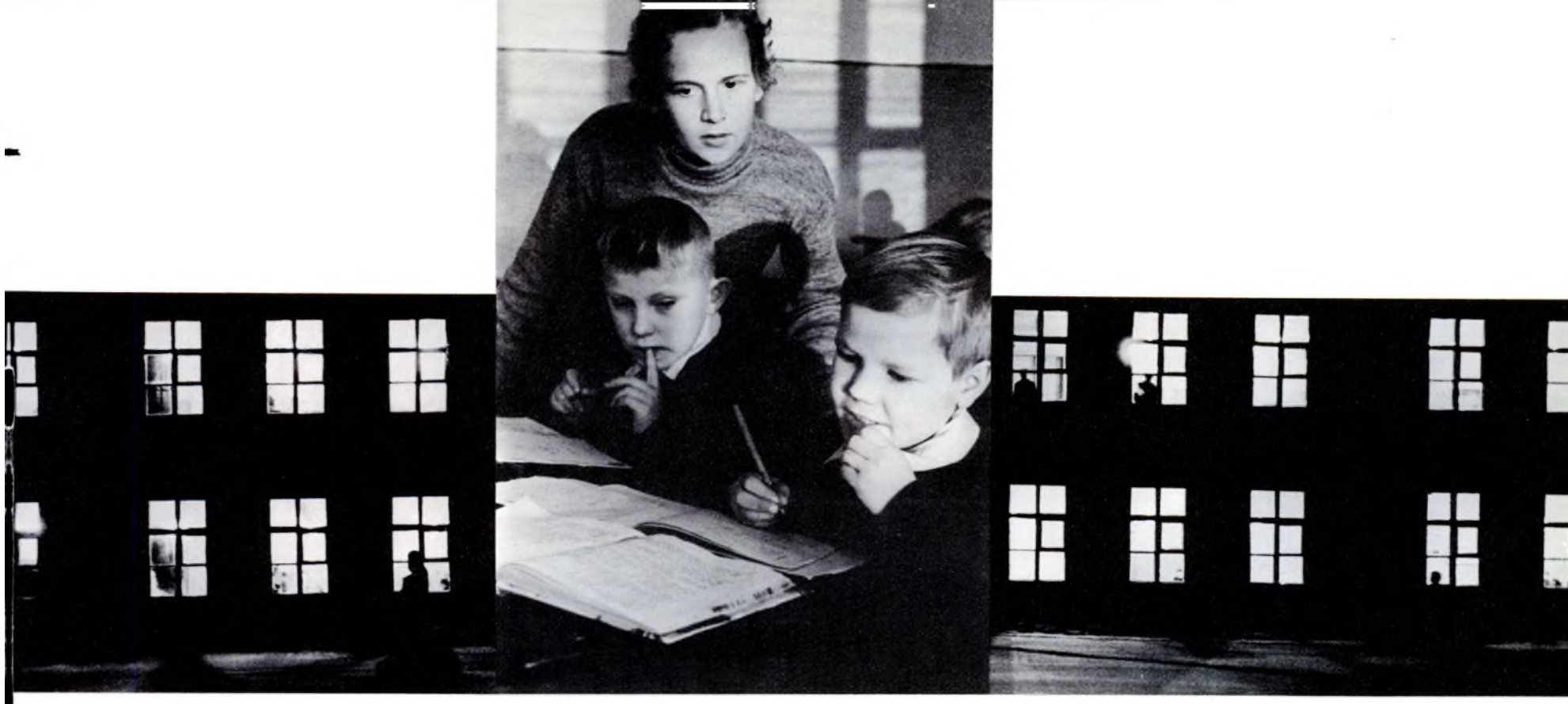
There are now two million teachers in Soviet schools. What are they like—these people who are educating the new generation of citizens of a communist society? How do they rate their profession and the work they do? We asked a young teacher, Lilia Kanninen, to tell us about herself. She lives in Chalnu, a loggers' community in Karelia. This used to be called "a land of unscared birds."

MINE is the finest profession in the world. My husband Albert—we've known each other since childhood—thinks his is; he's an engineer. Maybe we're both right. We both like the professions we picked.

After graduating from secondary school, Albert went right on to construction engineering. He had his mind made up. I wavered for a while between engineering, medicine and geology—all seemed attractive—and finally decided on teaching. I remember my college years with pleasure—the fine instructors and the pleasant, happy student community. I knew I'd made the right choice.

A teacher has a responsible and important job to do. I believe that the generation we are bringing up will never be a generation of soldiers. Our children will be builders, farmers, artists—in a communist society.

Besides a better living and a shorter workday, our country is working for a higher cultural level for the Soviet people. The answer is a better educational system, and that's where



we teachers are of prime importance.

When we completed our studies in Petrozavodsk, Albert and I came back home. In the few years we were away the place had changed—new streets, new houses, with a forest of TV aerials on the roofs. The teachers we'd had were still there, but the school itself had grown from a seven- to an eleven-year school with a carpentry shop, a housekeeping unit, and cars for driving instruction.

I teach the second grade. The children are, of course, too young to operate a lathe or take the wheel of a car—not that they don't want to. They're all eager to learn more than writing, reading and arithmetic. Some of them like to grow peas and turnips and take care of the flowers in the school garden. Others are fond of painting and modeling. Many of them go to the community music school. I haven't any idea what vocations my 27 young pupils will finally choose, but they have the whole world of trades and professions open to them.

On my twenty-second birthday my husband gave me a lovely present—the key to an apartment in a house he helped build. The house is surrounded by woods, and the river nearby lures Albert. He goes off with his tackle all the time. Sometimes the river is good to him, sometimes not; but either way, he doesn't mind too much. He likes fishing even without fish.

We have a good home life and we all have plans for the future, including our little son Alexander. The whole house is full of his toys, and one of his favorite games is playing school, when he imagines how "very soon"—in some three years—he'll be old enough to go.

His parents have gone back to school. This year we both began courses at correspondence institutes. We worked it out so that they don't interfere with our jobs or our evenings with friends. We'll still have time for skiing in winter and the river cruise we're planning to take this summer.

One of Lilia's 27 pupils. Our photographer found him in an unusually contemplative mood.

Lilia, who is the proud mother of a four-year-old son, makes a report at a parents' meeting.

Extracurricular favorite. This is fine skiing country and children take to the sport early.

The whole family on the way to a Sunday visit. Her husband Albert is a construction engineer.

He's presently helping to build another lumberjack town nearby. The region is growing fast.

Lilia teaches 24 hours a day. "Why" is the word most often used in Alexander's vocabulary.

BY SERGEI PETROV

THE SUN OF RUSSIAN POETRY

ALEXANDER PUSHKIN, the great Russian poet, died 125 years ago this February 10.

It was Maxim Gorky who said that Pushkin's verses held "more wisdom and living beauty than are to be found in the cold glitter of the stars or the rhythmic thunder of the ocean, in the whisper of the woods or the silence of the desert."

From early childhood, Soviet readers draw upon the revivifying source of his poetry. The statement of his contemporary, the outstanding critic of the day, Vissarion Belinsky, that generations to come would be nurtured on Pushkin's poetry, was prophetic. His profoundly humanist writings now serve the cause of freedom, of peace and friendship among nations; they help to rear the man of the future.

Pushkin gave Russia a poetry of artistic verity, a poetry infused with reality. He discarded the illusory, the unreal—all the deceptive trappings of idealism. He brought to fruition the century-old effort of writers before him—to make Russian literature meaningful to the ordinary people.

As the sea draws upon the waters of great and small streams alike, so he drew upon those who preceded him and passed on the distillation of their thoughts and feelings to his heirs—Leo Tolstoy and Ivan Turgenev, Fyodor Dostoyevsky and Fyodor Tyutchev, Anton Chekhov and Alexander Blok, Maxim Gorky and Vladimir Mayakovsky.

Like the genius he was, with an innate sense of history, conversant with the best in Russian and world literature, Pushkin was able to give expression to the moods and aspirations of the Russian people at a time of awakening national consciousness.

Life Was His Theme

"What did he treat in his poetry?" Gogol asked himself in amazement and delight. "Everything, and nothing in particular. It is impossible to encompass the boundlessness of his themes."

The richness and diversity of Pushkin's themes are indeed boundless. He wrote of the most universal aspects of human experience—of love and death, of the destiny of the people, of the beautiful in man, of the role of art. He was interested in life in all its varied manifestations, in history past and present, in poetry and prose. And he pictured the "gushing fountain of life" in all its wonderful colors.

Belinsky saw in the "over-all tone" of Pushkin's poetry "man's inner beauty" and a "humanism that soothes the soul." He "echoed the voice of the Russian people."

His lyrics reflect the quests of the foremost men of his time, their passion for freedom, their hatred of coercion, slavery, spiritual serfdom. Man, in Pushkin's verses, is a free spirit, noble in mind and body, but at the same time a man of the earth, of his own time. The lucid beauty and purity of the thoughts of his heroes image the poet's own nobility of heart.

In his earliest writings Pushkin forecast the doom of the "tyrants of the world," an end to shameless slavery. To his dying day, he was true to this call of his youth,

"My friend, to the fatherland,
Let us devote our all. . . ."

Hymns to Freedom

A friend of the Decembrists, the progressive men who came out in open rebellion against czarism, Pushkin extolled the cause of freedom and courageously attacked serfdom. Many of his poems are hymns to freedom. When the Decembrist movement was crushed, he was not daunted. In 1827 he wrote "In the Depths of the Siberian Mines," dedicated to the Decembrists in exile.

Whatever he wrote was centered on the life of his day. He found poetry in the most common things. Pushkin was the first Russian writer to depict man in relation to the society he lived in, with a way of thought that depended upon the historic movement of the times.

His national pride was the source of his inspiration. He was interested in all the great events of his country's history—the "fateful moments" of Boris Godunov's reign, when the Poles invaded the land; the reforms of the epoch of Peter the Great; the peasant uprising of Pugachov; the "storm of 1812"; the Decembrist movement. He loved his country's culture and took infinite delight in the boundless wealth of the Russian language.

Each line in his lyrics arouses an exultant feeling of freedom, champions the independence and value of the human personality. Man is free to think and feel, he declared. But every manifestation of freedom in that "cruel age," any recognition of independence as an inherent trait of man's nature was tantamount to a challenge of czarism itself. For Pushkin, love was a lofty emotion that awakened in man the better side of his nature.

"Naked Simplicity"

In Goldenweiser's reminiscences Leo Tolstoy is quoted as saying that in Pushkin "the sense of beauty was developed . . . to the highest degree, as in no one else." But the beauty of his verses is reserved; this is not beauty for beauty's sake. The poet sees beauty only in life, in man. It is man's thoughts and emotions that are beautiful, noble and exquisite, and Pushkin gives them consummate expression.

His imagery derives from life itself. Witness his poem *The Bronze Horseman*, his "little tragedies," and the story *The Queen of Spades*, written in the thirties. His lyrics had become virtually unexcelled. He almost completely dispensed with metaphors, similes and epithets. Yet this great economy of expression, the "naked simplicity" of language, scenes, and poetic images which he used with such extraordinary effect in *Eugene Onegin*, does not diminish the emotional impact of his work but, on the contrary, raises it to the very highest and the most lucid level of artistic expression.

Pushkin made the Russian literary language the property of the whole people. He drew freely upon the folk dialect and boldly brought the language of the people into poetry.

The principles of realism in poetry that Pushkin bequeathed to us are still very much alive—his artistic truth, his historical objectivity, his profound sincerity, his optimism and his great artistry. ★

THE BRIDGE

By Nikolai Chukovsky

"HOW HE'LL make the trip I simply can't imagine," Grandmother said as she turned a pancake with a knife. "He's afraid of everything."

"He'll get there all right," Aunt Nadya's voice came from far back in the kitchen. "After all, it can't be helped. It'll be better for him in every way."

Kostya heard everything they said; he was standing in the currant bushes just outside the kitchen window. He hastily picked some berries and popped them into his mouth. Ever since it had been finally decided he was to leave, he had spent hours in those bushes whose branches thrust themselves in through the open window. He could hear the pancakes sizzling. In the dimness of the kitchen he made out Grandmother's bare, yellow arms as they hovered above the kerosene stove.

"He's afraid of just about everything," Grandmother repeated. "He's afraid to buy a stamp at the post office. How will he ever make the trip?"

The berries were long since sour on Kostya's tongue. Depression weighed him down. He came out of the bushes, went up the steps, and felt for his bicycle in the dark hallway. The bicycle on his shoulder, he pushed open the door to the kitchen.

Aunt Nadya, Grandmother's sister, was standing at the table peeling potatoes. Since this was Sunday, she was helping Grandmother instead of going off to work at the factory nearby. On a plate beside the kerosene stove rose a stack of pancakes. Kostya knew the pancakes were being fried for the journey. It was still another sign that his departure was inevitable.

"I'm going for a ride," he muttered sullenly.

Grandmother shifted heavily from one foot to the other and sighed again. Without looking up from the potatoes, Aunt Nadya remarked:

"Have a good ride. It'll be your last for a long time. There won't be any riding up there."

Kostya wheeled the bicycle through the gate and threw his long leg over it. The bicycle had been bought long ago, before his mother died, and now it was too small for him. He had suddenly shot up during the past year; he was now almost twice his previous height, but he had not grown a bit broader. His shoulders were narrow, his neck long with a big Adam's apple, and his ears protruded slightly, appearing translucent in the light. When he mounted the small bike, his sharp knees almost touched his chin. But he was accustomed to his bicycle and did not find it at all awkward. Absentmindedly he rode down the lane, past the fences beside which hung dusty elderberries, and out onto the highway, turning left to get out into the country as quickly as possible. He did not want to meet anyone, did not want anyone to disturb his thoughts.

He had finished the ten-year secondary school that spring, doing badly in his final exams. With barely satisfactory marks there could be no question of college. He had not lagged behind the others until after his mother died, a year and a half ago, and he had missed two months of school. He had not been able to make them up. He could never answer the teachers' questions in class, and everyone thought that he did not know anything. That made him even more timid and diffident.

He was clumsy and shy. With strangers he would keep quiet or else not talk to the point, and that plunged him into a fit of agony. He avoided people, gave up soccer, and went swimming in the river by himself. One time the salesgirl at the baker's did not give him the right change. He could not get up the courage to tell her, although he saw right away she had made a mistake. He told his grandmother he had lost the money. Grandmother was the only one he was not afraid of. Only with her did he feel free and easy. But he had to leave her.

Grandmother had stopped working at the factory three years before and had gone on pension; her pension also supported him. Aunt Nadya had four small children. Her husband had left for a job at a construction site on the Volga. There were rumors he had another woman there; he had not sent them a kopeck the whole year. The entire community, in which Kostya had been born and had lived all of his seventeen years, worked at the factory. The factory employed women mostly; there was really no work for a man there. The boys left the town as soon as they finished school. Kostya also had to leave and start a life of his own so he would not be a burden on Grandmother and Aunt Nadya. And there was a place for him to go. He had been invited to go to Siberia by Grandmother's brother Vasili Petrovich, who had promised to look after him and help get him settled. Everyone thought it a wonderful solution, a great opportunity. Only Kostya, deep down inside, thought that it was not wonderful at all, but he did not dare say so aloud.

He did not dare tell anyone how frightened and depressed he became at the thought of leaving Grandmother—he had never been away from her for a single day in his whole life. Or what a cold, stern, bossy old man he imagined Uncle Vasili to be. Grandmother was evidently afraid of her brother too. "See that you don't cross him," she had warned Kostya.

Uncle Vasili had moved to Siberia many years before Kostya was born, when Kostya's mother was still a little girl. He had become a tugboat pilot on a large Siberian river that flowed into the Arctic Ocean. Now he was no longer a pilot but was in charge of a great many boats. Kostya had traced the river on the big map that hung in the classroom. With all its winding tributaries it looked like the underground part of some supernatural plant that had weird and terrifying roots. In his invitation to Kostya Uncle Vasili had written: "I'll put him in a technical school for river pilots along with my boy Nikolai. They'll be properly trained there, and in three years' time they'll be real river boatmen." Grandmother had glanced fearfully at Kostya when she read the ominous word "trained" aloud.

And now they would be going to the station that night to catch the Moscow train that stopped there at five in the morning. Kostya would travel alone to Moscow, where he had never been, and in that vast and mysterious city he would transfer from one station to another to get the train which would take him to Siberia. And all of that he would have to do alone, his only tie with Grandmother the pancakes in his basket.

The day was warm but overcast. Rain had threatened since morning but was still holding off. Kostya rode out of the town and onto the highway that ran up and down across the countryside. To the right of him, some two miles away, flowed a river, and every once in a while there were glimpses of it between the gentle knolls of the broad river meadows. The clouds hung low, and a warm, hay-scented breeze blew in his face. It was Sunday, and the usually crowded highway was deserted, no one to bother him.

A little bird alighted on a telegraph wire in front of him and, waving its long tail, waited until he caught up. Then it flew off, perching on a wire far ahead, and waited for him again. The highway had once been a dirt road, and along the right-hand side old lindens still stood here and there, so bushy and thick with leaves they looked like congealed explosions in the still air. But Kostya saw neither the bird nor the lindens. He pedaled along steadily, staring straight ahead down the gray ribbon of a highway as it gently climbed and dipped.

Each time he could see to the top of the next rise, where it looked as though the highway fell off the edge of the world. But as soon as he topped the ridge, Kostya would see another green dip through which the straight strip of highway ran down, then up again and off into the sky on the next rise.

As he topped one of these crests, he noticed something bright in the distance.

It was moving along the highway, on a rise, traveling in the same direction as he, something blue and yellow. He did not have time to make out what it was before it vanished over the ridge.

Kostya pedaled faster, racing down a slope, across a little bridge over a ravine, speeding ahead, trying not to lose on the rise what he had gained in the descent. As he came to the top of the ridge he saw the blue and yellow spot on the next crest. Now he could see—it was someone on a bicycle.

As he sped over the next crest, he saw that the rider ahead was a girl in a blue skirt and yellow blouse, with golden hair down to her shoulders. She was pedaling along unhurriedly. Kostya raced down the hill to catch up with her and see what she looked like. She heard him coming and turned.

She had a round face. They were some two hundred yards apart and he could not make out her features. Besides, he had no time, since she immediately turned her face away. Her plump legs in their white socks started pumping faster. She did not want him to catch up to her.

They raced along. At the next rise the distance between them grew smaller; but on the drop, when they stopped pedaling, he fell behind. Her bicycle was the better one. Carried away by the excitement of the race, he bent low over the handlebars, straining every muscle. On the rise he again drew closer, and by quite a length. Now he had to keep from dropping back on the descent. And although the slope was a long one, he reached the bottom without having lost a single foot. She was fourteen or fifteen. Every

once in a while she would turn her head slightly, studying him out of the corner of her eye.

The distance between them shortened relentlessly, and a feeling of triumph swelled Kostya's breast. The girl kept glancing back at him more and more often. He could see her cheek when she did. Every time she turned her head to look back at him, her bicycle swerved on the asphalt and Kostya gained another two or three yards. Now Kostya was sure he would overtake her.

To the right, at the bottom of the next hill, a newly paved road turned off from the highway. Kostya knew the road led to the river and the spot where a new bridge was being built that would link up this side with the state farms on the other side.

She turned off onto the new road so unexpectedly that he almost missed it. Evidently she thought he would stop chasing her and keep going along the highway. But, with growing excitement, he though only of catching up. He turned off onto the road and dashed after her.

It was impossible to cross the bridge, and the road led only to the bridge. He knew she would have to stop as soon as she reached the river.

They flew past cement barrels, sifters, temporary wooden sheds and a great number of reinforced concrete piles. The unfinished bridge lay before them.

Although the bridge reached to the other bank, it had no roadway. Encased in shapeless wooden scaffolding, it was like a grill with coarse holes through which bits of the other bank could be glimpsed. The beautiful lines of the future steel bridge could only be guessed at in this conglomeration of prop lumber. Work would ordinarily have been in full swing, but today there was no one around. Today was Sunday.

Kostya had no time to take in the scene. His bicycle was carrying him forward much too fast, and everything rose up in front of him instantaneously. All of a sudden the asphalt ahead ended and he was riding on a sandy embankment leading to the bridge. A bridge four boards wide had been laid across the embankment of loose sand, and he was startled to see the girl ride straight out onto the boards without slowing down.

Before he realized it, he was on the boards himself. He had to get a tight hold on the handlebars so as not to slip off into the sand. But that did not worry him. What did worry him was the sight of those boards leading off the embankment up onto the bridge to form a narrow path at the edge. The boards rested on steel beams set far apart, and there was nothing to rail them off from the water far, far below. The path was evidently used by the men who worked on the bridge in getting from one bank to the other. Her bicycle, traveling at full speed, was coming to the end of the embankment.

"Put on your brakes!" Kostya yelled, but he choked and could not hear his own voice.

She rode straight ahead on the boards and out onto the bridge, racing along between the two abysses high above the water.

Kostya felt that something terrible, irreparable, was happening. He could still have braked, but for some reason did not. His bicycle carried him out onto the bridge, onto those boards. Far below him, to the right and to the left he saw the water.

To stop, or turn back, or look around was out of the question now. All he could do was ride forward without slowing down. If only his hand did not tremble. He knew he wouldn't hold out; he'd grow weak from fright and his hand would falter if her bicycle were not there ahead of him.

He did not take his eyes off her. Her bicycle traveled along evenly, straight ahead. But Kostya could feel the desperate tension of that evenness. Would she be able to stand it? She had found herself on these narrow boards as unexpectedly as he had. If only she did not look back. How far there still was to go! If only she did not quiver, if only she did not look back. There, she had reached the middle. Another minute or so and it would be over. If only she did not look back.

But she did.

She turned her head the very slightest bit to see if he was following her, and her front wheel wavered. For a terribly long instant she struggled to straighten herself. But she could not manage to, and the bicycle slipped off into space, into emptiness.

Kostya did not see her fall. She simply vanished from the bridge with her bicycle. Then in a flash he did what a moment ago had seemed to him impossible—he braked and jumped off his bicycle onto the boards. He managed to keep his footing on the boards and looked down. The water was far below, gleaming dully like metal as it flowed swiftly under the bridge. He saw her bicycle; the frame had caught on the end of a board sticking out of the rough scaffolding. It hung above the water, the wheels still turning. But she was nowhere in sight.

That terrified him so much that he laid his bicycle down on the boards and dived into the river, head first.

The water closed over him and pulled him down. He was stunned by the fall, but he forced his eyes open under the water to search for her. What he saw were the vague outlines of huge boulders and pillars. He touched bottom; now he was being drawn upward. He turned over under water and then rose to the surface.

He was being carried toward the span of the bridge. He could see the concrete pier close by. The molding boards and wooden piles sticking out of the water nearby had not yet been removed. Above, through a multistoried network of metal crosspieces and weather-beaten boards, he caught glimpses of the overcast sky. The current dragged him downstream. There was no hope of swimming against it. The current swept him along, whirling him around, and at first he made no effort to resist being spun about. Suddenly, as he turned, he caught sight of her.

He saw the curve of her cheek beyond a wooden pile sticking out of the water beside the foundation, at the very end of the bridge span. Up to her mouth in the water, she was holding onto the pile with both hands while the current whipped up a frothy whirlpool in front of it. The pile prevented him from seeing her whole face. All he could see were a cheek and an eye. But from that eye, open wide in terror, he guessed she was about to let go of the pile. If she did, she would be carried out at once into the river.

"Hold on!" he shouted, choking and sputtering.

His only fear now was that the current would carry him past her. To swim back to her against the current would be more than he had strength for. He made desperate efforts to direct his movement a little. His wet trousers and canvas shoes weighed him down. Still he did manage, by flinging out his arm to the left, to grab the same pile. The current immediately swung him about and threw him against the pile. He found his shoulder pressed against hers.

Her pale, wet, frightened face was close to his. Her dilated gray eyes showed nothing but strain. She was holding on to the pile with her last ounce of strength. He knew that she had hope and faith because he was next to her, that she was depending on him.

He looked up. Overhead rose the concrete span of the bridge. It looked tremendous from below. There was nothing to catch hold of. To climb up was impossible.

He looked behind. Behind was the river.

"Can you swim?" he asked her.

She shook her head.

Nor could she hold on any longer either. Again he looked about him. It was not far to the left bank. By himself he could make it. The river turned right, and so did the current, while to the left reeds rose out of the water in a long promontory. If only the current would carry them to the reeds.

He glanced at her again. He would have to act fast, while she still had some strength left.

"Let go!"

"No, no!"

He tore one of her hands away from the pile and tried to place it on his shoulder. Instantly her other hand slipped off the pile and she grabbed hold of him with both hands. Her weight forced him to let go, and they both sank at once. The current whirled them about and carried them ahead under water. He tore her hands away, pushed her from him to free himself.

She rose to the surface, her arms flailing about. He came up also, snorting, and saw how fast the enormous bulk of the bridge was receding. She floundered beside him. For an instant her round face emerged from the water. She gulped convulsively for air and sank again.

He put her short, plump arm about his neck. When her other hand started to clutch at him, he flung it aside.

"Don't you dare!" he said sternly. "Do what I tell you."

She obeyed at once and let go. Now they were able to keep their heads above water. He knew he must stop the current from carrying them past the reeds, and paddled hard with one hand. Her soft hand lay heavily, trustingly, on the back of his neck, pushing him down. His mouth was under water most

of the time, but he adjusted himself to that and lifted his face out only to breathe. What mattered was keeping her face above water.

She stopped struggling and gasping because she had calmed down, and she had calmed down because she trusted him completely, more than he trusted himself.

He felt he was losing strength, and it looked as if they would be carried past the reeds. He kept trying to paddle to the left, to the bank, but the current, rushing along, turned right, skirting the reeds. He was worn out, tried twice to touch bottom. On the third try he did.

The water came up to his ears, but he was standing. The sand bar on which the reeds grew stretched into the river; it was not so high there. She also tried to touch bottom, but her head disappeared under water and she came up gasping and choking. He grabbed hold of her, lifted her in his arms and, treading carefully, carried her to shore.

Fifteen minutes later they were sitting on the slope of the river bank in an alder grove, looking at the water through the leaves. Their clothes were drying on the branches. Kostya had only his shorts on; she wore shorts and a brassiere. He was embarrassed and tried not to sit too close to her or look at her too often. But she was not the least bit bothered. Her round, childike eyes gazed at him trustingly and admiringly.

Both their bicycles lay in front of them on the grass. Kostya had gotten both of them off the bridge himself. After they had come out of the water, he felt he had to do something. He felt as though he were walking on air; there was nothing he could not cope with. Getting his own bicycle off the bridge had not been difficult, though he had marveled as he made his way over the four boards how he had ever ridden a bicycle along such a narrow, unfenced path. An hour before he would have refused to walk over the boards, and now he walked over them without a tremor, not even bothering to look down. Getting her bicycle had proven incomparably more difficult. He had had to slide down the scaffolding, hang by his hands and maneuver the bicycle off the end of the board with his feet. He had done all that without a moment's hesitation because she was standing on the bank watching him. He was not so much afraid of falling into the river—that would only be repeating the dive he had made—as of dropping her bicycle into the water. But he held on to it and wheeled both bikes up onto the bank.

"You can do anything!" she said.

"Yes, anything," he repeated with conviction. "If I'd dropped your bike, I'd have given you mine."

He yearned to be infinitely generous and even regretted that he hadn't had to give her his bicycle.

"I wouldn't have taken it."

"I don't need it any more. I'm leaving tonight."

"Leaving?"

"Yes, tonight."

"For long?"

"For good."

"When will you come back?"

"Probably never."

His words made such an obvious impression on her that he became upset himself.

"Never," she repeated slowly. "Are you going far away?"

"Very far away. I'm taking the Moscow night train."

She asked if he was going to the regional center.

"Of course not!" he said. "Day after tomorrow morning I'll be in Moscow."

"In Moscow," she repeated respectfully.

"Only for one day. Have to take a look at Moscow, after all."

"Are you going still farther?"

He nodded. "To Siberia."

She was silent, and he realized how important the word "Siberia" sounded.

"Whom are you going with?" she asked finally.

"No one. I'm going by myself."

As he talked, he found he was looking at what lay ahead of him in a new light. He had made a discovery, had learned something about himself he had not known before. It seemed there were a great many things he could do. And the future, which until now had been so frightening, was suddenly, gloriously, within his reach.

In his excitement he got to his feet.

"I'm going to pilot ships," he said. "Diesel electric ships."

"Where to?"

"Up to the Arctic Ocean. Beyond the polar circle and back again. There'll be taiga and tundra and lots of wild beasts," he said, trying to remember all he knew about Siberia.

He waited for her to ask if he really knew how to pilot a diesel electric ship, but she did not ask. She did not doubt but that he could do anything. It was he who did the doubting.

"I'll learn," he said, thinking of Uncle Vasili. "What one man can do so can another."

Narrow-shouldered, long-legged, erect, he stood silent for a moment, forgetting about her as he stared at the water gleaming through the leaves, gripped by everything he had so suddenly discovered. She glanced at him timidly.

"Is anyone seeing you off?" she asked in a low voice.

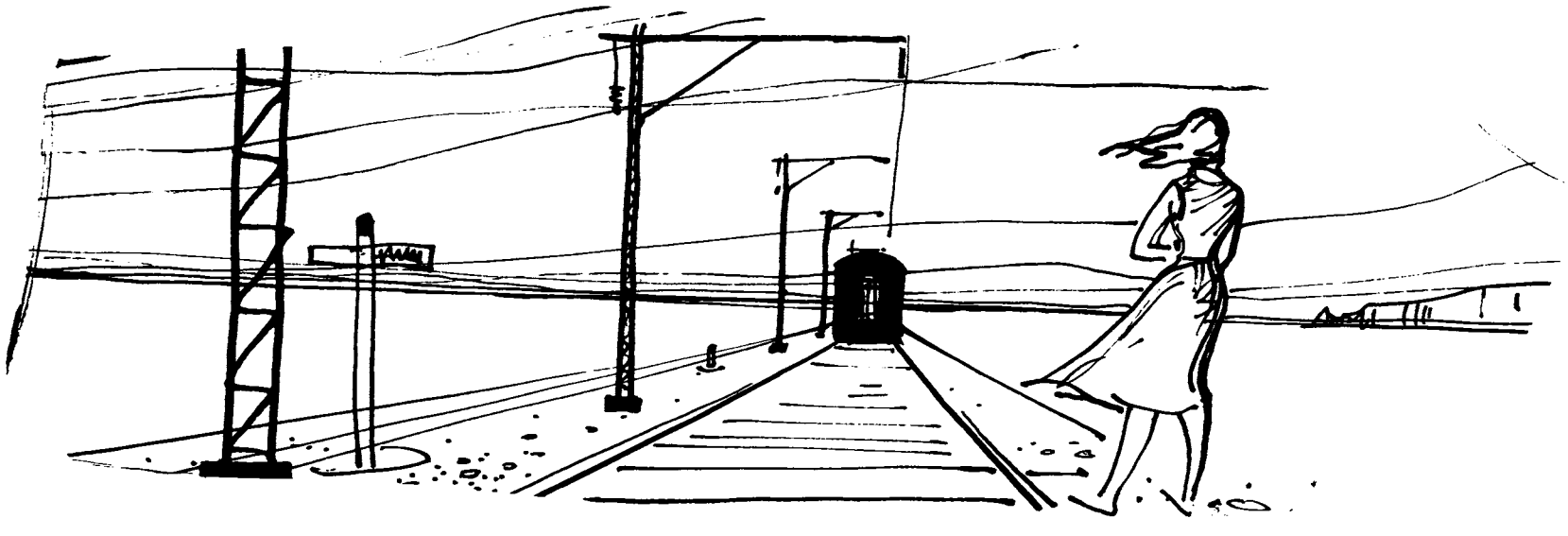
"Yes," he said.

"Who?"

He knew that Grandmother and Aunt Nadya would go to the station with him. But for some reason he did not want to tell her. So he said nothing.

"May I come?" she asked quickly in a whisper, pushing her wet hair away from her face. "We live near the station. I'll climb out of the window and run over. May I?" She talked hurriedly, fearful that he would forbid her to. "I won't bother you. No one will see me. I'll just stand on the side and watch. May I?"

He did not answer. He looked at her in joyful surprise, filled with a tenderness that was also a discovery. ★



Artists *in the making*

BY ARIADNA ZHUKOVA

Tanya Asokina, graduate of the Moscow Secondary School of Art, has just started on a very promising career.

Museum visits are scheduled in the school curriculum. This group is at the Tretyakov Gallery. The painting is by Alexei Ivanov.

IS AN ARTIST born or made? Ask anyone who works with youngsters and you'll be told that all children are born artists. Unfortunately, most of them grow out of it. The young child takes to drawing in the most natural way in the world.

This time of year the kindergartner's favorite subject is likely to be a fir tree, very green against a dark blue sky with a very red sun and fluffy white dots of falling snow. The children work together painting large panels to decorate their school's playrooms.

At home three-year-old Sasha sits on the floor making circles and curlicues on a sheet of paper.

"What's that?" Grandma asks, pointing to the curlicues.

"A fish," says Sasha.

"And that?"

Sasha is surprised at Grandma's lack of perspicacity. "Can't you see it's a bus?"

Grandma writes "fish" and "bus" on the back of the drawings and puts them away. A few days later she shows them to Sasha. No, he doesn't get them mixed up. He obviously sees a pretty little fish in one drawing and a red bus in the other.

The child draws the world around him as he sees it. His drawings change as he matures, but his very individual view of the world remains unchanged. There is the artist in the making.

At school children study drawing more formally. They are taught the fundamentals of perspective and sketch their first still life—an autumn branch of golden-brown and red leaves lying alongside an album, or a bright flower glistening with dewdrops.

We teach children to draw just as we teach them to speak, read and write. And yet drawing rarely becomes their favorite pastime or vocation.

Ten-year-old Tanya is a young artist in the making. Her teacher in grade school tells the class: "For homework, I want you to look in your mirror at home and draw a picture of yourself."

Up to now, Tanya, like all the other children, had only drawn

Fyodor Modorov, well-known painter and principal of the Surikov Art Institute, often speaks at the Moscow Secondary School of Art.

such simple things as a milk can, a vase, a sprig of blossoms. The teacher told the class something about the proportions of the human face, and about light and shade. She had a dark-skinned boy and a fair-complexioned girl come to the front of the room to show that even skin colors vary. The children stared at these familiar faces as though they had never seen them before. They were looking at them for the first time with the observant and probing eye of the artist.

At home Tanya sat down in front of her mirror and did everything the teacher had said. She mixed her paints carefully, looked at her skin in different lighting, and tried hard to trace the line of her perky, turned-up nose. Mother laughed when she saw the picture, but Tanya's teacher said, "That's fine!"

That brief expression of approbation was the turning point in this ten-year-old's life. She began to draw every day, sitting for hours while she sketched a simple white teacup, trying to trace the play of light and shade on the porcelain surface.

One day her teacher said: "Tell your mother you'll be home a little later tomorrow. I'm taking you to an art school."

The next day Tanya and the teacher visited a building opposite the famous Tretyakov Gallery. The sign at the entrance read, "Moscow Secondary School of Art of the Surikov Institute."

On the corridor walls hung pictures done by the students—butterflies, elephants, trees, flowers, portraits, and fairy tale illustrations that Tanya liked best.

Her teacher told her about the school. The course is seven years. Besides the general academic subjects, children study painting, drawing, clay modeling, composition and art history. The first four years they work in water colors, the next three in oils. They go to the country for a month every summer to do landscapes. In winter they sketch at the zoo, the circus or backstage in a theater.

"Are the teachers real painters?" Tanya asked.

"Yes. Almost all the teachers are graduates of the Surikov Institute of Moscow or the Leningrad Academy of Arts. They paint, exhibit in the big shows, and teach besides."

Two boys walked past Tanya with paint boxes strapped to their shoulders. One of them was asking the other, "Did you get your stipend yesterday?"

Tanya was surprised—she had thought only college students receive stipends. The teacher explained that all art students who show progress get stipends and that every student is given his materials free—charcoal, crayons, paints and canvas.

"There are 320 children studying here," she explained. "Some are recommended by art teachers at clubs and Young Pioneer Palaces, others by teachers in regular schools like ours."

Tanya wanted very much to enter the art school, and her mother raised no objection. For the fall entrance examinations she was asked to do two still lifes and a composition on a given theme. For the still lifes she made a drawing of a clay toy and two books, and another of a red flower in a glass jar. Then she listened to a modern fairy tale, and, after thinking about it a few minutes, sketched a ship winging its way above the clouds.

Her drawings showed promise, and Tanya was accepted. With the teachers' help she will eventually choose one of the many fields of art. In seven years she can qualify for a job as a commercial artist, interior decorator, illustrator, or as a worker in one of the several other fields in which people with skill and training are needed. Or, if she chooses, she can go on to the Surikov Institute. ★

Besides the professional courses, the young artists of the future are taught all of the regular school subjects.

All the teachers are artists in their own right and exhibit at the more important shows. Most are graduates of the Surikov Institute or the Leningrad Art Academy.

A gym class. The school's working slogan might well be: "Artists in heart and mind; athletes in body."

Art students Kolya Charugin and Grisha Tskikunov are inspired by this fall scene on the outskirts of Moscow.

HOW DO

BY ZINOVI YURIEV

Zinovi Yuriev is happily married and the father of two children. He has fallen in love any number of times, although with the same woman each time--his wife. This, he feels, makes him qualified to speak on the subject authoritatively, which he does - - briefly and unscientifically.

It is much easier to fall in love than to write about it. The editors not only expected an article that would cover the subject in strict scientific terms, but one in which cupids would be poised for action behind every word. After I had accepted the assignment to write on the subject, I was truly worried about what my neighbors might think. It would probably be rumored that I am a Don Juan, and being called Don Juan Yuriev is not the best thing that can happen to a man.

I was not worried about my wife. Without her I could not have written this article. Not only did she keep the children from crawling over me as I sat writing it, and not only did she keep the baby from chewing my manuscript, but she was indispensable in recalling the sequence of the events of our courtship.

In our infrequent quarrels she would refer to me as a heartless brute who couldn't even love himself. I was almost ready to accept that criticism, but suddenly she conjured up such a picture of me that I marveled at myself. I'd never have believed that I could stand hours in the frost waiting for anyone, or that I could even write love poems. As the details were drawn from out of her memory, I felt I simply had to love her all my life—I couldn't let the results of this Herculean labor go to waste. And after all these reminiscences, my wife, too, thought that I was a rather nice fellow. At any rate, three days of my absence at the kitchen sink passed unnoticed, and I wasn't asked to walk the baby when it woke at four in the morning.

I searched for fresh background material to stimulate my memory by attending a wedding. However, I found I did not have a coherent thought for a week afterward. I also spent a day at the registrar's office watching love being translated into formal certificates.

The article that follows is the result of my research.

FALLING in love is quite easy if you have someone with whom to fall in love. "For every man there is a woman," say the wise men. But they do not say where to find her.

I met my future wife in a restaurant. Waiters in our country are like space vehicles—they are much easier to put into orbit than to bring down from orbit. That's why I had more than enough time to examine the young lady at a neighboring table, and vice versa. And it was not long before we both fell—hard. Now we have two children—that's the story in a nutshell.

This is not the only pattern, I discovered. The Soviet Union is a big country, and there are a multitude of opportunities for young people to meet and fall in love. He and She might meet on the Black Sea or on the limitless plains of the virgin land territory. They might meet aboard a TU-104 jet liner or at a workers' club dance. Research has also shown that it is possible to meet at a Bolshoi Ballet performance, or in a tourist group visiting the Cathedral of Notre Dame in Paris, or in the Arctic. So you see, opportunities are unlimited, except that it might not be much fun embracing in a thick fur coat.

Further, I have found that once He and She meet, that is the last we see of them. They seem to shun company. As a matter of fact, it is reasonable to assume that they will spend endless hours blushing in each other's company and repeating the things lovers have been repeating ever since man discovered he was not alone on earth.

It becomes much easier to spot lovers in the winter time. They are bound to be seen in the movies during the last performance, which seems to be for lovers only. A person who actually wants to see a film, not merely go to the movies, usually avoids the last performance.

In rural areas certain complications may arise in boy-meets-girl relations, because rural people are usually more puritanical. In a small village everyone knows everyone else and more decorum has to be observed.

Still, the younger set lives by its own laws. Watchful mothers may warn their daughters about staying out late, but statistics do not indicate that this injunction is taken seriously. A study reveals that girls from 16 years up can be expected to have dates. It is fair to assume that the same holds for boys, although no such study has yet been made.

In some respects the rural He and She have it easier than their urban brothers and sisters. Should you happen to be in a Russian village some warm summer evening, you are likely to see what appears to be an endless procession of couples singing songs to the accompaniment of an accordion, an instrument without which

PEOPLE FALL IN LOVE?

country life is incomplete. Although the movies have found their way into the most remote villages, and in many places TV also helps brighten life, the tradition of going for a promenade in the late evening hours is still very much alive. And in thousands of villages from the Arctic Circle to the subtropics the slow-moving folk song can be heard alternating with the modern tunes the younger generation seems to favor.

One of the facts I learned during my research is that the word "engagement" is known to our younger generation only from books. Courting, however, is known from both books and experience. The courting period is not long, generally speaking, although no statistics have been found to either prove or disprove this contention. It may be said to average from six months to one year.

Young people, once they have their hearts set on marriage, do not wait until they reach a particular level of prosperity. No longer do fathers ask: "Young man, can you provide my daughter with the standard of living to which she is accustomed?" If the couple decide to wait at all, it is until He or She, or both, finish school or acquire a profession. But there is no hard and fast rule on this score. In general, as soon as the couple start earning their own money, all barriers are removed.

After exhaustive inquiries I have yet to find the man who would tell himself or the love of his life that they'd better wait until the next pay raise. This does not mean that all newlyweds start out on Easy Street. Far from it. Many of them have the odds against them, so far as housing, for example, is concerned. But the outlook is always optimistic. This optimism appears to be universal and can be said to be a national trait.

A young man's rating on the "eligible" list is determined not by his money but by his education and reputation. The same holds true for the fair sex. If She has a college education and He has not, it is a disappointment, of course. But everything is patched up by a promise on his part to start a college course. A higher education or a good profession is the best dowry the fiancée can possibly have.

Once the young couple is ready to tie the knot, how is that done?

Church weddings are down to an infinitesimally low percentage—a small fraction of one per cent. The ordinary procedure is to pile into a cavalcade of taxis with parents, relatives and friends, and ride to the local registrar's office for a civil ceremony. In large cities the ceremony may take place at the Marriage Palace.

As the bride and groom stand on a thick carpet at these civil ceremonies—she beautiful but trembling, he smiling but pitiable—they are congratulated by a representative of the municipal authorities. It may be a motherly-looking woman who comes out from behind a desk to kiss the bride, or a venerable man who looks at the couple benevolently and wishes them many years of wedded bliss. Then the bride and groom receive their marriage certificate and officially become man and wife. It is not unlikely that, if pressed, the officials will consent to a sip of champagne to toast the health of the wedding couple.

Let it not be thought, however, that the entire ceremony boils down merely to a sip of champagne, especially at the traditional Russian wedding feast. The bride and groom, now man and wife, sit together at the end of the table. And whenever the guests shout "Gorko!" they kiss. This is not a magic word. It means "bitter." The implication is that the glass of vodka—or even the sweet wine that the guest may be holding—is too bitter to drink unless sweetened by the kiss of the newlyweds.

There is no predicting how many times the newlyweds may be called upon to sweeten someone's drink at the wedding. Anyway, it is with these kisses, "sweeter than wine," that wedded bliss begins.

But that is the subject of another discourse. What the editors wanted this time was "Falling in Love." They have it. ★

The squad spends three days a week training and two playing international or home matches.

(Left) Coach Arkadi Chernyshev's job is to get players from eight clubs clicking as a team.

A tense moment in the game between the Canadian Kelowna Packers and the all-Moscow team.

Robert Sakharovsky (left), Igor Christovsky, Lev Khalaichev.

This will be Stanislav Litovko's first year on the national squad.

Center Vyacheslav Starshinov flanked by the Mayorov twins.

ICE HOCKEY HEADLINERS

By GERARD YELENSKY

FOUR YEARS AGO the centenary of Canadian ice hockey was celebrated. The anniversary was also marked in the Soviet Union, although the game there has been played for only 15 years.

In February 1954 the Soviet Union made its début in international hockey competition. Stockholm fans were the first to see the red jerseys with the letters "CCCP"—Russian for "USSR."

The novices brought with them enthusiasm and a terrific will to win. They defeated one team after another. The surprise came when they beat the Canadian world-title holders. The Russian Bombardiers were acclaimed generally as players of the highest caliber, and the team's captain, Vsevolod Bobrov, the best forward in the tournament.

The following year Canada turned the tables and the Soviet Union had to console itself with the European title. In 1956, at Cortina D'Ampezzo, Italy, the players in red won Olympic and world laurels. It was a jubilant squad that stood at attention when the Soviet national anthem was played.

It is easier to win a title than to hold on to it, those who know say. At the next three world championship meets the best the Soviet Union could do was win the silver medal. And in the past two years it stepped down a rung by relinquishing the European title to Czechoslovakia.

The fans, however, are not downhearted. They know that Lady Luck is fickle, that she doesn't always smile in the same direction. Even Canada, synonymous in the sports world with ice hockey, has had to take it on the chin more than once. In 1954 and 1960 Canada was only runner-up. In Squaw Valley the Canadians were pushed back to third place.

"Almost making it" is no consolation. The slump is not some inescapable jinx but usually the result of improper training.

Time stops for no man. Age caught up with those of our players who brought world laurels to Soviet hockey in 1954-1956, and their successors were found wanting. It is not easy to produce players of championship caliber.

Enthusiasm is fine, but it takes more than that to win games. Victory is the result of indefatigable practice the year round. What happened was that the coaches concentrated on winter training and overlooked summer training on artificial ice. The three or four months of winter training were insufficient for producing champions.

The players and playing units on the USSR team come from big league clubs. But even a smooth-clicking trio is not enough to produce a winning combination. There must be equally smooth operation between the forwards and defensemen. Training sessions and a full game schedule help cement and solidify the units into a single team. This takes time, and time was what the coaches never seemed to have.

The candidates for the team are all involved in the USSR championships, a twenty-club affair. The club that runs up the highest point total in a double round robin is the winner. The games, played in 14 cities scattered over a huge territory from Riga on the Baltic coast to Novosibirsk in the heart of Siberia, began on October 21 and are still going strong; the winner will not be known before April.

It's a big job spotting the all-USSR players in time, molding them into a team and keeping them in peak form until the world championship rolls around. But we're optimistic.

As of this writing the USSR team is a 29-man affair, but only 17 airline tickets to Colorado Springs will be available. The final choice will be made by the selectors after a series of scheduled international warm-up games. The selectors will release the names at the end of February. Risky as forecasts may be, here are some of the likeliest choices:

The team will be made up of two playing generations—ages ranging from 20 to 32 years, and playing experience from 4 to 15 years. Most of the younger generation are students, mainly from technical colleges; there are 16 students among the 29 possibilities.

The goal tender will most probably be Nikolai Puchkov, 32-year-old veteran of the Olympic victory of 1956. Despite his age he is still in fine form. His substitute will be Moscow student Vladimir Chinov or Leningrad lathe operator Stanislav Litovko. Stanislav is five years older than Vladimir, but he has little international match experience. Otherwise there is little to choose from between the two. Both are 5 feet 7 inches and weigh 150 pounds.

Neither one nor the other can be considered a positive candidate. The trainers' council of the USSR Hockey Federation also has its eye on other goalies.

Players of the Army's Central Sports Club are at the top of the list among defensemen. These include 30-year-old Genrikh Sidorenkov, playing on the country's all-star team for the tenth season. His partner, Vladimir Brezhnev, is five years younger and in his second season on the picked team. They are experienced players who not only do an excellent defensive job but also actively help the forwards.

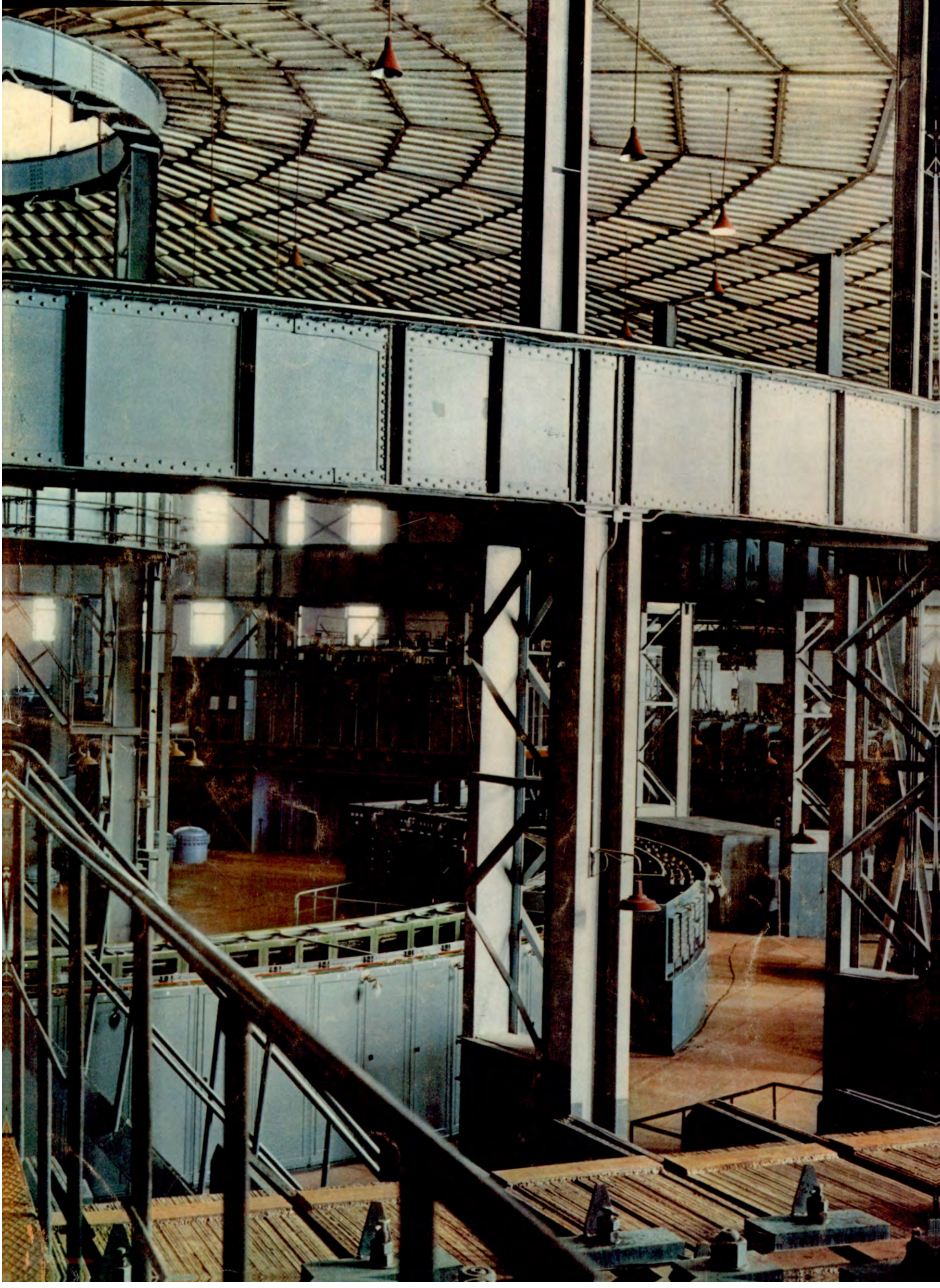
Another pair of Muscovites who look good are electrician Edward Ivanov and student Vitali Davydov. They were members of the USSR team which toured Canada in 1960 and played against Americans—the Trail Smoke-eaters Club—in Moscow in the autumn of 1960. Edward is a do-or-die player and a difficult man to outsmart on a scoring drive. Vitali plays a precision game. Both boys are 23 and stand six feet tall. Their weight—180 pounds—makes them formidable blockers.

There are nine vacant forward positions and 18 hopefuls. The top trio is undoubtedly the Moscow Spartaks' high scorers—twins Yevgeni and Boris Mayorov, wings, and Vyacheslav Starshinov, center. These three play such a smooth game that the fans call Starshinov the "third brother." Boris Mayorov is the hope of Soviet hockey. He reminds us in many ways of the renowned Vsevolod Bobrov. Brother Yevgeni also shows much promise as an all-round man. Starshinov is the jet-propelled center who sparks off all the trio's scoring attacks.

For the previous world championship in Switzerland the trio chosen was that of the Moscow Railwaymen's Club. As right wing we had Nikolai Snetkov, a graduate of the Railroad Engineering Institute, a player with an enviable drive. The center man, Victor Yakushev, mainstay of the trio, who played in the United States in 1959 and 1960, is a locomotive engineer. He is a first-class dispatcher too, judging from the way he passes the puck. Victor Tsyplakov, who can always be spotted by his blazing hair, played left wing. This student looks very unlike a hockey player, yet he is one of the highest scorers. His precision drives must be electronically computed.

Statistics show that the current USSR team will be a year younger than the 1960 Olympic squad, an inch taller and five pounds heavier. How this will affect their showing in Colorado Springs is the question.

The USSR team is coached by Arkadi Chernyshev, who trained the USSR team for the world championships in 1954-1957. He was again appointed to the post last year. Soviet fans fondly hope and expect that Arkadi Chernyshev and his boys will not come back from Colorado Springs empty-handed.



USSR

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3 questions for soviet women

OUR WOMEN

IT IS SIMPLER by far to offer a woman a seat in a bus than in a national legislature, to kiss a woman's hands than to give those hands work worthy of them—and pay for the labor at the same wage rate as a man gets. To do the first, you merely have to be a well-bred person; to do the second, you must be a citizen of a civilized and genuinely democratic state.

The "gallantry" of a society is measured not simply by its courtesies but by this essential criterion—whether the society gives its women equal rights with its men, gives them the material requisites, the respect, the motivation to develop their spiritual, vocational and civic capacities.

Nor does the modern woman lose any of her feminine graces when she regards just and equal law as more important than serenades and madrigals. Chivalry to us means giving women equal rights with men at jobs suited to their abilities and inclinations; equal pay for equal work; equal right to education; equal opportunity in all economic, scientific, cultural and political spheres; and an equal right to elect and be elected to any public office.

Look around anywhere—in the design offices of the Gorky Auto Plant, at a meeting of the Council of Ministers of the USSR, a session of the Supreme Soviet of the USSR, a trade union conference at the Uralmash Machine-Building Works, a Moscow University class, the fields of the Rassvet Collective Farm in the Kuban—and

you see these wonderful women of ours at work. They are the pride of our Soviet society.

Thirty-six per cent of our engineers and 50 per cent of our specialists and executives are women. In old Russia the eminent mathematician Sophia Kovalevskaya had to go abroad for her education. By contrast, more than 700 of our women have earned the title of Academician, Corresponding Member of an Academy or Professor. Some 12,000 women are docents and senior researchers. On the teams working in the newer fields of science, like outer space research, we have scores of women engineers, designers and technicians. More skilled jobs are held by women in the Soviet Union than in any other country in the world.

There is no significant area of Soviet production, technology, science or culture in which women do not play an important role. They head local and state bodies, Party organizations; they direct vital sectors of the economy. Many are widely known for their production achievements, scientific discoveries and civic work. To mention a few—textile weavers Valentina Gaganova and Serafima Kotova, corn grower Yevgenia Dolinyuk, cotton grower Tursunoi Akhunova, Chairman of the Board of the Union of Soviet Societies of Friendship and Cultural Relations with Foreign Countries Nina Popova.

But perhaps it is only these "special people" we accord honor and fame? Certainly not. Open any Soviet newspaper and you will find any number of photographs of women industrial and farm workers, teachers and designers honored for their contributions. You will find articles on the creative work of women scientists, writers and musicians, reports of speeches made by women legislators and other public officials.

How is it Soviet women have been able to move ahead so fast? To explain it by referring to their natural intellectual gifts or any special "privileges" accorded them by the men makes no sense. The explanation lies in our socialist laws that guarantee women full equality, in our social attitudes, in the responsibility of all the members of our society to give women every opportunity to develop their abilities.

Women's rights and opportunities are broad and varied in the USSR. Yet we know that much more has to be done for them. Soviet papers still report cases of disparagement of women, of neglect of their requests and complaints. But we are working in very concrete ways to give all our women a more prosperous and a happier life.

Like all citizens, they get free medical care and tuition-free education from grade school through college. Women are entitled to pensions from the age of 55 and paid maternity leave for 112 calendar days. The law forbids overtime employment of expectant mothers on night shifts, and requires that they be transferred to less taxing jobs at no loss of pay.

We are frequently asked why so many of our women hold jobs; they make up 47 per cent of our work force. For one thing, our society is not rich enough yet to let half of its population do nothing but housekeeping. But that is only incidental, it does not really get to the heart of the matter. We want all our women to have the chance to work—interesting work worthy of their abilities. We want to set up enough preschool and other children's facilities so that a woman will not have to stay at home if she does not want to. We believe that only if women participate actively in the economic, cultural, scientific and recreational life of the country will they achieve complete independence and equality, will their talents have full opportunity to flower.

Nor do we ignore more material considerations. We are working toward a production level—and we have no doubt at all of reaching it in the next 10 to 15 years—that will give our women the highest standard of living in the world. We are turning out more refrigerators, washing machines, vacuum cleaners and other such household appliances every year. Our retail stores keep stocking more and more of the items that appeal to women. New dress shops and beauty salons keep opening all the time.

"Man does not live by bread alone" is a well-

worn saying but still very true. We have many well-provided for women who would be unhappy without their outside jobs, frustrated if they were not making a larger social contribution than keeping house or raising children. And it is the aim of our society to do everything possible to satisfy them. Therein lies real equality of the sexes.

Love and family relations are dry as dust when translated into figures. But until someone devises a better method, say, like that of the novelist, we have to fall back on statistics for the number of registered marriages and divorces. In the USSR there are 12 marriages a year for every 1,000 persons. The number of divorces per 1,000 is 1.3. These are heartening figures. We see in them a solid family foundation, proof of the validity of our moral values and our ethical aspirations.

One explanation, perhaps, is that in our society disrespect for women is socially unacceptable, publicly censured. Another, perhaps, is the fact that all work which humiliates woman, that makes her femininity and beauty a commodity to be traded, is banned. We rid ourselves of that long ago, together with the system of society which makes it possible.

Soviet women owe their way of life to socialism, and socialism is no less deeply indebted to them. We can never forget how our women fought in revolutionary battle side by side with their husbands and brothers. Nor how they put on overalls and helped build a new life in the cities and villages. Nor how much the victory over fascism was due to our nurses, women fliers, the women in our defense factories, collective farm women and to our mothers, wives, sweethearts and sisters in general.

That was the great test of loyalty, and history has yet to honor them for their courage and resolution. They are our partners in life, in the struggle for communism. We can no longer call them the weaker sex, but we can and we do call them the truly fair sex.

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HAMRO TAIROVA

BY ARNOLD ODINTSOV

The story of Hamro Tairova is typical for women of what is now known as the Central Asian Republics of the Soviet Union. They have shed the black horsehair veil —symbol of their status as the chattel of men—and with it the age-old prejudices born of illiteracy and nurtured by poverty. It is a story that can be told about countless women of Tairova's generation who have become leading figures in every field of endeavor.

Hamro Tairova is the chairman of Gosplan (the State Planning Committee) of the Tajik Republic.

(Far right) With her son Alisher. In spite of her responsible position, she is a good homemaker.

Although modern in every way, she likes to observe the pleasant traditions of her people.

On Sundays she always finds time to prepare her husband's favorite dishes for dinner.

I HAVE KNOWN Hamro Tairova a good many years. She used to be slim and petite and a first-rate horsewoman. There was a time she could gallop by and cut down a vine with one stroke of a sword, no mean feat even for a man. Now she is chairman of the State Planning Committee (Gosplan) of the Tajik Republic, a plump woman of 48 but with astonishingly youthful eyes, still bubbling over with energy—although her gait is somewhat more deliberate—and with the same sense of humor as always. When you see her at work, she is the mature and seasoned statesman, leader of her native republic. In her home, you meet a simple and gracious hostess and a loving wife and mother.

On the map of the Soviet Union trace a line from Moscow downward and to the right in the general direction of the Pamirs, this side of the border of Afghanistan, and you are in Tajikistan. Everything that makes up this Soviet Asian republic is the direct concern of Hamro Tairova:

. . . the cotton plantations in the valleys, the municipal bands that play in the parks, the canals, the vineyards;

. . . the produce markets with their great mounds of melons, grapes and pears and their variety of game, poultry and mountain trout;

. . . the construction of hydropower stations, chemical plants and railways;

. . . the attendance at movies, theaters, museums and exhibits of all sorts;

. . . and, the fact that Dushanbe, an isolated village of 200 inhabitants only 30 years ago, is now the republic's capital city with a population of 200,000.

All of the aforementioned and many, many other things, are Hamro's direct concern, for the committee she heads is the hub of Tajikistan's economic life, where the republic's growth is planned and where all the threads of that complex developmental program converge. Gosplan lays out the pattern of the republic's future.

To head this committee, whose short- and long-term plans must take in every aspect of human endeavor in Tajikistan, from the number of students that will be entering the first grade to the quantity of steel needed for apartments to be built, one must not only be a combined economist-engineer in the academic sense of these words—which Tairova is—but one has to have the gift of vision to foresee the march of events five, seven and even twenty years ahead. Tairova has that too, bolstered by a vast store of facts and figures at her finger tips with which she can conjure up for you a picture of Tajikistan's progress—past, present and future. The figures she gives you come alive as she cites them, they become an exciting narrative.

She loves her work. When she speaks of her institution, its 12 departments, bearing very prosaic names, come alive, mirroring the seething activities they are engaged in.

It is there that are resolved the problems involved in the development of heavy and light industry, electrification, housing, trade, education. The over-all planning for the Tajik Republic has to be well balanced and integrated so that its progress will be smooth. To achieve this every detail has to be thought out soundly—price-setting, for instance, and cost of production, wages and salaries, and vital statistics. Gosplan's staff of 160 is a group of highly skilled experts who plot the course of Tajikistan's advance not only for the next few years but for the next 10 and 20 years, and coordinate the republic's plans with those of the country as a whole.

At present the chairman and her staff are concentrating on the problem of the geographical distribution of power-producing capacities. Wherever cheap natural gas, oil and coal are available and wherever fast mountain rivers rush through narrow gorges, there are sources for electric power and good locations for chemical plants.

These plants are still in the blueprint stage, but their power supply—a complex of hydroelectric stations on the Vakhsh River, a tributary of the Amu-Darya with its source in the Pamirs—is under rapid construction. Several of the stations have already been built, and so cheaply that the initial costs were made good in the first year of operation. Now the Nurek project, with an installed capacity of 2.7 million kilowatts, which makes it one of the world's largest, is being built. Tairova calls it "the major project of Tajikistan's seven-year plan" because of the effect it will have on the over-all economic development of the republic.

You are more likely to find the chairman on the move rather than at her desk. Her job requires a firsthand and thorough knowledge of the land and its possibilities and of the people who will make the possibilities a reality. Hence, Tairova spends a good deal of her time in factories and mines, on cotton plantations, in housing design offices and on power plant construction sites.

I flew with her to the town of Leninabad. We followed the course of the wide Syr-Darya as it flowed through vast tracts of orchards and mile upon mile of cotton plants in bloom. After circling the town our plane came down at the airport where many representatives of the local enterprises and offices were waiting for the Gosplan chairman in spite of the early hour.

She started off on a round of the construction sites. Work was in full swing. Bulldozers were tearing down old mud huts and excavators were digging foundation pits for new factories. The people who used to live in these huts had been relocated in a newly built residential district.

Tairova remarked, "You know, I have a special feeling about construction work. Probably it's because I was once Minister of Construction."

She went up to a building with an ornamental wrought-iron railing, made some brief notes in a small pad and then asked the man in charge, "You're still using iron railings?"

"Not any more," he said.

"Let me have a look at the reinforced concrete railings."

When Tairova was Minister of Construction she had issued instructions that the protective railings along highways and the fences around stadiums and public buildings should be made of reinforced concrete to save metal but tha

they should be light and decorative. We drove around a few blocks, and it was evident that the chairman didn't like what she saw. Then we went on to the architecture offices. There was a concrete railing around that building too, but, unlike the others we had seen, this one was very handsome. Tairova's only comment—and sufficient—was, "I should think we ought to be as concerned with the looks of other buildings too." The designers maintained an embarrassed silence.

With the Leninabad building specialists Tairova went over plans for new plants to produce prefabricated reinforced concrete elements and other prefabricated parts. In many places abroad and in the larger Soviet cities, building with prefabricated assemblies is fairly standard procedure these days, but in Tajikistan, where people have lived for centuries in mud huts, it is still an innovation. Relocation from mud huts to modern apartments is a symbol of the republic's progress from past to present. Tairova wants to speed up the process with production-line building.

We were driving to the site of the future Nurek hydropower station, not far from Dushanbe. The highway ran along a narrow gorge with a foaming mountain stream rushing through it, the roar echoing back from the mountains. The twisted branches of the elm trees whipped at the windshield. On a winding path below us, we saw a girl with dark hair done up in a dozen or so thin braids. Tairova smiled, "When I was ten," she said, "I wore braids like those."

The girl was picking the tulips that grew in profusion on the cliffs. A house came into sight around the bend. When she was a child, Tairova said, there was no house or highway there, just a mountain path. I asked about her childhood.

She was born in a nearby village. Her father used to go off to town to work at the flour mill or on the railroad. Hamro didn't know what a railroad was, but she did know that the money her father sent home was hardly enough to buy the little wheat her mother ground by hand.

The family moved to Tashkent, and it was there Hamro's life really began, when she began attending a workers' school that prepared young people for college entrance. At the time she still couldn't read very well, but she was admitted nevertheless. She had broken with age-old tradition by discarding the *paranjah*, the ugly black horsehair veil behind which Tajik women hid their faces and figures. Her mother was old-fashioned, and so Hamro didn't tell her she was going to school. When the news leaked out, she had to hide with neighbors for a time to escape her mother's wrath. Education was not womanly, her mother believed.

And it is unquestionably true that for most of her life Tairova has been doing things that were considered not womanly in the old days. She became a civil engineer and got a job as a construction foreman. Then she was put in charge of a building project in growing Dushanbe, and often within earshot there would be remarks like, "What does a woman know about building!" But only in the beginning.

She would mount the scaffolding to show the workers how she wanted the job done, laid bricks herself to demonstrate. Not strictly what a young engineer is supposed to do, but this engineer was a woman who was battling deeply entrenched prejudice.

A few years later she was appointed to head the local construction office, then elected to the Supreme Soviet of Tajikistan, and subsequently was promoted to the post of Minister of Construction.

To what does Tairova owe her promotion? Why is she universally respected and liked by workers, technical experts and political leaders? If you were to ask these questions of the people with whom she works, you would be told that it's probably because of her restless spirit.

People who work with her say that the word for Hamro is restless. She can't rest easy with old and outworn ideas; she's always hunting for new and better ways of doing things.

This is no longer a rare characteristic of Tajik women. They have all discarded the *paranjah*. The Tajik woman is emancipated now, an equal partner in her family; she is educated. In the most remote village one finds women heading collective farms, teaching school, healing the sick. Tens of thousands have had higher education and many hold leading positions in industry and agriculture.

In spite of all that, here and there one still comes across an invisible *paranjah*. One hears occasional reports of parents trying to marry their daughter off against her will; of a woman brought to a hospital barely alive after being subjected to witchcraft; of a rural teacher, otherwise civilized and cultured, who won't let his wife walk in the street with him.

The time is long past when these practices were commonplace. Today they evoke a great deal of adverse reaction and press comment as well. The new way of life is erasing these feudal anachronisms.

Where they appear, people usually get in touch with their representatives in the Soviets. When Tairova gets word that anything of the sort is going on, she drops everything and hastens to the spot. Tajik men can't lord it over their wives the way they used to, for active, public-spirited young Tajik women wholeheartedly support Tairova in protecting the rights of women.

It is pleasant to visit the Tairov family, a close-knit and devoted one. Hamro's husband is in the theater. After spending a good many years in the army, he went back to his old job as director of the Tajik national theater when he was demobilized. Like most of his colleagues, he is convinced that he knows better than anyone else in the world how plays should be written. So we indulge in a bit of criticism of playwrights, who in our opinion know the least about playwrighting.

I stopped in for a visit with the family after we returned from our Leninabad trip, and Hamro prepared a light supper. Izat, as tradition prescribes, took the first sip of tea from a *piyala*, a porcelain bowl. After supper the boys Yakub and Alisher went to their room, their mother close behind, and as Izat and I sat and talked, we could hear peals of laughter coming from that side of the house. ★

HOW IS THE USSR SUPR

Elections will shortly be held for the USSR Supreme Soviet. In the article below, Mikhail Strepukhov, editor of the magazine *Soviets of Working People's Deputies* answers questions on electoral procedure.

QUESTION: What is the highest governing body in the Soviet Union and how is it constituted?

ANSWER: The highest organ of state power and the only body empowered to legislate for the whole country is the USSR Supreme Soviet. It is composed of two chambers—the Soviet of the Union and the Soviet of Nationalities. The reason for the bicameral system is the multinational character of the Soviet Union. People of many nations, nationalities and ethnic groups live within its boundaries.

The Soviet of the Union represents the common interests of all Soviet citizens, regardless of their nationality. But besides these common interests the various peoples of the USSR have special interests that derive from their national backgrounds. These more specific interests are represented by the Soviet of Nationalities.

The two chambers have equal right and equal power to initiate legislation. Members of both chambers are elected for four-year terms. A bill becomes a law only after it is passed by both chambers of the Supreme Soviet.

The basis of representation in the Soviet of the Union is one deputy for every 300,000 of the population, with the country divided into corresponding election districts. The basis of representation in the Soviet of Nationalities is as follows: 25 deputies from each Union Republic, 11 from each Autonomous Republic, 5 from each Autonomous Region, and 1 from each National Area, with election districts divided accordingly.

QUESTION: How are candidates nominated?

ANSWER: Nomination is by election districts. The right to nominate candidates is granted to all public organizations and societies of working people, national and local. Nominations are made at meetings of industrial and office workers in their factories, of professionals, of farmers at collective farm meetings, and servicemen in their respective units. Nominees are approved by a show of hands.

QUESTION: What is the voting age?

ANSWER: The Constitution of the USSR gives voting rights to all citizens who have reached the age of 18, regardless of their race, nationality, sex, religion, education, domicile, social origin, property status or past activities, with the exception of insane persons. (Insanity must be duly certified by competent authorities.)

QUESTION: Can people withdraw their support from a candidate they have nominated? Is there any state body that has the right to veto a candidate?

ANSWER: The same organizations and societies that have the right to nominate candidates can withdraw their support if they so choose. Should it become apparent, in the course of an election campaign, that a candidate does not merit their confidence, they may nominate another in his place.

No state body has the right to veto a candidate. However, the Electoral Law does permit the district election commission to refuse to register a candidate should there be compromising evidence to warrant the action. The decision can be appealed to the national election commission, whose judgment is final.

QUESTION: Why does the ballot list only one candidate?

ANSWER: All Soviet people have common interests and the same goal —the building of a new society. There are no classes with conflicting interests in the USSR. Industrial workers, collective farmers and intellectuals work together to achieve this goal. The Communist Party, which guides the entire life of the country, all its economic and cultural affairs, enjoys the supreme confidence of the people.

Since the interests of the people and the Communist Party are one and the same and since there are no antagonistic groups or classes, there is no reason for several candidates to appear on the ballot. At the nominating meetings, where all possible candidates are discussed and voted on, both the Communists and non-Party people agree on the one they consider best suited to serve as their representative.

QUESTION: How many votes are required for election?

ANSWER: An absolute majority. A candidate is considered elected only if he has polled more than 50 per cent of the vote and only if at least half the electorate of his district casts ballots.

QUESTION: Suppose a candidate does not poll the required number of votes, is another election called or does a state body appoint a deputy?

ANSWER: If a candidate does not poll the required number of votes, the district election commission immediately notifies the national commission. That body thereupon calls a special election no later than two weeks after the regular elections. There are no state bodies that appoint deputies.

QUESTION: Can an individual nominate himself?

ANSWER: No. Only public organizations and societies of working people have the right to nominate candidates. What is required of a candidate is that he consent to run in one or another election district.

QUESTION: How is an election campaign run? Does a candidate tour his constituency?

ANSWER: The election campaign begins with setting up of election districts and supervising election commissions in every Union and Autonomous Republic, Autonomous Region and National Area. The election commissions are in charge of all the technical and organizational preparatory work. It is their responsibility to see that the Rules on Elections to the USSR Supreme Soviet are strictly observed.

Once the candidates are nominated and registered by the district election commissions, they tour their districts to acquaint voters with their backgrounds and the contributions they have made to the country's welfare. At these meetings the voters let the candidate know how they feel about matters of local and larger import and what they expect of their representative.

QUESTION: Who campaigns for the candidate?

ANSWER: The public organization that nominated him and individual citizens who know him well. The campaign is carried on through meetings, the press, radio and other media.

QUESTION: Can a candidate run his own campaign?

ANSWER: No, that is not Soviet practice. The campaign is run by the public organization that nominated him. Of course, the candidate also campaigns for himself to the extent that he speaks at meetings and in other ways asks for the citizen's vote.

EME SOVIET ELECTED ?

QUESTION: How are election campaigns financed?

ANSWER: They are financed entirely by the state. There is no conflict of interests between Communists and non-Party citizens and therefore no separate slates. They both choose the same candidate and work for him in the same campaign. Communists support and vote for candidates who are not Party members and non-Party people support and vote for candidates who are.

QUESTION: What do voters look for in the candidates they choose for election to the Supreme Soviet? Are there any official qualifications?

ANSWER: Any Soviet citizen who has reached the age of 23 may be elected to serve as deputy to the Supreme Soviet regardless of race, nationality, sex, religion, education, domicile, social origin, property status or past activities.

When voters discuss the merits of a candidate, they consider first of all his contribution toward the common cause—the building of a new society. As a general rule people elected are leading factory workers and farmers, eminent scientists and artists, political and public leaders who have done outstanding work in the country's behalf.

QUESTION: How do voters get to know about the candidates?

ANSWER: Through election meetings at which the candidate speaks and through radio and TV broadcasts and press reports. In addition, posters with detailed information about the candidates are prominently displayed in all election districts.

QUESTION: How active are the trade unions and other public organizations in election matters?

ANSWER: Very active. They nominate candidates and campaign for them. As a matter of fact, the various election commissions, from the national commission down, are made up of representatives from the various public organizations—the trade unions; cooperative societies; Communist Party organizations; cultural, technical and scientific bodies.

Each organization elects its own representatives—by a show of hands—to these election commissions.

QUESTION: How is the secret ballot guaranteed?

ANSWER: Under the Soviet electoral system the voter marks his ballot in a booth which no one else may enter until he is through.

QUESTION: Who may nominate non-Party candidates?

ANSWER: The working people of the Soviet Union, Party as well as non-Party people, act in one bloc with a single election platform. They agree on a common candidate for election and decide together who of the proposed candidates can best cope with the duties of a deputy. All candidates, Party as well as non-Party, are therefore nominated by the same public organizations and societies of the working people.

QUESTION: Are there quotas for the number of intellectuals, industrial and office workers, and farmers elected to the USSR Supreme Soviet?

ANSWER: There are no such quotas. The USSR Supreme Soviet is organized to represent the interests of all the people in the country, regardless of their vocations. Since industrial workers and collective farmers do, however, comprise the largest part of the population, they naturally have the largest representation in the Supreme Soviet.

QUESTION: Can a Supreme Soviet deputy run for a second term?

ANSWER: Yes.

QUESTION: How much is a deputy paid?

ANSWER: Deputies are not paid. They consider their legislative work a social duty and honor, to be done without compensation. They have an expense account—100 rubles a month—for travel expenses, postage, etc.

QUESTION: How does a deputy make a living?

ANSWER: He continues to work at his regular job or profession, in a factory, hospital, school or farm, while carrying out his official duties.

QUESTION: Can a deputy initiate legislation?

ANSWER: Yes. He may propose any bill he thinks merits the consideration of the Supreme Soviet.

QUESTION: How are bills proposed and how do they become law?

ANSWER: Bills proposed by persons and organizations that have the right to initiate legislation are considered by the Legislative Proposals Committee of both chambers and by other interested committees of the Supreme Soviet. The most important of this draft legislation—the bill to decentralize industrial management and the school reorganization bill are more recent examples—are published for nationwide discussion. A bill becomes law when it is passed by both chambers of the Supreme Soviet by a simple majority.

QUESTION: What are the principal rights and duties of a deputy?

ANSWER: The Soviet deputy is invested with high authority. He may propose legislation; address an inquiry to any official which must be replied to in detail; lay a proposal before the Supreme Soviet, the Council of Ministers, a ministry or a department.

A deputy has immunity; he may not be arrested or placed on trial without the specific consent of the Supreme Soviet.

He is expected to carry out his responsibilities loyally and conscientiously; to be in close touch with his constituents; and to be responsive to their wishes, complaints and suggestions.

QUESTION: Is a deputy free to act on his own in the Supreme Soviet or must he defer to the wishes of his constituents?

ANSWER: The Soviet deputy is completely responsible to his constituents. He must defer to their wishes in all matters.

QUESTION: May voters recall a deputy?

ANSWER: The Constitution of the USSR states that a deputy whose practices are incompatible with the high calling of his office may be recalled at any time by a majority of his constituents. The procedure is established by law. There have been cases where deputies to the Supreme Soviet were recalled for failure to justify their trust.

QUESTION: Are deputies required to report on their work to their electors?

ANSWER: Yes. It is expressly stipulated in Article 142 of the Constitution of the USSR that every deputy must report to the electors on his own work and on the work of his Soviet of Working People's Deputies. The specific nature of the report varies, but it is generally given at voters' meetings in the factory, office or farm where the deputy was elected.

A meeting of the board of the Institute of Soviet-American Relations held recently in Moscow's House of Friendship with Peoples of Foreign Countries.

INSTITUTE OF SOVIET-AMERICAN RELATIONS AT WORK

AT A BOARD MEETING of the Institute of Soviet-American Relations one is likely to be seated with a scientist on one side, an artist on the other, and an athlete, engineer, or teacher in close proximity. The institute, founded several months ago by Soviet public groups and individuals to promote better understanding between the two countries, was organized to cover all areas of vocational and professional interest. Each of the various sections and committees is headed by an outstanding figure, many of world renown, in a particular field of endeavor.

The section of social sciences, for example, is headed by Anushavan Arzumanyan, director of the Institute of World Economy and International Relations. It has four committees—economics, history, sociology and philosophy, and disarmament.

The scientific and technical section is headed by Alexei Shakhurin, former Minister of Aviation and a Hero of Socialist Labor. This section also has four committees—industry, science and technology, architecture and construction, and agriculture.

Professor Alexander Markov heads the section of medicine and biology. The section of literature and the arts is headed by the noted film director Sergei Gerasimov and includes committees on literature, theater, cinematography, fine arts and music.

Heading the legal committee is Vramshapu Tadevosyan, deputy director of the USSR Academy of Sciences' Institute of the State and Law. Professor Zoya Zarubina, dean of the English Department of the Moscow Institute of Foreign Languages, heads the committee on education.

The board meets in Moscow at the House of Friendship with the Peoples of Foreign Countries. At its most recent meeting to discuss the institute's program of activities, the board heard from several committee representatives in addition to representatives of youth and women's committees. All underscored the fact that despite differences and disagreements between the two countries, contacts between groups and individuals in science, culture and other areas have to be broadened and strengthened.

Speaking to the point, with suggestions for expanding the institute's work, were Academician Ivan Artobolevsky of the science and technology committee, Professor Zoya Zarubina, Grigori Volkov of the agricultural committee, and Academician Yevgeni Fedorov, one of the institute's vice presidents.

The board discussed and approved proposals on exchange of delegations, exhibitions and printed material; joint meetings of cultural workers; the staging of an American play in the Soviet Union and a Soviet play in the United States; and the joint production of a film.

The session noted the many letters received by the board from Americans from all walks of life and from public groups greeting the founding of the institute and suggesting areas of cooperation.

Following its business session, the board heard papers on scientific and technical exchange with the United States read by historian Boris Krylov, member of the State Committee for Cultural Relations with Foreign Countries, and Dzhermen Gvishiani, member of the State Committee for Coordination of Scientific and Technical Research. The papers opened the seminar on Science and Culture in the United States Today, which will continue throughout the year. Lecturers will be prominent public figures and specialists in various fields familiar with current American trends and developments.

★

The Juilliard Quartet playing to a packed Moscow concert hall. Inspired playing, said critics and audience. It was the first appearance of an American chamber music group in the USSR.

JUILLIARD STRING QUARTET In Moscow

By VLADIMIR VLASOV, Composer

PEOPLE'S ARTIST OF THE RUSSIAN FEDERATIVE REPUBLIC

Between concerts, the visiting artists saw the sights and met Soviet composers and performers. They are shown here with the director of the Moscow Conservatory, Alexander Sveshnikov.

FOR all chamber music lovers—and Moscow has many—the performance of the Juilliard String Quartet was a red-letter event. They packed the hall, conservatory students jamming all the balcony aisles.

It was a knowing audience for which the American guest artists were playing, receptive but critical. There are seven quartets that perform regularly in the Soviet capital, some of them world famous. Would the Juilliard Quartet, the first American chamber music group to play in Moscow, win its approval and affection?

As the opening chords of Mozart's E Flat Major Quartet were struck, the audience listened, but with reservations. However, with each new movement, the response was perceptibly stronger. When the music ended, the hall resounded with applause—appreciation for the artistry and the talent of the quartet as a whole and each of its members.

And, indeed, Claus Adam, Isidore Cohen, Raphael Hillyer and Robert Mann are splendid musicians, superb artists with a perfect feeling for ensemble performance. These artists have everything an ideal musical combination needs—flawless intonation, an impeccable sense of rhythm and a homogeneous touch. The quartet plays like a single inspired artist, united in thought and emotion.

The visiting artists gave Moscow its first performance of Bartok's Third Quartet. This very original work by the Hungarian composer has great subjective force and is replete with startling and unique coloring. The Juilliard Quartet interpreted this complex piece with great feeling and passion, overcoming its exceptional technical difficulties with apparently effortless ease.

The highlight of the program was Schubert's famous D Minor Quartet, *Death and the Maiden*—always a fascinating musical challenge because of its profound thoughts and philosophical content. It demands of the artists not only great individual and collective skill but also insight into the innermost feelings of the composer.

There is no question but that the Juilliard Quartet did eloquent justice to this monumental work, particularly in the second movement, "Variations," that literally held the audience of two thousand spellbound. They rose as one to pay heartfelt tribute to the brilliant performance by this magnificent ensemble. ★

EVENTS AND PEOPLE

MILLIONS OF BOOK LOVERS

Any place it's possible to read—in parks, buses and even on subway escalators—you'll see Muscovites poring over books. Last year every Muscovite bought an average of 14 books. There are now some 1,500 bookshops and stalls here, let alone 500 bookstands in factories. With the growing popularity of book collecting Muscovites have acquired a grand total of 750 million volumes in their home libraries.

If there is a record for book sales in factories, it is probably held by the Vladimir Ilyich Electric Machinery Plant where books are sold in the shops during lunch hour. In one year the personnel of this Moscow plant bought more than a million rubles' worth.

What's true of Moscow is also true of every other Soviet city. Private libraries of from 1,000 to 3,000 volumes in the homes of teachers, engineers and factory workers are no great rarity, and you would be hard put to find a bookshop anywhere in the country that isn't doing a flourishing business.

The Soviet Union today prints three times as many books per head of population as all the other countries in the world put together. Books and magazines are published in 89 of the languages spoken in the Soviet Union and in 47 foreign languages.

INSIDE A VOLCANO

A cloud of yellow-black smoke hangs over the Avachin volcano on the Kamchatka Peninsula. Now and again the earth quivers with a dull rumble, as though a huge engine were at work inside the nearly two-mile-high mass of rock. The engine throbbing away is the earth's flaming heart, generating enormous quantities of heat. Soviet scientists have long been studying possible utilization of this heat.

Some time ago four young researchers led by Genrikh Steinberg, chief of the Volcanic Physics Expedition of the USSR Academy of Sciences, clad in fireproof suits and wearing gas masks, clambered down into the fiery mouth of the Avachin volcano for a closer look.

They had to climb down several hundred yards of sheer, gas-spewing wall before they reached the boulder-strewn bottom sizzling with jets of hot gas with temperatures of from 300 to 400 degrees Fahrenheit. The scientists had to collect specimens with gloves and pincers. They filled a leather bag with the specimens, but before they could get it up, the rock had burned the bag to ashes. The sides of a deep fissure in the wall glowed with a cherry-red tint. A thermometer applied to the rock cracked; it could not register more than 1200 degrees Fahrenheit.

The four venturesome researchers spent about two and a half hours in the volcano. They came back with specimens of rock and gas. Study of the volcano is continuing to find ways of harnessing volcanic heat for man's use.

NEW AUTONOMOUS REPUBLIC

The Tuva Autonomous Soviet Socialist Republic recently held its first Supreme Soviet election—first because Tuva is the youngest of the Soviet autonomous republics. Before last October it was an autonomous region.

Tuva borders on Mongolia. Until 1930 its people were nomads. During the years of Soviet government the people of Tuva have made a giant leap forward from feudalism to socialism. They have since moved into the main stream of modern agricultural and industrial life. The tribes settled down and developed large, mechanized farms. Now coal and gold are mined in Tuva, and big installations are being constructed for the mining and processing of cobalt and asbestos. Geologists are also prospecting for oil. An ever-present feature of the new republic's land scape these days is building scaffolding.

Only 15 years ago these people had no alphabet of their own. Today they take pride in their own engineers, doctors, scientists, writers, artists and composers. The republic now has its own institutes and theaters.

As a result of Tuva's new status, it will have double its previous representation in the Soviet of Nationalities, one of the two chambers of the USSR Supreme Soviet.

Elections to Tuva's Supreme Soviet were held under the republic's new constitution. Practically every eligible voter—99.96 per cent of the population—went to the polls. Among the 100 deputies elected were cattle breeders, industrial workers, engineers, teachers and workers in the arts.

Here you see a street in Kyzyl, capital of the new republic.

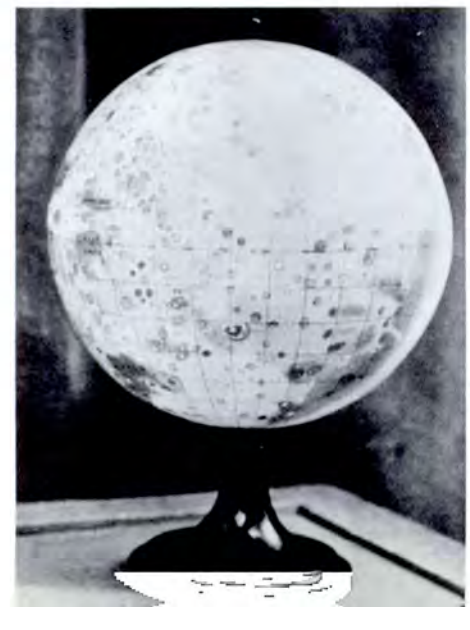
MOON GLOBE

The first globe of the moon to give a complete picture of both its visible and hidden sides now stands alongside a globe of the earth in Soviet schoolrooms. The hidden side of the moon was photographed by a Soviet lunik.

This side has more than 400 geographical features, many of which the USSR Academy of Sciences has named after such great men of world science as Lomonosov, Joliot-Curie, Hertz and Mendeleyev. One dark lunar formation has been called the Moscow Sea; a lighter, mountainous region—the Soviet Ridge. At its congress in Berkeley, California, the International Astronomical Union endorsed all the names as universal and accepted their Latin spelling.

A broken line on the moon globe marks the area photographed by the Soviet automatic interplanetary station. A red circle in the region of the Sea of Rains on the visible side shows where the space probe delivered the Soviet emblem with the country's coat of arms.

Very likely, in the not so distant future, the school children themselves will be chalking on their moon globes the launching sites of space rockets, the sites of automatic observatories and the places where astronauts will have landed.



FRENCH FILM WEEK

Seven of the best French movies, one for each day of the week, were shown at the Udarnik Theater, one of Moscow's largest movie houses, during a recent French film week. They included René Clair's *Tout l'Or du Monde;* a screen version—the eleventh—of Dumas' *The Three Musketeers; L'Aiglon,* about the tragic life of Napoleon's son; and *Le Capitaine Fracasse,* an adventure story. The last two star Jean Marais, who came to Moscow especially for the festival.

La Verité, featuring Brigitte Bardot in her first dramatic role, made the biggest hit. The visitors met Soviet movie makers and audiences, were taken on a tour of the Kremlin and the museums, and made a flying trip to Leningrad.

"We were touched by the cordial hospitality of the Muscovites," said Marais, who headed the French film delegation, before he left. He is shown here with Odile Versoy at St. Basil's Cathedral.

AIR JUMP TO SOUTH POLE

Moscow—Tashkent—New Delhi—Jakarta—Sydney—Christchurch—Antarctica are the spans of a giant air bridge thrown across half the world by pilots of Aeroflot's Arctic Service. In 42 flight hours the IL-18 turbojet and AN-10 turboprop liners covered about 15,000 miles. Alexander Afanasiev, chief of the Northern Sea Route Central Administration, who made this trial flight, said in an interview with an APN (Novosti Press Agency) correspondent:

"The purpose of this trial flight to Antarctica was to set up a regular air link with the sixth continent. In the near future, instead of four months of sea travel, members of an expedition will need only a few days to get to an Antarctic base. This will change the whole character of research. The major Antarctic operations will be done in the summertime and most of the explorers will return to their native countries in the winter. Only a minimum number of scientists will winter in Antarctica. Dozens of people will be able to avoid the sixth continent's austere climate for those months.

"The four-motor turboprop AN-10 will remain in Antarctica for permanent operation to make sure that inland bases get what they need faster than by the light aircraft already in use in that area.

"On the trial flight we carried 35 members of the seventh Antarctic expedition and aviation engineers, but on future flights the two liners will be able to carry 160 people simultaneously.

"All countries we flew over gave us full cooperation."

NEW CHESS CHAMPION

Boris Spassky, the new 25-year-old chess champion, participated in his first international tournament when he was 16 years old. He became an International Grandmaster two years later.

Spassky does not play to the gallery. His manner seems to be unassuming, but it represents a formidable threat both to adherents of positional maneuvering and to such combination virtuosos as Mikhail Tahl.

The talented grandmaster does have his Achilles' heel, however — his end-game. He makes a brilliant opening and winds up with a weak end. He downs his opponents at the start and then slows down. He has participated in seven championship matches and held the lead nearly every time, but never quite made it. In this tournament, his eighth, he finally captured the title. Chess players felt that his end-game carried much more punch this time. He held the lead firmly throughout the tournament, a rare thing in championships. And besides taking the gold championship medal, he also captured the prizes for the best showing at the beginning and end of the tournament.

The young grandmaster is about to graduate as a journalist from Leningrad University. His hobbies include reading, music, the theater, skating and high jumping. He's especially partial to the last. There was a time when he even dreamed of vying with world champion Valeri Brumel.

FISH LIFTER

The Volga-Caspian sturgeon is the world's best. When the Volgograd power station dammed the river, it closed off the way to the spawning grounds. As a temporary measure the sturgeon were removed and transported over the dam, but this did not satisfy the ichthyologists.

Now a capacious fish-lifting installation has been put into operation. It consists of two 55-yard-long concrete canals jutting out in front of the dam, through which the water flows with a velocity of two to three feet a second. The sturgeon swim into the canals; every two hours the water gates are closed and the lock is raised, releasing the sturgeon into the artificial sea behind the dam. From there they make their way to the spawning grounds near Saratov.

Baby sturgeon going down the river slip through the revolving turbines unharmed. Sterlet and catfish, sometimes bigger than a man, also use the lift, thus settling the long-time argument between the engineers and ichthyologists in favor of the fish.

FIFTY YEARS OF WRITING

Konstantin Fedin recently celebrated his seventieth birthday and his fiftieth anniversary as a writer.

His novel *Cities and Years,* published in 1924, was one of the earliest novels to assess the Revolution from the viewpoint of the intellectual. In the book Fedin, the humanist, inveighs passionately against the senselessness of war's universal carnage; yet he looks upon the Revolution as merely an anarchic and destructive force.

His next book *The Abduction of Europe,* which he wrote in the thirties after a trip across the continent, contrasts two worlds—panic-stricken Europe after the 1929 crisis and the optimistic Soviet Union building up its industry.

He wrote his major work—the trilogy *Early Joys, An Unusual Summer* and *Bonfire*—after the war. The three novels are built around one central idea and the same group of major characters. They give us a cross section of Russian life from 1910 to the present and a gallery of portraits that show the making of the Russian revolutionary character, so manifest in our time.

Besides writing, Fedin serves as a deputy to the Supreme Soviet of the Russian Federation and as a member of the Soviet Peace Committee. At the last congress of the Soviet Writers Union he was elected chairman of the board.

LATVIAN FARMER

BY VALERI YURYEV

Why did we choose Lacplesis for our story about a Latvian collective farm? My friend Sasha—that's what everybody calls photographer Alexander Mokletsov—and I were attracted to that particular farm because of its name. To a Latvian, Lacplesis means what Ilya Muromets does to a Russian and Robin Hood to an Englishman. He is the national hero whose epic deeds were recounted by Andrei Pumpurs, one of Latvia's most renowned writers of the past century.

Pumpurs based his epic on the legends of the struggle of the Latvian people against the German conquerors in the late twelfth and early thirteenth centuries. In a series of encounters, Lacplesis, the knight with awesome strength, defeats all the forces of evil that enslave his beloved land. The final stanzas describe his valiant fight against a German knight near the Castle of Lielvarde. Neither valor nor cunning avail the alien warrior. They struggle desperately until Lacplesis at last raises the enemy high and hurls him from a cliff into the Daugava River. But, drained of his strength by the contest, he too falls from the cliff.

When we learned that the Lacplesis Collective Farm was actually near the Castle of Lielvarde, our minds were made up. It would be Lacplesis rather than any of the other 976 collective farms in Latvia.

Valdemars Jurgensons is a member of the Lacplesis Collective Farm in Latvia.

A SIGN on the highway that runs along the Daugava River, about 35 miles out of Riga, reads "Lacplesis Collective Farm, Ogre District, Lielvarde Village Soviet Precinct." There's another sign like it about six miles farther on. About midway between the two signs is the building that houses the farm's office.

It was lunch time, and the only person in the office was the switchboard operator. Rather than wait for someone to show us around, we decided to drop in at the nearest house and get acquainted. That's how we met the Jurgensonses.

There are Lacplesis Collective Farm members who are known far beyond the two road signs. One of them, for instance, is dairymaid Elvira Purene, deputy from Ogre District to the Latvian Supreme Soviet. Another is team leader Dzidra Slipene, who went to Moscow last October as a delegate to the Twenty-second Party Congress.

There are no celebrities among the Jurgensonses, we found. And there was nothing exceptional about their house either. It is new, only six years old, but Lacplesis farmers have built more than 40 like it since. The Jurgensonses are a relatively small family. Valdemars, the father, worked as a truck driver but a while ago was promoted to a new job. He's something like a marketing and supply agent now. His wife Aina works at the farm's silver fox nursery. Inara, their elder daughter, is in the graduating class, the eleventh grade, of the Lielvarde Secondary School, and younger daughter Dagnija is in the sixth grade.

The Jurgensonses joined the collective farm in 1953, five years after it was organized. They had come from Bebrene, a small town in southern Latvia, near the Lithuanian border. Soon after Aina's sister Alma Seklavs followed them out to the farm with her husband Valdemars and their children.

When they first came, the Jurgensonses lived in two rooms in a house owned by the collective farm. It was a convenient arrangement and cheap, no small consideration when settling in a new place. But after the second year they began to build their own home.

The collective farm gave them the land for a building lot and garden free of charge. A similar piece of land across the road was assigned to the Seklavses. Both families used the services of the farm's construction team, but they did much of the work themselves, helping each other as kinsmen and neighbors should. They cut costs very considerably by hauling the building material from town themselves and doing a lot of their own work.

Latvian autumns are long and the winters quite cold, so that houses must be well-built. The thin walls usual in American homes would mean very high fuel bills in Latvia. That is why all the new houses at the Lacplesis farm have concrete walls and steam heat.

The Jurgensonses built a two-story house. The ground floor has a small entrance hall, a combined kitchen-dining room, a living room, and a bathroom. The upstairs has two bedrooms. Back of the house they built a concrete root cellar to store vegetables and other food.

They have a barn, also concrete, large enough to hold their cow, three pigs, a rabbit hutch, a chicken coop, fuel bin and tools. "There's enough room in the barn for a car if we should decide to buy one," Valdemars told us.

On part of their land they built an enclosure that serves as a nursery for their silver foxes. The rest of the plot is kitchen garden and fruit trees. The grapevines beginning to climb up the back wall of the house justify the name they gave it—"Winsari," vineyard in Latvian.

The total cost of all construction was 5,000 rubles. They made a down payment of half, from their savings. The rest was covered by a ten-year, interest-free loan of 1,000 rubles from the collective farm and a 1,500-ruble loan at three per cent interest from the State Bank. This loan was for 15 years, with no interest charged for the first three years. The three-year moratorium made it possible for the Jorgensonses to pay off their collective farm note ahead of time. They hope to get their State Bank loan paid off ahead of schedule too.

"Will the bank cut the interest if you do?" we asked.

"No," answered Valdemars. "It's just that we would like to get our family budget out of the red as soon as possible."

The upkeep of the house seems to be the smallest item in the family budget. Electricity costs them 30 rubles a year; fuel for cooking and heating, 52 rubles. They have their own well and pump, so that water costs nothing. Besides that, there are the comparatively small outlays for maintenance of the sewage system and repairs. All told, the house costs them less than 100 rubles a year.

Valdemars is 42 years old and Aina is 41, so that they both remember what farm life was like before 1940 when Latvia became a Soviet republic. At that time even the well-to-do homesteader had no security to speak of. "When the

So is his wife Aina. She works in the farm's profitable silver fox nursery.

To talk with farm chairman Edgars Kaulins, you must catch him on the go.

The farm is named after Latvia's national hero. Legend says that he fought and died here.

Lacplesis is a good-size farm, stretching six miles up the Daugava River from Lielvarde.

farmer figured his income those days," Valdemars said dryly, "more often than not his arithmetic was limited to subtraction."

The lion's share of his income was spent on upkeep, to pay commission for the sale of his produce, to buy seed and fodder, and to cover taxes, the cost of all sorts of insurance and the interest on mortgages. With all these deductions, the farmer was lucky if he had enough left over to pull through to the next harvest.

If the collective farm system hasn't relieved the farmer of all of his former worries, it has certainly freed him of the most important one —ever-threatening ruin. It guaranteed his well-being and gave him confidence in both the present and the future. This sense of security, says Valdemars, is something "money can't buy."

There is an unlimited market for farm produce in the Soviet Union. No one even thinks of such things as marketing crises or restricting farm production. On the contrary, all the talk you hear in every farm district in the country has to do with expanding production to meet growing demands. As part of their contribution to the national effort to boost agricultural output, the collective farms have been making larger deliveries annually, and since prices are guaranteed, their incomes have grown from year to year.

The annual income of the Lacplesis Collective Farm grew from 137,000 new rubles in 1950 to 670,000 in 1960. Last year it reached 700,000 rubles, even though there were serious losses from the steady rains that fell in Latvia from early June to the end of September. State insurance covered the direct losses (this insurance is paid for from the Latvian Republic's budget), but the poor crops of winter wheat and potatoes

Jurgensons was recently made collective farm market agent.

He checks deliveries to state agencies and to retail outlets.

Until very recently he drove a truck. The farm has 18.

cut into the profit enough so that the farm's income was not as high as had been expected. It was still higher than the previous year's, however, because the yields of several other important farm divisions were not affected by the weather.

All the collective farm members directly participate in deciding how income is to be distributed. The year's budget is drafted by the farm board, presented to a general membership meeting and approved only after close scrutiny and discussion.

This is how Lacplesis income was distributed these past few years:

15 to 20 per cent for the indivisible fund used in capital investment—construction, purchase of machines, etc.—to expand the property owned in common;

20 to 25 per cent for fodder, seed, fertilizer,

Their relatives, the Seklavses, often come for Sunday dinner.

The Jurgensons girls. Their father built the cottage six years ago.

Inara finishes high school this year; Dagnija is in the sixth grade.

Inara makes a Latvian national costume for her sister to wear at the farm's harvest festival.

fuel, lubricants, machine and equipment repair, and other production needs;

12 to 15 per cent for taxes (assigned to the local and republican budgets);

3 to 5 per cent for cultural services and pensions for members;

35 to 45 per cent was divided among the collective farm members; in addition to cash they got grain and sugar, and those working in the dairy division got milk.

The share of each member is determined by the total farm income over the year and the kind, quality and quantity of work he does. This basis for sharing is the fairest for each farmer and for the farm as a whole, since it takes into consideration the interests of both the individual and the collective.

The share he gets for his work is the major income item of the collective farmer's family budget. Vegetables, fruit, poultry and whatever else a family raises on its own plot supplements that income.

In 1961 the total cash income of the Jurgensonses came to 4,035 rubles. That included 60 rubles earned by their two daughters. The school curriculum includes work on the farm as part of the student's production training. So Inara worked in the farm's cannery for a month during the summer, and Dagnija took care of the farm's strawberry patch. Besides cash, the Jurgensonses also received more than two tons of grain and 440 pounds of sugar.

The cash and produce they received was all net income. There were none of the subtractions Valdemares enumerated when he talked about how a farmer's income melted away in pre-Soviet times. None of this income went into taxes or farm maintenance.

The Jurgensonses' most profitable source of supplementary income is silver fox breeding—in 1961 they sold ten skins. A second source is their kitchen garden; they grow the earlier varieties of potatoes, cauliflower, cucumbers and

The varicolored flower beds in their front yard bloom from early spring to late fall.

Villages like the one at Lacplesis are replacing the isolated Latvian farmsteads.

onions. A third source of income is the milk they get from their cow. The vegetables and surplus milk are sold in Riga by the collective farm for a ten per cent commission. All the other produce is for the family's own use.

They pay a tax of 25 rubles a year on this husbandry—the only tax they pay. The only other deduction from their income is one per cent for the farm's pension fund. Men are eligible for retirement and pension at the age of 60; women at 55. Pensions average one-half of the farmer's income.

Simple calculation will show that in 1961 the Jurgensonses had a net income of just a little less than 4,000 rubles. The progress of the collective farm as a whole is of very personal concern to every one of its members; the larger the farm's income, the higher the income of each family. The Jurgensonses keep getting a larger income from the farm each year, both in cash and kind—the reason for their cutting down on their personal farming, especially since it involves so much time and effort. Valdemars says: "It helped us save money to build our house, but now that we've repaid most of the loan, there doesn't seem to be much point in messing with silver foxes or a kitchen garden."

Acting on their resolve to pay off their bank loan ahead of time, they made a double installment in 1961; it came to 206 rubles with interest.

The family buys comparatively little of its food, about 250 rubles' worth a year all told. Most of it comes from their share of the produce distributed by the farm and the foods they raise themselves.

After deducting for the pension fund, the tax, loans, the maintenance of the house, and for food, we found that the Jurgensonses had about 3,400 rubles left to spend as they liked.

We asked them what they had done with the money. Up to now the calculations had been simple enough, but this question was apparently as unexpected as our visit. Trying to remember how the money had been spent, what had been bought and when, the Jurgensonses kept interrupting each other, jumping from Russian to their native Latvian and back again.

At last, having arrived at some semblance of agreement, they gave the floor to Valdemars. He said that for the past few years most of their spare money had been spent on furniture. They had moved into a new but empty house in 1956. It was well furnished by now, everything bought C.O.D. in Riga.

With the home furnished—that was money spent for the whole family—they now spent more for individual needs. The girls, and particularly 17-year-old Ingara, were very clothes conscious. Ingara went to a show or concert in Riga with her school friends nearly every week, and she wanted to look as well dressed as the girls in town.

The girls reminded their parents that there had been talk of a new bookcase, and high time—what with all the books they'd bought over the past half-dozen years. There was also that list of records to buy now that they had a record player. And what about replacing the picture tube in the TV set?

Last summer both girls spent a month with their schoolmates touring Lithuania, the Ukraine, the Caucasus and the Black Sea coast. Most of the kids, they complained, had good cameras, not cheap ones like theirs. Didn't their parents want to see good pictures of the places their daughters visited? "That means two cameras for next summer's school tour to Byelorussia and Moscow," Valdemars said somewhat resignedly.

Expenses keep climbing from year to year when there are two growing girls in a family, but the Jurgensonses do not seem overly concerned. Valdemars and Aina are glad to be able to give their daughters a childhood and youth much better than their own, and they can do it without depriving themselves of anything. They like to entertain and set a generous table for their friends, and in winter, when work at the farm slackens off, they go to Riga for a show fairly frequently.

The family budget with its credit and debit columns doesn't tell the whole story about the Jurgensonses' income. Valdemars explains, "We don't have to pay anything for our children's education all the way through college, or for medical care. That certainly is income that doesn't show in the budget, nor does the two-week vacation with full pay that my wife and I take every year at the expense of the collective farm. What farmer in the old days could afford a vacation? Then there are the sick benefits that the farm pays."

The collective farm's indivisible fund has been and still is being used exclusively for production needs—barns, machines, etc.—but in two years, when the farm's cannery is finished, a part of this fund will be assigned for new dwelling units. The aim is to have all housing construction financed by the collective farm. The next step will be to free farm members of all house maintenance expenses. This will add another plus to the income side of the family budget.

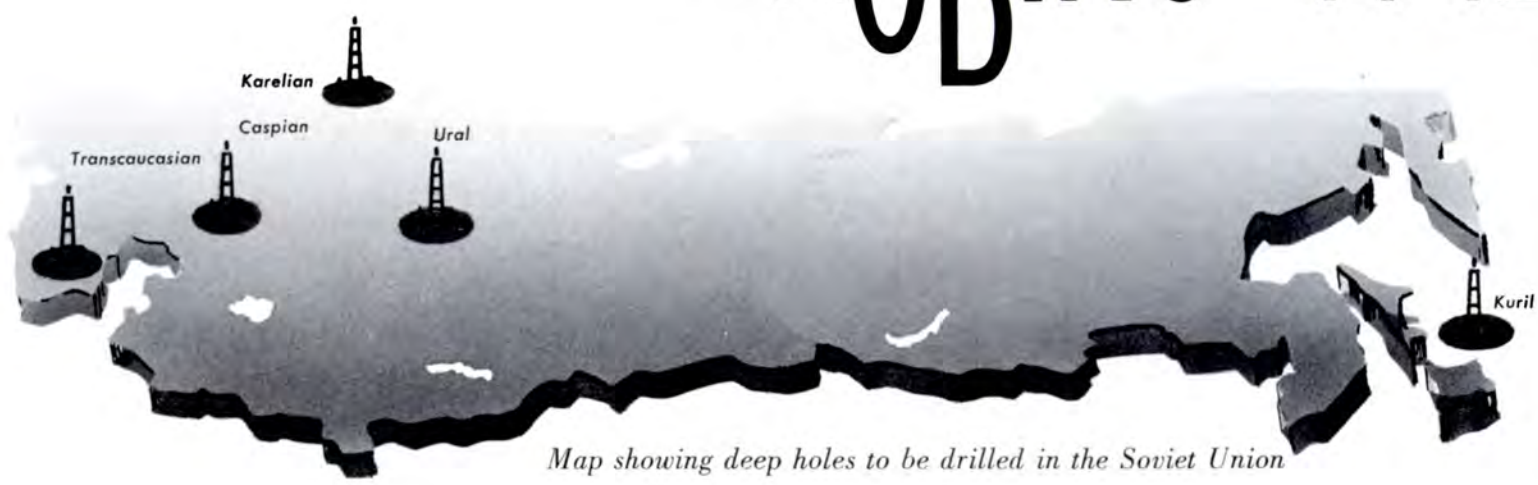
In the next few years the farm also aims to dispense with the one per cent contribution members are presently required to make to the pension fund, and then to increase pensions—still another plus.

The new Program of the Communist Party, adopted at the Twenty-second Congress, envisages that the real income of each Soviet collective farmer will double in the next ten years and more than quadruple in the next 20. So far as the Jurgensonses are concerned, these are not abstract figures. They are derived from a concrete plan that all the Soviet people are putting into practice right now. ★

The Jurgensonses have their own kitchen garden, a cow, three pigs, 25 chickens, and rabbits.

Dagnija is an overeager athlete—hence the broken arm; but she does fine in the kitchen.

PROBING THE



Map showing deep holes to be drilled in the Soviet Union

SOVIET geologists plan to drill five holes six to nine miles deep in the earth's crust. The deepest ever drilled, they will help to reveal some of the most closely hidden secrets of our planet.

Since man became an intelligent being, he has puzzled over the nature of this cosmic home of his, the earth. Until recently he had only hypotheses based on scanty facts and speculation. The relatively limited character of research in the geological sciences and the modest scale of technical probings were until recently in no way commensurate with the importance of the problem of studying the depths of the earth.

Astronomers detect light and receive radio signals from stars half a billion light years away; but seismic soundings of the earth by means of explosions reach no deeper than tens or hundreds of miles. Soviet space laboratories have reached Venus and the moon; but the greatest depth reached by boreholes is five miles, and by mines—something less than two miles.

According to present conceptions our planet is made up of three concentric layers—the crust, the mantle and the core. The crust under the oceans is usually no more than six miles thick; in mountain areas it may be as thick as 43 miles.

The crust is separated from the mantle by the so-called Mohorovicic layer where the velocity of seismic waves changes sharply, approximately from four to five miles per second. Since the velocity of sound depends on the density of the medium, this means that the density of the mantle is greater than that of the crust. Geologists believe, but this is by no means certain, that the composition of the mantle is similar to that of stone meteorites.

Academician Alexander Vinogradov and a number of other scientists believe that the mantle exerts a decisive influence on the formation of the crust, the occurrence of ore deposits and the origin and existence of the atmosphere and oceans, thus indicating how important it is for us to penetrate the earth's crust.

Equally important are the potential energy sources generated by deep-seated processes. As we go down, the earth's temperature increases by one degree C. for each 15 to 100 feet of depth in volcanic regions and each 100 to 300 feet on continental platforms and shields. Add to this the fact that each year the earth dissipates into outer space a quality or heat so great that to express it in terms of ergs requires a figure with 27 zeros. How is the enormous heat loss made up? Unless compensated for, the depths of the earth would long since have become ice cold. The compensation is largely from gravitational compression of matter and radioactive processes. There also appears to be such other reasons for the presence of underground heat as nuclear energy and the energy of deformed atoms.

The depths of the earth represents a kind of "geocosmos." We know that at great altitudes in the cosmos, due to the effects of radiation, electrically neutral atoms are ionized, that is, they lose electrons and split into free charges. Deep in the earth, however, the tremendous pressure causes a deformation—"crumpling"—of the electron shells. At very great pressures the electron shells are destroyed altogether. Electrons lose their bonds with the atoms and form a kind of "electron gas."

The analogy with outer space is evident. In the depths of the earth, too, atomic structures are in an unstable, peculiarly plasma-like condition—a most interesting observation from the viewpoint of energetics. In fact, the energy source hidden in the bowels of the earth can be compared only with the possibilities of thermonuclear energy. When we find ways to tap this energy—and this can be done only by penetrating the earth's depths—mankind will be assured of enough power for all time to carry through his most daring projects.

A view into the earth's depths will help us establish the mechanism by which volcanoes—magmatic foci—are formed, and to understand at long last the causes of earthquakes so that we can counteract them. It will also give us the answer to many other questions, for example: What induces the earth's magnetic field? Why do some parts of continents slowly subside while others rise? Do continents shift? Does the shape of the earth change?

Theoretically, there are three ways of penetrating to the abyssal zones of the earth—drilling deep holes, sinking mine shafts and traveling in special subsurface ships.

American scientists have taken the first steps. They propose to reach subcrustal matter through the thin basalt ocean floor where the basalt bed is only two to three miles thick. The first stage of drilling is now in progress. American geologists have presented the USSR Academy of Sciences with a sample of under-ocean basalt that they brought to the surface.

The five holes for the widescale Soviet research study will be drilled in various parts of the country:

1. In the Caspian depression, the plan is to go down seven to eight miles in order to study the distribution and physical character of oil and gas, the changes in rock composition and structure, and to investigate the peculiarities of the crystalline bed of this deepest sedimentary basin the world.

2. In the Urals, rocks contained in the copper-bearing band will be opened and studied. Here earth scientists are primarily interested in the distribution of ores and rock changes under the action of high temperatures and pressures. They will look into the conditions of the origin of magmatic chambers and the nature of the ancient bed of this geological structure.

3. In Transcaucasia, sedimentary and igneous rock strata are directly above the basalt layer at a depth of three to four miles. We are able, with a geological structure of this kind, to study the character and composition of the basalt layer under the Conrad surface (the surface of the basalt layer of the earth's crust). The Transcaucasian hole will permit us to study the influence of the basalt layer on the formation of metalliferous solutions and the distribution of matter in the lower levels of the earth's crust.

4. In the Karelian region, where the terrestrial rocks are 2.2 to 2.4 billion years old, the drilling will make it possible to study the basalt layer and the Conrad surface which lies above it, and to determine the origin of the earth's crust and the earth.

5. The southern part of the Kuril archipelago is thus far the only known land area in the Soviet Union where the bottom of the earth's crust comes as close to the surface as seven miles. A nine-mile hole drilled at this point will pass through the whole mass of the earth's crust, which changes in character from continent to ocean. With this hole we will be able to open

EARTH'S CRUST

BY PROFESSOR YURI KRAVTSOV

the upper part of the mantle and determine the composition and structure of the earth's interior.

These deep holes represent a giant step forward in researching the earth's interior. But a thoroughgoing study of the great depths still requires the actual presence of men with research equipment. To solve this problem it has been suggested that a system of vertical and inclined mine shafts be sunk in a limited cross-sectional area in a ladderlike, zigzag pattern. Theoretically, a mine of this type could be sunk to a depth of 19 miles.

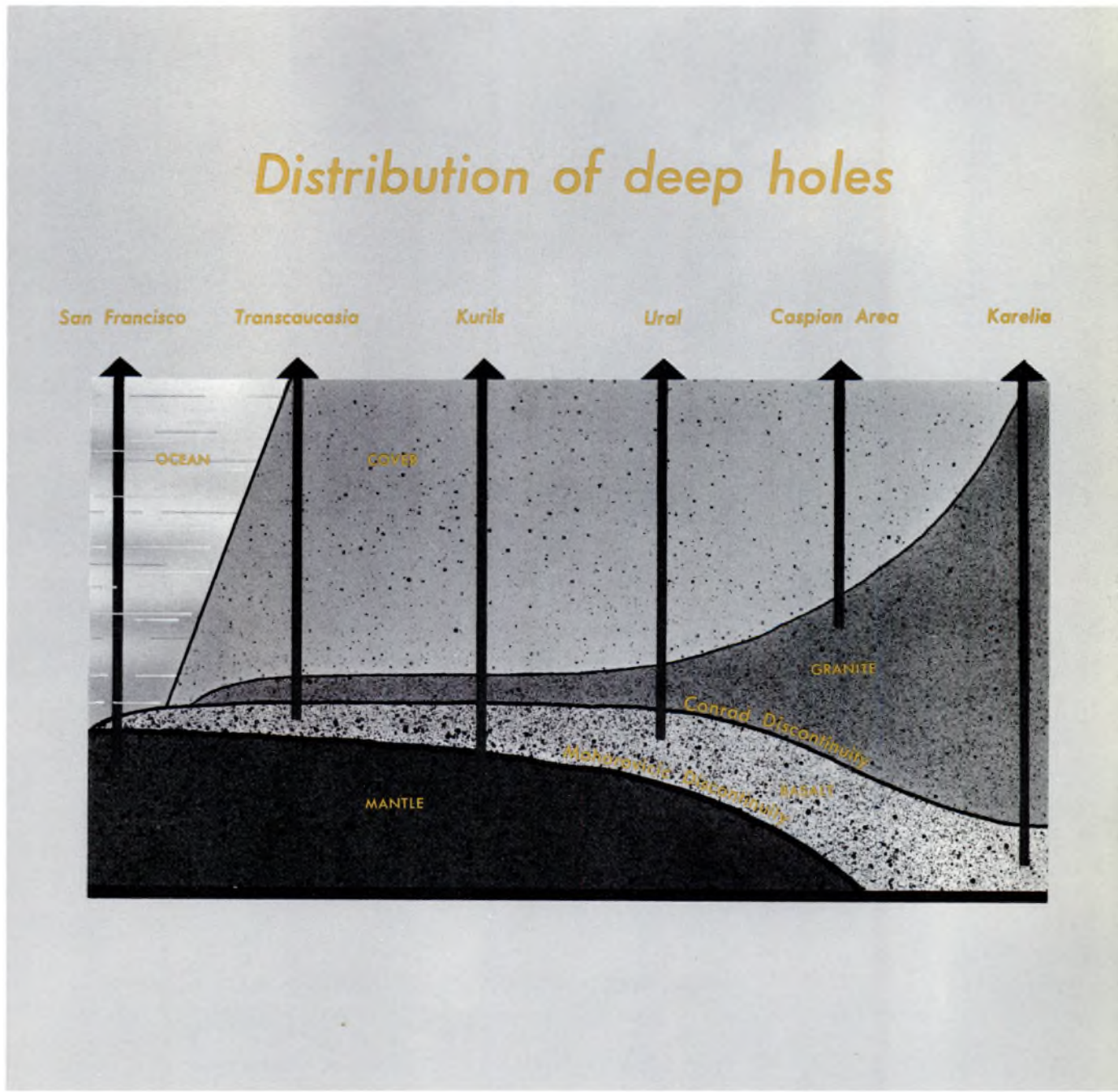
The mine must be sunk by steps, from level to level. The depth of the separate levels is not to exceed the length of the functioning mine shafts, and each level will have independent installations for hoisting, water drainage, ventilation, etc.

It is possible to sink such a deep mine in the near future largely by using the shaft-sinking equipment we now have. The most serious problems at great depths would be safety and climate. But similar problems have been successfully solved in space flight with specially designed air-conditioning equipment.

A deep mine can serve a variety of uses—as a field laboratory for a lengthy, comprehensive study of the depths; as a base at the lower levels of the earth's crust from which to study the mantle; as a pilot project for the utilization of the thermal energy of the earth's interior; and as an actual mine, should the borehole strike some rich mineral deposit.

"Underground ships"—the idea is borrowed from our experience with outer space—are likely to become vastly important instruments for researching terrestrial depths. At first thought these self-contained geological probes may seem fantastic, but the design principle of similar machines is altogether realistic. The main function of the probes would be to pass up to the surface information on the character of matter at different depths and to send up samples.

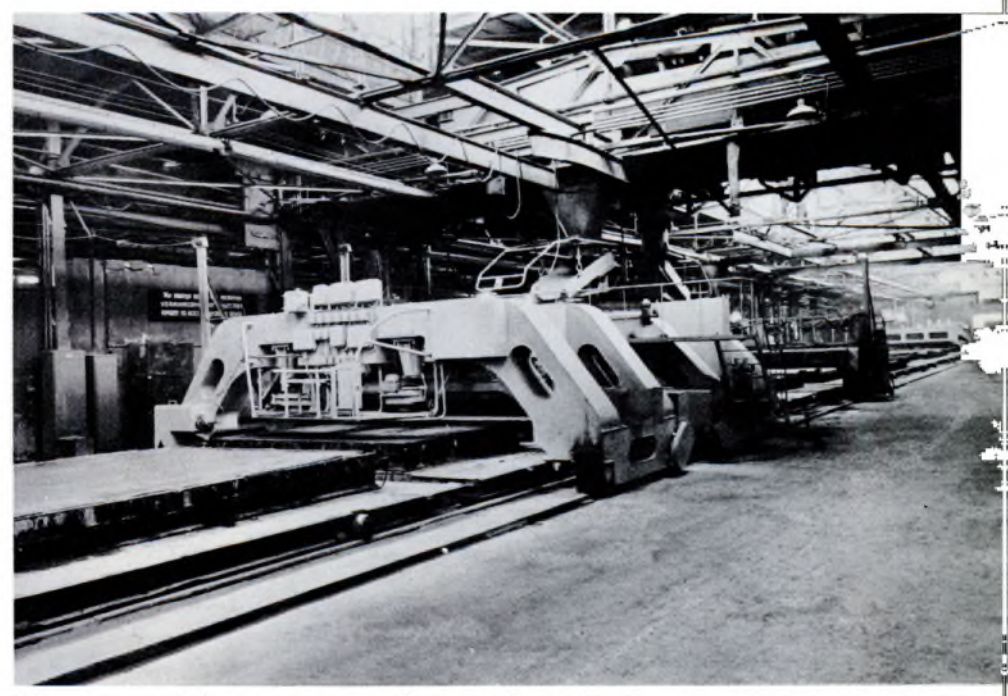
We are beginning to dig into the bowels of our home planet—earth—with all the knowledge and tools we presently have available. The task will be a long and arduous one for scientists, engineers, and workers. This is a complex job, a greatly challenging one. But then, ours is a great age because it is an age of great ideas. ★



BELT-LINE

Discussion among the architect members of the Lagutenko family—Hero of Socialist Labor Vitali, his daughter-in-law Natasha and his son Igor.

This Moscow house-building complex shop finishes the panels: the windows are put in, the walls decorated.



The conveyor belt passes parts under a machine that evens out the cement layer on the outer house panels.

HOUSING CONSTRUCTION

A FEW FIGURES on the scope of the Soviet Union's housing program. In the past five years almost 50 million Soviet citizens, every fourth person in the country, moved to a new apartment or house. More housing units were built in the past five years than in the preceding 15.

In spite of its very varied climatic zones, the Soviet Union leads the world in volume and rate of housing construction. Although construction work is more complicated and difficult than elsewhere, the average number of apartments built per thousand of the population in the Soviet Union is twice that of France and two and a half times that of Britain and Italy.

But the housing shortage still remains acute and is being given top priority. The Soviet Government is exerting every effort to solve this problem, allocating more and more funds for housing construction every year. In the remaining four years of the seven-year-plan period (1962-1965) another 13 million apartment units will be built.

This is a stupendous program and cannot be carried through with the old building techniques. Take Moscow as illustration. The capital will have to build almost two million apartments in the next ten to a dozen years. Experts figure that to build that many apartment buildings of brick would require two million workers. Every fourth Muscovite would then have to be a construction worker, a completely unrealistic notion.

Soviet architects and engineers therefore took a different tack. We need house-building factories, they said, or, to put it more accurately, factories that turn out sections of prefabricated houses. These sections would be hauled to the site and assembled there with the use of cranes and other machines. We'll be able to get along with much fewer building workers on the site.

A house-building complex was set up in Moscow composed of several architectural bureaus, several factories for the production of prefabricated sections and construction and assembly organizations.

While this complex was being set up, a competition was held for the best standard-type design for a modern apartment building constructed

These are the new apartment buildings in Moscow of standard-type design and constructed of prefabricated units as planned by architect Lagutenko.

with prefabricated units. One of the best designs, which averaged 325 square feet of space in addition to a roomy kitchen, bathroom, hallways and storage areas, was submitted by the well-known Soviet architect Vitali Lagutenko.

His house is built of separate panels used as room partitions. The rims of the partitions serve as rafters and supporting columns to carry the main weight of the house. The exterior panels serve only as insulation and decoration.

A group of architects and engineers directed by Lagutenko worked out a production technique for the elements of his house employing vertical molds, the latest molding forms.

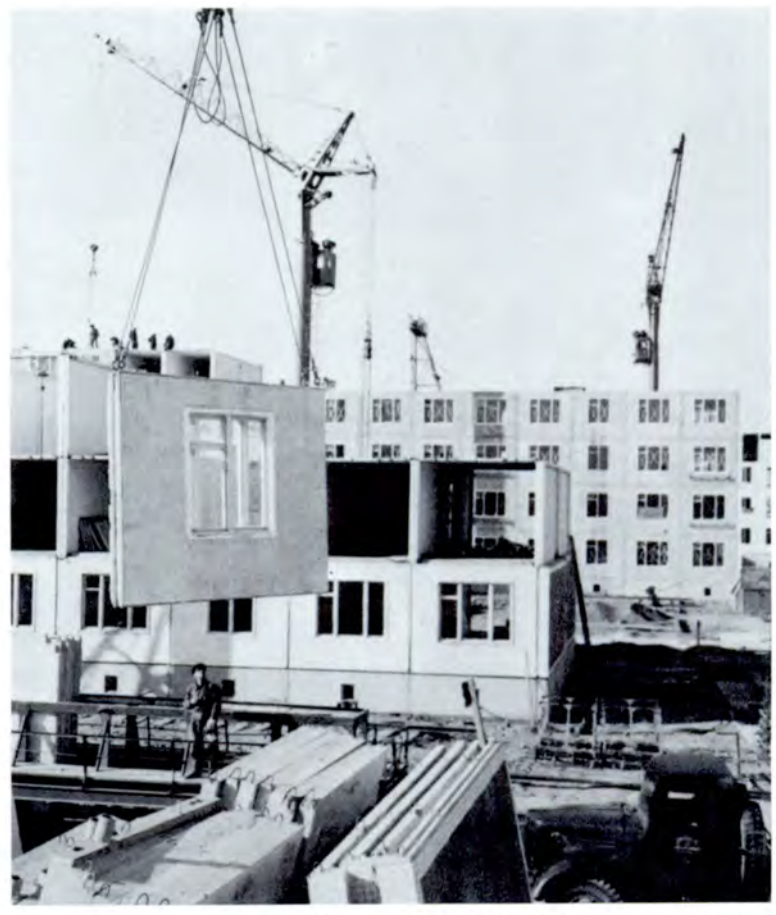
Lagutenko's design was the general blueprint used by the house-building complex. Several factories were set up in Moscow for the belt-line production of the panels, which go directly from the conveyor to assembly teams at the building sites. It takes a team about 24 days to assemble a five-story house from the prefabricated parts. The complex puts up an average of about 35,000 apartments annually. You can see these prefab buildings in many sections of the capital.

The one serious drawback of this kind of production-line building is that the houses look alike. Whole blocks and even districts of such architectural monotony will tend to hide a city's individuality.

This problem is being tackled by a group of young architects headed by Vitali Lagutenko's son Igor. The group has already worked out several variants in block layout, building size, decoration and finish of façades, panel structure, materials, etc.

Igor's wife Natasha, also an architect, works with her husband and father-in-law. Her particular forte is public buildings, schools and kindergartens.

All three are enthusiastic about the elder Lagutenko's new idea of creating a flexible plan which would make possible still broader application of prefab building methods. This means additional thousands of housing sections and a constant acceleration in the pace of housing construction in the Soviet Union. ★



Giant cranes are able to set the panels in place. Much fewer building workers are needed on the site when prefabricated parts are used.

FOREIGN DIPLOMATS SEE SIBERIA

A LARGE group of foreign diplomats accredited to Moscow made a tour of Eastern Siberia not long ago. The excursion was organized by the Protocol Department of the USSR Foreign Ministry and was one of four such tours the department arranged during the year—two to Eastern Siberia, one to Georgia and one to the Ukraine and the Crimea. This is aside from the frequent trips through the country that the foreign diplomats made on their own.

Envoys from 22 countries of five continents and members of their families took the trip. The group included Boris Klosson, counselor at the U.S. Embassy, and trade advisor to the Canadian Embassy Robert Gordon and his wife. The tour covered Irkutsk, Bratsk and Lake Baikal.

In cold 43 degrees below zero the guests inspected the Irkutsk Hydropower Station, the first in a chain of power projects on the Angara that links Lake Baikal with the Yenisei. The station, commissioned in 1959, has a capacity of 660,000 kilowatts.

Two IL-14 planes then flew the party to Bratsk, 400 miles north of Irkutsk, where the world's biggest hydroelectric station is under construction. The second in the Angara chain, it will have a capacity of 4.5 million kilowatts. Its dam, 417 feet high—as tall as a 40-story building—will form a reservoir 355 miles long.

The Bratsk station will be finished in 1963. Then a third Angara station, at Ust-Ilim, also with a capacity of 4.5 million kilowatts, will be built. "After that," Aron Gindin, Bratsk chief engineer, told the diplomats, "there will be no rapids, and the Angara will be navigable throughout its length. You will then be able to board a ship at London and disembark at Baikal."

The party also visited an aluminum plant under construction in the new city of Shelekhov near Irkutsk and went through a farm for breeding pedigreed cattle. In Irkutsk they visited the fine arts and local history museums and saw the play *Siberian Lights* at the Musical Comedy Theater.

Commenting on the trip to a Novosti Press Agency correspondent, Italian Ambassador to the USSR Carlo Straneo said, "We in Italy are aware of the great scope of construction work in the USSR. But I've now seen something of the great difficulties you have to overcome in building such projects as the Bratsk hydropower station, where you have a 160-degree temperature difference between summer and winter. I've seen how rationally planned and fast-paced construction is in the USSR."

Australian Ambassador John K. Waller remarked, "During my trip to Eastern Siberia the thing that impressed me most of all was the pioneering spirit that inspired a great number of the young people we met." ★

Foreign envoys at Lake Baikal. The USSR Foreign Ministry has in the past year arranged two tours to Siberia, one to Georgia and one to the Ukraine and the Crimea for diplomatic personnel in Moscow.

Norwegian Ambassador and U.S. Counselor at the Bratsk Station.

A tour of the Limnological Institute of the East Siberian Branch of the USSR Academy of Sciences with Director Galazi (center).

THIS THIN CRESCENT, marked in blue on the map of Central Siberia, is famed Lake Baikal which, they say, means "holy sea," or so at least the ancient Tyurkic tribes that once dwelled on its shores called it.

The lifetime of a lake is 10-15 thousand years, usually not more. Baikal is the Methuselah of them all. It is 20 million years old.

This king of lakes, the biggest on the Eurasian continent and the deepest in the world, wears a crown of mountain ranges forested with giant pines and larches that make light of time.

Baikal is capricious—savage one moment, beckoning the next; smooth as a mirror and then suddenly raging, with its white-tipped waves foaming high above the deep.

In winter Baikal is bewitched, fairy-tale country. It discards its ice cover only in May, but for a long time after that huge ice floes drift along on its surface like sparkling islands.

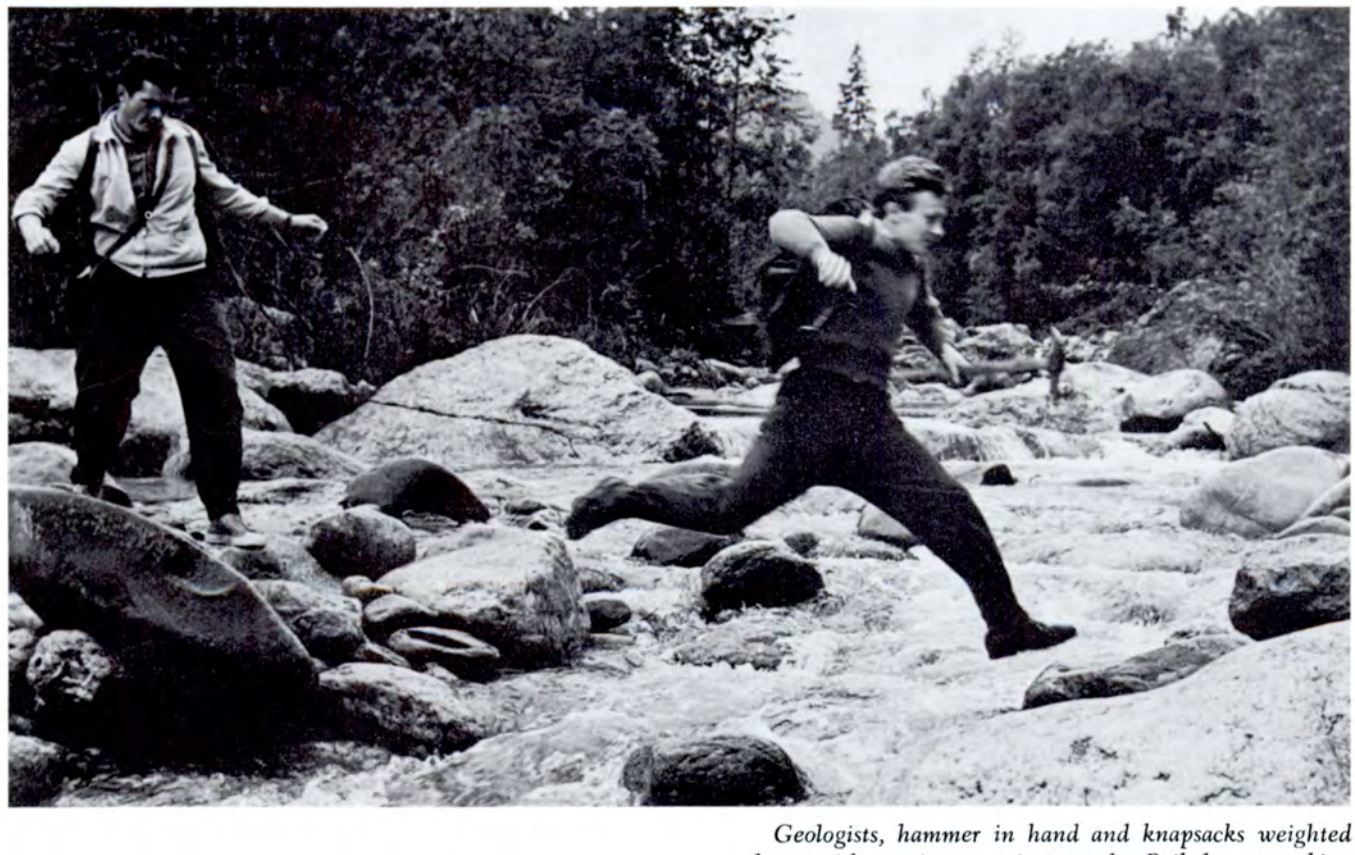
On a sunny summer day the forests around Baikal come alive. Bears lumber through the dense underbrush, the lynx glide silently along in search of prey,

LAKE BAIKAL

elk hide deep in the woods, broad-tailed squirrels scurry from cedar to cedar.

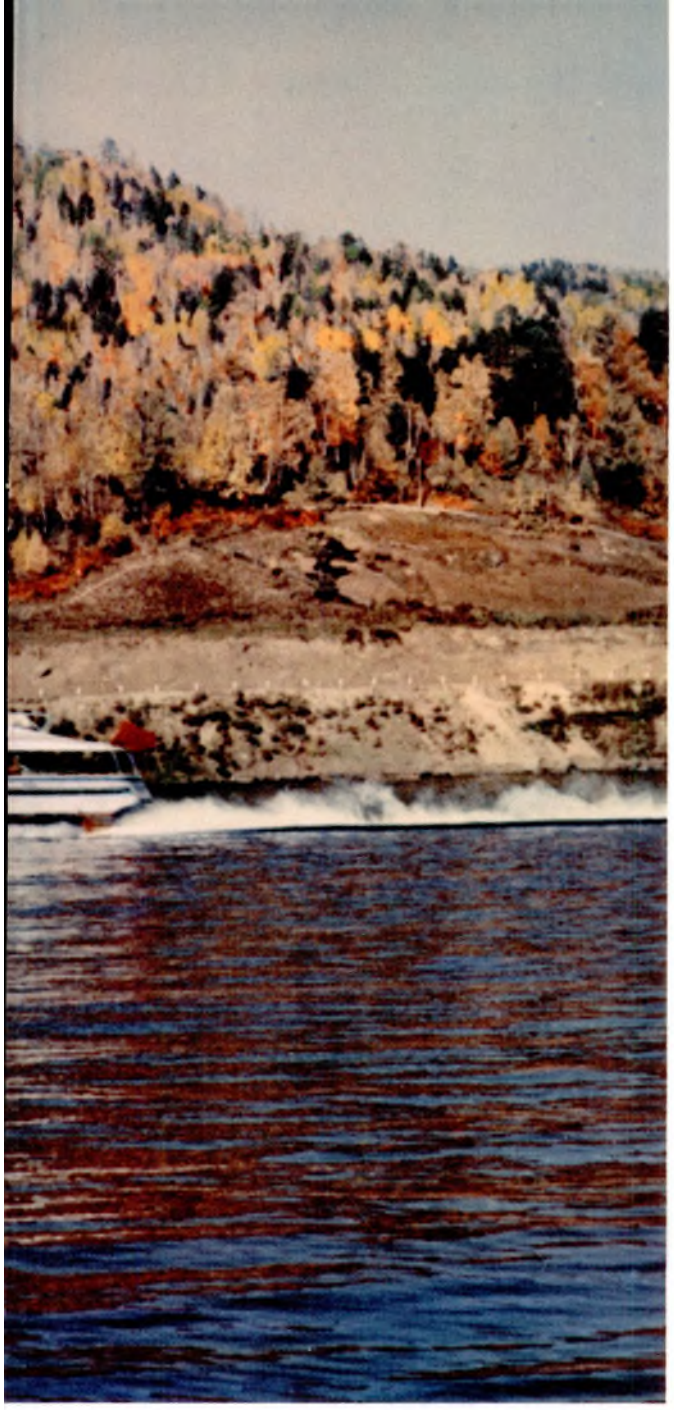
At the turn of the century Anton Chekhov, making the hard journey to Sakhalin Island to collect material for later writings about the life of exiles sentenced to hard labor, stopped at Baikal for a few days. The lake was an unfathomed miracle for the writer. He wrote to his sister Maria: "The weather was wonderful—quiet, sunny and warm. I can't tell you how fine I felt. Here lay the shore of Baikal. In Siberia they call it a sea. A mirror. You can't see the opposite shore, of course. The water of Baikal is turquoise, more transparent than the Black Sea. They claim that in deep places you can see a whole kilometer down to the bottom. And I myself saw depths with cliffs and mountains sunk in the turquoise waters that made my skin creep."

Wake up to see the sun rise over Baikal, the seasoned traveler says; it is a sight never to be forgotten. The campfire has burned down to ashes. The stars fade. The cliffs, colored purple and violet, are opalescent in the first rays of the sun. And below, hoary Baikal thrashes about like a monster in a cramped cell.



Geologists, hammer in hand and knapsacks weighted down with specimens, crisscross the Baikal area seeking mineral deposits. This is fabulously rich country.

Science is still trying to explain the lake's origin, and how the Arctic seal got there. Baikal has more than 600 varieties of plants and 1,000 species of animals.



Twenty-million-year-old Baikal, the earth's oldest lake and the largest in Europe and Asia, has the world's only institute for fresh-water biological research.

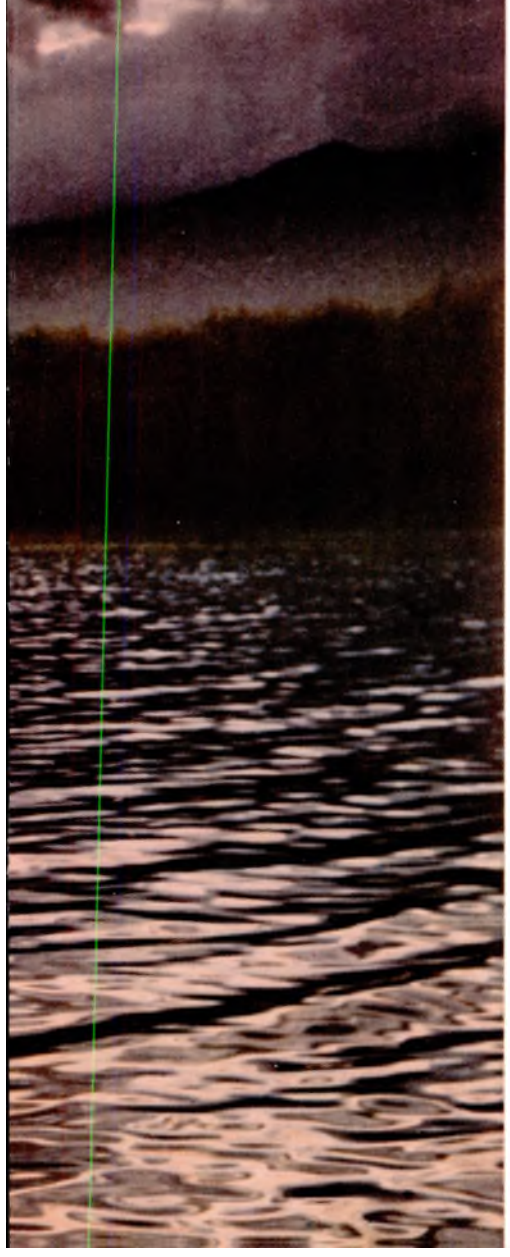
Three hundred rivers flow into Lake Baikal; only the Angara flows out of it. Giant hydroelectric stations are beginning to tap the Angara's enormous power.

The Baikal area seems to be one great depository of minerals. Gold, mica, coal and manganese are mined in the mountain valleys and oil extracted in the thick forests.

The primeval taiga that reaches to the water's edge is one solid stretch of first -grade timber. Logs are rafted down the many rivers that flow into the lake.

Describing the awesome beauty of Baikal, Chekhov wrote: "I myself saw depths with cliffs and mountains sunk in the turquoise waters that made my skin creep."

The deepest lake in the world—almost 1¼ miles to the bottom in some spots—Baikal stretches across 370 miles of scenic Siberian mountain country.



Baikal fish is famous the world over. The lake has 45 species and hauls are invariably large. Prized especially are its whitefish, sturgeon and grayling.

This tree on stilts is one of Baikal's sights.
The mountain streams that fall into the lake from a great height, the spray opalescent in the sun, is another.

This is made-to-order holiday country any season of the year, but fall vacationers find Baikal particularly enchanting for its unbelievably beautiful colors.

One of the many children's camps on the lake.
The youngsters come from Siberian cities, of course, but also from distant Moscow, the Ukraine and the Urals.

Baikal has everything for everyone—a lake full of fish for the angler, forests full of game for the hunter, and blue skies and blue water for those less ambitious.

LIVING AND HAPPINESS

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BY YEKATERINA SHEVELEVA

In my travels around the world I have met people who were well-to-do and unhappy, and people who were truly happy in spite of their poverty; human beings full of the joy of living even when they lacked the bare necessities, and others whom the same circumstances drove to desperation. I have talked with people who were certain that only a high standard of living could bring real happiness, and with others who believed just as strongly that man does not live by bread alone.

In this little story I should like to continue a discussion that began with foreign fellow journalists aboard the British vessel Strathaird last year.

THE SHIP *Strathaird*, scheduled to be scrapped, was sailing from Australia to Britain and stopping at all ports en route for its final voyage. A big poster on deck bearing the black figures 1930-1961 against a white background reminded one of a tombstone. On the desk in Captain Clay's stateroom were many radio messages of farewell from passing ships.

The atmosphere on board was not what one usually finds on a liner where the round of activities includes entertainment of the passengers. You felt a barely perceptible undercurrent of melancholy in the bar, on the volleyball court, on deck, which moved the passengers to spend more time than usual in the deck chairs, thoughtfully gazing into the distance and trying to imagine the future. In those moments I—and perhaps the other passengers too—had the impression that the ship's deck was projected into the horizon and that our vessel was the converging point of all the earth's latitudes and longitudes.

Once, with dusk coming on, I was standing on deck with a group of journalists from many countries, admiring the Indian Ocean. My companions were wearing light clothing—the women smart dresses or play suits, the men summer shirts.

"Look at that girl in the blue blouse," a French journalist said to me. "She's just an ordinary clerk, but so smartly dressed. And she looks so happy and pleased with herself. You can't deny that she dresses better than a Soviet girl of similar position."

A British newsman added, "Soviet journalists make it a rule to keep quiet about the more typical things in our countries."

"And what do you think is typical of your countries?" I asked.

"The high standard of living," they exclaimed in unison. "In the Soviet Union you don't have the cars, radios and refrigerators that we have. You're a woman, and you know that in Moscow you can't get many of the kitchen appliances that are commonplace in London and Paris. Do your stores carry anywhere near the varied stock of nylon blouses, the up-to-date portable electric driers, irons and meat choppers that ours do?"

"Now, if I were to write that the typical features of French and English life were nylon blouses and the latest irons, you would say I'm misrepresenting again."

Someone sighed, murmured something about how hard it was to convince people who wouldn't see facts, and cited a few more figures about high Western living standards. But I wanted them to tell me something else, a very simple thing. Were their fellow countrymen happy? What I wanted to know was not their countries' standard of living but, if I may be permitted a metaphor, the standard of happiness.

If I were asked what the typical quality of Soviet life is, I would have no difficulty answer-

ing. I would not talk of the steel, machine-tool or other industries in which the Soviet Union either leads the world's producers or is close to the top of the list. Nor would I mention the manned flights in outer space or the pennant we left on the moon. I would not even mention the fact that our stores are full of items that make living easier and more pleasant.

Here is what I would say: "True, we still have plenty of shortcomings, all kinds of problems still to be solved. But what's most typical of my country is the happiness of the people."

I didn't have a chance to say this at the time, on the deck of the *Strathaird*, because, as so frequently happens, the conversation drifted off to abstract definitions of happiness.

For ages man has been asking the question, "What is happiness?"

Some people say "children," others "health" or "the work you want to do," or "a comfortable living." They are all good answers, of course, but the one I liked best was Lisa Howard's. The young American actress was working on a play by the almost forgotten English dramatist John Ford, a part she had wanted to do for years. Trying to explain why she was happy, she told me it was not so much that here was an ambition achieved, but that she was looking forward to the production of another interesting play, and whenever she had something to look forward to, she was happy.

I think we will all agree that refrigerators are not a sufficient yardstick by which to measure happiness. If we can measure it at all, certainly a man's aspirations provide a better gauge.

Man can move mountains to achieve a great end. He may accept the worst privation or sacrifice his life for the sake of his ideas, for just ideals. Even as he undergoes severe trials, struggling, perhaps, with his last breath to make his dream come true, man can still be happy, live in an atmosphere of buoyant energy, full of the love of life.

How does this state of mind and feeling come about? To my way of thinking, it happens when the individual's conception of happiness coincides with the idea of happiness that is consonant with the times, that springs from the spirit of the people, of the whole nation. Often a man like that may not even be aware that he is happy. Happiness becomes so much a part of his environment that he is unconscious of it.

I spent six years of my youth working as a lathe operator at the Moscow Dynamo Plant and met many people with whom I am still good friends. Zina is one of them. She now heads a big department there. There is no gray in her hair yet, and her eyes still have the old sparkle.

I happened to drop in to see Zina at a bad time—she was in the middle of an argument with her chief and going at it hot and heavy. So when I asked my all-important question a little later—was she happy—she almost bit my head off. Happy? How could she be happy with all that worry at the factory and at home, with her department falling behind schedule!

To Zina her department schedule was a trolley bus line somewhere in a remote snowbound Siberian town not running for lack of equipment or a new textile mill in the south shut down for the same reason.

And how could she be expected to be happy, Zina went on, when she had to spend so much of her time and energy trying to prove that the new production setup she was proposing would be an improvement?

Then there was the latest headache with her teen-age daughter who had had her hair done up like Brigitte Bardot for an amateur show at the music school and now insisted on wearing it that way all the time. And of course she looked awful, it didn't suit her at all. Did we try to do our hair like Mary Pickford when we were young?

Zina stopped short suddenly, and with a broad grin, said, "Listen to me blowing off steam about production schedules and hair-dos." And we both burst into a fit of laughter.

We speculated how we would have looked in fashionable hair-dos with the heavy boots and thick quilted jackets that we working girls wore in those days to the factory club dances.

It struck me as we laughed how much things have changed—the outward things. Those heavy boots and jackets are things of the past. Now we wear fashionable shoes and light, nylon pile coats. The smart summer dresses one sees at the Black Sea resorts are no different from those at the Italian Riviera or the Florida resorts.

What hasn't changed is our focus, our concept of the meaning of life and happiness, no matter its outward dress—whether it wears the rough, shabby clothes of yesterday or today's attractive styles.

Then another thought crossed my mind: If Zina did not have all these worries and headaches, public and private, if all she had to think about were handsome fur coats and pretty dresses, there would not be much of her buoyant sparkle left.

When I told my *Strathaird* fellow passengers about Zina, an Italian newspaperwoman said: "What strikes me about the conversation you had with your friend Zina is that it might just as well have been two men talking. Do you Soviet women ever indulge in woman's talk—about men, love and the like? Or don't Soviet women have any time for such feminine interests and conversation?"

I tried to explain that we're by no means ascetics but that our ideas of femininity and love have altered, changed with the times.

Once, in a theater lobby in Moscow during a film festival, I met another Italian woman, also a journalist. She and I were looking out at the gray silhouettes of houses through the haze of a fine autumn drizzle, at the bare, dripping trees and the endless stream of people.

"Dreadful weather, isn't it?" the Italian woman said.

I nodded in agreement.

"But you seem to like this weather. You're smiling."

I didn't deny it.

She said, "I would like to ask you a woman's question, do you mind?"

I told her that I was quite willing to answer a "woman's question."

"Does this autumn weather remind you of anyone?"

"Yes, it does."

"A man you met?"

"Yes."

"From the way you smiled a moment ago, I'd say he was in love with you."

"Well, he isn't," I said calmly.

"Oh," she said in a puzzled tone. "He loves someone else?"

"His wife," I said.

"Oh," she said again, sympathetically. "Do you get a chance to see each other often?"

"No. He lives thousands of miles from Moscow."

"You must forgive me, for I was not quite frank with you. I meant to write about our conversation and explain what makes Soviet women happy. I'm a newspaper woman, too. But I'm afraid our readers would not understand."

My Italian colleague did not write about our "women's" chat. Well, I just did.

And I wondered why it should be so difficult for her to understand that the sentiments of the stagecoach epoch were bound to undergo a change in the era of cosmic flights.

In the old days we believed that in a relationship between a man and a woman there was always the one who loved and the one who was loved, the one who gave and the one who received. But in our society people are taught from a tender age to give, generously and unstintingly, to their fellowmen, not to be greedy and acquisitive, that the old, "immutable" truths must yield to the new ones. In love and in friendship we strive to give, not to take; to love, not merely to be loved; to be a friend, not just to have a friend. And we recognize that the affection born of common effort sometimes blossoms into love and sometimes remains a close and enduring friendship.

The big white poster with the dates 1930-1961 in black hanging on the deck of the *Strathaird* reminded one that life also has its tragedies—death or parting, for in every parting there is an image of death.

There was this other truth the poster brought home—that furs, washing machines and even ships wear out, but that the life of a people, inspired by great ideas, moving toward great goals, daily and hourly building and creating—that is everlasting. ★

3 questions for soviet women

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SRBUI TER-OGANESYAN

BIOCHEMIST, AGE 33

YEREVAN, ARMENIA

1. Yes. I think that the hearth is every woman's calling.

My daughter Seda is studying at a music school, and in the evening my husband and I like to sit and listen to her play. A family idyl! Why not? I'm an enthusiast for the home. But I'm also an enthusiast for the work I do outside. I'm a biochemist, and my home chores do not get in the way of the research I'm doing on blood. I'll be defending my master's dissertation on the subject soon.

I'm also interested in the "home" affairs of my republic. I'm a deputy to the Armenian Supreme Soviet and a member of its Committee on Public Health and Social Insurance. I'm concerned not only with our own family budget but with the budget for medical care for all the children in the republic.

2. I've already mentioned my daughter. I also have a son, Noraj. He's four now. I have no particular system for bringing up children. I try to be a comrade and friend to my children. I try not to yell at them, not to weary them with long lectures on behavior. I think life has to do the teaching. There are no ready-made prescriptions. First we must see how a child reacts and only then give our advice.

3. Everything about a woman must be in harmony if she is to be beautiful—her face, body, clothes, goals, actions, friends and her idea of love. I don't call a woman beautiful if all she has is a pretty face or nice clothes.

ANASTASIA GORYUSHKINA

PENSIONER, AGE 55

MOSCOW, RUSSIAN FEDERATION

1. Bringing up ten children takes a lot of time, but I held down a job until I retired. I didn't work because I was poorly off—seven of my children are engineers who make good money—but because it's dull to chain oneself to housework and lose contact with people.

Even now, after retiring on a pension, I can't stay idle. I do volunteer work for the Pensioners Council. I visit a kindergarten to see how the children are cared for, or I look into a food shop to check its products and service. There's plenty to do, and I'm glad to help out. I want to be useful not only to my children but to other people.

2. Children are different, and the way they are handled has to be different too. One has to be scolded, another patted on the head. But there is one principle that I've used for all of them. From the time they could walk, I taught my children to help out. During the war, when my husband went to the front, I was left with eight children on my hands. They washed the dishes and clothes, cleaned the house and did the shopping. My children grew up to be steady, industrious people, not afraid of hard work. Seven of them already have a higher education, two are still in college and one is in secondary school.

3. At my age it becomes very clear that the true beauty of a woman lies in the warmth and generosity of her heart.

ANNA SHCHETININA

SEA CAPTAIN, AGE 52

VLADIVOSTOK, RUSSIAN FEDERATION

1. A woman is the central figure in the home; she is the one who binds it together. But her interests should not end there. A woman should continue to study, to keep abreast of the times. To do this she must be able to combine study, work and family duties.

2. A child must learn to be independent from an early age. To my mind, that is the most important principle of education. Too much care is as bad as too much strictness. Those fathers and mothers who create a kind of hot house for their children are spoiling and pampering them. A child must know life as it is if he is to develop will and character.

3. What makes a woman beautiful is the sort of person she is. A woman must be a respected citizen of her country, her husband's friend, a good mother to her children. Looks matter a great deal, of course, but they do not necessarily make a woman beautiful. There are lots of shallow, pretty girls who repel rather than attract men. And there are women whose beauty is not evident at first glance but whose inner qualities win them lasting admiration and love.

RAISA BOBYLEVA

ARCHITECT, AGE 33

DUSHANBE, TAJIKISTAN

1. I would miss the joy and worry that come with a home and family if I didn't have them. But I would feel just as unhappy if my life had to be limited to the home. I design houses, schools, kindergartens and nurseries. It's not only the salary that I work for; my husband, a civil engineer, earns enough. My feeling is that if you busy yourself only with housework, you don't grow with the life around you, with your husband or even with your children.

2. A short time ago I read a newspaper article by a textile weaver who said her work helps her bring up her children properly. When she leaves for her job and the children are on their own, they learn to be responsible, disciplined, and so on. I think she's wrong. The ideal thing, to my way of thinking, is for the mother to be home with her children all the time. But that would narrow the mother's life. Compromises are unavoidable here. And talking about compromises, in our family we have an indulgent mother and a strict father. Perhaps that is the recipe for well brought up children.
3. I've noticed more than once that after marriage some women stop caring about their appearance and lose interest in books, study and their own development. After a time they lose their husband's attention and respect, and even their children's. I try not to let that happen to me.

NINA YAKOVLEVA

AIRLINE HOSTESS, AGE 26

DUSHANBE, TAJIKISTAN

1. I can't say much about home and family, I never had either. Perhaps I will someday. I lost my parents very early and was brought up in a children's home. I finished ten-year school there and went to work as an airline hostess. I'd very much miss my job and the people I work with if I got married. And, of course, marriage would be the end of my job. What husband would put up with a wife who is in Penza today and Tashkent tomorrow?

2. All I know about bringing up children is from my own experience in the home. I think care and kindness combined with firmness and discipline is the answer.
3. Some writer once said that a man loves with his eyes. We women are well aware of that and are very much concerned with our looks. A woman must try to make herself attractive and charming. They are indispensable qualities.

   But at the same time I have no use for women whose only concern is the way they look. They spread no warmth or light around them. They make dolls out of themselves, a humiliating way to live. A woman must strive for something higher than the most fashionable kind of nail polish or the newest exercise that will help her slim down.

GALINA KRASNOVA

SENIOR RESEARCHER, AGE 35

MOSCOW, RUSSIAN FEDERATION

1. I think woman's calling is her family, her home and her job. Life is like a diamond; if one facet doesn't sparkle, the diamond isn't really good. So far as I'm concerned, I like my job and I shouldn't want to change it for cooking and washing. With today's progress almost every family can afford the conveniences that simplify housework. It's the woman's job to see to it that her life doesn't become a round of tiresome chores.
2. My daughter is a difficult child. She cried when she had to go to school. She doesn't like to study and is willful besides. Corporal punishment, I've always believed, is no answer and should never be used. Only reasonable persuasion can help. The child thinks only of the present; the adult—especially the mother—must keep the future in mind too and work toward the time when the child will understand that its course is wrong and be grateful to its parents. I believe in this future and look forward to that "thank you" from my daughter.
3. A woman's beauty depends on many things. First, she must have an inner beauty. That will affect her outward appearance as well. Second, she must have good taste. She must like clothes, not follow fashions blindly but know which styles suit her. And by no means should a woman try to please men at all costs. I think in many cases that a man's taste is not his strongest point.

ZINAIDA KOSTINA

HOUSEWIFE, AGE 36

MOSCOW, RUSSIAN FEDERATION

1. What man or woman does not dream of a happy home and hearth? And if, unfortunately, there are hearths in which a home fire, kindled by two people who once loved each other, goes out or burns with a weak flame, more often than not it is the woman's fault. She simply never bothered to learn her job as wife and mother.

   I have never held any other job. I have been a housewife for 15 years. It has been my calling to take care of the two people in the world dearest to me—my husband and daughter.
2. Our daughter is 14. There are no special methods we've been using in bringing her up. We taught her to do things for herself at an early age. I think this is the most essential thing in a child's upbringing. A child must be made to understand that mother is not a servant. It is also very important for children to know that you trust them. It gives them independence and dignity. The most important thing, though, is for the parents to set the example.
3. I think that motherhood is what makes a woman really beautiful.

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NADEZHDA OSTROVSKAYA

SURGEON, AGE 36

TALLINN, ESTONIA

1. No. I would find it a bore to sit home and do nothing but keep house. Working outside, you are always in contact with people and you're able to do things not only for your own family but for others. Since I'm a surgeon, my job is to rid people of their ailments. To my mind there is nothing in the world to compare with the feeling that you've helped a person get on his feet and become useful to others again.
2. I have two children and I try to give them every chance for independent growth. I try to get them to do their own work, to be neat, and to take care of themselves generally. We often go to the theater and to art shows together. I think the idea of introducing vocational training in the schools is a good one. I'm very pleased when my son comes home from school waving something in excitement, "Mama, I made this myself!"
3. A woman's beauty, I feel, lies in her originality. She must have a quality of her own that distinguishes her from all other women.

LYDIA TUZ

WAITRESS, AGE 23

KIEV, UKRAINE

1. To limit your time and interests to a home and children must be extremely dull, I think. It makes life so monotonous, robs it of all its richness. If I marry and have a family, I don't intend to let it stop me from going on with my studies. I'm taking a correspondence course at the Foreign Languages Institute and hope to graduate as an interpreter.
2. It's too soon for me to talk about how I'll be bringing up my children. It's all in the future. What kind of a mother will I be? I don't know. I suppose my child will run around, play, and fight like all children do. I don't want it to learn to read too early or to beat its father at chess.
3. How wonderful it would be if parents had only pretty daughters. But the thing that makes for beauty is not good looks alone but charm. And that important quality is not inherited.

LYDIA SERDYUK

HOUSEWIFE, AGE 32

KIEV, UKRAINE

1. I am a housewife and, in my opinion, the family is a woman's basic responsibility, regardless of her trade or profession. As schoolgirls we used to talk about what we would like to be. We dreamed about so many things. But in all our talks about the future, no one ever said she'd like to be a housewife. It was a good many years before I convinced myself that being a good wife and mother is as honorable a career as any.
2. I think the family plays a decisive role in bringing up children. The child will inevitably be affected by family relationships. One must try to understand how youngsters feel and think, be gentle and firm at the same time, and one must always be honest with children. Never-ending care by the mother is, to my mind, the main principle of upbringing.
3. You'd better ask men that question. Every woman wants to be beautiful so that men will find her attractive. Achieving feminine beauty is an art that we women do our best to learn.

ZOYA SHEVCHENKO

CERAMICS ARTIST, AGE 25

ORDZHONIKIDZE, NORTH OSSETIA

1. No. I consider it a duty rather than a calling. A person has many duties but only one calling. For me, it is music. It burst into my life only recently. I started to sing with an amateur group at the House of Culture in my city just for the fun of it, but now it has taken hold of me completely. Home, family, and comfort are all important but not the main things in my life.
2. Since I am not married as yet, the problem of bringing up a child is not one I've worried about. But I do think that this should not be only the mother's problem. The child should grow up with others—at kindergarten, school, college—under the guidance of experienced and understanding teachers. A child, it seems to me, grows best when he's with others.
3. A woman's outward attractiveness is important, of course. But it's not everything. I believe that there must always be something new and fresh about a woman. She must seem different today than yesterday. The secret of a woman's eternal beauty is in her many-sided interests. It is no accident that we so often speak of an interesting woman and a beautiful woman in the same breath.

3 questions for soviet women

1. Do you believe that the hearth should b
2. How do you think children should be b
3. What, in your opinion, is beauty in a w

NINA YEVSEYEVA

DRESSMAKER, AGE 32

MOSCOW, RUSSIAN FEDERATION

1. If there is such a calling for women, it should be the same for men. Don't misunderstand me; I don't mean to say that a man has to become the housewife of the family. But I wouldn't want to live with a man who comes home with the idea that everything has to be ready and waiting for him. I expect a man to take his child out for a walk, do some shopping, help to keep the apartment in order, and, of course, look after himself. That makes for a happy home for both husband and wife.
2. My daughter is seven. When she was three, I took her to a kindergarten and I've had no reason to regret it. I'm glad for the training she got there. They taught her to work and to respect her elders. She likes to prepare little surprises for us, like a good report from school—she is a first grader now—or a new poem she has learned, or to have the apartment all tidied up when we come home.
3. I think a woman's beauty lies in her modesty—modesty in clothes, in hair-do, in manners. This is real beauty, as I see it.

JEMMA KHACHATRYAN

ARCHITECT, AGE 22

DIVNOGORSK, EAST SIBERIA

1. A home and family is just as much man's calling as woman's, in my opinion. Chores should be shared by all the members of the family. As yet, my family is just my husband and myself. He's also an architect and works at the same place I do. In the morning we tidy our room together, and when we come home we both prepare dinner. That makes life easier, strengthens our friendship and makes it possible for us to be equals both within the family and in life generally.
2. I'm expecting a baby. My husband and I haven't given much thought yet to how we're going to raise it. But one thing we are quite sure about—that we must teach our child to respect other people. We feel, too, that the inner world of the child must be respected by adults.
3. A woman's beauty depends, first of all, on her mood. If she is happy and feels secure, she will have a real urge to look better, to wear pretty clothes. It is this urge, I think, that makes a woman beautiful.

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REGINA KOLESNIKOVA

FASHION MODEL, AGE 25

MOSCOW, RUSSIAN FEDERATION

1. Only a woman can create a real home. Nobody will argue this fact. But boredom will engulf even the most comfortable of homes if the wife lets herself become a slave to the house and the things in it, if she voluntarily deprives herself of the stimulus of a job. Besides that, a woman who heedlessly slips into the role of nothing but housewife is risking her family happiness. More than one great writer has made that point. I like to help women dress well and look pretty. That's why I'm so fond of my job.
2. I have no children as yet, but I certainly intend to have some. I hope to have a son who will grow up to be an astronaut or a scientist.
3. In view of the work I do, you would expect me to say that beauty is a matter of outward appearance. But there's more to beauty than that. I would answer your question by paraphrasing Anton Chekhov: "Everything in a woman must be attractive—her soul, clothes, emotions and thoughts."

ADA POVYSSHAYA

ACTRESS, AGE 24

MAGADAN, SIBERIA

1. Of course not. The woman of today cannot consider the comfort of her home her sole interest in life. But without such interests she is also not a woman. It is rather pleasant, upon coming home after rehearsals, to put on an apron and do some cooking. Housekeeping is by no means a tiresome job for the modern woman, especially since these days it doesn't require much time.
2. So far we have no children. But when we do, I shall do my best to instill in my boy (and boy it shall be) a love for technology. At one time in my life I had to choose between the career of an engineer and that of an actress. I chose the latter. I want my son to make my first dream come true.
3. The most beautiful woman is one who is always attractive to her husband.

KATYA MAKAROVA

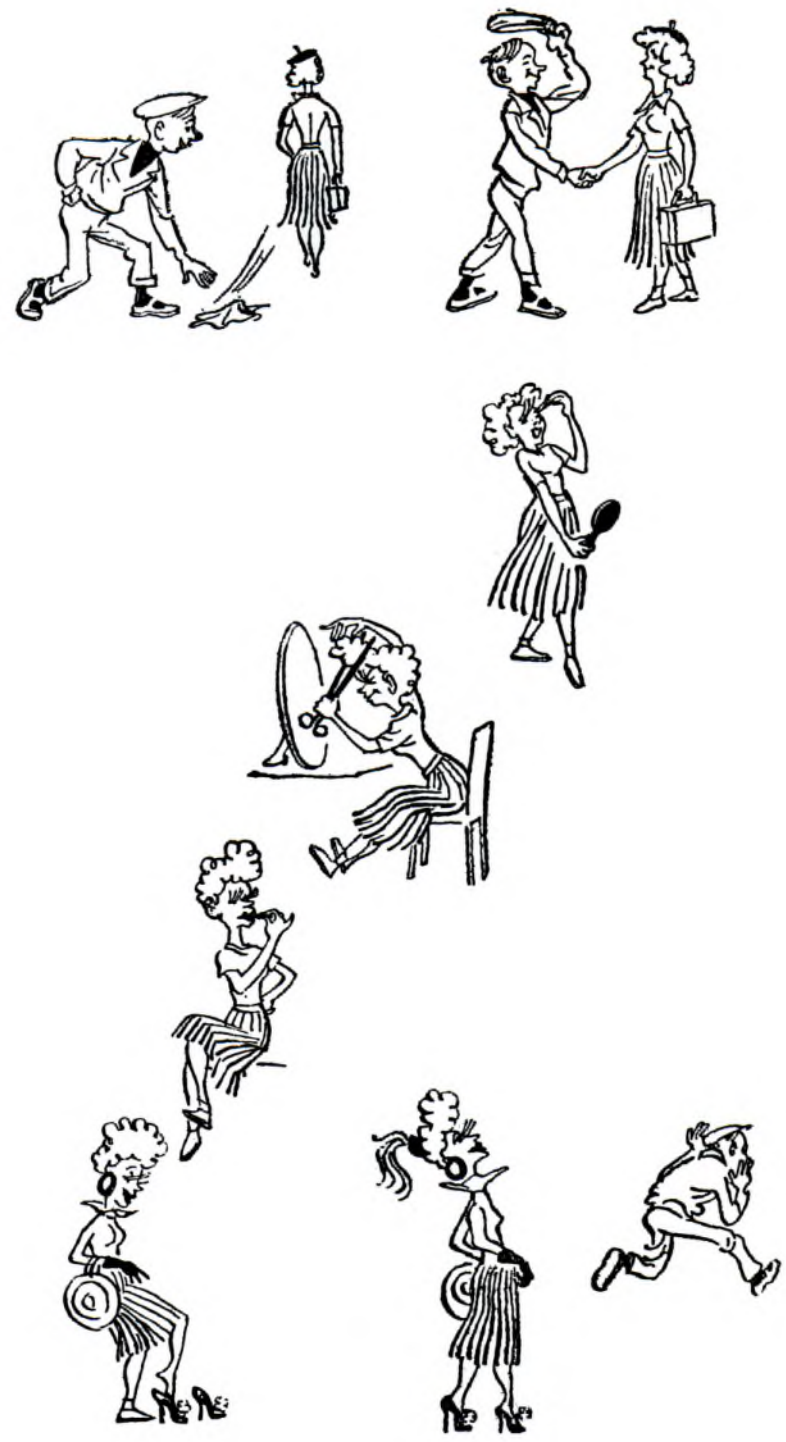
CRANE OPERATOR, AGE 20

NAZAROVSK, EAST SIBERIA

1. Home for me is a room in a rooming house. I do my best to keep it neat and cozy. I take my meals in a cafeteria. You don't have to have any special calling to tidy up a room or wash your clothes. When I get married, I'll probably have a better answer to your question.
2. I haven't thought about children or how to bring them up—for the same reason.
3. I think my friend Klava Chernigina is beautiful, and I wish I were more like her. She's a crane operator too. Klava is always cheerful and happy. Nothing seems to spoil her disposition. She isn't much to look at, at first glance—snub-nosed, round-faced, freckled. But people always seem to glow when she's around.

beauty salon

BY GALINA VASILYEVA



THE BEAUTICIANS in this very popular Moscow salon say, "It's the face, not the hair, that we dress."

A slender young Buryat woman with straight black hair asks, only half in jest, "Can you make me look beautiful?" Hairdresser Tatyana Konstantinova looks thoughtfully at her customer's narrow forehead, high cheekbones and slanting hazel eyes—the hair would have to be pulled away from the temples to make the eyes stand out—and says matter-of-factly, "Let's give it a try, shall we?"

The popularity of this beauty salon is well earned, its hairdressers are rated about the best in the capital. The price of a facial treatment, hair-do, manicure or pedicure is the same as at any other salon, however. A manicure costs 38 kopecks, a haircut 40, a hair-do 60, and a permanent five rubles.

The salon is especially busy during lunch hour and after the offices and factories let out. The customer chooses the hairdresser, and consequently the hairdresser feels that each customer is a personal challenge.

"You prefer this one?" asks young hair stylist Semyon Weisburd—he looks skeptically at the hair-do his customer has picked out of a magazine. "But that's really not good for you. We'll look for something more flattering." Semyon's aim is to play down the bad points and emphasize the good ones.

Parisian women say you can pick out an Englishwoman by the feathers in her hat—they're just a little bit smaller than they ought to be. And a German woman, because hers are a little bit too long. It's the little bit more or less that's the problem in hair-dos. The master stylists in this beauty salon have learned to take advantage of that little bit more or less to make a woman's face more attractive.

Let's have another look at the Buryat girl we mentioned earlier. Tatyana has almost finished. Here is a really pretty face, with eyes slightly slanted, turned out by those expert hands. The girl looks at her reflection in the mirror as she leaves, smiles happily, and walks to the door, her head high, past women waiting their turn. ★

special for women

BY VALENTINA BELETSKAYA

MOSCOW'S Southwest is a district of modern apartment buildings that seem to have flung their windows wide open to let in sun and air. The new store for women's wear in the district, with its huge plate-glass front, its elegantly attired mannequins, eye-catching materials and modern furniture, fits the setting. High ceilings and tall columns grace its inviting interior.

The shop has several departments. "Ready-made" offers a wide choice of dresses, suits and coats. If the fit is not perfect, alterations are made without charge. If the alterations are considerable, it might be better to try the "Semi-finished" department. The salesclerks will be pleased to arrange an appointment for a fitting. Or, for those who are very fussy, dresses and coats can be made to order. The store has its own workshop and very skilled craftsmen.

Textiles and furs on display come from all parts of the Soviet Union—woolen fabrics from the Baltic Republics; rayons from Novosibirsk, the Altai and Kiev; linens from Kostroma and Yaroslavl; astrakhan from Central Asia; Siberian fox, mink and otter from the Far East. There are also wools from Italy and taffeta from France.

"You can't decide between these two coats? Why don't you sit down, relax and give yourself time to think it over?" says the saleswoman, pointing to the comfortable armchairs and end tables with fashion magazines pleasantly distributed throughout the store.

The pretty smiling faces of the saleswomen welcome you wherever you go.

"Want to see how this dress looks? Let me help you. The dressing room is right this way."

"This hat? Try it on. No, black makes you look too pale. This one is more your color."

No simple matter to choose the right style and shade in this important accessory. The saleswomen in the hat department are glad to put their trained judgment of style, color and suitability at your service.

In the costume jewelry department there are necklaces, earrings and bracelets to match your dress, and down the aisle are gloves and handbags.

The store was opened only last October, but, says manager Alexei Boldin, "to judge by the sales—and that's the best way—we've already become very popular with the ladies." ★

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Spring

FASHIONS

BY YELENA RAIZMAN

SPRING brings a multitude of colors to life. The melting snow reflects all the shades of the rainbow, then the first green blades of grass appear, followed by the earliest flowers—yellow, orchid, orange.

Dress designers at the All-Union House of Fashions look at spring with a searching and artful eye to determine which of these gay colors to borrow from nature for madame's new wardrobe.

Beauty is a major consideration for our designers, of course, but not the only one. There is comfort to be considered—the early spring breezes tend to be blustery.

This simple but very chic black dress is elegant with a blue mink cape.

And this spring costume with its long lines is of soft green wool. The hat and collar are red fox.

This short capron evening dress is cut on the bias for a molded silhouette. The gown is trimmed with ruching; the beads are gilt wood.

A costume for street wear with soft comfortable lines, trimmed with a large, light-red fox collar. Sleeve and yoke are one piece.

A cold-weather sports coat of gray artificial astrakhan. Scarf, gloves and shoes are in a smart terra-cotta shade.

A rainy-day costume in the spring mood—a striped wool dress, red raincoat of synthetic material, yellow rubber boots and umbrella.

The furs in spring fashions are for the end of winter; the fine artificial silks, for approaching summer; and the colors—those are for the season itself, for nature awakening. ★

CAPITAL CITIES ON POSTAGE STAMPS

BY ILYA ZBARSKY

MANY Soviet stamps illustrate the way of life and the national traditions and cultures of the different peoples who live in the USSR. One series of 15 metal-engraved stamps issued in 1958, all of 40-kopeck denomination, shows the capitals of the union republics. Each stamp carries the name of the union republic in both the Russian and the national language and, to the left, its coat of arms.

In 1960 a series of ten stamps, somewhat smaller in size but also of 40-kopeck denomination and otherwise similar to the union republic series, was issued for the autonomous republics.

Six new stamps in this series were added in 1961. These are of 4-kopeck denomination because of the new currency put into circulation that year.

QUEST
THE SC

In the last issue we published Zoya Malkova's answers to several questions on the Soviet school system asked by visitors to the Soviet book exhibition held in New York and other American cities last summer. These are the rest of the questions and answers.

QUESTION: What is the aim of the Soviet school reorganization law recently passed and what has it done to improve school life?

ANSWER: One of its aims is to improve the quality of instruction and keep it up to the requirements of our age of atomic energy and sputniks. Another is to give all young people a better chance to finish high school. The law extends the period of compulsory education from seven to eight years. It also adds an extra year to the senior high school course. The combined elementary and high school course is 11 years; the age range is 7 to 18.

Young workers are granted such privileges as a shorter workday with full pay and longer paid vacation periods to make it easier for them to go to high school evenings or after their work shift.

The curriculum has been revised to dovetail classroom teaching with work experience. New industrial and agricultural courses have been introduced, and the traditional subjects have been overhauled with an eye to more polytechnical content. Methods of teaching have been revised to stress development of initiative and independent thinking.

The over-all effect of the law is that the school has become more closely related to life, to the day-to-day activities of the workers and collective farmers.

QUESTION: How is the 8-year grade school organized?

ANSWER: The first four years are spent with one teacher for all subjects—Russian reading and writing (or whatever the native language of the particular republic may be), arithmetic, introduction to science, geography, history, drawing, singing, physical culture and elementary manual training.

Beginning with the fifth grade, each subject is taught by a different teacher. Children begin the detailed study of history and natural science in the fifth year; in the sixth they take physics, algebra and geometry; and in the seventh, chemistry. The goal of the 8-year school is to provide a solid foundation of general and polytechnical knowledge.

ONS AND ANSWERS ON VIET SCHOOL SYSTEM

QUESTION: How is class teaching tied in with productive work experience?

ANSWER: The world's great teachers and thinkers have long advocated a combination of study and productive work as the key to the rounded development of the child. This is the guiding principle of Soviet education.

From the fifth to the eighth grade 15 per cent of class time is devoted to productive work in the school shop or on the school farm plot. The children learn to use tools and materials and acquire fundamental work habits. In the upper grades the work is more complex and socially productive. Ninth- to eleventh-grade students spend 30 per cent of their school time in factories, farms or laboratories working alongside adults on specific tasks and acquiring specific skills.

The teacher tries to link the classroom study of algebra, physics, chemistry and the other subjects to the students' practical work without watering down the theoretical material. Upper-grade pupils are given class problems connected with production processes. They may be asked to describe the physical theory on which a lathe operates or how coke is produced from coal. In that way the laws of physics and chemical formulas take on more concrete meaning.

In the three years since the school reorganization law was enacted, there is no question but that the quality of instruction has improved. However, there are still many problems and difficulties to be resolved. For one thing, students in the upper grades find it difficult to choose a vocation. For another, there is the question, still open, of organizing productive work in the schools so that it yields maximum results.

For a solution to these and other questions, Soviet educators have been studying the experience of other countries. The Foreign Section of the Academy of Pedagogical Sciences worked on an extensive research project between 1958 and 1960 on "Student Training for Practical Work in Foreign Schools." The educators studied the experience of American schools, among others.

QUESTION: Why do you require every student in the upper grades to take practical work training? How about the student who does not intend to go straight to work after high school graduation but means to go on with his studies?

ANSWER: We consider work training the key to a rounded education. It helps the pupil assimilate and retain the material learned; it sharpens the eye and makes the hands more dexterous. This is important for every person, no matter what his future profession may be, whether he becomes a factory worker, a physicist or a surgeon. Work is also a vital element in ethical training. Every modern teacher will concur with this statement of the great nineteenth-century Russian educator Constantin Ushinsky, "Work per se is as essential to the mental health of the individual as fresh air is to his physical health."

QUESTION: Do you have tests to check the students' progress?

ANSWER: The word "test" in Russian is *proverka* or *opredeleniye*, closer to your "control" or "check-up." In that sense of the word the Soviet schools, of course, test the students. Without systematic check-ups on progress, we have no way of gauging the effectiveness of the teaching.

Every teacher assigns "control tasks" to the class from time to time. The questions the teacher asks are designed to show how well the students have mastered the material. They are, in a way, "achievement tests"—a measure of the pupils' learning and the instructor's teaching.

Our schools do not, however, go in for the type of tests known as I. Q. tests.

QUESTION: Why are you opposed to I. Q. tests?

ANSWER: In all fairness we must point out that not only Soviet teachers but many American teachers and educators as well are opposed to intelligence tests. Here is what Irving Adler says about them in his book *What We Want of Our Schools* (John Day Co., N. Y., 1957). "The whole theory of intelligence testing and the educational practices based on it are built on a false foundation. Mounting evidence shows that the I. Q. is not constant and that it is not a measure of innate ability. The I. Q. theory deprives large numbers of children of the privilege of a liberal education."

The conclusion these educators have reached is that it would be more profitable to abandon the fruitless search for a perfect selection technique and use the energy to make secondary education, with systematic and purposeful teaching, available to every child. We Soviet teachers are in full agreement with those of our colleagues in other countries who question the value of intelligence testing.

QUESTION: Do Soviet schools group children according to ability?

ANSWER: No, they do not. Soviet teachers are convinced that all students are able to cope with the prescribed course of study.

QUESTION: In that case, what provision do you make for individual differences?

ANSWER: The standard course of study is the minimum—quite a high minimum, incidentally, not one built around the poorest students. In each class there are sure to be a dozen or more children who find that minimum easy. For them, the teacher has additional tasks—an independent report, an extra reading assignment, coaching one of the poorer students.

As for the weak students—we have them, of course, in most classes—the teacher tries to find out why the child is falling behind and to eliminate the cause. The reason may be lack of parental supervision, the child's failure to master previous material without which the new material cannot be understood, or simply a lack of interest in school.

This last presents a particularly serious problem. Interest is the vital stimulus in the educational process. That is why teachers work so hard to discover and develop the special interest of each student. Every school has clubs for young physicists, historians and the like. Many children are active in the various circles of neighborhood Pioneer Clubs and the Young Technicians and Young Naturalists Clubs. Membership and materials are free of charge. These well-equipped and well-organized extracurricular groups, in school and out, do a great deal to develop the children's interests and aptitudes.

QUESTION: What is your marking system for promotion from one grade to the next?

ANSWER: We use a five-point system; five is the highest mark and 2 and 1 correspond to failing. The student is marked for his "control work," homework, and classroom answers. The school year is divided into four quarters. At the end of each quarter the teacher tallies all the marks with his general impression of the student and gives him a grade for the quarter. Similarly for the final mark

at the end of the year the teacher takes into consideration the final "control work," the marks received for each quarter, and his own impression of the student's classroom performance.

A student with a "2" mark in one or two subjects must study during the summer under the guidance of a teacher and pass a test before he is promoted. If he has a failing "2" in three or more subjects, he stays in the same grade and repeats the whole year's work.

At the end of the eighth and eleventh grades students take state examinations to earn their graduation diplomas from the 8- and 11-year schools respectively.

QUESTION: What do you do with a pupil who does not want to study?

ANSWER: We consider that an abnormal condition for a child. If a child does not want to study, it indicates that outside influences have stifled his natural interest in learning. In that case the teacher tries to do everything possible to reach his heart and mind and awaken a desire for learning.

QUESTION: In which grade do children begin to study foreign languages?

ANSWER: Every child, from the fifth grade on, takes one foreign language.

QUESTION: What do you emphasize most in foreign language teaching—speech or grammar?

ANSWER: We stress development of speech habits, reading and translation. Our foreign language syllabuses, textbooks and classroom aids proceed from that premise.

QUESTION: How do your foreign language schools differ from the regular schools and how are students chosen?

ANSWER: The first of these schools were opened in 1947. They are no different from the regular schools, except in their greater emphasis on a good grounding in the foreign language. Pupils begin to study a foreign language in the second grade and, from the sixth grade on, history, geography and literature are taught in that language.

The students are not specifically selected, except that they happen to live in the particular district where the school is situated. By a recent decision of the USSR Council of Ministers, 700 more of these schools are to be set up in various cities.

QUESTION: Do you use television as a teaching aid?

ANSWER: Yes, in some schools, but by and large its use is still experimental. A special group at the Academy of Pedagogical Sciences is investigating its possibilities. We would very much like to learn more about American school experience with TV.

QUESTION: How is the child's critical thinking developed in the educational process?

ANSWER: The teacher does not give the child ready-made knowledge that needs only to be memorized. The teaching process is so organized that the child must reach out for learning himself. He has to think out his own answers, come to his own conclusions, not just learn them by rote.

Pupils are given all kinds of tasks to do on their own—composition writing, laboratory assignments in physics and chemistry, practical work in the school shops or on the farm plot.

The children go on excursions and museum visits. They do their own experiments, making observations and measurements, and solve problems. They criticize stories they read and write their own. They are taught to check what they learn in the classroom against their own observations.

The dovetailing of classroom study and work training has made it easier to foster independent thinking by reason of the fact that it has enlarged the student's area of observation and comparison. The regular extracurricular discussions most schools arrange on books, motion pictures, plays—frequently writers are invited to participate—are also of great help.

QUESTION: What advantages do your boarding schools have over the usual schools?

ANSWER: In the five years since they were set up, the boarding schools, with children there 24 hours a day, have proved better than the day schools for all-round development. Students get a general education and also learn a vocational skill. I happened to be acquainted with the work of boarding school No. 12 in Moscow. Students there learn to speak a foreign language with some fluency; they are good athletes; and many of them play a musical instrument, sing or draw.

The boarding school does not replace the child's family; the two complement each other. Children spend weekends as well as the whole summer at home with their parents. Not infrequently they will hurry back to school before vacation is quite over. "We missed school," they say.

Boarding schools are very popular, but there are too few of them as yet. Energetic steps are under way to get more set up. The goal is to have two and a half million children in boarding school by 1965.

QUESTION: How do you stimulate interest in reading?

ANSWER: The school, library, family, the child's general environment, all have something to do with a child's interest in reading. It's hard to say which is the determining factor.

The words of the Russian poet Pushkin, "Love books, for they are the fountain of knowledge," is a motto written large in every school. No teacher confines himself to one textbook; he always recommends several other titles for additional reading. Whether or not the pupil actually reads the suggested books depends upon how interesting and informative he has found the lesson. Nothing will do more to stimulate a pupil's love of reading than a good lesson. After an interesting class discussion of medieval England, sixth graders will avidly read Sir Walter Scott's *Ivanhoe* and *Quentin Durward.*

Literature, which is taught from the fifth grade on, obviously plays a very special role in fostering a love for books. As they get to know the characters and to appreciate the literary quality of a book, children derive a keener spiritual and aesthetic pleasure from their reading. They begin to look on books as wise friends to turn to for advice and answers to questions.

In some schools children keep a joint diary of the books they read. Others have regular readers' conferences and discussions. All schools distribute reading lists. These and many other activities are helpful.

Every school has its own library, and there are more than 5,000 special children's libraries in towns. In addition every adult library has a special children's section.

But much of the effort of school and library would be wasted if reading were not encouraged by the family. Most homes have libraries of their own. Books make welcome birthday gifts. Reading aloud with the whole family gathered round is a regular activity in many homes.

QUESTION: What are your children's TV programs like?

ANSWER: We have daily features for children—talks by famous actors, artists, writers, and people in other fields; popular feature and science films; broadcasts of plays directly from the theaters; and cartoon features.

There are special shows for the very small fry, like "The Buratino Display," where they see drawings sent in by children of their own age. Many youngsters participate in the "Do It Yourself Club" and the "Happy Pencil School," programs that teach them how to draw and make all kinds of toys themselves, thus fostering their urge to create.

"The School Aid" is a regular feature for older school children, with interesting visual material related to class assignments in history, literature and physics. Literary quizzes and talks by writers are very popular, as are television adaptations of short stories and novels where young readers see their favorite literary characters come alive—Don Quixote, Tom Sawyer and the little boys of Nikolai Nossov's amusing tales.

After a TV adaptation there is usually a big demand for the book from which it was made, so that while television consumes some of the time children might otherwise give to reading, it cannot ever replace books for them. That is the conclusion our teachers have reached. Television tends to broaden the child's outlook and, in its own way, to stimulate his love for books.

QUESTION: Is juvenile delinquency a problem in the Soviet Union?

ANSWER: No. Of course there are minors in our country who break the law, but their number is insignificant. Why? Well, briefly, the answer lies with the family, the school, the Young Pioneer and YCL organizations. The wide network of free after-school clubs supplements the work of the school and provides creative and interesting outlets for the child's energy in his free time. In even the smallest communities there are Young Pioneer clubs, led by experienced teachers and specialists and offering a variety of activities to meet every child's taste. These Pioneer clubs hold children's concerts and arrange excursions, athletic events and exhibitions.

On a more specialized plane there are the Young Technicians and Young Naturalists Clubs we mentioned before, and also children's railroads. The work they do is sometimes on so high a level as to merit the attention and praise of leading scientists.

Such organizations as the children's sections of trade union clubs, the children's athletic schools and the summer Young Pioneer camps also help to keep down juvenile delinquency. But the most important factor, in my opinion, is the general social environment and the ethical values that our children absorb almost from birth. Ours is a purposeful, industrious environment where comradeship and mutual respect prevail.

QUESTION: What are the basic aims of communist education?

ANSWER: Our schools aim to instill in the child a love for work and an understanding of his responsibility as an individual in a collective society; in other words, to teach the child how to use his abilities and talents in behalf of society.

We want our children to have initiative, to be curageous, not to shirk hardship, to recognize weaknesses and errors and correct them, to be truthful and self-disciplined.

One of our major aims is to give our children a feeling of internationalism, to teach them respect for peoples of other countries and nationalities.

To bring up man with a capital M, adults who combine high moral and spiritual stature with physical perfection—that is the goal of every Soviet teacher. ★

PUPPETEER

BY OLGA IGNATOVICH

SHE USES a different medium—fabric instead of clay or marble—but otherwise puppet designer Yekaterina Bekleshova is a sculptor of rare talent. Her soft dolls all but live and breathe.

The figures used in most of the world's puppet theaters, with their heads of clay or papier-maché, are usually limp and lifeless when they are not being manipulated by the puppeteers. But Bekleshova's dolls, even when motionless, keep the character with which she endowed them—they look cunning or naïve, hypocritical or sincere, their eyes have a sparkle or a hard glint.

In her gallery are such personages as Don Quixote and Sancho Panza, the Good Soldier Schweik, the people of Gogol's novels and the classics of all nations. She has also created contemporary portraits—some are recognizable caricatures, others are types we come across in everyday life. Soviet children and grownups all enjoy Bekleshova's shows; they are wonderful, animated fun.

The puppeteer, with an unerring sense of artistry, has found a complement in Marta Tsifrinovich, a talented young variety actress, who has the dolls putting on airs, flirting, gossiping, arguing and generally keeping the audience vastly amused. ★

ANTONINA KOPTYAYEVA

novelist

BY BERTHA BRAININA
CRITIC

"MASS . . . mountains and gleaming blue lakes. And the far-famed Ilmen Reservation. Pine groves and white sand, a background for the green arrows of reeds. And amidst it all a city of small houses huddled together in rows along streets that look like cobbled roads. Timber roofs and stone fences and prospectors' families washing gold right there in the river beds. The women pump water. The ore, once rich, already many times washed, is heaped onto a crudely knocked-together wooden contraption."

So Antonina Koptyayeva described the small town in the Urals where she wrote her first novel at a plain kitchen table covered with oilcloth. It was published in 1940 in the magazine *Oktyabr*.

The writer was greeted as a fresh and original talent. Her vivid descriptions of nature, her vigorous characterization of the strong men who lived amid the rugged and austere beauty of the Aldan won the hearts of readers.

This feeling for life and nature around her and for strong, single-purposed characters is reflected in everything she has written since.

When Koptyayeva settled in Moscow, she chose a small cottage on Nikolin Hill, on the city's outskirts. For recreation she worked in her garden, which was filled with the fragrance of flowers and fruit trees she planted herself. But Koptyayeva traveled to all parts of the country, bringing to her novels her firsthand impressions of Soviet life.

In Moscow she wrote *Comrade Anna*. The heroine is a young woman doctor, desolated by her husband's infidelity, striving to preserve her dignity and pride as a woman and a human being.

The novelist's most important work is her trilogy—*Ivan Ivanovich, Friendship* and *Daring*—also centered on a woman's life, love and the conflicts and contradictions that make up human relationships.

There are innumerable people who are happy in love, Koptyayeva is saying, but there are others whose marriages have failed, whom love has somehow betrayed. How are they to keep up courage, strength of will, interest in their work, faith in life? The novelist poses the issue squarely with none of the cant, evasion and prudery that so frequently befogs the problem.

The *Ivan Ivanovich* of the first volume in the trilogy is young surgeon Dr. Arzhanov. In *Friendship* he is a front-line physician in the Second World War performing miracles in surgery. In the last volume, *Daring*, he is an eminent researcher and clinician.

Both Dr. Arzhanov and Varya, the girl whom he met at the front and married, are passionately devoted to medicine. To them it is the most humanitarian of all pursuits. They study and search, meet their failures and successes, have their sorrows and joys. Good and loving people, both of them, yet their marriage falls apart.

They were in love when they married. They have a son, Mishutka, whom they treasure. Varya is eternally grateful to her husband that he helped her grow, become a doctor. They seem to have every element of a happy relationship but, faced with a crisis, their marriage founders.

What makes men and women fall in and out of love? the novelist asks. Dr. Arzhanov knows that he no longer cares for his wife, is not at ease with her, is restless. But he does not, at first, understand why his feelings have changed. Slowly, probing deeply to untangle the knot of their relationship, the novelist shows us that Varya lacked the courage to give her husband the support he needed at a critical moment in a search for new methods of treatment. When he needed strength, she offered him pity—the mistake women frequently make—and so clipped his wings.

But the novelist complicates the situation in a way that life so often does. Dr. Arzhanov meets Larissa, an old sweetheart. Circumstances had kept them apart, but Dr. Arzhanov half-consciously had gone on loving her for years. Both husband and wife dismiss the chance meeting as of no consequence. But Larissa's strength of character, boldness in research and devotion to medicine match Arzhanov's, and inevitably he is drawn toward her, away from his wife.

Koptyayeva does not simplify the complexities of human behavior, the passions and moods that are often beyond the control of reason and compounded of elements that are both base and noble. She writes of lives as people live them, lives in which the realities of jealousy, love grown cold, and separation exist. To paint the idyllic, Koptyayeva implies, is to do violence to truth and morality. To face the crisis, to meet it with courage and without self-deception, is to become a bigger, more mature human being.

At present Koptyayeva is writing a novel about oil workers and here, too, her prime interest is the inner world of her characters, "the dialectics of the soul."

She was born in the Far East, lived in Siberia and the Urals, and has traveled mile upon mile of the taiga on foot. There is vigor and breadth of vision in her writing and in her personal life that she seems to have absorbed from the country, a harmony of contrasts so characteristic of nature—unyielding strength and abounding gentleness.

The novelist quite recently suffered a great loss, the death of her husband, the well-known writer Fyodor Panferov, from cancer. She gives every assistance she can to those afflicted with this dread disease and to those searching for better methods of its treatment and cure.

These concluding paragraphs from her reminiscences of Fyodor Panferov give us an insight into the novelist's character:

"My sufferings tell me—from misfortune one must emerge all the stronger.

"I remember him saying, 'How I love to see you at your desk!'

"Yes, I shall keep working. Individuals come and go, but the world remains as full and alive with people as ever. And if there is something you have that you can give people, give it to them. Give it with all the passion in you. You will feel then that what you have to give, no matter how small, lends purpose to life. That alone makes life worth living."

DARING

(Excerpt from the novel)

BY ANTONINA KOPTYAYEVA

IVAN Ivanovich? After the Battle of Stalingrad he was appointed Chief Surgeon of the Special Hospital of the Southwestern Front and vanished forever from Larissa's life. But though he had vanished, she did not forget him. . . . Other men tried to gain her favor, made love to her, and even proposed. . . . But. . . . "If they were only like Ivan Ivanovich." Eh, Alyoshka! Now if it were Ivan Ivanovich, then, of course, it would be different! But one had a wife and two children, and another was jealous and captious to the point of nausea. How was she to cope with someone else's moods and humors? Change them? Larissa was too tired of life to start remaking a grown man. And what was marriage without love, without warmth of heart? Take Sofya Sheffer. . . . She'd just arrived from Minsk, buxom and loud-mouthed as ever.

"Well, how are things with you?" inquired Larissa.

"I'm still alone, and I suppose I'll stay that way."

"Why?"

"Nobody will have me," replied Sofya with naïve frankness. "Nowadays, after the war, men are worth their weight in gold, Larissa!"

She also spoke of Arzhanov and did not even try to be tactful about it.

"You're a fool, Larissa, letting a man like that slip through your fingers!"

But why should Larissa reproach herself after all these years? She couldn't have remarried so soon after the death of her near and dear ones, of Alexei, her Alyosha's father. She would have lost her self-respect if she had.

She lay on her cot, neat and narrow as a young girl's—there was too little room for much more furniture—thinking and yearning. She was not even yearning for Arzhanov so much (the years had blunted the sharp edge of her feeling for him) as for the caresses of a beloved and strong man. Alyoshka alone could not fill the void left in her heart by the loss of the rest of her family. There he lay breathing in the darkness. She could touch the couch he slept on just by stretching out her hand. The boy was mumbling something in his sleep. He tossed about and even cried out at times—the aftermath of his front-line experiences. He had lived through so many horrors! He must never again have to go through them. But those awful four years of war were hardly over, and now again a black cloud hung ominously over the country. Would Alyoshka have to go to war too? Larissa's heart contracted with so much pain that she could no longer keep her thoughts on herself. Her youth was gone, she had to reconcile herself to the fact. Not everybody was fated to be happy.

The year following she brilliantly defended her dissertation for a master's degree. It was later published and became a reference book for surgeons treating the face and jaw. That was a great occasion in her life. Alyosha and Sofya Sheffer, who had come on one of her lightning visits again, were present at the defense. Afterward they bought a lot of snacks, wine and fruit, invited Larissa's colleagues over, and the Firsov room resounded for the first time with the gay noise of merrymaking.

So time went by, beginning to heal her wounds.

Then suddenly strange things began to happen to her. Feelings should mellow, one would think, calm down with the years. Especially the feelings of those who had suffered a great deal. Her own, too. . . . But she was suddenly afflicted by something she called "a twist" of the heart. It was a serious matter, this thing that was happening to her. . . .

She'd finally made arrangements to go to a resort in the South. Until the very final moment, she couldn't believe she was really going. The last bell rang, the train whistle blew, and the wheels began their measured clicking over the rails. Alyosha's face, his hand raised in an overly gay gesture, and the forced smile were all left behind. It was such a pity to leave him all by himself, and a little dangerous too. He was just at the age when adolescents became so uncontrolled and difficult. She shouldn't have paid any attention to the advice of her friends and the doctors—overwork was not a mortal disease. Her heart could stand a lot more. Nerves? Nothing so terrible about that either.

Depressed and upbraiding herself for the mistake (she should have postponed her vacation till summer and then gone to a holiday home with Alyosha), Larissa stepped into her train compartment. She was going to Kislovodsk. Why couldn't she have gone to the Crimean coast instead? That's where she used to go with her husband and daughter Tanya before the war. Alyosha had never been to the seashore.

"I've done everything wrong," she told herself.

Through the window she could see the summer homes in the Moscow suburbs, the lacy designs of their window frames, balconies and porches, the carved towers, spires, arbors, crooked fences and outhouses. How run-down those summer houses had become during the war! They were no longer repaired or painted. The snow was melting, and there were dirty patches of it lying in the shade of the porches and fences. The bare branches of the trees clawed the thinned air of the gardens and groves, and streams gushed everywhere.

It was disorder, but not the gloomy disorder of fall. There was bright sunlight everywhere, and over the damp, rubbish-littered ground hopped shiny, raven-winged rooks and mottled starlings. Soon spring would embellish the newly wakened earth. Winter had hidden the rubbish, but spring, smiling in every little puddle, had come to strip the earth of its white blanket. Old Mother Earth had certainly picked up a lot of filth! That's all right—we'll wash everything clean with rain, drain the dirt off into the ditches and river and then decorate everything with leaves, grass and flowers, wrap the gardens in a silver haze, gild the walls and fences with sunbeams, and all the earth shall be beautiful!

As she stared through the window, Larissa gradually regained her composure. Alyosha was a serious boy, old beyond his years, and Nadya would surely look after him. Next time she would take him along. Then again, Larissa plagued herself, this was the wrong time to go to a resort—the boy would soon be preparing for his examinations!

"Will you have a glass of tea?" came a man's voice from the passage outside.

"No, thanks."

The porter. He cleared something away in a corner and left. Still deep in thought, Larissa picked up a copy of Balzac's *Lost Illusions*—her fellow passengers were still standing at the windows in the corridor—and began to read.

"Is yours the lower berth? Shall I make it up for you?" came the same male voice from the doorway.

Larissa came out of her dark mood. Soon the others would be coming in and taking their places.

"Please, do," she said, and went out into the corridor.

The train sped on, whistling shrilly, the wheels clicking. The car rocked and vibrated. Fields laid bare by the spring passed by, followed by villages, woods, and small way stations. Larissa glanced through the window from time to time and continued reading.

"Excuse me." It was the porter again. He had passed by with a pile of bedding and accidentally brushed against her.

Turning the pages of her book, Larissa cast an absent-minded look at the compartment. Male hands were gently straightening out the blanket on her berth, patting the pillow ever so carefully. . . . That was how Alexei used to make her bed. He'd been such a neat, trim man. Sometimes he'd help with the chores, since they'd both worked and looked after the two children. But in the 12 years since, nobody had ever touched her bed. And here were a man's hands making up her berth with so much care—loving care almost—smoothing out every little wrinkle. Suddenly the realization that she had forever given up a man's tender love and concern, that there was no shoulder to rest her head on when she was either weary or deliriously happy, cut her to the very heart, made her feel how terribly lonely she was. It was strange, perhaps, but she made no effort to have a better look at the man with those wonderfully gentle hands.

She turned away and, walking down to the far end of the passage, opened her book again. But she did not read. Her own life now passed before her mind's eye, overshadowing that of the book's heroes. She felt depressed again. Why had fortune picked her for such a hapless existence? She did nothing but work and work, take part in community activity, look after her son, and again work and work. She was still young and beautiful. So many

people told her that with their eyes and their words! She was good-looking and lonely. That was why she was reminded so frequently that she was beautiful and desirable. But had she been created only to satisfy somebody's desire? She had her own needs, and they were enormous and tormentingly exacting. Not so simple to satisfy! Not at all, in fact.

That night Larissa could not fall asleep. Again and again she saw those young and strong male hands making up her berth. What was the matter with her? Her blood kept coursing through her body like a spring flood, burning, pulsating, calling. Who was it calling?

Her hair, which she had left unbraided, lay tousled on the pillow . . . the pillow placed there for her by a man's hand. Such soft hair she had, with the pure and delicate aroma of forest violets. The filmy ruffle on the collar of her nightgown lay close to her face, and her arm was tantalizingly smooth under the short sleeve. . . . She could not sleep! She wanted a man, her man, to come and embrace her. People would tell her she should be ashamed of thinking such things! But only those who had never experienced the torments of loneliness, who could not even imagine what it meant to work and care, and care and work, day after day, year after year, could shame her.

Meanwhile the years were rolling by swiftly, and her youth was passing without a beloved one, without caresses, without happiness. . . . Of course, one could manage to get along without that kind of happiness, but it was necessary as salt—and not only as spice for food. . . . It was easier for those whose blood flowed calmly. But what happened if your blood ran riot? Eh? Burning with desire, Larissa saw the man who had made up her berth coming into the compartment. . . . Ah, how he had roused her, that man who had offered her tea. . . .

The woman lying on the berth opposite her was breathing heavily. On the berth above an officer snored gently. He looked so gallant! What a funny business this was of putting strangers to bed at such close range! But the officer did not bother her at all. He was just a man, that was all, even though he was worth his weight in gold. . . .

She recalled all the adversities of her single life: the strain of her work, her fear of falling ill—upon whom would she and Alyosha depend in that case?—the arrogant attentions of men, their jealous wives, and the bitter tears she furtively shed on holidays. Holiday time was a happy time for everyone—except that there were no holidays for the widow of a front-line soldier!

"Oh, go to sleep!" she told herself. And the train clicked, and clanked, and hummed, and raced along with the quietly sleeping and the yearning alike. Time raced on like that too. She'd soon be old. "Oh, do go to sleep, will you!"

Larissa sat up quietly and drew the window curtain aside. What was happening out there in the world? Nothing. There was nothing but darkness outside and the noise of the speeding train. Lights glimmered past, the train screamed, and then more lights swept past. Larissa sank back upon her pillow with a sigh. What was the matter with her?

In the morning, on the way to the washroom, she took care to have a good look at the porter. He was a very blond, middle-aged man with amber-yellow, squinting eyes. A sly character obviously, he was trying to hide a bulging sack. It looked as if it might be chock-full of grain. Speculating on top of everything, no doubt. She was amused and ashamed and, at the same time, a little sorry for herself. "He" might have been so different!

She went back to her compartment and picked up the book again. The woman in the other berth did not get up. She was not feeling well. Her husband and the officer went off to play cards in another compartment.

"Will you have some tea?"

Turning around sharply, Larissa saw a man's face bending over her. It was very young, with a clearly defined mouth, a handsome large nose and dark eyes under lashes so thick that the glance seemed to have a particular intensity. His hair was black, curly and smooth, packed as though his head were cast of iron.

"Tea? Yes, I think I will," replied Larissa dryly. She made a point, however, of glancing at his hands when he brought her the tea. Those were the hands? Strange, that. . . .

A cold wind blew all the way through Kharkov Region, raising clouds of dust. It was the same in the Donbas. But in the Kuban area the first green appeared, tender and shy, and at the foothills of the Caucasus it was really warm, and the trees were arrayed in all the shining splendor of their leaves.

Larissa kept to her compartment, reading, and mailed postcards to Alyosha at each station.

The train sped along a valley past blue craggy mountains, and the whole car now buzzed with the words Zmeyevaya, Mt. Mashuk, the place where Lermontov had fought his duel, Mt. Beshtau. The turbulent Podkumok River came rushing toward them.

Pyatigorsk was a frothing garden of snow-white flowers. The apricots were blooming, but the apples were still holding out, keeping their waxen pink buds in readiness. The train pulled into Kislovodsk, clicking and clanking and wheezing as it slowed to a stop. Here the white houses on the hillsides nestled in the filmy haze of gardens. Sprinkled about were pyramidal poplars, black cedars and cypresses.

As she stepped onto the platform Larissa met a familiar gaze.

"Oh, hell!" she said to herself in annoyance, and, turning away, called for a man to take her bag.

How wonderful the air was, how wonderful spring was here! What a lovely city, Kislovodsk! White stone sanatorium palaces surrounded by luxuriant gardens. Houses hidden away in the middle of orchards. And blue mountains all around. Suddenly Larissa recalled the fact that the fascists had been here. They had been here, and in the suburbs, on the bank of the Podkumok, they had shot close to 5,000 Jewish medical workers.

This lovely spot where the poet Lermontov had lived, and suddenly those fascists. . . .

The next morning, rising with the sun, Larissa tiptoed out to the balcony and almost cried aloud with delight. The double-headed white cap of Mt. Elbrus towered majestically in the crystal-clear air high over the blue horizon, over the bluish range of still slumbering hills. It had also awakened, and its distant summits could be seen for hundreds of miles, pink-white, with tiny cloudlets hovering about like shadows.

If only Alyoshka could see it!

Larissa noticed a solitary figure standing on the bare ledge of a nearby hill. Vacationers were already strolling up the winding paths. Like tiny ants, they crawled up the treeless, lead-colored mountain crags in the distance. There were people everywhere, but it was the solitary figure that drew her attention. For almost the whole month she kept expecting something to happen, as excited as a young girl.

They met again, just before her departure from the resort. It was in the summer theater during intermission. People poured past her talking vivaciously and laughing. Larissa looked at them, listened to the music absent-mindedly and thought of her imminent return to Moscow and her son. Suddenly, as though somebody had pushed her, she straightened up. The porter was approaching her, smiling.

"Having a good rest?" She listened hungrily to the sound of his voice, but said nothing in reply. "Don't you recognize me?"

Larissa shook her head, frowning.

"Why should I recognize you?" she said, enunciating each word slowly. The smile left his face.

Let it! What had they in common? He was at least ten years younger than she, and their interests were poles apart.

"Pardon me for bothering you," he said, crushed by her icy aloofness.

Then she strolled with the festive crowd under the black, star-spangled southern sky, almost bursting into tears when she smelled the fragrance of fading gardens.

It was uncanny, but when she boarded the train for home she found herself in the very same car she had traveled south in. Again she stayed awake all night. She hardly went out into the passage and refused all the porter's services.

"Look at what I've found!" he told her once, unclenching his fist.

Larissa was startled, black beetles were crawling all over his palm.

"I caught them in the cars. They flew in," he explained, looking at her with a happy, shy smile. "They'd just flown in. I didn't see any of these in the south." Then, very quietly, he said: "You know, I hoped I'd meet you every time I came south. I searched the whole town for you."

"Idiotic, that's what you are!" said Larissa, squeezing the words out with difficulty. "Throw your beetles out of the window and the foolishness out of your head.".

"At last!" she cried with relief, embracing Alyosha on the platform. Without looking back, she hurried away with him.

What did that tumult in her heart mean? No woman who lived a full life would feel that way. For a long time Larissa felt miserable and even shed a few tears over her unfortunate lot, ashamed that she had let a physical urge come so close to breaking down her inner equanimity.

"Are you ill?" Alyosha asked her, studying her face in alarm.

She forced a smile and explained that she was merely thinking of all the work waiting for her. She was faced with the new and very difficult problem of restoring the larynx when it was severed together with the front of the gullet. What made Larissa attack such difficult problems? Her restless nature? Her need to fill the emptiness of her personal life? Her wish to earn the highest scientific degree? Larissa did not make speeches about her calling, she simply worked. But her work and her desire to help people drove her to search for new ways and means.

"Why deprive yourself of the sweet things of life?" some of her colleagues asked. "Why let yourself grow old before your time? Grow old and gray, wrinkled and weak-sighted? A person can live without scientific degrees and honors!"

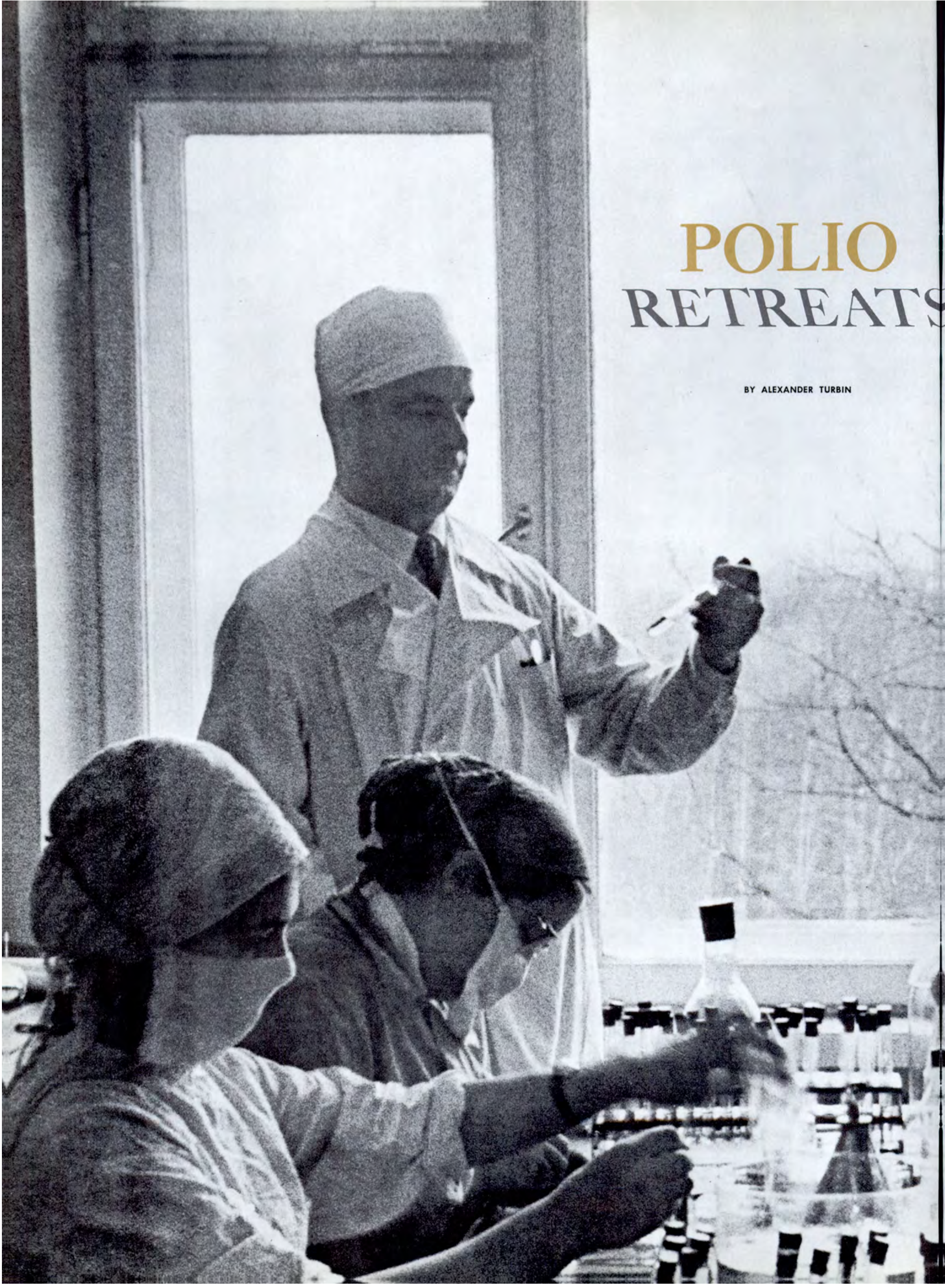
The young people hankered for more entertainment, and the older ones for rest. But there were so many eternal martyrs like Larissa! And they looked for neither rest nor entertainment.

Larissa's life fell into its old groove. She was sure she'd done with her feminine weakness for good, that she could now face her forties calmly.

But life was preparing a new trial for her—an encounter with Arzhanov. ★

POLIO RETREATS

BY ALEXANDER TURBIN



WHAT SOCIAL HISTORIANS of the future will probably label as the most impassioned medical controversy of the mid-twentieth century developed around vaccines for poliomyelitis, that dreaded, crippling disease. The argument reached its peak in 1958 over a vaccine introduced by Dr. Albert Sabin.

Already in use since 1954 was the original vaccine developed by Dr. Jonas Salk. Was there any need, the question ran, to risk a new remedy? The Sabin vaccine had its ardent supporters who insisted that mass inoculation be undertaken immediately, and its equally confirmed opponents, who did not say in so many words that the vaccine was no good but kept repeating that it had not been tested long enough.

The pro-Sabin people cited epidemiological data as evidence that the Salk vaccine had not met the problem completely. A vaccinated child, they said, could still contract the disease. In Moscow, for example, 30 per cent of the polio cases had received the shots.

But this was no great surprise. Dr. Salk, as a matter of fact, had never said that his vaccine would give every person immunity. Besides, it developed later, the vaccine produced by the pharmaceutical companies did not have the potency of Salk's laboratory-produced specimens. He had therefore recommended four shots instead of three.

But even without the additional shot the quantities of vaccine available were not sufficient to meet the demand. This is the most complicated of biological preparations in current use. About 20,000 liters of vaccine were being prepared yearly, and the plan was to double the quantity. But even if production were tripled, or even quadrupled, it was apparent that it would be years before there would be enough to give every child in this multimillioned country the 3-4 cubic centimeters necessary. And even with that, as we know, some sizable percentage of the vaccinated children would still remain susceptible to the disease.

Dr. Sabin's idea was to make vaccine from the live polio virus. He had been successful in developing a new strain so weakened and altered that it had lost its ability to produce the disease. The the final product has so high a concentration that it can be diluted to one-hundredth of its strength—two drops are sufficient for an inoculation.

This made possible the production of practically unlimited quantities in a short time. An additional advantage was the very simple method of inoculation by mouth—the two drops of vaccine could be swallowed with a spoonful of milk or tea.

As for the results, it was too early to draw definitive conclusions. Dr. Sabin had tested his vaccine only on a small group of volunteers, and field tests were yet to be made. But experiments did show that the live vaccine, as was to be expected, was more active than the dead Salk vaccine and gave a greater number of the vaccinated subjects immunity, and a stable immunity at that.

"All this is very encouraging," said its critics, "but how about the risk?"

"There is no risk!" retorted its advocates.

The critics kept talking of the risk. The live virus, they insisted, could cause a violent reaction as it reproduced in the child's body. "Suppose this weakened virus regained its potency? What then?"

The "then"—there was no argument about that—would mean an epidemic.

"An epidemic is ruled out," declared Professor Chumakov. And in support of his belief he quoted the results of the large body of research work done with the live vaccine in the laboratories of the Moscow Institute of Poliomyelitis, which he heads, and at the Leningrad Institute of Experimental Medicine.

But the critics were adamant. "Mass inoculation is premature," they said at scientific meetings. And in conversation after the meetings, "If you know Chumakov, you know that he doesn't mind taking chances."

Before the war, polio was rare in the Soviet Union. It was only after the war that it took on epidemic proportions. The United States is, so to speak, the classic polio country. It was only natural, therefore, that the most extensive study of the disease would be done there. Both Salk and Sabin, as everyone knows, are Americans.

When polio became an international problem, as happened after the war, it became the subject of general study, and medical researchers in many countries added their contributions to the common pool.

So it was that the fate of poliomyelitis was decided in the Soviet Union. It was there that the live vaccine was first used successfully on a mass scale.

Dr. Sabin has often repeated the words expressed by a Soviet medical commentator—"the live vaccine was born in America but was baptized in the Soviet Union." If we call Dr. Sabin the father of the new vaccine, we should call Professor Mikhail Chumakov its godfather.

This is the man who "doesn't mind taking chances." He has—more than once, working in infection-ridden areas, searching for the unknown agents of disease. In his earlier years, on his first expedition of the kind, he contracted tick encephalitis—an unknown disease at the time—that crippled him for life. This is a man who takes chances—but only with himself, not with others, and certainly not with the lives of children.

So far as the vaccine was concerned, he was absolutely convinced of its safety and effectiveness, and was courageous enough to be the first one to use it on a large scale.

Chumakov and a group of his associates went to Estonia, where the morbidity rate was rising, to prove the vaccine in the field. Many authorities thought the test dangerous, but after a mass vaccination program was begun in January 1959 the incidence of the disease dropped sharply.

The live vaccine immediately won new supporters. The campaign made progress in Lithuania, Kazakhstan and Kirghizia. In Tashkent, capital of the Uzbek Republic, mass inoculations at the outbreak of a polio epidemic quickly brought it to a halt.

By the end of 1959 about 15,200,000 persons—from two months of age to 20 years and, in some regions, to 35 and even 55 years—had been inoculated.

The results were evident enough to break down all opposition. And polio inoculation became as compulsory a preventive as smallpox vaccination.

A Moscow confectionary factory produced a vaccine candy with two drops of live vaccine in the center. Even in its liquid form the vaccine was pleasant tasting; the candy form simplified storage and shipping, and reduced inoculation to the pleasant chore of eating a sweet.

In 1960 the first and second doses of the vaccine were taken by 77,478,000 persons. Almost as many were inoculated in the first half of 1961. Nowhere else in the world has the live vaccine been used on so large a scale.

Now for the results—and there is no longer any question as to their conclusiveness.

We have spoken of Estonia, where the incidence of the disease rose steadily to the very high and alarming figure of 82.2 cases per 100,000 in 1958. A year later, after mass live vaccine inoculation, the figure dropped to 4.9. Last year not a single polio case was reported.

At a conference held by the Institute of Poliomyelitis some weeks ago, Professor Chumakov made this statement in his report, "We can now say that our country has done away with polio epidemics."

Dr. Sabin, who visited Moscow again very recently, agreed. He declared that he was amazed at the scope of the inoculation campaign and most gratified with its results. Like Chumakov, he thinks we can completely eradicate polio.

Several other countries have been using the Soviet-made live vaccine. The German Democratic Republic, which imports the Soviet vaccine, has had no polio epidemic for more than a year, while in the neighboring Federal Republic of Germany there was a marked seasonal rise in the incidence of the disease last summer.

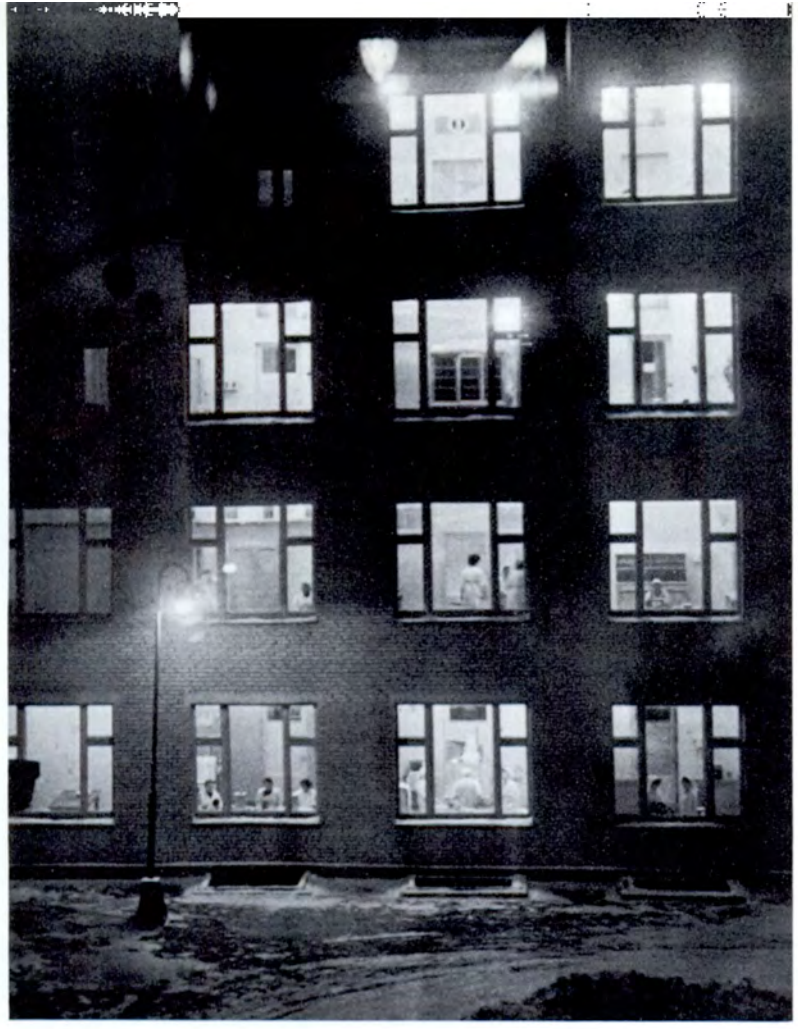
Live vaccine, now the generally accepted preventive, is produced in huge quantities in the Soviet Union. It is available to any country that needs it. When Japan appealed to the Soviet Union for help in fighting polio, several million doses were immediately flown from Moscow to Tokyo.

"Japanese mothers came to the Hakeda airport with their children to meet the precious cargo," wrote the newspaper *Akahata*. And shortly afterward Professor Chumakov received word that in the prefectures where mass inoculation was carried out, the epidemic was slowing down.

The most recent of several American-Soviet conferences on poliomyelitis was held in Washington. These meetings for an exchange of experience and opinion have assumed an almost traditional character. The first was held in 1960, when Dr. Albert Sabin and his colleagues came to Moscow. This time Professor Chumakov and four of his associates made a return visit to the United States.

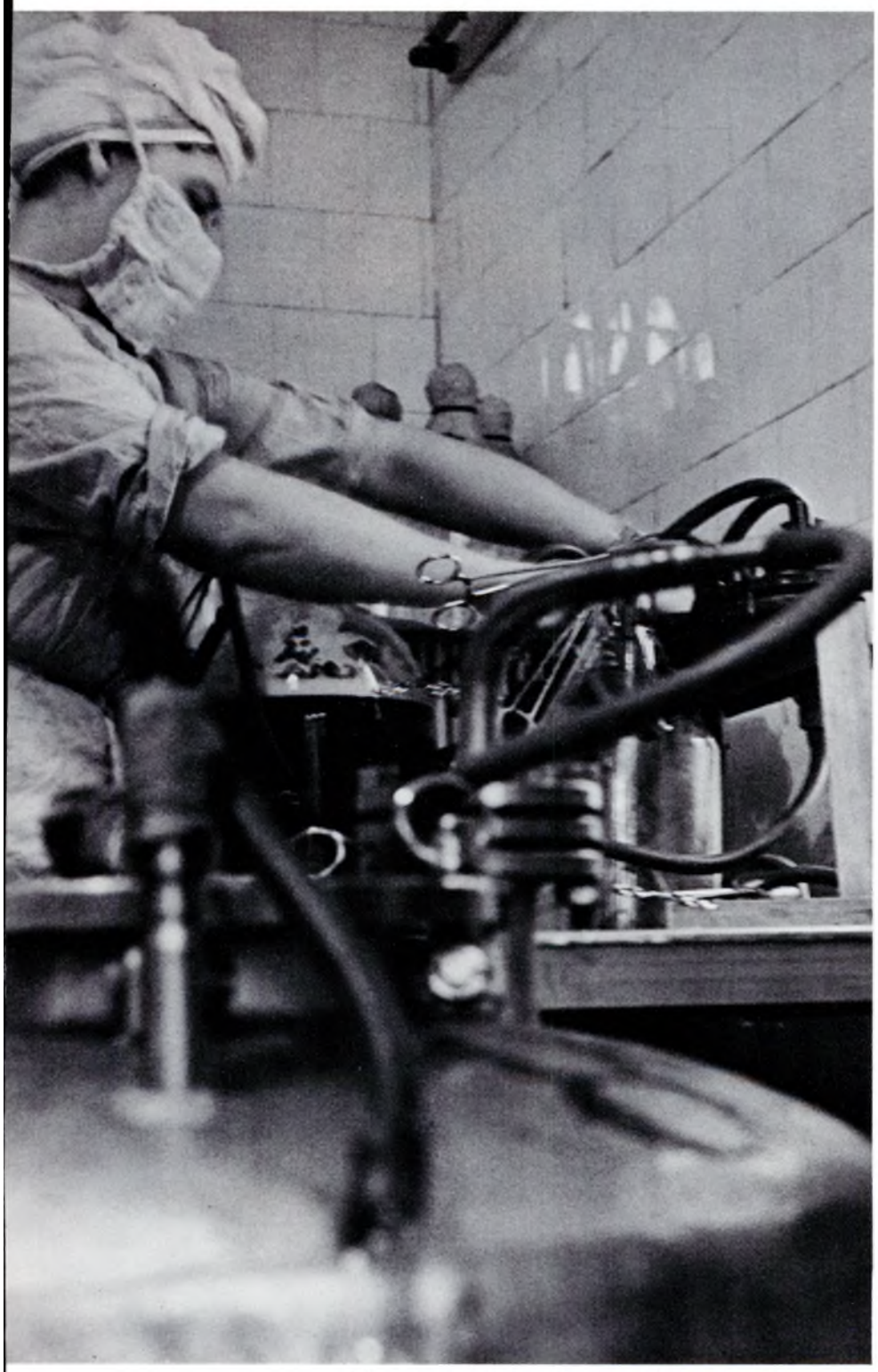
The Soviet scientists described their country's experience with mass inoculation and the extraordinarily rapid changeover in production that Soviet pharmaceutical plants had made from one vaccine to another.

For more than a century and a half, since the smallpox vaccine was discovered, mankind has been fighting infectious diseases by means of preventive vaccination. But never before in medical history has a new vaccine ever been administered to so many people in so short a time; never before has mankind scored so decisive a victory, a victory to be attributed to the cooperation of Soviet and American scientists in their joint offensive against this formidable enemy.



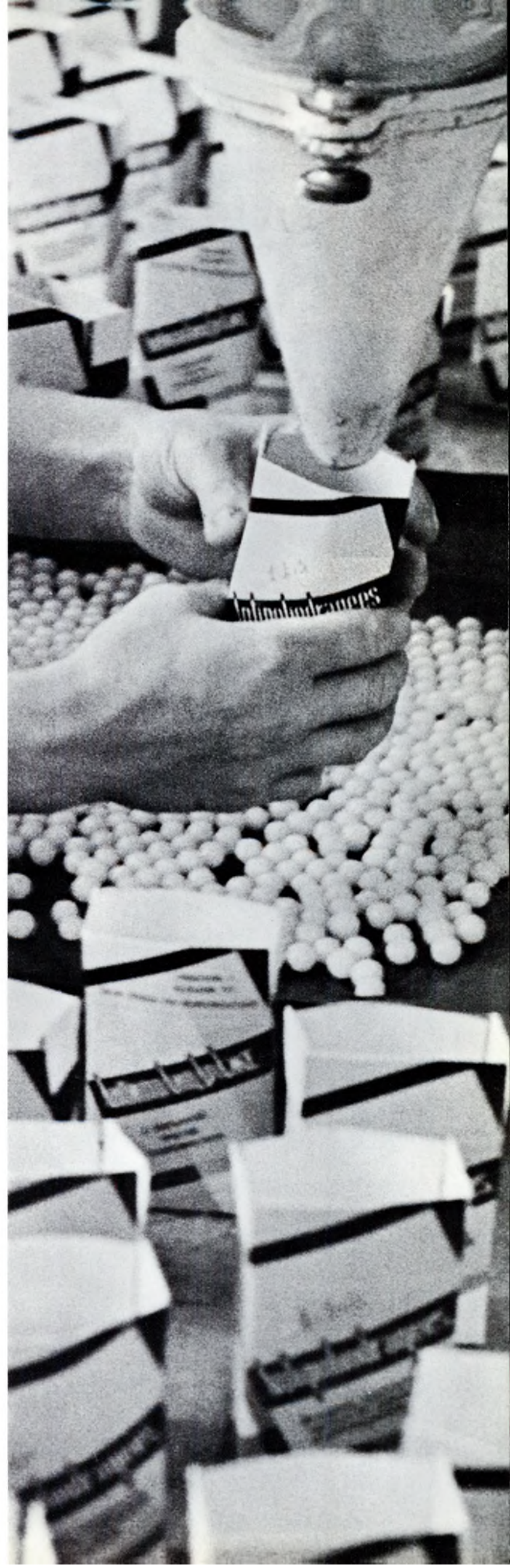
The Poliomyelitis Institute, 17 miles outside of Moscow, was enlarged last year. It has an administration and four laboratory buildings, a monkey nursery and housing for the staff.

Poliomyelitis is no longer an epidemic threat in the Soviet Union, but the search for better vaccines and methods of treatment goes on. Lidia Karpovich, one of the institute's researchers.



The attenuated virus for the polio vaccine is grown on kidney tissue from monkeys flown in from India. The filtered virus is shipped to nurseries and hospitals all over the country.

Candy inoculators. Moscow's Red Front Confectionary Factory puts out the polio vaccine in this pleasant form. Two lifesaving drops of vaccine are sealed in a sugar-coated pill.



the male in THE APRON

TOLD BY ZINOVI YURIEV

I AM A MAN of routine. I live by schedul One morning last autumn, however, som thing seemed to snap in the usual march events. I looked around my room: Everythin was in order. I looked out of my window: The below on the boulevard were mothers and gran mothers wheeling baby carriages and exchangin choice bits of domestic news. Everything seeme to be normal there—but then I noticed it.

On a bench at a distance from the rest humanity sat a man beside a carriage. Out the corner of his eye he tried to get the detai of baby-rocking from his more experience neighbors. Now, a man rocking a baby feels a urge to communicate with the rest of the worl Other people were talking, but this male s alone with a large pipe in his mouth. He too enormous puffs, sending up big clouds of smok The rest of humanity understood him.

The following week I saw those clouds smoke billowing up from among the mothers an grandmothers. He was in their midst, taking pa in their conversation and, from my vantage poin it seemed as though he already spoke with au thority.

In a few days' time he was the envy of a the males around. He attracted the fair sex lik a magnet. Young women who had no childre tried to borrow them from friends who had s they could take them out for an airing on th boulevard. As a matter of fact, our boulevar became the most crowded in town—all the othe in the neighborhood were deserted. People cam to see this male wonder. When he spoke, all knit ting halted. In fact even cranky babies stoppe their fretting.

One morning I cornered him on his way t the boulevard. As a student of human na ture, I was interested in knowing whether bab sitting had become a new male vocation. learned, to my surprise, that I was talking to novice at the game—he was a mere scientist. Hi wife was busy writing a paper on volcanoe which is a man's job. So he, the man in the fam ily, had to do the woman's job. Simple!

"How do you like it?" I asked, just to kee the conversation going.

"Sometimes I feel like riding up on a whit steed," he said, "blowing a horn, throwing th reins to my wife and commanding: A tankar of ale and a leg of mutton . . . and my war slippers!"

I looked around to see how far it was to th telephone in case I had to call the insane asylun He did not notice my searching glance and co tinued:

"Too bad, I don't have a white steed . . ."

"Or ale in the house," I put in hopefully. H looked at me and laughed.

"That's one of the things our sex has got

get used to. When the wife's busy, it's up to us to do the housekeeping and baby-sitting."

Now that is not a discovery. I myself always play with my two children, and the baby talk I use sometimes causes me no end of embarrassment. I call the two: "bunnies," "little lambs"—in fact I call them by all the names I can think of but the names their mother chose for them.

One day the venerable old professor who heads our laboratory asked me to check the feed-back system. At the moment I was sitting and staring off into space recalling the antics of my two youngsters. I smiled and retorted: "Yes, Bunny."

The professor, who was studying a photograph at the time, replied without looking up: "Thank you, Sweeties."

At this point we both looked up, beet-red, and laughed. It seemed the professor had been baby-sitting with his three grandchildren.

But let us return to my new acquaintance. After a puff or two he went on: "Excuse me for talking so much, but one gets that way sitting for hours on the boulevard with the baby. Some people think the father ought to put more into bringing up the children. But it doesn't always work," he added sagely.

"I have a friend who simply couldn't stand the way most grandmothers frighten children into being good by threatening to call the militiaman. His wife used this method too until he decided to step in and take the upbringing of his three-year-old son into his own hands. The first thing he did was to have his son get over his fear of the militiaman as the bogyman. He spent hours explaining that militiamen are guardian angels to little boys and girls. They never touch little ones and even protect them from anyone who tries to be mean to them.

"This crash program of instilling love for the militiaman bore immediate fruit. Whenever the youngster saw a militiaman he began smiling and stretched out his hands in token of friendship.

"Once my friend refused to buy his son the big penknife the youngster had been crying for. And when the nagging overtaxed his patience, he let the boy have two hearty slaps in the place designed by nature for such matters.

"The youngster began howling and ran out. Within a few minutes he returned with a militiaman who immediately took a strict tone with my friend and demanded to know why he had beaten a helpless child so brutally.

"You can imagine what my friend felt like saying. But as he was talking to a guardian of the law, he tried to explain in a logical, comprehensible manner what had happened. His explanation was not too convincing, evidently, because the militiaman warned him that he would have to take measures 'if that child is touched again.'

"Some time later my friend again refused to buy the youngster something he wanted. This time it was a motor-scooter. He appealed to the discretion and noble sentiments of the three-year-old. For obvious reasons he dared not use the prerogative of fathers which has served humanity for so long.

"Talk did not help. The youngster ran out and in a few minutes returned with the militiaman . . .

"Now that boy is in seventh heaven. He keeps his parents terrified with the militiaman. When the boy is in bad humor, Daddy will get down on all fours and play horse until he gets stabbing pains in the heart. The motor-scooter was bought on the installment plan a long time ago and his wife learned how to drive so that she could take the boy out riding. Incidentally, she is going to traffic court in a few days for nearly running down a militiaman. Who knows whether it was an accident or intentional?" My friend paused reflectively.

His story convinces us of what we know already—progressive methods of child upbringing are not always better than our grandfather's way.

On the whole, however, the male sex, as the less conservative sex, has brought definite progress into housekeeping. Man's rational mind revolts against the medieval tradition of daily cleaning. Moreover, the male sex is firmly convinced, and prepared to prove, that microbes are not as mean as the doctors would have us believe. The microbe, like any man, only wants to be let alone. But get him mad with soap and water, and there's no telling what he'll do in his rage. Don't get on his nerves by washing hands and dishes too often—that only makes microbes mad and they begin to bite!

The male sex has not only revolutionized our concept of the microbe. It is aware that the best way of airing a bed is by not making it. The best dinners are at the delicatessen. And the best way to get rid of dust in a room is to allow it to circulate naturally.

Much has been written about women doing men's jobs. But who will sing the praises of the unnoticed and yet unsung male who does so much to make the home what it is?

A man is indispensable in the house; that is a generally recognized axiom. But, as one man to another, personally I'd feel happier with a woman in the house.

WOMEN IN SPORTS

BY VICTOR KUPRIANOV

ACTUALLY, the whole story could be told in one short sentence—they certainly are! Distaff sports are major sports. Statistics show that in sports, too, there is a woman for every man. And in many mixed sports the male is even in a minority.

Family sports, as a rule, are dominated and dictated by the fair sex. In most families the woman is not only the reason men rush home after work; she is also, like as not, the reason they spend their weekends on skiis, bicycles or hiking with the family. This feature is as characteristic of the Soviet way of life as the government's policy to keep the population healthy—the reason physicial fitness and sports, not to mention free medical care, account for a substantial slice of the national and local budgets.

Soviet sports performance has zoomed in recent years. Many new and very superior athletes, like the high-jump wizard Valeri Brumel, have come to the fore. But with all our fine male athletes, we are often told that it's our girls who are making sports history.

Our American friends have reminded us, time and again, that our winning points in the USA-USSR track-and-field meets are brought in by the girls. Even if we blush a little for our men, there's no reason for not being proud of our girls. And it's not for having brought up a race of superwomen that we're proud, but for having developed prime performers out of ordinary young ladies—athletically speaking, of course.

Let's begin with the girl who provided sports writers with most of their copy this past season—Tatyana Schelkanova. This young lady has broken the world broad-jump record, has, in fact, done it many times, only to have the officials invalidate the results because the wind was too "helpful." She is a graduate of a Leningrad technical college, where she is now doing graduate work in TV engineering. Incidentally, she has always been an honor student. Tatyana is a powerful argument for scholarship and sports combined. This promising athlete plans to continue her winning streak at the European championships this year. Those in the know are optimistic.

Some people complain that with sports performances reaching the levels they have, it is impossible for an *ordinary* human to break a world record any more. They make some small allowance for athletes who study at institutes of physical education. Tatyana Schelkanova is not the only argument to the contrary; Tamara and Irina Press are also.

The Press sisters live and study in Leningrad. They are both studying to be civil engineers. Irina wants to specialize in bridges and tunnels. Between them these girls hold three world records. (Tamara — shot-put and discus, Irina—pentathlon) and both like to cook. Sports, to them, are a hobby, nothing more. When they travel to tournaments, their suitcases are among the heaviest in the team. Why? They're full of textbooks.

Not only future engineers make good athletes. Anna Dmitrieva, highest ranking tennis star, is majoring in linguistics at Moscow University. Or take another of our tennis luminaries —Irina Ryazanova, who comes from Tbilisi, in the Caucasus. She is a geology student at the Tbilisi Polytechnic Institute. Ordinarily a geologist doesn't get much opportunity to play tennis, but Irina makes hers. She never misses a chance at a game, even at the expense of a date. It's not the title she's dreaming of. Tennis, she says, helps develop agility and stamina, traits a geologist needs.

Irina began playing by chance. She preferred basketball, but her mother thought tennis was more ladylike. And Mother always has the last word. So Irina started playing tennis, and now she is well up in the top ten. She is not only an excellent student and crack tennis player but is also a deputy to the City Soviet. "Isn't it too much, combining all these things?" I wondered. "Why no," she protested. "You can squeeze a lot more than you think into 24 hours."

College athletes are the dream of any Olympic coach. Gavriil Korobkov, top USSR track-and-field coach, assures us that the squad he

takes to Tokyo will consist exclusively of students. We get his point—college athletes are younger. And up to now the USSR Olympic teams have ranked high in age. It's not that we are a hardier people; it's just that we don't believe that sports are the prerogative of the young.

At the 1960 Olympics Moscow building technician Antonia Seredina won two gold medals in canoeing. She was 30 at the time. Doctor Maria Shubina from Vladivostok also won a gold medal in canoeing; she too was past the 30-year mark. Nina Ponomareva, Moscow discus thrower, won the Olympic gold medal at the age of 31. When I asked how long she expected to go on competing, she told me confidentially that she couldn't think of stopping. "What would become of my figure?"

All ages and all professions go in for sports. Some achieve headline level, but most people play just to keep healthy and in trim.

And it makes no difference if you have a family. As a matter of fact, a family is no hindrance even in headline sports. Our top gymnast Larissa Latynina, who is a real "find" for an editor looking for a glamorous magazine cover girl, has a charming daughter—Tanya. Larissa is thinking of a son, but that doesn't mean she intends to drop gymnastics. In other sports, too, babies are no hindrance. Every time the USSR women's basketball team plays, there is a front row bench for the players' young ones.

When the USSR Olympic squad returned from Rome, the welcoming ceremony was held up for a moment while the athletes scooped up their children for the first kiss. Then the youngsters had to be returned to their grandmothers so that the photographers could take pictures of the Olympic stars. There was a slight hitch at this point when a howling baby refused to be separated from her mother.

While coaches hope for younger athletes, the physical fitness promoters do their best to keep the ceiling high. They have started a countrywide sports campaign for persons of, and past, middle age.

Women are particularly enthusiastic about these physical fitness activities. Exercises are graded, of course, to suit individual ability and health, and are done under strict medical supervision and with expert instruction. It is difficult to compile statistics on the ages of the women taking part, for obvious reasons. But I can cite a pensioner I interviewed at the Lenin Stadium in Moscow. He goes in for physical fitness, he said, and his wife does too. He was 62 at the time of the interview.

Many women prefer unorganized sports. That would include skiing and skating. It makes no difference if their technique leaves something to be desired. They are having fun, and that's what counts.

A survey has shown that it's usually the woman of the house who gets the male to do his morning exercises. You can rely on the woman to switch the radio on for the daily dozen broadcast in the morning. And it doesn't help the male to take refuge for these few minutes in the shower or the garage. Physical fitness records are sold for practically nothing and can be played at any time under the wife's supervision. And the record shops tell us that they are going like hotcakes.

There's still another angle to the physical fitness program. At 11 A.M. every day there is a countrywide broadcast legalized as a midday exercise break. Work stops and nearly everyone does the exercises. Big factories have their own PT instructors.

I mention this because it is such a thorough way of popularizing sports. It's just a short step from these exercises to sports. Many women are taking the step and making their menfolk take it too.

Several years ago we set ourselves the goal of having 50 million people all over the country go in for sports and physical fitness activities—about one person in every family. What makes us certain we'll make it is the fact that if the one person is a woman, you may be sure that the rest of the family will join her.

1 Polina Astakhova at home. This Phys Ed student is as adept with the needle as on the bars.

2. Irina Gurova, who has earned a name in the sports world, is an excellent engineer as well.

3. Larissa Latynina, a very attentive mother, is shown picking mushrooms with her daughter.

4. Elvira Ozolina, Olympic javelin champion and science student, shown in a college lab.

5. Zoya Mironova feels quite at home in both her roles—top-notch athlete and skilled surgeon.

6. 1961 Moscow Match-Larissa Latynina, Doris Fuchs, Polina Astakhova and Muriel Grosfeld.

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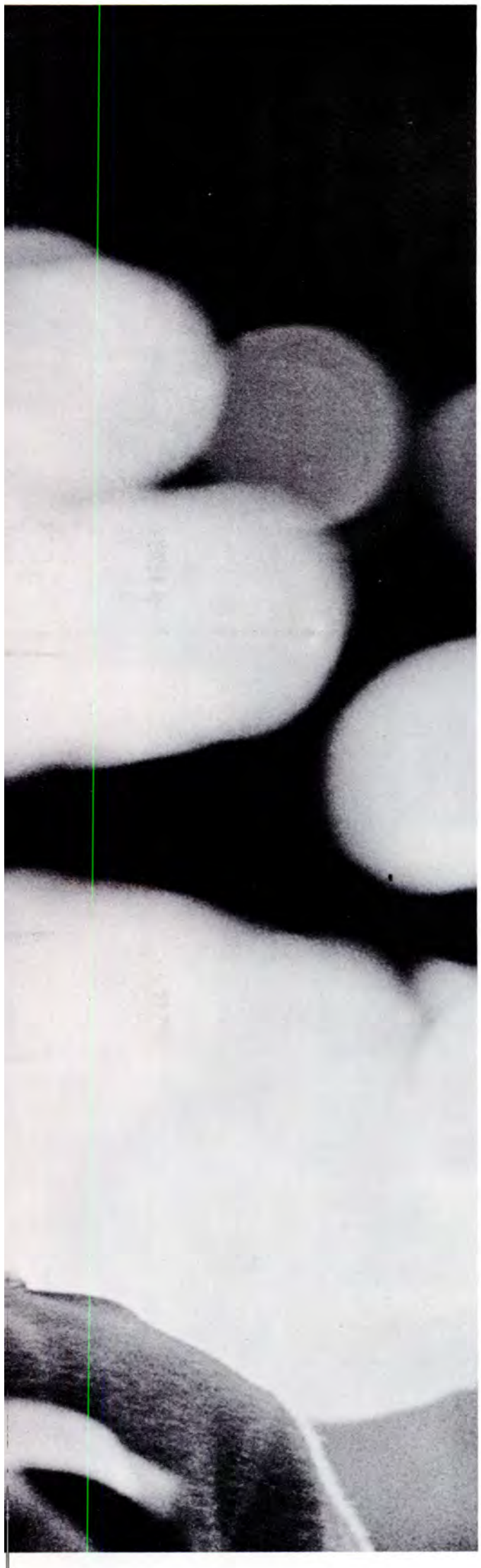


WHY NIKOLAI NEBUKIN JOINED THE COMMUNIST PARTY

BY YURI KOROLYOV

NIKOLAI NEBUKIN, a young lathe operator who works in the Gorky Auto Plant, recently became a candidate member of the Communist Party of the Soviet Union. After a one-year probationary period, he will be eligible for full membership.

Why did he decide to join the Party?

"It takes more than a sentence or two to give you my reasons," said Nikolai. "Sooner or later every Soviet persons asks himself the question, 'How do I want to live my life?'

"This isn't a matter of choosing a career, a job or a profession, of making one's way in life in the narrow sense of the term. It's a person asking himself about his place in society, what he is doing to determine the course of history, the destiny of his country, what he believes in and is working toward.

"In our society you don't have to look far for the answer. How can anyone not get involved when everything around him is alive and bubbling, when his people and his country have been working for almost half a century to build a new society? Sometimes it's hard to imagine that so much has been done in only 44 years.

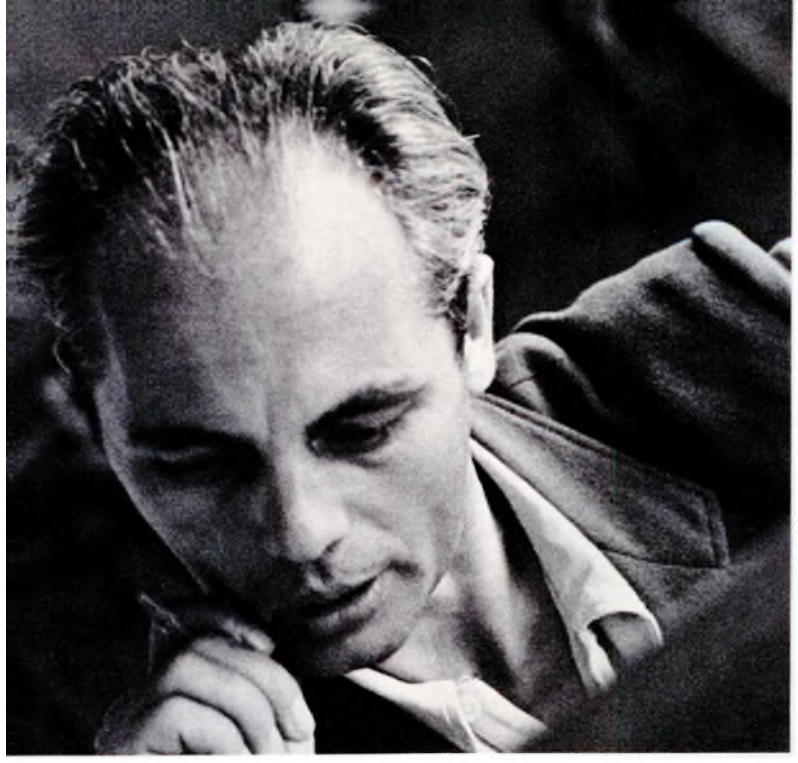
"The ideas of the Communist Party are very near and dear to the people. The Party led the people, moved them to sweep away the injustices that had evolved over the ages, to fight off the armies sent in by the mightiest powers in the world to crush the Revolution, to create a new life, to repel the attack of the brown hordes of fascism, and then, once again, to rebuild everything from scratch on soil saturated with the people's blood.

"The Communists were the vanguard fighters. They took the most exposed and dangerous front-line positions, endured more than the average share of hardship and deprivation. They didn't do that for glory or riches. They did it to build a peaceful and prosperous life for everyone. It is the Communists who search out the laws of development of society, who inspire the people to great creative achievements, who block those who want to set the world afire with a new war. So that when a person asks himself what he should believe and how he should live his life, the answer is plain.

"For me there was only one answer—the Communist Party. But Party membership is not easily achieved. It is a right that must be earned."

Alexander Zolin works with me at the plant. He
joined the Party very recently. He's a fitter by tr
and an inventor in his spare time. His original id
and designs have saved the country thousands of rub

I'm 27. I make machine parts, sometimes very intricate ones, in the nonferrous fitting shop of the Gorky Auto Plant. I joined the Party because it works for a better and happier way of life—the Communist way.



It's usually the Communists who are the most respected workers—men like solderer Fyodor Gulyayev. People at the plant take their lead from him. He's always glad to pass on what he knows and to lend a helping hand.

These girls from our plant sing in the factory's amateur chorus. Others go in for ballet, art and other activities. The Party sees to it that Soviet young people have every facility to develop their talents.

There are some people in the West who try to picture us Communists as fanatics, ascetics and what not else. So far as my comrades, myself and everyone else I know are concerned, I can say that nothing human is alien to us. We like our fun and enjoy a good song and a mug of beer in congenial company just as much as the next fellow.

The same goes for sports. I'm captain of the volleyball team in my shop. We captured a leading place at the recent Spartakiad that was held by the plant.

The Party encourages people to go on with their education. It works to expand the network of specialized secondary schools and institutes to make study after work possible. I'm in my fourth year at the Gorky Diesel Engineering School.

It's getting so photographers have a problem—they can't see the town for all the trees and flowers. Ours is very much a garden city, planned for light and air and pleasant living. Communists are in the front there too—in civic improvement.

This is a new housing project the plant is building for its personnel. The vast construction going on all over the country is the result of Party policy, which is always aimed at satisfying the people's needs.

It may sound sentimental, but every time I look at the Volga, I read a fuller meaning into the words "my land and my people." As a Communist, I can serve them better.

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FRONT COVER—*Lenin*, a reproduction of the painting by Mikhail Bozhy.

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NIN THE MAN

BY BORIS POLEVOI

VLADIMIR ILYICH LENIN was a man whose life was spent in action. He was a leader unlike any the world had ever seen—a farsighted theoretician with a consummate understanding of life, a bold and brilliant scholar, a speaker who captured the hearts and minds of his listeners, a judicious statesman who foresaw the destiny of mankind. The name Lenin brings to mind a towering figure, one that has come to symbolize the struggle of all laboring men on our planet for a happier life.

He was a great and at the same time a surprisingly simple man. Those who had the good fortune to meet Lenin describe him as short, very lively and spry, with broad shoulders, a dark complexion, prominent cheek bones; the ready smile on his lips was outlined by a close-cropped reddish mustache and a short, thin beard.

There were certain characteristics he had—an extraordinarily forceful, ringing voice; a slight lisp; quick movements. And—what was most striking—whomever he spoke to, Lenin was always the same man.

Before a visitor had gotten over his surprise that Lenin was such a plain-looking man, so perfectly natural in his ways, he would be caught by the wide-set, dark-brown screwed up eyes in which one sensed a very special kind of whimsy. But they were very discerning eyes; nothing escaped their attention. Then the visitor would be struck by the unusually high Socratic forehead, the brow of a sage. This man, so ordinary at first glance, seemed suddenly to have grown. And the visitor, or listener, or simply observer would fall unwittingly under his spell.

Lenin had faith in the people. He believed in the creative power and initiative of the workers. He studied their experience diligently and learned from them. The first communist subbotnik is a case in point. Actually this effort by the workers to help their desperately needy country by volunteer work on their days off was a small affair. But in this first subbotnik Lenin saw the beginnings of a great movement. Eventually it developed into the nationwide shock-workers movement and then into the socialist competition movement that has been and is still playing so important a part in the building of a communist society.

With this faith in the creative powers of the people that was so much a part of his being, this unshakable faith that he had acquired when as a young Marxist he was making impassioned speeches to small gatherings of factory workers in the St. Petersburg suburbs, he was able to understand the nature of the spontaneously rising revolutionary tide and to direct it toward the proletarian revolution.

Many of those who knew Lenin intimately recall his profound faith in the people, his affection for the workers and peasants. Their suffering struck a responsive chord in his heart. Nor was this pity alone. It was a constructive, deep-rooted feeling. In the exploited and the victimized he saw and valued above all the fighters against oppression, the future builders of the new society, the class destined by history to abolish exploitation.

A well-educated man, thoroughly grounded in Marxist theory, he sought in his very first work to promote the theory and broaden its field of application. While still a lad, he never missed an opportunity to talk to the common people, to ask about their lives, to get them to voice their thoughts and aspirations. This was not simple curiosity; he wanted to know what working men were thinking and feeling.

When Lenin studied statistical data, when he compared, analyzed and correlated figures, it was to find out how the people whom these figures represented—the workers, peasants, intellectuals—lived, what troubled them, what their hopes were, what they were striving for. With all his pressing duties, Lenin never begrudged the time he spent talking to people.

A tireless desire to learn from reality, to test theory in the press of developing events, to check the truth of every idea and every philosophical tenet characterizes all of Lenin's activity. Even in a foreign land, in exile, he was better informed about the people's sentiments than many revolutionaries living in St. Petersburg, Moscow or the provinces.

He always looked truth in the face with courage and candor. No matter how bitter or shocking that truth was, he never hid it from his companions or from the people. This man, whose revolutionary ideas were unrivalled in their daring, scope and foresight, had—so his friends and colleagues testify—complete faith in the indestructible and decisive influence of the creative revolutionary energy of the millions of workers.

Lenin taught the masses and learned from them. This simple statement explains his all-embracing activity. It is the key to the art of his leadership, the thing that gave him unerring insight into what the working people really wanted and how events would develop. That is why he was always able to perceive and point out the one and only right direction in a multitude of roads and byways, to discern in an acorn the seed of the future tree.

He cut into his leisure time and sometimes into his hours for sleep to see and talk to people. When Soviet power was established, when he became head of the first workers' state, a vast country spread over a sixth of the globe that had been ravaged by an imperialist war and then immediately thereafter plunged into civil war, with all the great burdens he had to shoulder, Lenin still found time to keep in contact with the people. That was his practice.

Through his reception room flowed a steady stream of visitors—messengers from distant farm villages, delegates from factory committees, and intellectuals who came from every part of Russia with requests, grievances, suggestions. Lenin always found time to hear what they had to say, to talk things over with them.

He had the wonderful faculty of giving his complete and wholehearted attention to people, of being able to understand their problems and win their sympathies. When a factory worker, peasant or Red Army soldier come into his study, awed by the surroundings and by the fact that he was talking to Lenin, Vladimir Ilyich would generally step out from behind the desk to meet him and say in his usual brisk way, "Sit down, Comrade." Then, instead of going back to his desk, he would drop into an armchair so close to the visitor that their knees would almost touch. Bent forward as though to hear better, he would ask questions, get his visitor to talk, give advice. And the visitor, who only a moment before had been nervously waiting his turn in the reception room, would feel as though he had known this simple man for an age and would open up and speak his innermost thoughts.

People felt that Lenin was quick to grasp their problems. He might not always share their views, but he always understood them. In two or three simple phrases he would get to the heart of a problem, present the policy of the Party, and sometimes in a matter of minutes outline a detailed program of action.

This close and unbroken contact with the people was Lenin's way of administering the country, his way of keeping his finger on the pulse of life in Russia and everywhere else in the world.

He followed the news at home and abroad very closely, scanned the papers carefully every morning. Occasionally his attention would be caught by a particular letter or article, and with a pleased twinkle in his eye, he would ask to see the writer. Those who worked with him would know that Lenin had lighted on another manifestation of the people's creative initiative and was eager to explore its potentialities.

Another characteristic of Lenin that was noted by all who knew him was his concern for people. In exile Lenin and the members of his family were often in narrow straits, but he was always ready to share his last penny with a friend. With the responsibilities of the country on his shoulders, he was neglectful of himself but never of those around him. The many books about Lenin are full of instances of the way he helped people in difficulty.

He was extremely punctual about fulfilling every commitment, from a promise to return a book at a specified time to his habit of opening a meeting to the minute. He was demanding of himself and of others, leaving no assignment uncompleted, no matter how trifling. This, in toto, was what you might call his method of work.

At six sharp he would open the small door of his study and at once, without further ado or delay, open the meeting of the Sovnarkom, the Council of People's Commissars. He insisted that the speakers stick to the point, that they be brief. He could not stand windbags and blusterers, people who tried to cover up with fancy talk

Lenin and Vladimir Bonch-Bruyevich, business manager of the Council of People's Commissars. Kremlin courtyard, 1918.

the fact that they had nothing to say or suggest. He cut them short with a single ironic remark.

Lenin set a high value on collective work. He would not think of making a decision on a major issue without the Central Committee of the Party or the Sovnarkom. He would take great pains to see that a problem was thoroughly discussed and a collective decision taken. To him, collective work was the guiding principle in Party leadership, one that assured complete and permanent success in the achievement of its aims.

Many of Lenin's contemporaries have commented on his ability as a speaker and propagandist. Even his opponents agreed that nothing could withstand Lenin's logic, and that people were swept up by his line of argument even against their will.

Describing Lenin at the London Congress, where he was pitted against the most persuasive of the Menshevik speakers, Maxim Gorky writes: "Vladimir Ilyich hurriedly ascended the platform and said 'Comrades.' It sounded guttural. I thought he was a poor speaker, but a minute had barely passed when I, like everyone else, was engrossed in what he was saying. It was the first time I had ever heard anyone speak so simply on such complex political issues."

When an aged worker who knew Lenin was asked what he thought was the most striking quality of the man, he answered, "Simplicity, simple as the truth."

No description could be more accurate. We have hundreds of books about Lenin written by people who knew him at different periods of his life, who worked with him in the first Marxist study groups, who knew him when he was working underground, when he was in exile and living abroad, during the grim days of the October battles, and later when he became head of the state. Many of them comment on the extraordinary simplicity of this much loved man.

He abhorred pose and pomposity, ovations and display. He never sought a conspicuous place, but was nonetheless always in the limelight. In his childhood and youth, the playmates of those years reminisce, he never tried to be the leader. But his animation, ingenuity, cheerfulness and, of course, extraordinary intellect made him the natural leader even when there were older boys about.

This quality became more pronounced as he grew. It was very much a part of his character by the time he was head of the first socialist state and the leader of the country's powerful, mature and militant Party.

Lenin never tried to outshine others, but his intellect, his wide knowledge, his experience, his charm, and the whole of his rich life as a Bolshevik made him, without any apparent effort on his part, the recognized leader, even among those who opposed and disliked him.

He was a human magnet who drew the hearts of people, a real leader of the masses whom the workers and peasants considered one of themselves despite his scholarly and intellectual background.

Lenin was never afraid of being outrivalled. He tried always to attract to his cause the most gifted and dynamic people, those with strength of will and other qualities of leadership. His friends and co-workers said he willingly helped these people, rejoiced at their successes, did everything to build them up. He even forgave them their weaknesses unless, of course, they involved matters of Bolshevik principle.

On questions of principle, of political activity, Lenin was firm, outspoken and uncompromising. However great his fondness for an individual, no matter what friendly ties linked them, he would never condone a distortion of the Party line or excuse the person responsible until he had acknowledged his error and had taken steps to correct it.

He was very fond of Plekhanov and held his Marxist works in high

Lenin, his wife Nadezhda Krupskaya and his sister Anna Yelizarova with her children in a garden. Gorki, August-September 1922.

Chess with A. Bogdanov on a visit to Maxim Gorky. Capri, Italy, 1908.

Lenin making a speech to the crowds that thronged Red Square on the occasion of the unveiling of a monument to Stepa Razin, leader of a peasant revolt in the seventeenth century that began in the Don and swept the country. May 1, 191

esteem. Whenever anyone had seen Plekhanov, Lenin would make detailed inquiries about his health and activities. For all that, he never let up exposing Plekhanov's erroneous concepts or lashing out at him for his betrayal of the working class.

All Lenin needed was a two- or three-sentence exchange with a caller to size him up, see his merits and demerits, his strong and weak points. He would then adopt a tone and attitude best suited to put the caller at his ease, so that he could put his best foot forward. He was aware of the shortcomings of those who worked under him, tried not to let their weaknesses become dominant, helped them to develop their strong points.

People in close touch with Lenin were always amazed at his keen insight. Evidence of his perception is the so-called "will" he left, the "Letter to the Congress." Gorky wrote of it: "People were not always disposed to trust his forecasts, and quite often they hurt. But unfortunately quite a few people justified his skeptical estimates." The events that followed the "Letter to the Congress" a few years later proved how perceptive Lenin had been.

He was a man of principle—revolutionary principle, we should add —in the best and highest sense of the word. Exacting of others, he was most exacting of himself. Insistent that every Party member abide strictly by the decisions of the Central Committee, he was no less insistent for himself. Demanding that Soviet laws be strictly observed, he was the first to comply with the law.

The very deep concern he had for the health, diet and rest of those working with him he did not extend to himself. Busy with affairs of state, he would work himself into headaches and sleepless nights. When work piled up and there was no other way of getting him to rest, Nadezhda Konstantinovna, his wife, would call the Party's Central Committee, which would thereupon pass a resolution to grant V. I. Ulyanov—Lenin—so many days of compulsory leave, following that with a phone call to inform him of the decision.

In reply would come Lenin's very angry "h'm-h'm-h'm" and the sharp query, "When do I have to go on vacation?"

Even on such a totally private matter Lenin regarded a Central Committee decision with the utmost seriousness. Once the arrangements had been made, he would leave Moscow, go hunting, fishing or mushroom-picking, carrying on no business whatsoever, observing to the letter the Central Committee's decision that had been taken over his head. A very interesting document on view at the archives shows to what lengths Lenin would go to protest arbitrary action, especially if personal considerations were involved. In March 1918, without Lenin's knowledge, his pay was raised because of the devaluation of the ruble. He wrote this note himself:

> To Vladimir Dmitrievich Bonch-Bruyevich,
> Business Manager, Council of People's Commissars,
>
> In view of your failure, in spite of my urgent request, to indicate on what grounds you raised my pay as of March 1, 1918, from 500 to 800 rubles a month, and in view of the obvious illegality of the arbitrary action, which you took with the consent of the Council's secretary, Nikolai Petrovich Gorbunov, in direct violation of the decree of the Council of People's Commissars of November 23, 1917, I hereby reprimand you severely.
>
> V. Ulyanov (Lenin)
> Chairman, Council of People's Commissars

This letter, with its deliberately formal and stilted language, giv us a better picture of the man Lenin than we could get from a number of beautifully phrased eulogies.

This great thinker, passionate revolutionary and wise statesm who set his compatriots an example of rigid observance of t laws of the socialist state was the most human of individuals private life. He found joy in nature and in art, he loved music a singing.

He was a monolith of a man, built in one solid whole, harmonious blended, each trait and quality interrelated with the rest. He was man brimming with life and energy, a healthy and natural man, w carried the burden of his work and the responsibility of greatne on his shoulder like a Titan, appearing not to notice the weight his load.

While still a lad, Lenin showed astonishing ability to combi close and intensive study and reading with enthusiastic play—swi ming, exercise, singing, chess. He played better chess than his fath who taught him the game and was not a bad player himself. As a b he competed with some of the best players in Samara, includi Khardin, who at the time ranked with Russia's leading chess maste He liked to play music, to sing, to tramp through the woods w a shotgun.

Wherever the fate of a revolutionary took him—to a remote spot exile or a foreign land—he tried to spend what spare time he h out of doors. In Siberian forest expanses, in rainy London parks, beautiful Swiss mountain country, amid the jagged cliffs of t Polish Carpathians, the spare greenery of Finnish groves or, in t last years of his life, in the quiet charm of the Moscow countrysi he loved so much—he took great draughts of the natural splend around him. He tramped the woods with gun in hand, sat in a b with a fishing rod, cycled or hiked with a knapsack strapped to b back and an alpenstock or roughly carved juniper stick in his ha

Lenin was not a serious hunter or angler. The hunting boots wore and the gun or fishing rod he carried were only an excu to ramble in the woods or sit quietly on a river bank. He was ne alone on these jaunts, always took the occasion to chat with t other anglers and hunters he met, with farmers, with the people whose cottages he put up for the night. He invariably made frie with them, and before long they would be pouring out their troub to him.

A joke, they say, brings out a man's character. Lenin liked a go story. People who knew him well say they have rarely heard contagious a laugh as Lenin's. He would laugh till the tears stream

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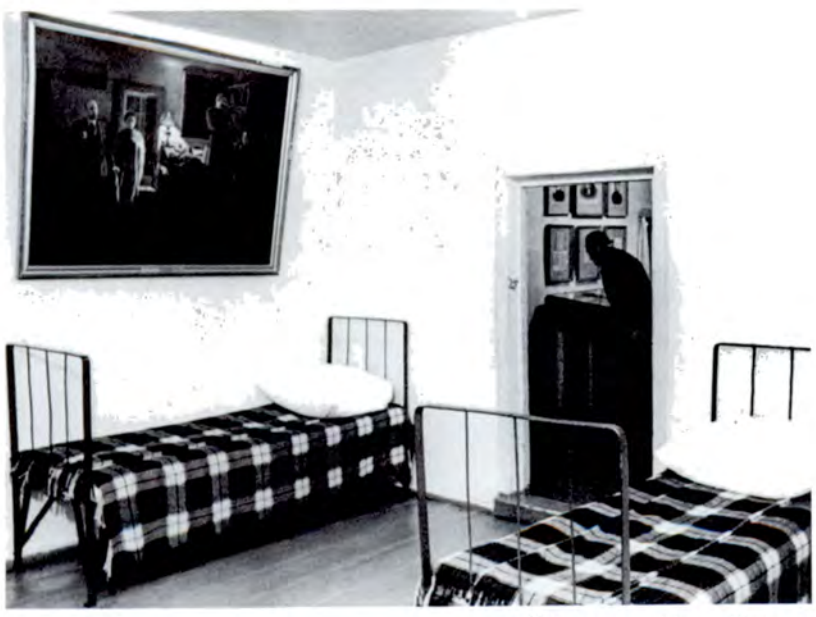
Anna Seryodkina shows visitors the house where Lenin lived. Now a museum, it was owned by her mother.

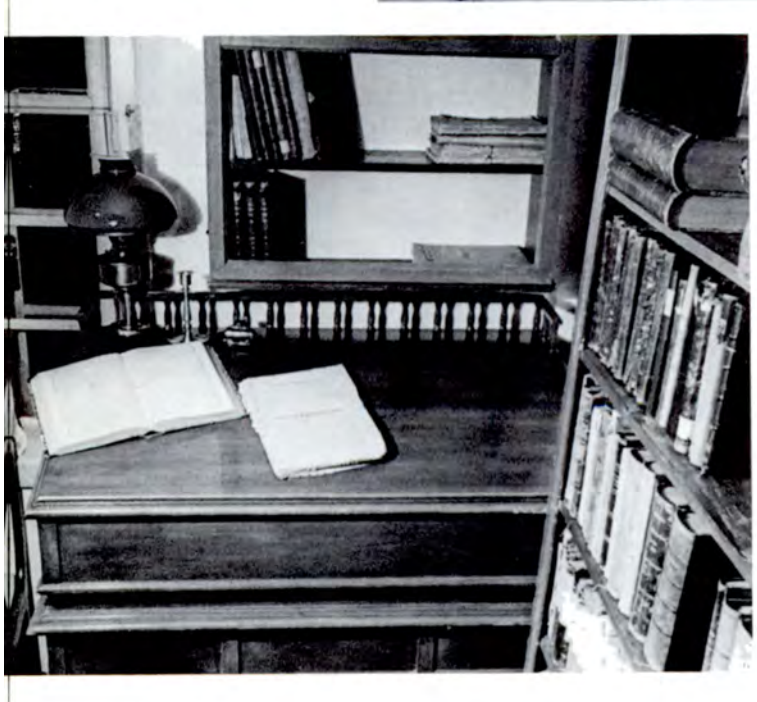
The log house where Lenin spent his years of Siberian exile stands on the shore of the quiet Shusha River.

These simple household articles served Lenin and his wife Krupskaya when they lived in Shushenskoye.

They ate in this dining room. The museum is visited by people from every part of the Soviet Union.

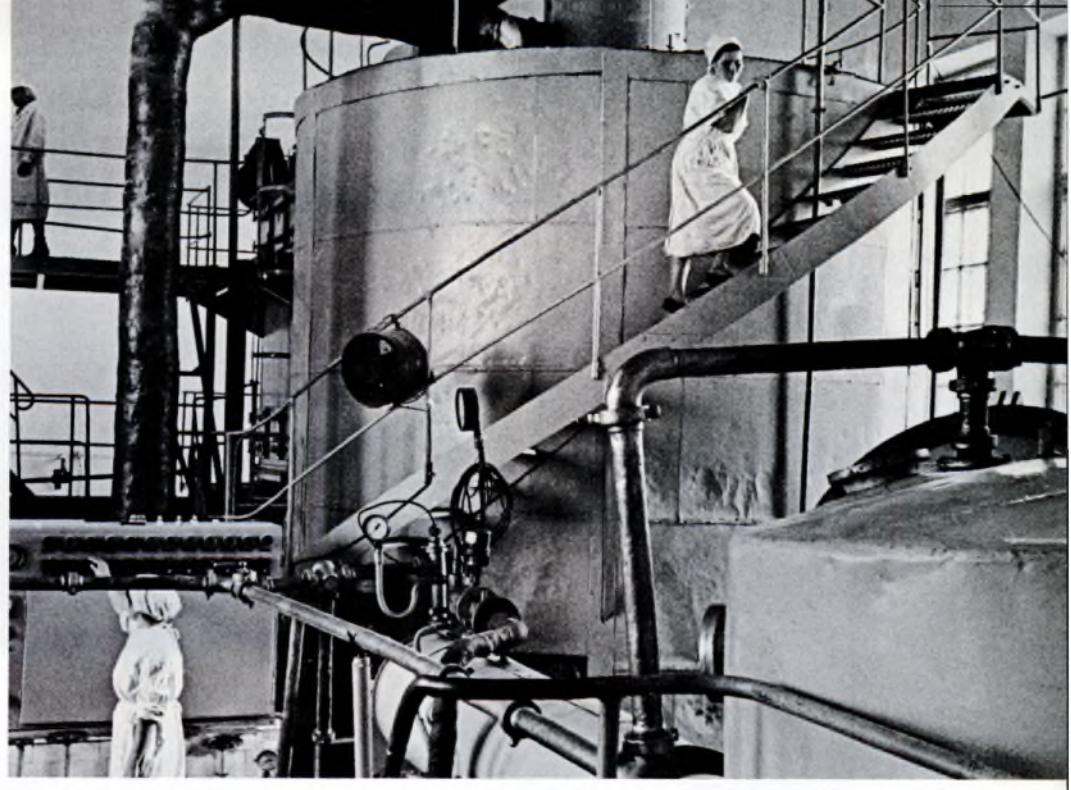


This room with its Spartan simplicity was used by Lenin and his wife as a bedroom-study.



It was at this desk that Lenin drew up his plan for the creation of a revolutionary workers' party.

A section of the sizable modern plant in Shushenskoye village where powdered milk is processed.



Graduating students at the agricultural school nearby named in honor of Lenin and Krupskaya.

A concert at the House of Culture. Shushenskoye lacks none of the educational and cultural facilities.

Secondary school carpentry shop. Shushenskoye today is a far cry from the isolated village Lenin knew.

Visiting school children at the hut in the woods where Lenin used to rest when he went out hunting.

He's following in Lenin's footsteps. An Oktyabrist now, he hopes to be a Pioneer and then a Komsomol.

EVENTS AND PEOPLE

80th BIRTHDAY OF CHILDREN'S STORYTELLER

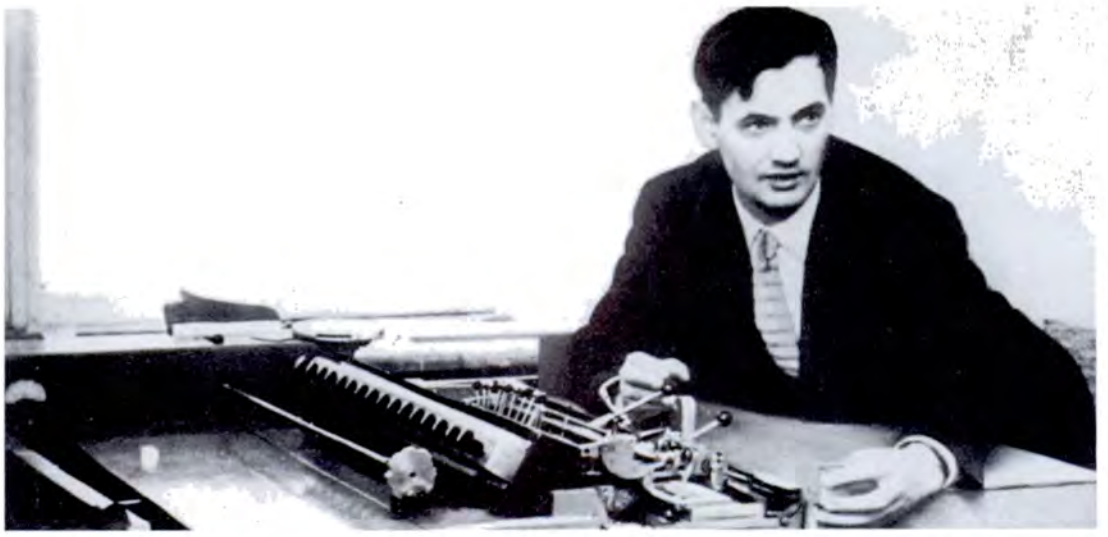
The children's stories of Soviet writer Kornei Chukovsky are read not only in his native land, where 40 million copies of his books have been published, but in France, Italy, the United States, Australia and many other parts of the world.

Chukovsky began his career as a scholar of literature. It was the paucity of children's books prior to the Revolution that turned him to juvenile fiction. His first was a tale in verse, *The Crocodile,* followed by the famous *Moidodyr,* about a young loafer who hated to wash; *Mukha-Tsokotukha,* the story of a brave little mosquito that vanquished an evil spider; the fascinating story of kind *Dr. Aibolit* (Dr. Ouch It Hurts), who cured animals; and a host of others.

The writer's summer house in Peredelkino near Moscow is a veritable children's village. Next to his house is the children's library he built and stocked at his own expense. The youngsters come there to borrow books, do homework, watch TV shows and stage their own plays. Chukovsky often contributes his talents as writer and actor.

Twice a year Peredelkino lights festive campfires for children from the Soviet capital and its environs—in May to welcome summer, and in late August to bid it farewell. Chukovsky arranges a program of games, contests and riddles; reads poetry; and entertains his young guests with the toys sent him from many countries.

Adults know the venerable writer—he was 80 in March—for his *From 2 to 5,* a study of the peculiar features of the child's language, his critical works on Walt Whitman and the Russian poet Nikolai Nekrasov, and his writings on the principles of translation.



COSMIC MUSIC

The "sound barrier" in music has troubled many great composers and instrumentalists. Although the variety of sounds, combinations and tonalities of modern musical instruments is quite large, it is still limited. The Russian composer Alexander Scriabine found himself especially blocked by the "sound barrier." To this very day some of his works cannot be played the way the composer intended.

Yevgeni Murzin, a young Soviet scientist and passionate music lover, has created an instrument that breaks through the barrier. He calls it ANS, Scriabine's initials.

Music notation is recorded on glass covered with an opaque substance instead of the usual paper. Lines are drawn on the glass by scratching the opaque substance with a knife. The length of the sound, its relation to other sounds, and its tonality depend on the size of the scratch and its position. Elements sensitive to light "read" the scratch, convert it into sound, and transmit it to an amplifier. The music obtained is fantastically unreal, described as "cosmic." The tones have a unique splendor and the number of combinations is virtually unlimited.

"Cosmic" music written on the ANS by Moscow composers and performed at Soviet exhibitions in London and Paris drew large crowds. It is used for the eerie musical background of the film of Yuri Gagarin's space exploit, *First Trip to the Stars.*

The State Committee on Radio Electronics recently decided to begin commercial production of ANS sets.

WHOLE PLANET WITHIN PHONE REACH

New equipment for semiautomatic international telephone communication between Moscow, Prague and Berlin, and from there to other European capitals, has been installed and successfully tested. The equipment was designed jointly by Czech, East German, Hungarian and Soviet engineers.

An operator will no longer have to call the international exchange in another country, give the exchange the number, and then wait until it reaches the party. She will be able to call the foreign number directly and make the connection in practically no time. The next step, already on the way, is to make international calls completely automatic.

The procedure for making calls to any city in the world will involve no more than dialing the number of the international exchange—the two-digit code number of the country called, followed by the local number. Code numbers for all countries have already been worked out—68 to 79 for various zones of the Soviet Union, 57 for Czechoslovakia, 41 for England, 35 for Hungary, 33 for France, 28 for Bulgaria.

With the new apparatus Soviet telephone lines will be incorporated into the unified network of the present semiautomatic and later completely automatic world telephone system.

UKRAINIAN STEELMAKERS TOP ENGLAND'S

Soviet steelmakers smelted 71 million metric tons last year. The Ukraine, which produces 40 per cent of the country's metal, topped England's steel output. England's population exceeds the Ukraine's by ten million.

Steel production in the Ukraine has been growing at an especially fast rate since the Second World War. It increased almost 3.5-fold since 1950, from 8.3 million to 28.1 million metric tons.

The republic's metallurgists plan a breathtaking leap in the next 20 years—from 28 million to 75 million metric tons, three times England's output. That very ambitious goal may be reached even sooner, since in the first three years of the current seven-year plan Ukrainian steelmen reached the production level planned for 1965.

Ukrainian metallurgists are also ahead of their British counterparts in steelmaking techniques. The productivity of their open-hearth furnaces is considerably higher than anywhere else in the world. The Zaporozhye mill steelmen hold the global record.

MEDEA STAGED IN MOSCOW

A new production *of Medea,* the 2,400-year-old Greek tragedy, opened at the Tchaikovsky Concert Hall in Moscow to critical encomiums and thunderous bravoes. It was staged by Nikolai Okhlopkov and gives full scope to the play of human passions by Euripides and to the talent of the director.

Okhlopkov did not try to modernize the tragedy; he followed the stage forms prescribed by the Greek theater. The action is moved out to the spacious, semicircular stage of the concert hall, and the scenery is reduced to essentials. The chorus, so intrinsic a part of Greek tragedy, is, however, handled in a new way. It does not speak, its reaction to events as they unfold is only through gesture.

Yevgenia Kozyreva plays the title role. Her Medea is human and guileless, a woman driven to the monstrous murder of her children in a frenzied and desperate protest against injustice and deceit.

The music is by the noted Russian composer Sergei Taneyev.

LONG-DISTANCE TELEVISION

A turn of the knob on this TV set brings you a London stage production; another, a variety show from Warsaw; a third, a news commentator in Helsinki. This new television set for long-distance reception was built by Leopold Ozols-Ozolin of Krustpils, Latvia.

The designer is only 33, but he has a long history in amateur radio. He built his first set when he was 12.

The idea for the new TV derives from an article he came across in a Soviet magazine on the possibility of receiving ultrashort waves reflected from meteoric streams that appear at an altitude of 62 miles.

Ozolin made a study of the astronomic calendar and the stellar chart of the Northern Hemisphere, and designed an original installation for orientating the TV antenna toward a particular segment of the heavens. The antenna designed by this radio amateur gives steady reception of telecasts over a 3,000-mile range.

Ozolin has now designed an even more sensitive antenna which brings in programs from nearly 50 stations in several countries.

ITALY ACCLAIMS SOVIET PRIMA DONNA

Unusual applause this was, the spontaneous tribute paid by musicians to a great artist. Through the empty hall resounded the echoes of bows striking against the sounding boards of violins—the orchestra in rehearsal applauding the remarkable voice of Tamara Milashkina. Maestro Gavazzinni, the noted conductor, added his "bravo."

Milashkina went to Italy in the spring of 1961 with a group of singers from the Bolshoi Theater to study at the world famous La Scala Opera in Milan. Followed a rigorous regimen of lessons in the Italian language, rehearsals and independent work on Italian opera roles. A part in any of the productions seemed to be an unrealizable dream since the La Scala repertoire is planned a year ahead.

But the management, carried away by the extraordinary gifts of the young singer, broke tradition by offering Milashkina the role of Lida in Verdi's *La Battaglia di Legnano.*

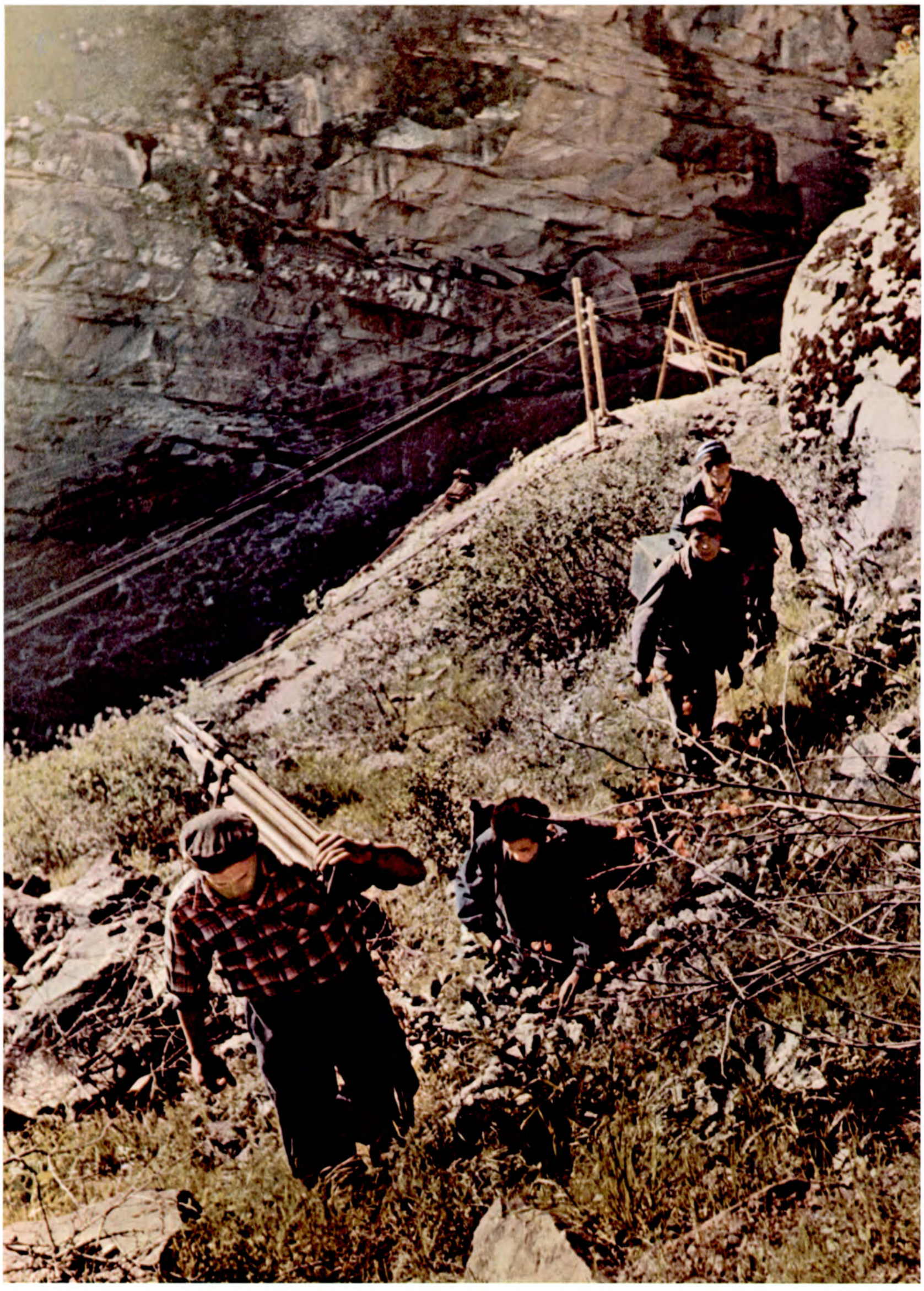
This is not the first time this young singer has done the highly improbable. In 1957 she won two gold medals—at the USSR Vocalists' Contest and the contest at the Sixth World Youth Festival. The Bolshoi Theater made her a member of its company while she was still in her fourth year at the Moscow Conservatory.

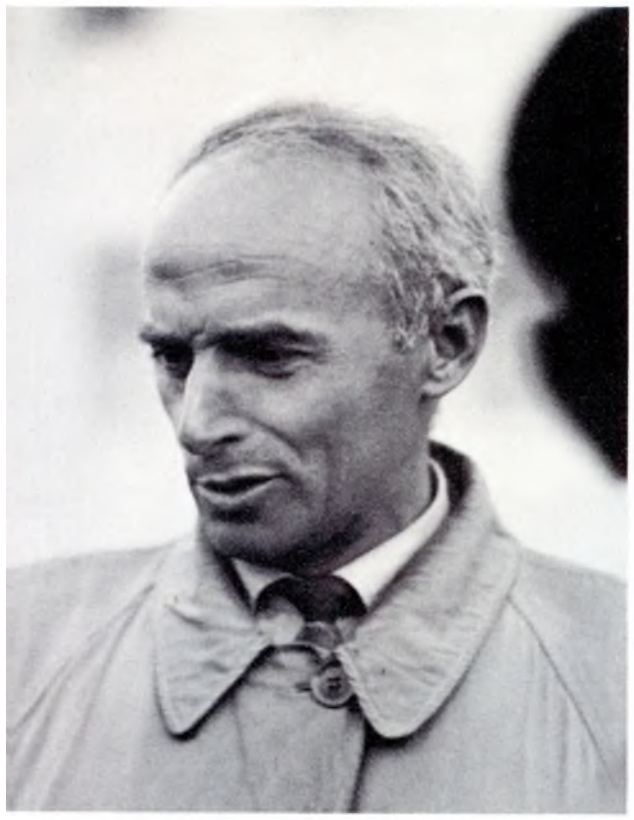
Milashkina learned the difficult role of Lida, to be sung in Italian, in an incredible two and a half months. Incidentally, the opera has never been produced in Russia.

How would the very knowing Milan public, accustomed to hearing the great Italian prima donna Antonietta Stella in the role, respond? In the fifty years since Sobinov and Chaliapin, no Russian has sung at La Scala. The double challenge would have driven a lesser artist to distraction.

Milashkina did more than rise to the occasion. Her teacher, Professor Yelena Katulskaya, who tends to be sparing with her praise, describes her pupil's remarkable gift in these terms: "At such moments her voice, with its striking timbre and exceptional beauty, combines splendid technique with deep and sincere human feeling."

"The Soviet singer scored a brilliant success," read the cable the director of the La Scala Opera sent to Moscow.





Chief Engineer Yuri Tchaikovsky is no novice. He headed Dnieper hydropower construction.

BY ANDREI SAKHAROV

TAMING THE VAKHSH

eft) Surveying the site of the future 2.7 mil-n-kilowatt power station on the Vakhsh (above).

IT WAS very hard to believe that here, among these mountains, waves would splash. Could it be that this road, along which we were zigzagging for more than an hour, and these cliffs, descending in terraces to the narrow and turbulent Vakhsh River, would also be under water along with the pink flowering almond bushes growing among the rocks?

One question after another kept popping into our minds as we drove along. What would be happening to these villages of clay houses that seemed glued together? And to these herds of sheep in the mountain pastures? And the eagles soaring high in the air on the hunt for prey—were they going to go on a fish diet?

We drove into the village of Nurek, center of the hydropower station construction site, and pulled up at the project office. Here is where we were going to get the answers.

Yuri Tchaikovsky hardly looked like a construction engineer, with his thin, nervous fingers, his gray hair fringing a high-domed forehead, his aquiline features. He had more the look of an artist, an actor or a scholar. But his deep tan and his shoes that dust had bitten into showed that the man had spent long months in the blazing Tajik sun and had trudged many miles along dust-brown mountain paths.

"Have you seen the Vakhsh?" Tchaikovsky asked us.

"Yes, the river below."

"That's no river, it's a ferocious beast!"

And what he told us in the next few minutes changed our ideas about this muddy stream rushing among the cliffs into the valley.

The Vakhsh travels with terrific speed down the slopes of the Trans-Alai range, crushing everything in its way. The river becomes especially violent when the glaciers melt. It overflows its banks, fills an enormous stone bowl to overflowing, and then retreats unwillingly to ready itself for a new caper.

The Vakhsh's current is so swift that its energy potential—50 million kilowatts—is greater than that of the much larger but slower plains river, the Volga. Hence the interest evoked in the power station builders. They plan to build nine large hydroelectric stations, beginning in the upper reaches and continuing down to where the river meanders through Tajikistan's cotton plantations.

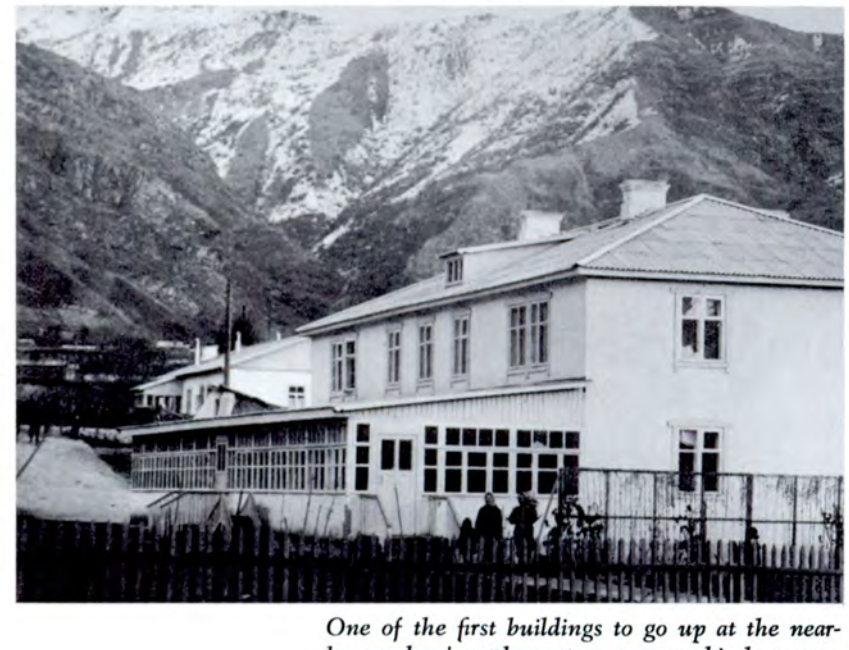
The station at Nurek will be generating 2.7 million kilowatts for the industries of Tajikistan and Uzbekistan, and the waters of the Vakhsh will be irrigating almost half a square mile of cotton fields.

Tchaikovsky is all wrapped up in this power station. He might be talking about the woman he loves. "Not another one like it, the only one of its kind in the world."

And it is indeed the only one of its kind in the world for its size and setting. No other station has so high a dam—985 feet. Or so unusual a

A self-propelled drilling outfit developed by a Moscow research institute is tested on the site.

The river will be backed into an immense natural stone bowl by a dam almost a thousand feet high.



One of the first buildings to go up at the nearby workers' settlement—a nursery-kindergarten.

reservoir—an immense stone bowl formed by canyons. Or a system of power lines that will run across the mountains at so high an altitude—12,000 feet—to reach the towns, factories and construction sites of Tajikistan and Uzbekistan.

It is unique also for the fact that its builders have had to cope with such difficulties as constant seismic activity and glaciation at high altitudes. And finally, because it will be the Soviet Union's most economical hydro-electric station; the initial cost will be covered in the first eighteen months of operation.

On the table we saw a scale model of the project—the dam in outline, the drain pipes for discharging the surplus water, the façade of the station and the silver masts carrying the power lines into the mountains.

"This is how it will all look," said Tchaikovsky, "and meanwhile. . . ."

And meanwhile we have a real struggle between man and nature. It began a year ago, in 1960, when the January Plenary Session of the Central Committee of the Communist Party of the Soviet Union decided to harness the Vakhsh as an electric power station for Tajikistan.

Two months later came the first survey party of geologists. In their broad-brimmed hats and heavy shoes they tramped around in the mountains, checked rock samples and water evaporation during the day, and in the evening they sat around their campfires roasting shish kebab and singing.

Then they left, and for several months the Pulisanginskoye gorge was quiet. But this was only the quiet before the storm. At the Hydropower Project Institute in Moscow construction plans were already being drawn up. Soon afterward the country's radio and press announced a new, big project in Tajikistan with plenty of jobs that needed to be filled.

First on the site were Vladimir Khan and his team, demolition men and drillers from the neighboring Takobi mine, to clear the road to the construction site. For the first couple of days, while a tent camp was being set up, the team lived in the local tea house. More people kept arriving every day. Now all along the boundaries of the future dam you can hear blasting and the rumble of bulldozers and excavators chewing their way into the mountains.

Sergei Petrichenko, a laborer, came here from a mine in Siberia on the Bodaibo River. Why did he come? "I get bored staying in one place too long. I want to see the world."

Sandhog Anatoli Bolotsky came here from the Urals. "It sounded like an interesting construction project. I thought I'd like to get in on it."

Plasterer Yevgeniya Shikun came from Archangelsk. "I wanted to try my hand at a more challenging job, that's why I came."

There are all sorts of people working on the project, men and women of different nationalities, from different parts of the country—youngsters straight out of secondary school, recently-graduated engineers, and veterans with a long history of power-station construction experience.

Right now there are more than 2,000 workers on the project, of a variety of ages. Yet there is a general feeling of strength and confidence among them, of vitality, which unites them. Another thing they share in common is a good sense of humor. Illustration?

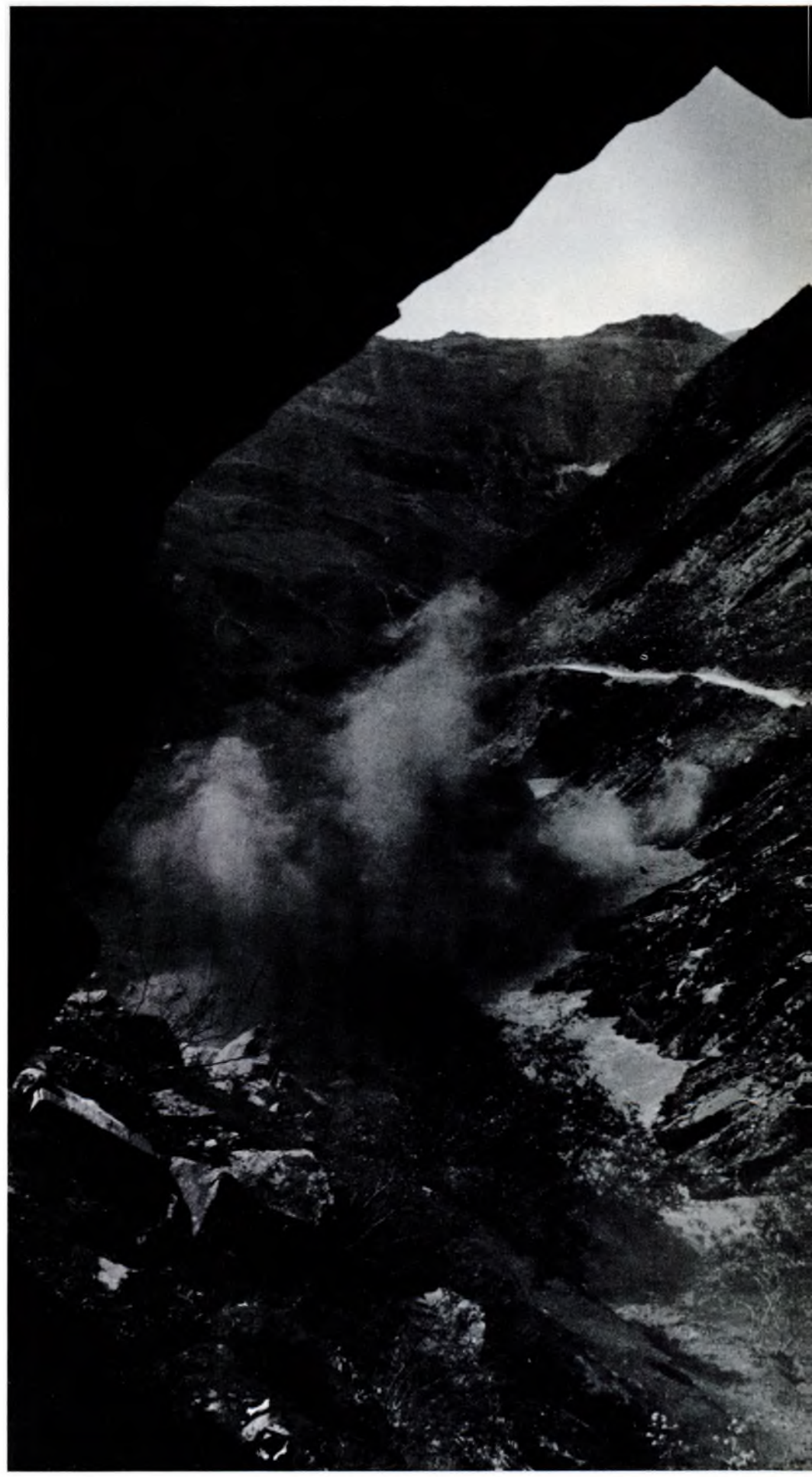
Because of negligence on the part of engineer Khuritov, the construction of a hospital was held up. Thereupon the young people put a big, brightly-colored poster on the bulletin board which read: "Comrade Khuritov! What do you think you'll get first, the gravel for the new hospital building or a sense of responsibility?" The very next day the gravel was delivered.

And another. The meals at the cafeteria had little variety in the beginning. After the workers had invited the chef to eat with them regularly for several days, the menu improved considerably.

From the way the workers speak and act, you get a real sense of personal ownership in the project. "You know," plasterer Valentina Balandina said to us, "it's hard to believe that all this was absolutely empty when we came; there was nothing here. Look what we've built—houses, a kindergarten, nursery, hospitals and a movie theater. It's for ourselves; we're going to be living here."

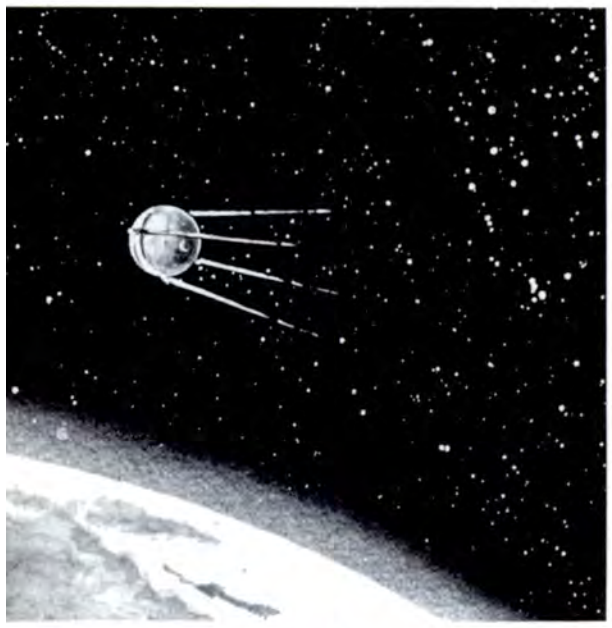
Where the old mountain village of Nurek used to be there is now a modern settlement. The last explosions are now reverberating in the mountains and the drainage tunnels are going deeper and deeper into the cliffs. It won't be long before the turbulent waters of the Vakhsh will be serving man. ★

The last explosion rocks the mountainside. And soon the river's waters will be serving man.

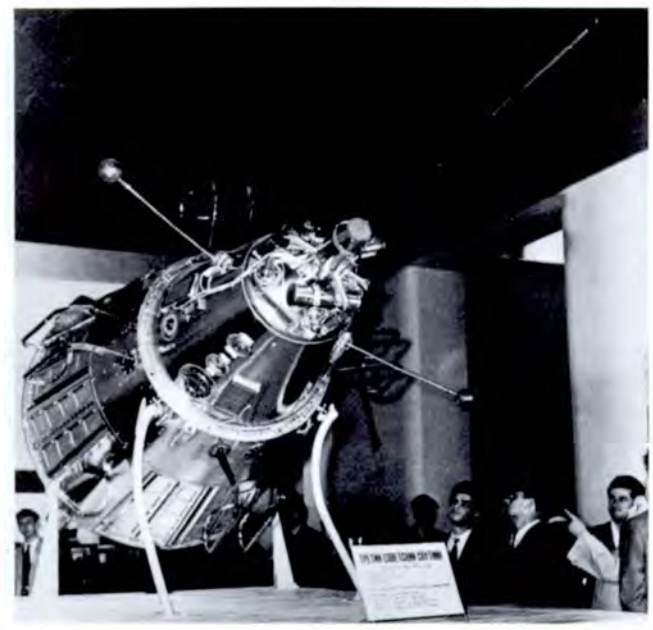


STEPS INTO SPACE

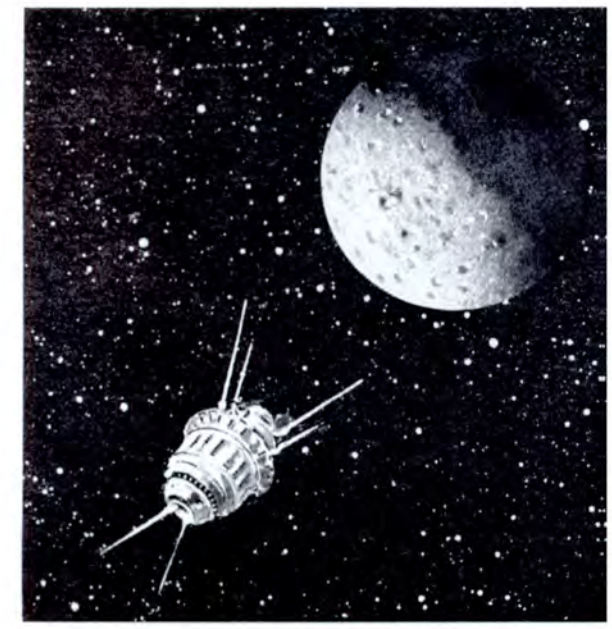
BY ANATOLI GLASKO



1957 *The world's first artificial earth satellite was orbited on October 4. It weighed 184.3 pounds and was 23 inches in diameter. A month later the second Soviet sputnik, weighing 1,120.5 pounds, was launched into outer space. It carried the dog Laika and was instrumented for the study of cosmic rays as well as short-wave radiation from the sun.*



1958 *On May 15 the third Soviet sputnik was launched. It weighed 2,925 pounds, and its research program was much more comprehensive. Besides cosmic rays, it investigated the earth's magnetic field and possible hazards from meteorites and corpuscular irradiations of the sun in preparation for launching spaceships manned by a human cosmonaut.*



1959 *On January 2 the first Soviet lunik was shot into space at a speed of more than seven miles per second. The 3,244-pound lunik passed the moon and entered into an orbit around the sun. In September a rocket landed a Soviet pennant on the moon, and a month later an automatic interplanetary station photographed the hidden side of the moon.*

IT IS A YEAR since that momentous day when man, for the first time in his earthbound history, broke through the barrier of gravity into space, not theoretically nor in fantasy, but in fact, and not with a piece of animated metal as proxy, but present in space himself as an authentic representative of his planet earth. The day was April 12, 1961, the man—Major Yuri Gagarin, whose name a grateful humanity will forever remember.

The father and founder of the space flight theory was Konstantin Tsiolkovsky of Kaluga, a provincial Russian town. He was the first to affirm, at the turn of the century, that only with powerful rockets would man be able to travel in outer space. His ideas were applied only after the Socialist Revolution in 1917. By the thirties Soviet high-altitude rockets were already probing space.

On October 4, 1957, the first artificial earth satellite was orbited, and the Russian word *sputnik* became familiar the world over. A new era had begun, the era of space conquest.

The first Soviet sputnik weighed 184.3 pounds. It was 23 inches in diameter and carried various apparatus for recording scientific data and transmitting them to earth. The sputnik collected priceless information on the space surrounding our planet, data on the earth's magnetic field and solar radiation.

The research program was continued by the second Soviet earth satellite, launched November 3, 1957. The last stage of this vehicle, containing all the scientific instruments and weighing 1,120.5 pounds, performed, in effect, like its sputnik predecessor. It, too, collected data on the upper strata of the atmosphere, cosmic radiation and solar activity. But it was also given a new task—to determine whether life can be sustained in outer space. For the purpose, it carried the first animal space traveler, the dog Laika.

These manned trips required large and heavy spaceships to contain the cabin for the animal or human traveler, the life-sustaining systems and the guidance and communications apparatus. Soviet scientists therefore concentrated on the development of systems capable of launching heavy sputniks.

The third Soviet sputnik was the earliest of these heavy vehicles. It weighed 2,925 pounds and was, to all intents and purposes, a small flying laboratory. Its research program, much more comprehensive than the two previous ones, included study of the composition of the upper strata of the atmosphere and the intensity of the earth's magnetic field. The vehicle carried ion traps and apparatus for investigating the probability of spaceship collisions with micrometeors. This third sputnik collected extremely important data on primary cosmic rays.

At the same time that they designed these heavy sputniks, Soviet scientists developed launching methods and rocket systems that made it possible to achieve not only orbital velocity (five miles per second) but also escape velocity (seven miles per second). This very difficult task was carried through successfully with the launching of the first Soviet space rocket, which was guided by an automatic system. After its engines were switched off, the last stage of this rocket, weighing 3,244 pounds, passed the vicinity of the moon and entered an orbit around the sun, to become the first man-made planet of the solar system. It supplied important research data on the region around the moon.

On September 12, 1959, the second Soviet space rocket, weighing 3,331 pounds, was launched. Moving along a precisely calculated trajectory, it reached the moon's surface on September 14 after traveling a distance of almost 248,000 miles.

On October 4, 1959, came another major space victory when Lunik III,

1960 *This was the year that the problem of returning spaceships to a preset area of the earth was solved. On August 19 a spaceship weighing more than 4.5 tons was launched and returned to earth. It carried the dogs Belka and Strelka, mice, flies, microbes and plants. During the year similar heavy vehicles were launched three times and returned to earth.*

1961 *On April 12 came the epic flight of Yuri Gagarin in* Vostok I. *On his 108-minute journey around the earth the world's first cosmonaut retained his working capacities under overload and weightlessness. On August 6, in* Vostok II, *Gherman Titov made a cosmic voyage, unparallelled by any in human history, that lasted 25 hours and 18 minutes.*

the third Soviet space rocket, orbited an automatic interplanetary station which flew around the moon, photographed its hidden side and transmitted the picture to earth, man's first view of the moon's invisible side.

With the launching of a 10,006-pound orbital ship on May 15, 1960, the Soviet Union took another long step into outer space. Besides the transmitter and various instruments this vehicle carried a pressurized capsule with a dummy astronaut and whatever else might be required for manned flight. After the research program was completed the capsule was jettisoned. All the systems worked perfectly. The flight tested the reliability of the take-off and flight of a powerful carrier-rocket operating by a set program, and the system for space guidance and orientation.

The next stage came on August 19, 1960, when the second orbital ship was launched for a final test of a human space flight program. The capsule of the 10,140-pound ship, fully equipped for manned flight, carried the dogs Belka and Strelka, mice, flies, microbes and various seeds and plants.

When its research program was completed, the orbital ship's descent was ordered from earth. The guidance systems and the braking engine landed the ship and its animal travelers, all in fine condition, in the preset area.

The next step was to launch a guided space rocket from an orbiting heavy satellite. On February 12, 1961, an improved multistage rocket orbited the second Soviet heavy sputnik. It fired a guided space rocket to set an interplanetary automatic station on a trajectory toward the region of Venus. On May 20, 1961, this station passed within 62,000 miles of the surface of that planet.

Simultaneously, Soviet scientists continued their preparations for manned flight. The fourth and fifth orbital ships were launched to test the reliability of the spaceship and all its systems for a human astronaut. These test launchings in March 1961 were followed by the epic flight of Yuri Gagarin, the world's first cosmonaut, in *Vostok I.*

In his 108-minute flight Yuri Gagarin retained his working capacities both under conditions of overload and weightlessness. The flight demonstrated that Soviet scientists and designers had built a spaceship guaranteeing normal conditions of flight, normal vital functioning and the pilot's safe return to a preset area.

Only four months later, on August 6, 1961, the Soviet Union orbited a new satellite spaceship, *Vostok II,* piloted by Major Gherman Titov, a cosmic flight, unparalleled by any voyage in man's history, that lasted for 25 hours 18 minutes.

This year, on February 20, the family of cosmonauts was joined by Lieutenant Colonel John Glenn, a citizen of the United States. The Soviet people are filled with admiration for astronaut Glenn's cosmic flight and the scientific and engineering achievement of his country. They share the sentiments of Nikita Khrushchev's congratulatory telegram to President Kennedy.

"I hope that the genius of man," wrote the Chairman, "which penetrated the depths of the universe, will be able to find the road to an enduring peace and to ensure prosperity and peace to all people on our planet earth which, although it may not seem so large in this age of space, is still dear to all its inhabitants.

"If our countries pooled their efforts—scientific, technical and material—to explore outer space, this would be most beneficial for scientific progress and would be acclaimed by all peoples who wish to see scientific achievement used for man's benefit rather than for 'cold war' purposes and the arms race." ★

WHEREIN IS THE PROBLEM IN TH

BY ALEXEI LEONTYEV
PROFESSOR, MOSCOW UNIVERSITY

Preschool-age violinists playing at an Institute of Psychology conference.

THE CONCEPT of inherent abilities, an idea about as old as man himself, keeps cropping up anew periodically. Many psychologists still credit biological heredity with a very important part in shaping abilities.

Advocates of various theories regarding inherent abilities are particularly emphatic about biological differences in such spheres as music. If, as they claim, musical ability is a natural gift, then some people have no ear for music from the very day they are born, and the world of musical sounds is forever closed to them, while others have a good ear for music and are consequently capable of developing their gift to a very high level.

This same argument applies as well to man's other abilities, including the mental. But life does not bear out the argument. The latest research data give a different answer to the question concerning the development of man's abilities.

Some interesting experiments have been done in the Soviet Union in relation to the problem around the question of whether an ear for music is a hereditary trait. The studies show that very many people, to be sure, have no absolute ear for music, without which musical ability cannot be developed. At the same time it has been found that an ear for music can be developed even in the case of tone-deaf adults.

As is true with many other abilities, an ear for music is formed and developed with time. This conclusion is confirmed in practice. Some teachers have proved that all children who begin to study music before they go to regular school develop a fairly good ear.

The Institute of Psychology recently held a conference on the development of sensory abilities in children of preschool age. No theoretical exposition is as convincing as fact. Present at the conference were all 40 students of a music school in one of the Moscow suburbs. The headmaster, Mikhail Kravets, has been able to develop a very good ear for music in his boys and girls. A poster in his school reads, "Talent for music is not inborn, it is developed." There are no competitive entrance examinations, and no pupil has ever dropped out. Classes are held twice a week for 30-minute sessions. The youngest pupils are three years old, the oldest—nine.

The conference participants heard the tiny violinists play in ensembles, in trios, and as soloists. Some three-year-olds put on a creditable performance after only a few weeks of schooling.

Similar experimental work with very large numbers of young children has been done by the Japanese psychologist and educator Suzuki. Suffice it to note that he has an orchestra of a thousand little violinists.

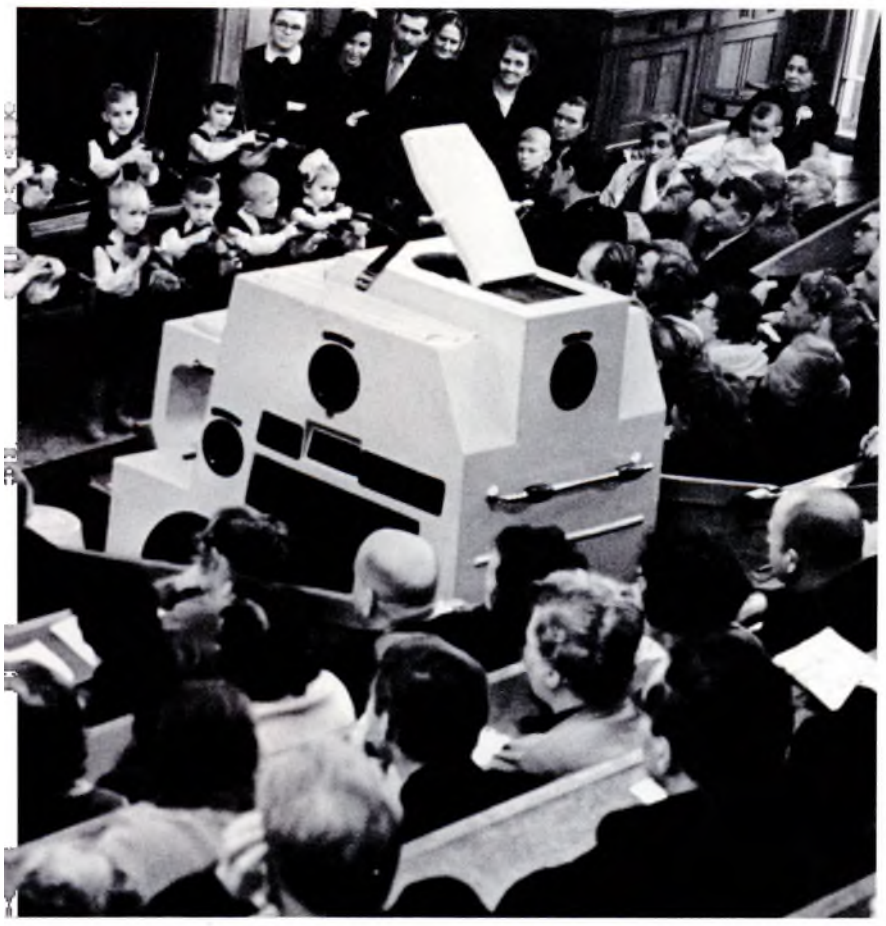
Does that mean a thousand future Mozarts? Of course not. The point is to give as many people as possible an understanding of music. This is part of the educational background of the harmoniously developed individual.

And if musical ability, whose origin is least known and understood, can be developed, the possibility of developing mental ability should be even greater. That has also been the subject of considerable research in the Soviet Union.

The country's extraordinary cultural progress since the Revolution is proof that mental development on a mass scale is possible. Less than 50 years ago, the outlying parts of what were then czarist Russia were areas of almost complete illiteracy. There was, for example, only one person out of every 99 in Turkmenia who could read and write. Today the Central Asian Republics are practically 100 per cent

These children are learning music notation by playing the game of lotto.

EQUALITY OF ABILITIES OR THE POSSIBILITY OF THEIR DEVELOPMENT?



Recent experiments indicate that a good ear for music can be developed.

literate, with large numbers of specialists trained in their own universities. Each republic has its own Academy of Sciences.

Every man has abilities that can be developed, and equal educational opportunity must be available to all—these are the two basic principles of Soviet education. The Soviet school makes the same demand upon every student within a particular grade. The level of education is determined not by the number of years an individual studies but by the number of grades through which he has successfully progressed.

Students are not grouped into classes of the more and the less capable. That would mean establishing levels within the one grade. That practice is also rejected for pedagogical reasons. Soviet education attaches great importance to the influence exerted on the individual by the collective. A child comes to know his environment through his relationship with other people. For a child to develop properly, it is vital that he associate with those of his peers who are more advanced. If the slower learners were grouped, they would be isolated from the beneficial influence and the example set them by the better students.

Rapid learners are given additional and more difficult assignments and tasks to complete. When a slower child associates with these rapid learners, who have a richer vocabulary and have learned how to think more logically, he makes considerably faster progress than if he were to associate only with slow learners like himself. Division by groupings of this kind would not raise the development level of all the children. On the contrary, it would lower the level of development and make for an even more pronounced ability differential.

Obviously what we have said here does not mean that we believe all people are born with the same propensities. There is no question that people have different inborn propensities. But when we consider the normal, we see that these inborn inclinations—heightened nervous activity, for instance—while they play a definite role in development and influence individual abilities, do not determine the main thing we are concerned with here, the level of development. This level can always be raised if individual differences are taken into account, if an individual approach is used in the educational process.

The more mankind progresses and the richer his social experience, the larger will be the role of education and the more complicated its tasks. That is why every stage in human development, as well as in the development of individual nations, also means a new stage in educational progress—more time allotted by society for educating children, more schools set up, more specialized teaching, richer curriculums, improved pedagogy, the development of theories and principles of education.

This link between historic progress and educational progress is so close that we can judge the level of educational growth by the general level of society's historic development, and, conversely, the level of society's economic and cultural growth by the level of educational development.

And so the real problem is not whether people have or have not the ability to master a body of knowledge, make it their own property and add their own contributions. The real problem is to make it possible—and practicable—for every man, all people, all nations, to grow and develop without hindrance or restriction. That is the great aim to which we should aspire. ★

ROOSEVELT COMMEMORATION
in Moscow

AMERICAN-SOVIET relations, in the not very distant past, were founded on the principle of peaceful coexistence of states with different social systems, a heartening fact that people tend to lose sight of in today's inclement international weather. The name of Franklin Delano Roosevelt is closely linked with that period in the minds of Soviet people.

In a telegram to Mrs. Eleanor Roosevelt on the occasion of the eightieth anniversary of her husband's birth, Nikita Khrushchev wrote, "President Roosevelt will always occupy an honored place in the chronicle of the stormy events of the twentieth century as one of the world's greatest statesmen. His profound understanding of the trend of international events brought him to the conclusion that businesslike cooperation was the only reasonable form of relations between capitalist and socialist countries."

A large public meeting dedicated to the great President was held in Moscow's Friendship House. Academician Nikolai Blokhin, president of the Soviet-American Institute, noted that for Soviet people, Roosevelt ranks with such other great Americans as George Washington, Benjamin Franklin, Thomas Jefferson and Abraham Lincoln.

The press reported the meeting and carried other commemorative material. In an article headed "Roosevelt's Traditions," *Pravda* wrote, "In the stormy period of world economic crisis and political upheaval, the growth of the fascist threat and the Second World War, he tried to adhere to a policy of reason."

A sober estimate of the world situation in 1933 led Roosevelt to the belief that normal diplomatic relations with the Soviet Union had to be established. Not long before his death the President declared he had always been proud he had taken the step.

A humanist and champion of progress, he passionately hated the brown plague of fascism that was spreading through Europe at the time. In his speech of October 5, 1937, he called for a quarantine against fascism, a call greeted warmly by the Soviet people.

After Hitler Germany's treacherous attack, the President pledged his full solidarity with the Soviet Union.

Llewellyn Thompson, U S A Ambassador, with Soviet-American Institute head Nikolai Blokhin.

The newspaper *Izvestia* commented that "Franklin Roosevelt helped personally to bring the peoples of the United States and the Soviet Union together as brothers-in-arms in the war against fascism. During the course of the war he spared no effort to cement the American-Soviet fighting alliance."

The President expressed his great admiration for the courageous struggle waged by the Soviet people. Their glorious victory, he wrote of the heroes of the Battle of Stalingrad, checked the wave of invasion and became the turning point in the war of the allied nations against the forces of aggression.

Roosevelt stressed that neither during the grim war years nor the peace that followed should ideological differences be an obstacle to good-neighbor relations between our peoples and governments. Harry Hopkins, his closest aid, recalled that during the last years of the President's life he had no doubt whatsoever that as far ahead as one could see, the United States and the Soviet Union could live and "work peacefully" together.

Thus, by a realistic appraisal of political changes, Roosevelt came to the independent conclusion that peaceful coexistence of states with different social systems was a necessity of our contemporary world. ★

Mrs. Thompson, Nina Khrushcheva, Llewellyn Thompson and Victor Gorshkov at the Roosevelt meeting.

THE FUTURE OF COMPUTERS

BY VICTOR GLUSHKOV, UKRAINIAN ACADEMY OF SCIENCES
AND ANATOLI DORODNITSIN, USSR ACADEMY OF SCIENCES

DIGITAL COMPUTERS were originally developed to automate complex and laborious mathematical calculations. But their possibilities proved to be infinitely more far-reaching than even the boldest of their creators could have imagined. They became our first universal convertors of information.

The very great significance of this fact strikes home when we remind ourselves that all of man's intellectual activity is essentially a diverse and, at times, extremely complicated processing of information. It is true that electronic digital computers use only numbers and letters, but with special devices any information—visual, aural, electric signals, etc.—can be converted into a digital form.

What is it that makes electronic digital computers so universal? They are able, automatically, through a series of elementary operations, to carry out any conversion of letter and number information—meaning that computers can solve any problem once we find and set up the precise rules by which the conversions are to be made.

One of the fantastic qualities of these machines is their operating speed. The best modern computers do a million arithmetical operations with many digital quantities per second. This is several million times faster than a skilled accountant using a keyboard adding machine.

Equally fantastic is their data input and output speed. Their mechanical printing systems read out data at the rate of more than a thousand letters per second. With contactless printing, even this rate can be increased substantially.

An important indication of the quality of electronic digital computers is their reliability. There is still much that needs doing along this line, but even at present these machines do millions and billions of operations without an error, something no human being is equal to.

Computer speeds keep going up. In the near future they will be doing tens and hundreds of millions of operations per second. The volume of the high speed "memory" will grow much larger, and information input and output speeds will increase. In the next few years the introduction of new elements and production techniques will reduce the size and cost of computers and their consumption of electric power, while increasing their reliability very considerably.

Universal electronic digital computers of various capacities are and will continue to be the basis for the development of electronic computing techniques that will create control and information devices and complex systems for processing data. Specialized computers for solving comparatively simple problems will be made up of elements and assemblies of universal computers.

Computers, especially of the universal type, play a vital part in scientific research and technical designing. This is not simply because of the ease and economy of labor with which they carry through complex calculations, however significant this factor is, but primarily because the electronic digital computer makes it possible to solve scientific and technical problems that were insoluble heretofore, the reason modern computing techniques play so decisive a role in modern physics, rocketry and astronautics.

Electronic computers are bound to revolutionize every single branch of industry. It is happening already, especially in the older branches of engineering. They also predicate a new approach to designing, planning and research. Despite the conservatism of the shortsighted, the high-speed computer keeps winning growing numbers of adherents.

To make full use of the potentials of computers they should be employed not only to calculate the elements of a design but to automate the designing process, first, of the computing operations and then of the drawing operations. This problem solved means a considerable saving of time in developing new designs and constructions.

But even this is only a beginning. Presently engineers are able to analyze and compare a relatively few design versions. With computer use, *optimal* designing will be possible, the choice of the best possible version.

This is already being done. For example, the Computing Center of the Ukrainian Academy of Sciences, working jointly with the Moscow Central Research Institute of Transport Construction, recently developed a standard program of railroad bed design for all topographic and soil conditions. Preliminary estimates show that the program will bring a reduction of about 10 per cent in the design costs of beds made under complex conditions. Considering the annual volume of road construction, this is an enormous saving. At the very least, it far exceeds the cost of setting up and equipping the Kiev computing center that conceived the program.

The use of computers in economic planning opens very wide horizons indeed. The volume of information now processed by Soviet planning bodies is so vast that it would be useless to hope for optimal planning by the old methods.

Our computing centers have already had a certain amount of experience with optimal planning. In 1961 the Computing Centers of the USSR Academy of Sciences and the Ukrainian Academy of Sciences solved about a hundred problems in optimal planning of road and rail haulage. Each month optimal truck routes are compiled for delivery of ferroconcrete items to construction sites in Moscow Region. The first month's plan cut the mileage of no-load runs by 60,000 miles.

Without computers we cannot possibly do the best operative planning. A plan compiled by a human being, no matter how skilled, under rush conditions is bound to be a long way from optimum. For example, a 10-day plan compiled by a computer for hauling dirt dug up by excavators at Moscow construction sites proved almost 43 per cent more economical than one compiled by man. In ten days in August 1961 the machine plan saved more than 106,000 rubles.

Trucking is only one of the fields in which computer planning is possible, and not the most dramatic one by a long shot. It simply happens to be one field in which techniques have been worked out and applied. There is no question but that over-all optimal planning can save billions of rubles annually.

Experiments carried on by the Computing Center of the Ukrainian Academy of Sciences prove that electronic digital computers can not only control industrial processes directly but maintain optimum operating conditions. The large universal digital computer "Kiev" controlled the Bessemer converters of the Dzerzhinsky Iron and Steel Plant and the carbonating column of the Slavyansk Soda Works from a distance of several hundred miles. The machine did a good job. It shortened the production cycle, increasing steel output, and raised the efficiency, and cut the cost of the carbonating column process.

Other fields of computer application include automation of information and reference service; statistics and bookkeeping; postal and telegraph service; banking operations; automatic translation from one language to another. Computers can be made that will review scientific papers and—this for the future—prove new mathematical theories. All of this will accelerate scientific progress enormously.

Electronic computing is one of the youngest, if not the very youngest, branch of engineering, no more than 15 years old. But it has a long future and will be applied in ways as yet undreamed of. ★

The institute's major publication is this biweekly Journal of Abstracts. *Each issue carries 32,000 annotations on articles and books published all over the world.*

SCIENCE INFORMATION SERVICE

BY YEVGENI MUSLIN

A section of the staff of 2,700 researchers who go through the publications received by the USSR Institute of Scientific and Technological Information in Moscow.

IN THESE DAYS of narrowing specialization we do not expect an individual or a learned society to be equally familiar with, let us say, aircraft design and sheep farming. But there is one place where you can get the latest word on both—the USSR Institute of Scientific and Technical Information in Moscow.

Every morning a fleet of delivery trucks pulls up at the institute with what you might call the "raw material"—books and journals from 90 countries published in 68 languages. Soviet publications, understandably, make up a large fraction of this flow of mail. In a relatively short time this daily crop of human thought is processed, turned into the institute's "finished product"—systematized files of concise information in all the scientific and technical fields.

Only nine years old, the institute is already internationally famous. Without the service it provides, scientists in many specialties the world over would find it more difficult to carry on their research.

Consider this. There are tens of thousands of scientific and technical journals published today. Somewhere in the neighborhood of 300,000 inventions are patented every year. The number of monographs, reviews, reports, theses, proceedings, bulletins and papers issued by countless scientific congresses, conferences, meetings, symposia and debates would pile up into whole mountains of books.

The world total of scientific and technical publications put out yearly has reached astronomical proportions—400,000! No researcher could possibly hope to keep up with this endless flow of literature or to find a report or article he needs within a reasonable amount of time.

The eminent English scientist Professor John D. Bernal puts it that "it is easier to search out a new fact or build up a new theory than to ascertain whether these have been discovered or deduced before." There are cases on record of laboratories spending hundreds of thousands of dollars on research projects already successfully completed and published. Here is the comment of one American executive on the subject, "If a

Scientists the world over write to the institute for references to published information on their research problems. Lists are compiled from this very extensive card catalogue.

With the stockpile of world scientific and technical literature growing year by year, machines are more and more needed to take over the job of processing material.

Besides all the Soviet publications, the institute gets scientific and technical periodicals from 90 countries published in 68 languages.

research job costs less than 100,000 dollars, it is cheaper for us to do it than to find out if it has been done before and is reported in the literature."

All this goes to demonstrate the importance of an efficient information service. The institute in the Soviet capital is one of the largest of its kind in the world.

How does it operate? The institute's assistant director Alexander Fomin explains:

"We receive all the Soviet and some 12,000 foreign scientific and technical periodicals. We have contact with 1,800 organizations abroad which send us their publications—one very effective way, they feel, to bring them to the attention of the public. We have about 2,700 researchers in the institute going through all the publications that come in. We also enlist the services of more than 22,000 outside experts who know foreign languages. These are people in many different fields—academicians, professors, masters and doctors of science. Soviet scientists consider this a work of vital importance and are glad to help.

"The institute's main bibliographic publication is its *Journal of Abstracts*, containing brief summaries of books and articles. It is published in 16 series, each one covering some major branch of science or technology—mathematics, physics, engineering, etc. Each series comes out in 123 editions with every edition devoted to a specific branch of learning. This makes it possible for specialists to find whatever they are looking for quickly.

"The institute also publishes 59 'Express-Information' series containing comprehensive reviews of all important technical developments. These are issued weekly, and since they are intended mainly for the staffs of plant design shops, they are illustrated with photographs, diagrams and drawings.

"For the specialist interested in an original paper, the institute will prepare a microfilm, photostatic copy or complete translation of any text. Last year more than 26,000 photostats of scientific papers were sent out.

"Thousands of requests come from research centers and individuals for lists of articles published on specific problems. The institute's vast file department, serviced by hundreds of experienced bibliographers, makes it possible to meet these requests promptly.

"The international stockpile of scientific and technical literature keeps growing by 60 million pages a year, equivalent to 100,000 volumes of 600 pages each. To illustrate the enormous job the institute has tackled, this would fill 200 miles of bookshelves. The disparity between the mass of published material and the human capacity to absorb it is becoming greater every year.

"What can be done? It is obviously impossible for the institute to employ hundreds of thousands of experts. The answer lies in automatic processing of information. Scientists in all countries are now working on machines that will translate and annotate scientific texts. It should be possible, in the not-too-distant future, to ask such machines any question at all—whether it has to do with the population of Southeast Asia, methods of growing corn, or the best way to reach the moon—and have the machine read the question, translate it into its own language, transform the question into electric signals and direct them to its logic apparatus. After searching its prodigious and constantly replenished memory for a moment, in the course of which it will have scanned millions of pages, the machine will type out the answer.

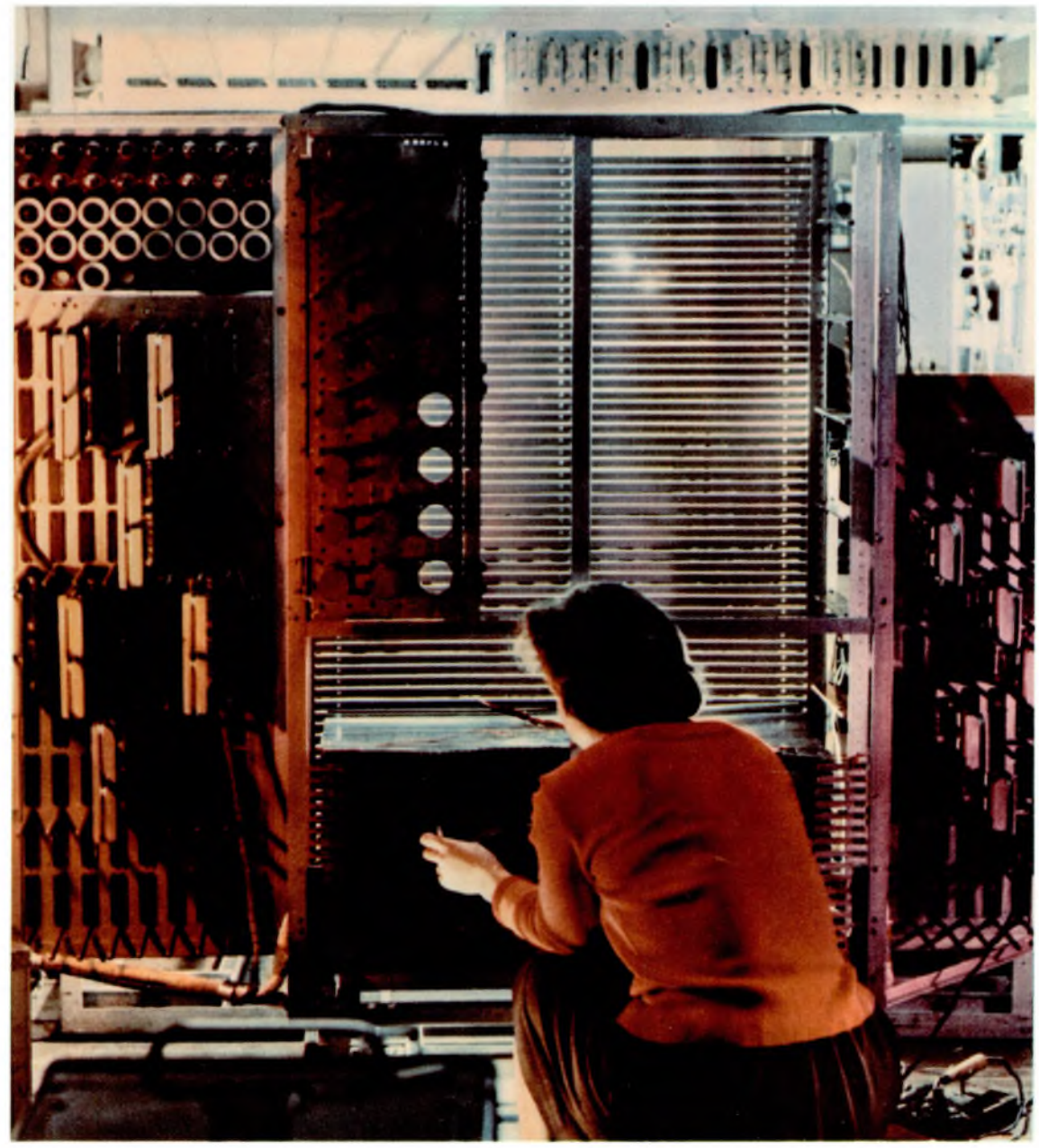
"The institute's technical department is now designing such machines. Some of them are about to be put into serial production; others are being tested in laboratories. They will all soon be available to the large army of researchers. Moreover, with the creation of devices capable of understanding spoken words, it will be possible to ask a question and get the answer by radio or videotelephone.

"These information machines, the libraries of the future, will store the conclusions of countless scientific studies and experiments in their colossal memories, keep adding to the infinite treasury of human knowledge and so play an enormous part in the development of world culture." ★

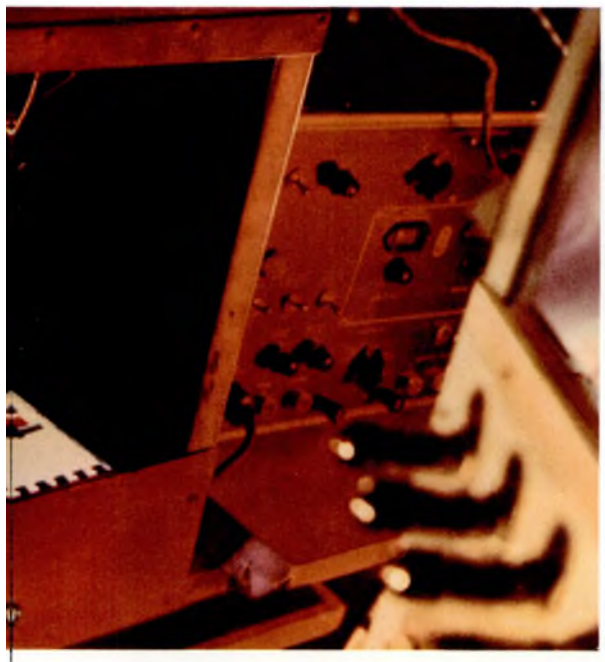
Information-logic device to help the bibliographer. An experimental machine that proofreads English texts

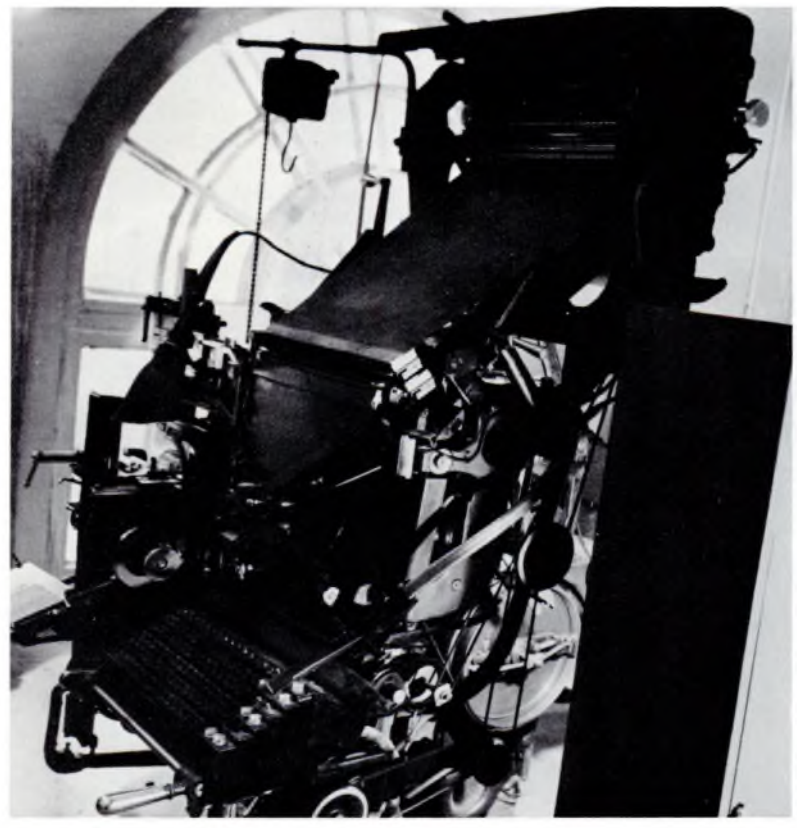
The institute enlists the service of some 22,000 scientists and enginee who also know foreign language

A small section of the institute stacks. The annual world total of scientific and technical publications comes to an astronomical 400,000.



The institute can provide a microfilm, photostatic copy or translation of any text.





An automatic typesetter. The institute has its own print shop and publishing house.

Dance of the Dolls

In the Cornfield

UKRAINIAN DANCERS

The Ukrainian State Dance Company, most popular folk ensemble in the republic, will be touring the United States and Canada this month. The company, which celebrated its tenth birthday last fall, has won the applause and affection of audiences throughout the Soviet Union and abroad.

Pavel Virsky, its artistic director and a People's Artist of the USSR, is interviewed by our correspondent.

QUESTION: In which foreign cities has your company performed in recent years?

ANSWER: Twice in London, and in Paris, Prague, Vienna, Warsaw, Peking and Hanoi.

QUESTION: How long will your American tour be?

ANSWER: Ten weeks, all told, in the United States and Canada. Our first performances will be at the Metropolitan Opera House in New York. The details of the itinerary and programs were finally settled when the American impresario Sol Hurok visited Kiev late in February.

QUESTION: Which of the dances in your repertoire will you be doing?

ANSWER: Perhaps I should tell you something of my ideas on choreography before I answer the question specifically. For one thing, I believe that as time goes on the classical ballet and the folk dance will draw closer together through a process of mutual enrichment. A folk dance ensemble like ours is a sort of experimental laboratory. We look for more perfect forms in which to express new, contemporary ideas in dance.

Some choreographers believe that the folk dance should be performed on the stage exactly as it is done by the people. I don't hold with that at all. We of the company try to infuse our folk dances with elements of the classical dance and return them to the people in more polished form.

Our aim is to present not only the folk dance as such but the national spirit and character it delineates. Our American program will include a dance cycle built around scenes from the history of the Ukraine ranging from the sixteenth century Zaporozhe Free State to our own day. The cycle features *Kalina*, a popular round dance done on the eve of the midsummer festival; *Zaporozhtsy; New Year Snowstorm;* seamen's dances; and the familiar, fiery Ukrainian *Gopak*.

Among the other numbers on our program are such lyrical and humorous dances as *The Needlewomen, Podolyanochka, Woodcutters, Dance of the Dolls, In the Cornfield,* and *Why the Weeping Willow Weeps,* which is based on a poem by Taras Shevchenko.

QUESTION: Tell us something about the company—conductor, soloists, and so on.

ANSWER: We have 74 dancers and a 25-piece orchestra. The gifted young musician Igor Ivashchenko, who who has been honored by the republic with the title Honored Worker in the Arts, conducts the orchestra. The well-known Soviet scenic designer Anatoli Petritsky does our sets. Our leading soloists are Valeria Kotlyar, Anatoli Knyazev and Boris Mokrov, all Honored Artists of the Ukraine.

QUESTION: What else would you like to say in connection with your forthcoming trip?

ANSWER: We are the first Ukrainian ensemble to be performing in the United States. They say that a people's character is best shown in its dances. We hope to portray for you the optimism and humor, the feeling and imagination, and the fervent hope of our people for peace.

Gay Fragment

Zaporozhtsy

In the Cornfield

Zaporozhtsy

Woodcutters

Near Gagra in the Caucasus

Welcome

BY VLADIMIR ANKUNDINOV
CHAIRMAN OF THE BOARD, INTOURIST

Dear Reader of *USSR* Magazine:

If you have not yet decided where you will be spending your summer vacation, may I suggest that you spend it with us in the Soviet Union. Even a short stay in a country like ours will leave you with unforgettable impressions. It is a trite but true saying that there is nothing like travel to broaden your visual and mental horizons.

Intourist gives the foreign visitor a choice of travel by plane, train, ship, bus, or private car along many different routes, and stopovers in the most colorful cities and regions of the European and Asian parts of the USSR.

You can visit Moscow, Leningrad, Kiev, Minsk, Tbilisi, Irkutsk, Tashkent, Samarkand; the capitals of the Soviet Baltic Republics—Riga, Tallinn, Vilnius; Donetsk, the center of the industrial Donets Basin; the old Russian towns of Suzdal and Vladimir; Krasnodar in the Kuban; the magnificent health and holiday resorts in Sochi, Yalta and elsewhere.

Needless to say, the itineraries that Intourist recommends are not mandatory. A tourist may, if he prefers, draw up his own itinerary, decide how long he will stay in one town or another, and in what order he will visit them.

Moscow is, of course, a must for every tourist. There are the Kremlin's ancient palaces and cathedrals to see, towering Moscow University on Lenin Hills, the Tretyakov Art Gallery, the permanent USSR Exhibition of Economic Achievements, the new residential districts, the big industrial plants.

Leningrad sights include the world famous collection of art masterpieces in the Hermitage Museum; the castles, fountains and parks of Petrodvorets; the superb architectural ensemble of this city on the Neva.

Many tourists want to see heroic Volgograd, rebuilt from the rubble to which it was reduced during the war, and the restored cities of Kiev and Minsk, now more beautiful than ever.

For those who like seashore vacations there are incomparable Yalta and Sochi with their fine hotels. Intourist will be happy to arrange your accommodations. Hundreds of thousands of people from every part of the country and far-flung corners of the world come to the Crimea and the Caucasus every year for the wonderful subtropical climate and scenery, the hot sun and the caressing warm sea air. The fine sand beaches, excursion launches, cafés and restaurants, clubs and dance pavilions make for a memorable holiday. The Black Sea bathing season runs from May to October.

Intourist arranges hunting trips for deer and other game in the Crimean Mountains during the fall and winter. Hunters are put up in comfortable lodges in scenic mountain valleys.

Many people ask if they may come to the Soviet Union in their own cars. Yes, of course, they may. Intourist services the following routes: Brest-Minsk-Smolensk-Moscow; Vyborg-Leningrad-Novgorod-Kalinin-Moscow; Moscow-Orel-Kursk-Kharkov-Zaporozhye-Yalta-Kharkov-Poltava-Kiev-Vinnitsa-Chernovtsy; Kiev-Rovno-Lvov-Uzhgorod; Kiev-Odessa; Odessa-Kishinev-Chernovtsy.

Automobile tourists come to the Soviet Union via Poland, Czechoslovakia, Rumania and Finland, and by motorship via Odessa and Leningrad.

We have camp sites set up along all the auto routes listed above. Camping of this kind is new for the Soviet Union, but

Minsk, Byelorussia

Tallinn, Estonia

Kiev, Ukraine

Mishor, Crimea

to the Soviet Union

we are pleased to say that Intourist has managed, in a rather short time, to get them organized to the point where they have won the commendation of seasoned foreign auto tourists.

Intourist serves travelers with different requirements and income levels. Our charges are not high, considering the many services we offer. All prices quoted are in American dollars. *First class* service is 15 dollars a day; *tourist class* service is 10 dollars a day. We also have *rest tours*, with boarding-house accommodations, at 6 to 8 dollars a day.

Deluxe class service—a car for traveler and luggage, a private suite with bath, four meals, daily excursions with a guide-interpreter—is 35 dollars a day, and for husbands and wives traveling together, 25 dollars per person.

The charge for use of a camp site is only one dollar a day per person. The fee covers tent space and parking; water, gas, electric and sewage disposal; as well as one excursion for every two days of stay. These excursions are taken with a guide-interpreter in a tourist bus.

The Sputnik Youth Tourist Bureau organizes inexpensive tours for young people with accommodations at low-cost hotels, student hostels and summer sports camps. The Bureau has camps in the Crimea, the Caucasus and other scenic areas.

The Soviet Union, with its varied climatic zones, beautiful countryside and history-filled cities, has everything to attract the tourist. The number keeps growing yearly—sightseers, businessmen, journalists, scientists, clergymen, students. In 1956 we had 486,000 foreigners visiting, in 1960 the figure climbed to 710,000, and in nine months of 1961 we had almost as many as for the whole of 1960. At the present rate—paralleling the growth of cultural, scientific, trade, sports and other exchanges—we estimate a million foreign travelers in the next few years.

Intourist has concluded agreements with several hundred foreign tourist agencies in expectation of greater travel activity this year over last.

So far as touring is concerned, the Soviet Union is a very young country. We don't have the experience of Italy, France or Switzerland, but we have been working hard to expand hotel, camp site, restaurant and other facilities to keep pace with the fast-growing demand.

This year, for example, we will be opening several new hotels, each of them accommodating 3,700 guests, in various cities to enable us to provide better service generally and spare the traveler hotel problems even at the height of the tourist season.

Intourist lends a ready and attentive ear to all tourist reactions, comments, criticisms and suggestions. At present we are working on restaurant and hotel menus with a wider assortment of dishes to tempt the palates of our guests.

Intourist's goal is to leave the visitor with memories of happy, comfortable, interest-crammed days. The many grateful letters we get from pleased travelers are an incentive to cudgel our brains for still better ways of serving them.

Our 1961 season was very successful. We hope that this year's will be even better—the fruit of greater efforts by both our countries for peace, understanding and friendship. Our doors are wide open to anyone who wants to acquaint himself with the way Soviet people live, think and feel.

Dear reader, we hope to have the opportunity of welcoming you to our country this year. ★

TAX ABOLITION AND LIVING STANDARDS

BY REM BELOUSOV, ECONOMIST

IN 1965 the Soviet Union will become the first country in the world that does not tax its citizens. The graduated tax-abolition law is already being carried out. The first stage, which took effect October 1, 1960, is estimated to have saved wage earners an annual 360 million rubles. The second stage, effective as of October 1, 1961, will add another 400 million rubles to family income.

There was a period in the history of the country when taxes on the population played an important part. In the years following the October 1917 Revolution the country was in economic ruin, with factories gutted, fields neglected and mines flooded—much of it the aftermath of foreign intervention and the Civil War.

Economic reconstruction was the task at hand, a pressing and enormous task. But in addition, the Soviet people undertook the seemingly impossible —to transform Russia into a great industrial power. No effort was spared, no sacrifice was too great.

Branches of industry that czarist Russia did not have had to be created if the socialist republic was to become economically self-sufficient, or as a matter of fact, if it was to exist at all. Energetics, metallurgy, heavy machine building, machine-tool building, oil and chemicals were all crucial industries.

Money was needed to build these basic industries, and there was none. Nor was there credit; foreign loans were refused. The country had to lift itself by its own bootstraps. The most stringent economies had to be made; every ruble had to be saved, every kopeck accounted for.

Even then, as young as this socialist country was, nationalized industry was already playing a decisive part in accumulating means for capital construction. The profits of Soviet enterprises were spent in a carefully planned, centralized fashion to develop key branches of the national economy.

These funds were supplemented by loans that millions of citizens voluntarily made to the state out of their earnings. Together with loans, taxes accounted for a considerable part of budgetary revenue.

As more plants, power stations, mines, farms and other nationally owned or collectively owned enterprises raised the country's over-all productivity, a smaller proportion of the national revenue came from taxes. And, as time went on, the proportion diminished to the point where it was no longer significant for socialist accumulation. The income from industries, farms and other socialist enterprises had grown large enough to finance virtually all state activity.

Presently more than nine-tenths of national revenue comes from state and cooperative enterprises. The state no longer needs loans from its citizens; that practice was discontinued several years ago. It was the country's growing wealth that made tax abolition possible. Tax abolition also became possible because taxes no longer serve as an important instrument for evening out the material level of the various sections of the population.

There is a certain differential in the level of material well-being in the Soviet Union due, firstly, to the fact that labor is paid for in accordance with skill, and, secondly, the portion of family income available to each member is affected by the composition of the family.

To a certain degree taxes tend to level off the influence of these factors on living standards. This is true of the tax system in force in the Soviet Union. There are three kinds of taxes, all of them direct.

Income tax. The higher the income, the higher the tax. Workers in the low-paid category are not required to pay taxes.

Tax on bachelors and persons with small families. It is levied on single people and couples without children.

Farm Tax. This tax is paid on income from personally owned kitchen gardens, cow, chickens, etc. The income from work on a collective farm is not taxed.

In the next few years the regulating, or leveling, role of taxes will be cut to the vanishing point. The income of low-paid factory and office workers is estimated to treble, thus eliminating that category entirely. The state will also be assuming more and more of the financial responsibility

for educating the young and maintaining the old and disabled—a factor that will tend to even out income per member of the family. Tax abolition is a natural development, and a painless one, for our country.

The gradual tax abolition is being accompanied by retail price reductions, as shown in the table below:

State Retail Price Index

	1950	1958	1959	1960
All goods	100	76	75	74
Foodstuffs	100	73	72	71
Manufactured goods	100	80	79	78

Note that in the past decade the index of retail prices in state stores—they account for 67 per cent of the country's total commodity turnover—has dropped by more than 25 per cent. The prices of alcoholic drinks went up during the period, so that the retail price cuts in other consumer goods are even larger—28 per cent for all goods and 33 per cent for foodstuffs.

Coincidentally, there has been a steady increase in the average earnings, and therefore the purchasing power, of factory and office workers. Soviet statistical bureaus record a rise of 50 to 70 per cent in the consumption of meat, milk and eggs by urban families and of 60 to 100 per cent in farm families in the past ten years. Approximately the same rise is evident in the purchase of clothes and footwear. In the purchase of cultural and household goods, furniture, motorcycles and automobiles the rise is even more striking—100 to 150 per cent. In the past decade the total volume of retail trade has more than trebled.

Rents and charges for utilities have gone down. A one-bedroom apartment plus electricity and gas rents for 10-12 rubles a month. A Soviet family pays approximately 5 per cent of its income for rent. In the next 20 years rent will be abolished altogether. City transport will also be provided free of charge. It will be paid for out of state social welfare funds.

These funds—25 to 30 billion rubles earmarked annually in the national budget—are spent for public education, medical services, pensions and various other social and cultural services. The social welfare funds pay for a multiplicity of items—the pensions of some 20 million people; accommodations at health and vacation resorts (provided free of charge or at reduced rates) for four million people; camp vacations for seven million children; grants for seven million large families; nurseries and kindergartens for almost four million children; and free tuition for 56 million people in general and specialized secondary schools, institutes and universities. Most of the students get monthly allowances from the state. More than four million of these students combine work and study and are allowed shorter working hours, paid leave at examination periods, and other privileges. All the 220 million people in the Soviet Union get their medical care free.

The services and benefits provided for factory and office workers out of these funds are the equivalent, in money terms, of more than 30 per cent of their earnings. By 1980 these free welfare items will account for approximately half the real income.

Steady rise in wages, lower prices for goods and services, larger sums budgeted for social and cultural needs, and tax abolition are all steps in a planned program to give the Soviet people a standard of living second to none. We can see the reality of the program in the 70 per cent rise in the real income of Soviet workers in the past ten years and the almost 100 per cent increase in that of farmers.

In the next ten years real income will double again. Twenty years hence it will be three and a half times higher than now to give the Soviet citizen the highest living standard in the world.

Portion of the national revenue from taxes
(in per cent)

1955	8.6
1958	7.7
1959	7.5
1960	7.3
1961	7.0

Volume of state and cooperative retail trade
(in billions of rubles)

1955	50.2
1958	67.7
1959	71.92
1960	78.55
1961	80.2

Increase in real income of factory and office workers
(in per cent of 1952)

1952	100
1958	142
1960	155
1961	164

Increase in real income of farmers
(in per cent of 1952)

1952	100
1958	168
1960	173
1961	180

Increase in social welfare funds
(in billions of rubles)

1955	15.4
1958	21.5
1959	23.0
1960	24.5
1961	26.4

Mark Gudkin

ENGINEER

BY ANATOLI RUSSOV

ENGINEER MARK GUDKIN has a reputation for asking disconcerting questions. He earned it shortly after he came to work at the Krasny Kotelshchik Machine-building Plant in Taganrog. That was in 1953 at a meeting called for the regular quarterly review of production.

The plant had overfulfilled its quota, and a sizable part of the additional profits were to be distributed to the workers and executives as bonuses. Bench workers, technicians, team leaders and foremen were to get from 20 to 120 rubles each, and innovators—who are also benchworkers and technicians—from 200 to 500 rubles. The lengthy list was read to the meeting and approved as a matter of course.

Then bonuses to the managerial staff were discussed. Someone proposed an extra bonus for the assistant director. That, too, would have gone through with the usual more or less formal approval except for an unfamiliar voice that asked, "What for?"

After thinking it over for a few minutes, the people there realized that there really was no reason to give the assistant director a bonus, and his name was crossed off the list.

That was how engineer Mark Gudkin first introduced himself to the plant staff. Actually there was nothing special about his behavior at that meeting. The people there were accustomed to speaking their mind openly and frankly. But Gudkin was a newcomer, and his boldness won everybody over.

"There's a man with character. He's not the type to flatter and fawn," they said.

Gudkin was born in Vitebsk and, although his parents are alive, he was brought up at one of the children's homes in Moscow. He demonstrated an early inclination for applied science, and his teachers did everything they could to foster that aptitude. Even more important, they helped develop those aspects of his character for which the people at the plant admire him so much.

At the outbreak of the war the Gudkin family lived in Vitebsk. During a night raid an incendiary bomb struck their house. To escape the flames and smoke Mark jumped out of the window and hurt his back. That's all he remembers of that night.

He awoke early the next morning and was picked up by retreating Soviet soldiers. When they found themselves surrounded by the enemy, they joined the partisans in the Bryansk woods where Mark stayed for a year. When Moscow made air contact with the partisans, he was put aboard the first plane and brought to the children's home in the capital.

His father and mother had been carried out of the burning house unconscious and were subsequently evacuated with the other civilians. Their son, they thought, had perished. After the war Mark searched for and found them. He remembers getting the telegram, meeting them at the station, his father pale, his mother trembling uncontrolledly as he embraced her.

"All that evening and the whole of the next day my parents talked of nothing but the war," Mark recalls. "It crippled their lives, deprived them of their youth, destroyed their home. 'Heaven forbid,' my mother says, 'that there should ever be another war!' "

He had a brother, Mark found out, born during the time they had been evacuated. His parents, certain their first son had died, gave him the same name.

Mark specialized in machine building at the Moscow Power Institute and received a diploma as design engineer. At a party arranged by the students after they had defended their diploma projects and taken their state exams, Mark was called on to make the first toast.

"We're engineers with jobs to do that are going to take us to different parts of the country. It's hard to say good-by. But in our case we'll be saying hello very soon to new people. I propose that we drink our first toast to these new jobs with new people in new places."

Mark chose the Krasny Kotelshchik machine-building plant

Mark Gudkin giving a popular science talk, one of his contributions to Taganrog's civic life. He came here after graduating from the Moscow Power Institute.

from the many employment offers he received. When he got to Taganrog he turned down a job in the design office, although he was eligible and there was a place waiting for him. He told the chief engineer, "I want to work in a shop and see how real machinists work real lathes. I'd like to hammer away for a while at the bottoms of boilers before trying to improve their design."

He took a job as section head on the construction of a thermal electric power station. But "section head" was only a high-sounding title. In actual fact Mark worked for two years as leader of a team that assembled steam boilers.

That was six years ago. Today he is working in the plant's division of advanced design and taking a graduate correspondence course at his alma mater, the Moscow Power Institute. He is working on projects that have to do with increasing the heat exchange in large capacity boilers.

"One of these days," he says with a smile, "the Institute will probably expel me. I've been studying there five years, and I should have had my dissertation finished a year ago. With technical progress what it is, equipment becomes obsolete so quickly that if I don't hurry up, my dissertation is going to turn into a piece of historical research. If not for my wife, I'd have dropped it long ago. She keeps my nose to the grindstone."

Seven years ago Mark met Nelly, a student of the Taganrog Radio Technical School, at a New Year's ball in the Palace of Culture. A year later she became his wife, and a few years after that they had a son they named Yevgeni.

Nelly now works as a programming technician at the computing center of the Taganrog branch of the Institute of Oceanography of the USSR Academy of Sciences. Evenings she types and retypes chapters of her husband's dissertation, makes copies of his drafts and diagrams for photographing, and has her friends at the computing center check his calculations.

There was a time Mark was sure he would work in Taganrog for five or six years and then go back to Moscow. Now he's just as sure that he'll stay. "It's my city," he says. "I feel that I

Gudkin enjoys the lively, inquiring conversation of young people. The opportunity of talking with such a distinguished engineer is a treat for them also.

He's a design engineer at the Krasny Kotelshchik plant. Here Mark is holding forth at one of the "brain trust" sessions the chief engineer calls every week.

He and his wife Nelly are sailboat enthusiasts. She works as a programming technician at the computing center of the Taganrog Institute of Oceanography.

belong here. I've got too many friends in Taganrog I wouldn't want to leave." He has friends all over town, other young design engineers in his office and people he worked with building the power station during the first two years of his stay in Taganrog —men like fitter Leonid Mrozek and molder Nikolai Tikhov.

He is also active in civic affairs—a member of the All-Union Society for the Dissemination of Scientific and Political Knowledge—and a popular science lecturer.

According to the seven-year plan the Krasny Kotelshchik plant is setting up a factory institute, a new type of Soviet college that combines work and study leading to an engineering degree. Mark has volunteered to supervise the bureau of technical information of the new institute. He is completely absorbed in the project and bubbles over with enthusiasm when he speaks of the future plant. He spends hours poring over building plans for classrooms, shops and laboratories. His whole life —his dreams, work, friends and family—seem to revolve around these plans. ★

PEOPLE'S MUSIC CONSERVATORY

BY VERA KOCHNEVSKAYA

In spite of 30-odd music schools and the Rimsky-Korsakov Conservatory, Leningrad, until recently, didn't have enough music teachers to meet the rising tide of demand. Not surprising—with carpenters and chemists singing the roles in an opera production of the Kirov Palace of Culture and with doctors and dressmakers the instrumentalists in the Vyborg Palace of Culture Symphony Orchestra.

That's what started the idea for a tuition-free people's conservatory where the more gifted amateur musicians could get a background in music theory. The idea was translated into fact by the Palace of Culture named after the first five-year plan with the help of teachers and students of the Rimsky-Korsakov Conservatory. The conservatory students were among the leading spirits to get the project under way. These are young men and women who are studying not only to carve out careers for themselves but to pass their art on to others.

The lecturing at the People's Conservatory is done by the teachers and graduate students of the Rimsky-Korsakov Conservatory. There are no financial problems because the teachers refuse to accept any pay and the instruments and classrooms are provided free by the Palace of Culture.

The sponsors of the People's Conservatory had no idea how much they were meeting a public need until the applications began to pour in, nor what a wealth of real talent they were tapping until they began to give auditions.

One of the first applicants to appear before the Examining Board was a young blond-haired lad of medium height, very nervous. He introduced himself as Vadim Shibarev, carpenter at the navy yard.

"What would you like to play?" asked one of the examining teachers.

"Bach's 'Chaconne' and Liszt's 'Tarantella.' "

The examiners raised their eyebrows; neither of these are easy pieces. But as soon as carpenter Vadim struck the first few chords, they relaxed. He played with a sure touch, taste and genuine feeling. Asked to tell something of his musical background, it developed that Vadim had never had any formal music training. He had picked up what music he knew by listening to records and going to concerts.

The People's Conservatory now has 66 students enrolled and some 120 people doing the teaching. The type of student? We'll select a few at random. Anatoli Kotikov, a mechanic at the Skorokhod Shoe Factory, is studying conducting. Anatoli Pyatakov, a bus driver; Valentina Rud, a salesgirl; and Yekaterina Sergeyeva, a dressmaker, are voice students. Tatyana Davydova, a garment cutter, and Marat Katsadze, a surgeon, are studying piano. Valentin Andreyev, a locomotive engineer on the Oktyabr Railroad, is in the orchestra department.

The faculty has such artists and musicologists as Professor Pavel Serebryakov of the Rimsky-Korsakov Conservatory; Professor Alexander Ulyanov; Honored Artist of the Republic Ivan Nechayev; Lyudmila Ivanova, soloist with the Leningrad Philharmonic Society; and Yekaterina Murina, prize winner at an international piano contest. Among the consultants are the noted oboeist Professor Alexander Parshin and trombonist Mikhail Buyanovsky.

Dean Flavius Sokolov finds his job immeasurably rewarding. "I can't begin to tell you," he says, "the number of talented people who come to us. It's a great pleasure to work with them. Besides, to teach here means to return in some small way the debt we owe the people."

The dean took a letter signed by the distinguished Soviet zoologist Yevgeni Pavlovsky out of a folder. The academician wrote that he wanted to make the People's Conservatory a gift of his large music library with opera scores and other works collected over many years.

Evenings the corridors of the People's Conservatory come alive with voices running up and down the scale and with the echoing strains of strings and woodwinds, brasses and percussions.

When classes are over, the students leave the building for home. The next day they work at machines and drafting boards, hospital beds and office desks, humming the music they learned the evening before. ★

Spring

NOTES BY DMITRI ZUYEV, PHENOLOGIST

APRIL is the first month of spring and the last for snow and sleighs, when the rivers burst through their icy barricades and begin to swell, when the bees make their earliest raids on flowers still pushing up through the snow. The sunbeams—"golden keys of warmth," a poet has called them—play the quiet music of spring. The birds sing and the brooks begin to flow. The drops splash as they fall; the icicles break with a tinkle. That virtuoso of the fields, the lark, gives a moving performance as he wings through the clear sky, singing a triumphant hymn to spring. To the noisy chatter of the rooks and the whistle of the starlings the toy boat navigation season opens.

The rivers spill out of their beds and flood the meadows. The ice breaks away from the shore and sails downstream in crystal floes. A grand and exciting spectacle, this drifting ice, and something purely Russian in the advent of this early and most beautiful northern spring.

Through the trees, their buds growing round and full, one sees the azure blue of the spring sky. Yellow and brown butterflies flutter about, and the ants scurry around busily. Although the trees are bare of leaves, the woods are wrapped in a green haze.

The pine and nut trees are the first to flower. Soon everything grows green and blossoms; only the birches are still bare. The sun caresses them and the spring wind whispers through their branches. The birch is a timid tree, awaiting the sun's more enduring warmth before budding.

A spring gurgles loudly in the bottom of a gully, and white porcelain bells peep out among the green leaves. It's May and the woods are carpeted with fragrant lily of the valley. Now that it's warm enough, the birches wash in the rain, dressed in garlands of curly leaves hanging in lovely patterns from their branches. The grass glistens radiant green through the dew. Pink bells cluster thick around the leafless, pliant stems of the aromatic forest lilac. The bird cherry, its leaves still young, bristles with buds.

The nightingales sing through the night. The giant crown of the oak hums like an organ. The green distances of blossoming May lure one irresistibly into the deep woods. ★

Lithuania, *window done by Algimantas Stoskus*

STAINED GLASS WALLS

BY ARIADNA ZHUKOVA

WHAT SORT OF CITIES will future generations live in? We can picture them today—their glass-walled houses opening on great vistas of sky and garden, with theaters whose façades will be scintillating pictures of varicolored glass. Just such a theater was described to me the other day in very matter-of-fact terms by a man whose job it is to create beauty. The man's name is Algimantas Stoskus and he heads the stained-glass studio of the Vilnius Institute of Art.

Staining glass is a very ancient art. The dim interiors of lofty Gothic cathedrals built centuries ago are lighted by marvelously worked stained-glass windows through which the sunbeams filter to cast their many-hued glories on the bowed backs of the worshippers. Today Lithuanian artisans, using new themes, have revived the art. They do stained-glass paintings that have the immediacy of impact of a poster, the power of monumental sculpture, and the fresh charm of a folk tale.

The stained-glass panel has indeed been turned into a notable art form by virtue of its new use and subject matter alone. Lithuanian artists have replaced the more usual thin and fragile glass with a new material—a heavy, crudely-finished glass substance as durable as stone. The rough, sparkling blocks of glass are laid like brick in a cement frame and the stained-glass panel is worked in as part of the wall.

For the new building of the Vilnius Opera and Ballet Theater such a panel has been designed for one of the walls of the huge 88-foot-long foyer. Of chipped glass 12 inches thick, held together by cement, the lustrous pictured wall will adorn and illumine both the foyer and the street outside.

One of several Sea Bottom *panels*

Fishing Folk *by Antanas Galeckas*

Glass plays an important part in current building, and stained glass is certain to grow in use because of its functional and decorative qualities. It is already fairly common in Palaces of Culture, vacation resorts, exhibition pavilions and museums, and is beginning to find its way into industrial buildings.

Lithuanian craftsmen have used stained glass in the interior of a drill-making plant in Vilnius. Three large adjoining windows are of stained glass, with the central window depicting a worker's head and part of a lathe, and the side windows showing the plant's trade mark and various tools—a superb tribute to the worker's daily effort. The glass here is the thin type commonly in use. This is only the beginning—a token for the plants we shall be designing in the not too distant future with walls of colored glass that will gleam with the brilliance of a thousand lights. ★

Snake Queen *by Antanas Garbauskas*

Another of the Sea Bottom *panels*

LENIN ON STAMPS

BY ILYA ZBARSKY

THE FIRST STAMPS to bear Lenin's portrait were issued on January 21, 1924, the day of his funeral. The series of 3-, 6-, 12- and 20-kopeck commemoratives show a shadowy portrait of Lenin in a double black and red frame.

In 1925 and subsequently, Lenin stamps in 1-, 2-, 3-, 5- and 10-ruble denominations appeared. They were done by the metal engraving process with differing perforations and printed on paper with the "carpet" watermark, typical of the 1925-1935 issues.

Stamps of similar design in 3-, 5-, and 10-ruble denominations with two types of linear perforations—10 and 10½—printed on paper with the "shadowy squares" watermark, appeared in 1928-29.

In 1939 Lenin stamps with linear perforations of 12½, in 3-, 5-, and 10-ruble denominations, were issued. These had no watermark.

In more recent years there have been many beautifully designed Lenin stamps. The best of them, issued in 1959 and 1961, were done by the gifted artist Pyotr Vasilyev.

Very much in demand by collectors are varicolored commemoratives that reproduce paintings of Lenin—in a student's uniform, standing lost in thought on the bank of the Volga; at Lake Razliv, near St. Petersburg, where he hid from the czarist police; in the Smolny, talking with Red guards.

It is a revealing sidelight on Lenin that when he learned the postal authorities were planning to issue a stamp with his portrait, he expressed great dissatisfaction and refused to give his consent. ★

QUERIES FROM READERS

Max Moller, who works for a store in California, wrote us for information about Soviet salesclerks. Yekaterina Klementyeva, assistant editor of the newspaper* Sovietskaya Torgovlya (Soviet Trade), *gives the answer below.

YOUNG MEN AND WOMEN who want to work in retail stores have several ways of preparing themselves for jobs. They can go to a two-year apprentice school where class study alternates with actual store experience. The students get maintenance stipends.

Retail establishments also take on people without special background or experience and train them in schools set up by the store trade union group. Skilled salesclerks and store executives do the teaching.

A third way of learning retail selling is in the ninth, tenth and eleventh grades of many of the regular schools that give commercial courses. School No. 7 in Tartu, Estonia, is an example. Besides the usual academic courses, it offers the fundamentals of Soviet law, commercial arithmetic, economics of retail trade, bookkeeping, etc.

Many of the young people go on with their studies at specialized secondary schools or institutes. The Russian Federation alone has 75 commercial secondary schools and five commercial institutes. Others combine work and study at one of the many correspondence or evening schools. The Institute of Soviet Trade has a correspondence division with an enrollment of 16,000.

Those who do not care to enroll in an institute can improve their qualifications at special courses offered in various phases of retail selling and store management.

After the seven-hour workday was introduced, the number of part-time students rose. Many of the stores are open for 9, 10 and even 12 hours, but the workday is staggered so that no one puts in more than 7 hours.

Besides the cut in the workday, salespeople received salary boosts and a better bonus setup that gives them an added 3 per cent of salary for every per cent by which they top their monthly sales quota.

Like all Soviet citizens, they get free medical care, sick benefits and old age and disability pensions. The retirement age is 55 for women and 60 for men. Those making comparatively low wages get a pension equal to 100 per cent of former earnings. If due to poor health a person cannot work before reaching pension age, he is granted a disability pension.

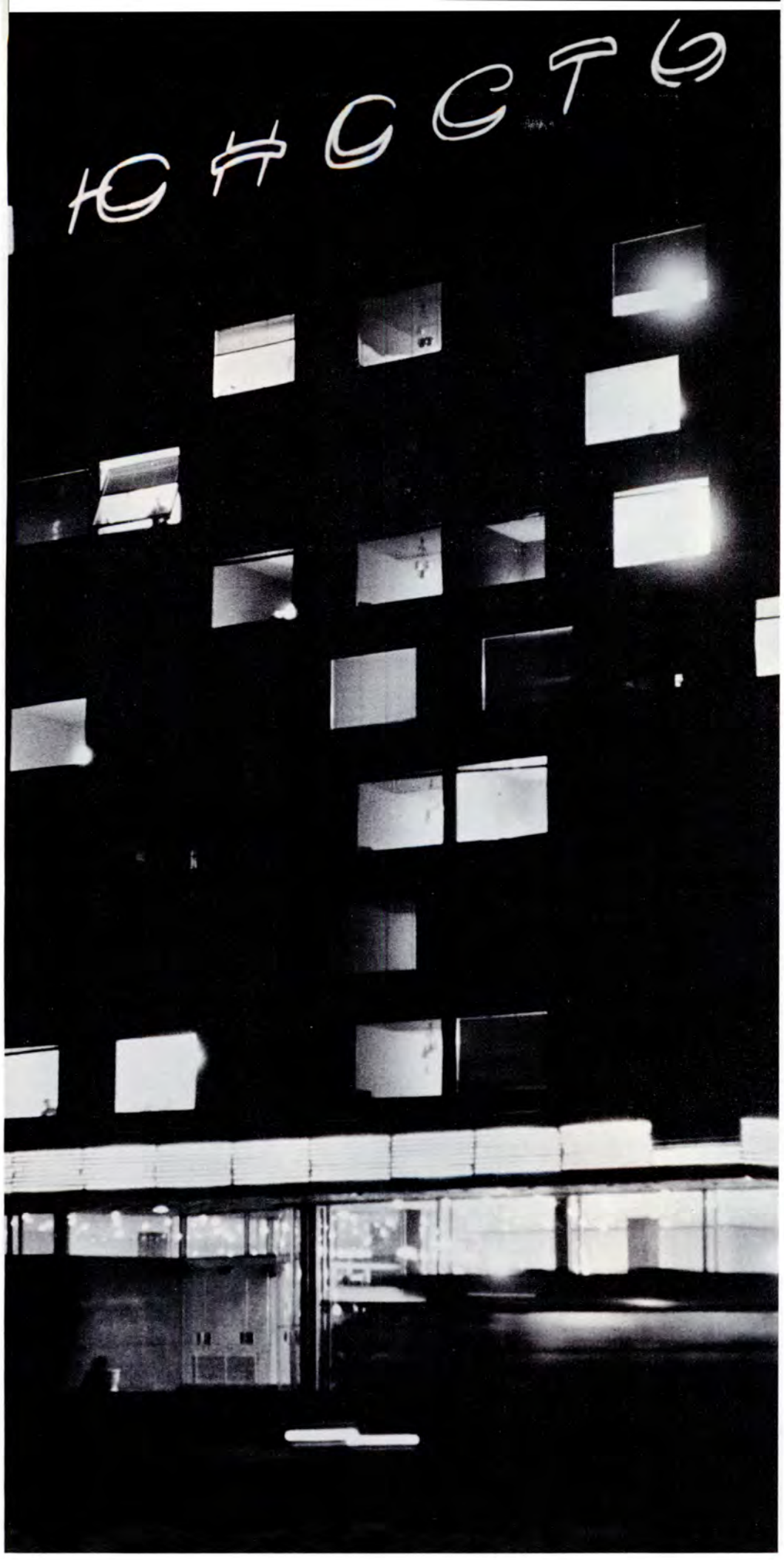
Every store has its trade union committee that bargains collectively with management. Besides such basic matters as wages, hours, sales quotas and working conditions, the collective agreement, concluded annually, usually includes management's responsibility to increase the number of freight elevators in the store, provide comfortable lounges for the salesclerks, build an apartment house for the staff, provide a kindergarten or summer camp accommodations for the children of store employees.

Should management violate any of the provisions of the agreement, the union sees to it that the executive responsible is reprimanded or removed. No worker can be dismissed without the union's consent.

The union of workers employed in the state and cooperative trade network maintains vacation resorts and sanatoriums on the Black Sea coast, in picturesque places around Moscow and elsewhere. Accommodations at union sanatoriums are free of charge for store personnel; the cost is covered by social insurance funds.

The union makes sure that its members have good facilities for recreation after working hours. It maintains about a hundred clubs, more than 300 libraries and 6,000 bookmobiles. People's Universities of Culture hold classes at the clubs where workers can take courses in literature, music and painting.

Salespeople have their own newspapers and magazines which carry articles of special interest to those working in the retail trade field. *Sovietskaya Torgovlya* is the organ of the retail trade workers' union. ★



YUNOST HOTEL

BY PAVEL KATAYEV

THE SHALFEYEVS got married a short time ago. He's an engineer; she's still a student. They decided to spend their first long holiday together sightseeing in the capital. The flight from Kazan, where Victor and Tamara live, to Moscow wasn't long—two and a half hours.

At the Vnukovo Airport they took a cab and asked the driver about hotels. He took one look at them, smiled and said, "The Yunost, of course." Yunost is Russian for youth.

Yunost was built last year—in seven months. Its first guests were the delegates to the World Youth Forum. It was they who gave the hotel its name and character. Since then, Yunost has been full of young men and women in Moscow for a week or two, on business or for pleasure.

The eight-story hotel doesn't look its size. This may be due to the huge windows, almost a man's height, with their pleasing square dimensions, or perhaps to the ground floor which resembles a translucent glass box. The hotel has 217 rooms, a movie theater, ten spacious lounges that look even more so because of the low, light armchairs and tables and the indirect ceiling lights. The rooms surround an inner courtyard open to the sky.

Booths and stores in the hotel foyer sell souvenirs, foreign newspapers, theater and stadium tickets. Behind the manager's desk hangs a huge mosaic map of Moscow that covers the whole wall.

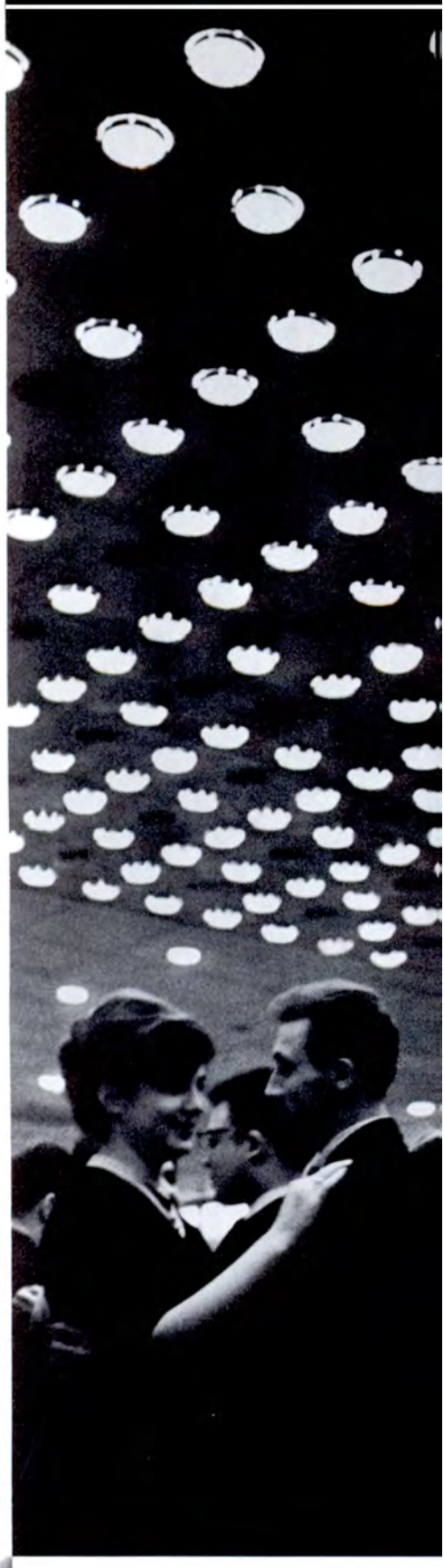
The young couple took a room on the eighth floor with a striking view of Lenin Hills and Moscow University. Their first day in the capital was spent roaming the parks; the next, visiting the old cathedrals in the Kremlin and its Armory, which contains unique treasures from the former czars' collections. On the third day they went on an out-of-town excursion organized by the hotel.

In the evenings they went to a play, a concert or sat with friends in the hotel café over a cup of coffee—leaving their table occasionally to dance—and sampling the unique Yunost cocktail for which only the close-mouthed bartender knows the recipe.

The Shalfeyev newlyweds check in at the new 217-room Yunost Hotel. Their room overlooks Lenin Hills.

Victor got acquainted with engineer Yuri Shein at an instruments exhibit at the Polytechnical Museum.

Tamara is interested in buying a souvenir of Moscow from among the items displayed in the hotel lobby.



A festive dinner in the hotel restaurant, a show or a concert, and then back for a dance and the famous "Yunost" cocktail. The Yunost Hotel was built last year. Its first guests were the participants at the World Youth Forum. They gave the hotel its name and set its character.

A lazy morning at the hotel's beauty salon before a visit to Moscow's Fashion House.

And then, of course, an interminable—so Victor calls it—talk with new friends in the hotel lounge of clothes, the eccentricities of husbands, and other such feminine interests.

BUILDING A MOUNTAIN ROAD

PHOTO STORY BY VICTOR SAKK

KIRGHIZIA is a sunny land of fertile valleys and mineral-rich mountains. It is not easy country to get to. The ranges of the high Tien Shan, that run west to east, cut Kirghizia in half. To travel north and south you climb hidden caravan paths to dizzy mountain heights.

It used to take more than a month to go from Frunze to Osh on horseback, and all you could get from the local guides was this curiously hedged guarantee, "We'll get your body there, but we don't answer for your soul." Most travelers preferred the roundabout but much less dangerous route through Kazakhstan and Tajikistan.

Now a modern highway is being built between Frunze and Osh. It will cross four mountain ranges, cut through ravines, climb passes, run through permafrost region in some spots, under conditions of constant avalanches, snowslips and rockslides.

There are very few highways that have had to be built under conditions anywhere near so tough. At one stage the crew working on the Toktogul section was completely snowbound. Food ran out. For 12 days and nights relief bulldozers and trucks fought 12-foot-high drifts, inching their way through a stretch of country that ordinarily takes eight hours to cover. The last four days the drivers ate nothing—their food supply had run out—but

The modern highway under construction in Kirghizia crosses four mountain ranges, cuts through ravines and, in spots, runs through permafrost region.

It takes a special breed of builder. They worked on the Moscow Metro.

A full-time job, keeping the tunnel mouth clear, with snow piling high.

You wouldn't think the thermometer is way down low from his costume.

no one would touch the load of canned food for the snowbound settlement.

Another real-life thriller! An excavator with a bulldozer escort—one ahead and two behind—moved slowly along a narrow mountain road, not wide enough for two trucks. As the caravan climbed the pass, the drivers kept their eyes glued on the road ahead so that they wouldn't see the yawning abyss below, and their thoughts away from such questions as "what if. . . ."

It would have been easier, and certainly safer, to dismantle the excavator and send the parts by truck the roundabout way. But that would have taken a whole fleet and, more important, 35 days to cover the distance. The builders couldn't wait that long. So they decided to drive the excavator across the pass.

At the last and trickiest bend one of the bulldozers suddenly went into a skid. The rope that tied it to the excavator snapped, and the excavator began to slip off the road toward the abyss, pulling the front bulldozer along with it. Without a moment's hesitation the driver of the third bulldozer rammed his machine in under the slipping excavator. It held! The caravan reached its destination safely, and soon after the machines were in operation.

The entrance to the tunnel looks like the enormous mouth of a stone monster feeding on the pipes, compressed air hoses, rails and strings of electric bulbs that passed into its dark depths. Now and then the monster heaves a deep sigh, the tunnel echoes with the muffled rumble of explosions, and then for a long while afterward the black mouth spits out trucks hauling waste rock.

There was the time a blizzard raged for four days with no sign of letup. The snow hills grew at incredible speed, buried the construction settlement to the very roofs. Five bulldozers stood around, useless, caught in the drifts.

But the work in the tunnel was proceeding according to schedule. At the entrance a snow corridor six feet high had been cleared. It was a full-time job to keep the track cleared for rock haulage. As soon as a train of trucks passed, the blizzard immediately covered it again.

And suddenly a new problem—fuel for the compressor room was running low. No compressed air, no drilling, and everything would come to a stop. You could say good-by to the schedule then.

It was 300 yards from the compressor room to the fuel storehouse, but it felt like that many miles. Every step in the waist-deep snow took tremendous effort. Even breathing was hard at this altitude. But the men moved ahead stubbornly, dragging a sled with fuel behind them. They got the one load there and then dropped, completely worn out. Good for an hour, maybe two—no longer. Then what?

Somebody suddenly remembered the pipe buried under the snow near the compressor room. If they laid a pipeline from the storehouse to the compressor room, they might be able to hold out till the storm blew over.

As the pipeline snaked out behind them, the men seemed to forget their fatigue. The crews in the tunnel were depending on them to keep to schedule. The pipeline was laid. The work went on without a break. Two days later the storm blew over. Another battle had been won in the fight against the elements. ★

No better way to wake yourself up, they say, than a cold snow shower.

This was during a four-day blizzard, with every step an enormous effort.

LEARNING ENGLISH

THIS is Moscow Secondary School No. 5 on Kutuzovsky Prospect. It has the customary course of study in arithmetic, geography, history, Russian language and literature, and so on, with this unusual feature—that in the senior grade all the humanities courses are taught in English. Students in the lower grades study the English language five days a week for either one- or two-hour sessions.

First-grade children—the seven-year-olds—are still completing their Russian ABC's. When they get through with that, they celebrate with the traditional party. In the second-grade they begin to study the English letters through visual aids.

Russian school children have most trouble with pronunciation. They find mirrors helpful and group repetition of English sounds. They play word games, act out short plays in class, and make up stories around pictures. All this builds their vocabulary. By the time they graduate, students of the Kutuzovsky Prospect School speak fluent English.

HOWARD HANSON: "My Boys and I Are Very Pleased With the Reception Given Us"

THE MASTERLY PERFORMANCES of the famous Boston, Philadelphia and New York Philharmonic Symphony Orchestras in the Soviet Union left us in no doubt that the musical standards of the leading American orchestras were very high indeed. We were naturally curious as to the standards of the lesser known orchestras.

The accomplished playing of the Eastman Symphony Orchestra, made up of students from the Rochester University School of Music, gave us the answer. Their three Moscow concerts impressed listeners very favorably. The orchestra played like a single man, with consummate technique, flawless intonation and a rare sense of rhythm.

The programs were interestingly varied—with the classics represented by Beethoven, Schubert, Mozart and Purcell; early twentieth century music by Ravel, Respighi, de Falla and Lyadov; and a large group of modern American and Soviet composers—Barber, Piston, Hanson, Schuman, Stravinsky, Kabalevsky and Shostakovich.

The modern music, understandably, best suited the temperament of the young musicians. Barbers' *Symphony In One Movement* was beautifully interpreted. He has been winning the growing admiration of Soviet music lovers. William Schuman's *New England Triptych* evoked a warm response, especially for its second movement. So did the vivid saucy, brilliantly orchestrated suite from Walter Piston's ballet *The Incredible Flutist*. Stravinsky's *Firebird Suite* is frequently performed in Moscow; audiences were therefore in a position to compare and appreciate the moving rendition of the fifth movement—the Lullaby and Finale.

We are not used to hearing compositions intended for a brass band played by symphonic groups, but the Eastman Orchestra gave so youthfully breezy a performance of Sousa's fine march, which was played for us last year by the Michigan Brass Band, that the audience demanded an encore.

As for the Soviet composers, the visiting musicians did justice to the overture to Kabalevsky's opera *Colas Breugnon*, but that cannot be said for their interpretation of Shostakovich's *First Symphony*. The orchestra, under youthful conductor Frederick Feneli, played with feeling, but the interpretation was distinguished by neither depth nor significance.

There was hearty applause for Howard Hanson's *Second Romantic Symphony* and his *Elegy*, composed in memory of Serge Koussevitsky who lived in the United States for many years. Both are works with great depth of feeling and are written in the classical style of the European symphony school of the early twentieth century.

Hanson, a man of great charm, is the soul of the orchestra, its founder and chief conductor. His conducting is altogether unostentatious, simple, even a little reserved, but he commands the orchestra completely and carries along with him not only each of the musicians and the orchestra as a cohesive unit but every listener as well.

The concerts attracted large audiences to the Grand Hall of the Conservatory, which included many distinguished writers, theater personalities and, of course, musicians.

The Soviet playwright Alexei Arbuzov, whose plays *Tanya* and *Irkutsk Story* have been produced in Western countries, attended all three concerts. He said, "The youthful verve and musicianship of the orchestra won the hearts of our audiences."

Yuri Zavadsky, noted stage director, said "I liked the way they played the modern pieces. Barber and Stravinsky were beautifully done. And I thought Sousa's march very stirring."

Alexander Sveshnikov, director of the Moscow Conservatory, described the orchestra as "excellent. Hanson is a fine teacher and conductor. Under his baton the musicians play with utter ease. They are well disciplined and respond with fine sensitivity. The musical quality of each of the players and of the orchestra as a whole is very high."

The press also lauded the orchestra's performance.

After the Moscow concerts, Hanson was asked for his impressions.

"Gladly," said the conductor. "My boys and I are pleased with the reception given us by your well-wishing and responsive audiences. The day we arrived, we heard Shostakovich's *Fourth Symphony* played by your Moscow Orchestra under Kirill Kondrashin, who is popular in the United States. It is a splendid work, hardly less splendid in fact than the famous *Fifth Symphony*. It will undoubtedly get a warm reception in America, where Shostakovich is very popular. We liked both the orchestra and Kondrashin's conducting. This is our first visit to Moscow. We found its architecture interesting, and our young people were impressed by the gigantic winter swimming pool and stadium."

After Moscow the orchestra played in Leningrad, Kiev, Odessa, Kishinev and Chernovitsy. ★

BY YEFIM GALANTER, DIRECTOR
GRAND HALL OF THE MOSCOW CONSERVATORY

Mrs. Thompson, wife of the U.S. Ambassador to the USSR, USSR Deputy Minister of Culture Alexander Kuznetsov, Prof. Alexander Sveshnikov, Llewellyn Thompson, Howard Hanson.

SOVIET ARTISTS ON AMERICA

IN THE PAST FEW YEARS MANY SOVIET COMPOSERS, MUSICIANS AND DANCERS HAVE VISITED THE UNITED STATES. IN THESE SHORT INTERVIEWS THEY GIVE THEIR IMPRESSIONS OF AMERICA AND AMERICANS AND TALK ABOUT WORK IN PROGRESS.

MAYA PLISETSKAYA

BALLERINA

In September of this year, as part of a Bolshoi Theater ensemble, I will be making a three-and-a-half-month tour of the United States. Our programs will include complete ballets as well as excerpts. I shall be dancing in Tchaikovsky's Swan Lake, *Khachaturyan's* Spartacus, *and in scenes from Prokofiev's* Romeo and Juliet *and Rodion Shchedrin's* Humpbacked Horse. *I also expect to be dancing my favorite, Saint-Saens'* Dying Swan, *a Liszt étude, and other miniatures.*

I send my cordial best wishes to American lovers of Soviet ballet and to the readers of USSR *magazine.*

TIKHON KHRENNIKOV

COMPOSER

As secretary of the Soviet Composers Union I was a participant in the First International Music Festival held last year in Los Angeles. What most impressed me was the American public's very great interest in Soviet music. I was pleased to find the works of Soviet composers in the repertoire of America's best orchestras.

We met with a hearty welcome in all the cities we visited. One morning as we were having breakfast in a restaurant, the waitress told us she was bringing her whole family to our concert. We thought she was saying it out of politeness, but she was as good as her word. After the concert, when we were surrounded by a crowd of Americans who wanted our autographs, we heard her voice, "Let me through. I want to thank him. I met him; I served him frankfurters." I was delighted to see this fine American woman again.

We share many views with American composers on the direction music should take, but there are, of course, also things about which we disagree. That's one of the main reasons that we should be meeting more often.

I am now completing the score for a new operetta called A Hundred Devils and a Girl. *I also hope to begin work soon on my third symphony and on a concerto for cello and orchestra which I want to write especially for Mstislav Rostropovich, our leading cellist.*

DMITRI SHOSTAKOVICH

COMPOSER

It is with great pleasure that I recall my visit to the United States and the American musicians I met there. During my stay I was especially pleased to have a recording made of my Cello Concerto *by the Soviet cellist Mstislav Rostropovich, with Eugene Ormandy conducting.*

Cultural exchange between the United States and the Soviet Union has, to my mind, been growing in scope and interest. I am glad that American listeners extend such a hearty welcome to Soviet musicians and that Soviet music lovers pay similar tribute to American guest artists.

Letters I receive from American music lovers keep asking when I intend to revisit the United States. I am not likely to make the trip in the near future because of the many plans I have for my work. If I am to succeed in carrying out these plans, I need time for hard and intensive work.

GALINA VISHNEVSKAYA

OPERA SINGER

I had a very busy and interesting trip to the United States at the end of 1961. I sang eleven concerts in various cities and gave five performances at the Metropolitan Opera. Everywhere I went I was received most cordially, and it is with great pleasure that I recall the enthusiastic reception that the American public accorded me. There is nothing more rewarding for a musician than a responsive audience.

In May I shall be singing in Aida *at Covent Garden in London, and in August I shall be at the Edinburgh Festival. I am presently rehearsing the part of Alice in Verdi's* Falstaff *for the Bolshoi Theater and preparing a new concert program of works by Shostakovich, Prokofiev, Stravinsky and Britten.*

May I convey my warmest greetings to the American artists with whom I sang and to all American music lovers, not only those I met personally.

IGOR MOISEYEV

DANCE COMPANY DIRECTOR

What impressed me most during our two visits to the United States was that at no time did we feel any of the tensions existing between our two countries in the sphere of politics. This feeling was put into words by Adlai Stevenson when he came backstage at the Metropolitan Opera House in New York after our performance. At that time he said, "We unfortunately have many differences in the sphere of politics, but we feel none of these differences exist with you. We like you very much."

We were delighted that our American audiences liked us. Many people invited us to visit them. Contacts of this kind, I feel, are invaluable for building mutual understanding between nations.

A while ago our company marked its twenty-fifth anniversary. We celebrated the jubilee with four programs that reflected the company's progress over the quarter century. We plan to tour Rumania and Bulgaria this spring, and Italy and France in the fall.

DANILE SHAFRAN

CELLIST

There is one day in particular of my two months' visit to the United States that will stay with me for a long time, the day the USSR State Symphony Orchestra was giving its farewell concert. On the program, besides the Soviet performers, were the pianist Van Cliburn and an American brass band. The closing number was Tchaikovsky's 1812 Overture. *Both the orchestra and the brass band gave a splendid rendition. Before the last note had died down the audience broke into a storm of applause. The ovation was more than a tribute to a fine performance; it was a demonstration of the friendship that prevailed in the hall. Although this happened two years ago, I remember the applause as though I were hearing it now.*

The music world is now looking forward to the Second International Tchaikovsky Competition in Moscow. Among contestants from abroad we shall be welcoming young American musicians. I was especially pleased to hear that Gregor Piatigorsky, one of the greatest cellists of our day, is coming to the contest from the United States. I hope not only to see him on the judges panel but to hear him perform on our concert stage as well.

One of the concert pieces I am working on now is the Sonata for Piano and Cello *by the outstanding contemporary American composer Samuel Barber.*

LEONID KOGAN

VIOLINIST

I carried back a host of impressions from my visits to the United States. The most memorable of them centers on people I met. I played in Philadelphia, New York, Chicago, Detroit, Washington and New Orleans. On my 1958 and 1960 concert tours I performed with some of America's most eminent conductors and made many American friends.

I still remember a concert I gave with an amateur symphony orchestra in Mount Vernon, a New York suburb. We did Beethoven's Concerto for Violin and Orchestra. *The wonderful enthusiasm of the performers more than made up for what they may have lacked in professional technique. I was pleased with the very great interest of American music lovers in Soviet violinist.*

My plans? After concert tours in Italy, and England I shall go to Australia and New Zealand. I also hope to have many more opportunities to play for American audiences.

MSTISLAV ROSTROPOVICH

CELLIST

On my two trips to the United States I played in a number of cities and met many instrumentalists and conductors. In 1956 and again in 1959 I played with the celebrated New York Philharmonic and Philadelphia orchestras, and I recall with great pleasure the wonderful consideration they showed me and the help they gave me in rehearsals. I was glad to find out that American audiences have a deep appreciation of both classical and modern music.

This year I hope to visit the United States once again. I look forward to meeting old friends and making new ones. I think the more visits we exchange, the better we will understand each other. As a member of the Organizing Committee of the Tchaikovsky Competition to be held in Moscow in April, I look forward to meeting the Americans who will be playing as well as those who will serve on the judges panel.

the RUSSIAN SOUL

BY ZINOVI YURYEV

NOTWITHSTANDING the abundance of special literature devoted to the study of the mysterious Russian soul, that soul still seems to be a riddle. I have had occasion to hear many an interesting observation by Americans visiting Moscow on the seldom investigated subject of the influence of the Russian soul on the seasons, and vice versa.

Since April heralds the end of winter and the beginning of spring in Russia, we believe it in place to attempt an analysis, from the standpoint of science, as it were, of the influence of winter and spring on the Russian's cryptic soul.

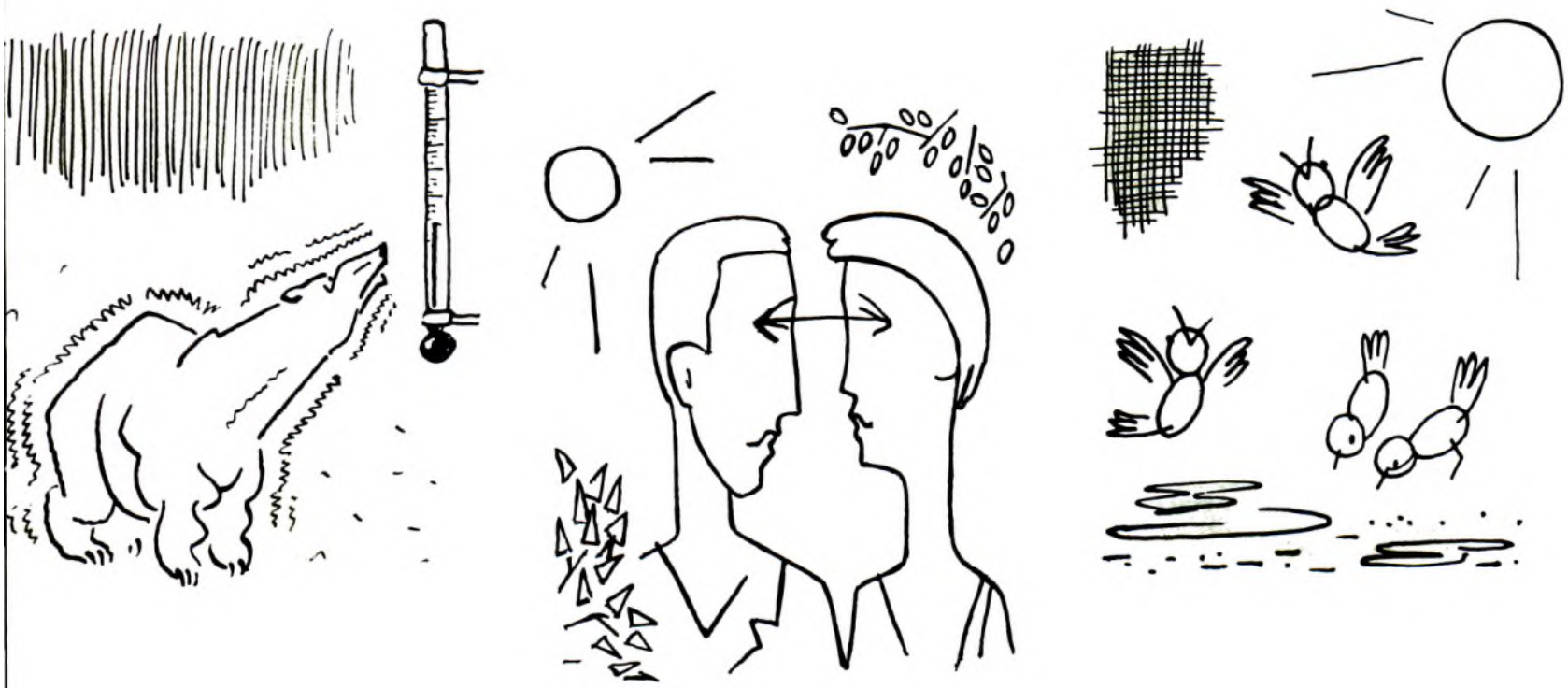
Let us start with winter. An American, whose name we won't divulge—since he left Moscow some time ago, we have no way of obtaining his permission to quote him literally—maintained that the Russian soul was very firm since it was able to withstand sharp fluctuations of temperature. In winter, during frosts of minus 30° C. the Russian soul, he said, has to reduce its volume considerably whereas in 30° C. heat in summer, it must expand accordingly. It goes without saying that only a very durable soul can stand such differences in temperature!

How does the Russian soul react to the mad capers of *Ded Moroz* (Grandfather Frost)? Therein perhaps lies the answer to our riddle. I interviewed several people in an attempt to solve the aforementioned burning question.

Here are the results of my scientific labors.

Lovers. These welcome cold weather. One of the reasons is that a girl who is generally late for her date believes that only true love can

and the SEASONS



ake a man wait out in the crackling frost for ore than an hour. Thus, the very fact of a an's presence at the trysting place is a definite uarantee of the durability of his feelings.

On the other hand, strange as it may seem, e men themselves also favor the cold. The oint is that many of them find it devilishly ard to couch their proposals in sufficiently ele- ant terms. After standing for an hour or two the cold, however, there's no use even trying wax lyrical; their lips grow so stiff they can nly clack like castanets in their attempts to roduce intelligible sounds. And so, on produc- g a few clacks, a man need only gaze tenderly nd questioningly at his beloved, and she will nmediately nod in happy consent.

Children. Youngsters of preschool age are e most ardent devotees of *Ded Moroz*, and e colder he makes it, the better. Their grand- others bundle them up so warmly that they n fight without getting the least bit hurt. But hat's even better, don't have to worry about tting spanked; the grandmothers grow so illed on their benches in the parks they can rdly lift a hand. As for the school children, ey are happiest when it gets cold enough for e schools to close down and they can go to e skating-rinks or skiing-centers which, for me reason or other, the mysterious Russian uls do not close.

Journalists. Russian journalists find win- r a most beneficent season. When it is cold tside, they have no special desire to go out on signments, and so many of them switch from journalism to book-writing, which they can do in the cozy warmth of their homes. In this way a talented newspaperman can become a celebrated writer, providing the cold days of winter last long enough, of course.

Meeting Fiends. These people make no secret of their love of winter. Whereas in summer it is almost impossible to keep an audience from fleeing a meeting hall, in winter the same audience is content to doze comfortably in their seats for as long as the speaker likes. If anybody wakes up and looks lingeringly at the door, one of the members of the presidium will be sure to remark: "It's 30 degrees below outside," with the result that the man to whom the remark is addressed will close his eyes with a sigh and settle back into his seat again.

Film-makers. These treat winter as an abstract thing. At film studios, we know, winter scenes are generally shot in summer, and summer scenes are shot in winter. Therefore, in winter the film people go to warmer climes where, with the aid of their spotlights, they can create additional sunshine whenever needed. In summer they have no difficulty producing winter effects. All they need is three tons of cotton, and the job is done!

Oldsters. Winter offers them a grand chance to grumble. "You call that winter?" they say contemptuously. "Thirty degrees? Poof! Now, when I was a boy, winter was really winter. People froze by the hundreds. Nowadays, a man doesn't even get his nose nipped properly. And the snow! In my day a man's house was snowed under for months at a time! Nowadays," they say sourly, "if a man stays at home, it's only because the elevator doesn't work."

Moralists. For them winter is the favorite season of the year. In heavy frosts they gleefully observe one and the same scene which, from the viewpoint of the decline of morals, is profoundly symbolical. A line stands waiting for the bus. Everybody is chilled to the bone. Finally the bus pulls up. Of course, it is crowded and unable to pick everybody up. Those who stay behind for the next one complain that the other lucky ones wouldn't make way for them, while those in the bus complain that if people had more patience they wouldn't crowd the buses so. The moralist grimly notes that "it's always like that. And they say people are progressing. . . ."

But enough about winter. It was not my purpose to give the reader a distorted picture of the Russian soul. He might begin to think that Russians are crazy about cold and cannot stand the warmth of summer. To prove the contrary, I asked everybody about their reactions to spring. It appeared that lovers prefer spring, because they can kiss outside without getting their lips frozen; children are happy to be able to peel off their heavy winter clothes; journalists are all excited about going out on assignments; meeting fiends have enough rainy days to satisfy them; for film-makers, as we noted above, it is all the same; oldsters are glad to warm their bones in the sun; and as for the moralists—have you ever heard of one changing his mind?

A TALL MAN'S GAME

BY GERARD YELENSKY

THE MOST RECENT USA-USSR basketball game, held last year in Moscow's Sports Palace, was packed full of dramatic moments.

When the wind-up whistle blew—barely heard above the din of 14,000 yelling spectators—the score was 77-77. There are no draws in basketball, so an extra five-minute period was called.

In that brief intermission the players huddled around their coaches to work out their tactics. Fans argued heatedly in the stands. Some tried to prove that only their proposed "plays" would win the game. Others studied their form sheets to find the answer in previous games between the rival quintets.

There was a little—but not very much—encouragement there. The Americans have invariably emerged the winners in Olympic engagements. But at the last world basketball championships, in 1959 in Santiago, fortune smiled on the Soviet players for the first time. All in all, however, the aggregate results of USSR-USA games in world-title competitions offered little consolation.

The scores of the annual games between the two countries—they began four years ago in Moscow—favored the Americans. They defeated their hosts, 74-68, in the first contest. The Soviet team also went home empty-handed after a return visit to the United States 18 months later.

With this double setback the team line-up and practice methods were overhauled and the tactics somewhat altered. The coaches impatiently awaited the day when they could check the effectiveness of their changes in action.

The next USSR-USA contest took place in Moscow last April. The Olympic champs won the first game, but only by a slim margin. Much encouraged, the Soviet players came out on the court for the second game the following day determined to chalk up a win.

And that brings us back to where we started—the fans comparing past performances, the 77-77 tie, and the umpire blowing the whistle for the start of the extra period. Luck kept seesawing and finally stayed with the guest team; the Americans won 84-81.

The Soviet basketballers were disappointed, of course, did a thoroughgoing post-mortem of the fatal errors—but all of it without the slightest shade of pessimism.

Looking at the situation objectively, there are several good reasons for the victory of the U.S. team. First is the 70-year-old history of basketball in America and the fact that the game ranks with baseball and football in popularity. Second, basketball is a game for tall athletes, and the U.S. has many more six-and-a-half-foot players than any other country.

In the Soviet Union basketball became a popular game only fifteen years ago. What helped make it so was the showing the USSR team made in international competition. The Soviet men's team made its debut in the European championships in 1947 and went home with gold medals. It has won top honors in six of the seven continental title tournaments held since. The USSR players carried off silver medals in Olympic tournaments from the first time they participated, back in 1952.

The Americans have been the winners in all but one of the eleven games played with the USSR in the past ten years. Understandably, Soviet basketballers want to turn the tide. The basketball federations of the USSR and of the various republics have been working hard to interest still greater numbers of young men and women in the sport. The national title tournament, an annual event running from January to the end of August, will have 48 challengers this year, 24 men's teams and the same number of women's. Vacancies in the national squad will be filled by the best tournament players.

The USSR national team at present, slated to visit the U.S. this month, has representatives of two generations of players ranging in age from 19 to 32. The eldest, and incidentally the shortest man on the team, is Armenak Alachachian from Armenia. The team's veteran scorer, he stands only 5 feet 9 in his stocking feet.

Center Victor Zubkov, who will be 25 years old on the twenty-fourth of this month, is 6 feet 8; he's from Moscow. Yuri Korneyev, also from Moscow, is the country's top-ranking forward. An excellent jumper and therefore an under-the-basket threat, he is 6 foot 6. Among the newcomers we have "Kid" Vasili Okipniak. This 19-year-old Kiev hope is 6 feet 10-and-one-half inches tall and still growing.

With six Russians, two Georgians, two Ukrainians, a Latvian, an Estonian and an Armenian, this will be a multinational aggregation. The scorching temperament of the southerners will be balanced by the imperturbability of the northerners.

Stepan Spandarian is the coach; this is his seventh year on the job. He's a brilliant tactitian and has a wealth of international competition experience.

USSR-USA women's basketball has a shorter history than the men's by five years. The ladies first faced one another at the 1957 world title tournament in Rio de Janeiro, the U.S. team—the Flying Queens—winning by a three-point margin. Half a year later when they flew over to Moscow, the hostess team racked up two wins by margins of 15 and 7 points.

The USSR women's team captured the world crown in the fall of 1959 and then boarded the same plane with the men's team for a return game in the U.S., which they won by two points.

With games five and six, played in Moscow a year ago, our girls made up for the men's defeat by two more wins and brought the aggregate count to 5-1.

In the past twelve months half the women on the team have been replaced by younger players who, although very capable, lack experience in international competition.

Skaidrite Smildzina of Riga is the youngest, 19, and the tallest, 6 foot 2. She already has an enviable collection of trophies gathered playing center on teams that have won the Latvian, USSR, European and world championships. Fyodora Oryol of Kiev, 20 years old and 5 feet 8 inches tall, promises to be a high-scoring forward.

We have many top-notch guards to choose from, only a few of whom are young. One ray of hope is 20-year-old Rosa Salimova of Tashkent. She is 6 foot 6.5 inches. It is quite possible that she too will be included on the team. The average height of the women's team will then be 5 foot 9 inches.

Stapas Butautas of Lithuania has been the women's team coach since 1957.

The Soviet basketball players are looking forward to their next meeting with American stars and hope to win. But then the Americans are no less eager. The games are certain to be hard fought. ★

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INTERVIEW OF

CHAIRMAN OF USSR COUNCIL OF MINISTERS NIKITA S. KHRUSHCHEV WITH GARDNER COWLES EDITOR OF LOOK MAGAZINE

APRIL 20, 1962

At the start of the interview Gardner Cowles wished Nikita Khrushchev many happy returns of the day and the best of health in connection with his recent birthday.

N. S. KHRUSHCHEV: Thank you. But it is customary with us to celebrate only round dates: Fifty years and so on, every decade. So I must "wait" for two more years. If we are to celebrate birthdays every year, there will be no time to work, there will be anniversaries without end!

G. COWLES: Please let me talk to you absolutely frankly. I think this would be useful.

N. S. KHRUSHCHEV: You are welcome. I respect frankness.

G. COWLES: First, I should like to raise the question of disarmament. It seems to me that you are one of the foremost statesmen who realize the horrors of nuclear war and the need of reaching agreement on the discontinuance of the steadily growing arms race. I should like to ask you the following question in this connection: Are you hopeful about the current Geneva negotiations?

N. S. KHRUSHCHEV: You have correctly defined my position, and I am grateful to you for this. Perhaps I do realize more concretely and realistically than certain other statesmen how terrible a thermonuclear and rocket war would be if we fail to prevent it. I, as the head of government, have to deal with questions of defense and, consequently, questions of modern means of warfare, and have occasion to attend their tests. This is why I have a perfectly clear idea of their action.

But this, of course, is not the only point. The fact is that we are Communists, and all genuine Communists are against aggressive wars. It is sometimes incorrectly asserted that Communists are interested in unleashing wars because revolutionary goals can allegedly be attained in this way. This is incorrect. It is a distorted conception of Communists.

We Communists are boundlessly devoted to the ideas of Marx and Lenin, and we believe that these ideas will triumph, that sooner or later communism will win everywhere as the most progressive system. But we hold that communism must achieve victory not through war between states, but in another way—by way of demonstrating convincingly the advantages brought by the communist system, and as a result of the natural development of contradictions inherent in the capitalist system, in the capitalist society. We are confident that all the peoples, after they see that communism is better than capitalism, will reject the bankrupt old system and prefer the new, communist system.

Aggressive wars are characteristic of imperialism, of monopoly capital. Precisely in this way it had extended its domination in the past, and these habits persist with it to this day. This is why we Communists approach the matter realistically and say: As long as there is imperialism, there might be wars. But Messrs. Imperialists should bear in mind that the times have changed. The peoples would not forgive them the unleashing of a new aggressive war and would definitely turn their arms against those who unleash it, just as we did in 1917.

However, we still wish to believe that our opponents have enough common sense not to start a war, and to take the road of peaceful competition between the two systems—the capitalist and the socialist.

This is our viewpoint on questions of war and peace. As you see, we are against aggressive wars.

Now for the second part of your question, concerning my view on the possibility of a disarmament agreement. I would like to be an optimist, but optimism must after all be backed by concrete facts. I believe, of course, that sooner or later sensible people, representatives of all states, will reach agreement among themselves and arrive at the conclusion that disarmament is necessary. But are conditions ripe for an agreement today? This cannot be said so far because there are still mighty forces in the United States which oppose disarmament.

I do not wish to forecast the failure of these negotiations, but I should like to be somewhat reserved about the question of whether the reaching of a disarmament agreement is possible already now at the Geneva conference.

I should like to say a few more words about the attitude of Communists to wars, so that you will understand me correctly.

As I have already said, we are against aggressive wars, but we recognize the lawfulness and even the necessity of defensive and wars of national liberation. What sort of wars are these? A defensive war is a war waged when a country is attacked by an aggressor and has to defend itself, is compelled to do so. A war of national liberation is a war waged when a nation which is oppressed by the colonialists takes up arms to achieve liberation.

An oppressed nation is entitled to this right. Moreover, it is not only entitled to this right, but sooner or later it will rise up to fight for its liberation. If the colonialists offer resistance, as was the case with Algeria, for instance, the people must rise up in arms and fight.

Indeed, what other alternative do they have? The United Nations General Assembly has passed a decision to grant independence to all the colonial nations, but the colonialists refuse to fulfill this decision. What must the oppressed peoples do? Put up with club rule and suffer silently? No, they no longer wish to put up with slavery and they rise up in arms against the oppressors. And they are perfectly right. Only in this way will they be able to secure freedom and independence. This is the kind of wars we regard as liberative. We are in sympathy with such wars.

In other words, we regard as just wars the type that was waged in the past by the Americans against the British, when the former fought for their liberation.

G. COWLES: Mr. Chairman, I read very carefully your letter of reply to the message of Prime Minister Macmillan, and I must say that I can understand your viewpoint, your concern that inspection over disarmament might be a fishing expedition to see what weapons remain and where.

But in this connection I should like to ask you the following question: Do you see any distinction between inspection and verification—a verification which would be undertaken only if an event takes place which a competent international authority supposes to be a nuclear blast. Only in this case would some commission have the right to go to see for sure what actually had taken place—a nuclear blast or an earthquake.

Do you see a difference between inspection and this sort of verification?

N. S. KHRUSHCHEV: There is a difference, but only a slight one: It is more verbal than essential. I shall give you an example from my own life. During the Civil War I served with the Red Army. Once I was sent to a division fighting in the Kuban. I came to a village where the division's headquarters was located, and was lodged at the priest's house. He was a sly man. He obviously sympathized with the White Guards and was against us but did not betray this by his conversation or behavior.

When I came to the headquarters, I was told that the situation was grave: The forces of General Wrangel, hurled against us, were debarking and had already engaged our troops. The priest apparently was informed of this but did not show any sign of this. However, he was eager to learn through me about the situation at the front. He invited me to a samovar in the garden—it was summer then—and engaged me in small talk. All of a sudden he cupped his hand to his ear and said: "Do you hear anything? Sounds like machine-gun fire." I said: "No, I do not hear anything."

"No, no. Sounds like a machine gun."

There was, of course, no sound of any machine-gun fire because the distance between the village and the place where the Wrangelites landed was such that the sound of machine-gun fire could not reach us. But the priest was all aquiver for confirmation or denial from me. Now, this was also verification of sorts!

You know that earthquakes and various volcanic shocks of various degree and force occur on earth all the time, and that it is therefore always possible to find a pretext for arugments, as instruments will indicate that there really was some sort of tremor.

But these will be contrived arguments. Scientists have proved that nuclear shots anywhere in the world can be pinpointed by the instruments we already have. This is why those who insist vociferously, in the face of this, on the holding of some inspections and checks, unwittingly expose themselves, as did that village priest, who had tried to find out from me, during our tea party, how the fighting against the White Guards was going on.

I do not, in fact, see any great difference between verification, inspection and intelligence or, as you put it, "fishing." As the Ukrainians say, "Danila did not die—a disease got him."

G. COWLES: Mr. Chairman, you often speak of having no confidence in the intentions of the United States. I think that the Soviet Union would itself like to have some form of inspection and verification with regard to our country, or do you have such trust in us that you will not want to verify or inspect the U.S. if a disarmament agreement is reached?

N. S. KHRUSHCHEV: No, you have misunderstood me. We

have so far been talking about inspection and verification connected with nuclear weapon tests, and not disarmament.

Inspection connected with general and complete disarmament is an entirely different matter, and in this question we ourselves demand not only verification but also inspection, and a most rigorous and extensive one at that. We consider that if agreement on disarmament is reached, all countries will have to be subjected to the most rigorous inspection and control. And this is no longer a question of trust or mistrust. We must have a system where each country would be confident that the other countries scrupulously comply with their undertakings, and that they really have destroyed, or are destroying, the weapons subject to liquidation.

This is why we must have our inspection on the territory of the U.S. and other countries, while the United States and other countries should have their inspection on our territory and the territory of other countries signatories of the agreement on general and complete disarmament. I repeat, the issue is not trust or mistrust. There must be an established system: the strictest verification, exhaustive and comprehensive control over disarmament.

G. COWLES: Tell me, Mr. Chairman, do you consider as encouraging the proposals submitted in Geneva in the past 48 hours by the so-called neutrals to the disarmament conference?
N. S. KHRUSHCHEV: We have already stated our attitude to these proposals. The Soviet Government considers that they can be used as the basis for further talks concerning agreement on the prohibition of nuclear weapon tests. We stated this through our representative at Geneva.

G. COWLES: I should like to ask you now: Do you think it would be useful, from the viewpoint of speeding up the work of the Geneva conference, if a summit meeting were held in the near future, or if you, for example, invited President Kennedy to the Soviet Union to discuss matters with him? Could this, perhaps, also play a useful role?
N. S. KHRUSHCHEV: You know my opinion and the opinion of our government: We have always held and we hold now that contacts between heads of state or government are useful, and that such meetings not only can but should be held from time to time. And I would be prepared to meet President Kennedy to exchange once again our views on the pressing issues. The conversations I had with your President in Vienna left a favorable impression on me. True, we differed with him in our appraisal of the situation and did not reach agreement on questions which require solution. But at any rate, as a result of that meeting, we now, apparently, understand one another better and have a clearer picture of the questions it is necessary to settle.

Therefore, I am in favor of such meetings. Where such meetings could be held, on what territory—whether on neutral soil, as was the case in Vienna or in Moscow—is not the main point, in my opinion.

The main thing now is—and I agree with the President of the United States in this respect—that our meeting should not prove sterile. When we met in Vienna, it was, so to speak, a probing, of sorts, of our respective positions, a first acquaintance. And we differed, and differed rather sharply, on the questions awaiting solution.

If we meet again and with the same result, neither the President nor I will, of course, get any satisfaction from such a meeting. What is more, it will be a sore disappointment to people who desire a positive solution of the ripe problems in order to achieve a relaxation of international tension.

It seems to me, therefore, that we should first reach some agreement on the questions on which our common decision is required now to avoid a conflict and war. And meeting at the summit would perhaps be a pinnacle of such agreement. This would be the best way.

But I do not rule out another possibility: Should the international situation become even more complicated—which we, of course, do not want and which we are doing our best to prevent—urgent efforts by the leaders of the Great Powers may then be required to prevent a spark which might cause a military conflagration. In this case, I do not preclude a summit meeting in order to prevent such an outcome.

As to inviting the President of the U.S. to our country now—and I would very much like to invite him, and we would like to receive him with all the honors due such a distinguished guest—unfortunately, there still exists an obstacle to this which arose through no fault of ours. I mean the incident on the eve of Eisenhower's planned visit to the Soviet Union—it seared us a great deal.

You will remember how it all happened, of course. We were preparing to receive Eisenhower, and we would have received him in a befitting way. But he up and sent a reconnaissance plane on an espionage mission over our territory. This soured our sense of hospitality. Words fail me in expressing what the Soviet people felt about that act of perfidy. It was simply incredible!

The Soviet people were deeply insulted by the way in which the then President of the U.S. replied to our hospitable invitation. They have not forgotten this; the wound has not healed yet, as they say. Therefore, if we invited President Kennedy to the Soviet Union now, without any real improvement in our relations, we would put our guest in a difficult position, for the reception would not be such as his rank entitled him to.

G. COWLES: Mr. Chairman, I would like some clarification of your views on the problems which divide our countries. Do you think that the problem of disarmament or, putting it another way, the arms race is the number one problem causing tension in relations between the United States and the Soviet Union?
N. S. KHRUSHCHEV: You see, if we take interstate relations between the United States and the Soviet Union, then, if we leave aside the basic contradictions between socialism and capitalism—these are contradictions of social development and therefore I shall omit them in this case—we actually have no reasons for serious disputes. Our interests do not clash directly anywhere, either territorially or economically. Both the Soviet Union and the United States are countries abundantly provided with natural resources, having a big population, a developed industry and science. It seemed, therefore, that we could coexist very well.

As to sociopolitical questions, we have always regarded and regard them as internal issues, and we are for noninterference in the affairs of others. The Americans themselves must decide on the sociopolitical system of America. We may sympathize with a certain system, but the people of every given country decides these questions.

As to the question of disarmament, which you have touched upon, this is indeed the question of questions, and it concerns not only the Soviet Union and the United States but all the countries of the world. This is why we hold that the solution of this problem would be a great joy for the peoples of our two countries and the peoples of the world. Inasmuch as the United States and the Soviet Union now possess the most developed economies and are able to create the most up-to-date weapons, whereas many countries do not have this opportunity, both our nations should exert particular efforts to find ways to disarmament.

In this respect I agree with you that it can be said: The problem of disarmament for the USSR and the United States is problem number one. But along with this I should like to mention one other question, which seems to depend on disarmament but can in itself be an issue of primary importance. This is the question of Germany, the question of concluding a German peace treaty.

This question is for us, so to say, a touchstone by which we check the razor blade. Why? Because it is the source that raises or lowers tensions, that gives the main impulse. Why do we believe this? Because we have fought together with America and other nations against Hitler; because our country has suffered tremendous losses in this war, has lost millions of people; because hugh riches, material and cultural values have been destroyed in this war conflagration. Finally we defeated Hitler. And now we say: Let us draw a line through the Second World War; let us formalize its results in a peace treaty so as to extinguish the fighting itch of the revanchists once and for all.

Slightly less than seventeen years have passed since the war, however, but we still have no peace treaty. Why? It is said that Chancellor Adenauer does not want it. We regret that the Americans, our former allies, take the cue from Chancellor

Adenauer and support his dangerous policy of preserving the vestiges of World War Two. The question arises, "What does America, the American people, need this for?"

What are we striving for when we consistently and persistently raise the question of the peace treaty? We only wish to consolidate peace and create a solid foundation for it.

We are told: Let the two republics—the German Democratic Republic and the Federal Republic of Germany—reunite first. But this is already a question for the two German states to decide. It is within the competence of the Germans themselves, and neither we nor you have anything to do with it. We shall not object, in principle, if the two German republics reach agreement between themselves and reunite. But we are realistically-minded people and we understand that this solution is impossible at present, because these two republics hold diametrically opposite positions: One of them stands on positions of socialism, while the other—on positions of capitalism. How can they be reunited?

Consequently, those who advance such an impracticable proposal strive to preserve this most dangerous seat of war, to keep handy smoldering ashes with a view to fanning, at a suitable moment, a new conflict which is quite liable to be of a military nature.

This is why we attach such great importance to the question of concluding a German peace treaty. Hence the problem of West Berlin. We have proposed to do away with the occupation regime in West Berlin. It seems that it should be clear to everyone that we do not lay any claims to West Berlin. It would be stupid to suspect us of this. What will West Berlin give us? It has a populaiton of only 2.5 million people, and even these two and a half million people have begun diminishing as a glacier under the effect of the sun's rays. And if this situation continues, the time is probably not far off when far fewer people will remain there. If the German peace treaty is not signed, life in West Berlin will increasingly come to a standstill.

And so we have advanced an absolutely unselfish and clear-cut proposal: Let us sign a peace treaty, declare West Berlin a free city, guarantee unobstructed access to it, and withdraw the occupation forces. What answer do we get to this?

No, this is impossible, they allege, because such a decision prejudices the prestige of the United States, Britain and France.

But talks about prestige in the given case are nothing but eyewash. The point in case is not prestige but the desire of the United States, Britain and France to retain their armed forces in West Berlin, and these forces now, as I said to Mr. Macmillan in my message, are no longer occupation troops but forces of the NATO nations, having absolutely definite designs against the socialist countries. These designs, naturally, alarm us and we cannot put up with them.

This is why two questions must be solved in order to improve the international atmosphere, to create normal conditions for peaceful coexistence—I do not link them up directly, but they are actually closely bound up: These are the question of disarmament and the question of signing a German peace treaty. Solution of any of them would be a big stimulus to the improvement of relations between our two countries, and I think it would be easier in the first place to solve the German issue. This would create conditions of great confidence and a better atmosphere for agreement on disarmament.

This is what problems number one and number two are. I do not link both these questions together, but they are very closely allied.

I should like to add a few more words to the above. At present the most aggressive revanchist forces of West Germany are trying to set us, the Soviet Union and the United States, at loggerheads over the German issue, over the question of a peace treaty.

They do not want this peace because they still cherish the dream of restoring, with the help of the United States of America, the German borders which existed prior to the Second World War. They understand, of course, that this cannot be achieved without a war and therefore deliberately work for a conflict.

I am sure that this goal and these interests are alien to the interests of the American people. And if the statesmen shaping the policy of the United States of America realized onto what road they are being prodded by the West German revanchists, if they took their own position, meeting their own national interests in this question, we would reach agreement quickly and sign a peace treaty.

This is one question. Now the other one. It is said that the United States, British and French forces in West Berlin allegedly meet the interests of the West Berlin population. But the actual situation is the very opposite of this claim.

What does the population of West Berlin need now? It needs a calm situation, confidence in the morrow, conditions where the economy of West Berlin could develop normally. Only on this basis can the welfare of the West Berlin population be ensured. But what confidence can West Berliners have in the morrow if foreign troops, holding military exercises and rattling weapons all the time, remain there?

It should be clear to all that we shall not become satisfied and that we shall not desist from our efforts toward the signing of a peace treaty, liquidation of the occupation regime and the withdrawal of occupation troops from West Berlin until this just aim is achieved. Consequently, to persist in the attempts to prevent this will only further aggravate and exacerbate the situation. And greater aggravation and exacerbation will make the population of West Berlin even less confident in the morrow.

Those who shape the policy of the Western Powers understand this themselves, but they delude world opinion and the people of West Berlin.

G. COWLES: Mr. Chairman, my impression was that the talks on this question now in progress in Washington are proceeding quite well and that fair chances of agreement, if only an interim one, have appeared there. Is that also your impression?

N. S. KHRUSHCHEV: I think that there are some glimmers of hope for agreement. But the main question remains. It is the presence of Western occupation forces in West Berlin, to which we cannot agree. It cannot be held that agreement is possible without the solution of this question.

G. COWLES: The building of the wall in Berlin aroused grave concern among the American public. Was this wall really necessary?

N. S. KHRUSHCHEV: All states have their frontiers and guard them carefully; every state has the right reliably to guard its frontiers, and the German Democratic Republic did no more than what every sovereign state does to strengthen its frontiers. What the Government of the GDR did last August was necessary, and it is our opinion that in the conditions which existed at the time it was even imperative.

G. COWLES: Mr. Chairman, I would like to recall now an incident from the past. I want to recall it because I think that the language barrier between us sometimes raises certain difficulties. You once said something that was translated into English as "we shall bury you." In America, these words were taken as a military threat. I should like to ask you, therefore, what you meant by saying: "We shall bury you."

N. S. KHRUSHCHEV: I think that people who translate statements from one language to another, and especially those who disseminate and interpret them, should always do this with scrupulous honesty. What you speak of happened because some unscrupulous people deliberately twisted a phrase of mine, a very clear statement that capitalism will be buried in the course of the historic development of mankind, that it will be inevitably superseded by communism. In claiming this, I had in mind that society develops according to definite laws: It is changing all the time; the old dies off and the new emerges and develops.

America was at one time a colony of Britain, but the American people finally rose up in arms and freed themselves of oppression by Britain. The American people, one might say, buried Britain as the colonizer of the U.S. and achieved independence.

There was a time when the feudal system reigned in the majority of the countries in the world. In its time, when this system was just coming into being, it was more progressive than the slave system. Conditions more conducive to the development of the productive forces of society were gradually developing within the feudal system. The time came when feudalism outlived itself. A more progressive system, capitalism, was born within it. Capitalism buried, interred feudalism. True, feudal relations still exist in a number of countries, but

in general it can be said that feudalism as a system has been buried, interred, and the countries which were the first to begin to "bury" that system gained in their economic development. Russia, which lingered longer in the stage of the landlord feudal system, lagged in the development of her economy in comparison with the other Western countries.

But capitalism engendered irreconcilable contradictions, and a new, progressive social system, communism, with entirely different social relations between people than under capitalism, has appeared to replace it. We are convinced that communism will win, as it provides better conditions for the development of the productive forces of society, provides the conditions for the fullest and most harmonious development of the society in general and for every individual in particular. Capitalism fights against communism, but it is impossible to arrest the process of the development of mankind. Sooner or later, communism will win everywhere in the world and, consequently, communism will bury capitalism.

This is how my statement should be understood. It is not the question of someone burying someone physically, but of a change in the social system in the course of the historic development of society. When we say that communism will bury capitalism, this does not mean, of course, that the Soviet people, the Communists of the Soviet Union will inter capitalists from some countries. No, communism is winning in the Soviet Union, and many other countries are now following the road of communist development. Communism is growing out of the dedicated labor and struggle of the peoples of the socialist countries for a new, better, most just, creative life on earth. Such is the teaching of life, of history: A more progressive social system inevitably comes to replace a system which is outliving itself; a progressive system buries a moribund one.

This is how we regard the historic process of the development of society. I have spoken of this more than once. I spoke of this in the United States, too, when I visited your country. We do not impose our communist convictions by force on anybody. We believe that in America, too, mighty forces will grow—they already exist there and are growing and developing all the time: These progressive forces, which are growing within the American people itself, will ultimately win. In place of capitalism, which reigns in America today, the American people will themselves assert a new social system, and this system will be communism.

Thus it can be said that one system, asserting itself, buries another system which is outliving itself. It is not that one people buries a part of another—this would be monstrous.

This would mean war between states. The question of the victory of one social system over another is one of class struggle. It is a new class which is developing and gaining in strength now—the working class, the people themselves, that will, properly speaking, reign in the world, including the United States of America.

G. COWLES: Mr. Chairman, I come from the farm state of Iowa. You will recall, perhaps, that my paper the Des Moines *Register* was the first to propose that Soviet farm specialists should come to us, in Iowa, to study corn-growing methods.

Now, some of our American farm specialists are wondering whether a communist society can establish a truly efficient agriculture. Tell me, please, are you sure you will achieve progress in agricultural production?

N. S. KHRUSHCHEV: Agriculture is a very interesting problem which always occupies me.

Oh, yes, I remember that your newspaper has displayed a good initiative by inviting Soviet agriculture specialists to the United States, and we are grateful to you for this. You have done a very good deed which has been and will be a fine contribution to the improvement of Soviet-American relations and better mutual understanding.

We are glad that now you have come to our country. You probably know that American farmers are now visiting in the Soviet Union. This is fine. We would gladly send another group of our farm specialists to the United States to study the American experience. After all, the standards of American agriculture are very high.

I shall tell you confidentially that were I to get a chance to travel in the United States, to visit the American farmers, for instance, Mr. Garst, I would go to the United States with pleasure. Only without escort, without policemen and other officials, without any rumpus: It would be good to paste on a moustache or a beard, or, still better both, so as not to be Khrushchev but, let us say, Ivanov, so as to be able to see at peace everything interesting, to study agriculture production in the United States. But this is impossible for me, of course.

G. COWLES: Is agriculture the number one problem for your country from the viewpoint of the internal situation?

N. S. KHRUSHCHEV: No, I would not say so. We believe that definite proportions should be maintained in the development of all branches of the national economy, including industry and agriculture. Agriculture should keep apace with the growing requirements of the country's population due to the growth of our economy as a whole.

On the whole, our agriculture meets the requirements with which it is faced, provides industry and the population, in the main, with all types of products. But our national economy is progressing at a steadily increasing pace all the time; the requirements are growing substantially, and it is necessary to satisfy more and more fully these growing requirements of the population by turning out both manufactured goods and products of all branches of agriculture. However, our agriculture now does not develop in step with all the national economy, does not keep in step with the development of industry, and we want it to keep in step.

Now I shall reply to the essence of your question of whether a communist society can create a really efficient agriculture? Of course it can, and not only can it do so but it already has such an agriculture and strives to raise it to a higher level of development.

The United States of America has achieved a high level of agricultural development on the capitalist basis. We hold second place in the world as regards the gross output of farm products. But the Soviet Union develops its agriculture along socialist lines. The level of our agricultural output is lower than in the United States. This is due to a number of reasons.

What did we begin with in our agriculture? The old Russia mainly had a natural economy. Its technical equipment was primitive—the wooden plow and wooden harrow. What the farmer produced, he ate up himself. In the old village, even their clothing was woven and sewn by the peasants themselves.

Of course, czarist Russia also had capitalist landlord farms, but even among them there were some of the natural economy type. Figuratively speaking, Russian agriculture did not undergo such an extensive capitalist schooling as in the Western countries.

The peasants of old Russia did not have the habit of keeping account of their husbandry, they were little concerned about the advantage of one crop over another. They strove to have a little of everything by raising all crops—flax and hemp, oats and barley, potatoes and sugar beets.

Moreover, the agriculture in the old Russia was terribly fragmented, small-scale. Millions of peasants could not even dream of doing anything better on the scrap of land they owned.

In the United States agriculture is built on a different basis. There the question of production costs, the expenditure of labor, as in every market economy, is of decisive significance. The question of profit means everything for the farmer there.

The development of socialist agriculture proceeded, to a large extent, in circumvention of the capitalist period of development. Of course, capitalism had made headway in the agriculture of the old Russia, but it was then at the early stage of its development and was not so clearly expressed as in the United States and other advanced capitalist countries.

What prerequisites are there in our country for the further upswing of agriculture? We carried out collectivization long ago; that is, we effected the reorganization of agriculture along socialist lines. Thereby a basis was created for doing away with scattered agricultural production and setting up large-scale mechanized husbandries. This gave us an opportunity to employ the most up-to-date farm machinery.

Organizationally, our agriculture is conducted on a much broader scale than the American. Our conditions are more favorable for the use of highly efficient farm machines than in America. Our tractors are now more powerful than the American, but we have decided to raise even further their horsepower.

What do we lack then? The adequate training of our cadres, I should say. Many of our agriculturists still have insufficient

economic knowledge and organizational know-how for managing large-scale husbandries. Due to many reasons, which I shall mention further on, we lingered too long, after collectivization, at the stage when insufficient attention was paid to the training of personnel to head collective farms: These were mostly peasants who grew up and were trained in conditions of backward individual households. They overlooked for a long time questions of accountancy, organization, labor productivity, expenditure of labor per unit of the raised product. Today we have to pay for all this.

On the farms where the cadres are well trained and understand these questions, the level of the economy does not differ but is in many cases higher than on the best farms of the United States of America.

Consequently, we are now faced chiefly with an organizational task. At the March Plenary Meeting of our Party's Central Committee we decided to select, train and even re-educate some of our personnel. Not only must they master agricultural knowledge and study plant-growing and livestock breeding, they must learn to solve organizational and economic questions too.

I have read the interview on Soviet agriculture recently given by Mr. Garst to an American magazine. He said many things about our agriculture with which I agree. Of course, I cannot agree with him completely. He is a capitalist, and therefore he does not understand everything in socialist construction. This is beyond him as yet, but he is an intelligent man, well versed in his business, and he understands agriculture very well. There is a lot to learn from him.

What else do we need? Now we must get down energetically to the building of livestock premises because they are rather primitive on some farms. We must introduce electrification and mechanization on a still wider scale. It is necessary to build plants for the production of mineral fertilizers. We produce very little mineral fertilizers, herbicides, insufficient quantities of various growth stimulants and antibiotics.

In other words, we know what we need and what we still lack.

G. COWLES: Do you intend to abolish the private plots of collective farmers?

N. S. KHRUSHCHEV: No, we don't. This is not the main thing, though I think that with time the private plots will be abandoned by the owners themselves. But this will happen when the socially-owned economy will be developed to such a degree that it will satisfy in full all the requirements of collective farmers. They will then have no interest in their small subsidiary plots. We rigorously punish those who are too eager to liquidate such plots. We must not overreach ourselves by administrative methods.

We Communists say that the building of communism requires definite economic prerequisites. If we attempt to establish communism while the productive forces are not sufficiently developed for this, this will be pauperism not communism. Communism, as we understand it, means abundance. At one time, for instance, there were people in this country who wanted communism to be proclaimed when no material conditions had as yet been created to do so. But if communism is proclaimed while there is, say, one pair of pants per ten persons, and these pants are divided equally into ten parts, we shall all be going about without pants. We reject such pantsless communism. This would be a distortion.

Therefore, let the collective farmers keep their subsidiary plots while conditions have not yet been created for abundance. They do not contradict the development of socialism and communism, but for a certain space of time they are an addition to basic incomes derived from the collective farms.

I am convinced that our agriculture will soon make rapid headway. But this requires capital investment, and we are working on this now. We have adopted a decision on a further expansion of farm machinery production and on the building of plants for the manufacture of mineral fertilizers, chemical growth stimulants, weed-killing herbicides and insecticides.

In questions of animal husbandry, however, we believe we still must learn from America, which has big achievements to its credit.

We are satisfied with our position in the scientific work of selection. Plant breeding is also on a good level in our country. We have our own very good varieties of wheat and corn. In corn, we can compete successfully with you, and even beat you perhaps. I use the word "beat" in the sense of winning the competition, lest you say again that we want to beat you in the sense of "bury" you. See how careful I am in my choice of words.

It is, of course, not enough for a plant breeder to develop a new variety. It is also necessary to introduce it extensively in practical farming. And the most important thing is for the managerial personnel in agriculture, the directors of collective and state farms, to realize the need to use high-grade seeds. Not all understand this at present, however. I have had conversations like this with some people:

"Do you plant corn?"

Now, everybody knows, of course, that I am champion of corn, so the man replies: "Yes, indeed."

The man begins to hem and haw. I ask him again: "Which variety?"

He replies uncertainly: ". . . Kharkov."

I say: "There is no such variety. You can grow different varieties of corn in Kharkov, and the word 'Kharkov' merely means the place where the corn is grown, and not its variety."

Many of our people unfortunately lack agrotechnical knowledge and they must study. Well, we shall solve this problem, this is well within our power. We have a wide network of courses and schools. This is not an easy thing, of course. We shall have to work hard, but this will be done.

Some wishful thinkers from among our detractors keep speaking about a crisis in our agriculture. A good reply to these slanders was given by your fellow countryman, Mr. Garst: There is no crisis in agriculture in the Soviet Union.

I would put it this way: We are now passing through a period of difficulties of growth. Comparing what we have in agriculture now with what we had in 1953, our progress has been great. But this is no longer enough. We must scale new heights, and we are therefore straining our efforts to have our agriculture develop even more rapidly.

We are now paying for Stalin's mistakes in agriculture. He had a primitive notion of agriculture. I remember when I was working in the Ukraine, he asked me once: "How are things going with you?" I said: "We don't have enough grain for the livestock."

"But what do you need grain for?" he asks.

"To feed pigs, to feed poultry."

"But why feed pigs? Let them find their own food," he said. Now in Georgia, they would put a sort of a yoke on a pig so that it could not get through the fence into the kitchen garden, and let it run where it wanted to find its own food.

True, pigs are still kept in this way in some places in Georgia. But you cannot develop agriculture with such pig farming and meet the growing requirements of the population.

Ignorant of the problems of agriculture, Stalin followed a policy of unjustifiably low procurement prices for farm products. For potatoes, for instance, the collective farms were paid so little that it was not enough to pay for their transportation to the city. Who would grow potatoes if it were not profitable?

Enthusiasm alone is not enough. Talk about communism will not make the belly full. A man must eat; he needs clothes, he needs a flat, he needs many other things without which it is impossible to live.

Stalin's ignorance of questions of agriculture had many harmful consequences. We have done much to overcome these consequences, but clearly not everything has been done. The deeper we go into farming problems, the more attention and money has to be given to their solution. And our efforts are yielding positive results.

I am convinced that the time will come—I cannot give you the exact year as yet—when our yields will be so high that we shall have to reduce the area under crops, as is being done in America now. But you are doing this on the capitalist basis, with the result that the farmers are seriously affected, while in our country the cultivated areas will be reduced in a planned way and no one will suffer from this, all will gain.

On smaller areas and with less labor, we shall obtain greater amounts of products.

G. COWLES: Permit me to ask you a question from an entirely different field. We in the capitalist world have come to think that communism always speaks with one voice, and it is the voice of Moscow. But lately we have begun to hear different communist voices from different countries. The ques-

tion arises: What does this mean? Division in the communist world, or jealousy from some quarters because the Soviet Union is developing much faster than some other parts of the communist world?

N. S. KHRUSHCHEV: I think that is entirely wrong to put the question in this way. The basic ideas of communism are common to all who stand on communist positions, who abide by communist teachings and use them as a guide to action.

But different peoples have attained different levels of economic development; each has its own historical course of development, its own culture, its own national traditions, its own specific features. Therefore all cannot be made to conform to a common standard; no single pattern may be established for all the peoples which embark on the road of building socialism, on the road of building communism.

Moreover, the peoples profit by the experience of other peoples, take into account their experience in their development. Had we, for instance, accomplished the October Revolution now and started the construction of socialism, it is possible—and not only possible but a sure thing—that we would have avoided certain things which had taken place here in the past, would have solved certain problems in a different way. For we could then have availed ourselves of the experience of socialist construction in other countries. But when the Soviet people were building socialism, there was no such experience and we often had to feel our way.

Even the individual traits of leaders play a certain role in determining how to solve some problem or other. Yes, even they have some part to play. We had V. I. Lenin, a great theoretician, the leader and founder of our Party, of our state. It would be a waste of time to speak about his deep devotion to communism. He is one of the great founders of scientific communism. And we had Stalin. Is there anyone who doubts that Stalin was a Communist, that he was devoted to communism? If there is, it is a man who does not understand anything. Stalin was devoted to communism with all his being and was doing everything for communism. And yet V. I. Lenin wrote about Stalin that he was becoming intolerable as Secretary General, that he was too rude and capricious, and could abuse his power.

Lenin's words proved to be true. Stalin indeed committed unforgettable abuses of power, and we condemned him for that.

But it would be absolutely wrong to present Stalin's negative features as negative features of communism. What mattered here was not communism but Stalin's personal traits. And after Stalin's death we eradicated the consequences of the intolerable distortions he perpetrated, having deviated from the Leninist standards of Party and government life.

Now many countries have already adopted the road of socialism, and in the future the number of such countries will continually increase. I do not know exactly when such conditions will arise in the United States that the American people too will embark on this road. Clearly, when the Americans start building communism in their country, they too will be guided by the main principles of the Marxist-Lenin teachings. But the United States has its own national features, its own traditions, its own culture, its own economy. And Americans, of course, will take all this into account in building communism in the United States. The United States will use our experience too, but it will not copy us but take our experience into account.

This is what other socialist countries are doing now. And we have nothing against this. On the contrary, we consider this policy to be absolutely correct.

Of course, it sometimes happens that someone adopts a wrong decision and then displays obstinacy and refuses to correct this wrong decision. Well, even then one can say that people learn from experience.

In real life it happens that when a child's powers of perception begin to develop, he must experience much himself. If a mother tells a child: "This is hot and this cold," the child will not understand these words anyway until he himself touches the thing with his finger and learns by experience what is hot and what cold.

Theory is verified by practice. Sometimes people do know the theory but deviate from it in practice. Sometimes they apply theory reasonably, in a creative way, but sometimes they decide to go their own way. But it turns out that it is wrong, and they burn their fingers. Well, they try it, blow on their fingers, shake them and henceforward know what is hot.

G. COWLES: And China tried to rise too quickly?

N. S. KHRUSHCHEV: No, why? What has China got to do with it? We are sure that the People's Republic of China, in conducting its policy, takes into account it own possibilities. We Communists—Chinese, Russian and others—proceed from the fact that one should not indulge in wishful thinking. The desirable should be subordinated to the practicable, which means that in the construction of socialism, of communism, we must be guided not by subjective wishes but by objective possibilities.

Subjectively, I would want us already to have communism in our country, an abundance of material and spiritual benefits. But today our economy cannot as yet ensure this. Therefore such a desire on my part would be wishful thinking, without realistic support. That is why we say: We need 20 years to create the material and technical basis of communism. Of course, in order to complete the construction of communism, we shall have to develop our economy further, above the level which will be achieved in 20 years, because the material and spiritual requirements of people increase continually, and the economy must ensure satisfaction of these growing requirements.

I am convinced that such is the position of all Communist Parties, including the Communist Party of China.

G. COWLES: Mr. Chairman, earlier in our conversation you spoke about the desirability of wars of liberation for the liberation of colonial peoples. But cannot a situation arise where it would be necessary to wage a liberative war for the liberation of the territory of some communist country whose leaders had gone astray? To be specific, let us say Albania.

N. S. KHRUSHCHEV: You are confusing altogether incompatible things. With such a conception it would follow that since you are capitalists and we are Communists, we should start a war to liberate the American people from capitalism, and vice versa. That would be foolish and dangerous. That would have nothing in common with Marxism-Leninism.

Speaking about wars of liberation, it should be stressed that we have never tried or try to impose upon other peoples the laws of conducting wars of liberation.

We recognize the right of the people of this or that country to wage a war of liberation against an alien yoke. What does this mean? It means, for instance, that Communists recognize the right of the Algerian people to wage a war of liberation, and sympathize with this struggle, just as with the struggle of other peoples for freedom and independence.

The political development of this or that state is a different matter. We firmly stand by the principle of noninterference in the internal affairs of other states, and consider that problems of the internal development of any state must be decided by the people of that country themselves. This is not a question of a war of liberation but of solving internal problems.

Who may be the judge of what is right and what is wrong in this or that state? Only the people of that state. No one has the right to interfere in the internal affairs of other states.

As far as Albania is concerned, you know that we and the leaders of the Albanian Party of Labor have a different understanding of certain questions. We argue with them on these questions, but Albania's internal political development is the internal affair of the Albanian people themselves, and we strictly observe now, as we always did, the principle of noninterference in the affairs of other peoples, including the Albanian people.

E. M. KORRY (assistant to Cowles): Allow me to take advantage of your hospitality to ask one more question. May I?

N. S. KHRUSHCHEV: Please do.

E. M. KORRY: In the West many people are concerned over the fact that the 700 million Chinese people, expanding very rapidly, experience difficulty in meeting their requirements. Are there any grounds for concern on our part?

N. S. KHRUSHCHEV: What are the motives behind the concern you speak of? What is it: sympathy with the Chinese people, or perhaps the very opposite?

The Chinese people for many years were subjected to colonial exploitation. Then they achieved independence and are now building their life along socialist lines. The Chinese people have scored great successes on this road. Of course, every people can encounter difficulties at this or that stage in its development, and the Chinese people are presently apparently experiencing some difficulties which were mentioned in the communiqué of the Third Session of the All-China Assembly of People's Representatives. But we are absolutely convinced that the great Chinese people will soon overcome these difficulties of growth, raise their economy to a higher stage, achieve new successes in cultural construction—and the culture of the Chinese people is a most ancient one—and will be able to satisfy their material requirements to a greater extent.

This is why we do not feel the anxiety you spoke of. There are extremely able, extremely gifted people in China. Great opportunities have been opened up before the Chinese people, and they will use these opportunities.

Every people can encounter difficulties. Our difficulties, for instance, were incomparably greater forty years ago than they are now, but still we have some difficulties, some problems, though of a different nature than those we had then. The People's Republic of China, too, has its difficulties, but if we consider the conditions which existed in our country in the years after the October Revolution, it will become clear that we were then in much more difficult conditions than the Chinese people are at present. And yet we overcame our difficulties. We are certain that the great Chinese people are facing bright prospects in their further development.

G. COWLES: Mr. Chairman, what date can you predict for a Soviet manned flight to the moon and back?
N. S. KHRUSHCHEV: I cannot give any date, as it has not been decided yet. Your President, the head of a nation where, as you put it, everything is decided by private enterprise, has already announced his plan for sending a man to the moon. But we, though we have a planned socialist economy, have not decided this yet.

A manned flight to the moon, you see, raises many different problems. It will cost a lot to fly to the moon and back.

G. COWLES: Would you like this to be a joint project by the Soviet Union and the United States of America?
N. S. KHRUSHCHEV: We would welcome this. The Soviet Union has no aims of conquest in general and with regard to the moon in particular. In principle, we could pool our efforts—material, technical and scientific—and jointly develop a ship for a flight to the moon. Our scientists are, of course, working in this field. I have heard them; they have good ideas, calculations.

G. COWLES: And do you see any difficulties on the way to agreement between the Soviet Union and the United States that would ensure the use of outer space exclusively for peaceful purposes?
N. S. KHRUSHCHEV: I see no insuperable obstacles to this. Two stages will apparently have to be passed here. The first stage will be to settle the question of exchanges in the field of use and exploration of outer space on a national basis.

The second stage will be to pool the material, technical and scientific resources for the joint solution of problems in order to proceed from competition to the pooling of efforts in the conquest of outer space.

It is in the realization of this second stage that some difficulties appear. The principal means of the conquest of space is now the rocket, and it is also the principal weapon of war. It is natural that with our countries ranged against each other and competing in the refinement and stockpiling of these weapons, both you and we seek to keep secret our equipment, our scientific achievements in this sphere. Now, had we settled the problem of general and complete disarmament, this would eliminate the main obstacle—the question of keeping secret the scientific and technological achievements in the development of rocket engines and of the rockets themselves.

Thus the conclusion of a German peace treaty and liquidation of the occupation regime in West Berlin would reduce international tensions, increase trust between our states, create favorable conditions for agreement on disarmament. Agreement on disarmament would create the best possibilities for all-round cooperation in the application of scientific achievements.

G. COWLES: Mr. Chairman, when do you think it will be possible for my magazine, *Look*, or my paper, the Des Moines *Register*, to be sold freely in the Soviet Union?
N. S. KHRUSHCHEV: It is difficult for me to say when exactly this will become possible. The press is a means of conducting national policy. And we at present not only speak different languages but understand many questions in a different way. This prevents free exchanges. But I am convinced that this is a temporary thing. I cannot say how many years it will take, but conditions will change with time. Our government, in its policy, pursues precisely this aim: a free exchange of ideas.

G. COWLES: Mr. Chairman, you have been very generous to us with your time. I am very grateful to you.
N. S. KHRUSHCHEV: I was in debt to you to some extent. It was on your initiative that our people were first invited to America to study her agriculture; it was a fine initiative. I think I have now repaid part of this debt.

G. COWLES: You have repaid it very generously.
N. S. KHRUSHCHEV: We appreciated highly your initiative. True, in time people will say: What was there so extraordinary about somebody inviting somebody? But you see, every action should be judged within the context of time and specific conditions. Indeed, what is extraordinary about inviting people? But at the time you invited Soviet farming specialists, this was extremely important; it then required definite courage and, I would say, foresight.

G. COWLES: Mr. Chairman, a final political question. So far as I know, under your Constitution your government is going to resign next week, and a new one will be appointed. Tell me, Mr. Chairman, are you afraid that someone else might be appointed?
N. S. KHRUSHCHEV: Do you want me to tell you the truth? . . . I am not.

G. COWLES: Then we can already congratulate you.
N. S. KHRUSHCHEV: No, this would be premature. You see, my hopes, my confidence is one thing, and the decision of the Supreme Soviet is another. I am convinced that the Supreme Soviet will ask me to form a government, but then it may not. It is not I who decides this but the Supreme Soviet.

You do not always correctly understand our political structure, our Constitution. There has developed a strong moral and political unity of the Party and the people in our country, but it should always be remembered that a constitution is a constitution and the people have their rights under the constitution. Therefore, he who takes it for granted that he will be supported tomorrow because he was supported yesterday may be sorely disappointed one day.

Here is an example for you—1957. The anti-Party group, which came out against me and my comrades, came out against the line of the Central Committee of our Party, consisted of people puffed up with their own importance. They were convinced that their names could not be rejected. Molotov, Kaganovich, Voroshilov, Malenkov thought themselves omnipotent. True, Malenkov was not of the stature of the first three, who in the past had done quite a few good things as well. But they fell behind the times, misunderstood the situation and misjudged the prospects.

We told them: Things cannot continue as they were under Stalin. They replied: So it has been, so it will continue. We said: So it has been, but so it will not continue. Then they said: We shall remove you. But our Party, our people upped and removed them, because they interfered with the efforts of the Party and the people to rectify all the wrong and harm that was done by Stalin and by them in the period of the personality cult. This is what our Constitution means.

G. COWLES: Thank you for the interview. We wish you good health.
N. S. KHRUSCHEV: Thank you, too. Good-by. I wish you success.

USSR

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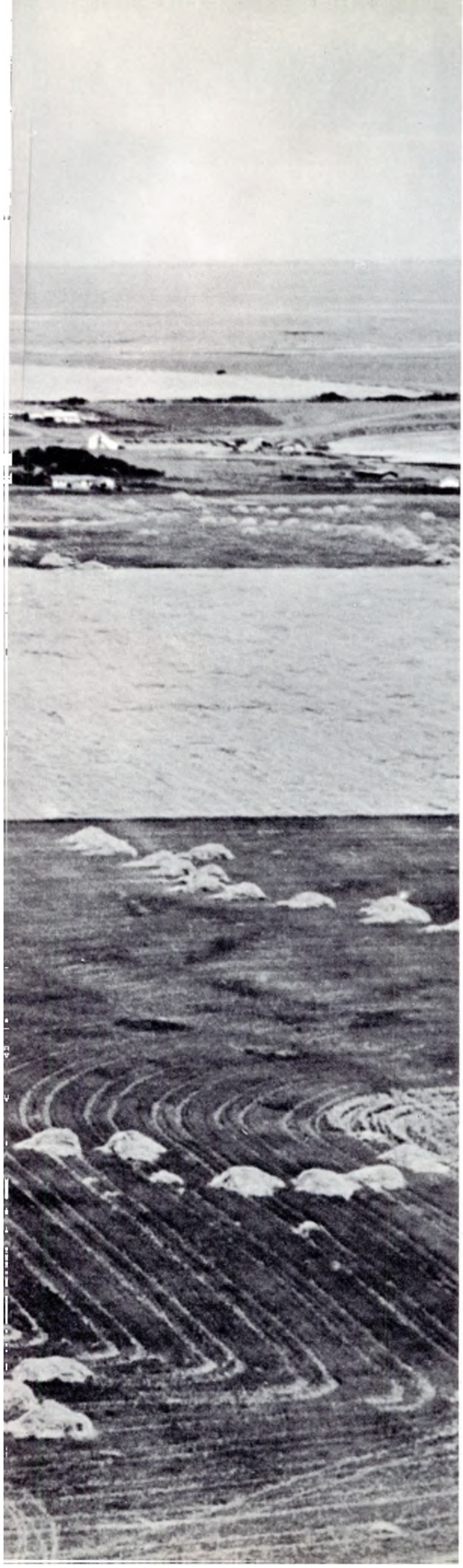


By PAVEL VOLIN
ECONOMIC ANALYST
NOVOSTI PRESS AGENCY

CENTRAL COMMITTEE MEETS ON FARM DEVELOPMENT

SOVIET AGRICULTURE REGISTERS 60 PER CENT INCREASE WITHIN EIGHT YEARS. THIS RATE INSUFFICIENT. NEW, MIGHTY UPSURGE REQUIRED.

SOVIET AGRICULTURE is being discussed widely these days, at home and abroad, by economists, journalists, TV commentators, politicians and just plain people. This is the sequel to the most recent Plenary Meeting of the Central Committee of the Communist Party of the Soviet Union, with farm development the major item on its agenda. Why a plenary meeting only four months after the Twenty-second Party Congress?

The 22nd Congress adopted the program of communist construction in our country. One of the fundamental requirements for a communist society is an abundance of foodstuffs and consumer goods. The March plenary meeting was called to consider and work out practical measures for increasing farm output so that that goal could be reached in the shortest possible time.

There was a sharp turn in the development of the Soviet Union in 1953, following a plenary meeting in September of that year that revealed serious weaknesses in agricultural management and took steps to rectify them. More tractors, harvester combines and other farm machines, and a larger volume of mineral fertilizer were manufactured and shipped to the collective and state farms. More agronomists and technicians were trained. In 1953 and the years following, the state paid considerably higher prices for the produce it bought and, simultaneously, the prices of items required for farming were cut. All this served as an incentive for collective farmers and state farm workers to step up their crop and livestock output. This raised the income of collective and state farms, strengthening them economically and making further expansion possible.

Beginning with 1954, some 104 million acres of the most fertile lands that until then had been lying idle were developed. They were used primarily for founding new state farms that raised grain at first and then turned to livestock.

The system of state machine and tractor stations was reorganized and the stations' equipment turned over to the collective farms. Up to then the stations had done the plowing and cultivating for the farms on a contract basis. The system was efficient while the collective farms were economically weak, but as they grew stronger, difficulties arose. There were, in effect, two masters on the same plot of land, a situation that made for disagreements. Now there is only the one master—the collective or state farm with its own machines.

During this period a new planning system was introduced. As it works now, the original plan is drawn up by the collective or state farm. The farms decide how best to utilize their acreage, what crops to grow. Their produce is contracted for by the state procurement agencies.

These various measures were responsible for a sharp upturn in farm production that increased gross farm output in 1961 by 60 per cent as compared with 1953.

Nevertheless the March plenary meeting considered the rate of growth too slow, insufficient to meet today's growing demands. Since 1953 the country's population has increased by 29 million. Personal income has risen by 42 billion rubles. At the same time the per capita consumption of such major foodstuffs as meat, milk, butter, eggs and sugar has increased by 35 to 50 per cent. All this is very much to the good, but because the people's demands continue to grow and are not fully met, it is not good enough, especially when we consider the fact that we have enormous possibilities for greater production of farm commodities.

The plenary session concerned itself with proposals that would ensure a more rapid over-all rate of growth in farm production. Its emphasis was not on single steps that would give certain percentage increases, but on a radical turn. The complex of measures adopted are meant to bring about that turn.

The March plenary meeting impelled some foreign observers to talk of a "crisis" in Soviet agriculture. A curious choice of word. What is a crisis? A crisis means a drop in production or, at best, a permanent plateau. But neither of these things is true. Since when do we call a steady rise in production a crisis? During the past eight years grain production has increased by 66 per cent, and meat production by 50 per cent. The Soviet farm picture is good, but it can be better, said the plenary meeting. A socialist economy, with its enormous productive potential, can and will meet all of the country's grain, meat, milk and other food requirements.

The plenary session came to the conclusion that although there were a number of factors that slowed down farm development, the major factor was the widespread use of the travopolye (grassland farming) system. It had severely hampered some of the country's major farm regions.

Because of this system tens of millions of acres of very fertile land grew low-yield crops of small value. For all practical purposes, the land was idle. The grassland farming system, based on a theory advanced by Academician Williams, held down grain output, weakened the country's fodder base and thereby slowed the development of animal husbandry.

This is not the first time the travopolye system has come under attack. Scientists have for a long time raised serious objections to the Williams theory, notably Academicians Dmitri Pryanishnikov and Nikolai Tulaikov. The former had expressed

Academician Konstantin Skryabin is interviewed by the correspondent of a youth newspaper during a recess of the plenary meeting.

Nikolai Manukovsky (left), tractor driver, with Vasili Smirnov, assembler at the Baltic Shipyard, in the lobby of the Kremlin Palace.

Nikita Khrushchev analyzed the present state of agriculture in his report and made recommendations for rapidly increasing output.

Representatives of the Party organization of Kazakhstan, a leading grain producer since the development of the virgin lands.

himself strongly against the introduction of grassland farming, declaring that it would hamper grain and fodder production. Academician Tulaikov, an eminent scientist with a thorough knowledge of farming in the arid parts of the Volga countryside, thought grassland farming generally bad for Soviet agriculture.

In 1950 the USSR Council of Ministers and the Central Committee of the Communist Party pointed to errors in the Williams theory and criticized the travopolye system. So did a Central Committee plenary meeting in 1954 that cautioned against the stereotyped use of the system. But practical farm workers, agronomists and collective farm chairmen thought they individually were employing the method creatively. And so it remained in use when it should have been discarded a long time ago. This is exactly what the March meeting did.

The radical decision will have large repercussions. It means abandoning a widespread farming system, replacing grasses and other low-yield crops with those of higher yield, improving soil with fertilizers and better cultivation, and, in general, using land much more rationally. The result will be higher yields from the same acreage and a stable fodder base for faster development of animal husbandry. Concrete measures were adopted for expanding acreage sown to such major crops as wheat, corn, peas and fodder beans.

Yield increases will be reached through more efficient growing methods, better seed farming and wider use of organic and mineral fertilizers. The change-over will reduce the amount of time that needs to be spent on field work and raise its quality.

In the important area of animal husbandry the present concentration of collective and state farms is on ways of increasing fodder yields. Fodder is the crucial requisite for stepping up meat and milk production. The main fodder crops today are milky, wax-ripe corn, fodder beans, sugar beets and peas.

Although the travopolye system has been the principal deterrent to both crop and livestock development, it is not the only one. The country's collective and state farms do not, as yet, have all the farm machinery they need, and although industry has shipped millions of machines to the countryside, more are needed.

The plenary meeting instructed the Presidium of the Party Central Committee and the Council of Ministers to work up a large-scale program of technical aids for farming. What it has in mind is a considerable rise in the manufacture of tractors and other farm machines; equipment for mechanizing stock breeding, loading and transportation; and machines for spreading organic fertilizers.

To this end the production capacities of present tractor and farm machinery plants will be enlarged, new factories will be built, and plants now manufacturing other items will add farm equipment to their lists.

In plan also is the production of more powerful tractors adapted for work at higher speeds and for machines working a wider front, thus raising labor productivity. Envisaged also is more efficient use of machinery presently available and better training of machine operators.

There was considerable discussion at the plenary meeting of the help the chemical industry could give agriculture by enlarging the capacities of its existing plants and building new ones to produce more mineral fertilizer. The goal is a fivefold increase in mineral fertilizer output by 1970.

As a consequence of the plenary meeting discussions and subsequent government decisions, collective and state farm production administrations are being set up in the union republics, territories and regions to help the collective and state farms use their latent resources more effectively.

In recent years several organizational steps were taken to bring agricultural agencies closer to the farmer. The Ministry of Agriculture, for example, was given the job of developing agricultural education and the agricultural sciences, and of publicizing new growing techniques. The Selkhoztechnika Farm Machinery Association was separated from the Ministry and

COMPARATIVE GROWTH OF INDUSTRIAL AND AGRICULTURAL PRODUCTION

Years	Increase of Industrial Output (in per cent)	Increase of Agricultural Outpu (in per cent)
1940-1952	130	10
1953-1961	100	60

INCREASE IN AGRICULTURAL GROSS OUTPUT DURING 8 YEARS

	1953	1961
grain	82,590,400 metric tons	137,432,000 metric tons
meat	5.8 million metric tons	8.8 million metric tons
milk	36.5 million metric tons	62.5 million metric tons
eggs	16 billion	29 billion
sugar and sugar beet	3,434,000 metric tons	6,085,000 metric tons

NUMBER OF MACHINES EMPLOYED IN AGRICULTURE *(IN THOUSANDS)*

	1949-53	1954-58
Tractors	372	668
Grain harvester combines	208	361
Other harvester combines	1	187
Other farm machinery	1,510	2,220

"Agriculture [illegible] literally every man. The level of agriculture [illegible] the well-being of the people to a considerable extent. [illegible] must regard the further development of agriculture [illegible] increase in the output of foodstuffs as the cause of the entire Party, of the entire people."

Nikita S. Khrushchev

charged with increasing the supply of machines to collective farms. The procurement agencies were revamped.

But these steps were peripheral, they did not reach the heart of the problem—production. There was, actually, no body directly concerned with farm management, one that organized production and procurement, that looked closely into the requirements of farms with a view to helping them get the most out of their land and machines. The new collective and state farm production administrations will be doing exactly that.

These new administrative bodies are being set up on the most representative basis. Thus, an interdistrict production administration takes in all the chairmen of the collective farms and the directors of state farms in a given area, the secretaries of district Party committees and the chairmen of the executive committees of the local Soviets.

The production administrations will be staffed by experienced farm organizers and instructors. They will be required to have a sufficiently intimate knowledge of regional farm problems so that, together with the board of a collective farm or the management of a state farm, they can organize its production.

The administration will send its people wherever they can help. For example, if a farm is not utilizing the machines in its livestock section to best advantage, an engineer will be sent out to assist right on the spot.

Without underrating the importance of machines, fertilizers and state agencies, the best guarantee that this wide-ranging farm development program will be successful is the remarkable people on collective and state farms who set the example for others to follow. These are the front-rankers, the "beacons," Nikita Khrushchev called them, who grow large harvests, use machines to capacity, and establish records in stock raising. There are a considerable number of these people whose high productivity accounts for the fact that their collective or state farms have already exceeded the target figures planned for 1965.

To make their experience the property of every farm machine operator, field hand and stock breeder in the country is the primary task of the new farm administrations.

The plenary meeting stressed the vital role of science in this program for agricultural abundance. Soviet scientists are working to improve seed growing and plant breeding. They are researching new high-yield varieties that will adjust to the country's many different agricultural zones.

Ukrainian farmers of the central chernozem and nonchernozem regions are looking to scientists for high-yield, frost-resistant varieties of winter wheat; Kazakhstan and Siberian farmers for high-yield, drought-resistant varieties of spring wheat; farmers elsewhere for early ripening varieties of leguminous crops, sugar beet, cotton, and so on.

Zoologists are working on perfecting existing strains and developing fast-growing and more fertile breeds of animals that will give the largest meat and milk return with minimum expenditure of feed and manpower.

Chemists are investigating more effective types of fertilizers and herbicides.

Engineers are looking for ways of automating all farm operations.

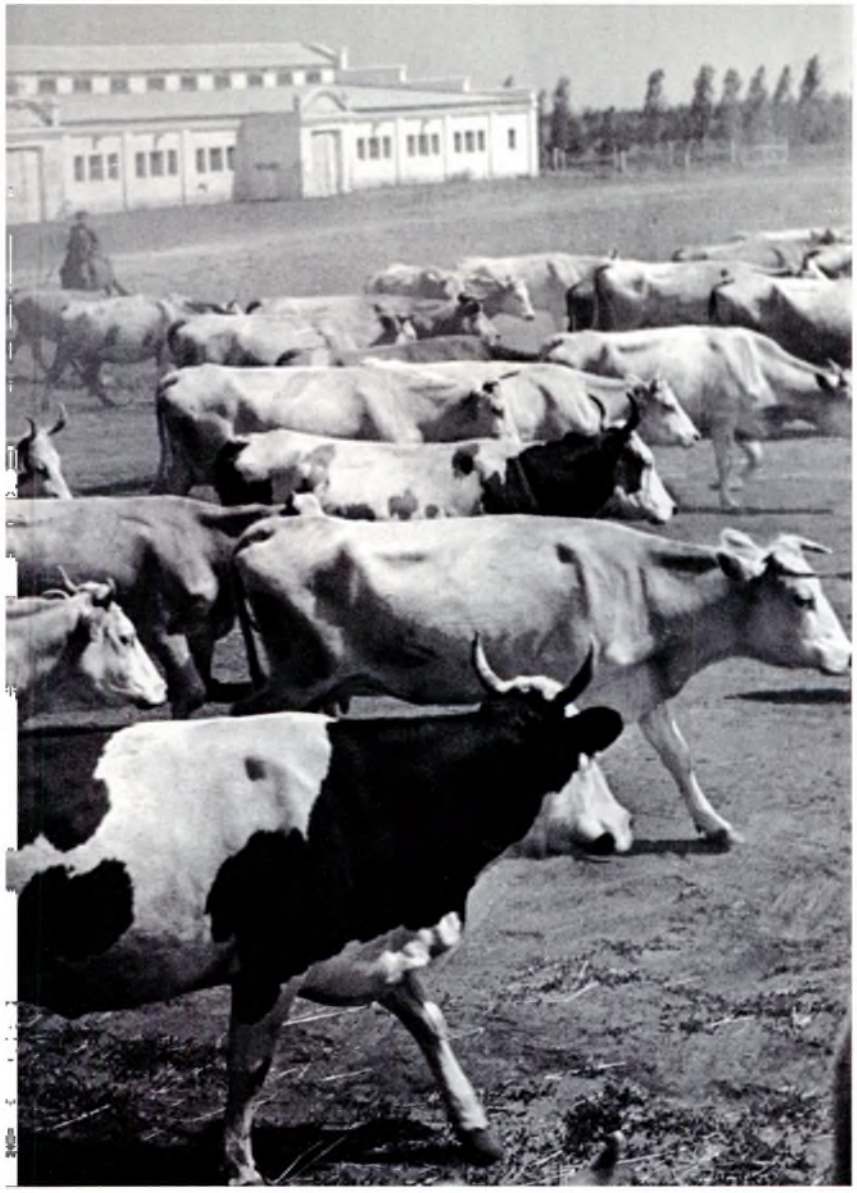
All of the sciences are being enlisted to create the abundance of farm commodities forecast in the new Program of the Communist Party.

INCREASE IN CONSUMPTION OF AGRICULTURAL PRODUCTS

	1953	1961
meat and meat products	1,757,000 metric tons	4,033,000 metric tons
milk and milk products	1,980,000 metric tons	9,393,000 metric tons
butter	330,000 metric tons	632,000 metric tons
sugar	2,410,000 metric tons	4,550,000 metric tons
eggs	2,045,000,000	5,860,000,000

Increase in population—29 million

Increase in consumption per person—35 to 50 per cent



INCREASE OF HEAD OF CATTLE *(IN MILLIONS)*

	1954	1961
Cattle	55.8	82.1
(including cows)	25.2	36.3
Hogs	33.3	66.6
Sheep	115.5	144.4

INCREASE IN PRODUCTIVITY OF AGRICULTURE BY END OF 20-YEAR PERIOD

Grain 295.2 to 311.6 million metric tons
Cotton 10 to 11 million metric tons
Sugar beet 98 to 108 million metric tons
Meat 30 to 32 million metric tons
Milk 170 to 180 million metric tons

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KSAVEROVKA

COLLECTIVE FARM VILLAGE

BY MARK TARTAKOVSKY

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1 *This farm village, destroyed by the Nazis, had to be entirely rebuilt after the war.*

2 *One of the modern, well-designed, brick-front cottages the farmers live in now.*

3 *And one of the prerevolutionary huts they used to live in—preserved as a curio.*

4 *Bus stop. There's a good deal of travel between the farm and Kiev, 20 miles away.*

5 *Famous paintings copied by local artists on view at the farm's House of Culture.*

6 *The general store sells everything from the latest in women's wear to TV sets.*

"DO YOU KNOW the Ukrainian night . . . the moon stares down from the middle of the sky. The earth is all bathed in silvery light . . ."

To the collective farmers of the village of Ksaverovka, these are familiar lines; it is their Ukrainian countryside Gogol was writing about. Chairman Vasili Rubanik remembers the words as he walks round the farm community on one of these starry, moonlit nights the great nineteenth century Russian writer described.

The sky hasn't changed, but everything else about the countryside has. Rubanik is always tempted to add such mundane present-day details to the poetic description as the Kiev-Odessa highway running by the farm; the full silos; the trucks loaded with poultry, fruit and vegetables pulling out in the early morning for the city markets.

Nowadays the subdued rumble of tractors working round the clock in a far-off corner of the farm and music coming over home radios blend with the rustle of leaves. Even the stars must look different when seen by electric light rather than oil lamps, he thinks as he passes a strolling young couple.

Chairman Rubanik walks through the village out toward the pig farm—4,000 boars and sows. High-class pigs these are, each boasts a pedigree. He looks into the feed barn, the breeding pens, the veterinary station and stops at the cowsheds. Even the cows are educated these days, he grins to himself, know all about hygiene; won't let you come near them unless you're wearing a clean white smock.

He bypasses the big poultry section and heads for home, past the farm ponds where mirror carp are being fattened and the garage to a building site with the jib of a tower crane pointing to the sky.

The chairman is much more inclined to speculate about the future than to ruminate on the past. The crane stimulates his imagination. Not too fast nor too far, though. Rubanik is a realist

and his daydreams have the solid grounding of fact. He's visualizing the village five years from now—another mile of steep-roofed brick houses on the main street, 400 new cottages added to the hundred already built. A new club. A new wing for the secondary school—the foundation is already being laid—to accommodate a boarding school. And in another three or four years he and his fellow collective farmers will be vacationing at their own resort, built with farm funds.

Behind the House of Culture still stands one of the dilapidated thatched huts Ksaverovka peasants used to live in before the Revolution. It looks as though it had been there since the village was founded two centuries ago. The collective farmers decided to preserve the hut as a sort of historical monument. They've furnished it with a spinning wheel, rough plank bed and other samples of the crude, old-time house furnishings and utensils borrowed from the local museum.

The hut used to be owned by fish breeder Sergei Chumak. He has no use for it since he built his new slate-roof eight-room cottage. It's a big house for an elderly couple, but on festive occasions it becomes jammed with children and grandchildren who converge on the Chumaks from every part of the country.

It occurs to the chairman that the old hut—historical memento notwithstanding—would have to go soon. The farm board had agreed that this is the best place for a new stadium. He didn't want to think what the very museum-minded director of the House of Culture would say about that.

He walks by the village club. A company on tour from the Kiev Regional Drama Theater was the attraction this evening. He watches the audience file out, the couples walking slowly home, a motorcyclist speeding down the road, lights beginning to go off in houses.

From the Rachkovsky cottage he hears the soft tinkle of piano keys. That must be daughter Nadya, a medical student, home for the holidays. Rachkovsky works in the farm's cement factory. Like most of the men in the village he had enlisted when the Second World War broke out and fought the war through to Berlin. When he came back, the village was in ruins. The Nazis had burnt it down and it had to be rebuilt. The house Rachkovsky lives in now is one of a group built at the time—roomy, with modern plumbing, electricity, central heating—a far cry from the old huts.

Chairman Rubanik treasures a clipping from a recent Moscow newspaper with an article by the American journalist Joseph North titled "People of the Future."

"I will never forget the story told me by a Soviet engineer," wrote North after a visit to Ksaverovka. "His father lived there during the First World War when the territory was occupied by the Germans. They razed the village. It was rebuilt, then destroyed again by the Nazis during the Second World War. Now the village has been rebuilt again. It is a beautiful, a splendid job. As I listened to that calm, confident voice telling me the story, I thought that there was no power on earth could ever daunt this man or his comrades."

North goes on to say that any worker in his own country would be pleased to live in one of Ksaverovka's modern, well-built and attractive brick houses.

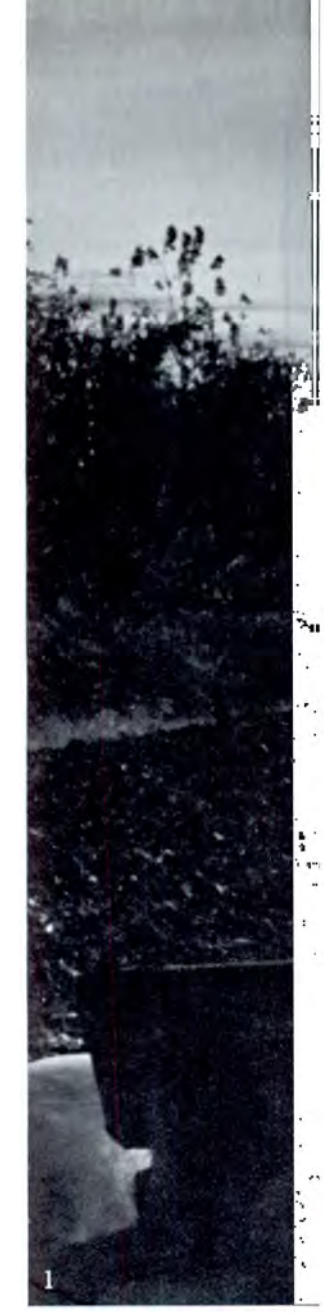
The village collective farmers, like those elsewhere in the country, followed the proceedings of the last Plenary Session of the Central Committee of the Communist Party with particular attention since it thrashed out questions on agricultural development. The reports and discussion reviewed farm progress and noted shortcomings.

Pyotr Panchenko, secretary of the farm's Party group, expressed the general Ksaverovka reaction to the Plenary Session when he said: "The decisions taken at the Central Committee meeting represent a concrete program of action. We've made a great deal of headway the past few years, but we still have a big job ahead of us. The progress made in boosting crop yields can in some ways be compared with an athlete's struggle to break a track record. It isn't difficult to advance from the lowest to average time, but as a runner approaches record time, his rate of progress decreases." He was referring to the fact that Ksaverovka, like the whole Kiev Region, this past year hit the target figure set by the seven-year plan for 1965 in yield and gross harvest of grain and sugar beet crops. The Plenary Session had strongly recommended that these crops replace the unprofitable grass.

Ivan Torokhty, farm economist and planning expert, said at one of the collective farm meetings held to discuss the Plenary Session that those who were criticized for promoting the grass-and-crop rotation system could learn from Ksaverovka's experience. "They would have no problem boosting income if they stopped planting grass and started cultivating such profitable crops as corn, sugar beet and legumes."

Chairman Rubanik, looking ahead to the future, as usual, had this comment. "In his speech at the Plenary Session, Nikita Khrushchev praised Vasili Kavun, chairman of a collective farm in Vinnitsa Region. He's practically a neighbor of ours. We have the same climate as Vinnitsa and our land is certainly no worse. There is no reason in the world why we can't do as well as the Vinnitsa farmers."

For Chairman Rubanik the past is history. Some people like to look at it in museum cases. He prefers to use it as a yardstick by which to gauge present and future progress. He's working toward the day when Chairman Khrushchev will cite Ksaverovka as one of the country's best collective farms.



1 *It gives a man a deep sense of satisfaction to take a last look at the fields after a day's work.*

2 *The collective farm has its own dressmaking shop, with skilled workers who learned the trade in town.*

3 *The village post office is also the local telegraph office as well as a popular savings institution.*

4 *Not much for these volunteer firemen to do but crack sunflower seeds. They're rarely called out.*

5 *A future member of the collective farm inspecting the day's haul. Ksaverovka's major crop is corn.*

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50 PRAVDA'S GOLDEN JUBILEE

BY PAVEL SATYUKOV
EDITOR IN CHIEF, *PRAVDA*

THE FIRST ISSUE of *Pravda (Truth)* appeared in St. Petersburg half a century ago, on May 5, 1912, at the peak of a nationwide revolutionary protest evoked by the czarist police's massacre of striking workers at the Lena gold fields in remote Siberia. The proposal to publish a legal working-class newspaper came from Lenin and won wide support among the Russian workers.

One of *Pravda's* first editors wrote that the paper had a staff of three: Lenin, the worker-correspondent and the worker-reader.

Lenin, then in exile, moved to Cracow, a town close to the Russian frontier, in order to write for the paper and direct its work. In two years' time he contributed more than 270 articles and notes on the country's most crucial problems.

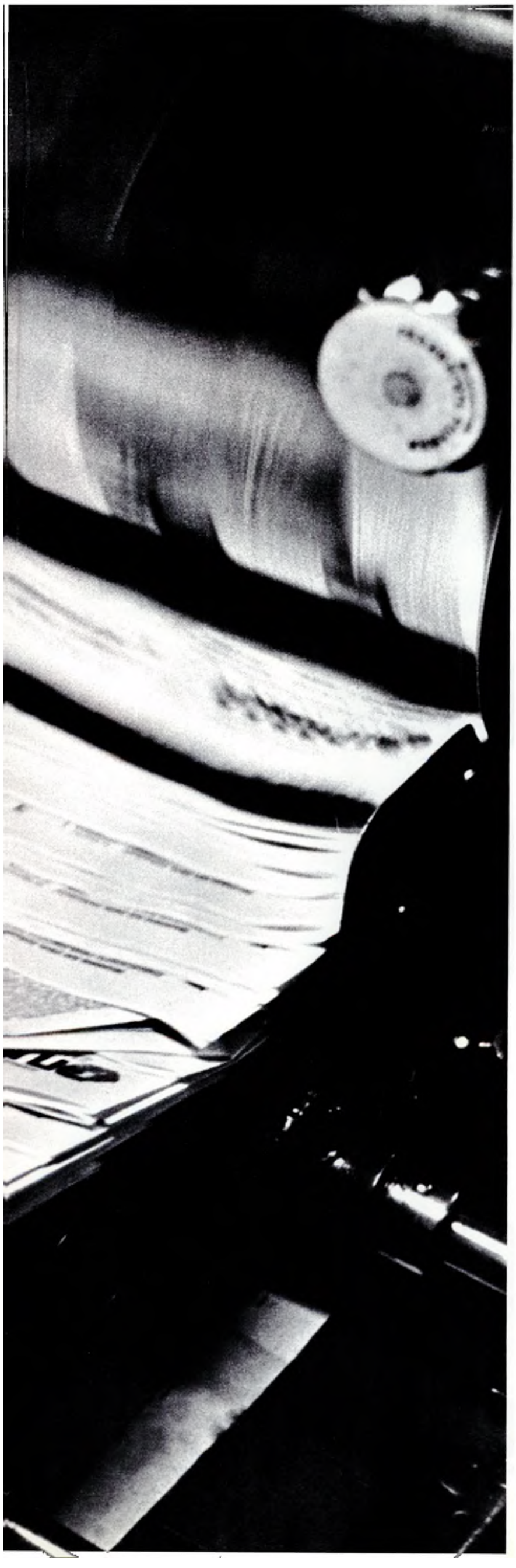
The paper was deluged with letters from workers and peasants all over the country. The czarist authorities could not tolerate this working-class paper and tried to harry it out of existence. Fines were imposed incessantly and many issues confiscated. In July 1914, a few days before the outbreak of the First World War, the police raided *Pravda*. The staff was sentenced to exile and penal servitude.

The paper resumed publication in March 1917, after the czarist regime had been overthrown. Lenin, returned from exile, was editor.

The history of *Pravda* is an inseparable part of the history of the Communist Party and the country. *Pravda* was the progenitor of today's Soviet press, devoted not to sensationalism but to serving the people, to helping them in their efforts to build a better life, and to popularizing the ideas and ideals of communism.

Pravda—with a circulation of 6.3 million, making it the world's largest daily—and all other Soviet newspapers serve as public forums for democratic discussion of economic, political and cultural problems. They present all major issues in the life of our society for nationwide debate. They inform the world public of Soviet foreign policy, its efforts for peace, and its struggle for general and complete disarmament under strict international control and an unqualified nuclear weapon ban.

The Soviet press has no interests apart from the people. Its function is to help build communism—a society dedicated to Peace, Labor, Freedom, Equality, Fraternity and Happiness for all peoples. The golden jubilee of *Pravda* is therefore a memorable celebration for the whole country. ★



THE FIRST ISSUE

A SHORT STORY
BY ANATOLI VERBITSKY
From the book *The Live Lenin*

TWILIGHT WAS FALLING over Paris, and in some places the first gaslights were already flickering when a carriage rolled up to a gray brick building in the Rue Marie Rose. A very agile, stocky, brown-eyed man of some 40 summers, wearing a short summer coat and broad-brimmed hat, got out. He paid the driver, nodded genially and went into the house.

The man was Lenin. He was returning from Longjumeau, a Paris suburb, where he had lectured to young émigré revolutionaries.

It was early May. There had been a thunderstorm a short while before, and the air was fresh with the fragrance of acacia. Lenin loved Paris in the spring and tried to spend every spare moment out of doors, on the banks of the Seine, on the Champs Elysées or in the gardens on the outskirts of the city.

This evening he was hurrying home so that he could have time for a stroll right after supper with his wife Nadezhda Krupskaya and their guest Inessa Armand. He ran up the narrow staircase to the third floor, stopped to catch his breath and rang the bell. He carried his own key, but he found it pleasant to be welcomed at the door, especially if some good tidings came with the welcome.

"Vladimir!" Krupskaya joyfully exclaimed. "How nice that you're back so early! Guess what news I've got for you. I'll count to three. One, two. . . ."

Krupskaya's eyes, smile, her whole face beamed. "What could it be?" Lenin's eyes narrowed in thought. Has that first issue of *Pravda* we've been looking forward to for so long come? Or is it a guest from Russia?

"A copy of *Pravda* from St. Petersburg?" he asked.

"You've guessed it! What inspired guesses you make!"

Lenin tore off his coat, threw his hat onto the little table in the foyer and ran into the room. There on the settee was pretty, dark-eyed Inessa Armand, reading a tabloid-size paper with the *Pravda* emblem.

"Inessa!" Lenin exclaimed, clapping his hands. "Nadya isn't joking, I hope. The baby has really arrived?"

Her eyes still on the paper, Inessa replied in French: "It has. My congratulations. The baby is full-size and quite a lusty, bawling infant. Good luck to it!"

Excited, Lenin stretched out his hand. Almost tenderly he took hold of the rustling paper and spread it out. He stared at the headlines, at Demyan Bedny's poem, couldn't seem to tear his eyes away from that short word *Pravda*. His face glowed with joy. At last his long-awaited darling was here. How marvelous! It was like being transported to that noisy, crowded apartment No. 18 on 37 Nikolayevsky Street in Petersburg where the paper was made up!

Lenin looked long and hard at the date and then whispered:

"Sunday, April 22-May 5, 1912."

Krupskaya's eyes were warm with understanding. She knew how impatiently he had been waiting for this first issue of *Pravda*. This was his day!

"We'll probably have to change the address and name more than once," Lenin said. "But the fact remains that the paper has come out and will keep on coming out. By starting this workers' daily, the factory workers of St. Petersburg have done a tremendous thing. Without exaggeration, one can call it a historic thing. What do you think of the paper, Inessa?"

Inessa Armand sat back, thought a moment and then said:

"A wonderful paper. Just what we need! Still, I think the staff

Artists Ivan Semyonov (left) and Nikolai Abramov (far right) supply many of the paper's drawings and political cartoons.

Victor Mayevsky is Pravda's *international news analyst. His reviews are read by statesmen at home and abroad and by the man in the street.*

gave too much space to material of secondary importance. Why so much poetry and sensational news? What are you laughing at, Vladimir Ilyich?"

Lenin looked as though he were going to burst with laughter. He clutched the paper to his chest and guffawed heartily. Krupskaya could not restrain herself either; she was also laughing. Inessa's face pulled tight, she was hurt.

"Inessa, forgive me, for heaven's sake." Lenin wiped the tears away with his handkerchief. "I thought my sides would burst. Please don't be angry with me." Suddenly he became serious, almost severe. "Stop being so pious, Inessa! Aren't you ashamed of yourself for criticizing the paper for poetry and some other items! Do you really want to turn our *Pravda* into a dry and musty agitation leaflet? All these bits of news are interesting, even necessary. Yes, indeed!"

Krupskaya opened the paper and pointed to a poem.

"Do you find anything objectionable in these verses by Demyan Bedny? Why do you think they shouldn't be there? Listen: 'We can suffer no more and our blood and sweat are one. But we still have the strength, and it is growing all the time!' "

"Go on, please, read some more!" Lenin begged.

"With pleasure. 'Let blind malice hiss, let the sly foe rage. Friends, we shall fight to the last for *Pravda* and our victorious flag!' "

They sat down on the settee and took turns reading the paper aloud. Lenin read Olminsky's "How People Are Deluded" and the note "On the Verge." Inessa showed interest in the item "Due to circumstances beyond the control of the publishers, the announced sale of the first issue of *Pravda* at a higher price for the benefit of the families of the murdered Lena workers is cancelled." Krupskaya then read a long poem about the miserable lot of the Russian factory hands. It took them nearly two hours to go through the paper.

"Well," Lenin persisted, "have you changed your mind about the first issue? Or are you still displeased?"

Inessa said nothing, her embarrassed smile was a good enough answer. That evening they were all gay. There was no end to the talk; they discussed the issue, reread the headlines, daydreamed.

"I'd like to get to Cracow sooner!" Lenin said. "In many ways it would be more convenient than Paris."

"Yes, we must get a little closer to Petersburg," Krupskaya said thoughtfully, "especially now that we have to keep in close touch with *Pravda*."

Inessa Armand reminded Lenin:

"Haven't you forgotten something? You promised that as soon as the first issue reached Paris you would mail an article to the editors. You must pay your bill, Vladimir Ilyich!"

"I haven't forgotten my promise, but I can't send anything right now. I have always wanted to write for workers. There isn't anything that is closer to my heart."

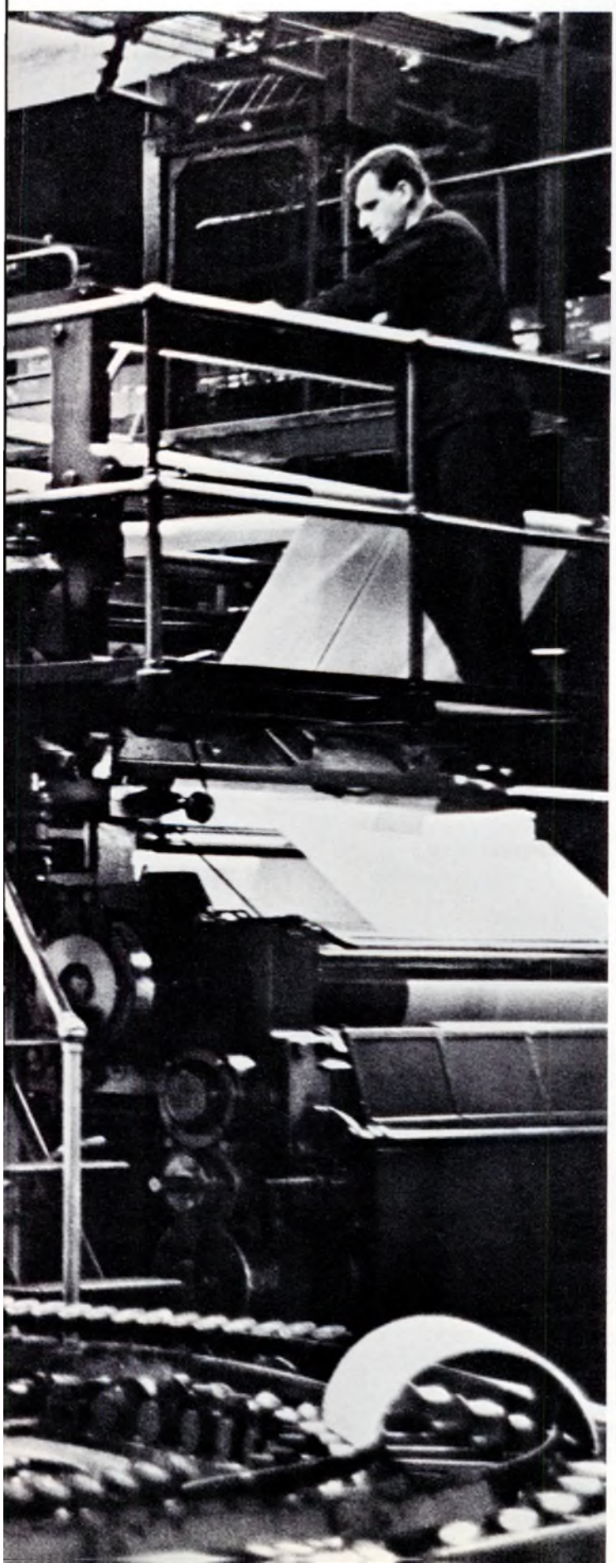
"Send them your latest article about the political emigrants. They'd gladly print that."

"No, I promised that to *Novaya Zvezda*. I can't go back on my word. But the first thing tomorrow I'll start writing an article specially for *Pravda*. I've already got the idea for it."

Lenin spread out the paper again. "It's wonderful, splendid, that there are so many pieces from workers! They are infinitely more important than my leading articles. They're a barometer showing how the workers live! . . . They've used the name I suggested, after all. I'll tell you confidentially, I was afraid they might not like my suggestion and might call the paper—as they meant to, at first—*Druzhba, Borba* or *Znamya (Friendship, Struggle, Banner)*. I could hardly wait to see the baby and find out what it had been christened. Nadezhda, tonight we'll send a telegram to Petersburg and congratulate the editors on their happy delivery and wish them a healthy, strong infant!"

Until fairly recently Yevgeni Litoshko was Pravda *correspondent in the United States. He is now an editor and one of the daily's several specialists on international affairs.*

This is where the reams of newspaper copy are transmuted into metal. Matrices are shipped by plane to 22 other Soviet cities.



These rotary presses turn out half a million papers every hour. Pravada *is now building a still bigger print shop.*

Deputy editor in chief Vasili Stepanov checks copy before it goes to press.

Editor in chief Pavel Satyukov began as a cub reporter on a youth paper.

Vladimir Yermakov looks over proofs fresh off the press. The issue features an article on the Geneva Disarmament Conference that people the world over look to with hope.

THE LAND and THE PEOPLE

THE WHITE SILENCE of the Arctic plains; the subtropical green of the southern coast; a turbulent river in the Carpathians on the country's western border; a fur-seal rookery on the Pacific shore at Sakhalin—this is the Soviet Union in all its diversity and vastness. It stretches west to east more than 6,000 miles and is seven times the size of India, 60 times the size of Japan and 700 times the size of the Netherlands.

Flying eastward from the western frontiers, you see the blue-shadowed peaks and the mist-shrouded valleys of the Carpathians and the narrow gleaming ribbon of the Dnieper. Beyond sprawls the far-flung Russian plain that resembles a man's work-roughened palm, lined with rivers and thickly interlaced with rail lines.

Farther on, the Ural Mountains with their wealth of iron ore, copper and wolfram lie north to south like a fur neckpiece to ward off the Siberian cold. Behind the mountains are green forests, blue lakes, mighty rivers. From above the surging Ob, the Yenisei and Lena look like great scars cut into the land with giant sabers. The Far East, Chukotka and Kamchatka loom up next, and finally, dotting the green, glassy waters of the Pacific, the Kuril Islands on the eastern border.

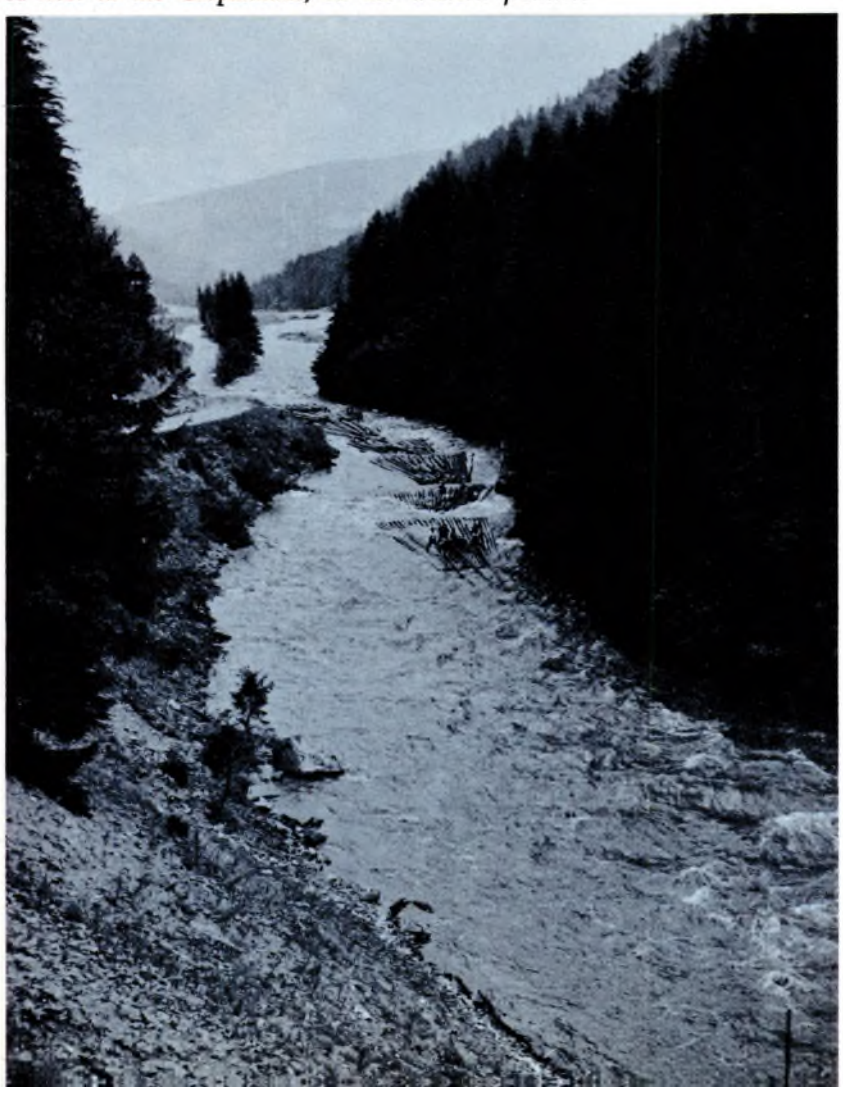
In the north we have the Arctic Ocean with its floating icebergs that look like immense sugar cones, and the tundra traced out by moss and lichen. In the subtropical south we have the emerald green of wooded mountains, palm leaves steaming in the sultry heat and the transparent blue sea that meets the horizon. The sun never sets on the vast expanse of the Soviet Union, the largest country in the world, inhabited by more than a hundred different nationalities.

There are the Russians with a rich and ancient culture, and the Touvinians and Tofalars, who live in the Sayan Mountains of Siberia and had no written language of their own before the Revolution. There are the Baltic Republics—Estonia, Latvia and Lithuania—with their European traditions, and the republics of Central Asia, which were once forsaken and squalid outposts of the Russian Empire and are today regions of universal literacy, advanced science and technology, prospering farms and industry.

All these republics, nations and nationalities have equal rights. Together they govern the country. For these 44 years they have been building their own future. We believe in the bright future we are creating, the Soviet people say, we believe in Peace, Labor, Freedom, Equality, Fraternity and Happiness for all the peoples of our planet.

The Main Caucasian Range

A river in the Carpathians, on the western frontier.



The Black Sea coast, in the southern part of the USSR.

A scene typical of the Central Russian countryside.

Beyond the Arctic Circle—one endless white silence.

An inhabitant of the remote North of the Soviet Union.

A fur-seal rookery on Sakhalin Island in the Pacific.

And a resident of one of the Central Asian Republics.

EVENTS AND PEOPLE

LADY SKIPPER

A seafaring superstition has it that a woman aboard ship means trouble. The 92-man crew of the Soviet trawler *Novikov-Priboy* disagrees. They should know, their skipper is a woman.

Captain Valentina Orlikova hardly looks the part. She is so diminutive she has to stand on a small stool to read her instruments. But the crew responds to her orders in the best marine tradition.

Captain Orlikova received her baptism of fire on the high seas in 1941. The first ship she commanded was the last to sail from Estonia with wounded soldiers. Later she captained ships bound for Norway and Sweden through showers of enemy bombs.

After the war she was appointed captain of a whaler. Then followed a shore job at the Ministry of the Fishing Industry against which she rebelled. "What sort of a skipper am I," she objected, "without a ship? I want to go back to sea."

She did. And for five years she has been bringing the trawler home to Murmansk from runs in the North Atlantic with holds full of perch and cod. She has been awarded the title Hero of Socialist Labor.

Captain Orlikova has a son, and to make a real man of him she signed the young lad on as deck hand for several voyages. The crew learned that Alexander was the skipper's boy only after the ship made port. Alexander is now a student at the Power Institute.

YOUNG PIONEERS JUBILEE

The Young Pioneers celebrates its fortieth birthday this year. The organization, to which practically all Soviet boys and girls between the ages of 10 and 15 belong, was set up for the purpose of educating the younger generation to be strong, inquisitive and honest.

Every town, no matter how small, has its own Pioneer Palace, with an activity program led by teachers and trained group leaders in music, literature, dancing, painting, photography, plane and ship modelmaking, radio, sports, and scores of other activities. All this is free—the state provides materials and defrays other expenses.

The activity program includes outings for studying the history and geography of the region. A good many new mineral deposits have been found in the course of such excursions. Young Pioneers take over personal guardianship of plants, birds and animals.

More than seven million boys and girls spend their summer vacations at camps, children's sanatoriums and tourist centers. Young Pioneers are pen-pals of children in other lands, and Artek, the Pioneer camp on the Black Sea, is open to foreign boys and girls of many nations who spend the summer with Soviet children.

LEO TOLSTOY'S WILL

The originals of two wills that Leo Tolstoy drew up on July 17 and 22, 1910, have been found. Copies have long been on museum display, but the whereabouts of the originals were unknown until now. They had been preserved by the noted musician Alexander Goldenweiser, one of the three witnesses to both wills. After Goldenweiser died, his wife presented the documents to the Tolstoy archives.

Witnesses to the first of the two wills had not complied with all the legal formalities. Tolstoy therefore drew up a second one five days later. It was written secretly, in a wood near his estate at Yasnaya Polyana.

In these documents the writer bequeathed all of his literary works to the people. When his son Andrei contested the will, the governor of Tambov, under whom Andrei served, reported: "By this will all the members of the family are deprived of an inheritance worth many millions and, what is of state importance, by the same will all of Count Tolstoy's works are made available for wide circulation."

The codicil reads: ". . . The will of Leo Tolstoy with regard to his writings is as follows: He wishes . . . all his works, those already published everywhere and those as yet unpublished, not to become anyone's private property after his death." To this is appended in Tolstoy's own hand: "I agree fully with the contents of this statement, which has been drawn up at my request and expresses my desires exactly."

ANIMATED CHESS AND MORE

It's not often that you hear a duet sung by a celebrated tenor—in this case People's Artist of the USSR Ivan Kozlovsky—and an ex-world chess champion—in this case Vasili Smyslov, who incidentally turns out to be a pleasant, though not very strong, bass-baritone. It happened at the Moscow Sports Palace a while ago when a crowd of 10,000 had a rare opportunity to see a chess game, hear a concert and watch a sports performance all rolled into one.

Vasili Smyslov's chess opponent was the current world champion Mikhail Botvinnik, and the moves were relayed to the spectators via an "animated chessboard"—a huge carpet with prominent athletes and actors representing the pieces. When a piece was lost, its human counterpart appeared on the stage and went through his paces. As the game proceeded, so did the stage show. One number that had the spectators on the edge of their seats was an equestrian exhibition led by Olympic champion Sergei Filatov.

The chess game was a draw, but there was a winner nevertheless—the Peace Fund, to which the box-office receipts were contributed.

A HUNDRED THOUSAND GUESTS

The Council of the Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries recently held its third session in Moscow. The council is composed of 197 people eminent in their fields of endeavor—scientists, educators, artists, men of letters, industrial workers and farmers.

The organization is made up of 38 societies and associations and maintains contact with 118 countries. Its function is to familiarize the Soviet public with the way people in other lands live, their history, traditions, and scientific and cultural achievements. The Union commemorates the national holidays of the various countries and the anniversaries of their eminent men with appropriate ceremonies.

During the past two years the Union has welcomed some 100,000 foreign tourists and arranged receptions, lectures and meetings for them.

In the United States the Union maintains contact with 60 institutions and organizations, among them leading universities, libraries and professional organizations of art workers.

"I'M GLAD TO BE VISITING AGAIN"

. . . said American novelist Mitchell Wilson when he came to Moscow with movie director Lester Cowan for talks about a Soviet-American screen version of *Meeting at a Far Meridian*, the first of Wilson's books to be published simultaneously in the United States and the Soviet Union.

"The popularity of the novel in my own country," he went on to say, "is explained by the wide public interest in the way Soviet people live, in Soviet science and in the friendship of scientists of different countries."

The film will deal with the work of Soviet and American atomic physicists, their cooperative scientific effort, and American and Russian attitudes generally. The idea for the joint production was suggested by the USSR Ministry of Culture.

"This is my fourth visit to Moscow," Wilson said. "I am acquainted with many of your writers and atomic scientists, and I shall be glad to meet them again."

HEART SURGERY ADVANCE

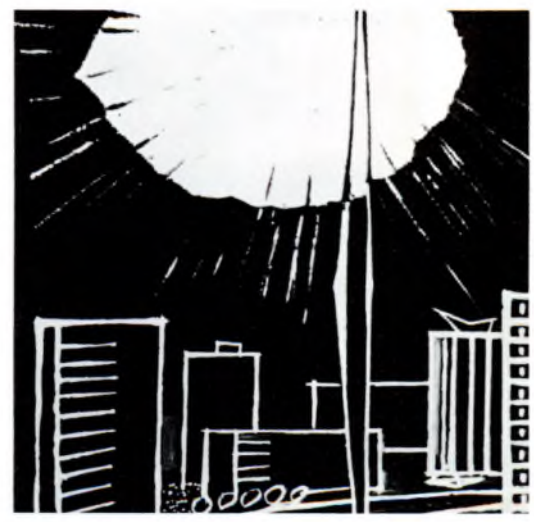
The accompanying photo shows a heart operation. Surgery of the heart and blood vessels is done at many Soviet hospitals. There has been marked progress in the field in the past few years, with a special Institute of Cardiovascular Surgery doing research in the field. Its findings were recently summed up at a conference attended by many Soviet cardiac surgeons.

Institute surgeons performed more than a hundred heart operations, using artificial blood circulation apparatus. Artificial partitions were created for two girls with three-chambered hearts.

Professor Nikolai Amosov of Kiev used an artificial blood circulation device he designed in more than 200 operations. His apparatus requires a third to a half of the blood other devices use.

Some patients with blood maladies or with particularly serious heart diseases do not respond well to surgery with artificial blood circulation. Surgeons looked for other methods that would make it possible for these patients to tolerate oxygen deficiency. They found the answer in a reduction of the body temperature to 46-50 degrees Fahrenheit.

It was thought by physicians in several countries that the method might damage brain tissue or disturb cell metabolism. But the conclusions of the Institute of Cardiovascular Surgery prove that fear groundless. When the method is properly used, the changes that occur in the patient's body are even slighter than those that take place with the more usual artificial blood circulation method.



A SUN FOR EVERY CITY

A group of young engineers of the Moscow Electric Bulb Factory have designed an incredibly powerful searchlight, which they have named Sirius, after the brightest star in the heavens. The new searchlight is a hollow quartz tube filled with xenon to which tungsten electrodes are attached at each end. The bulb "roars" when it is first switched on, the sound caused by the electric charge. Sirius generates enough heat to melt aluminum at a distance of about eight inches; it is cooled by a steady flow of distilled water.

The capacity of this artificial sun is 300,000 watts, the equivalent of 12,000 light bulbs of 100 watts. Suspended at a height of 328 feet, Sirius will provide even, pleasant light for a city of 100,000. These "suns" will soon be illuminating many Soviet towns, replacing the present complex lighting systems. The first Sirius is being shown at the USSR Permanent Exhibition of Economic Achievements in Moscow.

Last June, after graduation, the young people in our story went to Red Square to see the sun come up—a traditional farewell-to-school ceremony.

FACING LIFE

BY STANISLAV SERGEYEV

WE MET our young heroes a year ago. It was in May, the month Moscow seems to have just awakened and washed itself in the fresh winds of spring; when the face of the 800-year-old veteran is covered anew with a soft down of green; when the city is in a state of siege—stormed by lovers. However, our heroes were too busy at the time to take note of nature's charms.

We entered Moscow School No. 155, taking care not to break the deep silence of its corridors. The graduating students were taking their examinations, and our heroes were writing their compositions. We chose seven of the thirty bent over their desks.

Nina Voronina. Pensive, tired. Her smile we glimpsed only after the exam session was over.

Borya Belov. Head low over the paper. All we could see was his hand shuttling back and forth.

Lyosha Mukhin. Big, gray, laughing eyes, and a mouth permanently turned up at the corners.

Toma Kuznetsova. A round face that showed the marks of a sleepless night of cramming.

Lena Shokhina. Hair in a neat bun. Trying hard to concentrate, not very successfully.

Kolya Alexandrov. A large hand rubbing a furrowed brow.

Sasha Tevosyan. Black eyes that snapped, "Why can't people be quiet!"

That was how we met. Some weeks later, we went to the graduation party and afterward strolled with them through the streets and along the river front. We kept in touch that first year after they left school, visited them at work, spent evenings with them at the Café Molodyozhnoye where they usually gathered.

For a whole year we watched yesterday's children pushing their way into a life stripped of the romantic aura of school days, where successes and joys went hand in hand with difficulties and failures.

One evening we got together at Toma's house. The radio hummed softly. A couple of bottles of dry wine lent a festive touch. On the table lay the open copy of Boccaccio's *Decameron* Toma had been reading. The book prompted the manner in which we spent the evening. Somebody produced a pencil and suggested we call it the "conductor's wand" of our conversation. Each of the seven was a "conductor." Since the most resolute of the lot was Lyosha Mukhin, his story came first. He called it:

Down with Frich!

The first year of the war was also the first year of Lyosha's life. He was born on December 24, 1941, and that very day a German bomb fell on School No. 155. His mother shielded him as best she could from the horrors of the war years—the night bombings, the hunger, the cold. The war finally ended, and on September 1, 1950, he stood excitedly at the door of rebuilt School No. 155. His excitement was short-lived, however. He fell fast asleep during the second lesson and was rudely awakened by the bell for recess. During the third lesson he declared finally, "I wanna go home."

His early school years were in no way phenomenal. As soon as he came home, he'd throw his bag down and run out to play. He was the "chief" of a "tribe" that had declared war on the boys in the next block. Their "chief" was a freckle-faced boy Lyosha hated—why, he didn't know—and whom he called Frich, because it sounded like such a repulsive name.

For him, Frich was the embodiment of cowardice, treachery and evil. Armed with a homemade wooden shield on which he had painted the war cry "Down with Frich!" he led his men in battle. Later on, whenever he encountered some injustice or other, he would mutter, "Down with Frich." That spurred him on to the attack.

He developed a sudden and intense passion for geography in the sixth grade and began to bring home rolls of maps on which he traced the outlines of continents and countries for hours on end.

In the ninth grade he declared that the school was sure to fold up if it did not acquire a meteorological station of its own. He wheedled a rain gauge out of one person and a barometer from someone else. The school administration promised him the help of a few seniors. Although the weather station did not materialize, the school did not collapse. But neither did Lyosha's dream of studying the earth and probing it all the way to its center. Lyosha decided that he was going to be a geologist.

But his stay at the geological institute was cut short after his very first examination. He flunked math. He had set out to prove that he knew not only algebra and geometry but also the art of creative thinking. After spending three and a half hours out of four trying to work out an original solution for a problem, he got himself so entangled that it took the remaining half hour to extricate himself. Then, just at the moment when his brain began to function with the speed and precision of a computer, the bell rang. Lyosha looked pleadingly at the proctor; all he needed was another ten minutes. The proctor spread his arms wide, shook his head, and that was that.

Lyosha muttered, "Down with Frich." He decided to attack geology from another angle and went to work with a hydrological expedition. This summer he'll help probe the "innards" of the Sayan Mountains in Siberia, and in the fall he'll try the institute entrance exams once again.

On that hopeful note, Lyosha concluded and passed the baton to Toma Kuznetsova. She called her story:

My Four Best Friends

Toma's father fought at the front from the very outbreak of the war. A builder by profession, he shouldered a gun to defend the things he and other men had built. He soon grew used to the symphony of destruction—the thunder of exploding shells, the clanking of tank treads, the roar of aircraft motors. He fought furiously and ruthlessly so his children would never have to hear those sounds. Toma learned about the war from books. The sounds she grew up with were those of peacetime construction, sounds she learned to translate into music.

A neighbor's daughter was applying for entrance to a music school and persuaded Toma to come along. Both children took the entrance examination. Only ten of the applicants passed; Toma was one of them.

For the Kuznetsovs their daughter's penchant for music was a complete surprise. But they made the adjustment fast enough and bought Toma a cello. With that she was launched on what appears to be a promising musical career.

A year ago Toma completed two schools simultaneously—the general secondary school and a music school. She's had her ups and downs carrying a heavy program, but her beloved cello, she feels, pulled her through many of the "downs." It's the best friend she has, Toma says, or more accurately, the best four friends she's had. As she grew, she had to change her cellos. This is the fourth, and it helped her through the entrance exams for the Gnesin College of Music, one of the top conservatories in the Soviet Union. She did not take the exams immediately after graduating but gave herself an extra year for preparation so there would be no chance of failing. Evenings she has a job transcribing music.

Our future concert artist passed the baton to Borya Belov for a story he titled:

Twice Two Is Five

The grandson of a Moscow cabby, Borya is a physics and math major at Moscow University. He also writes verse and finds as much poetry in a complex formula as in a well-turned phrase by his favorite poet.

During the first four years at school he made good grades; then he got his first poor one—in arithmetic. That was because he just didn't bother working out the simple problems on paper but did them in his head. He told the teacher, "There are too many difficult problems in life to spend time on the simple ones."

In his senior year at school he learned Einstein's theory of relativity and read everything on the subject he could lay his hands on. After that he looked at his studies with a skeptical and somewhat jaundiced eye. Somebody might come along at any moment and prove that twice two was five. (Wasn't everything in the world relative?)

Borya soon discovered that it takes a great deal of knowledge to be a proper skeptic. When he took his graduation exam in algebra, he tried to show off the knowledge he had picked up in an advanced college textbook, with the result that the school's best math student got a barely passing grade.

In the fifth grade, Borya reported, he began to read avidly and at a fantastic rate. He'd swallow books at 100 pages an hour. For his entrance exams to Moscow University he must have gone through a whole mountain of books and kept them company with a second mountain of cigarette butts. He smoked like a chimney until that grand and glorious day when he learned that he had passed the exam. Then he ran like mad to the Moscow embankment and ceremoniously dumped all the cigarettes he had into the water. Standing there, disheveled and wild with joy, he was very unlike the usually staid and slightly sardonic Borya Belov.

On that resolute note Borya passed the baton to Lena Shokhina. She called her story:

The Little White Cap

Lena said that other people might think it odd, but she was never so sad as the day she heard the school bell ring for the last time. When she trooped into the auditorium with her classmates, and smelled the lilac blossoms through the open window, and listened to the teachers giving their parting advice, she felt so bad at leaving school that she burst into tears. And that night she couldn't sleep for all the memories running through her head.

There was the first time she wore the red tie of a Young Pioneer. The initiation ceremony took place at the Lenin Museum—very solemn. Then there was the year the school went coed. The sexes didn't mix well at first. Peace and mutual understanding were reached only after a pitched battle in which a few pigtails were pulled and faces slapped. She remembered that during recess the girls went after the ringleader Sasha Makeyev with a wet rag. They were soon joined by the boys, who, it turned out, also thought Sasha a nuisance. After that all was quiet on that front.

Then there was the day when the Secretary of the Young Communist League District Committee pinned a YCL badge on her best school uniform. She was the first YCL'er in her class.

But to explain the title of her story. She was the only one in the grad-

Graduation signifies the end of childhood and the beginning of adult life.

A happy occasion, slightly tinged with sadness, when the school principal confers graduation certificates.

Only a few days before, after weeks of cramming, they had taken their exams.

Shortly glasses will be lifted to toast the school, teachers, undying friendship and the future, of course.

uating class who hadn't made up her mind whether she would go to work or go on to college. She kept asking the other girls what they were going to do, without being able to come to a decision. Only after she applied to a medical institute did she begin to get excited about the idea of becoming a doctor.

Ironically, she failed in her best subject—physics—when she took the entrance exams, and was very upset about it. She got the results the day Gherman Titov returned from his space flight, and that didn't make her feel better. She kept telling herself, "Look what other people can do, and you can't even pass a simple physics test."

She took herself on as her own first patient. The diagnosis was easy—lack of confidence. The best medicine for that was action. Now Lena, decked out in white cap and smock, can be found in the reception office of Moscow Polyclinic No. 42. In a few years her place will be taken by some other girl in a white cap and Lena will have achieved her goal of becoming a doctor.

Nina Voronina was the next baton-holder with a story she called:

"We'll Try"

Nina was born aboard a Vladivostock-Moscow-bound train. Her father was in the Army, and the family shared his nomadic existence. The Voronins lived in many cities of the Soviet Union, and Nina's schools followed one another like milestones. The constant moving about perhaps explains why she chose flying as a career. At school she was good in physics, and everybody—classmates, teachers, parents—thought she would go in for it seriously. They were all surprised when she applied for admission to the Moscow Aviation Institute.

There was no end of argument at home over the choice she had made. Her parents said, a little sarcastically, when she went off to take her entrance exams, "See that you don't crash, pilot."

She didn't, she made a three-point landing. But the big test is still to come. Will she make it or "fly out" of the institute? It will take some doing to manage four hours of classes and a full-time, seven-hour-a-day factory job. That is more than a great many people could manage. "But," said Nina with a smile, "how can you tell unless you try?"

Now Kolya Alexandrov took the floor with a tale he called:

Lost Prize

Kolya's life, thus far, seems to be curiously divided between timepieces and aircraft. Like Nina, he took the exams at the Aviation Institute, but unlike her he did not make the grade; the competition was too keen. As a result, he lost a full year—or thought he had. Some of his friends thought differently. Wasn't he learning a lot in the machine shop of the Second Watch Factory, where he had a job? Wouldn't all this help him when he started to work with aircraft engines? It would, of course, he had to agree.

His whole class at school got its practical training at the Second Watch Factory, where they served their apprenticeship. At graduation they received their diplomas and certificates of first-category workers. Those who had done especially well were also presented with new, shiny clocks. Kolya was entitled to one of those clocks except for the fact that he had played truant twice—the first time on April 12, 1961, when the world was introduced to Yuri Gagarin, and the second time, two days later, when he went to Red Square to see the first spaceman.

It was then he resurrected his boyhood dream of becoming a flyer. The balcony of his apartment looks out on Central Airport, and he spent hours watching the big planes take off and land. He made any number of glider and plane models with rubberband motors.

Then his interest shifted, quite suddenly, when he came across a radio electronics book. He read it from cover to cover, pushed aside his plane models, and started from scratch to build a crystal set. When he picked up his first station, his joy knew no bounds. Then he tried his hand at a vacuum-tube set and a portable transistor.

He carried his passion for taking things apart and putting them together into his job. He's been wanting to do that with some of the complex watchmaking machines at the factory, to find out the principles by which they operate. But for that he has to know theory. He's getting it in a correspondence course.

All of which goes to prove that he isn't losing a minute at the watch factory, let alone a year. On the contrary, since his was a watch factory, he had time in his grip.

Kolya gave way to Sasha Tevosyan for an autobiography he called:

Nocturnal Concerts

For Sasha happiness has always meant being able to devote himself completely to writing. Sasha has been trying to write poetry and compose music ever since he can remember. He used to bring to class whole copybooks of compositions he'd written. The way other boys lost themselves in a soccer game, he could lose himself in the somber beauty of Verdi's *Requiem* and the lyricism of Blok's verses, in Beethoven's passionate symphonies and Verhaeren's and Mayakovsky's thunderous poetry.

He has so deep-rooted a love of music that he often hums recognizable melodies when he's asleep. Once, says his mother, she listened to him hum a good part of a Ravel concerto, another time Scriabin's *Poem of Ecstasy*.

When he was 14, Sasha began to compose sonatas. The themes, he explained, just popped into his head at odd moments, usually when he was trying to concentrate on something else. Once when he was working on a physics assignment he found the formulas and the notes of the composition jumbled together on the paper.

Now he's studying at a music school and working as assistant soundtrack man at a film studio. There are moments when he has to record a bad musical accompaniment—distressing moments for him. He hopes some day to wield a real conductor's baton in a performance of his much-loved Shostakovich's *Fifth Symphony*.

* * *

It was past midnight when we left Toma's house. The fresh spring wind cooled our faces and was appropriate to the evening we had spent with these young people looking forward to the creative season of their lives.

Graduate Lena Shokhina works in a hospital office. She hopes to study medicine.

Lyosha Mukhin will work with a geological expedition in Siberia this summer.

Toma Kuznetsova transcribes music, but the cello is her real vocation.

Kolya Alexandrov now has a job at the factory where he did his school work-training.

Sasha Tevosyan studies music nights; by day he is a film sound-track man.

This fall she will enter one of the country's most famous conservatories.

Nina Voronina expects to design aircraft. She's at the Moscow Aviation Institute.

Borya Belov is a physics and mathematics major at Moscow University.

This first year after graduation is obviously not all work and study.

TWO RIVER PILOTS

BY YURI GRAFSKY

STRELKA is a port on the Yenisei River, about 185 miles below Krasnoyarsk, in Siberia. It stands at a lively hub, where the Angara flows into the Yenisei and a mile of water separates the high, thick-wooded banks. To handle the shipping traffic at this turbulent stretch where the two great rivers meet takes skill, quick thinking and, ofttimes, cast-iron nerves.

Moored to the many piers that jut out from the shores are diesel ships and cutters. Huge barges stand by, tractably waiting to be loaded, the port cranes towering above them. Caravans of ships sail up and down the river past Strelka. Diesel boats drop passengers at the port. Cutters scurry about transporting raftsmen, loggers and geologists to the Angara.

The famous Siberian timber, prized for shipbuilding, construction, and furniture—all of it that floats down the Angara—is stopped at Strelka, where the huge log rafts are tied together into still huger rafts and floated off farther downstream to the sawmills.

Regulating the traffic at Strelka is a man-sized job, and it merits a high merchant marine rating. The harbor master is young Alexander Krayukhin. He wears four stripes on his sleeve and the gold-braided "crab" of a captain on his hat.

One evening we visited him in his small, neatly furnished cottage where everything is ship-shape. The first thing we noticed as we entered the house was a tightly packed bookcase. The captain's reading tastes run, not surprisingly, to the sea. Jack London, Stanyukovich, Novikov-Priboy and Lavrenev are well represented.

His wife, Galina, a plump, gentle, dark-haired woman with a pleasant smile, had just come from her job in the port. She was busy setting the table, while the captain, in civilian clothes, played with their eight-month-old daughter Irina and told us about himself and his work.

He came to Strelka four years ago after graduating from the Novosibirsk Institute of Water Transport and took a job of piloting a cutter to get the feel of the river.

"That first year—1958 it was—I learned more than I'm ever likely to again in a single year," he said reflectively, putting his daughter down on a blanket on the floor. "The hard way," he added. "The water in the Angara fell very low. The dry rocks stuck out. You could wade across in some spots.

"I should tell you that our section has 14 rapids. Even under normal conditions it's not easy to bypass them, let alone in a special situation like that. The rafts were getting stuck higher up on the Angara, and the fleet was in danger of being detained. Water was to be supplied by the Irkutsk Hydroelectric Station, while our job was to keep the timber rafts off the rocks. It was late in the fall, the wind was blowing hard and the rain was ice-cold. We waited for the rafts a long while. Finally the first diesel boats showed up, hauling the long rafts behind them.

"Our tug stuck close to the rafts, pushing them from behind and from the side toward the fairway. The tug captain kept asking me for advice, and I gave it in a voice that I am sure must have been shaky with uncertainty and apprehension.

"On the fourth day we reached Tatarka, not far from the Strelka rapid. There wasn't much water, and the rafts swerved to the right. The head raft got stuck on the rocks and pulled the diesel ship with it. The rocks stove a hole in the ship's bottom. The cables snapped. The rafts were breaking up, the logs bobbing about like matchsticks. It was freezing cold and the river was beginning to ice up. We had to work in the water to fix the hole in the bottom of the diesel boat.

"For a week we got no sleep and ate when we remembered to, but we saved the rafts. The old settlers said they couldn't remember a fall season like that, worse even than during the war years."

The captain finished his cigarette in silence, meditatively. It wasn't an easy life, certainly. And in such a remote port.

"Why did you stay?" we asked him.

"I like it here," he answered simply. "The Yenisei is a wonderful river, and Strelka is its best port. Besides, the Angara and Yenisei are in the family blood, I guess. I'm a hereditary river worker, you know. My father is also a harbor master, at Yeniseisk, about 40 miles from here. I prefer Strelka. It's a tougher job, but it's also more interesting."

When we left, the captain said, "If you get to Yeniseisk, give our best to Dad—mine, my wife's and, most important, the baby's."

Two days later Krayukhin senior got the message, but not from us.

The pilot of the cutter that took us to Yeniseisk was a speed demon. Some of his breakneck turns and twists had us gasping. We were not sorry when the town loomed into sight, an old town of one-story houses and a belfry gleaming white in the sun.

The pilot sped to the pier for all he was worth. A woman's voice rang out on the river, "Cut your speed!" And then we noticed a dispatcher violently waving her megaphone. The captain looked straight at her, his hand steady on the wheel. At the very last minute he cut his speed and the cutter, rolling on its own waves, came alongside the dock. The pilot winked at the girl and jauntily lit a cigarette.

Suddenly, a hoarse voice bellowed from the harbor master's quarters. "Who the devil's on that cutter? Oh, it's you. Come on up, I want to see you, and make it snappy."

The pilot chucked his cigarette butt and, buttoning his collar on the go, ran up the stairs. That, we thought, must be Krayukhin senior. We followed the pilot and listened from an inconspicuous distance.

"What do you think you were doing—putting on a show? You know you're not allowed to come into port at that speed. You just try that again and I'll see that you do all your speeding on shore. It's the last time I'm going to talk to you. Take my word for it, the next time. . . ."

The wily pilot interrupted with, "Greetings from Alexander, and from Galya and Irina."

That stopped the harbor master. "Is she all right, the baby?" he asked.

"Wonderful, a beautiful child."

Krayukhin coughed, got formal again. "All well and good, but a rule is a rule. You'll have to pay a fine for breaking the speed limit."

Ivan Krayukhin is an old river pilot. He sailed the Ural rivers way back at the beginning of the century—first as a sailor, then as a helmsman. He is a small, spare, energetic man with the keen, penetrating eyes of a real captain.

His first teacher, the skipper of a vessel he sailed on, told him, "To get anywhere, Ivan, you have to study." And so Ivan did. He studied the science and art of navigation, the fairway and the changing moods of the river. He earned his pilot's license when he was 20 and his first mate's papers shortly thereafter. His first command was at Tyumen. He has sailed tugs, barges and passenger vessels.

In the mid-thirties Krayukhin moved to the Yenisei. He served for 15 years as superintendent of the port of Igarka in the North and then transferred to Yeniseisk, where he has been since 1950.

The harbor master's main job is to meet and send off the many passenger boats that stop at Yeniseisk. The 70-year-old captain is always on hand, no matter what time of day or night a ship docks. In the daytime he wears a white tunic, in the evening a dark one, always impeccably dressed. This sturdy, broad-faced, smiling harbor master waving from the top deck of the passenger terminal is as familiar a sight to the skippers of passing ships as a beacon.

He is also a familiar sight to the townspeople as he walks, unhurriedly and sedately, along the high bank past the houses with their steep roofs. There is something solid and strong and confident about him, like the Siberian country he lives in.

The passenger terminal, a spacious blue-and-white building, is the captain's pride and joy. Back of it is a garden with broad-branched trees, arbors, sandy lanes, and tables at which waiting passengers may drink tea and play dominoes —a peaceful and very relaxed setting.

We watched Krayukhin walk through the garden, touching a branch here and there with a sense of personal pride. All of it was built under his guidance and with his participation.

His son, it occurred to us, had inherited more than a vocation from the old captain. The father had handed down to him the great tradition of Russian seamanship—hardihood, courage, devotion to duty. They were all in the story he had told us about his first year at Strelka.

Dr. Maxwell Lear of Yale Medical School at the American medical exhibit in Moscow. It will close July 2 after being shown in Kiev and Leningrad.

AMERICAN MEDICAL EQUIPMENT ON DISPLAY

BY STANISLAV PSHENNIKOV

MUSCOVITES recently viewed a display of American medical equipment. The exhibit, which opened in the capital, will be shown in Kiev and Leningrad before closing on July 2.

The 1959 Soviet-American agreement provides for the exchange of six cultural and scientific exhibitions. This is the third American show, following one on plastics and one on transportation. The Soviet Union has also had three shows in the United States—children's books, children's art and medicine.

The equipment displayed—some 300 eye-catching items among them—was provided by manufacturers and by such professional organizations as the American Medical Association and the American Dental Association.

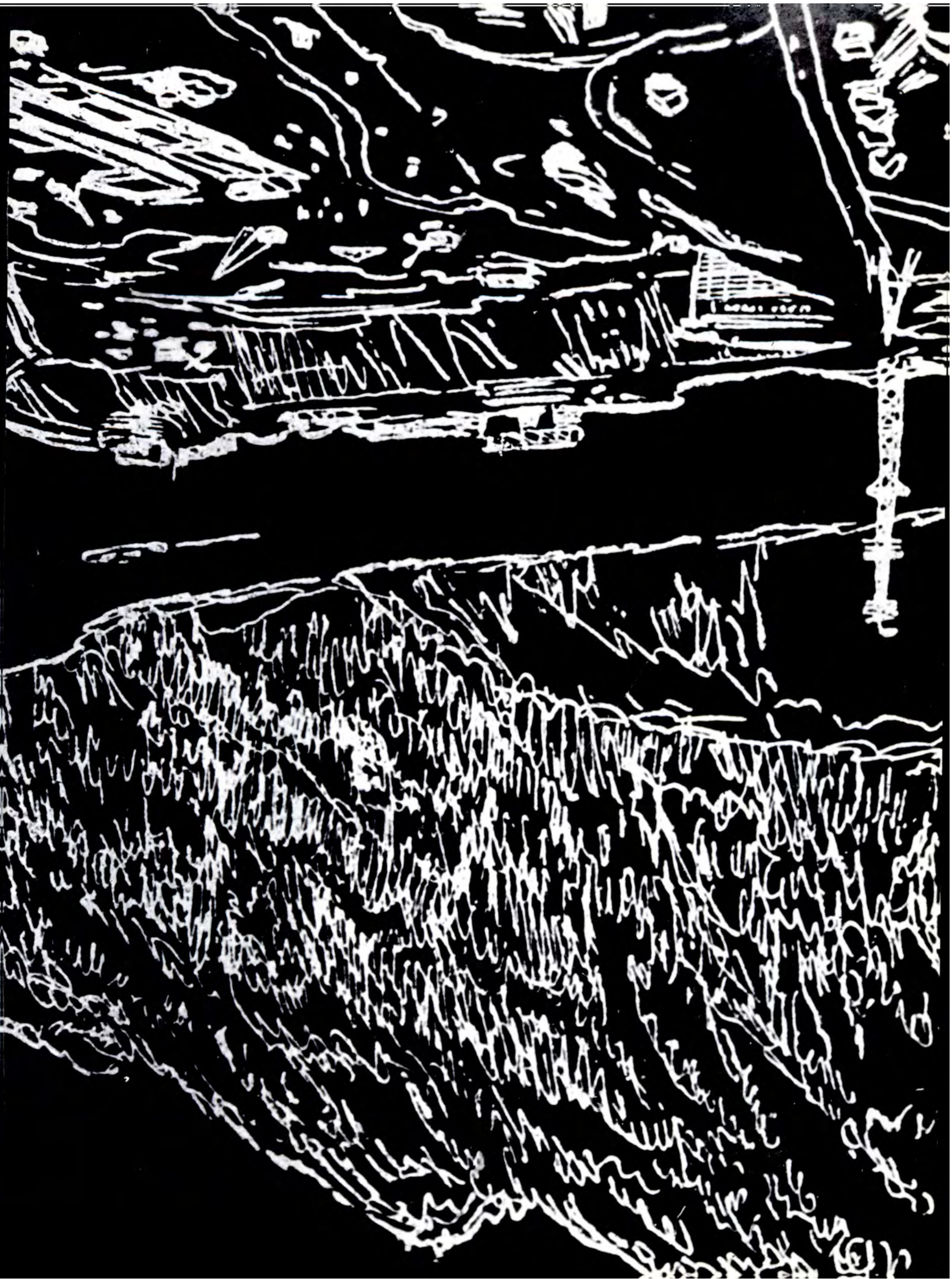
The milling crowds that filled the exhibit hall daily were made up of medical people and those in related professions for the most part, with a sprinkling of laymen.

Reaction to the exhibit generally was very favorable, although some visitors expressed the feeling that they would have liked to see more of the latest devices.

The 24 men and women who staff the show, all of them Russian-speaking, include seven doctors and one dentist. Their dean is 73-year-old Dr. Maxwell Lear, Assistant Professor of Surgery at the Yale Medical School, who was born in Russia. This is his first visit since 1900.

The youngest staff member is Dr. Ira Lubell, a recent medical school graduate. The exhibit director is Andrew Falkewicz, assisted by John Dixon. The medical director is Assistant Professor Patrick Storey of the University of Maryland Medical School.

Russian-born Dr. Zaren, a Florida general practitioner, had a consulting office set up at the entrance of the exhibit. His wonderful "bedside manner" has probably made him the most popular figure at the show. ★



NEW TOWN IN THE WILDERNESS

DRAWINGS BY YURI TSISHEVSKY

WHEN THEY FIRST CAME to this wild and almost impassable Siberian taiga country, they were awed by the majestic settings. They stared at the mighty Yenisei River rushing through the primeval forest, at the towering red-gray cliffs reflected in the water, smoky with cold mist in the early morning and golden and crimson in the midday sun, at the mountains that tapered off into a bluish haze on the horizon, and exclaimed, "This is wondrously beautiful."

And so these young people, who had come to build one of the world's largest power projects, the Krasnoyarsk Station, called their future town Divnogorsk. ***Divnyi*** in Russian means wondrous, and ***gorsk*** comes from ***gory***, mountains. The name they chose was more than a description, it was a challenge. This fabulously beautiful country, they felt, could be generous to the brave and daring, but it could also be pitiless to the weak and fainthearted.

These are venturesome and farsighted young people building Divnogorsk, volunteers who responded to the call of the Young Communist League. Only the best were chosen for this Siberian assignment. They are aware of the charge entrusted them, the responsibility they bear. They know that what they are building is not just a power station and a town but Siberia's future.

The power project is a herculean job—a dam 425 feet high, its ends resting on the high cliffs of the Yenisei shores, a spillway for a torrent 330 to 400 feet wide. The dam will bottle up a great man-made body of water—the Krasnoyarsk Sea.

What you see now is an enormous square of the rocky river bottom surrounded by a high dike of earth. Seen from above, the builders look like hundreds of restless ants working with toy trucks, excavators, bulldozers and cranes.

On closer view and short acquaintance you make out faces and individuals. Here is Gena Neustroyev, leader of a team made up mostly of demobilized sailors, busy lining the bottom of the pit with concrete, and the men in Nikolai Smelko's team, using their lunch hour to go through the instruction manuals for the machines they operate—a common sight on the project.

Not far from the dam site is another construction job—an aluminum plant that will be powered by the Krasnoyarsk Station. A good many of the people at work here are ex-servicemen who came to Siberia last year after they were demobilized.

Petya Bychok, one of the young fellows at work on this new town, deserves special attention. He believes that a man ought to learn his job from the ground up. When he came to the project from Tashkent, he asked for work as carpenter and bricklayer. He did well at both trades. More than that, he lent a hand wherever it was needed, made friends and took a lively interest in community affairs.

Petya worked that way for a whole year until one day it came out in conversation that he had a civil engineer's diploma in his suitcase. When friends asked him why he had kept that interesting fact such a close secret, he replied that before starting out as an engineer he wanted to try his hand at some of the more basic building skills. Now he's assistant chief of a construction section. An unusual fellow—Petya, they say in Divnogorsk. And he's not the only unusual fellow in this new town.

How do Petya and the other young people spend their leisure time? In a variety of very individual ways. Petya's passion is mountain climbing. Sunday mornings you'll find him setting out with a group of fellow alpinists to scale the high, fantastically shaped cliffs along the banks of the Yenisei. Others go in for hunting, fishing or hiking in this wilderness country.

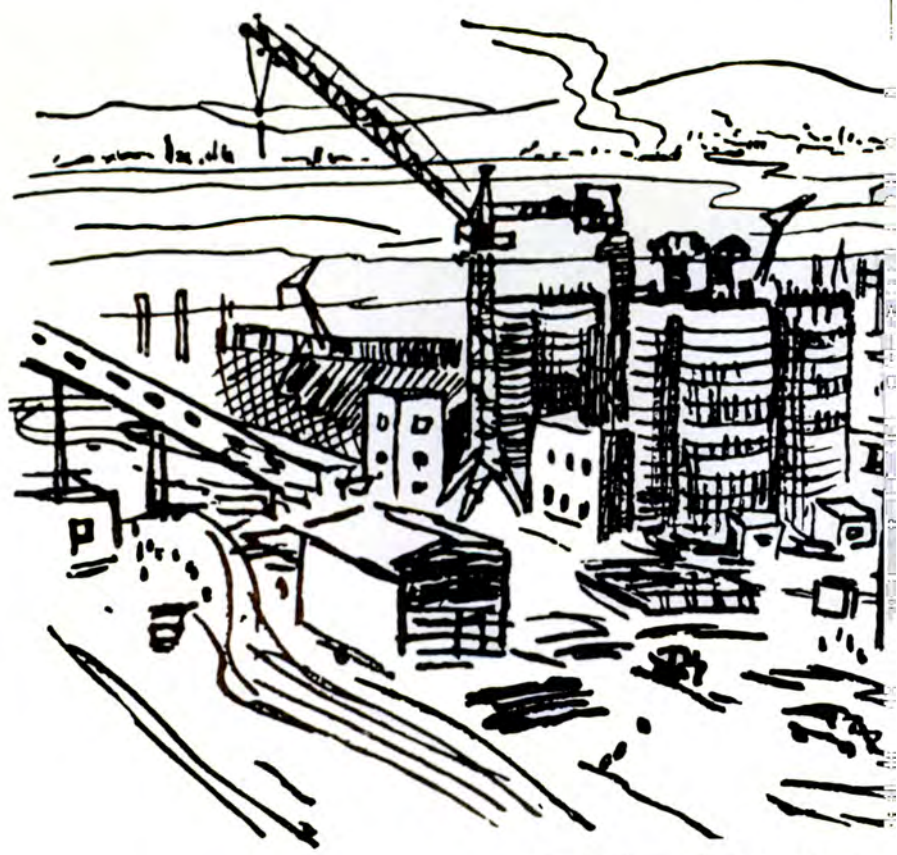
Evenings and weekends the local club is the general gathering place, with dancing the favorite activity.

You have to look closely at these well-dressed young men and women to recognize them as the people who weld, assemble, lay bricks, drive piles, pour concrete and operate bulldozers during the day.

These young citizens of Divnogorsk have plans for the Siberian country they have learned to love and for their growing town. They see it as the future mountain climbing and skiing resort center of Eastern Siberia, perhaps all of the Soviet Union.

In one of the new buildings on the Yenisei banks the lights keep burning far into the night. It's where architects work over sketches and blueprints that lay out the shape of the Divnogorsk they have in mind. It is no simple matter to design a new town, says Gherman Serkov, who heads the group. It takes thought, discussion and innumerable drafts.

Section head Vera Alexinskaya with Vasya Shitik, a carpenter.



An aluminum plant near the dam will be powered by the station.

Engineer Petya Bychok goes mountain climbing in his spare time.

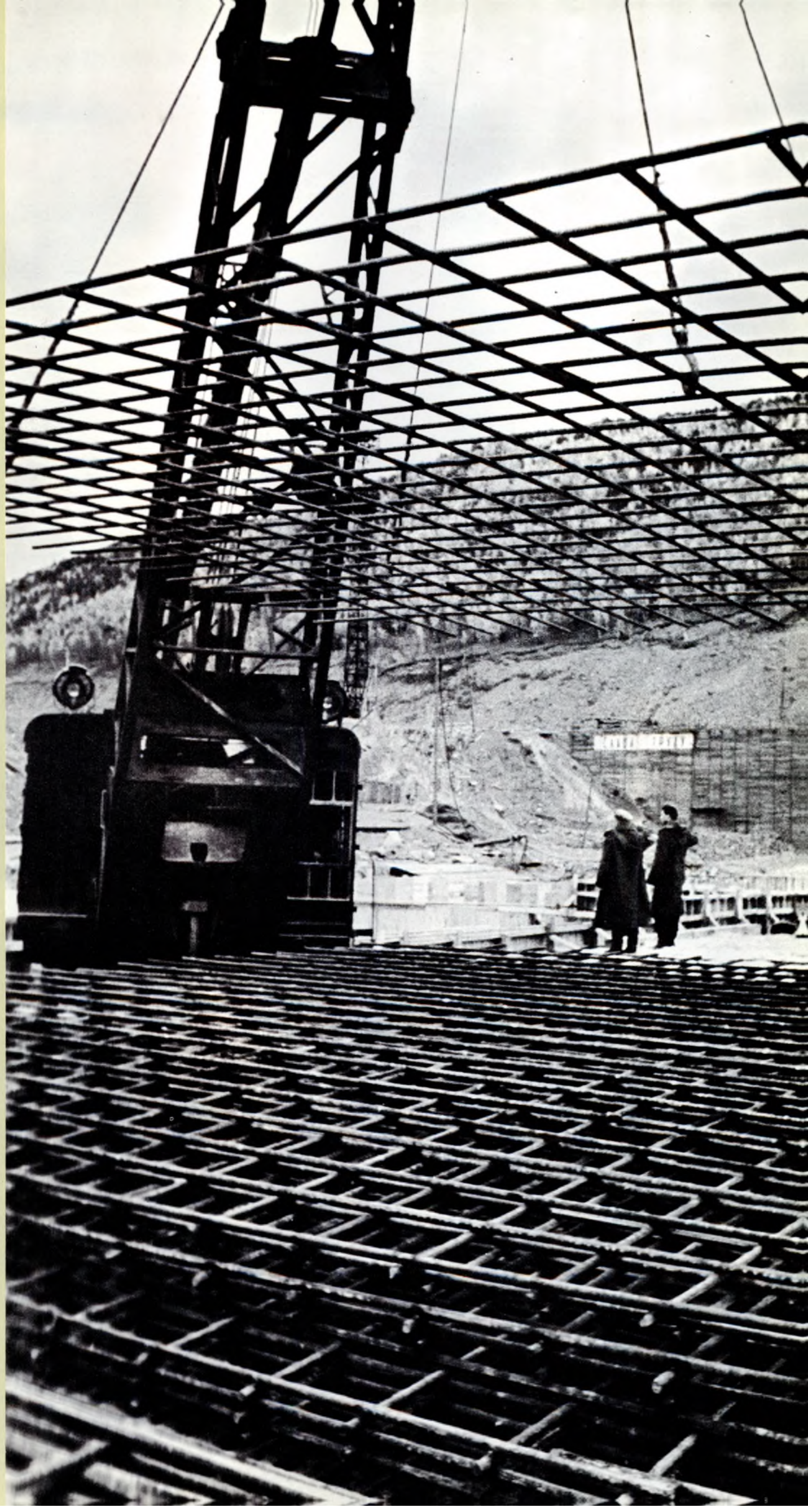
A common sight on the project—studying during a work break.

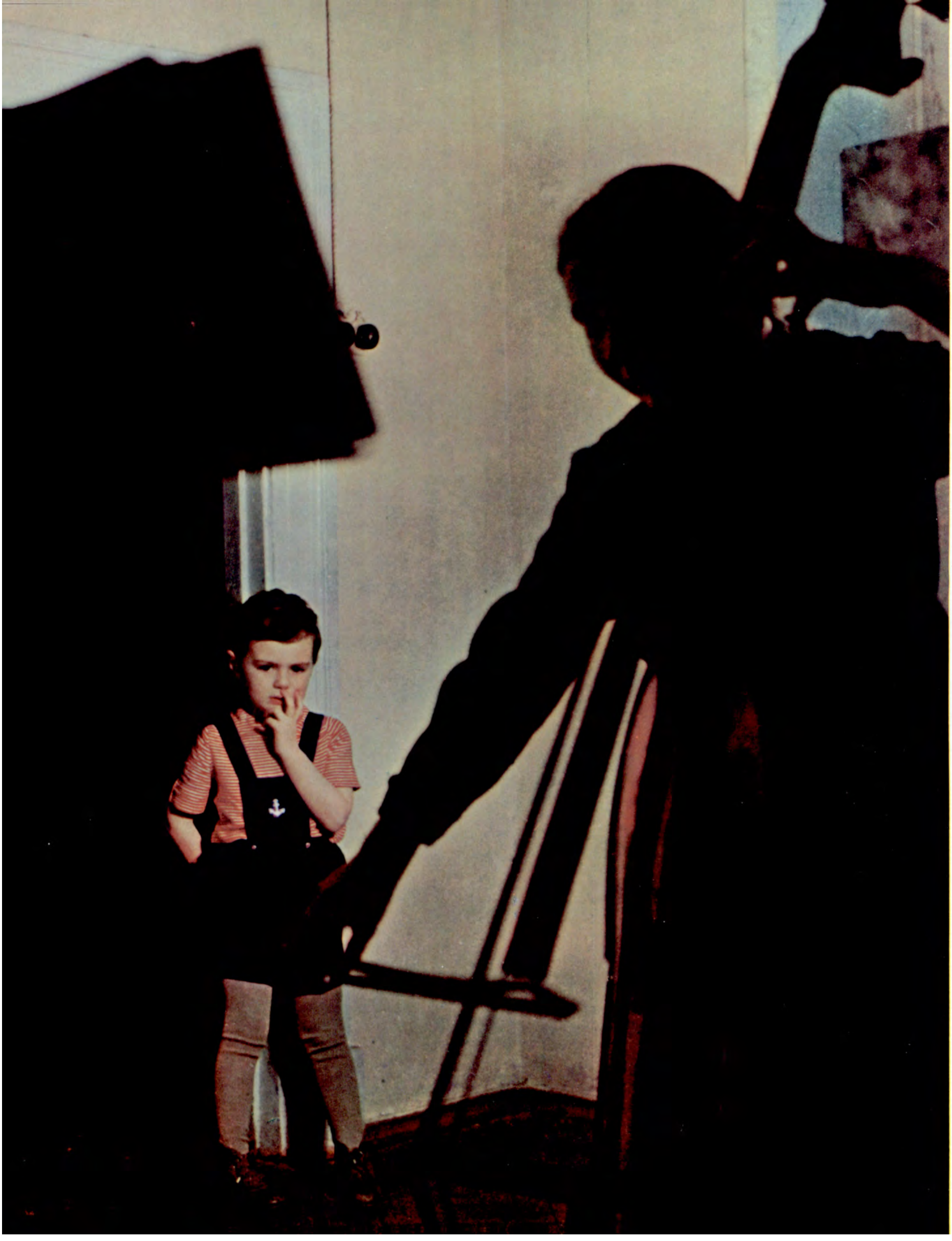
Another volunteer arrives to help in the Yenisei power construction.

Future Divnogorsk—East Siberia's tourist and winter sports center.

Assembling the steel skeleton of the Krasnoyarsk power station.

The team that Volodya Kuznetsov heads is building a huge garage.





BY ZINAIDA ALEXANDROVA
CHILDREN'S POET

THE ARTS AND THE CHILD

I WATCHED two little girls playing house, each one in her own corner busily furnishing and decorating her "apartment." From time to time the children stole a glance at each other's handiwork and yelled across, "Ready?" They were too engrossed in their play to notice me.

When the furnishing was done, the little housekeepers ceremoniously asked each other to tea.

Both girls came from families of about equal means, but there was a striking difference in the way they decorated their playhouses.

It was a safe guess that one of the girls came from a family whose taste ran to pillows stacked on the bed, pyramid fashion, and covered with tulle; to picture postcards and photographs spread fanwise on the walls; to ugly, old-fashioned chests of drawers decked out with atrocious bisque dogs and elephants; and to the inevitable bouquet of paper flowers.

The other child was obviously accustomed to more tasteful surroundings. She was discriminating and ingenious in her decorating. A small cardboard shoebox became a bookcase, a large acorn a lovely table lamp, an empty medicine bottle was pressed into service as a vase for a big white daisy, and a yellow aspen leaf as a dish for a cluster of red rowanberries.

Whenever I stop to think of the way children learn aesthetic discrimination, I am reminded of these two girls. The learning begins with the very earliest impressions a child is exposed to—the first nursery rhymes he memorizes, the first song he hears, the first play he sees, and the first New Year's fir tree party he goes to.

I still remember the first theater performance I ever saw, the opera *Ruslan and Ludmila.* I was seven and everything held me spellbound, not only the doings on the stage but the sounds of the orchestra, the gigantic chandelier hanging from the ceiling, the red velvet-curtained tiers of boxes.

First impressions play an enormous part in the child's aesthetic upbringing. That is why parents and teachers need to think hard, to be especially careful and discriminating themselves when they introduce children to art, music, the theater. They must choose those which will be meaningful to the child in his own terms, which will reach both his mind and his heart, which he will understand and be moved by, which will help him to grow mentally and emotionally. The point I keep making constantly to parents is: Give your children children's fare.

Watch them at play; their games mirror all the great events of our time. When the polar scientists first set up a station on the drifting ice floes of the Arctic Ocean, millions of youngsters played at being fearless explorers of the icebound continent. During the war "partisans" was the favorite game, with no end of bold raids on the fascist rear. In our day boys and girls fly to the moon, Venus and other far-off planets in sputniks and spaceships.

All this exciting play that copies the activity of grownups is eloquent proof of the child's interest in the world around him, of his desire to take part in the large and exciting realities. Games are outlets for the child's unabating creative urge, and his imaginative play invariably takes a social direction. Unfortunately, our books, films, theater, television programs, paintings and music for children sometimes show this contemporary world of ours, with its great plans and great achievements, far too sparingly and without color.

Very frequently I am asked to speak and to read my poetry to young audiences. One summer when I was in the country the Young Pioneer leader of a camp in the vicinity asked me to meet with the children. I said I would and told him to bring the youngsters on the following Sunday at 4 o'clock.

That Sunday it rained without letup. I was sure that none of the children would want to leave camp on a day like that to hear poetry read. But at 4 o'clock sharp the gate to my garden opened to let in a column of raincoated Young Pioneers. They took off their wet coats, kerchiefs, caps and rubbers on the porch, came in and sat down quietly. Those who could not find a chair or stool sat on the floor. I read them my poems. When I asked them to tell me what other poems they would like to hear, they appeared to favor many written by my contemporaries.

For these 40-odd years our writers, painters and composers have been creating works for children that would give them an appreciation and a love of the beautiful. The photographs on these pages catch children's natural and spontaneous reactions. Look at this little girl dancing to her mother's accompaniment. Such grace!

And this photo of a mother and her two daughters sitting in front of a museum painting. Who the painter is we do not know, but notice how absorbed the children are, as though veritably drinking in the painting. You have the feeling that it's one they will remember a long time.

Or this very young boy, perhaps a future architect—is he wondering about other possible combinations of form, line and color?

And this youngster listening to his sister play the double-bass, the very soul of concentration as his eyes follow the bow. This is a child who will almost certainly grow up with an appreciation, understanding and love of music.

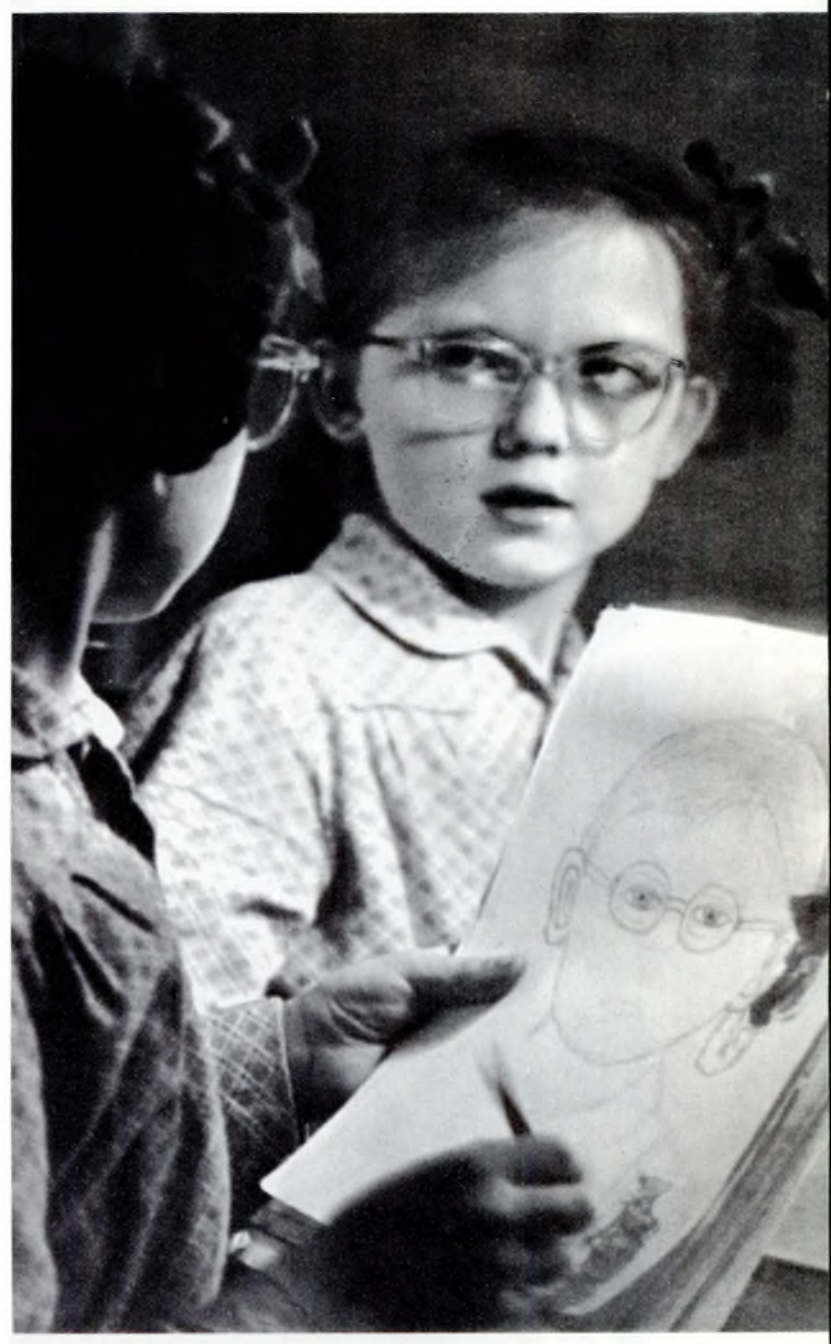
When children show an early penchant for acting, dancing or playing a musical instrument, the parents should, of course, foster that interest. But an aptitude ought not to be confused with talent. There are parents so eager to have their children become prodigies that they see talent where it does not exist.

Children have a feeling for beauty. It is a delicate feeling, one that can easily be aborted. Adults must be sensitive and knowledgeable enough to help it grow and flower. Look at this child with wide-open, bright, curious eyes. These eyes are asking—no, demanding—to be shown something remarkable.

It is the artist's responsibility to reach the child's awakening consciousness and satisfy his instinctive yearning for beauty so that through his medium—be it the spoken or written word, sound or color—he will be able to develop everything that is good and kind in the child's heart and enrich his mind with pure and lofty ideas.

Budding architect

At the art gallery



Self-portrait

Aspiring dancer

THREE GENERATIONS OF WORKERS

BY KONSTANTIN TARADANKIN

TIMES HAVE CHANGED and human relations with them. There was a time, in a past that now seems far distant, when a worker Stepan Smirnov's age would be listening for the shop superintendent to mutter, "He's getting too old for the job!" God help him then if he made the slightest mistake. It meant the human scrap heap for him, thrown out after he'd spent the best years of his life making others rich.

That happened to his father, who worked at this very same factory in Moscow before the Revolution, when it was owned by a man called Bromley. Fyodor Smirnov was a smith, and after years of work he was seriously injured in a shop accident. The management insisted he was to blame. They gave him a few rubles and fired him. He remained a cripple for the rest of his life and his family was left without a breadwinner.

Stepan started working at the factory in 1919 after it had changed ownership and name—from Bromley to Krasny Proletarii (Red Proletarian). It was a hard and hungry time of civil war, with the young republic fighting for its very existence.

Stepan was only 14 at the time. Pyotr Latyshev, an old hand in the shop, took him on as an apprentice and taught him what he could. Stepan, eager to learn fast, also watched the way other operators handled their machines. One day he came back to his bench almost in tears. Pyotr asked him what was wrong and finally got the youngster to open up.

Stepan had wanted to see how Alexei Kupriyanov, the shop's best molder, worked. A secretive and mean-spirited man, Kupriyanov fenced off his bench and lathe with plywood so the other men would not be able to see what he was doing and how he was doing it. His thinking must have run something like this: Teach someone else what you know and sooner or later he'll steal your job. If an apprentice came anywhere near his bench, he'd hide his work with an apron and yell at him to stay away. Stepan had come too close and Kupriyanov had struck out at him.

"What did he hit me for? All I wanted to do was learn something," the boy kept saying.

Pyotr quieted him down, told him not to mind. "You'll be a good machinist without Kupriyanov," he said. "Get more schooling and you'll do fine."

Kupriyanov was part of Stepan's education also. He had learned the hard way that there were still people around who had no understanding of what the new socialist life meant, who enclosed themselves in their own small world, lived by the old ways, hid their "secrets" so they would earn a few more kopecks. As time went on, there would be fewer and fewer Kupriyanovs. They were not the men the new generation would model itself after.

Latyshev's prediction about Stepan was justified. A few months later the lad was given a lathe to work independently, and it was not long before he was promoted to assistant foreman. He followed Pyotr's advice about schooling and enrolled in a two-year evening course at the Steel Institute, where his practical experience was enriched by an understanding of theory.

It was then he began to teach others his skills and to take as much pride in their attainments as in his own. Stepan is one of those people, not at all uncommon in Soviet life today, who not only are creative workers themselves but are able to fire a creative spark in the minds of those they teach.

The worker's broad interests and his thirst for knowledge have closely merged with the plant.

Senior foreman Stepan Smirnov and Sergei Puchhov have each trained 400 apprentices at the Krasny Proletarii Plant in the past 40 years.

Contributing to this is an educational network that makes it possible for the worker to raise his general educational level as well as improve his specific skills while on the job. Another contributing factor is the club at his plant with its wide-ranging program of music, art, theater, literature, lectures and hobby activities.

Stepan has been working at Krasny Proletarii for more than 40 years now. He is not a young man anymore. Time has touched his hair with gray and spun a web of wrinkles around his eyes. But he walks through the shop with the same proud stride, and the people he passes greet him with respect and affection. Times have indeed changed, and people with them, since the days when his father was crippled and discarded as useless.

Age has little relevance to a man's usefulness and productivity when he devotes himself to others, when he looks for people whom he can help and teach. The Stepan Smirnovs—there are thousands upon thousands of them in the Soviet Union today—are no burden to the factory they work in—they are its pride.

Look at foreman Sergei Demidov, for example, patiently explaining something to a young apprentice. Not so long ago Demidov was learning from Smirnov how to use a lathe. Or take Vladimir Khalamanov, bent over his drafting board in the design office. He, too, took his first lessons from Smirnov. A small legion of people will tell you, "I was one of his pupils."

Ask Smirnov himself how many young apprentices he's trained, and he'll smile and tell you, "Hard to say, I didn't count them, but there must be quite a number by this time. The thing that strikes me, though," he'll go on to say, "is the way they've changed with the passing years. As I remember, with the first apprentices, years back, I had to start from scratch. They had no education to speak of, some of them even had trouble reading. Of course, some were better, some worse. Some of them would catch on right away; with others I'd wear myself out explaining a simple thing. I'd get through talking and demonstrating and ask, 'Is that clear?' 'Clear,' they'd tell me. But as soon as I left them on their own, they'd fumble it all up. So I'd have to start all over from the beginning.

"In the thirties a different kind of boy came to the shop. They had gone to factory training schools. They knew what a lathe was. It was easier to explain things to them; they understood technical language and learned fast. Every once in a while one of them would come to me with a sketch. 'Comrade foreman,' he'd say, 'I've thought up something new. Will you have a look at it?'

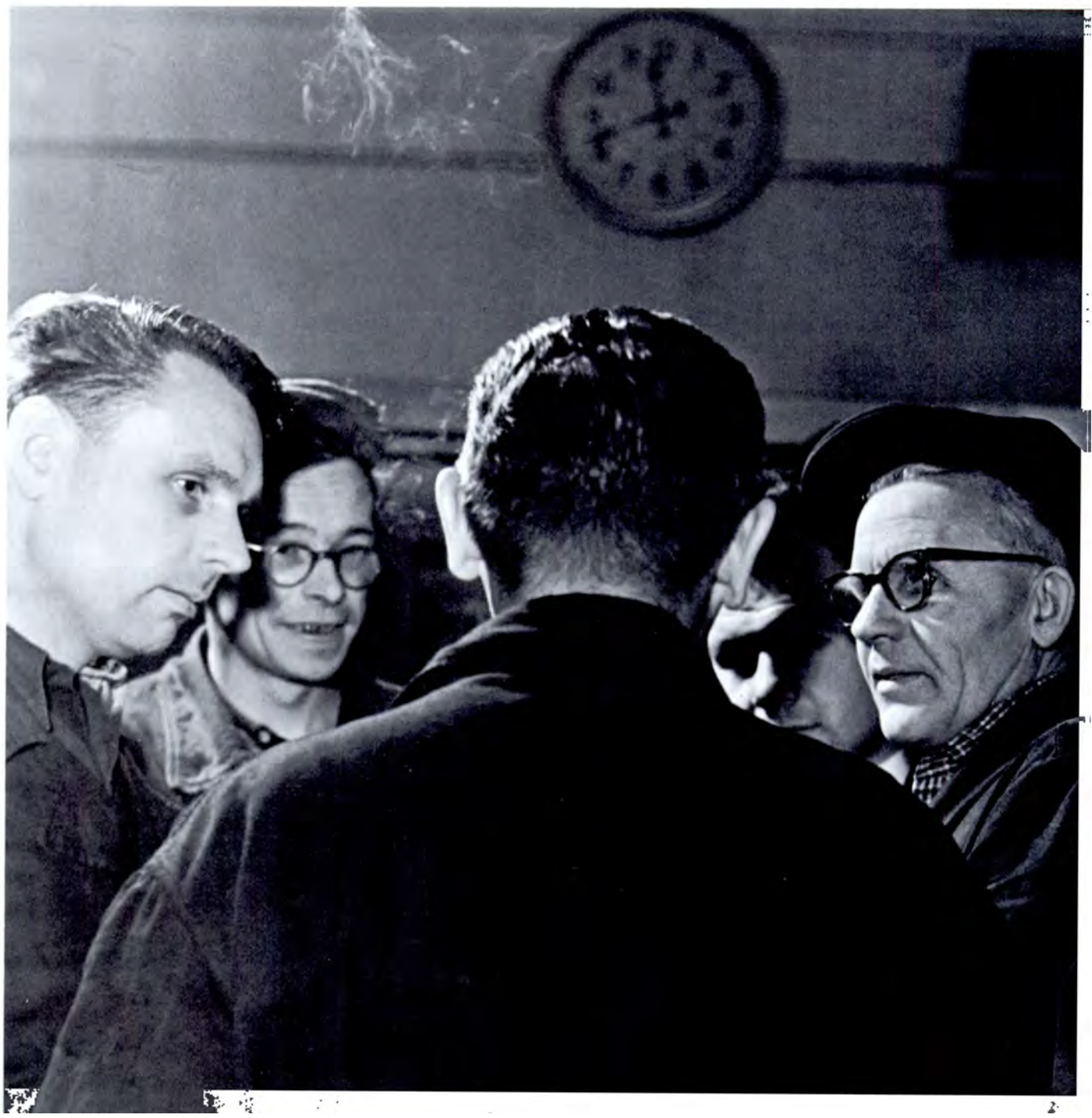
"Now we're getting young fellows who really know their business. This is the third wave, so to speak. When it comes to machinery, they are right in their element, like fish in water. Most of them are secondary school graduates, and a good many did their field work right here in the plant. They have a good grasp of things and a respect for the work they do. Some are attending evening college, others the technical school we have here at the plant."

Stepan Smirnov passed on his own deep-rooted respect for work and education to his son. Sergei Smirnov did not choose his father's vocation. His choice was wider because present-day opportunities for education are so much greater than when his father was young. Sergei became interested in the earth sciences, took his degree in geological engineering and is working in Siberia.

A few months ago his parents read about him in the newspaper *Komsomolskaya Pravda*. An article describing the work of a geological expedition that discovered rich deposits of phosphorite in the taiga country especially praised the contributions of young engineer Sergei Smirnov. And shortly afterward Sergei visited them during his vacation to give them a firsthand report. With him came his wife and their baby son.

There are people working at the Krasny Proletarii Plant who have won national honors and been elected to high public office—Lenin Prize winners, Heroes of Socialist Labor, deputies to the Soviets. Stepan Smirnov is a rank-and-file worker. Perhaps by that very token his life so aptly illustrates the way times have changed.

The veteran foreman still works with the same vigor and absorption, but now he is in the technological laboratory where the ideas of designers embodied in high precision machine tools are tested. He still guides the steps of apprentices and lends his rich background of experience to engineers and designers. And when especially fine skill is required, he takes his old place at the lathe and his skilled hands play the metal like a virtuoso.



Sergei Solovyov (center), who heads the experimental shop, graduated from Smirnov's academy into an engineering institute. He still turns to his old teacher for advice.

Sasha Ignatiev is one of the present group of apprentices. Smirnov has five. Like all 16- to 18-year-old workers, Ignatiev puts in a six-hour day.

This group of highly trained lathe operators are graduates of what everyone in this large Moscow machine-tool plant refers to as Smirnov's academy.

WAGES +

The standard of living of the Soviet people keeps rising. Wages keep going up. The portion of the national budget earmarked for the social consumption fund keeps growing larger. What is this fund? How is it accumulated? What does it pay for? How does it affect real wages and the Soviet living standard? These and related questions are answered by Alexander Bulgakov, Secretary of the All-Union Central Council of Trade Unions.

QUESTION: Will you describe the system of distribution of material benefits in the Soviet Union?

ANSWER: Since all industrial enterprises and state farms are publicly owned, their income is public property. Add the income of the collective farms, and you have the total national income.

A quarter of the national income is spent to augment and develop the country's industry, transport and agriculture; to expand and modernize existing enterprises and build new ones. This is paid for out of the accumulation fund.

The remaining three-quarters of the national income makes up the consumption fund. It is spent for the material and cultural needs of the citizen.

The consumption fund is subdivided into the wage fund and the public consumption fund.

QUESTION: These, I gather, are two quite separate funds and go to pay for different things.

ANSWER: Yes, the wage fund, as the name implies, covers the wages of people working in factories and offices, in what we call the areas of material production.

QUESTION: How about the wages of workers in other spheres, say, in education, the arts, service industries, government?

ANSWER: Their wages come out of the public consumption fund since this fund pays for the development of science and culture as well as the maintenance of the educational and public health systems and the various social insurance benefits.

QUESTION: Does this mean that the public consumption fund is spent for a number of different things?

ANSWER: Yes. Besides the wages of those working in the non-material production areas I mentioned, the fund pays for pensions, student stipends, vacations, resort accommodations, temporary disability benefits, and the like. These are direct money payments to the individual citizen, direct additions to his income. There are also indirect additions to his income, the many necessary and valuable services provided by the kindergartens, schools, colleges, hospitals, research centers and health and holiday resorts, all of which are financed by the public consumption fund.

QUESTION: If you translate these various benefits and social services provided by the public consumption fund into monetary terms, how much would you say they increase the average Soviet worker's income?

ANSWER: By a third, over and above wages.

QUESTION: It would be helpful if you could show us how the public consumption fund affects the budget of a typical Soviet family.

ANSWER: Well, the Suslins are as typical as any. They live in Shchelkovo a small town about 25 miles from Moscow. The family has two breadwinners—Alexei Suslin, who works at a chemical plant, and his wife Valentina, an assembler. Their joint annual earnings, after taxes, come to 2,118 rubles.

Alexei's father does not work. He gets an old age pension of 493 rubles 20 kopecks a year. Alexei is in his fifth year at a specialized secondary school, where he studies after work. His tuition, textbooks and study aids are all free. He gets paid leave from his job—it amounts to 75 rubles 40 kopecks a year on the average—to take his school exams. That sum plus his father's pension adds up to 568 rubles 60 kopecks a year.

Alexei spent his regular summer vacation at a resort; 45 rubles 60 kopecks, or one third of the cost of his accommodations, was paid by his trade union. Add this to the sum above and you have 614 rubles 20 kopecks.

The youngest Suslin, two-year-old Valerik, goes to a kindergarten. The parents pay 10 rubles of the 34 rubles a month it costs the kindergarten to keep the child, so that in a year the state spends 288 rubles for this young citizen. Add this to the previous total of 614 rubles 20 kopecks and you have 902 rubles 20 kopecks.

In the shop where Alexei is employed, workers get a free lunch that would ordinarily cost 68 kopecks. This saves him about 200 rubles a year.

All told, the public consumption fund gives the Suslins 1,102 rubles 20 kopecks in the course of a year.

QUESTION: Since the public consumption fund serves as an indirect addition to wages, wouldn't it be simpler and better to raise wages directly?

ANSWER: Simpler perhaps, but not better. Our country operates on the principle of socialism—"From each according to his abilities, to each according to his work." This means that every able-bodied person receives equal pay for equal work, irrespective of sex, age, race or nationality. A person's earnings depend on the quantity and quality of work he does.

People vary in stamina and skill. Some workers are stronger, capable of greater effort and endurance, and can therefore do more. Workers with more skill do a better job. Consequently their earnings are higher and they have more cash income to spend to satisfy whatever personal needs they have. Besides that, there is the difference in size of families, number of wage earners and so on. All these things make for inequalities in material well-being which will be gradually ironed out as we move toward the communist principle of distribution—"From each according to his ability, to each according to his *needs*."

When we come to the public consumption fund, this material inequality does not operate. Higher wages do not help a man to give his children a better education or to get more qualified medical attention, let us say. In Western countries the quality of these services depends entirely on the amount the family earns and can afford to spend. Our approach is altogether different. The public consumption fund is distributed by the communist principle—according to needs. If you have children, they go to school. If you are ill, you get free medical attention, hospitalization, surgery or whatever else is indicated. When you grow old, you get an old age pension. The

At the end of the 20 years public consumption funds will total about half of the aggregate real income of the population. This will make it possible to effect at public expense:

free maintenance of children at children's institutions and boarding schools (if parents wish it);

maintenance of disabled people;

free education at all educational establishments;

free medical services for all citizens, including the supply of medicines and the treatment of sick persons at sanatoriums;

rent-free housing and free communal services;

free municipal transport facilities;

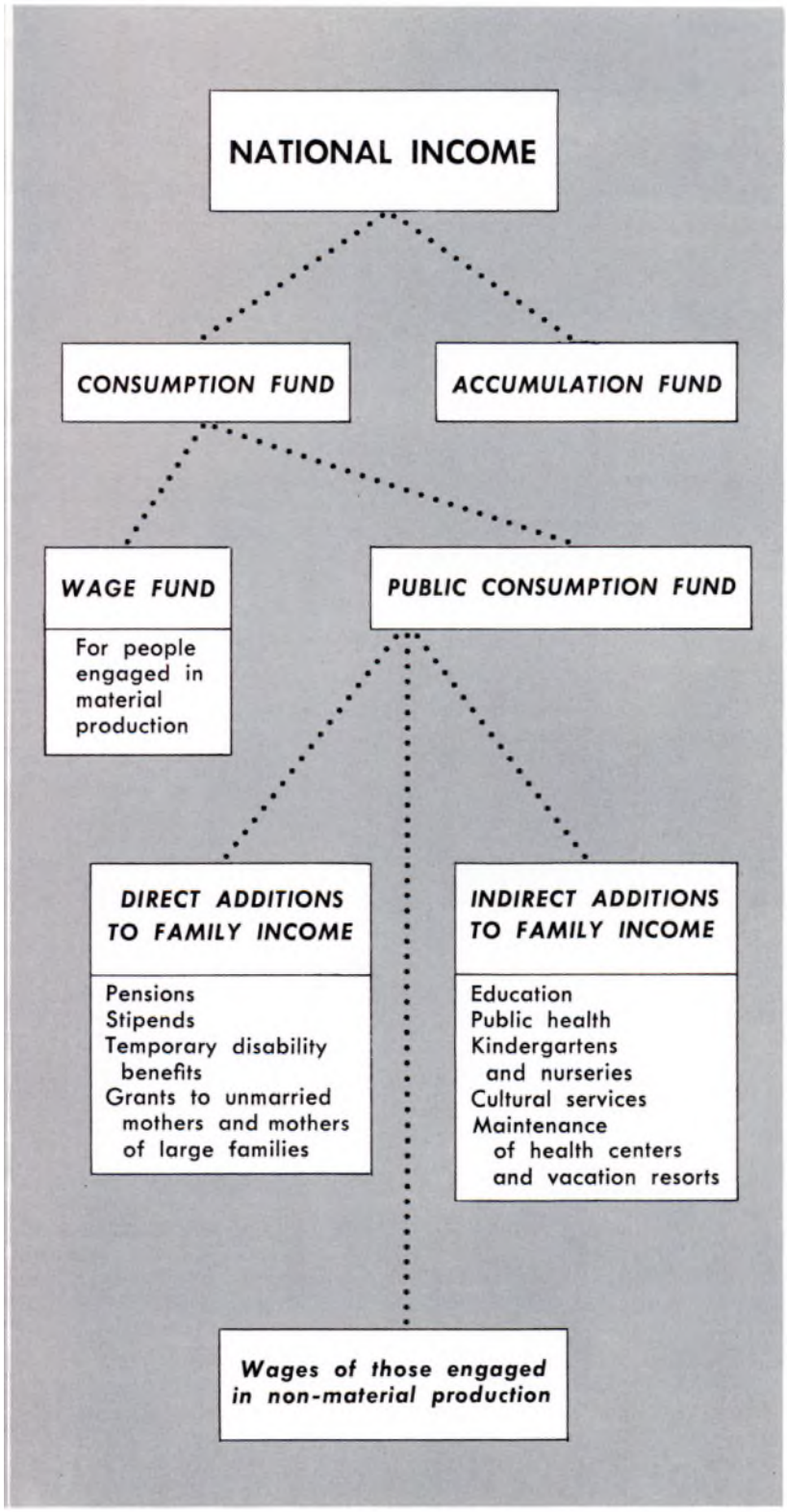
free use of some types of public services;

steady reduction of charges for, and, partially, free use of vacation resorts, boarding houses, tourist camps and sports facilities;

increasingly broad provision of the population with benefits, privileges and scholarships (grants to unmarried mothers, mothers of large families, scholarships for students);

gradual introduction of free public catering (midday meals) at enterprises and institutions, and for collective farmers at work.

From the Program of the Communist Party of the Soviet Union



public consumption fund meets people's needs regardless of the quantity and quality of the work they do. It makes all Soviet citizens equal with regard to educational opportunity, medical care and the other services the public consumption fund supplies.

If you check back on the public consumption fund receipts of the Suslin family, you will see that they received, in monetary terms, a sum equal to more than half of their total earnings.

QUESTION: Where does the money in the public consumption fund come from? Is the national budget its only source?

ANSWER: The bulk of it is allocated in the national budget so that it can be distributed in a centralized fashion and with the interests of the whole society in mind.

The public consumption fund also includes enterprise funds—the money deducted from plant income and spent by management only with the approval of the trade union for the needs of its workers; and farm funds—cash or produce that collective farms allocate for the same purpose.

QUESTION: Now, as to the more specific uses of the public consumption fund. How much of it, for example, is spent on education?

ANSWER: About 11 billion rubles last year. Next year the number of boarding schools will be increased to accommodate a total of 920,000 students. Expenditures on these schools alone will exceed half a billion rubles this year. The state is increasing the number of all-day schools where children stay from morning till evening for study, meals, rest, homework and play. There will be 1,160,000 pupils in such schools this year.

QUESTION: What is being done for preschool-age children?

ANSWER: For the current year 1.4 billion rubles of the public consumption fund have been earmarked for more nurseries and kindergartens, to bring the total attendance to 5.5 million children, 700,000 more than last year.

QUESTION: What are the long-range plans for school expenditures?

ANSWER: By 1981 the budget for education is expected to be ten times the present. The state by then plans to shoulder the expense of maintaining all Soviet children from nursery through secondary school.

QUESTION: How about schools of higher education? I gather that they too are supported by the public consumption fund. What are the budget plans for them?

ANSWER: The outlays for the specialized secondary and higher schools will also keep climbing, as they have been. For 1962 they will total 1.8 billion rubles.

QUESTION: Does this sum include the monthly stipends to students?

ANSWER: Yes.

QUESTION: Do specialized secondary and college students pay tuition?

ANSWER: No. Nor do they pay library or laboratory fees.

QUESTION: Is there any difference in this respect between full-time students and those who study after working hours?
ANSWER: No. Students who work pay no tuition, laboratory or library fees. They get 40 days of paid leave in addition to their regular vacation to prepare for and take exams. And in their last year of study they are granted four months of paid leave to prepare their diploma thesis.

I might add that all students, without exception, get free medical attention and care at the clinics and associated hospitals of the universities and institutes.

QUESTION: That brings us to the question I wanted to ask next. How are the funds earmarked for public health spent?
ANSWER: For building and equipping medical facilities of various types; staff salaries; food and drugs for hospital and clinic patients; laboratory tests, X-rays, cardiograms and other such auxiliary needs for diagnosis and treatment; the training of medical personnel; the maintenance of research institutes.

QUESTION: It is general knowledge that medical care in the Soviet Union is free, but does this include such things as complicated heart or brain surgery?
ANSWER: The state pays the full costs of all kinds of medical care. The most complicated operations. including those done by the foremost surgeons, are performed free of charge.

QUESTION: What about consultation?
ANSWER: That too is free. When necessary, a clinic or hospital calls in a specialist. The patient does not pay for his services.

QUESTION: Do patients pay for medicines?
ANSWER: Those in hospitals and clinics do not; those who are treated at home do. Incidentally the cost of medicines is a half or a third of that in Western countries. For some ailments—dysentery, tuberculosis, diabetes and others—the state foots the bill.

QUESTION: What is the Soviet public health picture for the next 20 years?
ANSWER: The new Communist Party Program sees a very considerable expansion of the public health system in the next two decades. More doctors and nurses will be trained and many more hospitals, clinics and other medical facilities will be built. There will be increasing emphasis on disease prevention. Along with free medical care, the state will provide free sanatorium accommodations and free medicines.

QUESTION: Who pays for the mother-and-child-care setup?
ANSWER: The whole public health system—it includes mother-and-child care, women's consultation centers, maternity homes, children's hospitals, clinics and out-patient facilities—is financed by the state out of the public consumption fund.

QUESTION: What special provisions are there for women before and after childbirth?
ANSWER: The expectant mother gets whatever advice and medical care she needs at the consultation center and maternity hospital without charge. She is granted a fully paid maternity leave of 56 days before and 56 days after confinement in addition to her regular vacation. When her paid maternity leave is up, she can, if she wishes, take an additional leave without pay for as long as three months. The management is required by law to hold her job open.

QUESTION: What about the special assistance given to mothers of large families and to unmarried mothers?
ANSWER: State allowances are paid to the mother after the birth of her third and every subsequent child. She gets a lump sum after confinement and a monthly allowance thereafter, from the second year after the child's birth until it reaches the age of five. An unmarried mother gets a monthly allowance until her child reaches the age of 12. If an unmarried mother has three or more children, she receives this allowance in addition to the usual grant paid to mothers of large families.

QUESTION: Do these come out of the public consumption fund?
ANSWER: Yes, though maternity leave is paid out of the social insurance fund. This is a part of the over-all public consumption fund specially allocated for the purposes indicated by its name.

QUESTION: Where does the social insurance fund money come from?
ANSWER: From contributions by factories and other enterprises. There are no deductions for social insurance from the worker's pay. The fund has grown almost tenfold since 1940.

QUESTION: What does this fund cover besides maternity leave?
ANSWER: It pays temporary benefits in case a worker falls ill, has an accident on the job, is quarantined with a contagious disease, undergoes sanatorium treatment, or has to stay home to look after a sick member of his family. The social insurance fund also pays for the meals for workers on special diets, the construction and maintenance of sanatoriums and health and vacation resorts, the upkeep of tourist and mountain-climbing facilities and of Young Pioneer summer camps.

Every fifth patient at a sanatorium and every tenth guest at a vacation resort gets free accommodations; the social insurance fund pays his bill. Workers are charged no more than 30 per cent of the cost of their stay at vacation resorts, the difference being made up by the fund. In the course of the next 20 years sanatorium accommodations will be free to all patients, and the charges for accommodations at resorts, hotels and boarding houses, and tourist bases and camps will be systematically reduced.

QUESTION: Pensions are also paid out of the social insurance fund, are they not?
ANSWER: Yes. The social insurance fund covers old age and disability pensions, continuous employment pensions, and pensions to families that have lost their breadwinner.

Women are entitled to old age pensions when they reach the age of 55 after 20 years of employment; men, when they reach the age of 60 after 25 years of employment. People working at hard and hazardous jobs—in mines, hot shops, etc.—retire earlier: men, at 50 or 55 after 20 to 25 years of work; and women, at 45 or 50 after 15 or 20 years of work.

QUESTION: I should like to turn to another area—housing. Where does the money for housing construction come from?
ANSWER: Directly from state funds, not from the public consumption fund. The Soviet people pay nothing for housing construction.

QUESTION: Who pays for the upkeep of houses and apartments?
ANSWER: Houses owned by cooperatives and individual citizens are maintained at their own expense, but the state helps out with easy-term loans and with building materials for repairs. The maintenance of houses owned by the state are financed out of the public consumption fund, and the tenants pay rent. Rent is very low and covers no more than half the upkeep. It runs from three to five per cent of family income. The plan for the next 20 years is to gradually cut even these modest rents to the vanishing point and to supply housing and utilities—gas, electric, central heating, etc.—free of charge. The intention is also to provide various free public services, including municipal transportation.

QUESTION: How much do you figure the public consumption fund will grow over the next 20-year period?
ANSWER: More than tenfold—from 24.5 billion rubles in 1960 to 255-265 billion in 1980.

QUESTION: What is the likelihood of the Soviet Union's being able to apply the principle of distribution according to need more widely in these next 20 years?
ANSWER: Very good indeed. The ratio between goods and services distributed according to work done and those distributed through the public consumption fund will be changing so that, as we approach 1980, the fund will be meeting about half the requirements of the population. This means a very much wider application of the communist principle of distribution according to needs. ★

OF POETRY AND FREEDOM FOR POETS

BY MARGARITA ALIGER
SOVIET POET

FROM TIME TO TIME I hear and read complaints from foreign colleagues—most frequently they come from ill-wishers, although I have heard them from friends as well—that artists lack freedom in the Soviet Union. Coercion, they say—some of them do not even balk at the word dictation—is an important factor in Soviet art. We write, they tell us, what we are told to write. This tired argument rests on a befuddled picture of the real state of affairs, on a lamentable ignorance of the conditions under which we live and write.

What I should like to know, first off, is how the foreign writer, an intellectual, familiar with the complexities and the day-to-day problems of our profession, pictures us working. How does he imagine that this "coercion," this "dictation" operates? What does he have in mind, concretely?

Is he thinking of the Communist Party's constant appeal to writers that they deal with current themes? But doesn't this appeal restate the very function of art itself, its everlasting quest? Isn't this what every artist choosing any subject in any age, tries to do—to explain himself and his time? Isn't it what you, our colleagues, in whatever country, strive for, demand of yourselves?

What disturbs you, perhaps, is the straightforward and undisguised nature of these appeals or the wide publicity they get. I grant there are some writers who are rubbed the wrong way, those who cannot, or do not like to, talk about work they have in plan or in progress. But then, nobody insists that they talk if they prefer not to.

Let us say that the appeal is for a book on Moscow or on the heroes of the virgin soil development. I assure you that each Soviet writer comes to his own decision. He responds only if he wishes to.

If the appeal coincides with his interests and plans, stimulates and channels his creative thinking, spurs him to work—all very well and good. But if he happens to be working on quite another subject, no one would dream of bothering him. He goes right ahead with the work he wants to do and everybody's blessing goes with him.

There is the fact, too, that writers in different media will react differently to the same appeal. A theme to which an essayist can respond easily enough may have only an oblique and peripheral value in such a wide-ranging medium as my own—poetry.

You can do violence to a medium, of course; the adroit professional can put his hand to almost anything. But such gymnastics, as a rule, fall considerably short of success. There have been occasions when our prized and hard-won medium, poetry, was used for purposes far from poetic. But these were wasted efforts, on the whole. These rhymed newspaper articles and odes, custom-tailored to win the reader's favor, were short-lived, in spite of praise for their topicality by some vulgar critics. These verses withered on the vine, nobody wanted them. They had nothing whatsoever to do with poetry.

The poet can use his medium to react to an appeal or a special occasion only when he is moved to do so by a compelling drive that comes from within. Poetry is no echo; it is a cry from the soul, a dictate, if you please, of the poet's own nature.

But suppose we assume that work is done to order; it is still the finished product on which final judgment must be made. Is there anybody who would dismiss Raphael's portrait of Pope Julius II because it was done on order? Or take a somewhat less direct but closer example, the poem "Very Good" that Mayakovsky was commissioned to write for the tenth anniversary of the October Revolution.

Even when art is commissioned, the results will be varied. We ought then to be in no rush to condemn "ordered" work. Let us examine the results critically and without prejudice, and be glad for original and moving work even though it is "ordered."

We are more prone to subjective appraisals and to erroneous judgments in art than in science since we have no precision instruments with which to measure, not even so simple a gauge as a ruler or a multiplication table. The artist must, for that very reason, take his stand on principle, be that much more conscious of his responsibility, fight that much harder for truth.

To me poetry takes in all of life. There is only one line of demarcation—what I love is on one side, what I hate on the other; what I stand ready to fight for is on the one side, what I stand ready to fight against is on the other.

I cannot abide placid and dispassionate poetry or pretty writing for writing's sake. Poems, to my mind, are not pills to be swallowed without pain or pleasure. I have no use for poetry stripped of thought and content. I hate untruth in any form, whether in life or in art. The lie cheapens art, vitiates it.

I love the poetry of great ideas, of real passions and deep emotions, poetry addressed to the truths of life, its problems and difficulties.

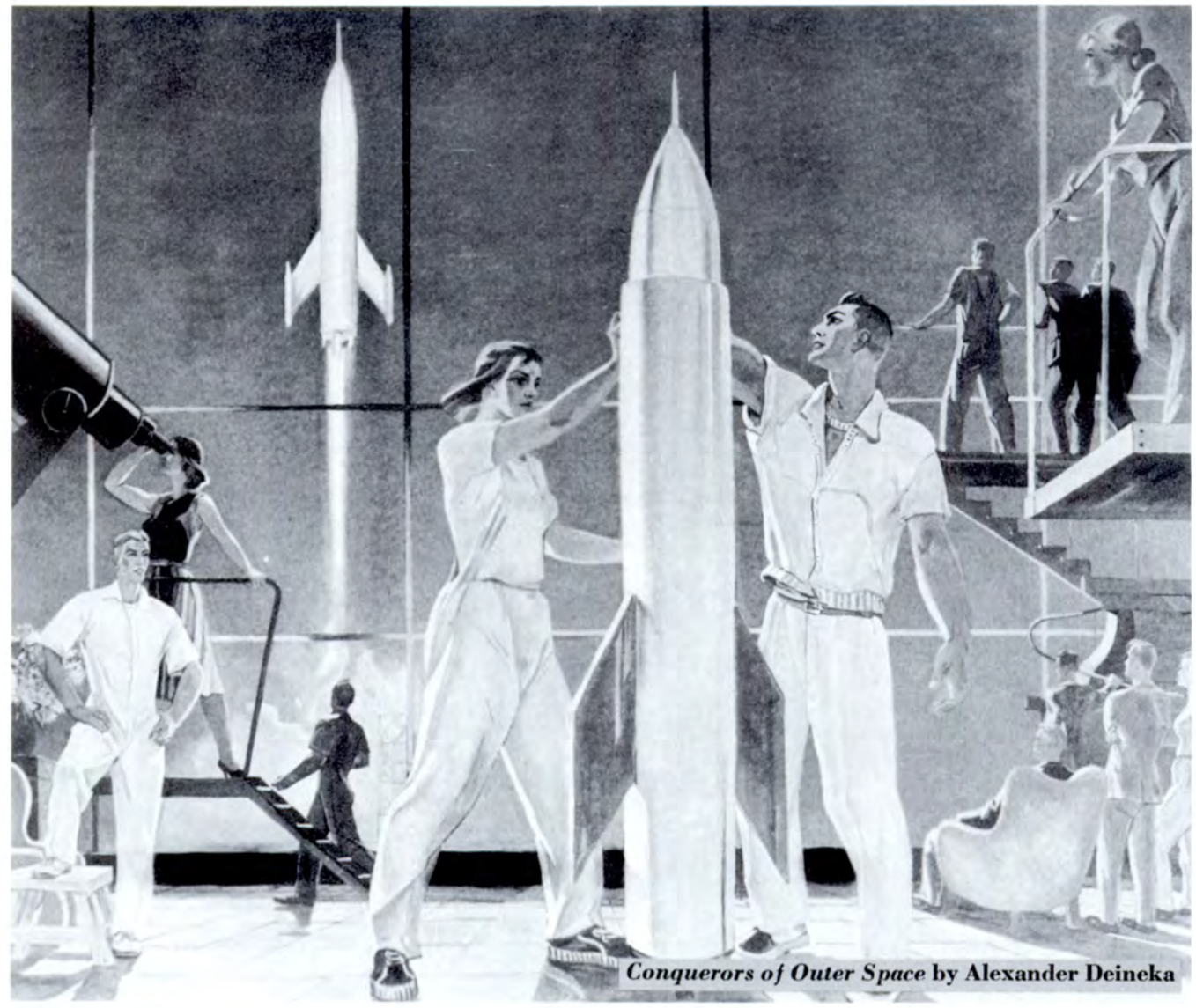
The philosophical foundation of our poetry, as of our whole world outlook, is optimism. I mean the word in its truest, deepest sense. Our optimism is not the superficial heartiness of a slap on the back and an easy conscience, but the probing of the destiny of humanity; it is faith in man, love of life, and takes as its province everything that moves the heart and mind. Poetry does not side-step tragedy—it helps people to surmount misfortune. Its function is not to rephrase truisms or to parrot the obvious. It is not afraid of exposing evil; it has the courage and the strength that comes from conviction.

If I speak with some feeling, it is because one still encounters opposition from people whose thinking is on a primitive, vulgar level. I experienced it when some of my own poetry—serious poems about serious things, lines written from the heart—were attacked as somber and pessimistic. They said what I wanted them to say, they expressed my feelings and thoughts about harsh and bitter things, but behind them was a faith in life and in the strength of people. That is why I stubbornly kept publishing these verses in all my collections, and my insistence was respected and supported. It was a matter of great joy to me, therefore, that it was precisely these poems that have stood the test of time and are included in the anthology of Soviet poetry.

To fight for the great art, to follow your own deep and unshakable convictions, to defend them everywhere and always, to know that you have the support of your comrades and that if you are right you will win—this, to my mind, is freedom for the artist. I have that freedom, it makes up my life. There is no other freedom I either desire or understand.

Everything that I have said here for and about myself could just as well have been said for every other Soviet writer. And if I am subjective and speak of myself so much, it is probably because I am a poet, a lyrical poet, first and foremost. ★

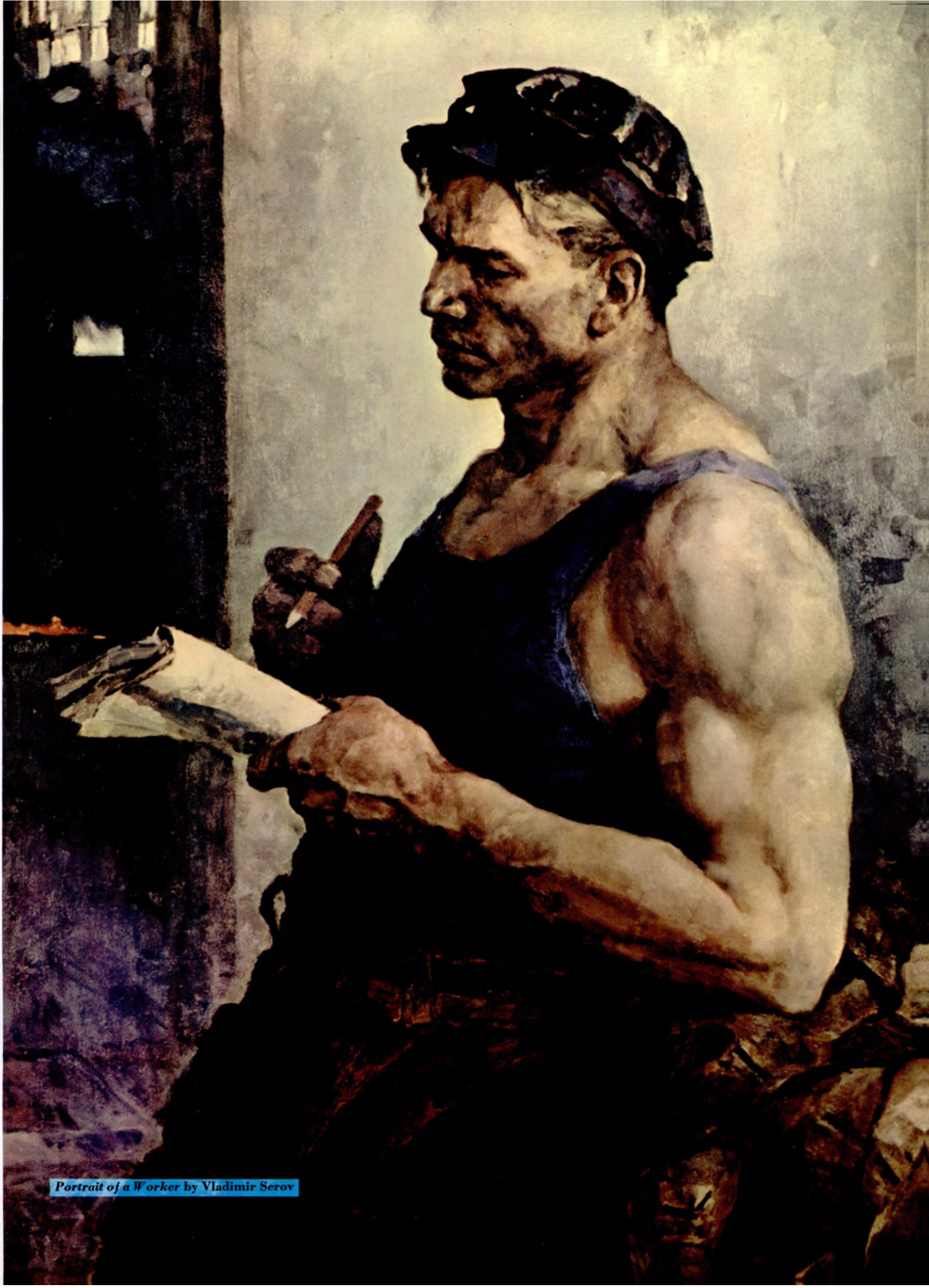
SOVIET MAN IN ART



Conquerors of Outer Space **by Alexander Deineka**

In the art of socialist realism, which is based on the principles of partisanship and kinship with the people, bold pioneering in the artistic depiction of life goes hand in hand with the cultivation and development of the progressive traditions of world culture. Writers, artists, musicians, theatrical workers and film makers have every opportunity of displaying creative initiative and skill, using manifold forms, styles and genres.

From the Program of the
Communist Party of the Soviet Union



Portrait of a Worker by Vladimir Serov

Building the Bratsk Hydroelectric Station **by Alexander Shatalov**

Spring **by Oganes Zadaryan**

In the Taiga **by Vsevolod Petrov-Maslakov**

Conversation **by Alexander Bubnov**

MAN IS THE THEME

BY ILYA ZBARSKY

THE THEME of most Soviet stamp issues is people—their portraits, achievements and activities—almost from birth.

One of the stamps in a 1938 series on children—the 10-kopeck denomination—shows a mother and baby at a children's consultation center. The 15-kopeck denomination of the 1949 International Women's Day series pictures youngsters in a kindergarten. The 30-kopeck stamp in the 1948 series dedicated to the Young Pioneers shows young airplane modelmakers. A 3-kopeck stamp in a new series titled "Youth on Seven-Year Plan Construction Sites" depicts young people assembling a high-voltage transmission line. There are numerous stamps designed around such themes as work, science and sports.

Eminent personalities in Soviet social and cultural history are memorialized in stamps. Many portray Lenin at various stages of his life. The 15-kopeck stamp of a 1940 series commemorated the tenth anniversary of the poet Vladimir Mayakovsky.

"For Peace! Against Warmongers!" is the inscription on a 40-kopeck stamp put out in 1949. A worker is shown restraining a hand with a flaming torch. In the background is a large demonstration above which waves a streamer with the words "For Peace" in English.

IVAN KOMZIN, BUILDER

BY PYOTR MELNIKOV

WHEN THEY ARRIVED at the tiny station at a spur of the mountain, the young Muscovites piled their luggage on the platform and surrounded the astonishingly tall young man who had come to meet them.

"I'm Ivan Komzin," said the giant extending an enormous hand to a snub-nosed girl. "I'm a graduate of a construction engineering college."

He led the group out into the steppes to a stretch of newly dug-up land studded with mounds of fresh earth.

"This is where we'll build the Komsomol blast furnace," he said, pointing to the evenly spaced stakes in the ground. "The document we buried under the foundation three months ago reads: 'July 1, 1930. On this date, in the thirteenth year of Soviet power, 14,000 workers laid the foundations of the first blast furnace of the great Magnitogorsk Metallurgical Plant. . . .' "

Magnitogorsk was born with almost superhuman stress and strain. The concrete was

Drawing by Anatoli Yar-Kravchenko

e done almost entirely by hand. There were not ıough technicians or specialists, and experts ad to be invited from abroad at fantastic salries at a time when every kopeck counted. he lack of equipment, however, was compenated for by the indomitable enthusiasm of the oung people who came by the thousands to uild the metallurgical giant.

It was then that young Soviet Russia paid ith backbreaking toil for the misrule and inompetence of the Romanov czars, who had reaced the country to penury, appalling illiteracy nd economic ruin.

With the Volgograd tractor plant and the ew hydroelectric station under construction on ıe Dnieper, the Magnitogorsk works was to erve as the Archimedes' lever by which to ıck up the national economy.

Conditions were impossibly hard. The workers ad to live in shanties in weather that ranged om 58 below zero to sweltering temperatures ' 104. No warmer nor better fed than the other ıilders, Komzin plagued himself over his miskes, endured defeat upon defeat in arguments ith the American and German experts, suffered from the humiliating realization of his inadequate knowledge, but took desperate chances nevertheless. Freezing, he was laboring for warmth; hungry, he was fighting for abundance; furious at his mistakes, he was studying hard so that he could do better the next time; and if he suffered defeats, it was so that he could be victorious later.

Magnitogorsk was the young engineer's great trial, the test of his maturity. He came through with flying colors. The proof was the Komsomol blast furnace, largest of its kind in Europe.

Komzin long remembered a talk he had with one of the German engineers. Just before returning to his country the man had said:

"You've piled up a big blast furnace there, but it'll never work in this crazy climate: 40 below zero in the winter and hellish heat in the summer!"

"It will work!" Komzin had answered. "It'll work like the very devil, and twice as productively as yours in the Ruhr."

His words were prophetic; Soviet metallurgists of the Magnitogorsk blast furnaces broke all productivity records.

Komzin later built bridges in Siberia, a plant in Kazakhstan and a port in Tallinn. He went on building, right up to the war. When bombs fell on the Estonian capital, he moved to the front to safeguard the projects he had erected.

The war over, Komzin supervised the reconstruction of Sevastopol port until a telephone call radically changed the course of his work and his life. Fyodor Loginov, USSR Minister of Electrification, called him to say the Central Committee of the Communist Party had recommended that he head construction of the big Kuibyshev hydroelectric station on the Volga. Would he agree? What a question! To build such a project was an engineer's dream.

Two days later Komzin came to Gidroproyekt, the chief hydroelectric institute. Gidroproyekt had been working on the Kuibyshev project even before the war. When Komzin came to the site, he found that every bit of ground had been covered by the surveyors. Blueprints by the tens of thousands had already been prepared. The project was beyond the theory and planning stages. The Leningrad plants were assembling unique

turbines for the future giant, and those in the Urals, Moscow, Kharkov, and Kiev were building the other equipment needed.

The director of the institute, the well-known Soviet power engineer Sergei Zhuk, briefed Komzin on the details. The Volga was to be stemmed by a 2.5-mile dam near the city of Kuibyshev. The 20-story structure of the electric station was to house 20 turbines with a total output of 2.3 million kilowatts. The reservoir, or sea, to be created by the dam would be 373 miles long and 25 miles wide. The water would rise by 90 feet, turning the city of Kazan, two miles upstream, into a big river port. New rivers of electricity would flow to the Urals and Moscow over high-tension lines packing half a million volts. The construction would require the excavation of 44.5 million more cubic yards of earth than the Panama Canal. The Kuibyshev hydroelectric station was to be the largest of its kind in the world.

Komzin compared all this with prewar engineering. There was reason for pride. His country had taken a giant step forward.

For earlier hydroelectric projects, foreign help had been indispensable. To build Volkhovstroi we consulted the Swedes; for Dnieprostroi, the Germans and Americans; but eventually Soviet engineering skill surpassed that of other countries. Even at Dnieprostroi Soviet specialists found better solutions for the problems at hand than those proposed by the foreigners. The hydroelectric hubs on the Volga and the Kama rivers, the Volga-Don Canal, and the electric stations on the Siberian rivers—Angara, Irtysh, Ob, and Yenisei—were and are presently being designed by Soviet specialists alone. The Soviet people long ago learned to manufacture their own excellent power and building equipment.

Routine construction on the site got under way. Academician Nikolai Razin, one of the designers of the project, was appointed chief engineer—an admirable counterbalance to Komzin. For all his impressive stature, Komzin was quick and impulsive. His flights of imagination were soberly, mathematically brought down to solid ground by Razin, the very soul of realism.

Finished with his affairs in the capital, Komzin went to Stavropol, the command post of the project. An avalanche of letters descended upon both the Stavropol post office and Kuibyshevgidrostroi, as the building organization was now called, from volunteers offering their services. How many schoolboys and students left their towns and villages to help build that unbelievable dam! Some of the younger ones ran away from home to the Volga and had to be brought back almost by force.

Among the thousands who came were respected veterans and young people on their first jobs. Mikhail Evets, the "king" of excavator operators, arrived from Azerbaijan. When his machine went into action, one had the impression of a monstrous, sharp-fanged iron animal seizing its prey. Evets excavated enough earth on this site to build a pyramid the size of Egypt's Cheops. He was soon followed to Kuibyshevgidrostroi by the "fiery seam" master, electric welding-machine operator Alexander Ulesov, twice Hero of Socialist Labor, who saved his country millions of rubles by developing cheap methods of welding.

Among the young enthusiasts eager to lend a hand on the great project were many who had no skills at all. Komzin, therefore, saw to it that a trade school and later a hydrotechnical school were opened in Stavropol. These schools trained 55,000 skilled building workers in seven years. A year later the Kuibyshev branch of the Industrial Institute was opened there, and Komzin became a professor and the dean of construction engineering. He lectured at the institute for four years and had the gratification of personally

presenting the 750 diplomas to the first graduating class.

After some months of preparatory work the first blast was set off, and machines began to move in and out of the crater. This was construction on a gigantic scale. All the usual work tempos went by the board. In peak hours hundreds of excavators, tractors, scrapers, bulldozers and dump trucks roared on both banks of the river. Tools and materials for this assault on the Volga were supplied by 1,300 plants throughout the country.

Competitive spirit ran high. One day chief engineer Razin brought Komzin a bundle of information leaflets put out by Gidroproyekt. In one of them Komzin's eye caught the figures on the quantity of concrete poured daily at one of the projects in the USA: a world record of 21,000 cubic yards!

He insisted that the leaflet be distributed at once to every worker on the site.

"But why advertise the fact that we're so far behind the Americans?" argued Academician Razin.

"That's exactly what we've got to do!" answered Komzin. "If they can do it, so can we! And better."

This was in the summer of 1955. Three months later, as their contribution in honor of the Twentieth Congress of the Communist Party, the workers of the Kuibyshev hydroelectric project poured 25,000 cubic yards of concrete in a day.

The five years of construction were five years of continuous battle against a river that refused to let itself be harnessed by man. Two days of that long fight Ivan Komzin will never forget. One of them threaded his temples with gray, the other rekindled the spark of youth in his eyes.

He was pulled out of bed at dawn by the excavation chief with the ominous news that the Volga was breaking through the barrier.

"There's not so much water yet, about eight gallons a second."

But that was plenty. There were men and machines in that great pit . . . and three years of hard work! Komzin dressed swiftly. Razin was waiting in the car outside. They talked fast and thought hard, both of them pale and tense. What could have happened? The cofferdam had been washed into place in the winter, and it was possible that some ice had gotten lodged in it and was now melting. Just what the river had been waiting for! It had struck at the weakest spot, of course, swelling out again after being restrained.

From his launch rocking on the waves Komzin glared at the river. He thought he had gotten the best of the Volga, but he hadn't! To the chief engineer it seemed Komzin was looking at the rush of water threatening the project with passionate hatred, as though it were his worst enemy.

From a height on the right bank one could see the river was widening the breach, making a mockery of man's labor, hurling its muddy waters over the barrier into the big pit.

A catastrophe!

Komzin knew that the eyes of thousands were on him and that their behavior depended on his. There must be no panic! He had to keep his head, remain cool. The first thing to do was to get all the people out of the pit. His orders followed one after the other, staccato-like, not to be questioned!

"Get a diver! Let him find the breach. Get ten barges of rocks here at once! A hundred truckloads of clay! Five thousand bags of sand! A hundred and fifty trucks to haul the rock!"

The builders acted as swiftly and calmly as their chief, efficiently carrying out his orders.

"Be careful under water!" Komzin cautioned the head diver Sergei Mileant, "so the current doesn't pull you into the breach. Don't take unnecessary risks! If anything happens, let us know right away! We'll pull you out."

It was only after his fifth descent that the diver found the break. He was barely conscious when brought to the surface.

"The suction was awful down there!" he said later.

Rocks, clay, and bags of sand were hurled into the breach. The battle with the Volga went on day and night until the final report from the big pit.

"Not a drop coming through!"

It was only then that Komzin wired Moscow: "Breach closed! No casualties! All's well."

The second memorable occasion was altogether different from the first. That was when the banks of the Volga were linked by a pontoon bridge thrown across the last gap. The entire staff of Kuibyshevgidrostroi had come out on the banks to watch. The finale of Tchaikovsky's Fifth Symphony blared out over the radio. Leading the parade across the bridge was the dump truck of Georgi Ignatyev, the driver who was awarded the honor of starting the final assault on the river. His truck was followed by hundreds of others dumping tons of concrete into the seething waters. But for all the river's fury as it hurled the concrete slabs about and scattered many cubic yards of rock over its bed, it was man who won out. Atoyan, the cook, made a frantic appearance on the bridge in the tenth hour of the assault. The day was drawing to a close, and no one had come to the dining room. He had brought sandwiches and hot coffee for the drivers. The battle against the Volga proceeded according to schedule. Exactly 19 hours and 35 minutes after it had begun, the builders advancing from the right and left banks met on the finished dam. Hundreds of colored rockets saluted the event.

The shaft of the first turbine of the Kuibyshev hydroelectric station was set in motion three years after the start of construction. The twentieth and final aggregate generated its first current on October 14, 1957.

Komzin was visited by a group of American businessmen shortly before the project was completed. Walker Sisler, president of the Detroit Edison Company, asked the station chief to show him how one of the aggregates worked. When the turbine developed a power output of 130,000 kilowatts, 15,000 more than had been projected, Mr. Sisler said:

"Gentlemen! Any country would be proud of such a construction job! The building tempos of this hydroelectric station were simply fantastic!"

This was an expert's appraisal of the level of Soviet scientific thought and technical strength. It was also a tribute to the organizational and creative abilities of Ivan Komzin who had directed the thousands who built the project.

Komzin's next big job was in Egypt, on the Aswan Dam. All around him he saw poverty-stricken fellahin. Would their unhappy lot be changed when the Aswan Dam harnessed the waters of the Nile?

Aswan will make it possible to irrigate the whole of dry Egypt. The first section alone will double the arable acreage. Every cubic yard of Nile water greedily absorbed by the parched fields is rated at 28 dollars by the fellah. The Aswan reservoir will provide the irrigation system with trillions of cubic yards of water every year.

The first draft plans of the Aswan system were submitted by the West German Hochtief und Dortmund Union. British firms as well as those in other countries presented their drafts later. The scales were tipping in favor of the Germans when the Soviet Union, with its background of experience on the Volga and in Siberia, submitted its plans for the construction of the Aswan Dam.

The Germans, Americans and British were astonished by the simplicity and economy of the Soviet plan. The Egyptian experts said that they were revolutionary. The Soviet plans, in fact, cut the cost and time of construction in Aswan by 20 per cent.

Arguing against the other versions, Komzin silenced all opposition with incontrovertible facts.

"Hammering tunnels through rock in this fearful heat is a complicated and expensive job. You'd have to design special excavators and conveyors that could operate in the stuffy and dusty holes in the rocks. Worse yet, the tunnels will let in very little water. That will lower the level of the old Aswan reservoir and cut the power of the small Aswan hydroelectric station now in operation by 100,000 kilowatts! What's needed is an open canal instead of those expensive tunnels. That would simplify organization and improve working conditions. The equipment, moreover, would cost half the price."

It was the Soviet project that won, with Ivan Komzin becoming chief expert on the construction of the first section of the Aswan High Dam.

Soviet excavators, bulldozers and dump trucks were shipped to the Nubian Desert. A big concrete plant was set going. The most experienced specialists were sent to Egypt. All of this was done to help the young republic get on its feet economically. The Soviet Government had assigned Komzin and his engineers a double task—to help build the Aswan Dam, the largest in Africa, and, in process, to train technical personnel for the country. He therefore asked and received permission from the Egyptian Government to set up a school in Aswan where Soviet engineers in their spare time could teach Arab workers various trades free of charge. Both the Russians and the Egyptians were delighted when the first fellah dug the first cubic yard of dry African soil with a Soviet excavator.

West German firms had hoped to win the contract for the second section of the Aswan Dam, which will account for 70 per cent of the cost of the entire project. They had no intention of letting the Russians beat them on this section, they stated.

When President Nasser met him, he shook Komzin's hand with both his own and asked, "Are you going to build the second section or not? The others are pressing us hard. Isn't there a Russian saying, 'The tougher the beginning, the easier the end!' The beginning was the hardest. The second section will be the most rewarding; it will be the crowning project of the Nile. . . ."

"Of course we'll build it," he answered.

And back in Moscow, Anastas Mikoyan told Komzin, "I'm all for the second section! And I think the Council of Ministers is too."

The hot desert air scorches the lungs, and therefore people from the North find living on the Nile hard. Will they stick it out in Egypt's heat? They certainly will! And the Aswan High Dam, the eighth wonder of the world, will rise beside the Pyramids of the Pharaohs.

Magnitogorsk, the Kuibyshev hydroelectric station, and Aswan. Three stages. Once we needed help ourselves, now we are able to help others.

To build and keep building eternally until the whole world is rebuilt and there are no more disinherited people anywhere—that is how Communist Ivan Komzin sees his job. ★

PEOPLE WHO SET THE PACE

Is the new Soviet man a visionary's ideal or a future reality? These short biographical sketches of men and women at work in today's Soviet factories and farms, schools and laboratories, concert halls and art studios give the answer. In their attitude toward labor, their social consciousness, their ethical values, we see the shape of the communist man of tomorrow.

Yevgenia Dolinyuk

won nationwide distinction as the leader of a champion corn-growing team on a collective farm in the Ukraine. She and her team reaped a record crop of more than six tons per acre.

Yevgenia has spent years working out improved methods for raising big fodder crops. Her experience is studied by farmers from other sections of the country.

Her activities are not limited to her own region and to farm matters. She shows keen interest in everything being done in the Soviet Union. Her fellow countrymen have elected this simple, open-hearted woman a deputy to the Supreme Soviet of the Ukrainian Republic. For her contributions she wears two Gold Stars of the Hero of Socialist Labor. Nikita Khrushchev called people like Yevgenia Dolinyuk "beacons" who light the road to greater prosperity.

Valentina Gaganova,

team leader at the Vyshny Volochok Textile Mill in Kalinin Region, left her own top-producing team of spinners to head the poorest team in the mill at a considerable sacrifice of earnings. Her inspiration and stimulus made the team a record producer. Other leading workers in industries throughout the country followed Gaganova's example. The national movement sparked by this now famous textile worker is responsible for productivity increases that have reached astronomical figures.

One other aspect of Gaganova's performance that cannot be measured in figures was cited by Nikita Khrushchev in a speech. "Just think, Comrades—and this is something really worth thinking about—anyone who reasons in capitalist terms would never believe that a worker would voluntarily give up a better-paid for a lower-paid job. . . . The value and nobility of this act is that it was not done for material considerations but for an idea, because of her devotion to the communist system. It is for the sake of this system that a personal sacrifice is made!"

Valentina Gaganova holds the honored title Hero of Socialist Labor. This year she was elected a deputy to the USSR Supreme Soviet.

THE

BY YURI KRUGLOV

Socialism, which freed man from all forms of political and economic subjection and began to build the material and technical foundation of a communist society, began simultaneously to perfect man's nature. Socialism in this respect has done the difficult spade-work. Communism will have to complete the molding of this personality.

What will the man of communist society be like? In this article Soviet people from various walks of life give their answers. The quotations are from debates conducted by Moscow TV at the Moscow Dynamo Plant; from the newspapers* Izvestia, Nedelya *and* Moskovsky Komsomolets, *the magazine* Technika Molodyozhy; *and from readers' letters to the editors of these publications.

These opinions sketch only the barest outline of this man of the future. Most of them stress a single trait, and the details do not always jibe. But this is understandable. After all, such a society as we are building has never existed before. Still, these opinions are not pure speculation. They have their roots in our everyday life. We know this is so because in today's innovators of production, in our virgin land pioneers, and in the other heroes of our time, we find the traits we would like to see in the man of the future.

"THE PRESENT generation of Soviet people shall live under communism!"

This solemn proclamation is recorded in the new Program of the Communist Party of the Soviet Union. This is not a utopian declaration but a statement of purpose in a plan already launched and in progress. We have reason, then, to speculate on the man who will be living in this communist society. What will he be like? What will his working conditions be? His facilities for rest and recreation? His opportunities for education? His ethical concepts? His ideas on love and family life?

The notion widely current in the West is that man is born with a private-property mentality. Critics of communism argue: "You may build thousands of new factories and cities, you may harness nuclear energy, you may create an abundance of all things, but you will never be able to change human nature. Man always has been and always will be motivated by self-interest primarily."

We have undertaken to change man. We know it will not be done in a decade or two. When man crosses the threshold into communism 15 or 20 years from now, he will still be far from the ideal we have in mind. Yet he will have changed in many ways. Our 40 years' experience in socialist construction has shown us how profoundly human thinking is altered by changed social conditions.

The people of the Soviet Union have been trying to picture the nature of this man of the future. The topic is discussed on the radio and on television, in national and local newspapers, in clubs and wherever else people gather. This interest reflects the desire of the Soviet citizen to perfect his own ethical values, to establish an ideal by which he may evaluate his own conduct. The ideal is slowly being shaped by this collective thinking.

Let us see how the Soviet man of today pictures the man of the future, the man he would like him to be.

Vladimir Petroshin, a lumberjack in Archangel Region, is certain that the application of the principle "from each according to his ability, to each according to his needs" in the communist society of the future will change human nature.

He writes, "People will no longer have to worry about tomorrow; consequently, men will no longer be tormented by selfishness, greed and other contemptible survivals of the past. Free of selfishness, men will no longer harbor envy, malice or hatred. These evils that cripple the most beautiful of nature's creations—man—will vanish forever."

The man of the future communist society, completely free of worry about a livelihood, will give still greater attention to

cultural, physical and spiritual self-improvement. His will be an integrated though many-faceted personality.

Anatoli Timofeyev, construction worker in Volgograd, describes him in these terms: "Handsome, strong and clever. He loves life, but he is capable of daring risks when necessary for the good of society. Having an inquiring mind and a thirst for knowledge, he fights off any tendency toward stagnation. He has a searching spirit that makes complacency impossible. He feels deeply the pain suffered by others, no matter how slight, because there will be no higher standard of conduct then than the respect for human feelings."

Many human weaknesses will undoubtedly remain. But such emotions as anger and jealousy will be tempered by candor and reason. And should a man fall victim to his weakness and commit an antisocial act, the moral influence of his fellow men and his own guilt feelings will help him make a sober estimate of his actions. He will not be likely to delude himself because, as writer Vladimir Nemtsov predicts, "The man of the future will find deals with his own conscience repugnant. His conscience will dominate all his actions and be his severest judge."

What will shape the character of the future man? It will be done largely by society itself. Society will be the prime teacher of both the youth and the adult population.

Alexander Konstantinov, a Moscow college student, sees the process thus: "Every individual has his corners and rough surfaces. As he moves among people, these corners and rough surfaces will be rubbed smooth until we have an individual as polished as a sea pebble."

Most of the participants in this discussion disagree with him. People without rough edges have too strong a resemblance to the stereotyped heroes of the worst of our modern plays—all alike and equally boring. These contrived heroes do not represent our ideal and certainly will not in the future. Under communism people will still have their problems, they will still be troubled by self-doubt, mistakes, setbacks, even tragedies.

It is not "polished sea pebbles" that we want,but highly developed individual personalities. "Precisely under communism," says the Georgian actress Dodo Chichinadze, "will every person have an unlimited opportunity to develop all his physical and mental capacities. The work of the teacher will be judged by his ability to bring out the talents of his students. No, communism does not presuppose a gray mass of people cut to one pattern, but millions of individuals with versatile and beautiful minds."

The function of communist society is to make real happiness possible for everyone. Which brings us to the perennial question: What is happiness?

A happy man is one who works at a job he prefers above all others, who feels that he is a useful member of society, who loves and is loved, who conducts his life with integrity—without fraud, cunning, pettiness or corruption.

"Happiness under communism," writes Semyon Epstein, a Moscow bookkeeper, "will mean the complete identification of the individual's personal welfare with the welfare and happiness of those around him. Those who live for themselves are not really living."

Nikolai Sportok thinks of happiness under communism "as a perpetual urge to search out unknown areas of knowledge. Man, like time, cannot stop; he must keep moving." He adds, "The happy person is one who feels that he is needed by others."

Iya Savvina, a Moscow actress says, "To be happy one must never be self-satisfied."

These definitions and many others we could quote all center on two points: that man cannot be happy alone, and that happiness is not a state of perpetual bliss but the continual search for something new and better.

Statisticians estimate that in 15 to 20 years the Soviet people will have to work no more than four hours a day to satisfy the material needs of the entire society. Anatoli Dnieprov, who has a master's degree in physics and mathematics, asserts: "People under communism will produce much greater scientific, technological and artistic results in a given unit of time than they do now. Under those conditions more and more people will be doing creative work."

Is it likely, some wonder, that in time there will be no need to work at all? Electronic machines will take over for the

David Oistrakh

is one of the world's great violinists. For more than a quarter of a century he has played to audiences in the Soviet Union and in concert halls abroad. His virtuosity has been acclaimed at numerous international competitions. He has been teaching for many years at the Moscow Conservatory.

In January 1962 he made his long-awaited debut as conductor in the Grand Hall of the Moscow Conservatory—a memorable event in the Soviet music world.

The American Academy of Arts and Sciences last year conferred an honorary degree on the artist. Oistrakh, who has been honored by his countrymen with the Lenin Prize and the title People's Artist of the USSR, is now at the peak of an extraordinary career.

Sergei Mergelian

is a born mathematician. He completed the ten-year secondary school in eight, the five-year undergraduate course at Yerevan University in three, and did such a good job at defending his master's thesis that the members of the Scientific Council of the university voted unanimously to award him his doctor's degree in mathematics at the age of 20. This was in 1949, and shortly thereafter he won a state prize for his research. Mergelian is now professor at Yerevan University, a member of the Armenian Academy of Sciences and a corresponding member of the USSR Academy of Sciences.

Alexei Ulesov

is an electric welder on giant hydroelectric station constructions. The most recent has been the Kuibyshev station. He has twice won the title Hero of Socialist Labor for dozens of inventions and labor-saving electric welding processes applied nationally in industry and construction with large savings in metal and time.

Ulesov is now working at a construction site and studying at an evening technical school. With that full schedule he still finds time to work on his inventions, the latest being an original type of five-electrode holder. The life and work of this electric welder serve as a fine example for the younger generation of Soviet workers.

Mikhail Gusarov

works in the open-hearth furnace division of the Moscow Hammer and Sickle Mill where he has been smelting steel for more than 30 years. Not long after he started at the mill he was outdoing veteran steelmen many years his senior in age and experience. He has maintained a deserved reputation as a high producer ever since. The men he works with say that he has the hands of a skilled worker and the head of an engineer. Gusarov has been awarded the title Hero of Socialist Labor.

Gusarov keeps abreast of the latest developments in steel manufacture and is quick to apply the latest methods. The result is an outstanding record for high productivity. The work done by Hero of Socialist Labor Mikhail Gusarov is a model for the country's steelmakers.

Sergei Ilyushin

is the noted aircraft designer. He started out as a ground mechanic, became a pilot, went to an engineering school, and turned to designing training gliders. Flying Ilyushin's most recent plane, the IL-18 airliner, the famous test pilot Vladimir Kokkinaki established 14 world distance, speed and payload records. The IL-18 is a familiar sight today in all the world's air lanes.

The designer has been deputy to five USSR Supreme Soviets. He relaxes from his many duties as designer, teacher and legislator by gardening and hunting.

Ilyushin, who is 68 years old, has headed his design office for three decades. He and 11 of his coworkers who created the IL-18 were honored with Lenin Prizes.

Johannes Smuul,

eminent Eastonian writer and poet, was born 40 years ago in a fishing village on the island of Muhu. His parents could afford to give him only six years of schooling, after which he worked as a farm hand and fisherman. He fought with the Estonian national corps of the Soviet Army in the Second World War and wrote his first lines of verse at the front. Since then he has published several books of poetry. His recurrent theme is the new attitudes of Soviet man toward labor, the evolution from isolated effort to collective work.

Smuul's *Ice Chronicle*, a prose narrative of Soviet explorers and exploration in Antarctica, won him a Lenin Prize. The gifted writer and civic leader has been elected chairman of the board of the Writers Union of the Estonian Republic.

human brain, and automatically operated factories, mines and nuclear plants will obviate the need for the human hand.

However, the majority of those responding did not cherish these prospects. Mikhail Venin, a carpenter, speaks for a great many others when he says: "Labor created man, developed his brain and his hands; labor also created the possibilities for the nuclear age. If man stopped working, he would degenerate. Idleness would impoverish his mind, reduce his physical capacities so that he would no longer be able to cope with the swift tempo of living. No, labor will not disappear under communism. It is essential for man's existence."

With progress in science and engineering the workday will gradually become shorter, but no matter to what degree work for the common good may be reduced, the need for work will never disappear completely. Social progress is inconceivable without work, and only man can ensure this progress.

Some people, very conscious of the importance of work for man's development, feel that even hard physical labor ought not to be eliminated completely.

"Keep in mind," cautions the writer Alexander Kazantsev, "that noted scientists relax by doing some kind of manual work after a day of intense mental labor. Work that requires muscular exertion will not be eliminated altogether; some types will deliberately be preserved."

There are many who disagree with Kazantsev.

"One of the characteristic features of communism, as compared with our own time," writes engineer Mikhail Pritvorov from the city of Gorky, "will be the automation of all laborious processes. Kazantsev's proposal that some hard physical work be retained strikes me as unnecessary. Why not substitute athletics, which can do more for harmonious physical development than hard labor? Take Yuri Vlasov, the Olympic high jumper. He's an engineer, but he's also an athlete. There is certainly no question of his physical degeneration."

Everybody seems to agree that for all-round development both mental and physical activity are necessary. What is essential is that all labor be made absorbing.

As both the length of the workday and the character of work change, man's attitude toward labor will change. Since a man will be able to choose the vocation he finds most appealing, he will work not from necessity but from inclination. And working by inclination, he will become an expert in his field.

On that point writer Nikolai Atarov comments, "It seems to me that under communism the number of mediocre workers will tend to diminish and the number of capable, even talented, workers will grow."

Ample leisure will enable people to change their vocations, if they are so inclined, or to acquire skills in a number of fields. The possibility of shifting easily from one occupation to another will make the work process more interesting and, by that token, more effective.

What will our future man's daily schedule be? This is what Academician Stanislav Strumilin, the eminent Soviet economist, has to say about it: "He will spend no more than four hours a day at work. If we figure ten hours for sleep, meals and other personal needs, he will have that much time again left.. Ten hours of leisure!"

The communist man will use leisure rationally and profitably for self-development.

"What we think of as higher education will be just the necessary minimum under communism," writes Mikhail Shestov, a worker from Volzhsky. "I cannot imagine the man of the future without a higher education."

But higher education will have a different meaning then. It will not be confined to the university or institute. People will move into areas of study that border on their vocations. Much of their free time will be devoted to the arts, science and reading. The difference between physical and mental labor will completely disappear. All the people will become intellectuals.

The arts will have a renascence. "We will be taking with us into communism all that is precious to us today," writes Raissa Volkova, a lab technician at the Institute of Biophysics, "the works of Shakespeare and Tolstoy, Walt Whitman and Pushkin, Beethoven and Tchaikovsy, Raphael and Levitan—all who looked into the future and helped bring it closer. Every person will have the leisure for artistic self-expression. Painting, literature and music will no longer be the special domain of the professional but will become a vital part of everyone's life. The amateur will regard his artistic activity not merely as a hobby but as a second vocation, a source of pleasure for himself and for others."

A very attractive thought, but art critic Victor Skatershchikov, speaking at the Dynamo Plant in Moscow, enters this word of caution: "Amateur art will flourish under communism as never before and will bring out a great deal of original talent. But we must remember that some of the arts require intensive train-

ing. A pianist who misses a few days of practice finds that he is not playing as well as he should. It's not likely that amateurs will ever replace the professionals in the arts, even under communism." Critic Skatershchikov is right, of course.

These are Leningrad novelist Vera Panova's thoughts on the subject. "All the performing arts will be a thousand times more creative in the society of the future because we will have the inclination, the leisure and ample talent. Laughter has always been the sign of good mental health. May the transformed world resound with laughter."

Man will take along into the future not only priceless works of art but also his finest emotions. Twenty and even a hundred years from now people in love will still walk hand in hand through city streets. But love itself will change, acquiring a deeper and fuller meaning. There will no longer be such a thing as a marriage of convenience; nothing will be left of the lowly things that sully and vulgarize the most basic of human emotions. Couples will stay in love for a lifetime, wedded not by need and habit but by strong mutual feeling.

The question of the family under communism is the subject of much discussion. The rearing of children is the basis of the family, and this will be assumed in the main by the state.

It is hard to foresee how future generations will solve this problem. Life will suggest the solution. In the meantime, most of the participants in the discussion agree that the family will continue to play an important role.

What will be its basis? Here is an opinion expressed during a debate on the subject at the Moscow Dynamo Plant:

"The family, of course, will not disintegrate. On the contrary, it will become stronger, joined not by financial dependence but by a great love, a pure and lofty love. True, society will assume a greater responsibility for the rearing of children, but this does not mean that the child will be deprived of parental care and affection. What we are likely to have is a harmonious unity of collective and parental rearing."

We have all observed how even the tiniest toddlers are drawn to other children of their age, how much at home they feel in the company of other children. In the society of the future there will be a large number of institutions where children will be able to stay as long as they and their parents desire. The healthy, emotional attachment of children and parents is not something a communist society would wish to see weakened. Quite the contrary. The need for strengthening the family as the basic unit of the communist society is emphasized in the new Program of the Party. In communist society parents will still be responsible for bringing up their children.

This beautiful new man of the future we have been talking about will not spring up full-blown in some future generation. There will be no miraculous transformation,but rather a gradual process—attitudes and habits recast in the crucible of the workaday life. We see the process in operation today in such commonplace activities as the workers of a Kuibyshev bearing plant carry on when they check the quantity and the quality of their own work, figure their wages and take their own pay—all without supervisors and cashiers. It would be easy for someone to take more than is due him, but that does not happen.

Kuibyshev is not an isolated example; the practice is being followed at dozens of other factories.

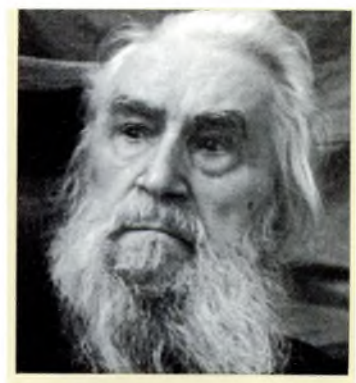
The words "mine" and "yours" are slowly disappearing from the Soviet people's vocabulary, being replaced by the word "ours." Implicit in this concept is a whole set of new attitudes that are developing out of communist construction.

Alexander Kirsanov, a quiet, unassuming lad employed as a milling machine operator in a factory at Krasnoyarsk, was badly burned in an accident. He had to have immediate skin grafts to save his life. When word reached his shop, 14 workers immediately volunteered their skin for the operation. The surgeon chose four donors, who, without the slightest hesitation, submitted to the painful operation to save their comrade's life. It brought them no pecuniary advantages. It is simply that the communist principle "man is friend, comrade and brother to man" is rooting itself in Soviet life.

The Soviet man's spiritual world keeps getting richer, his range of interests—in science, art, sports—keeps growing wider. One example is Alexander Filatov, a steelmaker in Moscow's Hammer and Sickle Mill, who has qualified for membership in the Writers Union. He still mans an open-hearth furnace, but in his free time he writes beautiful poetry on such themes as spring, comradeship and love.

One could argue that there is nothing very special about any of these examples, that these are things which happened in the past as well. True, but with this important difference—that in the Soviet society they establish the standard of behavior for millions. The small gestures and great deeds of our day are molding the man of tomorrow. ★

Sergei Konenkov,



at 88, is the oldest living Russian sculptor and the dean of Soviet art. Most of the 500-odd sculptures he has done in the past 70 years are on display in Soviet museums and galleries. Some of his work is in collections in the United States, where he lived from 1924 to the close of the Second World War. Since his return to the Soviet Union he has done a number of busts in marble and several statues, including the colossal *Emancipated Man.*

Konenkov's sculpture is very much esteemed in the Soviet Union. He holds the title People's Artist of the USSR, was awarded a Lenin Prize in 1957 for his marble *Self-portrait,* and is a member of the USSR Academy of Arts.

Zhamal Kanlybayeva

was the first woman in the Soviet Asian republics to earn a master's degree in the engineering sciences. She developed a new method for observing rock displacements. With an instrument she devised, processes that take place in the earth can be viewed on a television screen. This makes it possible to forecast rock displacements resulting from coal mining, determine the order in which coal seams should be mined and protect surface structures.

Zhamal Kanlybayeva, a graduate of a mine and metallurgy school, is now a senior researcher at the Alma-Ata Mining Institute of the Kazakh Academy of Sciences.

Kanysh Satpayev,

the President of the Kazahk Academy of Sciences, is the son of a nomad herdsman and began his working life as foreman of a drill crew. He has devoted 35 of his 63 years to the study of copper ore deposits in Central Kazakhstan, considered to be among the largest in the world, and has written more than 300 scientific works. The prognostic maps that Satpayev compiled enormously simplify the problem of surveying the widespread and diverse mineral wealth of this part of the country. Nearly 150 large-scale industrial plants have been built and at least 200 more are in the offing in the mineral areas prospected by Satpayev. He has won several state prizes and decorations and is a deputy to the USSR Supreme Soviet.

TRUE FRIENDSHIP

BY ANATOLI ALEXIN, WRITER

FRIENDSHIP, firm and indestructible, unites our Soviet people in a single family. This comradeship is a shield against adversity. It is the law of socialist life, a moral obligation, to extend a helping hand to those in trouble.

Most men do not think they have the stuff of heroes, yet, in moments of trial, heart and conscience somehow force them into action they may think themselves altogether incapable of in their self-critical moments.

I am reminded of the time I was telling a Lithuanian nurse—Maria Voitsekhovskaya was her name—about the heroism of one of her countrymen, the captain of a trawler, who engaged a storm in single combat, so to speak, to save the crew of a sinking ship.

Maria exclaimed, "People can be so brave; I don't think I should ever be able to risk my life that way."

But she did. It was a few months later that the newspaper *Komsomolskaya Pravda* carried this item: "By edict of the Presidium of the Supreme Soviet of the USSR, Maria Voitsekhovskaya, a nurse at the Vilnius Children's Hospital for Infectious Diseases, was awarded the For Valor medal for her great courage and selflessness in saving children who were drowning."

It happened this way.

Maria had just come home from night duty—she lived in the village of Salaty not far from Vilnius—when she heard a cry for help from a lake some 300 feet away. She rushed out immediately and saw that her neighbor's children had fallen through a hole in the ice while sleighing.

She managed to pull two of the youngsters out, a boy and a girl. Their three-year-old brother was still in the water, hanging on to the ice. While she was trying to pull the child out, the ice cracked under her and she fell in also. The rescued boy held out a stick, but by that time she was too exhausted to reach for it.

Maria had not only been a model nurse in a children's hospital but now she had given her life to save children. The people of Vilnius were so moved that they voted to erect a monument in her memory.

Yes, we must erect monuments—not only in village and city squares but in our hearts as well—to people with so great a sense of responsibility to others.

Often people who are total strangers are so eager to help each other, you would think they had been bosom friends for years. This is a true story of a stranger who played Cupid.

At the World Youth Festival in Moscow, Marina S., a student, met Volodya A., a young engineer on one of the big Far East construction projects. Volodya was vacationing in the capital, and by an unbelievable stroke of good fortune—so he must have thought—the festival happened to be taking place in the capital and he had chanced to meet Marina at a festival concert. Together they attended the parties, visited the youth art exhibitions, planted a tree in the Park of Friendship, and viewed the firework displays.

They were deliriously happy. And then the day before his departure they quarreled. Who and what started the quarrel is of no moment. What was needed was a little time to calm down, to think it over, to forget false pride and make up. But time was what they didn't have.

Volodya left by train the next morning. He had a long journey before him and plenty of time to call himself all sorts of names. The second day out he all but got off the train to take the first plane back to Moscow and Marina. He wrote her a letter instead. "If you don't answer at once, I'll know it is all over between us. . . ."

But even if she had wanted to, Marina could not answer "at once" because the letter never reached her. Volodya had made a mistake in the address, he had written Kozikhinsky instead of Kozitsky Lane.

Tanya L., a young print shop worker, who was about to leave on vacation, found the letter in her mailbox. She stopped off at the district post office to inquire and was informed that no Marina S. lived in her neighborhood. Then she attacked the address and information bureaus and found that Marina's last name was as common as her first. But Tanya is a determined young lady and persevered. She made a list of all the Marina S.'s and made the rounds.

She met Marina S.'s of various ages and occupations who thought her slightly daft until they heard the story, and then they asked how they could help.

She finally located *the* Marina S. The girl opened the letter feverishly, read it, then fell on Tanya's neck, sobbing, "I've been hoping for this letter so very much. I don't know what I'd have done if you hadn't looked for me. I don't know how to thank you. It was such a foolish argument. It will never happen again, I can assure you."

Tanya's was a simple, decent act of kindness, but it changed the lives of two people.

In a radio talk I once gave I mentioned an old woman living in Fryazino, near Moscow, who had been abandoned by her grown and well-off son. Shortly thereafter the old lady received literally dozens of letters from people inviting her to live with them. A young librarian from Kiev wrote, "I'm sure I can make you feel at home." The other letters said much the same thing.

Naturally, it is in his social activities and at work that Soviet man manifests his highest understanding of duty and comradeship. I am reminded of construction team leader Vasili Barabanshchikov whom I met beyond the Arctic Circle. Vasili had come to Norilsk, northernmost city in the Soviet Union, from Moscow. He was offered a comfortable apartment and a good job in town. But when he learned about the miner's settlement, where only a few apartment houses had been built yet and where most of the people still lived in barracks, he went there, persuading his team to follow suit. Before long they turned this settlement into a well-appointed town and are living there themselves now. It was his communist thinking, his concern for others, that made this man choose to go where living was harder but where he was needed more.

I have told these stories about real people because they say more than pages of generalities. I could cite dozens of other examples to demonstrate the singleness of feeling of Soviet people, the responsibility of person for person, the pride that each citizen takes in the country's achievements, because in a very real sense they are his own achievements multiplied 200 million times.

"Man is a friend, comrade and brother to man," declares the new Program of the Communist Party. In that single phrase is embodied the ethical code by which the Soviet citizen aspires to live. ★

THE RUSSIAN CHARACTER

The noted Soviet author Alexei Tolstoy (1883-1945) wrote many world-famous books, among them *Peter I*, a historical novel, and the trilogy *Road to Calvary*.

"The Russian Character," the short story reprinted below, was written in 1944, shortly before his death.

THE RUSSIAN CHARACTER! A rather pretentious title for a short story. But I can't help that. It is precisely the Russian character I want to tell you about.

The Russian character! Not an easy thing to describe. . . . Shall I tell you a story of valor and heroism? But so many could be told that one is simply at a loss to make a choice. A friend of mine has helped me out of my difficulty with an episode from his personal experience.

How this man fought the Germans I shall not stop to tell you, though he does wear the gold star of Hero and half his chest is covered with decorations. He was a simple, quiet, plain man —a collective farmer from a Volga village in Saratov Region. He stood out among his comrades, however, for his stalwart, well-knit frame and handsome features. To see him climb out of the tank turret was something to admire. A veritable god of war! He would jump to the ground, pull the helmet from his sweating forehead, and wipe his blackened face with an oil rag, invariably smiling out of sheer good humor.

At the war front, where life is a constant tussle with death, men change for the better; they shed all frippery like dead skin after a bad sunburn, leaving only the kernel of the man. To be sure, in some men the kernel is harder, in others softer; but even those whose kernel has a flaw in it try to make good, to be good, trustworthy comrades.

But my friend Yegor Dremov, even before the war, was a man of principle. He had a deep respect and love for his mother, Marya Polikarpovna, and his father, Yegor Yegorovich. He'd tell you: "My father's a self-respecting man; with him self-respect stands above everything else. 'You, my son,' he says, 'will see a lot of life and you'll visit foreign parts. Always remember to be proud that you're a Russian. .' "

He had a sweetheart in his native Volga village. We do a good deal of talking about sweethearts and wives, especially during a lull in the fighting, when there is a frost outside and the men gather after mess round a cheerful little stove in the dugout dimly lit by a smoky oil wick. Here yarns will be spun and many a tale embroidered. Somebody will start the ball rolling by throwing out the question, "What is love?" One man will say: "Love is founded on mutual respect. . . ." Another: "Nothing of the sort, love is a habit; a man doesn't only love his wife, he loves his father and mother and even animals. . . ." "Pshaw! Silly ass!" a third will say. "Love is when you're all sizzling inside and a fellow walks about as if he's drunk. . . ." And so they torture the question for a good hour or two until the sergeant brings the argument to an end with a peremptory but conclusive word of his own.

Yegor Dremov, obviously shy of joining these conversations, merely made a passing remark to me about his sweetheart, from which I gathered that she was a nice girl and that once she had given her word to wait for him, to wait though he come home on one leg.

Neither was he inclined to dwell on feats of battle. "They're not things one wants to remember," he would say with a frown and begin smoking a cigarette. We usually learned about the exploits of his tank from his crew. The accounts of tank-driver Chuvilev were especially thrilling.

"We'd only just deployed, you know, when suddenly I see him coming up over the hill. I yelled, 'Comrade Lieutenant, a Tiger!' 'Straight ahead,' he shouts, 'step on the gas!' I started zigzagging in and out of the fir trees. The Tiger began nosing around with his gun muzzle, groping like a blind man, and sent a washout at us. Our Lieutenant let him have the fireworks, straight in the side—the sparks went flying! Then he got one smack into the turret—the Fritz's tail went all skewy. He fired a third shell, and that Tiger started belching smoke all over—the flames shot up out of him at least three hundred feet high. The crew came tumbling out of the emergency hatch. Then Vanya Lapshin started squirting them with his machine gun—and they went down, collecting the lead. Well, now the way was clear. Five minutes later we dashed into the village. Here's where I nearly burst my sides. You should have seen the Nazis scuttling about. It was muddy, you know, and some of them had jumped out without their boots on, hopping about in their socks. They all made a dash for the barn. Our Comrade Lieutenant, he raps out the command: 'Now then, wade into that barn!' We swivelled the gun around and rode full tilt into that barn. Crickey! The rafters came raining down on the armor, with boards and bricks and fascists that had been sitting inside. I ironed that barn out again—the rest of them stuck up their hands, 'Hitler kaput.' "

And so Lieutenant Yegor Dremov fought until he came to grief. During the fierce fighting in the great Battle of Kursk, when the Germans were on their last legs and wavering, his tank was hit by a shell on a rise of ground in the middle of a wheat field. Two of the men in the crew were killed on the spot. The second shell set the tank on fire. Driver Chuvilev jumped out through the forward hatch, climbed on the armor, and managed to pull the Lieutenant out of the blazing tank. He was unconscious and his overalls were on fire. Scarcely had Chuvilev dragged the Lieutenant away, when the tank exploded with such terrific force that the turret was hurled a distance of fifty yards. Chuvilev threw handfuls of earth over the Lieutenant's face and head and over his clothes to extinguish the flames. Then, with the Lieutenant on his back, he crawled from shell hole to shell hole to the first-aid station. "The reason I pulled him out," Chuvilev related afterwards, "was because I felt his heart beating."

Yegor Dremov survived and even retained his eyesight, although his face was charred to the bone in some places. He lay in the hospital for eight months, undergoing one plastic operation after another. His nose, lips, eyelids and ears were restored. When the bandages were finally removed, he looked at his face, if you could call it his. The nurse who handed him the little mirror turned away with a sob. He gave her back the mirror almost at once.

"Could have been worse," he said. "One can live like this." But he never asked the nurse for the mirror again. He frequently explored his face with his fingers, as if trying to get used to it.

When the medical commission found him unfit for active service, he took himself off to the commanding general and said: "Please let me return to my regiment." "But you're disabled," said the general. "Certainly not. I'm a scarecrow, but that won't interfere with my getting back into fighting shape." (It was not lost on Yegor Dremov that the general had tried to keep his eyes turned away during the interview, and Dremov's livid slit of a mouth twisted in a wry smile.) He was given a 20-day furlough to recuperate and went home to his father and mother. That was in March.

He had expected to take a cart from the railway station but he had to walk the 12 miles. The snow still lay on the ground, it was damp and desolate, and a chill wind, howling dismally in his ears, blew out the skirts of his greatcoat. Dusk had fallen when he arrived in the village. The familiar well was still there with the tall crane swaying and creaking in the wind. The sixth cottage from here was his parents'. He stopped suddenly, his hands thrust into his pockets, then shook his head and turned toward the house. Knee-deep in the snow, he peered through the window and saw his mother—she was setting the table for supper in the dim light of a low-burning oil lamp that hung over the table. Still in the same dark shawl, quiet, patient, gentle. She looked older, her thin shoulders sharply outlined under the shawl. "Ah, had I known it, I would have written her at least a couple of words about myself every day." She put the frugal meal on the table—a jug of milk, a chunk of rye bread, two spoons and a saltcellar—and stood at the table with thin hands crossed on her bosom, lost in thought. Peering at his mother through the window, he told himself he must not frighten her, that dear old face must not be shaken with despair.

Ah, well! He lifted the latch of the wicket-gate, passed through the little yard onto the porch and knocked. His mother answered from behind the door: "Who's there?" He replied: "Hero of the Soviet Union Lieutenant Gromov."

His heart beat violently and he leaned his shoulder against the lintel. No, his mother had not recognized his voice. He seemed to be hearing it himself for the first time, changed after all those operations—a husky, gruff, muffled voice it was.

"What do you want, my dear?" she asked.

"I've brought regards to Marya Polikarpovna from her son, Senior Lieutenant Dremov."

She opened the door, grasped his hand. "He's alive, my Yegor? Is he all right? Goodness, come in, come in, my dear."

Yegor Dremov sat down on a bench by the table. This was where he used to sit when his feet still didn't reach the floor, and his mother, stroking his curly head, used to say: "Eat, my darling." He began to talk about her son, about himself, in detail—what he ate and drank, that he lacked for nothing, was always in good health and spirits—and a little about the battles he had taken part in with his tank.

"Tell me, is it very awful at the war?" she broke in, peering into his face with dark, abstracted eyes.

"Yes, it is pretty awful, Mother, but you get used to it."

Yegor Yegorovich, his father, came in. The years had told on him too, his beard looked as though it had been sprinkled with flour. He glanced at the visitor, stamped his worn felt boots in the doorway, slowly unwound his scarf, took off his sheepskin coat, drew up to the table and shook hands—ah, how familiar was that broad, just parental hand.

Without asking any questions—the presence of a guest with military decorations did not need explaining—he sat down to listen with eyes half-closed.

The longer Lieutenant Dremov sat like this, unrecognized, talking about himself, ostensibly about another, the more impossible it became for him to disclose his identity, to get up and say: "Don't you recognize me, Mother, Father, scarecrow that I am!" He felt happy sitting at his parents' table, happy and desolate.

"Well, let's have supper, Mother. Get something for the guest." Yegor Yegorovich opened a little old cabinet, where in the left-hand corner there had always lain a collection of fishhooks in a matchbox—they were still there—and a teapot with a chipped spout—it still stood there too—and from which came the familiar smell of bread crumbs and onion peelings. Yegor Yegorovich brought out a bottle of vodka, just enough to fill two glasses, sighing over the fact that no more was to be gotten, and they sat down to supper as they had in the old days. Suddenly, Lieutenant Dremov became aware that his mother was watching intently the way he held his spoon. A smile twisted his mouth. His mother raised her eyes, her face quivering painfully.

They talked of this, that and the other thing—what the spring would be like, whether folks would manage with the sowing and that the war would probably be over this summer.

"What makes you think the war will be over this summer, Yegor Yegorovich?"

"The people's blood is up," replied Yegor Yegorovich; "they've gone through death and there's nothing can stop them now—it's kaput for the Germans."

Marya Polikarpovna asked, "You didn't say when he'll be getting leave to come home for a visit. We haven't seem him for three years. He must have grown up, goes about with a mustache, I guess. . . Facing death, like that, every day, I should imagine his voice has gotten rough too."

"You'll be seeing him—maybe you won't recognize him," said the Lieutenant.

They fixed up a bed for him on the Russian stove, where every brick was familiar, every crevice in the timbered wall, every knot in the wooden ceiling. There was a smell of sheepskin and bread, the cozy smell of home that a man never forgets even in the face of death. The March wind howled above the roof. His father snored behind the partition. His mother turned and sighed and could not fall asleep. The Lieutenant lay on his stomach with his face buried in his hands. "Can it be that you didn't recognize me," he thought, "can it be? Mamma, Mamma. . . ."

He was awakened in the morning by the crackling of the wood in the stove, at which his mother was quietly busying herself. His washed foot-wrappings were strung on the clothesline and his cleaned boots stood by the door.

"Do you like wheat pancakes?" she asked him.

He held off answering until he climbed off the stove, slipped on his shirt, tightened his belt, and sat down barefoot on the bench.

"Does Katya Malysheva, Andrei Malyshev's daughter, live in your village?" he asked.

"She got through with her studies last year. She's a schoolteacher now in the village. Do you want to see her?"

"Your boy told me to be sure to give her his regards."

His mother sent the neighbor's little girl for her. Scarcely had the Lieutenant gotten his boots on when Katya Malysheva came running in. Her wide gray eyes were shining, her eyebrows twitched with excitement and her face was flushed with joy. When she slipped the knitted shawl from her head onto her shoulders, the Lieutenant groaned inwardly. "Oh, to kiss that glowing, fair hair!" He had always pictured his dear friend just this way—so fresh, sweet, merry, and kind, and so beautiful that the little cottage seemed filled with her golden radiance.

"You've brought regards from Yegor?" (He stood with his back to the light and merely nodded his head, unable to speak.) "I miss him terribly, tell him that."

Coming up closer, she glanced at his face and suddenly recoiled with horror in her eyes. That moment he made up his mind to go away—that very day.

His mother served the wheat pancakes with baked milk. Again he talked about Lieutenant Dremov, this time about his military exploits, hiding none of the cruel details, and keeping his eyes averted from Katya's so that he would not see his own frightfulness reflected in that sweet face. Yegor Yegorovich wanted to make arrangements for a collective farm cart to take him to the station, but he set out on foot, the way he had come. He was wretched about the way things had turned out. He stopped again and again, clutching his head in his hands, asking himself hoarsely: "What's to be done now?"

He rejoined his regiment, which had been pulled back deep to the rear for replacements. His comrades met him with unfeigned joy. It was like balm to the tormenting heartache that had deprived him of sleep, made it impossible for him to eat or breathe. He decided to let his mother stay ignorant of his misfortune a while longer. As for Katya—he would tear that image out of his heart.

A fortnight later came a letter from his mother:

"How are you, my darling boy. I'm afraid to write you about it, I don't know what to make of it. A man came here with greetings from you—he was a very good man, but his face was in bad shape. He had wanted to stay with us a while but then suddenly went off. Ever since, my dear son, I can't sleep nights for thinking it was you. Your father scolds me for it, says, 'You've gone crazy in your old age, woman. If it was our son, wouldn't he have said so? Why should he have kept it a secret if it was he? A face like that man's who came to see us was something to be proud of.' Your father tries to argue me out of it, but a mother's heart will have its own way—it was he, he was with us! That man slept on the stove, I took his coat out to the yard to brush it and I hugged it to me and cried—it's he, it's his! . . . Yegor, darling, write me, for the love of Christ, tell me—who was it? Or maybe I've really gone crazy. . . ."

Yegor Dremov showed this letter to me, Ivan Sudarev, told me his story, wiping his eyes with his sleeve. I said to him: "That's what I call a clash of character! Don't be an idiot, write your mother at once, ask her forgiveness, don't drive her mad. A lot she cares about your mug! She'll love you all the better as you are."

He wrote a letter that very day: "My dear parents, forgive me for my stupidity. It was really I, your son, who called on you that day . . ." and so on, four closely written pages—he would have written 20 had it been possible.

A short time later we were standing together on the firing range when a soldier came running up to Yegor Dremov: "Comrade Captain, somebody to see you." The soldier's expression, though he behaved according to regulation, was like that of a man about to raise his glass. We went down to the settlement, and as we came near the hut where Dremov and I were billeted I could see he was feeling edgy, kept coughing all the time. I thought to myself: "So you tank boys have nerves after all!" We went into the hut, he first, and I heard:

"Hullo Mother, it's me!" I saw a little old woman fall on his neck. I looked around and there was another woman standing nearby. Upon my word, there may be other beautiful girls somewhere, she's probably not the only one, but I'd never seen the likes of her.

He freed himself from his mother's embrace and went up to the girl—the god of war, by the whole stalwart look of him.

"Katya!" he said. "Katya, what brings you here? You promised another fellow to wait for him, not this one."

The lovely Katya answered him—I heard it from the hallway where I was waiting:

"Yegor, I want to live with you all my life. I'll love you truly, I'll love you deeply. Don't send me away."

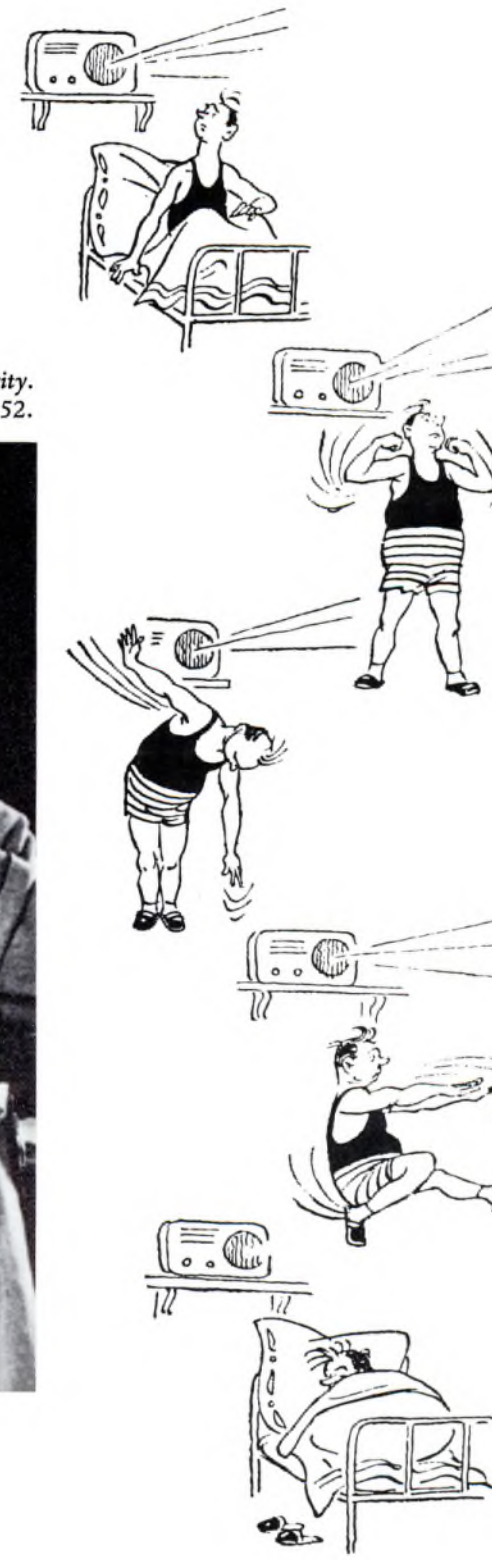
Yes, there you have it, the Russian character! A man seems quite ordinary until grim fate knocks at his door and a great power surges up within him—the power of human beauty.

They have done their share of work and are now enjoying a secure old age. Men are eligible for a pension at 60; women, at 55.

In keeping with the growth of the national income, the organs of state, the trade unions and the collective farms will in the course of the 20 years gradually undertake maintenance of all citizens incapacitated through old age or some disability. Sickness and disability grants and old age pensions will be extended to collective farm members; old age and disability pensions will be steadily raised. The number of comfortable homes for old people and invalids providing free accommodations for all applicants will be greatly increased in town and country.

From the Program of the Communist Party of the Soviet Union

PENSIONERS



Soviet longevity figures keep rising. The centenarian is no rarity. There are 21,708 venerables between the ages of 100 and 152.

Made to order for the active outdoor-type Moscow pensioner—the river at his doorstep and the woods a short bus ride out of town.

IS OLD AGE INEVITABLE?

BY GEORGI GUREVICH

IT IS MORNING as I walk along a Moscow boulevard, and the long snow-covered strip is gay with the bright caps of little citizens of the Soviet Union. These future heroes of earth and space, future scientists and machinists are sleighing, building snow hills and making snowmen. A man comes toward me dragging his stiff legs with difficulty, leaning heavily on his stick for support. His joints hurt, a pain shoots up his side and is reflected in the small of his back. This man was once young and brimming with health. He used to catch a hot wire deftly with tongs at the rolling mill or run lightly up and down the scaffolding of a construction site. Yes—once he personified vitality, but now he is weak and needs to be protected.

What is the Soviet Union doing for the aged?

First of all, there is the pension to which everyone is entitled, men on reaching the age of 60, women at 55. The amount runs from 100 per cent of wages for the lower paid workers to 50 per cent or more for those in the higher paid categories. Rents are low, three to five per cent of earnings, and, what matters most of all for the old, medical care is free.

Secondly, and bearing more directly on our subject, there are medical centers in various parts of the country that specialize in the specific maladies of old age as part of the over-all program in gerontology.

One such center in Kiev is comprised of a research institute, an out-patient clinic, a hospital and a home for the aged. The main building, a five-story structure, has physiology, biochemistry, old-age immunology and other laboratories.

The over-all research approach may be gathered from this comment by Professor Marchuk, one of the Kiev institute's leading scientists.

"Old age diseases must really be treated at as early as 30 years of age. Once their origin is determined, they can be prevented. There are two aspects to geriatrics: one is treatment, the other prevention. The latter requires study of the causes of old age diseases and ways of forestalling them.

"The fight against old age diseases actually begins with an attack against the environmental factors that breed them. A happy, healthy, tranquil life prolongs youth. Disease, hunger, poverty, trouble, suffering and sorrow hasten old age. The elimination of unemployment in our country and increased real wages means a better and longer life for the people. The systematic reduction in working hours gives them more rest. The eradication of infectious diseases, better housing, additional child care centers and vacation resorts all make for longevity."

One of the questions researchers in the field are debating is the relative influence of biological and environmental factors. This is not the academic argument it would seem to be at first glance, it has an important effect on research emphasis.

Opinions differ markedly. Addressing a conference on gerontology a year ago, Professor Spasokukotsky of Kiev declared, "Longevity is a social, not a biological, problem."

He and other like-minded scientists argue that there is a natural limit to life—100 years in the opinion of some, 150 to 200 in the opinion of others. People who reach this natural limit die of old age. But these lucky ones are few. Most people do not die of old age; they die prematurely of disease and other factors for which the imperfect conditions of civilized life are responsible. Hence the conclusion, to put it very simply—study the regimen, diet and habits of people who have lived to the age of 100 or 150.

This was the predominant view of a few years ago but it has been losing ground fast. We have no proof of the supposition that primitive man had a longer life span than ours. Nor do we know why some people live to so advanced an age as 150.

We have many such very old people in the Caucasus and elsewhere in the Soviet Union—in Abkhazia with its benign climate as well as in frost-bound Yakutia. Some of our present-day Methuselahs live in mountain districts, others in cities. Some are vegetarians, others meat-eaters. Some drink wine, others do not touch it. But in the final analysis they all die of disease, not of old age.

No one has yet observed a "natural" death and so it has not even been possible to determine what causes it. Many scientists question whether there is a "natural" life limit. They propose to call a conference to consider whether there really is such a thing as "natural" death.

A second group of gerontologists espouses the "biological" point of view. The cause of death, they claim, is to be found in the organism itself. There is a weak link in the body which breaks down with time, disturbs the vital processes and brings on old age. Where is this link? There are as many as 200 different answers to the question—in the large intestine, blood vessels, nerves, brain, heart; in colloids, protoplasm, nucleic acid stability; in metabolic disturbances, waste accumulation, etc., etc.

The theory of error on the molecular level has been winning favor of late. It is mathematical and seems logical. The processes of life go on, proteins are stamped, molecules repeat each other, but certain errors are unavoidable in stamping and, with time, they are cumulative.

There are some 200 explanations—more than enough evidence that we are still a long way from a valid old age theory. Besides, all these explanations have a common weakness—they cannot logically explain what determines the length of life in the animal world.

If the weak link is nerves, then why do organisms without nerves not live longer than those with them? If the weak link is in the circulatory system, why are not organisms without blood vessels immortal? If the weak link is at the molecular level, then why do not all cells live for the same length of time? And, to cap it all, if the cause of old age is structural weakness, why do the higher animals have a shorter life span than turtles, crocodiles, pike?

A third view has come to the fore in debates on the weak link theory. This one stems directly from Darwin's theory that the development of anatomical structures in the animal organism is determined by expediency, that they evolve with the end of survival in view. Those animals that adjust their structures to changing environmental conditions survive, the others die of hunger or are killed by beasts and birds of prey.

This question, then, suggests itself. Perhaps the life span of animals is also determined by expediency. Perhaps old age and death are necessary for the species to survive.

Scientists who adhere to this third point of view conclude that old age and death make possible the change of generations, the development and progressive evolution of the species.

In living organisms every structure must be organized. If an organism has need for eyes and ears, the formation of these structures is forecast in the developmental pattern of the organism. If old age is useful for the animal world, then the advent of old age must be a necessary part of the hereditary pattern, just as are the shedding of leaves in autumn, the transformation of a caterpillar into a chrysalis and human birth after nine months of gestation.

Following this line of reasoning, we arrive at the conclusion that the cause of death is the self-elimination of the organism. We have dozens of examples of self-elimination in plants and animals that have progeny only once in a lifetime and then die—the Pacific salmon, many varieties of butterfly, bamboo, rye and wheat. In higher animals—those who feed and rear their young—self-elimination takes the form of protracted weakening, of aging.

The theory of old age as self-elimination, sad to contemplate initially, is actually much more cheering than would seem. It is infinitely easier to prevent a suicide than to halt the process of natural destruction once begun. We may find ways of delaying or halting this process of self-elimination and thus add years to man's life span. How many? Perhaps ten, perhaps a hundred; that will depend upon medical progress. Professor Alpatov, a longevity statistician, said a while ago, "The minimum is 150 years. The maximum longevity limit will depend on the level of our knowledge and the scope of our research."

Soviet science is hard at work fighting old age. There are three major gerontology centers in the USSR—the institute in Kiev headed by Professor Chebotarev, one in Kharkov where Academician Nikitin is working, and one in Moscow called the Society of Nature Testers.

These centers do not adhere to any one point of view we have outlined. As a matter of fact, in a single laboratory at the Kiev institute, for example, you are likely to hear a half dozen different theories expounded. Similarly in Kharkov and Moscow.

The Muscovites are perhaps the most optimistic. Take young biologist Zhores Medvedev of the Agricultural Academy. He is investigating proteins and nucleic acids and thinks that old age is a factor of occasional error in the growth process of molecules. He believes that the aging process can be slowed down a great deal.

Lev Komarov of the Institute of Higher Nerve Activity says, "The life span can be stretched out to two or three times its present length and even more." He thinks old age is caused by the presence of superfluous substances in cell metabolism, something that can be corrected by diet, cold or other physical and chemical means.

And so my review, cursory at best, is at an end. I look at the snow-covered boulevard with its bright spots of color again. The future builders of earth and space are making castles of snow with their little spades.

What destiny awaits them? Will they drag their legs with difficulty along the same path in their declining years? Can anything be done to cancel or delay this bitter fate?

This is one of the fascinating problems facing science today. ★

PENSIONERS of one apartment house

1

BY YURI SEMYONOV

THE ARGUMENT started when someone said he had done his share of work in this life.

"It's not years that makes a man old, it's sitting around with your hands folded living in the past," Dmitri Leonov countered.

"How right you are," chimed in Ivan Sidorov. "Now don't misunderstand me. It's good to have the leisure time to fuss around the house, go on a fishing trip when you feel like it, play with your grandchildren. But it's not enough. If I didn't have something useful to do, something people depend on me for, there'd be no purpose to my life."

These people sitting in the courtyard of an apartment house in Moscow are pensioners. They had gotten to be friends two years ago working together on a volunteer community project to landscape the grounds around their house. They did a job that would do credit to professional gardeners—planted trees, laid out flower beds and made a playground for the children.

They are all well past 60 but have very different backgrounds. Vera Garina, for example, was an office worker; Georgi Pushich, a tailor. Ivan Sidorov was an architect and engineer and spent most of his life building houses. Dmitri Leonov served with the militia for a quarter of a century. His closest friend, Vasili Makarov, was a tinsmith.

Each of them began to earn a living at an early age. Leonov and Sidorov herded cattle for a landowner. Makarov worked as an errand boy. Pushich, now 72, spent his younger years in the czarist army.

Inevitably, whenever they get together there is a good deal of reminiscing. These pensioners greeted the October 1917 Revolution with rifle in hand and fought to defend the young Soviet Republic on the Civil War battlefronts.

The children in the project often gather round Pushich for his stories. He not only fought at the fronts in the Civil War but also operated in the enemy rear. He was captured, escaped, was caught by the White Guard counterintelligence, sentenced to death, and escaped again.

These are men and women incapable of working as they used to when they were young, but then, they don't have to. They live in new apartments and their pensions provide amply for their needs. But they are agreed that "living for myself," as one of them put it, is not really living. As a result, they are all engaged in some sort of useful activity, the kind of work that gives them a real sense of satisfaction, that brings them the respect and gratitude of their community.

Retired militiaman Leonov is chairman of the House Committee elected by the residents. The committee takes care of tenant problems and repairs; sees to it that sick people, especially those who live alone, are visited and looked after; and arranges social programs that include out-of-town excursions.

Committee member Vera Garina's special interest is children. She is always doing something for them, such as organizing photography and painting groups, taking them to the museum or the movies. She is now in process of starting a library in the house clubroom.

Retired architect-engineer Sidorov is an indispensable volunteer aide to the house management. He is frequently torn between his self-assumed duties and his fishing trips or mushroom-picking.

The last time Sidorov did not show up for a fishing date, Makarov, also an ardent angler, tracked him down and found him in the house management office, where, dressed for fishing, he was busy with a pile of papers.

"You'd better go without me," he said, straightening up and addressing his friend. "The building engineer is sick and these repair estimates have to be submitted. No estimates means no repairs. Sorry."

He bent over his desk again, full of energy, obviously delighted to be doing the job. ★

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1. We retired from jobs, not life, say pensioners.

2. Ivan Sidorov advises the management on repairs.

3. Vera Garina is setting up a children's library.

4. Georgi Pushich is drawing up a landscaping plan.

5. Dmitri Leonov is head of the House Committee.

6. Vasili Makarov visits his old shop frequently.

7. A man should plant at least one tree in his life.

BY VICTOR KUPRIANOV

HERE COMES A TIME when one gets tired of seeing the sights. One tourist told me: "I know the Russians built the Kremlin as a tourist attraction, but I want to see the people."

A word of caution, however. It's not difficult to meet people in a city like Moscow with a population high up in the millions. But don't be surprised if, at the end of your tour, you discover that the Russians are just like the folks back home.

Muscovites are very friendly. The moment they see a footsore tourist staggering under the weight of a bushel of cameras and cases of film and plowing through a guide book, they will immediately give him advice on exposures. It makes no difference if the tourist speaks no Russian or if he has a built-in exposure meter.

What usually happens is this: Muscovite A begins by remarking, "Nice camera. You'd better use this exposure and that shutter speed." Before you have time to look up the meaning of the first word of that sentence in your pocket dictionary, Muscovite B pipes in: "Nice camera, but the exposure should be. . . ." And that starts it off. There will be as many opinions as there are advisers.

ow much Russian should a tourist know before coming to Moscow? Of course it helps to have a pocket dictionary or a conversation guide in your pocket, but you'll do better with a snapshot of your wife and children. The Muscovite loves children—his own or anybody else's. If he hasn't a child to walk all over him, he's not a man—is the Muscovite's view. There's as much discussion of babies in Moscow as of the weather in London or the World Series in New York. Some of the finest buildings in the Soviet Union are children's recreation centers.

I had this happen to me once. I boarded the subway with a young daddy carrying an infant all bundled up. The job was done thoroughly, with the hands pinned down inside. For one or two stations baby slept. Then suddenly it discovered that it was wrapped like an Egyptian mummy. This was a baby with character. It began wiggling, trying to free its hands. It twisted and turned, and Daddy twisted and turned with it. Meanwhile the whole car was giving him advice.

Baby waited patiently for one station, but when it saw that nothing but talk was forthcoming, it began howling, bringing into play the most powerful weapon in creation. Immediately all of us were dancing around the infant, I dangling my keys, three other gentlemen singing a pop tune, and the harassed daddy bouncing the youngster up and down. Finally the baby freed its hands and the blanket fell to the seat. We tried to get baby into the blanket again, but there is no force on earth that can keep a baby covered if it doesn't want to be. Since we were getting off at the same stop, Daddy took the blanket and such other sundry items as one moccasin and various unidentifiable objects, and I carried the baby. Mother was waiting at the exit to the park. Suddenly she saw her husband coming with an empty blanket and sundry articles of clothing, but no baby. There's no telling what might have happened if baby hadn't let out a squeal; I must have been holding it head down. We are good friends now—I'm their favorite baby-sitter.

oscow hospitality is something special. If you are invited by a Muscovite to a cup of tea, *chashka chaya*, make sure you don't eat that day. Otherwise you will never last out the tea.

When a Moscow housewife sets a table, she makes sure that every square inch of it is covered with tasty dishes. First there will be some appetizers her mother sent. Then something she made herself. Dish follows dish in a seemingly endless succession. If you try to protest that the going is getting rough, host and hostess urge you on with—"but it's homemade." The idea is that if it's homemade there is no limit to the quantity that can be consumed. About the time you feel your eyes popping out of their sockets, the housewife says: "But you're not eating."

By the time you get home and find that the Russian-English dictionary says *chashka chaya* means a "cup of tea," you know better.

ooks are a passion, an obsession even. There is no such term as "best seller" in Russian. Whole editions are bought up immediately. Everybody reads. If you didn't hear the stations being called on the PA system, you'd think you were in the New York Public Library and not in the Moscow subway.

Sometimes this passion flares up too high and burns those involved. My wife and I are avid readers, and ever since our marriage a quarter of a century ago we have been collecting books. The accumulation was growing catastrophically and threatened to crowd both of us out of our home. Now, although we both continue to bring books home, the pile is no longer mounting. The solution to the problem is very simple and is in operation in many homes. Every time the wife buys a book, she disposes of one of her husband's. This maintains the equilibrium. It is one of the things the family doesn't discuss.

e Russians have mothers-in-law like all other people do. "Granny" is "babushka" in Russian. And she used to be quite an institution. Babushka could tell the best fairy tales, she could cook the tastiest dishes (an art her daughters, for some reason, never acquired). Babushka was the authority on child education, and probably more children were babushka-reared than kindergarten-educated. The word "babushka" brought visions of kind eyes, gray hair kept in place by a kerchief, and fingers skillfully knitting—in short, Whistler's *Mother*.

But the modern babushka is too busy with community activities to stay home and cook, she dines out. As to her influence on the growing generation . . . well, she will baby-sit every now and then, if her pensioners' chorus isn't rehearsing that evening.

When they quarrel with their husbands, wives no longer say: "That does it. I'm going back to Mother." They know that Mother is probably out for the evening anyway. Babushkas go to the theater more often than the average citizen. Their sizable pensions is one explanation.

oscow claims to be the most sports-minded city in the world. But then—so does Leningrad. And so does every other city, town and village in the Soviet Union. Participant sports are more popular than spectator sports. Muscovites prefer to *do* rather than *watch*. You're never too old for sports here. A pensioner past 60 enjoys his physical fitness activities just as much as the youngster who kicks a soccer ball all over the lot until he cuts the soles of his shoes to ribbons. Everybody knows the line-up of the local club, and fans are very partisan. Families will divide on the issue of Spartak versus Dynamo. On game day and at game time the city seems to be deserted. Everyone who's lucky enough to have a ticket is at the stadium; everyone else is watching the game on TV. Traffic cops will stop cars to ask: "What's the score?" And drivers have been known to avoid tickets by rooting for the same club the cop does.

One of the nice traditions is the freeing of a flock of homing pigeons every time the home team scores—that's to let the whole city know the good news. Thus far, however, no one has suggested what to release when the visiting side scores. The matter is still being studied.

here does the Muscovite take his girl on a date? If you are waiting for a list of restaurants and dance halls, you'd better turn to some other article. My first date was at the Tretyakov Art Gallary. This is a favorite with the school and college crowd because you can hold hands there without attracting too much attention. Later dates included the Polytechnical Museum, and it was in the Museum of Fine Arts that I proposed. My daughter rushed home after a visit to the Tolstoy Museum with the words: "Mom, he proposed!" My grandchildren started visiting museums at the age of five.

Then, of course, there's hiking and swimming in summer, skating and skiing in winter. Statistics indicate that the leading favorite pastimes are sports, movies and museums. But since you can't see the same film too often and not everyone can get seats in the back row, the museums compete successfully. And let's not forget that teen-age haven, the ice-cream parlor.

can visualize many of you reading these lines with a yawn. "What's so different?" you ask. Who said anything was different? Muscovites are just like the folks back home. The only difference is that Uncle John is called Dyadya Vanya, that's all. ★

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Dear Reader of *USSR* Magazine:

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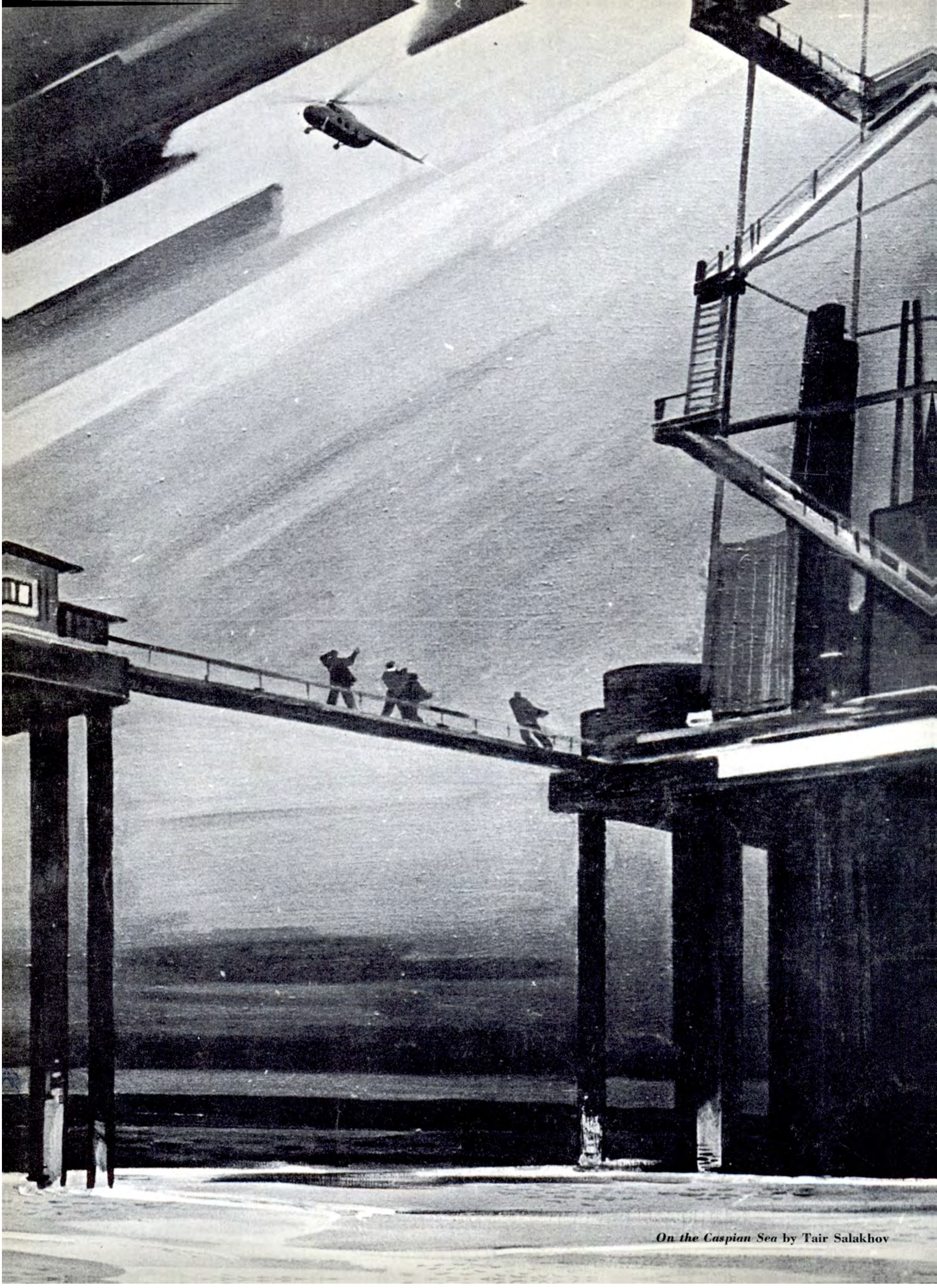

On the Caspian Sea by Tair Salakhov

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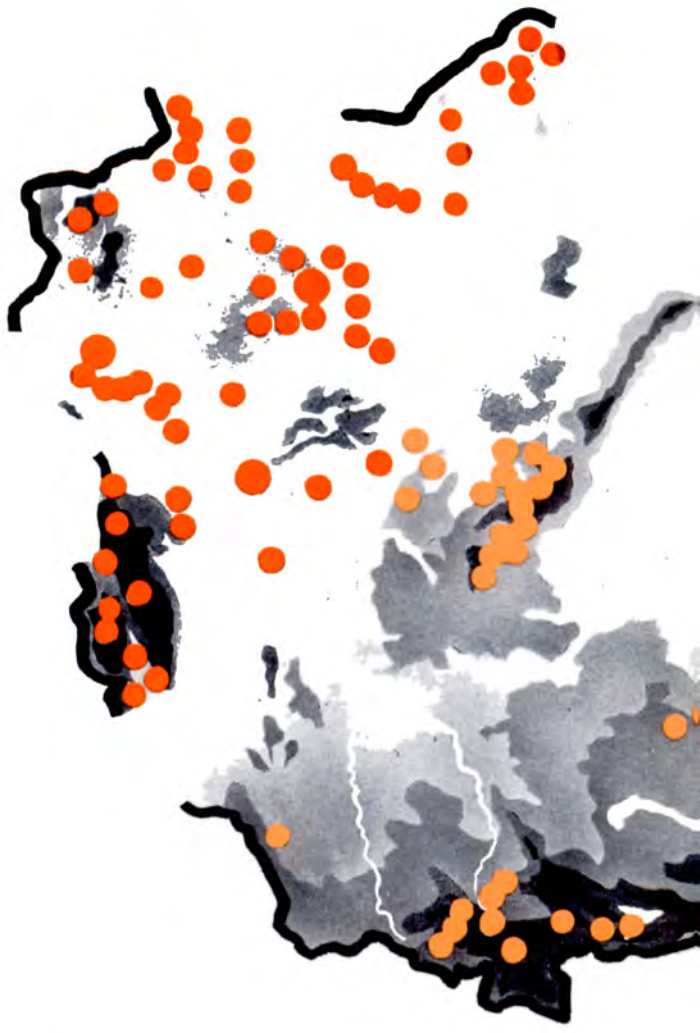
THE SOVIET POWER INDUSTRY IN THE NEXT TWENTY YEARS



(Above) Location of the major Soviet power projects to be built by 1980.
(Below) Bratsk station on the Siberian Angara will be the world's largest.

IN THE NEXT 20-YEAR PERIOD THE SOVIET UNION WILL BUILD:

180 HYDROELECTRIC STATIONS;
200 BIG THERMOELECTRIC STATIONS;
260 HEAT AND POWER STATIONS.

H. G. WELLS, the eminent English writer, visited an impoverished, poorly clad, ruined Russia in October 1920. He wanted to see the destitute country with his own eyes. He saw ruined cities, dying children, closed factories, empty shops. And yet Wells was forced to acknowledge that the Soviet power had the support of an absolute majority of the people.

What this famous science fiction writer who foresaw interplanetary flight thought altogether incredible was Lenin's plan to electrify Russia. "The Kremlin dreamer" Wells called Lenin in his *Russia in the Shadows*. He wrote that Lenin had fallen victim to "a utopia, the utopia of electrification. . . . Can one imagine a more courageous project in a vast flatland of forests and illiterate peasants, with no water power, with no technical skill available, and with trade and industry in its last gasp? . . . To see Russia carrying through such a project puts too great a strain on the imagination. I cannot see anything of the sort in this dark Russian crystal ball, but that little man in the Kremlin can. . . ."

Lenin visualized a Russia flooded with electric light. The magic mirror in which he saw reflected a rich and industrially powerful country was electrification. GOELRO, the plan for the electrification of Soviet Russia, was the first stage of the project.

The most daring of the GOELRO targets have long since been left far behind. But the Party's new Program, its third, adopted at the Twenty-second Congress, still gives electrification priority and includes Lenin's formula, ***Communism means Soviet power plus the electrification of the whole country,*** as its major thesis determining the main tasks in the construction of a communist society. An army of half a million builders of electric power stations is now moving on a vastly expanded front.

Dneproges—the Dnieper Hydroelectric Station, Europe's largest power project at the time—was built in the thirties. The station took five years in the building—a real crash tempo in those days.

How about construction tempo these days? The current seven-year plan (1959-1965) calls for new electric power production capacities equal to about 100 Dnieper stations. And by the end of the seventies capacities equal to that of Dneproges will be put into operation every five days.

The new Party Program plans to increase electric power production by the end of 1980 to 2.7-3 trillion kilowatt-hours. To visualize this figure, add the output of all the electric power stations on our planet exclusive of those on Soviet soil. The total now is in the neighborhood of two trillion kilowatt-hours.

Thus by 1980 the Soviet Union will be generating 50 per cent more electric power than is now produced by all the rest of the power stations on earth. Most of it will continue to be generated by thermoelectric power stations.

As for its use, it will give every industrial worker an average of eight to nine times the amount of electric power he now consumes and will save as much as five trillion man-hours of labor in industry and the utility services.

Universal electric traction will increase train speeds and carrying capacities, cut fuel consumption four to five times, and reduce operating costs. By 1965 electric power consumption on Soviet railroads will be 30 billion kilowatt-hours. It would have taken all of old Russia's power stations 15 years to generate that much electricity.

In the next few years we will see a sharp rise in rural electric consumption. By 1965 the Soviet countryside will get more electric power than is now available to all the farmers in the United States. The annual rural consumption of electricity in 20 years will be more than 200 billion kilowatt-hours, with all farm production operations completely electrified.

New power projects are transforming the basins of the Volga and Dnieper, the largest rivers in Europe. Reservoirs the size of seas are being created. ***Eventually 50 million acres of now arid land will be guaranteed against the vagaries of weather.*** Swamplands in Byelorussia and the Baltic Republics are being drained and plowed. New canals will shorten the routes for cargo ships from the country's northwestern regions and from the Baltic Sea to the Black Sea. Shipping costs will be cut sharply and the distance to the eastern Mediterranean shortened almost by half.

The Chulym Necklace is the fanciful name designers have given to a network of superpowerful stations to be built in what is thus far the barely explored and sparcely populated part of Siberia east of Krasnoyarsk. The two small railroad stations there now, Bogotol and Itat, are known only to geologists and power engineers. But in time there will be a whole necklace of thermoelectric power stations in the area with on annual outpu of 100 billion kilowatt-hours. This is not fancy, it is sober calculation.

Why this region? The Chulym Necklace will need 36 million tons of coa a year, and to judge by the older geological maps the area has no coal But look at the newer maps. The Itat deposit is estimated at more than 7(billion tons, enough coal to fuel the stations for 2,000 years.

Itat has another attractive feature, a very important one. The coal is o the surface and can be scooped up by excavators. That makes it very chea to obtain and means cheap electricity.

Modern towns with machine-building, chemical, woodworking and othe industries will grow up around the giant power stations.

The power plan for East Siberia is outsize in comparison with that o the country as a whole. East Siberia's output is scheduled to multiply 40 45 times, the rest of the country's 9 to 10 times. Should there be a surplu of power generated, it can be channeled to the Urals, the Far East and th European part of the Soviet Union.

When the Lenin Volga station near Kuibyshev began operating in 1958 it was the world's largest. Last fall that distinction went to another mam moth station on the Volga, near Volgograd, named in honor of the Twenty second Congress of the Communist Party. In a few years the Bratsk project on the Angara, a Siberian river, will inherit the title.

Unique power generators, each with a capacity of 228,000 kilowatts, ha to be produced for the Bratsk station. Generators of that size had neve before been made. Soviet turbine builders made them, and last fall, whil the Twenty-second Party Congress was in session, the first two unit were put into operation.

At the Elektrosila Plant in Leningrad work was recently completed o a rough draft of a thermal turbogenerator with a hydrogen-and-water coo ing system. This machine, with a scheduled 800,000 kilowatts, seems fan tastic even to specialists. But an even more powerful one-million-kilowat turbogenerator is next on the drafting boards.

There is one other machine worthy of comment, the boiler unit. Bi thermoelectric power stations will relieve many towns and industrial plant of the need for building large numbers of small boiler rooms and thu save fuel. Boilers of high steam parameters with a capacity of 500 an 640 tons of steam per hour have already been produced. Work is no in progress on boilers with a capacity of 950 tons of steam per hour. Nex will be boiler units with a capacity of 2,200-3,000 tons of steam per hour.

Arch dams are most economical for the country's mountain regions wher rivers are fenced in by cliffs and flow through narrow gorges. The impound the river and raise the water to a great height. The usual con crete dam for a plains river will be 50 to 100 feet high; arch dams ru 260 to 325 feet and more. They use a good deal less concrete than th plains type.

Arch dam construction is relatively new in the Soviet Union, where mos of the rivers are situated on plains. The country's first such dam was bui in the Caucasus. Presently model tests are being made at the Gidroenergo proyekt Institute on an arch dam to be built on the Inguri River i Georgia. It will loom 985 feet above the ground and will be the world highest. The water it raises will turn the turbines of a 1.4-million-kilowa hydroelectric station.

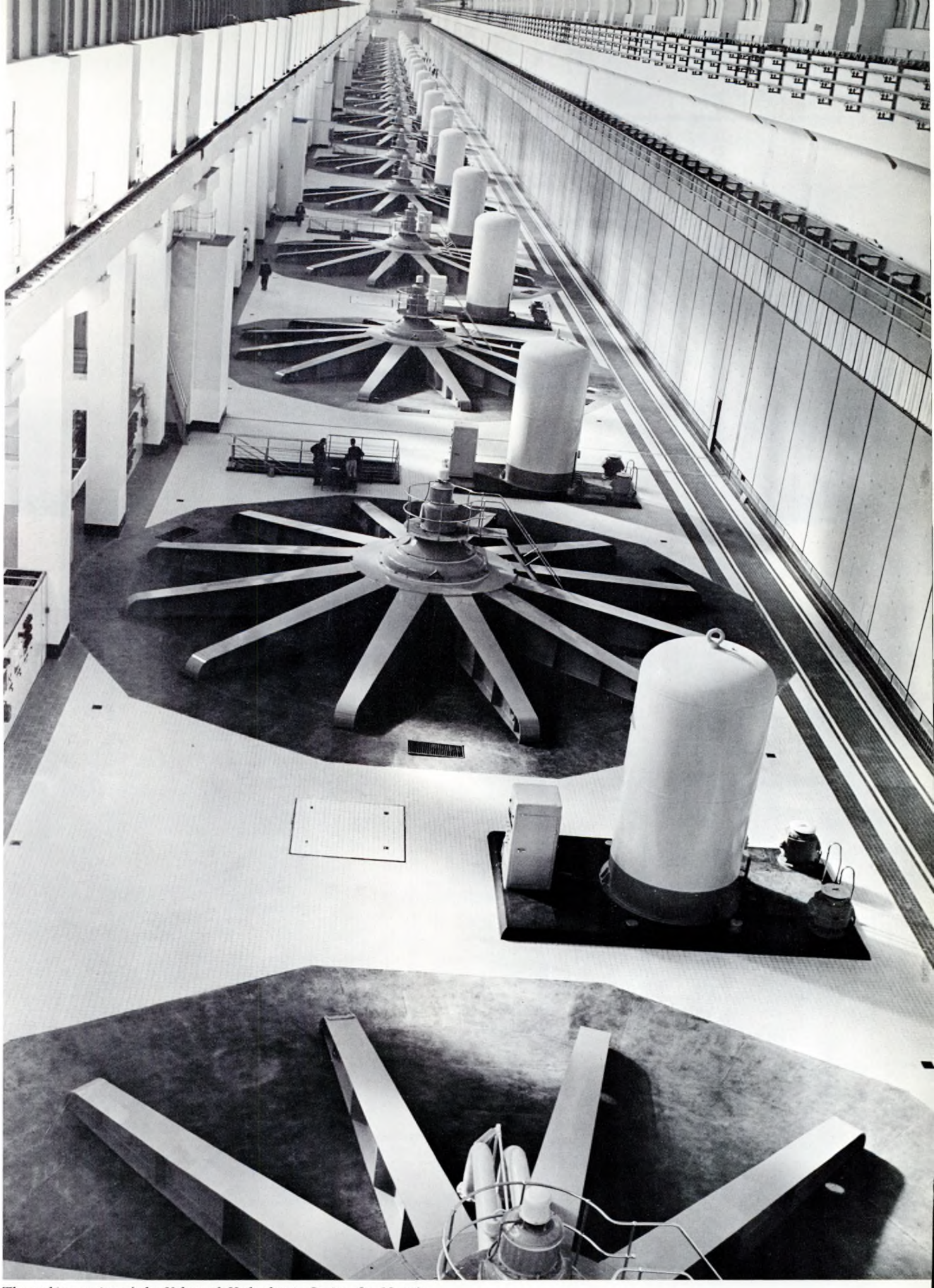
The Bratsk station on the Angara, with its 4.5 million kilowatts, wi have more than twice the capacity of America's Grand Coulee power plan The Krasnoyarsk station now being built on the Yenisei will have an eve greater capacity than Bratsk. The Sayan station will have triple the capacit of Grand Coulee. The capacity schedule for the Nizhne-Obskaya station six million kilowatts!

The Yenisei is a big and very swift river and will make the Krasnoyars project, the first to harness its power, the country's most efficient hydr electric station. The world's largest hydroelectric station will thus b generating the cheapest current.

The Angara-Yenisei region has an unusually good combination of natur resources—about a third of the country's fuel power potential, rich deposi of metals and other minerals, and large timber reserves.

The Angara and the Yenisei make up the Soviet Union's largest riv system. The regulating influence of Lake Baikal and other favorable facto make the river system an extremely valuable source of cheap electricit The series of projects to be built in the next 10-15 years will provide th power base for large-scale industrial development of the Angara-Yenis region.

Thus far man has not put to use the vast energy of the sea tides. Th alternate rise and fall of the ocean surface is caused by the interactio of the forces of gravity of the earth, the moon and the sun. Harnessed, th energy would give the world billions of kilowatt hours. This is a jo eminently worth tackling. The first step has already been taken by th Gidroenergoproyekt Institute, with a draft for the first experimental tid station to be located in a bay of the Barents Sea. Construction of th pioneer Kislogubskaya Tidal Electric Station will begin in 1963.



The turbine section of the Volgograd Hydroelectric Station. Its 21 units give this station a presently unequaled capacity of 2.5 million kilowatts.

Gidroenergoproyekt Institute's staff includes some of the most eminent power engineers.

Soviet engineers have worked out their own rather original design approach. The station's building will be constructed as a floating unit on the shore of the Severnaya Dvina River, near the city of Archangelsk. From there the unit will be towed to the narrow strait between the Kislaya promontory and the sea, and then flooded over a foundation laid beforehand. The amount of work required will be half that for the usual hydroelectric station, since there will be no need to build and dismantle dikes and to drain water.

This tidal station will have a capacity of only 1,200 kilowatts but that, of course, is no gauge of the implications of this pilot project. In plan is the Lumbovskaya Tidal Electric Power Station, for instance, with a capacity of 350,000 kilowatts, and in the offing is the giant White Sea Tidal Electric Power Station, with a 62-mile dam that will cut off the shallow eastern part of Mezensky Bay and add millions of kilowatt-hours of power to the European section of the United Power Grid (UPG).

UPG will help the country distribute its electric power more efficiently. Suppose the central regions need more current and Siberia has more than its needs; a dispatcher pushes the appropriate button and the transfer is made.

How will UPG be built? Zonal power grids will first be constructed. Each of these zonal grids will cover a vast area. The United Power Grid of the European Part of the USSR (UPGEPU), one of the largest zonal grids in the world, will incorporate the Northwestern Grid (including the Leningrad, Estonian and Latvian grids) and the Transcaucasion Grid (including Azerbaijan, Georgia and Armenia). By the end of the seven-year plan period (1965), the Central Siberian Grid will be ready. After that the grids of Siberia, the European part of the Soviet Union, Central Asia and North Kazakhstan will be joined.

Very special power lines will be needed to carry colossal quantities of current over great distances. For instance, we figure that in 1975 the 30 billion kilowatt-hours generated by the Nizhne-Obskaya Hydroelectric Station will be traveling a distance of about 1,120 miles in the European part of the USSR.

The current will be carried by superhigh tension DC power lines. These DC lines have a number of advantages over AC lines both technically and from the cost point of view. The first experimental line of this kind is now being built from Vologograd to the Donbas and will have a tension of 800 kilovolts.

Soviet power engineers already have the test result of lines with a tension of 1,200-1,400 kilovolts and are considering a tension of 2,000 kilovolts. This is four times the voltage of the world's longest line of this type, carrying current from the Volgograd Station to Moscow.

The seven-year plan schedules the construction of 130,000 miles of power line, 5,000 miles of the stretch with a tension of 500 kilovolts. In the next two decades, hundreds of thousands of miles of long-range power lines will be strung. But even now the Soviet power industry is proud of the fact that the USSR leads the world in the use of high-tension power lines. ★

Lenin station on the Volga at Kuibyshev. A big industrial center is growing up around it.

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NOVOSTI PRESS AGENCY

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FRONT COVER: Corner kick during a Kiev Dynamo versus Moscow Spartak soccer match. *—See story page 62.*

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Welcome

GHERMAN

"I am very happy to welcome you," said President Kennedy to Titov, "as are the American people. I admire what you did very much."

Greetings Titov! cheered the children as they presented Titov and his wife with bouquets of red and white flowers on their arrival at National Airport.

TITOV

Dear Friends,

May I take this welcome opportunity to thank all of you, and especially the people of New York, Washington, Baltimore, Seattle and San Francisco, for greeting me so warmly and making my American trip so interesting.

I shall never forget the friendly smiles and hearty handshakes of the ordinary Americans who are well disposed to our country.

I want to wish you good health, happiness and success.

Titov and Glenn after reporting to the International Space Science Symposium. "A symbol of future Soviet-American cooperation," commented one of the participants.

Annie Glenn and Tamara Titov became good friends in short order. "I would gladly accompany my husband to outer space," said Tamara.

Glenn drew Titov's attention to Lincoln's Gettysburg Address. "Good speeches are generally short," said Titov admiringly.

"Your courage set a wonderful example
youth all over the world," host C
Magnin (left) told Titov in San Franci

At a press conference at the Soviet Embassy Titov called for close Soviet-American cooperation in the exploration of the cosmos.

Trying on a protective hat presented him and his wife by the workers of Bethlehem Steel's Sparrows Point plant in Baltimore.

Vostok II *pin for 14-year-old Marle* *ite, who welcomed Titov with flowers on his* *ival in Seattle to visit the World's Fair.*

UN Acting Secretary General U Thant greeting the Soviet cosmonaut and his wife at a United Nations reception in Titov's honor.

Titov examining a dummy spaceman at the National Aeronautics and Space Administration exhibit at the Seattle World's Fair.

EVENTS AND PEOPLE

KIEV MONASTERY RESTORED

A month and a half after the Nazis captured Kiev in 1941, they blew up the Uspensky Cathedral, one of their many acts of vandalism. The cathedral, built in the eleventh century, had been preserved as part of the Kiev-Pechorskaya Monastery Museum.

In 1944 the Soviet Government began the restoration of the cathedral and other sections of the museum that the Nazis had ruined, a slow and painstaking job now on the way to completion.

Of the museum's forty structures, 32 have been completely restored, among them the Nadvratnaya Trinity Church built early in the twelfth century, and the Vsekhsvyatskaya, Spasskaya and Nikolskiye churches. Almost seven pounds of gold leaf were used to regild the dome of the Grand Monastery Bells.

In the group of buildings restored is one of the oldest print shops of Kiev Rus. Work is almost finished on the former living quarters of the metropolitan, the kitchen, refectory and other chambers.

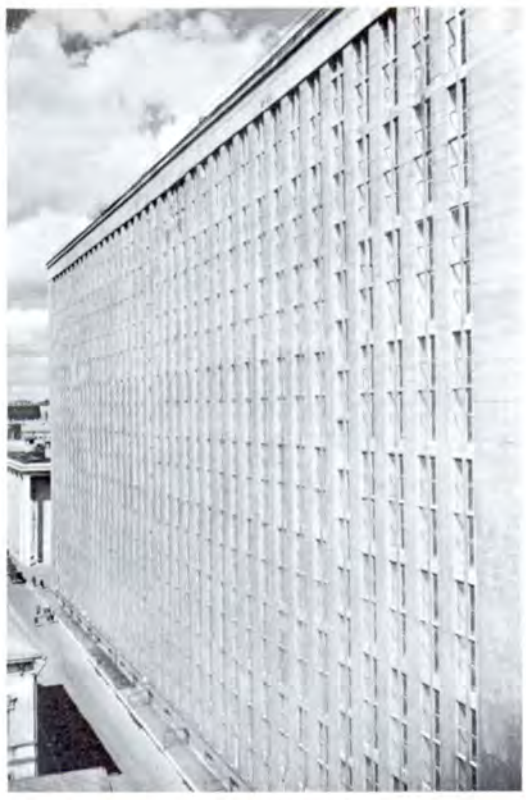
SOVIET STRONGMAN TAKES ALL RECORDS

Yuri Vlasov, Olympic weightlifting champ, broke the last record held by U. S. strongman Paul Anderson on April 2. At the student championships in Moscow, Vlasov lifted 410 pounds, 1.1 pounds more than the former world record in the press for heavyweight athletes.

When Paul Anderson, a 350-pound giant whom sports writers have dubbed the "human derrick," showed 408.9 pounds in the press, 433.2 pounds in the clean and jerk, and 1,129.8 pounds in the three lifts, the prediction was that these were unbeatable records.

Three years ago Yuri Vlasov took the record in the clean and jerk from Anderson. Then, at the Rome Olympics, the Soviet strongman captured the world record for the three lifts. Following this, he tried several times, but without success, to beat Anderson's record of 408.9 pounds in the press.

Vlasov kept working to strengthen his arms



LENIN LIBRARY CENTENNIAL

The Lenin Library in Moscow, contender with the British Museum and the Library of Congress for the title of the world's largest library, will be celebrating its hundredth birthday on July 1.

Shelved in this enormous repository of Soviet and foreign printed matter are 22 million volumes in 160 different languages. Its 22 reading rooms can seat 2,300 people simultaneously.

A copy of each and every book published in the Soviet Union must be filed with the Lenin Library. Foreign books and periodicals are acquired through exchange arrangement with 85 countries.

More recent acquisitions from abroad include a history of musical instruments of the world from Prague; *Mahabharata*, an ancient 18-part epic from India; *Black Like Me* by John Griffin from the United States; and a four-volume work on French atomic science.

The centennial will be marked, among other commemorative activities, by the publication of an illustrated volume, *The History of the Lenin Library*, a special jubilee postage stamp issue, a desk souvenir medal and a centennial badge.

MARILYN ESTHER DUBOW WINS PRIZE

Marilyn Dubow, one of the 23 musicians from the United States participating in the Second International Tchaikovsky Contest in Moscow, was awarded the Prize of the Soviet Composers Union for the best performance of Soviet composers' works. The young violinist won the acclaim of the Soviet public and the press.

David Oistrakh, in an article published in *Pravda*, called young Marilyn Dubow "a promising musician."

Izvestia noted that "the bright personality of very young Marilyn Dubow greatly impressed musicians and audiences alike although her playing was somewhat sentimental at times. Marilyn Dubow, who won a special prize awarded by the Soviet Composers Union, has all the makings of an outstanding musician. . . ."

Literatura i Zhizn predicted that although Marilyn Dubow did not survive the third round, "she is a gifted violinist, and we shall undoubtedly see her again among the winners of other contests."

SOVIET COMPOSERS MEET

The Third Congress of Soviet Composers, with 483 delegates from composers' organizations in every one of the union republics and all the large cities, met late in March at the Grand Kremlin Palace. The participants summed up the results of their work in the five years since the Second Congress and discussed creative problems of great interest to the Soviet musical world.

The five years between the two congresses have been an extremely fruitful period in the history of Soviet music for both recognized and new composers. The Composers Union added 130 young musicians to its membership of 1,432. More vocal and vocal-symphonic works were composed and many new ballets were produced, notably Alexei Machavariani's *Othello*, Aram Khachaturyan's *Spartacus*, and Arif Melikov's *The Legend of Love*.

Soviet composers, the congress discussion showed, have been increasingly active as teachers at the People's Universities of Culture and have been doing a good deal of concert touring with recitals of their own work.

The photo shows a symphony orchestra giving a concert at a factory. It was taken shortly before the congress met.

and, after twice pressing 396.8 pounds at one training session, told coach Suren Bagdasarov he was ready for another crack at the record.

Friends suggested he take part—outside competition—in the Moscow student weightlifting championships. He showed up at the Power Institute gym where the contest was held, took a short warmup and pressed 396.8 pounds. He then asked for 402.3 pounds, 3.3 more than the national record. He beat this record in very short order. The coach then told him to try 410 pounds, 1.1 pounds heavier than Anderson's seven-year-old record.

The crowd in the gym sat tense. But Vlasov calmly paced up and down until the judges of the international category took their seats and then walked to the barbell.

Pandemonium broke loose when he held the colossal weight an arm's length overhead for the fourth of the four world heavyweight records.

Vlasov intends soon to try for 418.8 pounds and a total of 1,234.5.

GOLD CUP TO DONETSK RADIO HAMS

Hams in the Ukrainian city of Donetsk can claim their city as the country's—even the world's—radio amateur center, and with plenty of justification. Since 1946 they have taken part in 150 national and international contests, and have invariably captured top place.

The Donetsk Radio Club station, UB-5-KAB, has chalked up 100,000 two-way radio contacts with amateurs in countries all over the globe.

A while ago the American magazine *To All* announced a world radio contest with a Gold Cup award to the amateur station that contacted the largest number of hams in the most distant countries within a 48-hour period. Station chief Leonid Yailenko and Alfred Barkov, both hams with a sizable background of experience, made up the UB-5-KAB team. Barkov, who is a student at a polytechnical institute, made his first long-distance contact when he was still a youngster. Since then he has to his credit a thousand Q.S.L.'s (postcards confirming signal received) from amateurs in many countries. Engineer Yailenko has won all sorts of competitions and is a many-time USSR champion.

The two relieved each other at the transmitter for the full 48 hours. They made 968 contacts in the two days, the highest score in the world. The Gold Cup, thereupon, traveled across the ocean to Donetsk.

UB-5-KAB attributes part of the victory to its four-band directional antenna, the "double square," designed by its team of winners.

ICE FLOE EVACUATED

A crumbling ice floe in the Arctic, the site of North Pole-8 Station, was recently evacuated. The tricky operation was supervised by Alexei Treshnikov of the Arctic and Antarctic Institute. He was the last to abandon the thawing island of ice.

The station, set up three years ago, had been making scientific observations and sending weather reports to the mainland. Suddenly the ice floe, which had served three shifts of Arctic explorers, began to split up. The staff continued its work, however, used rubber boats to cross the rifts, and built a small bridge spanning the fissures for the tractor.

The tractor and its operator took several unwanted baths in the ice-cold water. The radio operator also had his troubles when ice froze round the antenna and the wires broke under the weight. He managed with the antenna towers on two different ice fragments until the situation got out of hand.

The scientists refused to send out an SOS and continued to work until fissures appeared on the 390-foot-long and 195-foot-wide piece of ice on which the main station was located. But there was no floe within a 30-mile radius that would support the weight of a heavy plane. Intermediate bases, therefore, had to be set up and the station evacuated by small planes.

From the biggest ice floe near the station, a piece not much more than 655 feet long, the nimble AN-2 plane carried people and equipment to the first intermediary station, where a medium-powered plane transferred them to the next base, and from there to the mainland.

AN AMERICAN IN RUSSIA

Dr. David Ford Lindsley, Professor Yevgeni Sokolov and assisting biologist Olga Vinogradova are working as a successful research team in a Moscow University laboratory.

Dr. Lindsley is in the Soviet Union by arrangement between the United States Department of Health and the USSR Health Ministry. The team is studying the response to light flashes of a single cell of the cortex of cats and rabbits as it affects the general behavior of the animal.

Dr. Lindsley is not lonely in Moscow. He has many friends both among his colleagues and just ordinary Muscovites. He is a frequent and welcome visitor at the laboratories of Professors Anokhin, Asratyan, Sarkisov and others.

Dr. Lindsley has visited Leningrad in the North, Tbilisi in the South, and Kiev, the ancient Ukrainian capital. For recreation closer to home he likes skating, skiing and swimming in the university pool. His wife is with him, and together they are eagerly awaiting the arrival of a new addition to the family.

KIM NOVAK IN MOSCOW

Movie star Kim Novak spent ten busy days in Moscow as guest of the USSR Film Workers Union. She saw several pictures and plays, met with Soviet film and stage people and managed to sandwich in visits to the capital's art galleries and to sightsee Red Square, the sports facilities in Luzhniki, the new all-weather outdoor swimming pool and Moscow University.

Films in which the American actress starred were featured at Moscow theaters during her stay. "It is my dream," said Miss Novak, "to appear in a joint Soviet-American film. I won't hide the fact that one of the reasons I came to Moscow was to talk this over with people here."

The photo shows Kim Novak (center) with Soviet movie actresses Elina Bystritskaya and Natalia Fateyeva.

SPACEMEN'S NAMESAKES

The Revkovs, a couple living in Guriev, a city located on the delta where the Ural River flows into the Caspian Sea, celebrated the arrival of three blessed events recently. To find a proper name for one baby is a problem, to pick three first-class names at once is a feat. The parents named their three sturdy boys Yuri, Gherman and John, for the world's three space heroes.

John is a very uncommon name in the Soviet Union. The choice does honor to America's first cosmonaut and testifies to the international good will of this very typical Soviet worker's family.

THE VOICE OF SIX CONTINENTS

DISARMAMENT is the most urgent problem of our time. Millions the world over follow the conferences and talks of government leaders with fervent hope for universal peace. Public organizations have been expressing their peace sentiments in growing numbers and more urgent terms. National conferences have been held in several countries. At an international congress for general disarmament and peace to open in Moscow on July 9, delegates from six continents will debate a nuclear weapon ban and the complete demobilization of armed forces. The international organizing committee of the congress is composed of representatives from varied political and social groupings and movements and leading figures in political, scientific and cultural life.

Bertrand Russell, the eminent English philosopher, told a TASS correspondent he wished to help in the preparatory work. One of the aims of the congress is to reduce tensions between East and West, and he welcomed, said Earl Russell, any effort to lessen the danger of general destruction threatening us every hour, every minute.

The future of humanity depends on whether or not agreement on disarmament is reached. That is something everybody knows. Last fall the new Soviet press agency Novosti (APN) circulated a questionnaire in many countries. It asked: "How do you envisage the world and your own country 20 years hence?"

Answers have come from people prominent in public life, government officials, scientists and writers, from people of all ages and occupations, representing all shades of political and religious views. Whatever else they disagree on, they all declare that there is no sane alternative to peace.

To date, APN has received about 750 replies from 76 countries, with more coming in daily. All continents are represented in APN's mailbag. The overwhelming majority of the replies show deep concern for the critical world situation but an equally strong certainty that we shall achieve world peace and with it a happy future for mankind.

Excerpts from some of the replies follow:

POET OF SIBERIA

DMITRI KATAYEV
PRINTER

If you are a home-sitter, shake off the dust of your study and com out to see us in Angarsk, Siberia. Here you won't have a chance t be bored.

Our city of new white houses stands on the shore of the turbulen Kitoy River. The streets of our completely modern town still smell o resin, of the pines in the taiga. I try to compose verses, walking alon these streets on my way home from work, watching parents and thei children stroll along.

There are lots of children in our town. Angarsk is first in the Sovie Union in the number of children born. I'm 20 years old. What wil they be like when they get to be my age? They will be happy citizen of the Land of Soviets and will take pride in having been born i Angarsk. I know that when they take their graduation exams at Angarsk' Secondary School No. 10, they will all receive the highest marks i cosmonautics. . . .

As for my own plans, I am sure you have guessed them. I want to be th poet of Angarsk, the poet of my Siberia, which has rolled up its sleeve and is building dams and pondering over the world's future. Some day hope to set the type for my first book of verses. . . . I shall call it *Fres Breezes.*

I WILL BE 129

LUKERYA ANTONOVA
PENSIONER

People will live like good neighbors and there will be no wars.

Twenty years from now I will be 129 years old.

I was born in the Ukrainian village of Grigoryevka to the family of peasant serf. Naturally I was a serf myself and worked for the landowne from early childhood. When I was eight, serfdom was abolished, so the said, but my mother and I went on slaving for the landowner.

When the October Revolution broke out I was 64, and by that time m sons were grown. The eldest, Anton, was killed in the Civil War; my secon son, Ivan, was killed in the last war; my youngest son is alive and lives i Grigoryevka. I live in Moscow with my daughter Anna, who was born befor the Revolution, when I was 53. Now she is 56 years old, and we are bot pensioners.

As for the future, I, a former peasant serf, should like to live to se communism, to see how wonderfully well people will live then.

Over the TV we were told that people will soon be living to the age o 150. That's the right idea! People should live long. But I'm sure thos people will live longest who have worked all their lives.

LABOR WILL CHANGE THE WORLD

GEORGI SKROBANSKY
PROFESSOR, KHARKOV AGRICULTURAL INSTITUTE

I am a scientist. Although I am 73 years old, I still lecture. I shoul like to live to 93, to see how the world will change. I believe it wi be a world without wars.

I remember the time (I was a student then, in 1908) when the Frenc aviator Patam came to St. Petersburg. He rose into the air, flew som 300 feet and dropped. The following year, during Air Week, an unpre edented flight was attempted from St. Petersburg to Kronstadt. . . And in 1961 I saw our hero spacemen Gagarin and Titov fly in wonde ful ships created by the genius of our scientists and workers. All th

strengthens my faith in the progress of our social system and our science and technology.

I believe that 20 years from now there will be no trace of international tension; all colonial countries will be free, and the danger of war will be eliminated forever. Creative labor will change the profile of the world.

It is difficult to perceive the details of the future. The point is not only that they are concealed behind the haze of time but that I believe life will outrace our dreams. The work of Soviet men, our creative labor, will perform miracles, the likes of which we are unable even to imagine.

Yes, I should like to see the new world in 20 years, to ring up the Novosti Press Agency on the visual telephone or perhaps drop around in a helicopter for a talk to find out how close I came in my prediction.

PEACE DAY

VYACHESLAV PETROV
MACHINIST

I am 20 years old, an ordinary worker like millions of others in my country.

The greatest danger to the happiness of the working people of the world is the threat of war. Therefore I—and everybody else on earth, for that matter—would like to see our planet free from the dark shadow of armaments, brute force and slavery.

I am sure that in 20 years the workers of all lands will have a Peace Day to celebrate.

MORE SOCIALIST COUNTRIES

STEFAN IGNAR
CHAIRMAN, UNITED PEASANT PARTY (POLAND)

I believe that 20 years of peaceful coexistence will considerably increase the number of nations that have taken the path of socialism.

Progress will be made in health protection. The mortality rate will be cut and the process of aging halted. Cures will be found for cancer, sclerosis and heart diseases.

I believe that general and complete disarmament can be achieved within the next few years. Otherwise it will be hard to escape the horrors of an atomic war.

Warsaw

YOU CANNOT HOLD BACK WHAT IS NEW!

ISTVAN RUSNAK
PRESIDENT, ACADEMY OF SCIENCES OF HUNGARY

The world in 1981 will be the product of many factors hard to foresee in their entirety. Hence the difficulty of making a complete forecast.

But there are things about which there is no doubt.

There is no doubt, for one thing, that the people of the Soviet Union will more than fulfill their great plan. And if I were asked what the Soviet Union will be like 20 years from now, I should reply: Read the new Program of the Communist Party of the Soviet Union for details.

What about the other socialist countries? Although they started building socialism later than the Soviet Union, we are sure those countries, including my Hungary, will develop into communist societies at more or less the same time as the Soviet Union.

It goes without saying we could not hope to achieve that by ourselves. But our advantage lies in the fact we are not alone, that we can count on the ever broadening mutual assistance and cooperation of the socialist countries.

What will the world be like twenty years from now? I am certain it will be more beautiful, more meaningful—a happier place than it is today. Great dreams will have been translated into reality. We are going to make them come true through the work of our brains and our hands.

To carry out our plans we of course need peace, and we are going to work for peace in every way. But suppose our efforts are in vain? Suppose we are not able to prevent another world war? What will happen then?

The suffering will be frightful, and the destruction enormous. But war will not change our goals, will not swerve us from the path we have chosen. It will merely delay the consummation of our plans. Historical progress, in the course of which mankind has reached the threshold of communism, will go on even if criminals, blinded by malice and hatred, try to hold it back. The old will never triumph over the new!

Budapest

MAN WILL SET HIS HOUSE IN ORDER

GEORGE ANTIMIRESCU
OFFICE WORKER (RUMANIA)

I believe in life. What could be more criminal than a war that brings people death. Fortunately, no one can conquer life or halt its onward march. Life and its most refined expression, thought, move ahead irresistibly.

The universities of all lands and their scientists will work together to create a single world culture common to all peoples. Law based on reason and friendship will prevail. The great principle that man is a friend, comrade and brother to man will be put into practice.

Serious diseases, chiefly infectious ailments, will be eradicated. Science will discover the secret of protoplasm and thus be able to replace living cells which will lead to the unprecedented development of restorative surgery.

Man will set his house in order here on our planet. He will also launch out into the boundless expanses of outer space for the benefit and happiness of all!

Constantsa

THE MEANINGS OF THE WORD "PEACE"

PROFESSOR MARTIN BUBER
ISRAEL

I share your belief that the united efforts of the peoples can prevent another war and that mankind will advance in peace.

But everything depends on what is meant by the word "peace." Is peace to be merely the end of the cold war or is it to be peaceful coexistence?

If there is not another cold war (increasingly dangerous in view of the further development of technology) real coexistence could and should signify nothing other than genuine cooperation in solving the critical problems of mankind. In spite of considerable differences in views on social justice and personal freedom, I think such cooperation—cooperation in the spirit of true socialism—is possible.

Jerusalem

TERRIFIED AT THE THOUGHT OF WAR

IRENE RÖDIGER
OFFICE WORKER, GERMAN DEMOCRATIC REPUBLIC

I am now 21 years old. Here is what I imagine life will be like in 1981.

Both my husband and I work at a state-owned factory. Our children, like all others, will finish secondary school and go on to college, or else will combine study with work. Housework will be limited to tidying up. We will eat at a restaurant or have our meals delivered to the house.

Capitalism will have very little influence in the world by then. No one will worry about war. That is the most important thing of all. I was born during the last war, and I'm terrified at the thought of another one.

Scientists will have landed on other planets. There will be an observatory and a research laboratory on the moon. Gagarin and Titov will be researchers or designers of rockets and satellites.

People will do their jobs (working perhaps six hours a day five days a week) with a great sense of responsibility and will have the same attitude toward study. They will look on both as sources of enjoyment rather than as chores.

Dresden

TOWARD A GOLDEN AGE

HERVÉ BAZIN
FRENCH WRITER, WINNER OF THE PRIX GONCOURT

That the world will be different in 20 years goes without saying.

If we assume the worst, the positions-of-strength policy and lack of understanding among men will lead to an atomic catastrophe. Then the few people who survive in different parts of the world will have the job of carrying the baton of civilization.

BUT I DO NOT BELIEVE THAT WILL HAPPEN.

People cannot be so senseless.

Let us assume the best—the final capitulation of fools and all supporters of a policy of force. That will result, in 20 years' time, in peace throughout the world, a peace that will be vigilantly guarded by truly effective international organizations.

Here on earth science will come into its own, it will devote all its efforts to the solution of the world's most vital problems. Hunger will be abolished everywhere. Incurable diseases will disappear. A sensible balance in population growth will be achieved. And all forms of knowledge will be within everyone's reach.

A great deal will be accomplished in the next 20 years but still more will need to be done. The tremendous pressure of a planned socialist economy will bring about the downfall of capitalism, but the residue of capitalism will encumber our planet for a long time to come.

We are moving toward a golden age. That is almost certain, if only we can preserve the moral qualities of man and science. But that Golden Age will have nothing in common with its representation in the Bible. Twenty years from now, as today, the Golden Age will need day-to-day work and unceasing struggle against evil.

THE EAST IS STRONGER THAN THE WEST

DR. HEWLETT JOHNSON
DEAN OF CANTERBURY, LENIN PEACE PRIZE LAUREATE

In reply to your questions I am optimistic about the movement of the world in the next 20 years. The fundamental fact to me is the striking and ever increasing result in prosperity, production and strength of mind of the nations which have adopted the scientific and moral socialist way of life. I studied it in Russia for 40 years, especially in the question of children and their education, with such sequels as that of the sputniks. I see the same processes taking place in Eastern Germany, concerning which I am writing a book. Also in China, which has just published my book *The Upsurge of China.*

By the side of this massive advance in the socialist lands we get the internal contradictions and chaos and immorality and unscientific, unplanned economy of the Western world.

The East is already incomparably stronger even in a military sense, and the only fear is that some reckless fool will start a war by either ignorance or a maliciousness which has no fear of suicide.

There is no doubt that the peace fighters, and their numbers increase constantly, are playing and will continue to play an important part especially in lessening the arms race, which I cannot think will last up to 1981.

When war and arms race end, a whole new era will dawn. It is for that era I look eagerly and work to the limit of my possibility.

Canterbury

MY DREAMS

HUGH B. McCULLOUGH
USA

I am 66, worked for the A.T. & S.F. Railway 40 years, and am now pensioned.

It is possible that I will be living in 20 years from now. At least I am still interested in what people of other countries are doing.

I have read considerable about your schools, and know your people have come a long way since 1917. I earnestly hope that my country and the world will educate their people in such a way that greed and hatred will be a thing of the past.

Surely in the next 20 years men will have more faith in themselves, and less in an imaginary God.

When people become properly educated they will have more respect for their neighbors and their fellow men. They will understand the problem of production has been solved; our problem now is distribution. I believe this will be solved within the next 20 years.

When people become better educated, the money and manpower they now use for defense will be used to make the world a better and more beautiful place for people to live in. What a man carries in his head will have more value to educated people than what he carries in his pocket. There will be no greed or hate, and no cause for envy or war.

INVASION BY OUTER SPACE

GIORGIO LA PIRA
MAYOR OF FLORENCE (ITALY)

During the next 20 years we shall become more and more space-conscious, more and more "stellar," for the heavens will come to play a larger part in the history of nations.

The first inevitable consequence of this "invasion" will be to make war impossible. Peace will be inevitable, the only alternative to destruction. There is no third way.

What once seemed visionary, utopian, will rapidly become historical fact. Instead of fighting among themselves peoples will join together to investigate the stars, bring desert land under cultivation, conquer disease, study the depths of the oceans, and develop art and commerce. . . . We will welcome only one kind of war, a war against the common enemies of man—tyranny, hunger, unemployment, poverty, disease, ignorance, and war itself.

Another consequence of that "invasion" of civilization by outer space

will be the political, social, economic, cultural and spiritual progress of all peoples, and their organic amalgamation. The nations will strive more and more to form a single whole, one big family.

All this will take place not in the distant future but within the next 20 years, in the lifetime of our generation.

AN END TO COLONIALISM

NOMA BETU
MECHANIC (NIGER)

By that time there will be no remnant of colonialism left anywhere in the world.

My native land, the Republic of Niger, received its formal independence in August 1960. But the French colonialists have not left the country. They continue to steal its riches. Progressive trade unions and other organizations whose goal is the genuine independence of Niger have been disbanded or driven underground. True patriots are brutally persecuted and forced to emigrate. But in exile we continue to work unceasingly for the cause of our people and their future.

We are confident the final victory will be ours. The French colonialists are losing their key positions, one after another, in our republic's politics and economy, and they will lose them completely much earlier than in 20 years' time. I have the hope that the Republic of Niger will be a highly developed country by 1981.

THE SAHARA WILL BE DEVELOPED

SILVAN KAMARA
JOURNALIST (GUINEA)

The world 20 years from now? It seems to me by that time we should be able to include the earth, the moon and Mars in the term "world."

The 1961 maps will, of course, be out of date. Federations of states will have been established everywhere. It is very likely that in Africa, for example, two states, the Maghrib and the Union of Black African States, will exist peacefully side by side.

The Sahara will be a sort of "all-African pool." People will be interested in the Sahara not so much for its land area as its sunshine; the sun's energy will be used by industry and agriculture. By 1981 at least three-quarters of that vast desert will have been developed. It will be thickly populated, and crisscrossed by automobile highways.

Administratively, my little Guinea will be merely a province; industrially, it will be a great center, the Ruhr of West Africa, turning out airplanes and locomotives.

Konakri

I BELIEVE IN SOCIALISM

PIERRE COT
FORMER FRENCH MINISTER, MEMBER OF WORLD PEACE COUNCIL

Let us imagine we have reached the year 1981 without a world war. Agreement has been reached on general and complete disarmament. Competition between countries with different social systems, and especially between the socialist and capitalist countries, goes on peacefully.

It is becoming more and more obvious that the socialist countries are developing faster than the capitalist. More and more nations are going over to socialism since only that system shows that it can solve the great economic and social problems of our day.

In short, it is my belief that the world is moving toward socialism. The transition will not be smooth or easy. Nevertheless, as socialism wins positions and capitalism loses them, the world situation will keep improving.

Twenty years from now, with the achievements of socialism in all areas and the growing difficulties capitalism will encounter, the latter will probably seem like an anachronism.

A GOLDEN AGE

APOLINAR LOMA
MEXICO

I hope mankind can prevent another war. I want to believe that Nikita Khrushchev will convince all governments of the need to disarm, and that the efforts of every nation will be directed toward that end.

Laboring men, workers and peasants, will be leading much better and happier lives in 20 years than they do now. Then we shall be able to declare: A golden age has arrived!

Mexico City

WHEN I AM NINETY-THREE

KUMAICHI YAMAMOTO
PRESIDENT, INTERNATIONAL TRADE ASSOCIATION (JAPAN)

Although I was 73 last year, the future of our planet still interests me greatly. Past history sometimes permits us to see the future more clearly. When I came to Moscow 34 years ago, the Soviet people were just beginning to build socialism. At the time many felt the task was impossible.

When I next came to the USSR, socialism had been built, and the Soviet people had given themselves a still greater task, to create a communist society. I have no doubt that Soviet men and women will build the society they have planned, and that it will be built ahead of schedule.

My specialty is commerce, and so I should like to imagine what the trade picture will be like in 20 years.

Communism will have been built in the USSR. That will mean, among other things, the most intensive industrialization of the eastern regions of your country. An economically developed Siberia, a land of true abundance, will thus become our close neighbor. By that time all of the economic and political problems of our two countries will have been completely settled, and Soviet-Japanese trade will have grown by 10 to 15 times.

Two decades from now vast material resources will be used only to benefit man, to develop science and culture. People will know more about the world around them. It will be a wonderful time to live in, a great epoch, and one that is not far off.

Tokyo

A BRITISH OPINION

Gentlemen,

We are so upset by the world situation that we see no sense at the present time in making plans and expressing ideas about a world that may not be in existence 20 years from now.

ARCHITECTURAL DESIGN PUBLISHING HOUSE

London

THE ALTAI

BY ANATOLI GORYUSHKIN

PHOTOS BY YURI TRONKVILLITSKY

FROM OUR PLANE we look down on the Altai Territory, a wide expanse of mountain and tableland the size of Italy in southwestern Siberia.

The peaks of the Altai, which in Turkic means "Golden Mountains," rise almost three miles above sea level and are covered with snow and ice. North of the mountains the Ob River, fenced in by its steep banks, flows lazily through the interminable steppes of Siberia.

Below the wings of the plane flash by the plowed fields of dozens of new state farms and the winding ribbons of automobile highways. The Altai gives the country millions of bushels of wheat, corn and fodder beans, and hundreds of thousands of tons of meat and milk.

There are 17 million cultivated acres, half of which were virgin and long-fallow land only a few years ago. Grain is the territory's major crop. In the next 15-20 years it will produce about 18 million tons a year, two and a half times the present total.

Our pilot flies low to show us Lake Teletskoye—the pearl of Siberia, they call it. On the shore of one of its scenic bays is an orchard containing 32 varieties of apples. Once, not very long ago, it would have been considered extraordinary to find apples, currants and gooseberries growing in such altitudes, where the thermometer drops as low as minus 40 degrees Fahrenheit in the winter, but not any more. Today farms use these lands high in the mountains for fruit growing.

The Altai has come to mean expanding industry as well as agriculture. Barnaul, the territorial center, has power and transport equipment and machine-tool industries; Rubtsovsk produces tractors and other farm equipment; Chesnokovka, railway cars; and Biisk, equipment for the food and power-machine industries.

The Altai is becoming a national center of farm machinery as well as chemicals and textiles. The present seven-year plan (1958-1965) will almost triple the total industrial production. The manufacture of artificial and synthetic fiber, concentrated in Barnaul, is expected to increase 5.5-fold.

The territory's manufactured goods are exported to some 40 countries. Farm machinery, tractor equipment, boilers and instruments bearing the Altai trade mark receive high praise from foreign users. Testimonials come in the form of reorders from Poland, Czechoslovakia and other countries. The Altai TDT-60 skidding tractor won the Grand Prix at the 1958 Brussels World's Fair.

The progress figures recorded for the Gorny Altai Autonomous Region, in the south, are duplicated in other parts of the territory. In 1913, statistics show, this whole region was served by a single doctor's assistant. The shamans—witch doctors—treated the sick. There was a saying current among the Altai people, "When the cattle are sick, the dogs get fat; when a man is sick, the shaman gets fat." Compare that public health picture with the 175 hospitals and first-aid stations set up in the region during the Soviet period.

Forty years ago 97 out of a hundred people in the Gorny Altai could not read and write. There is no illiteracy now. The territory has its own trained specialists in every conceivable field. The Gorny Altai has 313 specialists with secondary school or college education per 10,000 people, compared with neighboring Turkey's 12 and Iran's 5.

The Gorny Altai is exploiting its natural resources—very large deposits of gold, mercury, copper and rare metals; six million acres of giant cedars, larch and evergreens; and fast-flowing rivers with enormous electric power potential.

The Katun alone—second tributary of the Ob—has more than twice the power reserves of the Dnieper, one of the Ukraine's biggest rivers. The Soviet Union built one of its first huge power projects on the Dnieper in the early thirties. The construction of a whole cascade of power stations on the Katun will soon get under way.

The Altai poet Erkemen Palkin wrote of his native region: "In my childhood I often climbed the mountains searching for the doors behind which fabulous treasures were hidden. Dozens of times my father and grandfather had told me the legend of those singular doors. . . ."

We have found these doors to the wealth of the Altai, pried them open, and are just beginning to reach the treasures.

Our plane follows the curving auto highway along the Chuisk tract. The road runs along the top of the construction pit of the Chuisk Hydroelectric Station, passes the new mining town of Myony, and winds its way through the pastures of the Kuraisk steppes, now being developed.

We fly over thick forest. The Altai has long been famous for its game. You find professional bear hunters at any taiga settlement. Thirty-year-old Mikhail Papin is one of the best; he has about 200 bears to his credit. But hunting is no longer the Altai's major source of income nor its only claim to fame.

The territory is growing fast and in all directions—economic as well as cultural. Its accelerated development is perhaps best symbolized by the space flight of Gherman Titov, son of the Altai, in *Vostok II*.

3

4

1. Seventy rivers empty into this mountain lake, Teletskoye, a famous tourist attraction.

2. Large herds of these tame Siberian deer graze in the forests of the Altai as well as in corrals.

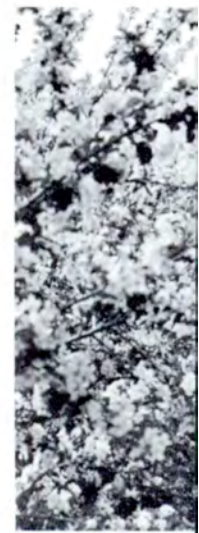
3. Camels ranging in the Kosh-Agachi District. The Altai has immense stretches of pastureland.

4. Fine-fleeced and large, the Altai sheep is bred to withstand the rigorous steppe climate.

5. Rows of government office buildings line the main street of Barnaul, the territorial seat.

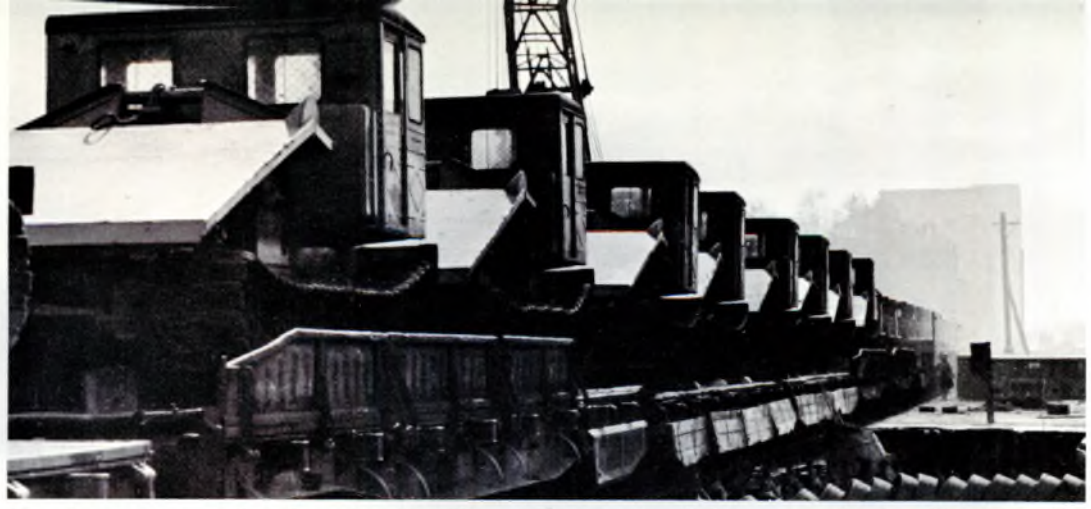
5

The winding Chuisk road, once a camel path and now a first-class highway, is the main transportation artery of the Gorny Altai Autonomous Region.



A surveying party in the field. The Altai is a wide expanse of mountain and tableland the size of Italy, with a wealth of untapped resources.

Elevators like this one at Rubtsovsk dot the landscape. This virgin land country now grows millions of bushels of wheat.

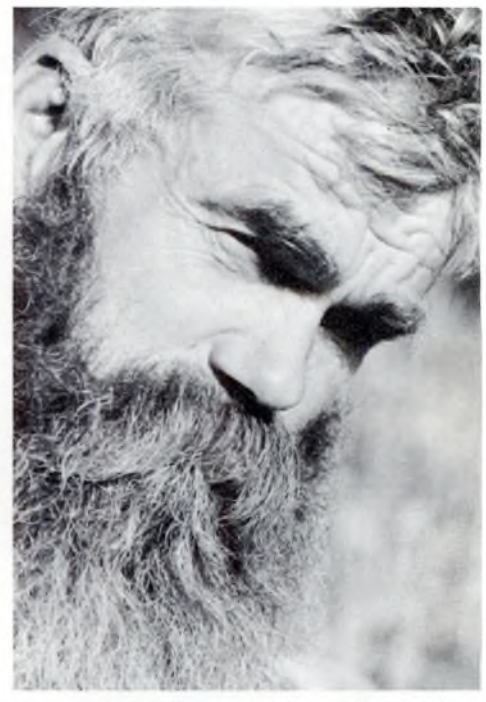


Crawler tractors produced at the Altai Tractor Factory in Rubtsovsk ready for shipment. The territory is rapidly becoming a national center for farm machinery and exports to 40 countries.

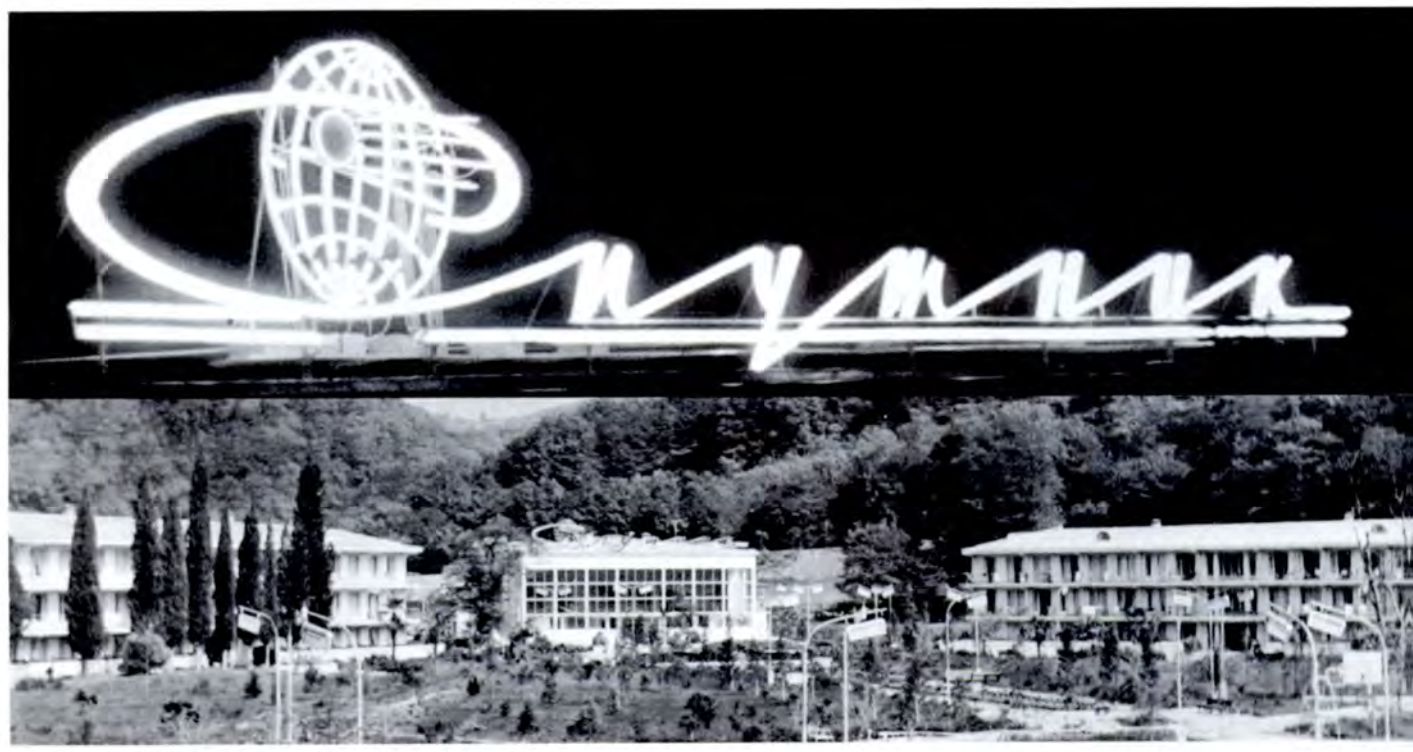
A few years ago a fruit tree was a rarity here. Now, despite high altitude and rigorous climate, you can see acre upon acre of orchard.

The Altai countryside is one great expanse of gold when the wheat is ready for harvesting.

Collective farmer Sampson Tabankin of the Ondugai District has bagged a snow leopard.



National award winner Moisei Oshchenkov, one of the old breed of Altai bear hunters.



SPUTNIK VACATION

BY GALINA OREKHOVA, CIVIL ENGINEER
PHOTOS BY VLADIMIR BLIOKH

I HAD BEEN wondering aloud about interesting ways of spending my 24-day vacation. "How about Sputnik?" the head of my trade union group asked me.

I must have shown my surprise. He smiled and added, "A terrestrial sputnik, not one that flies around in space. It's a camp in the Caucasus on the Black Sea set up in July 1960 by the Soviet Committee of Youth Organizations and the Youth Tourist Bureau for young people of different countries."

I liked the idea.

Situated near the well-known resort town of Sochi, Sputnik made a most favorable impression on me from the start. I liked all of it—my comfortable room, the pleasant lounges, the dining room's attractive atmosphere. I gave up my after-lunch nap to inspect the tennis, volleyball and basketball courts, the fine gym, the spacious hall for dancing, the movie theater, the library with books and newspapers from a great many countries—everything for a fine vacation.

One of the camp traditions is the ceremonial presentation of the "Friendship Cap" by those leaving camp to new arrivals. The group I came with received this symbol from a group of Austrians to the strains of the Sputnik March. The cap was studded with varicolored badges from the United States, Czechoslovakia, Britain, Poland, France, Hungary, the Federal Republic of Germany, Austria, Yugoslavia, Japan and Switzerland. The ceremony was followed by a dance with a multinational orchestra playing waltzes, tangos, rhumbas and cha-chas till midnight.

In the morning the camp director showed us around, with a running commentary of interesting details, to wit:

that the camp, designed by Soviet architects, was actually built by young men and women from different countries;

that as of the time I was there it had already been visited by young people from 22 countries;

that it accommodated 300 at a time;

that last year there were 2,500 foreign and 700 Soviet campers;

that accommodations for foreigners are arranged by the Youth Tourist Bureau, and those for Soviet campers through their trade union and Young Communist League organizations at colleges and places of work;

that the country's most famous entertainers and concert artists perform at the camp.

Someone told me later that last year was a real occasion for chess fans; Grandmaster Vasili Smyslov gave a simultaneous-play exhibition at the camp. The summer before Van Cliburn had played there.

For me Sputnik was one fascinating round of hikes, excursions, national parties, games, quizzes and sports competitions—much more interesting to participate in than to write or read about. I took part in the Flower Festival and the Festival of Girls, and went home with a prize for the best folk dance performance.

One day there was a climb to Eagle Cliff followed by a picnic at its summit dedicated to British-Soviet friendship. In the evening we broiled real Caucasian shish-kebab flavored with pine needles over the camp fire, sang the songs of many nations, and slept in tents.

I'm going to divide my vacation this coming summer between two Sputniks—the one in the Caucasus and a new one in the Crimea.

Foreign visitors, as a rule, spend eight days at Sputnik and another 16 traveling around the country, getting acquainted with the life of our young people.

Should any of you young readers of *USSR* magazine visit the Soviet Union, be sure to see our Sputniks. Besides providing you with a wonderful place to rest during your travels, it will give you a chance to meet and talk to young people from many countries.

London art student Martin Sturge with Penelope Hill. Both are Sputnik bound.

English student Andrew Garrit spent a week at the camp, two weeks touring.

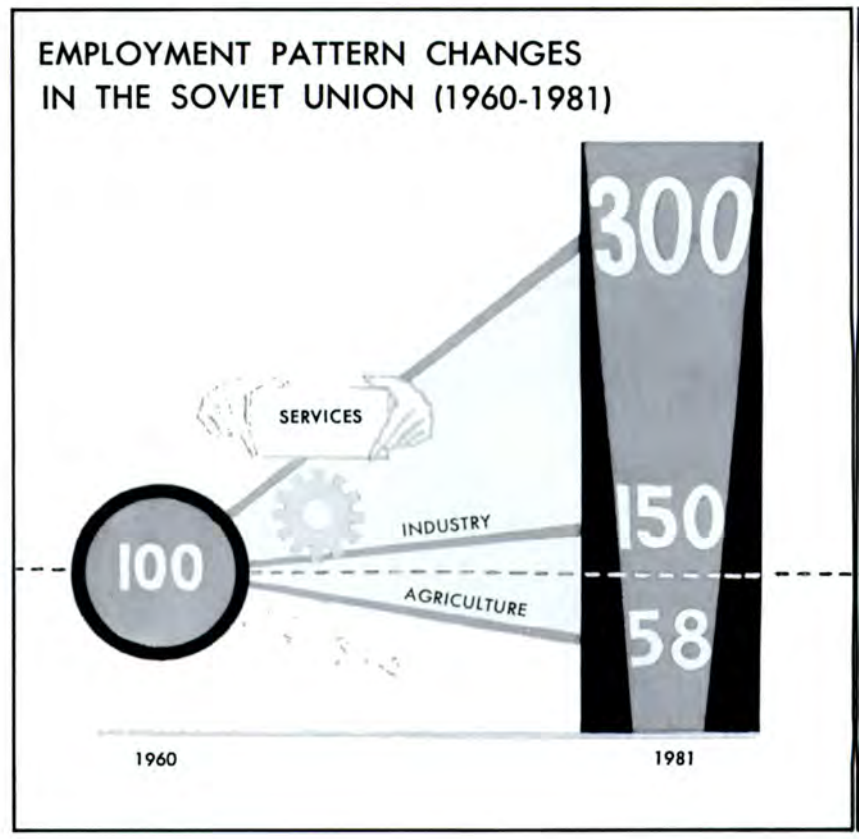
The Sputnik receipe for a vacation, in all languages, is sun, the sea and fun.

These past two years young people from 22 countries have vacationed at Sputnik.

After talking, all-day mountain hiking is the next most popular camp activity.

For the evening meal each takes a turn at preparing a favorite national dish.

Bound for Eagle Cliff and a picnic dedicated to British-Soviet friendship.



THE TWENTY-YEAR PROGRAM

THE NUMBER of factory and office workers and collective farmers in the Soviet Union comes to 100 million. By 1980, at the close of the new 20-year plan to build a communist society, the labor force will have grown to 140 million.

The rising output of the next two decades, however, will be due not nearly so much to a larger work force as to higher labor productivity. Between 1961 and 1980 it is estimated that 90 per cent of the rise in national income will come from higher labor productivity and only 10 per cent from the rise in employment. But the increase in output will be so great that this 10 per cent will require almost 40 million more workers.

There will be no unemployment these next 20 years just as there has been none for the past three decades. Since 1930, when the door of the last employment agency closed on the last unemployed worker, we have had no unemployment, no crises of overproduction, no stoppage in the development of industry and agriculture.

Our economy is developing in accordance with a single plan which takes into consideration the requirements of the country, its population and industry, and accordingly ensures the proportional development of various branches of industry, construction and agriculture. Thanks to planning, our economy is free from crises, and there is a continual increase in production and services to the population.

The Soviet production graph shows a steady and consistent rise. And as production grows, so does employment. In 1928 there were 10.8 million factory and office workers. By 1940, the number had tripled to 31.2 million. Ten years later the figure was 38.9 million. In 1960 it had jumped to 62 million. Thus, in a little more than three decades, despite a war that hindered our peaceful economic development, the number of factory and office workers grew more than 5.5 times.

Growing production is chiefly responsible for employment increases, but such other factors as the shorter workday and longer paid vacations obviously play a significant part. In recent years the workday for most jobs was cut from eight to seven hours, and for miners and certain other groups whose work is especially difficult or hazardous it was cut from seven to six. Soviet economists figure that a 14 per cent increase in the work force was required to compensate for this alone.

Another cut in the workday, due before 1970, will necessitate another 16 per cent increase. But despite the larger working force in 1970, estimates indicate that the total working time will be less than in 1960.

A steady rise in the country's labor force is also envisioned in the current seven-year plan (1959-65), five of whose seven years (1961-65) are included in the 20-year program for communist construction. Under the target figures of the seven-year plan, between 1959 and 1965 the number of industrial and office workers was to grow from 54.6 million in 1958 to 66.5 million, i.e., by 1.7 million a year. The actual rise, however, is much greater, due largely to the fact that the economy is developing at a faster rate than was envisioned by the plan—at a 10 per cent annual increase instead of the 8.3 per cent planned.

For 1959, the first year of the plan, we had a 1.9 million rise in the number of factory and office workers instead of the predicted 1.7 million. In 1960 employment grew by 5.5 million, and in 1961 we had 4.2 million more factory and office workers than in 1960.

On the basis of the present rate of development, Soviet economists expect that the number of industrial and office workers will grow, not by the 12 million predicted in the seven-year plan for the period, but by a much larger figure, since the average annual rise in employment is 3.8 million instead of the 1.7 million originally forecast.

In industry proper, the work force is expected to grow by 50 per cent in the next two decades. The total in 1960 was 22.3 million, so that we can estimate the increase at approximately 11.2 million. Employment will also go up in building, transport and communications, with an especially large rise in trade, education, public health and other service areas.

The 20-year plan will bring the Soviet people the world's highest living standard. The network of retail shops, public catering establishments and service facilities of all types will be greatly expanded. New hospitals, polyclinics, sanatoriums, maternity homes, mother-and-child care centers will be built. Boarding schools, kindergartens and nurseries will be available to every child.

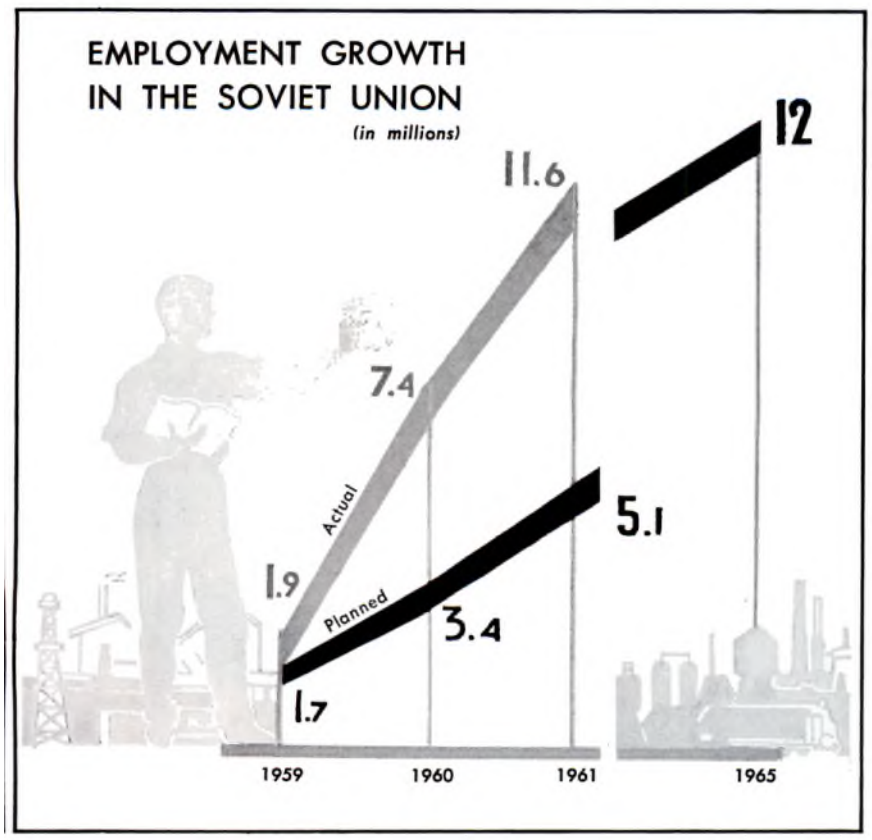
Mechanization and automation will be applied on an ever-growing scale to the trade and the service industries, and, where they can be used to advantage, in such areas as public health, education and science. We do not, at this juncture, foresee any significant mechanization of the work of a teacher, let us say, or a doctor. An increase in the volume of work in these fields will almost certainly require larger numbers of trained people.

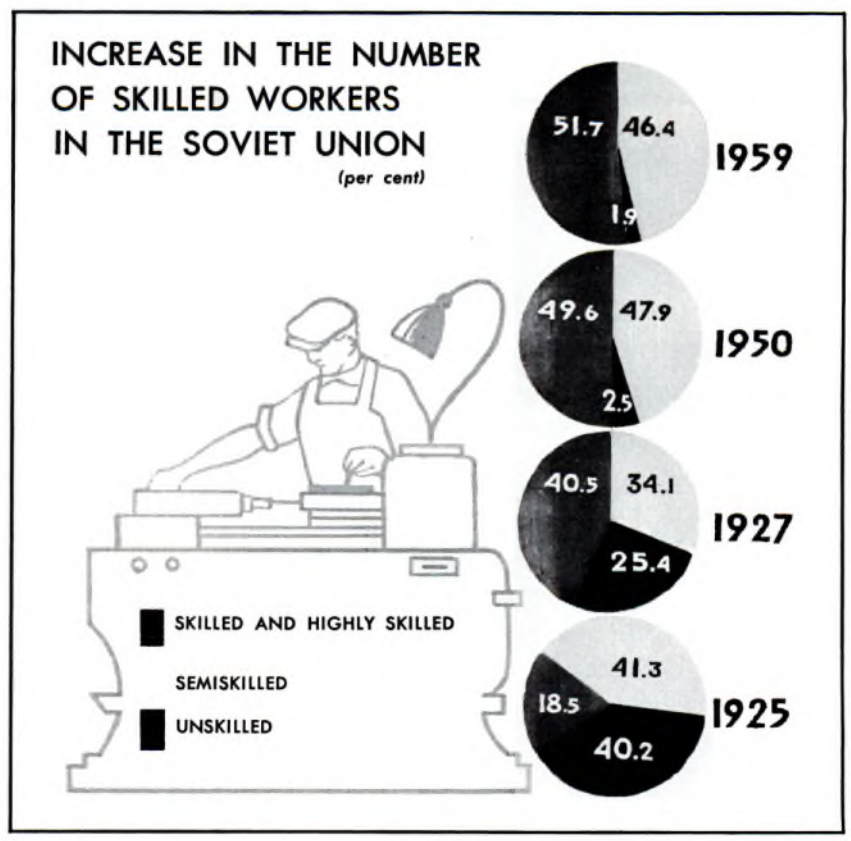
The estimate is that by 1980 the number of workers in science, medicine and education will be three times today's total. If we figure on the basis of the 18 million people presently employed in these and other social service areas, we conclude that in the next 20 years two-thirds of the new people who join the labor force will be working in social service vocations.

How will the country meet its manpower needs? The answer is in the Soviet plans.

Natural population growth will account for a third of the demand.

The countryside is a second manpower source for the developing indus-





AND EMPLOYMENT

BY MIKHAIL SONIN, ECONOMIST

tries and services. Foreseen for agriculture is a 3.5-fold increase in output and a sixfold increase in productivity. This means that by 1980 the labor force of collective and state farms will have decreased by about 42 per cent or 16 million, as compared with the present level.

As more public catering establishments, nurseries, kindergartens, boarding schools lighten household chores, greater numbers of women will be able to move into jobs.

In the armed forces we have designers, engineers, technicians and specialists in a variety of fields. Soviet people hope that disarmament will at long last become a fact, freeing 3.6 million men (according to the 1959 census) for work in the national economy.

All the manpower thus released will be fully employed in various rapidly growing branches of the national economy. Soviet economists believe that we will have no shortage of manpower for carrying out the 20-year program. Planned economic management takes into account both the demand for and the reserves of manpower.

But enough workers is only part of the answer. They must be trained for definite professions and trades. They must also be relocated in those regions of the country where the productive forces are developing.

At the present time 70 per cent of the population lives in the European part of the Soviet Union, a quarter of the country's territory; only 30 per cent lives in the regions east of the Urals, where 90 per cent of the nation's raw material and power resources are located. Hence the problem of shifting large numbers of workers and specialists to these areas, something that cannot be done by order or decree.

This seemingly complicated problem has been and will continue to be solved without special difficulty in the interests of both the country and the workers themselves. Whenever workers and specialists were needed on new construction jobs in remote places and the Communist Party and the Soviet Government sent out a call, there were always enough patriotic men and women to volunteer. This is an expression of the high social consciousness of Soviet people, their ability to combine personal aspirations with the needs of society. This is a manifestation of the characteristic traits of Soviet man, his patriotism and high moral standards.

Many examples can be cited from our life when Soviet people, following the appeal of Party and country, voluntarily assumed great loads and endured difficulties and hardships in the interests of the country.

In the thirties young volunteers built Magnitogorsk in the Urals and Komsomolsk-on-Amur in the Far East. More recently great numbers of young Soviet people gave up the comforts of city life to pioneer the country's virgin and long-fallow lands, to build the Bratsk Hydroelectric Station in Siberia and the Norilsk mining and metallurgy combine in the Far North.

The state helps these volunteers get set in the new locations. Their travel and moving expenses are paid. They are assured modern housing. In the Far East and Far North higher basic work rates are established. These and other material incentives are, of course, factors in influencing people to relocate, but the decision is purely voluntary.

The law requires, and the trade unions see to it, that a man receives at least as much on his new job as he did on the old. If the new job requires the worker to learn a trade, the management retrains him without charge and while he is learning pays him a wage equal to his previous average pay.

In recent years the railroads, in particular, have been doing mass retraining as they switch over from steam to electric traction. Retraining is no great problem in the Soviet Union, not only because the state covers all expenses, but because the general educational level of the workers is high and they master new trades rapidly.

Vocational training is an intrinsic part of Soviet education and is given on various levels. There are trade schools in both cities and villages with courses varying from one to three years (in the future, most probably to four years), depending upon whether the student has an eight- or a ten-year secondary school background.

The course of study covers the fundamentals of modern machines and instruments, production processes and methods of work, as well as the general technology of production, mechanics, electromechanics with the fundamentals of industrial electronics and the fundamentals of mechanization and automation of production. A curriculum of this kind gives a student more than the elements of a trade; what he gets is the background of a junior technician.

The work emphasis in the general 11-year schools—academic study combined with productive labor—helps to train skilled manpower. Under competent guidance, students do labor training first in school carpentry and machine shops, then in factories, collective farms, stores, hospital laboratories, kindergartens, etc. Upon graduating, the student is entitled to both a diploma and to a document certifying that he has the fundamentals of a particular trade. Workers with this basic technical and cultural background fit easily into many spheres of the national economy.

At the top of the vocational education ladder are the specialized secondary and higher schools. They already turn out more engineers than are graduated in any other country in the world.

The workers being trained today in a hundred different fields will be creating the economy of abundance that the new program foresees in the next two decades. ★

NEW EXCHANGE AGREEMENT SIGNED

Sergei Romanovsky: "New Agreement Covers Wider and More Interesting Area of Exchanges"

A new agreement was recently concluded between the United States and the Soviet Union for exchanges in science, technology, education and culture during 1962-63.

Sergei Romanovsky, Chairman of the USSR State Committee for Cultural Relations with Foreign Countries, gives some details of the agreement in an interview with our correspondent.

QUESTION: How does the 1962-63 exchange agreement differ from the previous one?

ANSWER: This new two-year agreement covers a wider and more interesting area of exchanges. I might indicate that our mutual experience over the past years made it very much easier to draw up this agreement.

QUESTION: How would you assess the exchange program generally?

ANSWER: Very favorably. Although USSR-USA exchanges are of relatively recent date, they made possible this wider development of scientific, technical and cultural contacts between the two countries.

Prior to 1958, contacts were limited and purely fortuitous. Following January 1958, after the first agreement was signed, the exchanges were planned and expanded to include meetings of American and Soviet scientists, educators, and workers in industry, agriculture, transport, trade and public health. In this last area, contact has not been limited to mutual visits; there has been active cooperation in fighting cancer, polio, heart disease and other serious ailments.

We have had more exchange delegations of writers, journalists, and representatives of youth and women's organizations. And, of course, a much more lively exchange in the performing arts. Such eminent artists as Van Cliburn and Rikhter, Gilels and Pollack, Oistrakh and Stern, Vishnevskaya and Peters, Ormandy and Kondrashin made concert tours. The Bolshoi Ballet, the Moiseyev dancers, the Leningrad Ballet, the USSR State Symphony, the Beryozka dancers, and the Georgian Dance Ensemble performed to enthusiastic audiences in the United States, as did the Philadelphia Orchestra and New York Philharmonic, the *My Fair Lady* company, the Juilliard String Quartet, the *Ice Capade* company and the Eastman Symphony Orchestra in the Soviet Union.

I do not think I need to list the many athletic exchanges. By now American-Soviet sports competitions are an established tradition.

Compare this with the situation prior to 1958 and you see how wide and diversified our exchanges have become. They have really facilitated the development of Soviet-American cultural, scientific and technical contacts.

QUESTION: You said earlier that the new agreement covers a wider and more interesting area of exchanges. Can you give us some of the details?

ANSWER: In general, the agreement provides a large concrete program for exchanges in science, engineering, education, public health, building, commerce, agriculture, films, radio and TV, the performing arts, literature and sports.

Projected are reciprocal visits by members of Congress and the USSR Supreme Soviet and other national and local government officials, as well as visits by the municipal and regional agencies for reciprocal studies of public administration. The agreement also stipulates that the governments encourage exchanges and joint projects by youth, women's and other public organizations, with the understanding that the arrangements are to be made by the organizations concerned.

In education there will be exchanges of undergraduate and graduate students and of instructors and professors for lectures, seminars, consultation and research. Moscow, Leningrad, Kiev and Tashkent Universities, and Columbia, Harvard, Yale, Indiana and the University of California will participate in these exchanges.

To encourage cooperation in the peaceful uses of atomic energy where no classified material is involved, the agreement provides for exchanges in the field, the concrete details of cooperation to be worked out by the USSR State Committee on the Utilization of Atomic Energy and the U. S. Atomic Energy Commission.

Agreements between the USSR Academy of Sciences and the American Council of Learned Societies and the National Academy of Sciences have been drawn up and initialed. They provide for reciprocal visits of scientists for lectures, seminars and conferences and for the exchange of research information.

The present exchange of publications between the two countries is to be expanded. More particularly, the circulation of the magazine *Amerika* in the Soviet Union and *USSR* in the United States will be gradually increased.

This year the Bolshoi Ballet will make its second visit to the United States, and the Ukrainian Dance Ensemble and the Leningrad Symphony Orchestra their first. The New York City Ballet, the Robert Shaw Chorale and Benny Goodman and his band will perform in the Soviet Union.

The agreement has a special proviso for film cooperation which projects reciprocal purchase of films, reciprocal premières, and an expanded documentary and science-fiction film exchange.

Also forecast are monthly exchanges of two radio programs and three TV films. With an eye to promoting closer understanding and friendship between our countries, documentaries, feature films and radio and TV programs on international problems will be exchanged, as well as recorded radio and TV talks by leaders in government and the arts and sciences.

QUESTION: How did the talks proceed?

ANSWER: Almost six weeks of intensive work was required for the final drafting of the agreement. This can be explained both by the wide range of the agreement and diverse points of view. However, the negotiations were conducted in a serious and businesslike atmosphere and, thanks to the good will displayed by both sides, were completed quite successfully. The implementation of the agreement should facilitate an improvement in the mutual understanding between the two countries. ★

From a writer's notebook
BY IVAN VINNICHENKO

ALEXANDER GITALOV pride of the Ukraine

I REMEMBER that first time I met Gitalov. It was in February 1950, and I was working on *Izvestia*. One raw day, just before the elections to the USSR Supreme Soviet, the editor sent for me.

"You're going to the Ukraine immediately," he said, "to interview Gitalov."

"Who is Gitalov?" I asked.

"That's what you're going to the Ukraine for, to get the answer to that question. He was nominated for the Supreme Soviet. . . ."

The next day I was in the Ukraine. I stopped at the office of the District Committee of the Party to ask how I could get to the collective farm in Kamyshevatoye.

"To see Gitalov?"

"That's right."

"He might be in any one of a dozen places. He's touring his constituency."

I went to see the Secretary of the District Committee to find out if he could track Gitalov down for me. Since the Secretary knew Gitalov personally, I asked him to tell me something about him while I was waiting.

"He's quite a man," he started, "tall, broad-shouldered, heavy—a really Herculean build. He looks like the kind of man who thrives on hard physical work. But all that muscle power, not to speak of brain, is used to free himself and everyone else from the strain of heavy work. He's the epitome of a mechanizer, by inclination and conviction. Gitalov talks about machines as though they were alive."

From the expression on his face and the warm smile on his lips it was obvious that the Secretary was describing a man he admired and liked. He warmed to his theme.

"Not many organizers like him, and a fine teacher. An incident that happened last fall will give you an idea of the kind of man he is.

"One day Ilya Kravchuk—he's one of the best tractor drivers in Gitalov's brigade—fell short of his quota. Instead of the scheduled 11 acres, he turned up 10.5, half an acre short. Gitalov asked how come, and Kravchuk blamed it on the weather—it was raining, you couldn't expect a man to do more in weather like that, and so on and so forth.

" 'So it was the weather, was it?' Gitalov said, nothing more. But that was enough to give Kravchuk a bad night. At daybreak he was out in the field. But Gitalov wouldn't let him take the tractor out, he got behind the wheel himself.

" 'And what am I supposed to do,' asked Kravchuk, 'watch you?'

"Gitalov shrugged his shoulders, 'Whatever you want to. Go on home and lie down. Or else hang around and see how other people manage in bad weather.'

"Kravchuk hung around the field all day, in the heavy rain. Gitalov plowed up more than 11 acres and then turned the tractor back to a very sheepish-looking Kravchuk without a word. The next day Kravchuk himself plowed up 12 acres."

I caught up with Gitalov two days later, at Pomoshnaya, where he was speaking at an election rally at the local railroad junction. There was very little talking he wanted to do about himself. But he was popping with information about the emulation movement for more efficient farm work he had sparked.

It all started at a conference of leading Ukrainian farmers in February 1947 called to evaluate the previous year's work. Nikita Khrushchev, then Secretary of the Central Committee of the Ukrainian Communist Party, was seated with the presiding committee near the speaker's stand and next to him sat Hero of Socialist Labor Praskovya Angelina, a famous farm machine operator.

"I walked up to the speaker's stand," Gitalov recollected, "and believe me, I got stage fright. I had never before had occasion to speak at a conference anywhere near so important. Well, I did manage to collect myself and started to tell the conference about our brigade. At the time, we were the best in the region. As I was speaking, I saw Nikita Sergeyevich Khrushchev turn to Angelina and say, 'Here, Angelina, is worthy competition for you.'

" 'Fine,' she answered, 'I'll challenge him right now!' And looking straight at me, she said, 'Hear that, Gitalov? I want to challenge you to a contest. Agreed?'

" 'Yes,' I said, but inwardly I thought, 'I'm in for it now.'

" 'But on the condition that we compete not only for the bigger crop, but for the bigger crop raised in less time with less labor. How's that?'

"We shook hands on the bargain to a real thunder of applause. And me thinking, 'Now

you got yourself into something, Gitalov, with the whole of the Ukraine listening in.' "

But he came through fine, he won the competition. In 1947 his brigade beat all outstanding production records, and he was honored with the title Hero of Socialist Labor.

The following year a hundred tractor brigades at various collective farms got into the competition with Gitalov's brigade. And now, he told me with a smile, "the number of our challengers is dangerously close to 500. Believe it or not, we get a new one practically every day."

The interview was shorter than I wanted, but it was long enough for me to feel that I had met a man of uncommon ability and great charm.

After that first meeting I kept coming across Gitalov's name in newspapers—interviews with him, stories about him and then articles by him. This was in 1958 when he was awarded his second gold star of Hero of Socialist Labor. In December of that same year he was invited to a Plenary Meeting of the Central Committee of the Communist Party of the Soviet Union to report his successes with comprehensive mechanization of corn growing.

In the summer of 1958 Gitalov went to the United States and spent more than three months working on the farm of Roswell Garst at Coon Rapids, Iowa. This was a short while before Mr. Garst visited the Soviet Union.

"Mr. Gitalov, a Russian engineer," was how Mr. Garst used to introduce his unusual farm hand to visitors. It may be that he was not aware of the fact that the "Russian engineer" had just about then graduated from an evening secondary school. But even if he did know, what else could you call a man who knew the insides and outsides of machines and learned to use unfamiliar American equipment in an unbelievably short time?

The young Russian had come to the United States to study American experience with overall farm mechanization. "No better way to do that than work on Mr. Garst's farm," Gitalov told me. "He really has it mechanized. He has about 5,000 acres of land, about 1,500 head of dairy cattle, a hundred sows with litters, a feed business, and only 11 men to take care of the whole thing. People here found it hard to believe. I myself took care of 250 acres of corn and fed 800 head of livestock on that farm every day. There is no reason we can't do it here."

In January 1961 Gitalov came to Moscow for a plenary meeting of the Central Committee. I could not get to meet him, but I did speak to him by phone shortly before the meeting.

I was pleased that he remembered me. When I asked him what he was going to talk about at the plenary session, he answered, "I'll give you one guess."

"Comprehensive farm mechanization?"

"Right you are," he laughed. And then in a more serious tone, "I feel strongly about it. To my mind it's the number one farm problem—getting rid of hand labor all the way along the line—in the basic operations and the auxiliary chores, in field work as well as livestock farming. What I'm after is to get our engineers to design not simply machines, but sets of machines that will take care of all the farm operations."

He urged me to visit his collective farm that summer. "I think I'll have something to show you then."

What Gitalov had to show me was farm machinery being tested on a really grand scale—more than 30 new models since the spring, many of them built to his specifications and with his advice. These were the first of the complex units that he had been so enthusiastic about during our phone conversation in January.

Shortly before my arrival the farm had received two sets of experimental machines for

direct route grain harvesting. On the first trial run they seemed to work smoothly, and Gitalov, hoping to use them to clear a considerable stretch of winter wheat, entrusted the machines to his two best combine operators, Dmitri Otyan and Pyotr Tantsyura.

But there are always bugs in a new machine, and these were no exceptions. They had to be tinkered with and adjusted, and that involved lengthy and frequent delays. The other handicap, if you can call it that, was the crop—it was too good. The stems were so thick that the crushers were literally choked with the straw, they couldn't chew it.

The stacker too, gave trouble; it stopped every once in a while and that jammed up the threshing grounds.

Of course, all the kinks were worked out eventually and after a while the machines were moving along smoothly. But it was a revelation to watch Gitalov those few hectic days, his car flying like a meteor from the combines to the stackers to the repair shops. Always on the go, stopping to do a repair job himself, improvising, arguing with the farm chairman about deadlines, exhorting the operators, rushing here and there, turning up at the very moment when he was most needed.

All this strenuous and difficult work of testing new machines in the field he does on his own, without any special remuneration.

One evening as I sat with a group of machine operators in the field camp, smoking and talking over the day's happenings, Gitalov joined us. In his grease-stained overalls, his feet stuck into worn sandals, he was not the grave, impressive Gitalov whose photograph we saw so often in magazines and newspapers, but there was no missing the essential strength and quality of the man.

Our talk inevitably turned to comprehensive mechanization and from that to Gitalov's American visit.

"What sort of man is Mr. Garst?" I asked. 'Is he friendly to the Soviet Union?"

"Well, let me put it this way," said Gitalov. 'He's a businessman and he has a practical approach to everything. He's a good, honest, straightforward man. He doesn't like to talk politics. But there was another corn magnate I met while I was there who would sooner argue politics than eat. Occassionally, when we'd get into a debate, John Crystall, Garst's nephew and partner, would say to me, 'You're wasting your breath, Alexander, you'll never change his mind.'

"Incidentally, how did you manage the conversation?" I asked. "Did you have an interpreter?"

"Yes, we had a girl there from Moscow. But after a while we got along without an interpreter. I had a Russian-English pocket dictionary, and John—we worked together—had an English-Russian one. And, of course, we did a lot of talking with our hands. His are just like mine, the same kind of calluses. A fine lad, that John."

Then we got to talking about America generally, and Gitalov gave us his impressions of the Manhattan skyline, traffic jams, Hollywood movies, advertising and other such assorted and indigenous American phenomena that we often read about in our newspapers and magazines.

Then the conversation turned to new books, films and plays, and Gitalov told us about a production he had seen recently in a Kiev theater that impressed him deeply—*Sour Grapes* by the Brazilian playwright Guilherme Figeiredo—about Aesop. It was interesting to watch his excitement, the emotion with which he spoke of the production, and, most of all, his understanding of the message of the play and his appreciation of the beauty of the inner world of the hero, a monstrously ugly man, a slave and a talented fabulist.

Listening to him, I thought, "Here is the man of our time—a farmer and a statesman; an ordinary farm-machine operator and a designer of new machines; a collective farmer and a real intellectual."

I followed Gitalov's career in the press. In October 1961, a few months after I returned from the Ukraine, *Pravda* carried an account of the opening of the Twenty-second Congress of the Communist Party.

I was not present, but I could visualize the the Great Hall of the Kremlin Palace flooded with light, packed with delegates and guests, the atmosphere very much alive, and Gitalov rising from his seat to take the floor.

I saw this broad-shouldered man of 50 or thereabouts with the big strong hands of a working farmer and a high Socratic forehead moving toward the speaker's stand with several ears of corn in his hand.

From his seat in the Presidium, Nikita Khrushchev looks on with paternal affection. The adjective is not misplaced—wasn't he present at the very birth of Gitalov's socialist emulation movement for greater farm efficiency? Recall that first meeting of theirs and Praskovya Angelina's challenge.

Gitalov speaks of the significance of the Congress, the Party's new Program, and reports that this year "The Twentieth Congress of the Communist Party Collective Farm (where he is working) grew a bumper grain crop. Fodder corn was especially good, up to 3.3 tons per acre. And most important—this big crop was grown without any manual labor whatsoever, all the operations were done by machine. As a result, it was possible to cut the cost of a centner (220.46 pounds) of grain to 42 kopecks, and a centner of corn silage to 6 kopecks."

Gitalov turns to the Presidium, "Interesting to compare the results with those of Garst, don't you agree, Nikita Sergeyevich? I think our labor expenditure per centner of corn is lower than his."

Thereupon, said the press reports, First Secretary Khrushchev and farmer Gitalov had this informal exchange.

Khrushchev (replying to Gitalov's remark): You ought to write Garst, Alexander Vassilyevich, and tell him, "After studying with you, I now get better results than you do yourself."

Gitalov: I'll do that, Nikita Sergeyevich.

Khrushchev: Garst is a levelheaded man. He's a capitalist but he's for honest competition with us. We can learn from his rich corn-growing experience.

Gitalov: I worked for Garst in 1958.

Khrushchev (addressing the Congress delegates): Not all the delegates know that Comrade Gitalov went to America, to Garst's farm, in 1958. Garst himself suggested it. 'Mr. Khrushchev,' he said, 'send your people and I'll teach them how one man can take care of 250 acres of corn,' and so Comrade Gitalov went to Garst. (To Gitalov) Who worked with you on Garst's farm?

Gitalov: Comrade Shvydko from Krasnodar Territory.

Khrushchev (addressing the delegates again): They went there and spent a whole summer working for Garst. And I must say that they worked with great profit to themselves. It was a valuable experience.

Gitalov: In 1958 Garst told us that he had raised his biggest crop yet—6.4 tons of grain per hectare (2.85 tons per acre). We harvested 7.5 tons per hectare (3.34 tons per acre) this year."

Gitalov dwelt on problems connected with the comprehensive mechanization of agriculture, the production of farm machines, efficiency in agriculture, and he spoke with such ardor, inspiration and statesmanlike acumen that the delegates rose to their feet in a rousing burst of applause when he finished. ★

The FACE OF FASCISM

On June 22, 1941, Hitler Germany attacked the Soviet Union

SEVENTEEN years ago Soviet soldiers marched into Berlin and wrote the end to a chapter that our descendants will probably record as the darkest in man's history.

What fascism offers mankind is recorded in documents captured by the Allies. They tell their own horrible story.

These are notes of a talk between Hitler and Rauschning shortly after the Nazis seized power. Hitler said, "We must work out the technique of unpeopling. What I have in mind is the extermination of whole racial units. That is what I intend to do, that is the task I have set myself. Nature is cruel, and we must therefore also be cruel. If I can hurl the flower of the German nation into the holocaust of war without the slightest regret for the precious German blood to be shed, I clearly have the right to exterminate the millions of the inferior races who multiply like worms."

Nazism proceeded to this task a few years later when it launched on a program of invasion.

In the city of Kerch on the Crimean Peninsula children were annihilated wholesale. The smaller ones were given poisoned cakes to eat, the older ones were taken outside the town and machine-gunned.

In an antitank ditch around the city of Rovno in the Ukraine were found the bodies of 102,000 people who had been shot. Ditches in Smolensk held 135,000 bodies; the Babi Yar pit near Kiev, 100,000. Scattered everywhere—in the Ukraine, Byelorussia and the Baltic regions—were great pits into which thousands of bodies had been thrown.

But fascism showed its face most nakedly in the death camps. Maidenek, Auschwitz, Dachau, Buchenwald shipped to German firms carloads of fertilizer made of human bones and bales of women's hair.

The Gestapo figures say that in Auschwitz alone more than four million people were put to death—Russians, Frenchmen, Jews, Belgians, Poles, Czechs, Greeks. Of the 18 million held in the concentration camps, 11 million were murdered.

The documents spell out Hitler's plans once he had conquered Russia. A coded telegram addressed by Ribbentrop to the Japanese Government reads:

"After Russia collapses, the position of the tripartite powers will be so strong that the fall of England and the complete destruction of the British Isles will be only a question of time. When the tripartite powers seize the remaining positions of the British Empire, America will stand isolated."

These plans were not realized. The Soviet people stopped the German armies and then broke the Hitler war machine, but at an enormous cost in lives. The Soviet people have seen fascism's naked face. They will never forget it.

THIS MUST NEVER BE FORGOTTEN

Of the 18 million people held in nazi concentration camps, 11 million were slaughtered—thrown into great pits shoveled out by excavators, incinerated, boiled down into soap. Photographs, shoes and clothing of millions of victims were found in the Dachau, Maidenek, Buchenwald and Auschwitz storage dumps.

BY ALEXANDER ZHITOMIRSKY
PHOTO COMPOSITION

25 YEARS IN A TEST TUBE

BY YURI GORIN

PHOTOS BY YURI CHERNYSHOV

PREPARATION for this singular operation begins four hours in advance, when powerful quartz lamps are turned on to destroy the germs in the operating room. In the meantime the patients are readied—bathed in a solution of sublimate—and the clothing of the operating staff and the instruments sterilized. Finally, the surgeon dips his hands in alcohol and picks up the first patient with a pair of tweezers. One incision, then another, and a tiny piece of tissue is severed from the crisp carrot.

Unusual "patients," these are—common garden varieties of carrot and cabbage, potato and corn. In a three-hour period a thousand of these vegetable-garden "patients" are operated on. The slivers of tissue are immersed in a nutritive medium in test tubes, some for several days, some for years. Why?

By keeping a bit of plant tissue alive in a test tube, the scientist breaks the chain of nature and isolates a single living link. Thereby he is able to study the development of the tissue or the organ as it is influenced by a given factor, eliminating the influence of all others.

Academician Alexander Nesmeyanov called this cultivation of isolated organs and tissues one of the techniques researchers are using to break through "to the second story of science."

The Institute of Plant Physiology of the USSR Academy of Sciences is one of the research agencies using the technique. Researcher Raisa Butenko can make a given plant tissue multiply its mass in six weeks not by 400 times, considered the normal rate of growth, but by 13,000 times. She succeeded in reproducing the isolated test-tube tissue of rauwolfia, a rare Indian plant from which the miracle drug reserpine, used in the treatment of hypertension, is derived.

The famous ginseng—"root of life"—can also be tissue-bred. In the very near future it should be possible to set up actual "factories" for quantity production of scarce drugs.

The institute laboratory miraculously transforms amorphous tissue into living plants. Tens of thousands of experiments have demonstrated that it is possible to force test-tube tissue not merely to increase in bulk resulting in a shapeless mass but to form the organs that give life to a new plant so that it can develop normally, produce seeds and reproduce itself. By influencing one and the same sliver of carrot or other plant tissue, researchers can control its development and produce dozens of new and desirable varieties.

All selectionists know that to change the chemistry of a plant, new agents must be brought into play at the initial stages of its development. Alexander Smirnov, another institute researcher, begins to influence the plant at a "super-early" stage, when it is still in embryo and, therefore, most susceptible to outside influences.

Corn protein contains no lysine or tryptophan, both indispensable to human and animal life. To correct nature's unfortunate "mistake," the seed embryo was cultivated in a nutrient medium containing both these elements and thus a new variety of corn was created whose protein contained both lysine and tryptophan. The next step was to consolidate these changes in the plant's chemistry and get it to produce progeny with the same characteristics.

Researcher Margarita Bardinskaya has been exploring the microworld of formative tissues. Until very recently scientists thought that these tissues produce supplementary substances that merely help to cement the plant walls. Bardinskaya refuted this universally held opinion. She used carrot tissue sent her by foreign colleagues that had been placed in test tubes by the French scientist Gothret 25 years before. Through a series of original experiments she established that the supplementary substances play an independent and extremely important role, that they have a profound affect on the growth of the plant. A large concentration of these substances will produce normal growth, and a small concentration uncontrolled and tumorous growth. An equally unexpected finding was that the chemical composition of the supplementary substances was very similar to the combinations that affect cell division—an important discovery in view of the known fact that malignant tumors are caused by abnormally high cell division.

With these slivers of carrot tissue researchers are unveiling some of the most fundamental secrets of nature. They will not be content with a breakthrough to "the second story of science"—they are aiming higher. ★

SUMMER

BY DMITRI ZUYEV

PHENOLOGIST

THE SPRING RAINS and thunderstorms are over, and now gardens are bright with blossoming lilac, jasmine, acacia and honeysuckle. The heat has not yet dulled the first vivid greens. There is nothing in the northern regions of our country fresher and lovelier than these early summer days, with the gardens and meadows blooming and the spring fields touched with the red of buckwheat. The Slavic for June is *cheven*, the red month, the month of blossoms.

July is the peak of summer. The air shimmers with heat, the fluff drifts down from the poplars, and light clouds melt into the blue of the sky. The dry haze of pollen smells of honey, and a honeyed fragrance comes from the flowering rye. In the birch groves, amid daisies and bluebells, the first mushrooms appear and the forest grasses stand waist-high.

According to an old Russian tradition, the night of Ivan Kupala, July 7, heralds the beginning of the haymaking season and the collection of medicinal herbs. The festival of the first sheaf is also celebrated in July.

This is the month when the rivers have become warm enough for the first dip of the year.

The July water carnival of flowers is a lovely sight. At dusk the water lilies sway in the gray cloud of mist like dancing mermaids. The white lily and the yellow-cupped water lily are the northern kin of the gorgeous tropical giant Victoria Regia and the lotus, the flower of Egyptian and Indian mythology. We also have our lotuses—in the Caspian they are a rare pink and white, and in the Far East they resemble the blues lilies of the Egyptian Nile.

August brings the first breath of fall. The sun still warms the forest glades, but it is already cool in the shade of the woods. Nature's bright colors are beginning to fade. Only the asters, poppies, dahlias, roses and hollyhocks still flame in the slanting rays of the setting sun. The trees at the roadside are coated with dust, and yellow leaves begin to streak the crowns of the birches.

August is the Russian month for a full larder and hospitality. In the woods, waiting to be picked, are berries, mushrooms, walnuts, herbs. The air is fragrant with the smell of mushrooms, honey, parsley, cucumber and ripe apples. There is a quiet glow in the air. Nature is putting on its lovely pre-autumnal array. ★

WINDOW ON THE UNIVERSE

BY PYOTR DOBRONRAVIN
DEPUTY DIRECTOR, CRIMEAN ASTROPHYSICAL OBSERVATORY

PHOTOS BY SEMYON FRIDLAND

A SIGN at a fork in the road 11 miles out of Simferopol on the way to Sevastopol directs you to the observatory up the mountain. Traveling by car, some 25 minutes later you approach the tree-shaded domes of the Crimean Astrophysical Observatory of the USSR Academy of Sciences.

The observatory was built 16 years ago, shortly after the war, and several unique telescopes have been installed since. The most refined one, named after the eminent Soviet astronomer Grigori Shain, is a mirror telescope 8.5 feet in diameter. With this instrument, the third largest in the world, the Crimean observatory astronomers made several discoveries that have evoked international scientific attention.

In the nineteenth century a mysterious phenomenon was observed—a spot on the sun's surface flared up brightly and then quickly died down. Similar phenomena were noted later with an instrument devised to observe the surface of the sun in the beams of a chemical element, particularly hydrogen.

Some 15 years ago this strange coincidence was noted—when these sun flares were observed, short-wave radio communication was interrupted, and a day or two later magnetic storms were recorded. It was evident statistically that there was a connection between the solar and terrestrial phenomena.

Two of the Crimean observatory's astronomers, Andrei Severny—now its director—and Evald Mustel, undertook a thoroughgoing study of the flares. Continuous filming of the sun revealed that their occurrence was fairly frequent but that only the largest had been observed.

Examination of the solar spectra provided Soviet astronomers with a good deal of new data leading to the conclusion that a sun flare is a tremendous explosion with an accompanying temperature of millions of degrees in which matter moves with a speed of hundreds of miles per second and an immense amount of energy is released. With the flares come powerful radio emissions from the sun.

Observation of the sun's magnetic fields helped to explain the process. Professor Severny established the fact that the flares always appear at the neutral points of the magnetic field, that is to say, where two oppositely charged fields meet. At a given moment, under the influence of the magnetic forces, the solar plasma undergoes intense compression and produces two waves that meet each other at the neutral point of the magnetic field. The compression heats the gas to fantastic temperatures and accelerates the movement of its electrons to almost the speed of light. The braking of these electrons produces X-rays. Acting on the upper layers of the terrestrial atmosphere, they alter the electric state of these layers, and this in turn influences radio communications.

As they enter the terrestrial atmosphere, beams of these charged particles generate currents that change the earth's magnetic field and cause a magnetic storm. These same particles give off intense radiation dangerous to human beings, the reason that in the reports on the flights of the Soviet cosmonauts it was stressed that the sun was calm at the time.

Professor Severny assumes that the conditions in which sun flares take place are similar to those which physicists are trying to create in order to produce controlled thermonuclear reactions. Continued study of the "solar laboratory" may provide the answer to many terrestrial problems.

The Crimean observatory combines several methods in its sun flare research—magnetic and spectral observation, solar radiation recording, and study of the ionosphere and the earth's magnetic field.

Severny and Mustel were awarded the State Prize for their work.

Do flares take place on other stars? Calculations show that even if the largest of the flares ever observed on the sun were to occur on the star nearest us, we would not see it.

Recently, however, researchers found stars suddenly increasing in luminosity by scores of times in a matter of several minutes, as happens during sun flares. The processes taking place on the stars are apparently of greater magnitude than those on the sun.

We have the help of new electronic equipment in our studies of the variable stars. One of the telescopes at the Crimean observatory is fitted with a sensitive photoelectric instrument designed by a young astronomer, Pavel Chugainov. The telescope is aimed at a star on which a flare is expected. The slightest increase in the luminosity of that star is immediately registered on the instrument.

With the help of his instrument Chugainov is able to fix the precise moment of the flare, its duration and the relative increase of the star's luminosity. This data is most vital in determining the nature of the mighty mechanism responsible for these tremendous stellar flares that are, presumably, related to thermonuclear reactions.

In outer space, besides the stars, there are nebulae, both bright and dark. They were detected by reason of the fact that they cover the large stars. Their nature was almost unexplored until the postwar years, when Grigori Shain, working at the Crimean observatory, evolved an ingenious method of photographing them based on the luminescence of the hydrogen in the nebulae.

Shain's first findings were interesting. The nebulae, up to that time, had been regarded as secondary formations in outer space with no significant role. Shain proved that the mass of matter in nebulae is greater than that of their neighboring stars, and that there is constant interaction between the dispersed interstellar matter and the stars. A theory of the formation of stars cannot, therefore, be evolved without careful consideration of the dispersed interstellar matter.

Shain established the fact that magnetic fields of the universe, previously not taken into account, play a large part in the formation and development of nebulae.

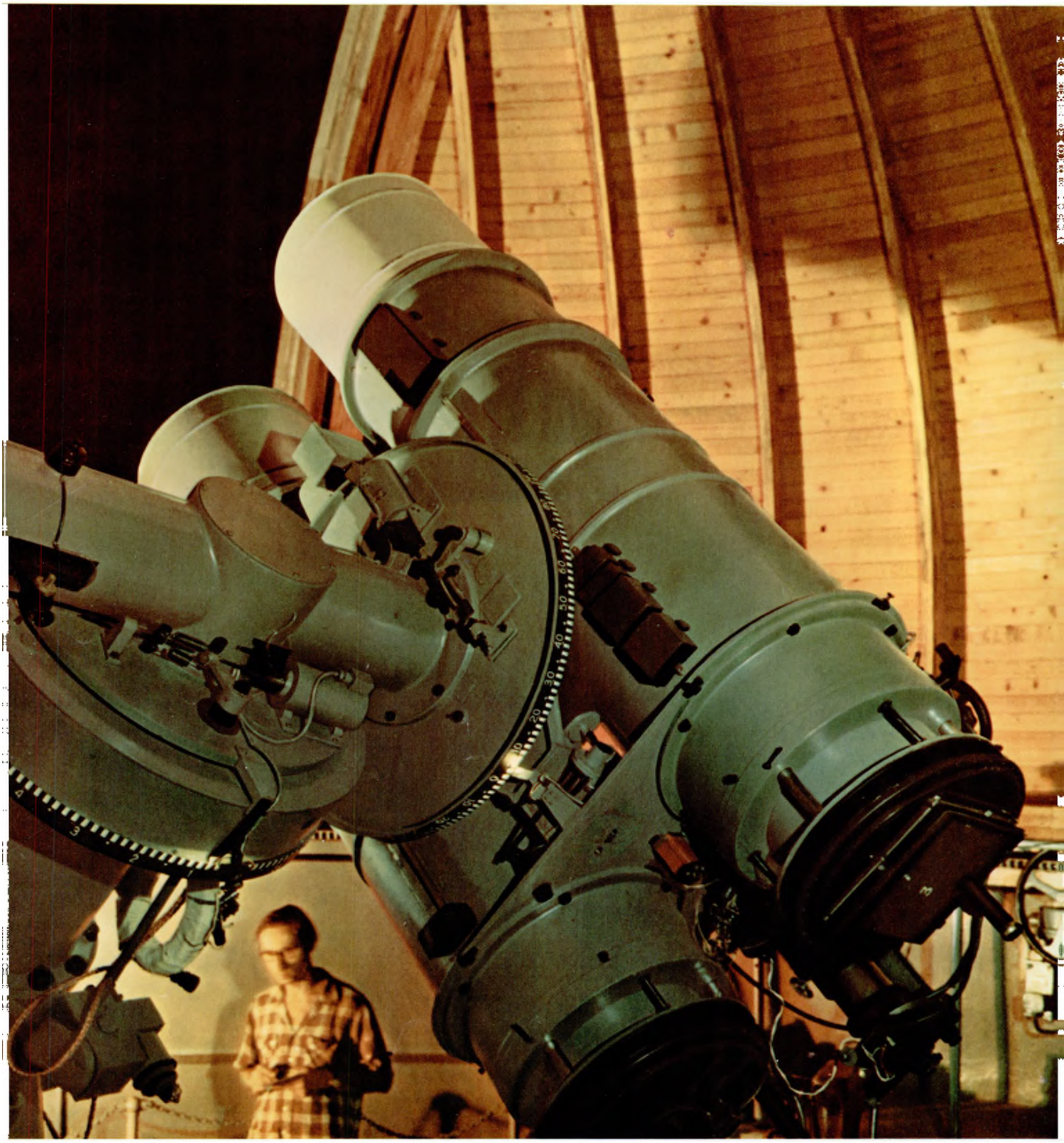
The study of remote stellar systems is understandably difficult because of the enormous distances that separate them from us. It takes more than a million years for the light from the nearest stellar system to reach the earth. The first time Professor Severny and his colleagues used the observatory's new telescope with the electronic photographing device, they discovered completely new stellar formations. In remote giant galaxies they discerned currents and clouds of luminescent hydrogen ejected from the central parts of the stellar formation. We do not know, as yet, what in the physical nature of these galaxies makes for such stupendous ejections of gas masses. It may be that from these studies we shall discover new natural laws or have reason to make fundamental corrections in the old ones.

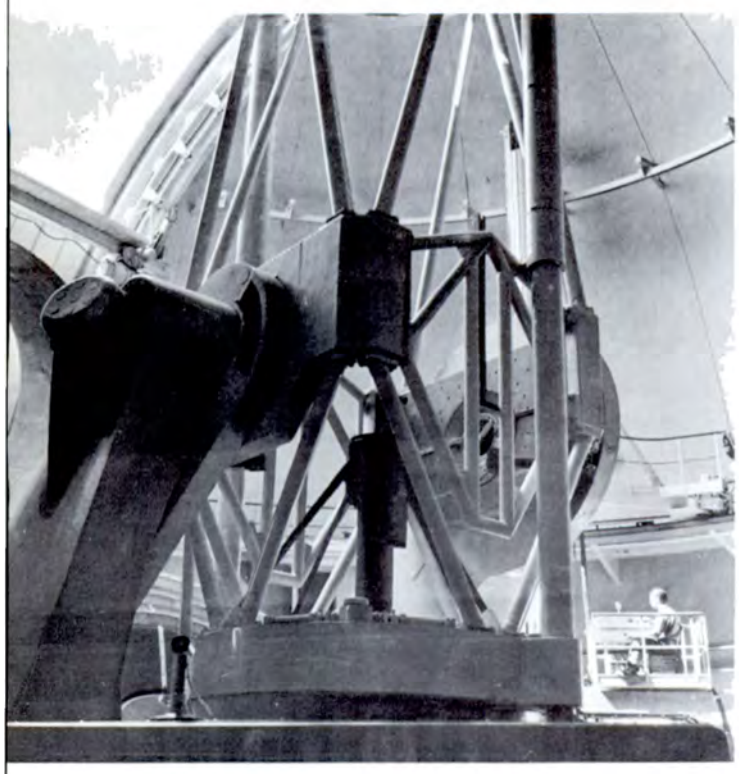
We have known for a long time that the atmosphere of Venus contains carbon dioxide. The presence of nitrogen is also indicated in the one spectrum world science has thus far obtained, that of Nikolai Kozyrev, a Pulkovo astronomer. This prompted the hypothesis that there is organic life on that planet.

Vladimir Prokofiev, another young Crimean observatory scientist, recently made a startling finding which confirms the hypothesis. He discovered that the upper atmospheric layers of Venus contain molecular oxygen, indispensable for life.

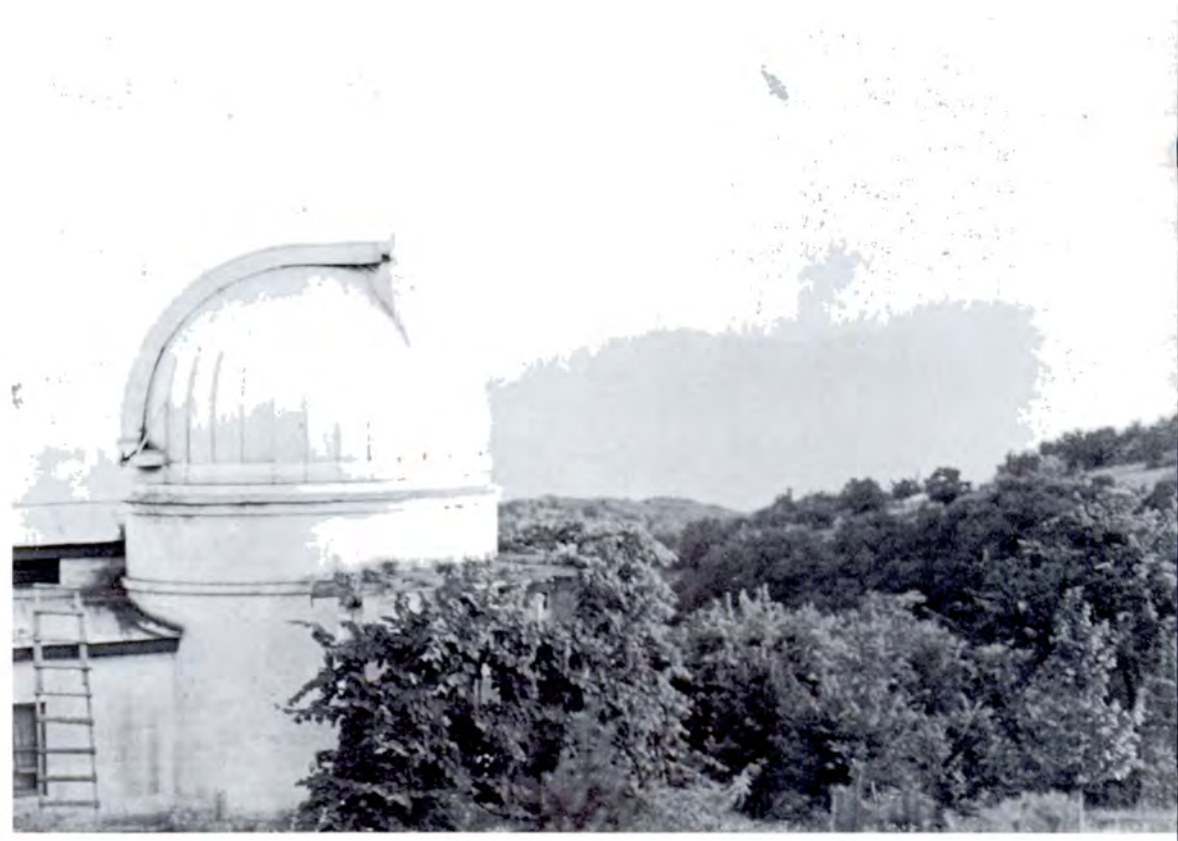
The young astronomer came to this conclusion after a detailed study of some unique spectra of Venus obtained with the big tower solar telescope and special spectrograph during the time the distance between Venus and the earth is shortest. Additional shots were made at various points when that planet began to move away from ours.

The discovery of molecular oxygen in the upper layers of the atmosphere of Venus is a big step toward solving the mysteries of that planet. Thanks to the research of Crimean observatory astronomers, new proof has been obtained that there is organic life on Venus.

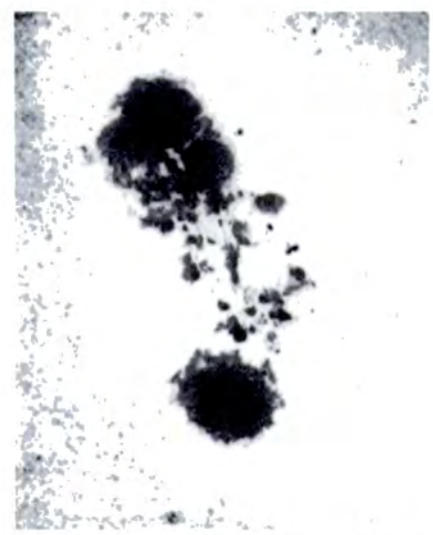




This mirror telescope at the Crimean observatory is 8½ feet in diameter, one of the world's largest.



An awesome sight—the sun erupting.



Sun spots—great solar gas explosions.

The very distant galaxy M-51.

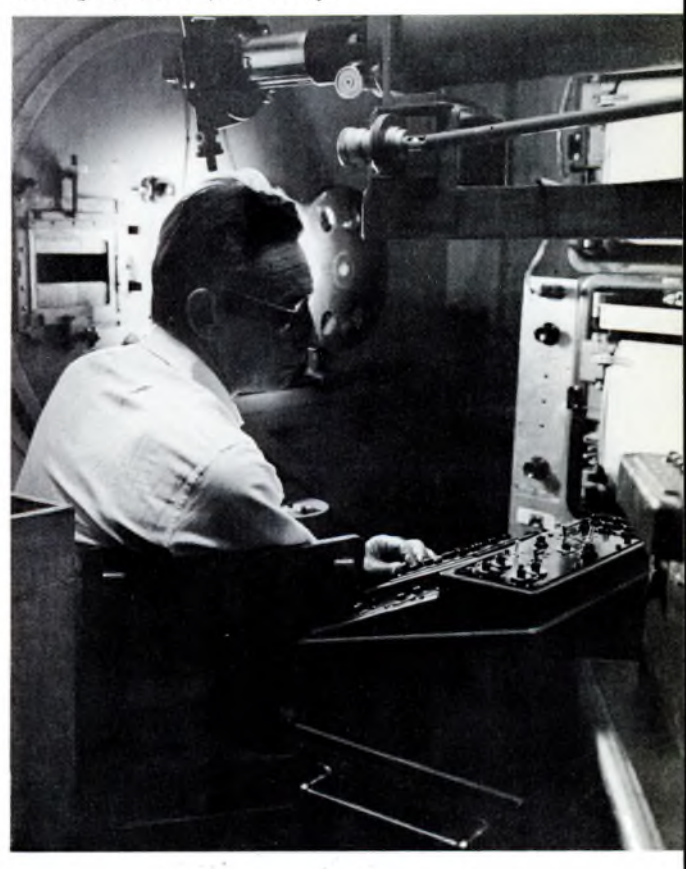
Solar corona seen during an eclipse.

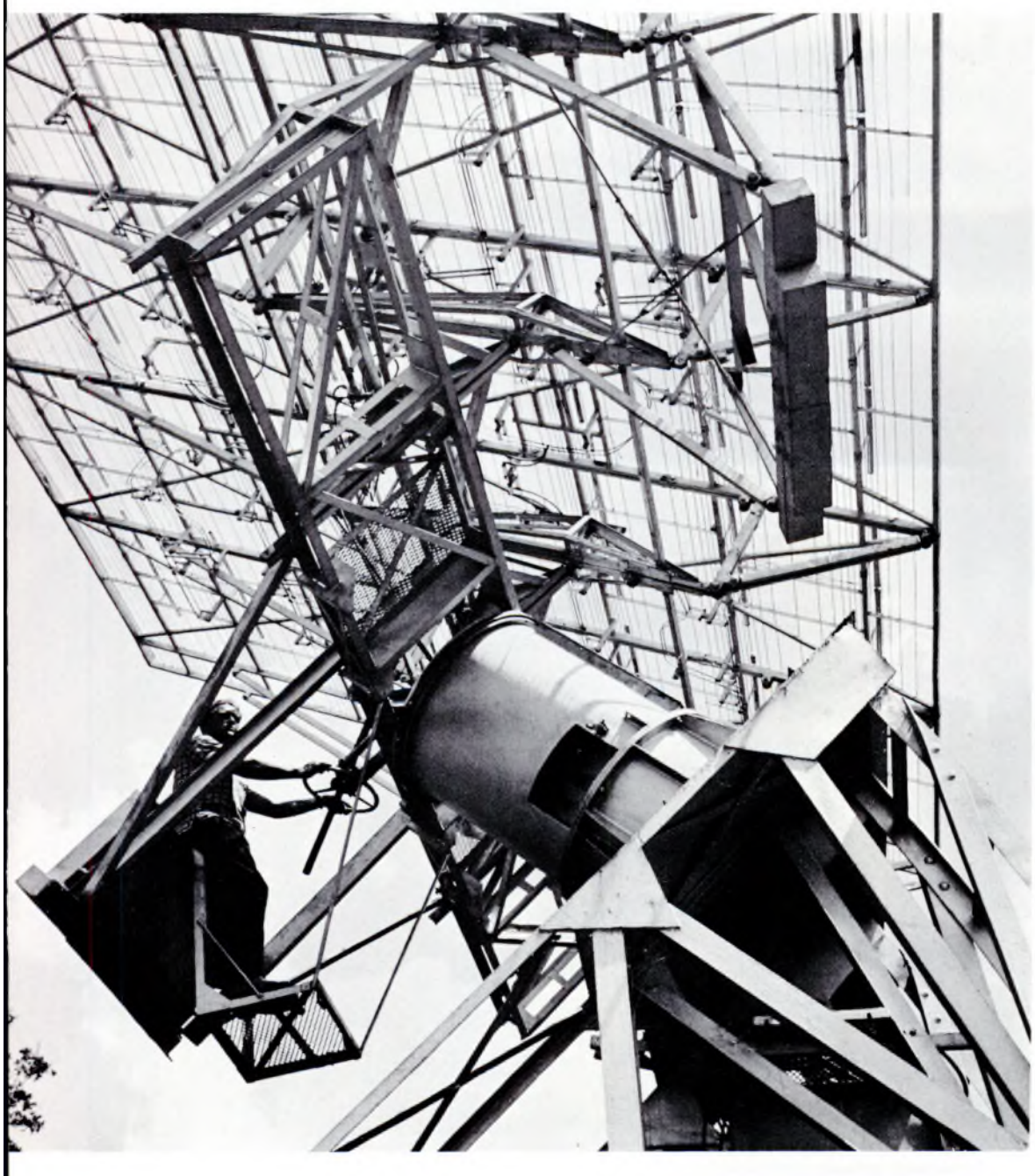
Solar prominences, giant cosmic flares.

Crater mountains of the moon.

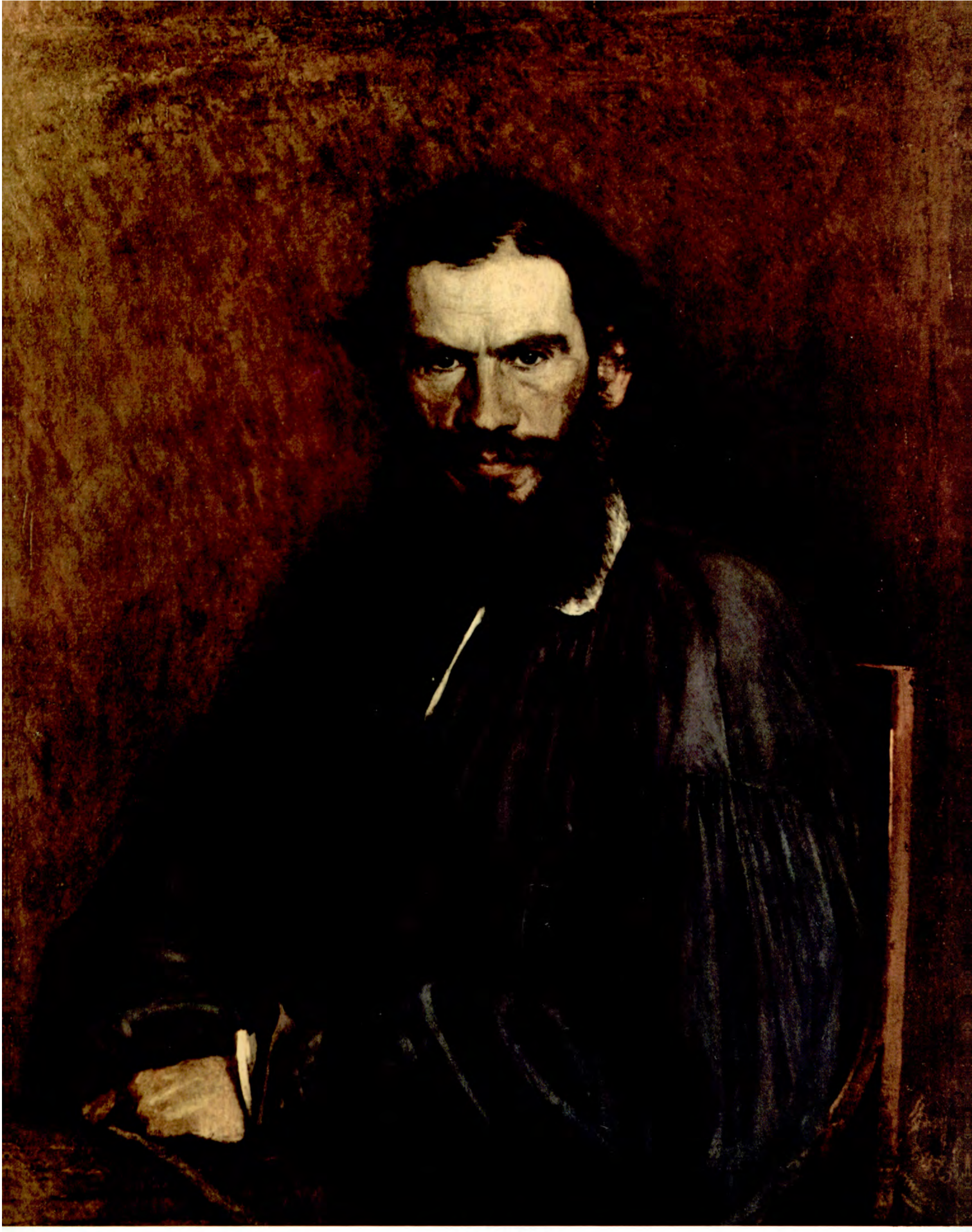
The Crimean Astrophysical Observatory near Simferopol was built shortly after the war.

Andrei Severny, observatory director, and his colleagues are developing a sun flare theory.





Listening in on the distant galaxies. These are antennae of the observatory's radiotelescope.



Portrait of Leo Tolstoy

FROM THE HISTORY OF RUSSIAN PAINTING

IVAN KRAMSKOY

(on the 125th anniversary of his birth)

BY NIKOLAI MASHKOVTSEV

I SAW a lean man in a black frock coat come into the classroom with a firm step. He had a thin face, prominent cheekbones, dark straight hair. So that's him! What eyes! No hiding them even if they are small and deep-set. They are gray, light.

This is the contemporary artist Ilya Repin giving a word picture of the eminent nineteenth century Russian painter, art critic and teacher Ivan Nikolayevich Kramskoy. The time is 1863. The description tallies with the painter's self-portrait.

Kramskoy was born to a poor family in the town of Ostrozhsk, Voronezh Gubernia, on May 27, 1837. In his youth he worked as an itinerant photographer's retoucher and visited many of the cities of Russia. He made friends with young artists in St. Petersburg, tried his hand at painting and enrolled for study at the Academy of Arts. It was not long before his talent made itself evident.

A group he founded—known to this day as Kramskoy's Academy—gave successful exhibitions and had a large popular following.

In 1870 the Fellowship of Peredvizhniki was organized. The *peredvizhniki* were artists who traveled with exhibitions of their pictures from one Russian city to another. Kramskoy headed the fellowship for ten years, which had among its members such outstanding artists as Myasoyedov, Perov, Repin, Vasnetsov and Levitan.

Their interests and the themes they chose to paint were essentially democratic—they produced many works of great merit which reflected the life of ordinary Russian people and paid tribute to the beauty of labor and the Russian landscape. Their pictures flayed the czarist autocracy and survivals of the feudal system.

Ivan Kramskoy is considered to have done his best work between 1870 and 1880, when he painted his *Moonlit Night* and *Looking at the Old Cottage*.

His talent and exceptional artistry are most apparent in his many portraits, especially those of the writers Tolstoy, Nekrasov and Shevchenko, of the sculptor Antokolsky and the painter Litovchenko.

His striking *Portrait of an Unknown Lady* occupies a place all of its own in his gallery of portraits. Who the enchanting beauty in this portrait is remains a mystery to this day. Repin insists that it was not an actual portrait because it is so dissimilar in style to the others Kramskoy painted. Conjecture is that the subject is the prototype of Anna Karenina, the heroine of Tolstoy's famous novel.

Kramskoy's abiding principle was artistic truth, a principle he followed throughout his life. He exerted a deep and lasting influence upon the generations of Russian painters who came after him. ★

Moonlit Night

Portrait of an Unknown Lady

FROM DREAM TO REALITY

The Twenty-second Congress of the Communist Party, held in Moscow the fall of 1961, was an event of prime importance for Soviet people and all those the world over who share the communist ideal. This congress was especially significant because it adopted a new Program for the Party, a plan for building a communist society in the Soviet Union.

The first Program, adopted at the Second Congress in 1903, set the Party the task of carrying out a proletarian revolution. In 1917 that task was accomplished and the world's first socialist country was born.

The task set by the second Program, adopted at the Eighth Party Congress in 1919, was to build a socialist society. Following uncharted paths, the Soviet people, guided by their Communist Party, carried through Lenin's plan for building socialism.

Now, in its new Program, the Communist Party has assumed a third great task, to build a communist society that will live by the principle, "From each according to his ability, to each according to his needs."

This article, the first in a series of three on communism, gives the historical origins of Marxist-Leninist thought and its application in socialist construction, the first stage of communism.

The second article will outline the tasks of the next 20-year period of communist construction for giving the country an abundance of consumer goods and the world's highest living standard.

The final article in the series will forecast the changes that will take place during the transition from socialism to communism—in government, social welfare, work and leisure, and in the cultural interests and the social and ethical attitudes of the individual.

COMMUNISM has a long and glorious history. It was cradled by the ancient dream of men for a social system that would bring them a happy life, a dream that even in the remote past sketched the communist ideal in outline—material equality, public ownership of the means of production, common work for the common good.

A century ago communism evolved from a dream into a science founded on a rigorous verification of the laws that govern social development. With communism a science, mankind could make the dream a reality. This scientific finding of Marx and Engels had a significance unequaled in the history of human thought.

In our day, communism is becoming a reality. The world's first state of workers and peasants, founded by Vladimir Lenin, has already built socialism. The Soviet people are now making the great historical change-over to communism, a society which proclaims Peace, Labor, Freedom, Equality, Fraternity and Happiness for all peoples of the earth.

Man has always cherished the hope of a brighter future and has fought and sacrificed for that hope. For thousands of years communism lived in folk epic and legend; later the utopias created by the great minds of their time gave voice and expression to the passionate hopes of millions.

In the ancient world men pictured in imagination a society where freedom, justice and equality, abundance and prosperity reigned. The legend of "The Golden Age" that once existed but then vanished forever, goes back to antiquity.

Centuries passed and one social system replaced another, but the majority of people remained destitute, still dreaming their dream of a better future. Thomas Münzer, leader of the German peasant revolt in the sixteenth century, was one of those who dreamed of creating a society without class differences, without rich and poor, without a state power hostile to the masses.

But many decades were to pass before thinkers were able to picture a society of abundance, scientifically authenticated, that would give every individual the opportunity for unlimited development.

Man's aspirations for a happy future were not born full blown. Like all other ideas, they grew out of the society he lived in. These hopes and dreams were the working man's reaction to a class society whose burdens he was always forced to shoulder. Abundance would not have been so ancient a dream of all people had mankind not suffered from poverty and hunger; the concept of freedom would not have spread so far had there been no oppression and enslavement; the ideal of peace would never have been conceived had humanity not experienced the horrors of war.

It was the wish to realize these ideals that prompted men to examine society, to try to understand its shortcomings and to envision a system that would bring a prosperous and a good life to all people.

Thomas More, the sixteenth century English philosopher and statesman, asserted that general equality and happiness are inconceivable so long as the right to private property exists, so long as wealth falls to the few and the majority are doomed to poverty.

In his *Utopia* he wrote of an imaginary island with a just society where property was owned in common, and work, done for the common good, produced a sufficient abundance so that the material wealth could be distributed according to need.

A century later the Italian philosopher Tommaso Campanella arrived at much the same conclusions. His famous *City of the Sun* was a picture of a people who had achieved abundance. "They have little interest in household goods and food since each of them obtains . . . everything he needs from the community . . . therefore they do not serve things, but things serve them."

The books of Thomas More and Tommaso Campanella depicted an ideal life. They were the first carefully thought-out plans for the organization of society on communist principles —equality and humanism.

After More and Campanella came other men who tried to see beyond the bounds of their own times, in which privation was, as it always had been, the lot of the great majority of people.

The nineteenth century British Utopian Socialist Robert Owen, a man far ahead of his own day, even worked out a practical plan for the transformation of society. He called for the creation of cooperatives—communities of free producers who would work communally and manage the communal economy together. Such communities, he reasoned, in which everything except personal articles was public property, would do away with class divisions and free society of its evils—the power of money, exploitation of the working people, poverty, crime and ignorance.

Owen's contemporaries, the French Utopian Socialists Charles Fourier and Henri Saint-Simon, also advocated the transition from capitalism to a more perfect social system, one reorganized on principles of justice.

Fourier was the ardent exponent of a "harmonious society" in which economic relations would be based on the "prevalence of shining truth." This just society of the future would be made up of producer-consumer cooperatives without hired labor. People would choose the work they were most disposed to, and work would thereby become a pleasure.

Saint-Simon and his followers saw the future society as a world-wide association of working people. As morality and

learning flowered, this association would take in all workers and organize production for the whole society. The relative position of people in this world association would "be determined by society in accord with their merits, and their compensation would be according to their work."

The great contribution of Utopian Socialism, particularly of the French Utopian Socialists, who were its outstanding exponents, was in keeping the dream of a just society alive and handing it down through the ages. The Utopian Socialists forecast with brilliant accuracy certain of the characteristics of the future society even though they had no understanding of the objective laws of social development. They did not see that the emerging revolutionary working class would be the only progressive force capable of rebuilding society along new lines. Nevertheless French Utopian Socialism became one of the sources of scientific socialism, Marxism. Besides Utopian Socialism, Marxism as a science creatively assimilated the greatest achievements of philosophic thought and bourgeois political economy.

The most important thinker of the pre-Marxian period was the German idealist philosopher Hegel. He conceived of social development as a continuous process in which the new was born out of the death of the old, a process of ascent from a lower to a higher phase. He proved that contradictions always give rise to movement. But Hegel did not follow his own reasoning to its logical conclusion—that human cognition and the historical process evolved endlessly. Moreover, he declared his teaching to be an absolute truth, beyond which social thought could not progress.

Hegel's great contribution was the dialectic method—the teaching that the clash of opposites, of contradictions, is the source of development. But he confined his dialectics to the past, did not carry the concept to the present or future. He was fearful of the conclusions that inevitably followed on his own teaching of contradictions as the motive force of social development. Karl Marx and Friedrich Engels took the Hegelian dialectic method and developed it creatively. This most important discovery of German classical philosophy became the second major source of scientific socialism.

The third source out of which scientific socialism developed was the writings of the English economists David Ricardo and Adam Smith. They analyzed the material conditions of social life and declared that labor was the basis of all public wealth. Their theory of value defined profit as the unpaid labor of hired workers. They were not able to reveal the essential exploitive nature of the relations between labor and capital, and the profound contradictions inherent in these relations. Nevertheless, theirs was the first attempt to define the private property system scientifically, a definition that involuntarily made them critics of that system.

Thus, as Lenin pointed out, the three sources of Marxism were French Utopian Socialism, German classical philosophy and English bourgeois political economy. And on this foundation Karl Marx and Friedrich Engels built Marxism, an integrated system of thought explaining the laws of social development.

Socialist theory directing the revolutionary movement of the working class became the great moving force for the development of society. Thus, by the mid-nineteenth century the abstract dream of happiness and a good life for every man had become possible of realization, and we have the beginning of a period of active struggle for socialism, its transformation from a utopia into a science, the merger of theory and practice.

In their famous *Communist Manifesto* Marx and Engels heralded the opening of this new era and wrote out for the whole world to see the major outlines of this coherent and comprehensive Marxist system. In the half-century following, they elaborated the Marxist philosophy, the Marxist political economy and the theory of scientific communism—a priceless store of knowledge of the objective laws governing the development of human society and nature.

Marx, besides his numerous works for newspapers and periodicals, wrote *The Class Struggles in France, 1848-1850, The Eighteenth Brumaire of Louis Bonaparte, A Critique of Political Economy, The Civil War in France, Critique of the Gotha Program* and his monumental *Capital*. In *Capital* Marx made a searching scientific analysis of the laws that govern the development of capitalist society in its premonopoly stage and exposed its inherent contradictions. He showed that the basis of capitalist production was profit, the production of surplus value; that as it developed, capitalism inevitably gave birth to its own gravedigger, the proletariat; and that the social character of modern production and the private acquisition of the products of labor gave rise to the contradictions of capitalism.

Engels, Marx's friend and coworker, was the author of *Socialism, Utopian and Scientific; Anti-Dühring; The Origin of the Family, Private Property and the State; Ludwig Feuerbach and the End of Classic German Philosophy*, and many other works which he wrote alone or with Marx.

These two founders of communism arrived at the irrefutable conclusion that the social system based on exploitation must be replaced by a society of free labor, without oppressors or oppressed. Philosophers had only explained the world in their various ways, Marx declared, but the thing was to change it.

They answered the questions that thinkers before them had only been able to pose: What shape was the ideal society to take? How was it to be achieved? Marxism proved that the new social order would not result from pious hopes and good intentions but would be a logical outcome of social development. It would come just as inevitably as feudalism, in its time, had come to replace the slave-owning system, and as capitalism had come to replace feudalism.

With brilliant historic insight Marx predicted the shape of the future: "In a higher phase of communist society, after the enslaving subordination of individuals under division of labor, and therewith also the antithesis between mental and physical labor, has vanished; after labor, from a mere means of life, has itself become the prime necessity of life; after the productive forces have also increased with the all-round development of the individual and all the springs of cooperative wealth flow more abundantly—only then can . . . society inscribe on its banners: From each according to his ability, to each according to his needs." On becoming a science, communism acquired a mighty force. Its principles, rooted in reality, and the clarity of its aim gave confidence and courage to all who participated in the revolutionary movement.

Marxism is essentially the science of the practical activity of the masses of people. It is therefore in constant process of development, adding and absorbing the experience of struggle and the achievements of human thought. The science of communism is not hidebound by the theories formulated in the classics of Marxism-Leninism. As communism develops and is implemented in practice, the builders of the new society have a more and more valid scientific basis for their activities.

One of the characteristic features of communism is that it is not a science for the "elect," but for all conscious people, for the broad masses. Fighters for communism are not muddle-headed fanatics. Theirs is not blind obedience based on faith. They are thinking people whose judgments derive from a knowledge of the social environment they live in and an understanding of its laws of growth and development. The strength of communism lies in the fact that it can and does arm millions of people with this knowledge, the reason its ideas have become a powerful force changing the world.

No country has yet attained the highest stage of the new society—communism—but in a third of the world one after another of the communist concepts are being put into practice. If we were to ask the plain people of all nations what the world

today needs most, they would have many different answers, but all these various answers would crystallize into:

—a future without hostility or war;

—a future without poverty or forced labor;

—a future free from social injustice and from political, national, racial or any other kind of oppression;

—a future in which every individual would be able to enjoy life's pleasures, to develop all his inherent talents and use them in free and creative work;

—a future in which relations between people would be governed by mutual respect, brotherhood and cooperation.

These are the ideals of communism. Their strength and power derives from the fact that they are the answer to man's great dream, that they embody the hopes and aspirations of all people.

Marx and Engels did not live to see their teachings become the way of life for millions. The era of transition from capitalism to socialism and communism will always be associated with Lenin. He applied the Marxist teachings to the new historical period, developed the communist theory in practice.

Marx and Engels had worked out the general outline of the transition from capitalism to socialism and communism. Lenin not only filled in the outline but further developed its implications for the contemporary stage of capitalism. Even before the Great October Socialist Revolution of 1917 Lenin had demonstrated that it would be possible to establish socialism in a few countries of the capitalist world, or even in one country. He resolved the most critical problems of a socialist economy and, by disclosing the laws of the transitional period from capitalism to socialism, determined the concrete ways of building a socialist society.

One of Lenin's great postrevolutionary achievements was his plan for transforming backward Russia into an advanced world power. His plan for socialist construction was based on industrialization, agricultural cooperatives and the cultural revolution.

The Communist Party, which Lenin founded and to which he dedicated his entire life, led the people during the years of revolution and, after its triumph, in the great task of constructing the new life.

Marx, Engels and Lenin had all underscored their belief that a nonexploitive society organized for use and not for profit would have enormous creative potentialities for engineering and scientific development, for harnessing the great natural forces—all for the benefit of the people.

Time and fact confirmed this prediction. The world had never seen such progress in every area of living as began with the establishment of Soviet power in Russia. The once backward country, grown into an industrial giant, registered such tremendous achievements in science, education, engineering, medicine and art that even the opponents of socialism could not argue away their world-wide significance.

The Soviet Union was the first country in history to build socialism—the first stage of a communist society. Now it is building communism. The plan is outlined in the new Program adopted by the Twenty-second Congress of the Communist Party.

Nikita Khrushchev has noted that the primary task of communist construction is the production of material values that make for a better life for the people. Communist principles can be realized only in a society of abundance, therefore the prime emphasis in the Program on the production of more metal, machines, oil, electricity, grain, butter, meat, clothes, footwear and housing.

The day when man's ancient dream of a society of justice and abundance will be realized is no longer far off.

The founders of Marxism-Leninism had but a single aim—man's welfare. This goal also guided those who applied their teachings. All of Soviet history is motivated by the same aim—to build an economy that will produce an abundance of material goods, systematically cut working hours and raise wages, provide larger pensions and more benefits, budget greater sums for cultural and welfare needs, all of which will assure every member of society the widest opportunities for developing his capacities.

The plan fulfilled will give the Soviet people unexampled possibilities for satisfying the most diverse wants. Science and technology, as the eminent British scholar John D. Bernal has affirmed, will put at every man's disposal more services and comforts than the Pharaohs of Egypt enjoyed, more wealth than the silver mines of the New World gave to Spain.

Communists are not magicians. They cannot create a flowing abundance today by waving a magic wand where only yesterday there was destitution. But they have proved beyond a shadow of doubt that the new social system for which they fought, from its very first day in power, brought people a better life than they had before and the unqualified assurance that their lives tomorrow will be still better, still richer.

Communism has already proved its superiority in many decisive areas. It has demonstrated, for example, that its economy can develop without crises and at rates no other system can match, an assurance of ever growing prosperity for the people.

Among critics of communism there are inevitably those who look down their noses at the "base" material needs with which Communists are so concerned, to the exclusion, they say, of the "higher human values." But these are people who have no interest in, and do not wish to be bothered with, the vital needs and aspirations of the millions in all countries to whom such "base" material values as food, clothing, shelter and health are life-and-death matters. And that not only in the poor, economically backward countries!

Communism, once realized, opens up boundless opportunities for the solution of problems connected with human relations and human values, whether they pertain to culture or ethics, the family or the community. Marx emphasized that the genuine wealth of man is the diversity of his needs, his ability to enjoy works of culture and art, his capacity for spiritual development.

The culture of the socialist world takes in the best of past human thought and creates new cultural values of its own. Its ethical standards do not degenerate, but are continually strengthened by the new relations between people at work, at home and in the community.

However severely Communists criticize their own shortcomings, there is no denying the fact that the new system has shown in practice that it not only brings material prosperity but that it builds men spiritually and culturally.

Communism has proved in practice that it can more than measure up to the challenge of the atomic age, the age of automation, everything that is known as the second technical revolution. Scientific and technological progress only strengthens the new system, accelerates its growth, brings the final goals closer.

Communism has also demonstrated in practice that it holds the key to the solution of the problem of relations between nations, both within one country and in the international sphere. The experience of the multinational socialist countries and of the whole world socialist system has shown that the peoples need not live in enmity or suffer from national oppression. Equality, mutual respect, fraternal aid—this is not a distant hope but today's reality.

Communism, once achieved, is democracy in the fullest sense. In the building, it draws millions of ordinary people into the management of the state and society. As it grows, the new system perfects its state apparatus. More and more people are directly involved in deciding affairs of state, to the point where government by a state apparatus is replaced by public self-government. That is the communist way.

It is perfectly obvious that the strength which the implementation of its ideals lends to communism will steadily grow with the successes of the world socialist system. Hence the firm conviction that in the peaceful competition with capitalism, the future lies with socialism, that its ideas will sooner or later draw all working mankind to its side. That is why Marxists stress repeatedly that communism does not have to be exported, that it takes hold of the masses as the result of internal economic and social processes in each country in the course of the struggle of its people for their social and human rights.

We began with communism as an ancient dream. Historically, that dream is as distant from the scientific reality of communism as the flying carpet of the fairy tale is from our present rocket cosmonautics. It took many generations and innumerable sacrifices for the dream to become real. But in life these aspects of communism—the dream, science, reality—will always exist side by side.

Communism cannot do without an inspiring ideal, a dream that stirs the heart and strengthens the will. Communism would have forever remained the cause of the few had not the ideal and the theory been reinforced by reality. It is the reality that is winning over great numbers of working people.

The union of these three aspects makes communism the world-wide force it is, advancing invincibly toward its great goal—a society that embodies mankind's dream of a full, rich and happy life. ★

COLLEGE APPLICANTS

BY VLADIMIR ILLESH
PHOTOS BY LEONID BERGOLTSEV

NOWADAYS you need a map when listing the Soviet Union's university cities, there are so many. Every regional center has at least one institution of higher learning, and every major city—Moscow, Vilnius, Kiev, Voronezh, Khabarovsk, Tashkent, Dushanbe, Tbilisi, Ashkhabad, Alma-Ata, Novosibirsk, Irkutsk, etc., etc.—is a university seat.

At the summer's end a million and a half applicants assemble in these cities and towns—247 in all—for entrance examinations. Most of these young men and women have already decided on their future professions and the school that will give them the best preparation.

More than half come to the exams with two or three years of work behind them in factories and laboratories, on construction sites and coltive farms—sufficient time for making the correct choice. The emphasis on polytechnical education in the secondary schools the past few years has also helped students discover their inclinations earlier.

The entrance exams are competitive since there are generally two applicants for every vacancy in Soviet higher schools. Competition is keener for university entrance, especially in the mathematics, physics and chemistry departments, and for all civil engineering schools on the college level. There are somewhat fewer applicants for the liberal arts and teacher training colleges.

This year some 300,000 young people will be admitted to the scores of institutes and universities. Once they have their student cards, they soon forget all the worries and doubts that have plagued them for months and look forward to their new life.

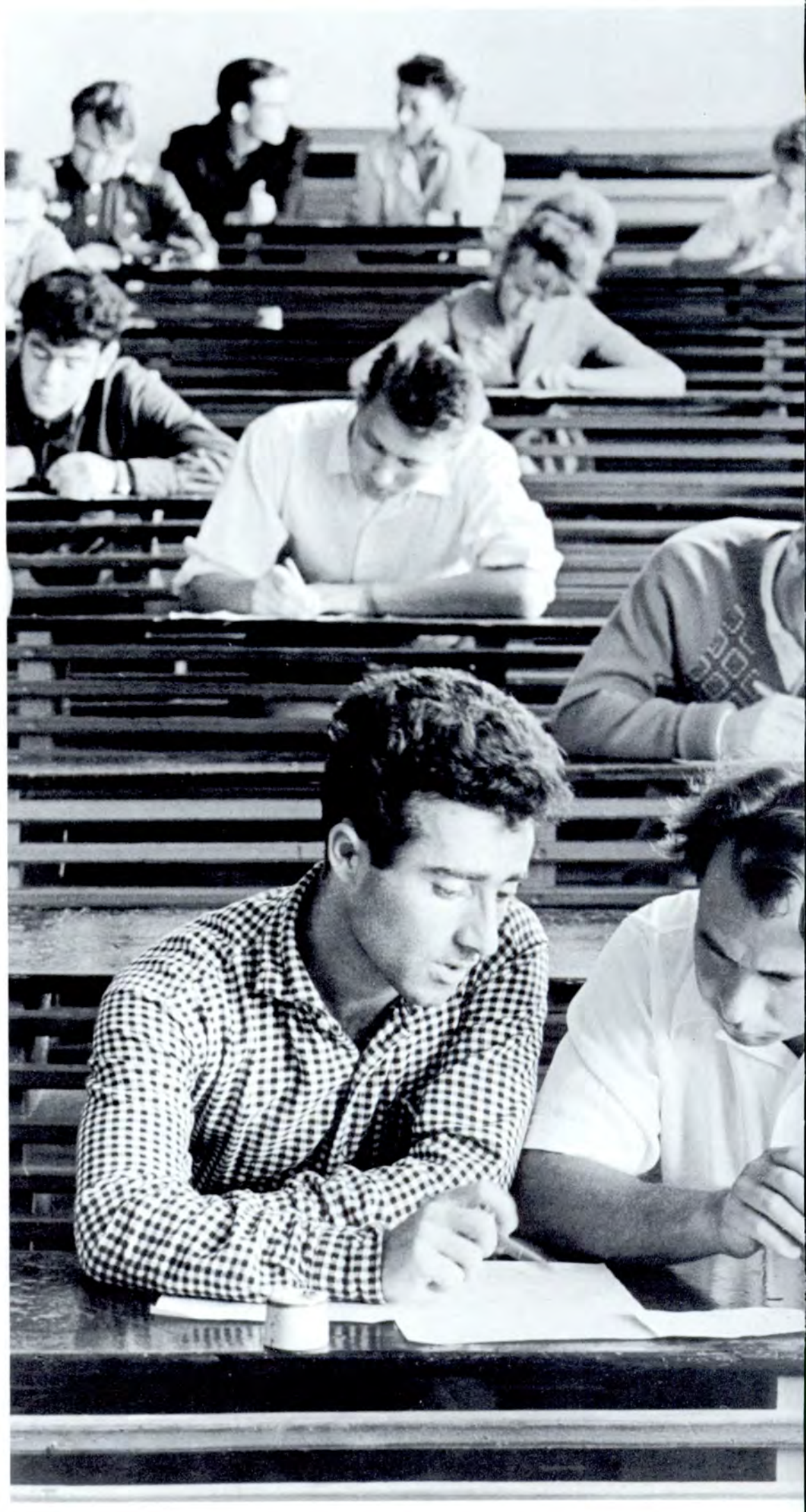
This first wave of applicants is followed by a second and larger wave, secondary school graduates who will be combining work and study in the evening and correspondence divisions of institutions of higher learning. Here entrance exams are also required, but they are noncompetitive for the most part. Their purpose is largely to determine how much preparation the applicant has for further education.

In this group we have not only the current crop of secondary school graduates but many thousands of adults who for one reason or another—the war, postwar adjustment difficulties, etc.—were unable to go on with their studies.

Late this summer 1.5 million young people will take examinations for admission to higher schools.

Exams for full-time study are competitive since there are two applicants for every vacancy.

The college evening and correspondence divisions also require entrance exams, but these are noncompetitive.



Preparing for the next test. Technical students take exams in the sciences, the others in the humanities.

The evening and correspondence divisions make it possible to double and even triple the number of students at those institutions. The work-study arrangement makes for a fusion of theory and actual job practice. Students bring to class for solution many of the problems they encounter on the job. After six years of study, the graduates are not only first-class specialists but good researchers.

Needless to say, the combination of work and study is not easy, and for that reason working students are allowed such special privileges as an extra four-week paid leave in addition to their regular annual vacation to prepare for end-term examinations.

Seniors in the evening divisions are granted an additional ten-day leave and an extra day off each week, and correspondence students a four-month leave—all this with full pay—to work on their graduation thesis or project. In the event that a student has to travel to take his examination, all his expenses are covered. There are a few more minor, but helpful, privileges.

As many as 20 to 30 per cent of the personnel of some large industrial plants are enrolled in evening and correspondence colleges. So that the plants are not left short-handed at the regular exam periods, working students are permitted to take their exams any time during the semester.

These various privileges have done much to stimulate college study. Presently there are about 1.3 million students enrolled in evening and correspondence colleges, more than in the full-time day divisions. In the near future the proportion is expected to rise as high as 80 per cent of the total.

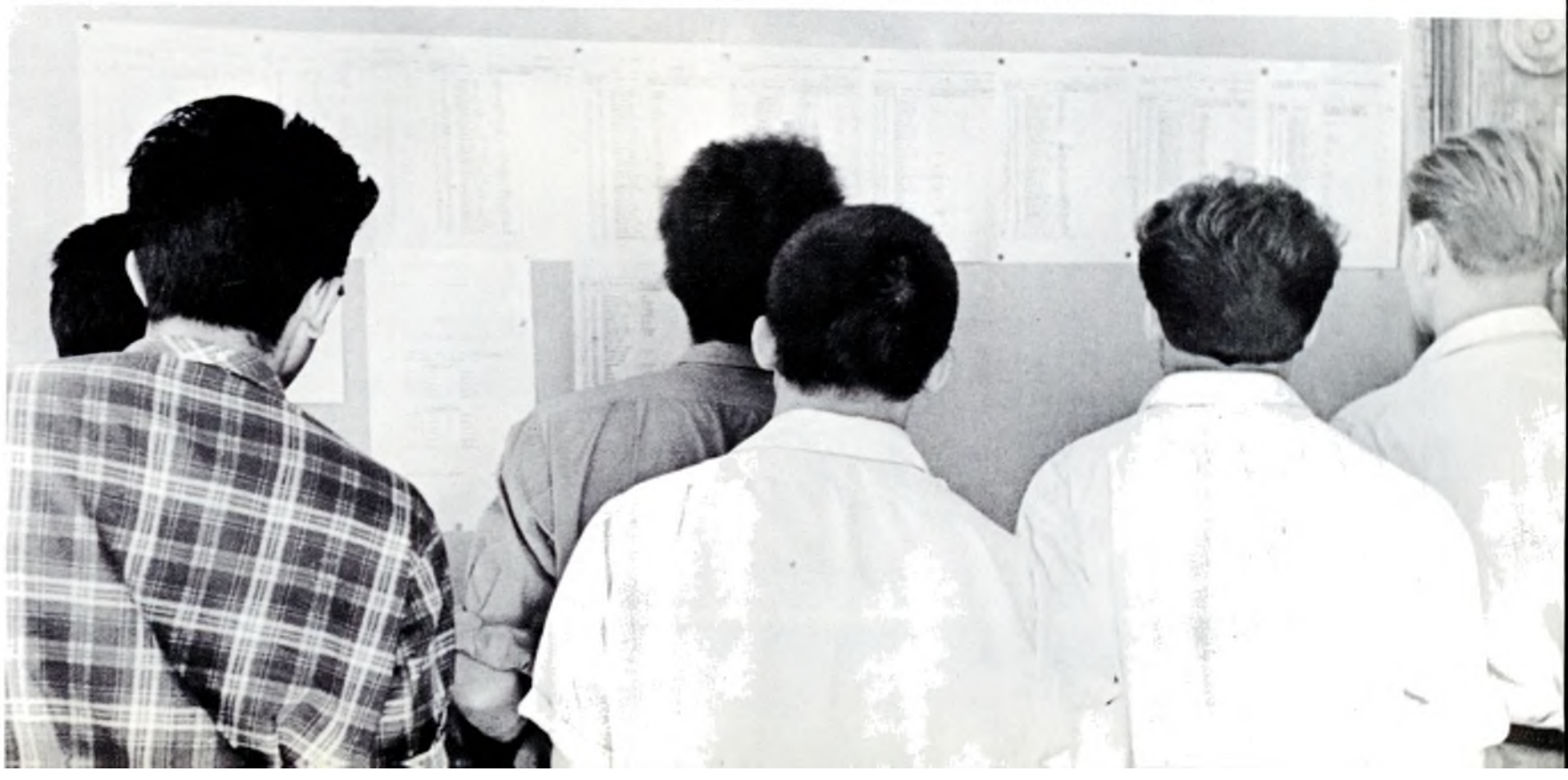
At the Third Congress of the Young Communist League of the Soviet Union, held shortly after the country was founded, Lenin declared that one could become a Communist only after he had enriched his memory with the knowledge of all the treasures created by mankind. That pronouncement has resulted in the veritable passion for education that so many foreign visitors to our country comment upon.

This year's total number of students at Soviet institutes, colleges and universities is higher than in all the Western countries of Europe combined. By 1965, the end of the seven-year-plan period, it will be increased by half again; by the end of the 20-year period mapped out by the Party's new program for communist construction, it will have grown to eight million, more than the total college enrollment of the Western world today.

Reporting home after the first exam. How was it? Tougher than he expected, but he thinks he made it.

This scene repeats itself in 247 Soviet towns and cities where colleges are located—that eternal wait for exam lists to be posted.

Some 300,000 aspiring full-time students will be accepted at institutes and universities this fall. Competition is especially keen in the math and science divisions and the engineering schools, somewhat less so for teaching and the liberal arts.



As Aelita (right) in a film about Mars.

In The Mosselprom Cigarette Girl.

TRIBUTE TO A FILM DIRECTOR

BY GRIGORI ROSHAL
FILM DIRECTOR, PEOPLE'S ARTIST OF THE RUSSIAN FEDERATION

THIS IS A TRIBUTE I wish to pay to Yulia Solntseva, a fellow film director. Over the years I have known her in two other roles—as a fine actress and as the wife of Alexander Dovzhenko, one of the greatest men in Soviet film history.

I saw her on the screen, before I met her personally, in a brilliant portrayal of Aelita, the star role in a screen adaptation by Yakov Protazanov of Alexei Tolstoy's story of the same name. It was a part that needed imagination and great physical beauty, and she had both.

Her gifts and special charm were eminently suited for the role of the mysterious girl living on a distant planet. She has a rare and wonderful combination of femininity and strength of will that has been her distinguishing characteristic throughout a long film career.

This "cosmic" picture launched Yulia Solntseva. In her next, *The Mosselprom Cigarette Girl*, she portrayed an ordinary young girl who finds herself by chance in a film studio and happily discovers that acting is her true calling.

It was years ago that Yulia and I met as actress and director. This was in 1929, when I was making *Two Women*. Working with Solntseva was a wonderful experience. Intellect, passion, understanding and tenderness were revealed in the character she played with sincerity and true simplicity.

She appeared in only one picture after that, *Land*, directed by her husband, in which she played a minor role. She gave up acting for directing, became a partner of Alexander Dovzhenko in their work as well, helping him to project his ideas, to translate into cinematic terms his love for the beauty of his native Ukraine.

Dovzhenko's inner world was an extraordinarily rich and beautiful one in which were blended the reflections of a philosopher with the perception and compassion of a poet deeply aware of the thoughts, feelings and hopes of

Flaming Years, *one of the films she directed.*

his fellow men. His art was one of deep passion and tender emotion, precise in detail yet boundless in scope. Deeply in love with the Ukraine—its quiet villages, blue rivers, its myriad golden sunflowers—Dovzhenko was enchanted by the wondrous changes taking place there and inspired his wife with the same feeling.

For nearly 30 years they worked together, sharing success and failure. After his death Yulia Solntseva did not lose herself in despair but carried the work he had begun to new heights and greater glories.

"I love to sow," says one of the characters in a film of Solntseva's. "I love to plow, to mow, to thresh. But most of all, I love to sow, to plant, to bring forth new growth." These words could well apply to herself. Out of the seed sown by Alexander Dovzhenko, she has produced two pictures of great talent—*Poem of the Sea* and *Flaming Years*. (*Flaming Years* was reviewed in the July 1961 issue of this magazine—Ed.) Every shot in these epic films breathes his spirit, reflects his creative thinking.

Seeing these pictures, one marvels that a woman could so powerfully conceive and direct the armies into battle, command the squadrons of aircraft and tanks, frame the seemingly boundless vistas.

She is now planning to produce *The Enchanted Desna*, from a script by Dovzhenko, one of his most sensitive screen plays.

Flaming Years won the prize for the best direction at the 1961 International Film Festival at Cannes and an award was given to Yulia Solntseva.

She has now been recommended for the Lenin Prize as a producer of unusual artistry and scope who, as Dovzhenko would have said, can wield a sizable brush for a large canvas and a small one for delineating character. *Flaming Years* opens up new possibilities for the wide-screen picture. It is an antiwar film of epic proportions, a tribute to man's nobility, an important contribution to the struggle for peace. ★

VACATION SPOTS ON STAMPS

BY ILYA ZBARSKY

SOVIET WORKERS spend their summer vacation in as many and as different ways as do people anywhere in the world. Some like to travel; some climb mountains, track game, spend long restful hours with rod in hand; some like the fun and sociality of a resort on the sunny Black Sea.

Many colorful Soviet postage stamps reproduce natural vacation sites—white beaches, steep cliffs, meandering rivers—and the palaces and fine resort hotels that the state has placed at the disposal of its citizens for rest and recreation.

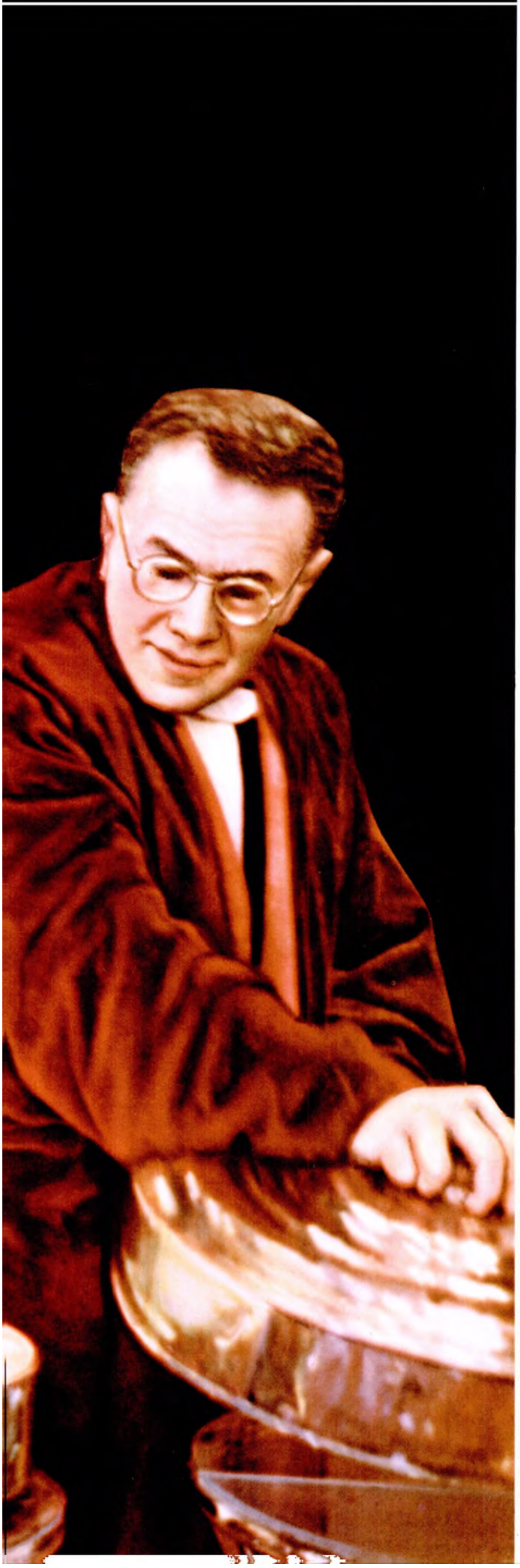
Stamps with views of the Crimea and the Caucasus, the two most favored summer and fall resort areas, were issued in 1938. The brown 5-kopeck stamp shows Yalta, world-famous resort town. The black-brown 15-kopeck stamp pictures the Swallow's Nest castle, a tourist sight situated on the edge of a high cliff above the sea. The red 10-kopeck and the dark gray 50-kopeck show the characteristic architecture of Sochi sanatoriums.

The Caucasus, noted for its medicinal waters, is depicted in several stamps. The Hot Water Spring, crowned with the sculptured figure of an eagle, is shown on a 40-kopeck stamp. A 10-kopeck stamp pictures scenic Lake Ritsa, high in the mountains, a favorite tourist spot.

Passenger ships, many of them floating resorts, sail the Black Sea. A big diesel cruise ship, plying between Odessa and Batumi, is shown on a 40-kopeck stamp.

A stamp showing a Young Pioneer blowing a bugle in a seaside camp is representative of many picturing children on vacation. Several are of Artek in the Crimea, one of the oldest and most popular Pioneer camps. ★

KIO
KIO



By VLADIMIR POLYAKOV

PHOTOS BY ANATOLI GARANIN

I HAD never been one to believe in miracles, but after seeing People's Artist of the Russian Republic Kio go through his incredible performance at the circus, I revised my views on the subject.

I now believe in miracles, and so do all the other thousands of spectators who pack the house every time Kio is billed with the circus. They buy tickets long in advance. His show may run for months, but it is always a sellout. That was the case in London, Bucharest, Cairo, Damascus and Copenhagen, not to mention Tokyo, Fukuoka, Sapporo, Nagano, and other cities of Japan where he put on three shows daily for crowds as large as 10,000.

Who is Kio? To look at him, an ordinary man, a little over medium height, without the slightest aura of mystery. The band strikes up, he comes out into the ring in a well-tailored tuxedo, a smile on his face. You look at him and suddenly he is not there—vanished!

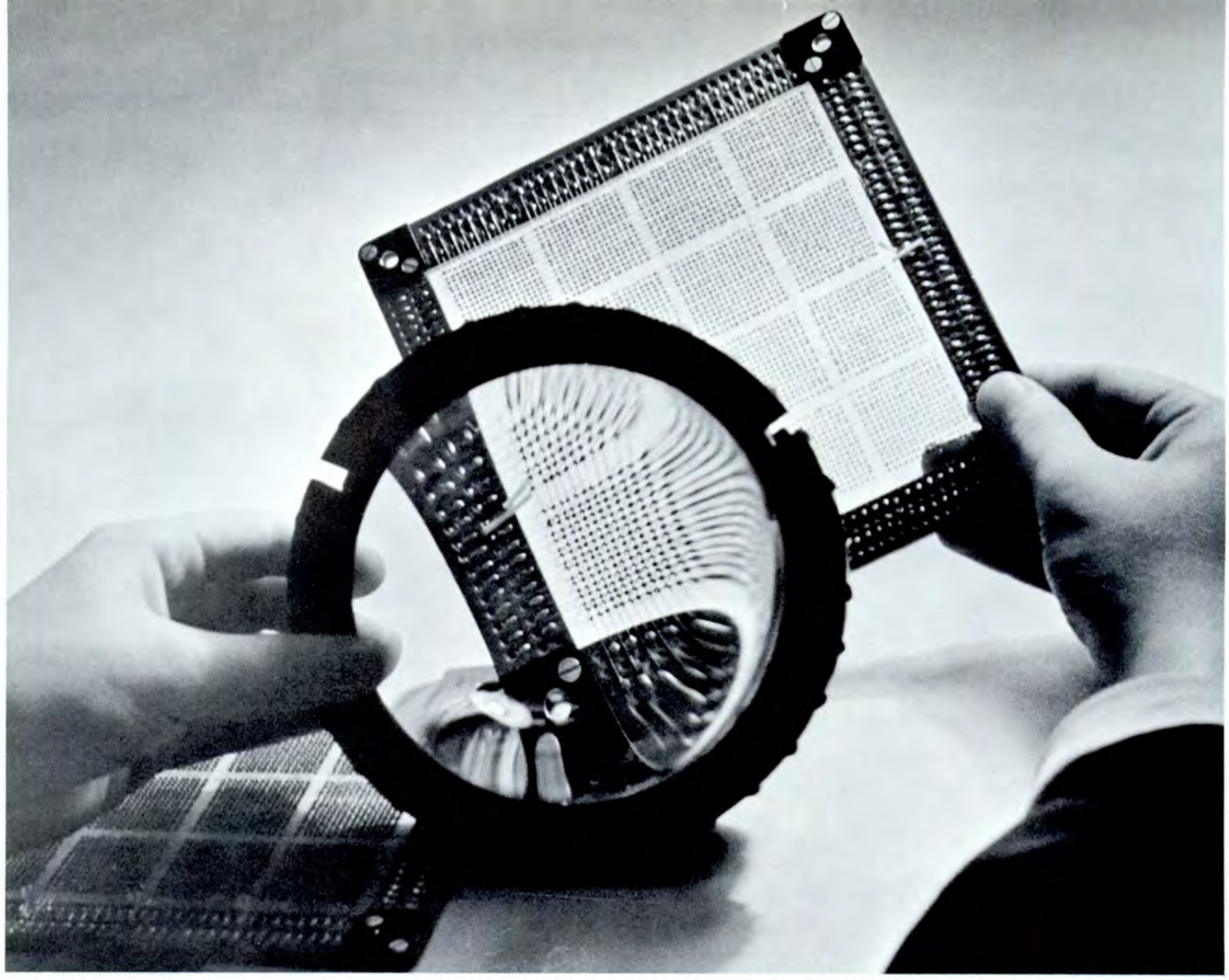
Is it an invisible cap or some other such fictional magic of the kind H. G. Wells described so artfully? Nothing of the kind. This is an actor's sorcery plus some trick devices designed by Soviet engineer-magicians from sketches Kio himself made.

There is not much time to rack your brains over his disappearance, for there is Kio in the top balcony going through his bewildering tricks. He's a confirmed materialist himself, but he has his audience believing that an object has really disappeared, and a minute later he'll make it reappear in any form and quantity he wishes. Walls, glass and metal simply do not exist for him. He turns water into fire and fire into water with the greatest ease. In a split second he transforms a roaring Berber lion into a lovely woman —in fact, into his wife Yevgenia. Happily, he does not turn her back into a lion.

Kio has 50 assistants, every one a loyal guardian of his secrets. For the hour that the magician and his sons Igor and Emil are in the ring, the audience never stops gaping.

Invariably there are two or three spectators who know, or think they know, how every trick is worked and are only too eager to share the secret with all and sundry. I feel sorry for these people. First, because they really don't know the answer. And second, because they are so busy analyzing, they miss the amazingly clever exhibition of ingenuity and dexterity. Everyone else finds Kio's performances—done with humor and even satire—wonderfully amusing and exciting. They believe in every one of his miracles, admire his artistry and the smooth dexterity of the young women who assist him. Like me, they do not worry themselves about how the miracles are done, content to let that be Kio's secret, the secret of the magical entertainment he creates.

★



An experimental cybernetics course is now being taught in some of the secondary schools. Senior students study the fundamentals of the binary system.

BY YURI BAGRYANSKY AND ANATOLI RUSSOV

HIGH SCHOOL CYBERNETICS

ACADEMICIAN A. Dorodnitsin writes in a *Pravda* article headed "Man's Electronic Assistant," "Ten years from now we can expect electronic computers to be as common as adding machines and slide rules are today." He goes on to say, "We are now experimenting with high school classes in electronic computer operation. I am certain that the fundamentals of machine mathematics will soon be a required course in all our secondary schools."

The academician's statement prompted us to visit Moscow School No. 2, where cybernetics is taught right along with literature, geography, language and other traditional subjects. Presently there are four pilot classes for ninth-year students, and three for tenth-year. The latter will be studying it in their eleventh year, too.

Our first question, directed to the school principal, V. Ovchinnikov, had to do with teaching and equipment.

The initial idea of teaching cybernetics to high school students, he explained, came from the USSR Academy of Sciences' Institute of Precision Mechanics and Computer Technology. The institute supplied the teachers for both theoretical and practical sessions, as well as all the equipment—oscillographs, standard signals oscillators, television sets and radio tubes.

We asked the instructors, "Is the experiment a success, do you think?"

"Yes," they told us, "very much so." The boys and girls are apparently making good progress in the theoretical material—binary calculus, fundamentals of electronics, etc.—and they like the laboratory work.

Radio assembly teacher Albina Yeremenko—she herself is studying electronic computer theory in the evening division of the Institute of Economics—showed us the laboratory work her pupils were doing. The youngsters are so interested and eager that they dive into experiments that are over their heads. One impatient lad assembled a component and soldered the wrong connections, with rather curious results.

We next tried to find out whether the students were theory-conscious.

Tenth-grader Natasha Nikulina gave a decided "yes" answer to the question. She said, "I got sick shortly after school started and missed several of the lessons in theory. I remember coming back to school and trying to make out a diagram one of the girls had drawn on the blackboard. I had no idea what it was all about. And at the lab session, I missed out too, naturally. I didn't know where certain parts went. I had to put in a lot of hard work to catch up. All of us in the class are now radio assembly mechanics, first category."

We put this question to V. Bardizh, who heads the institute's magnetic elements laboratory: "Is the idea behind these experimental classes to train skilled computer operators?"

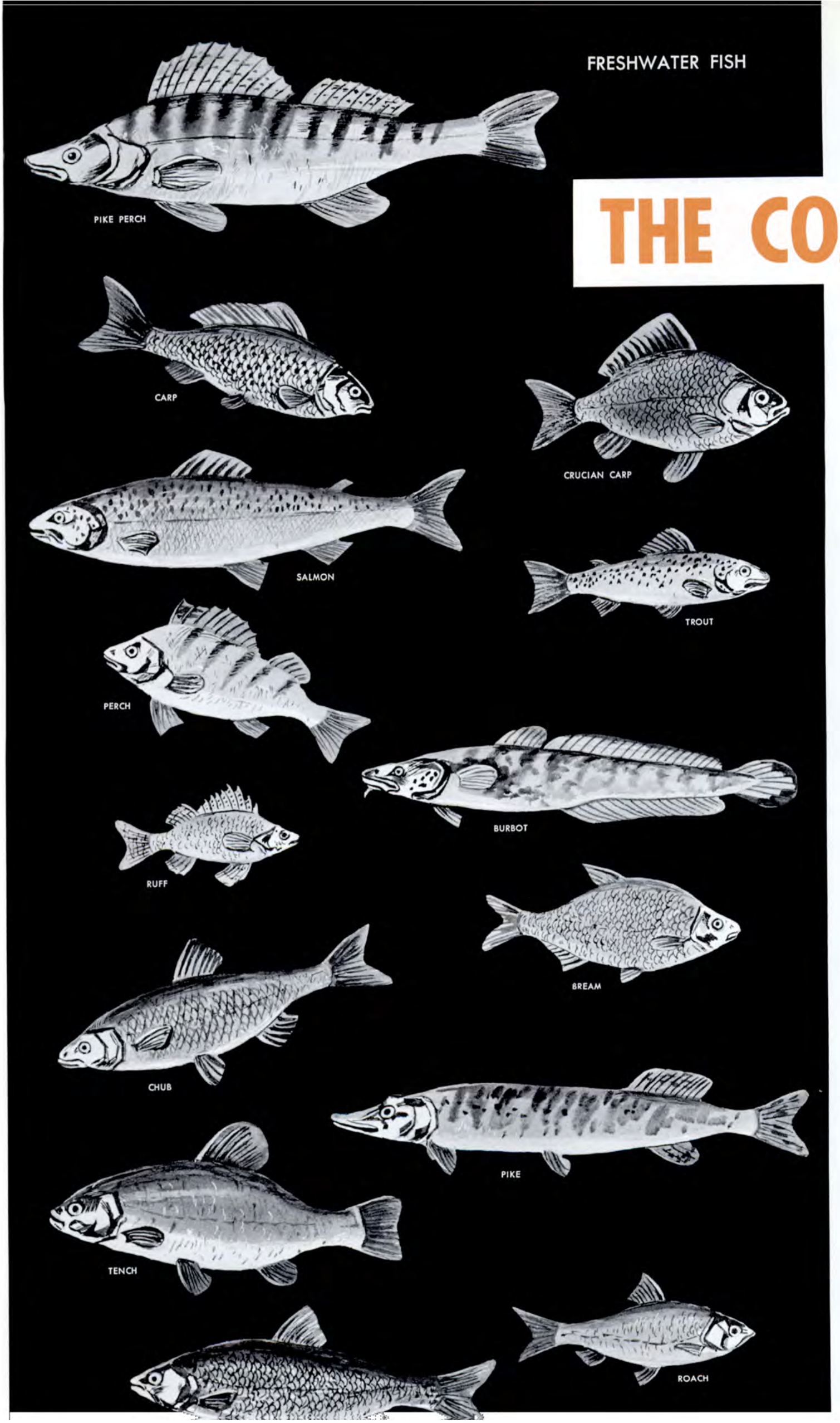
"Partly," he explained. "When we started out, we gave the students obsolete models to assemble. But they lost interest quickly because they saw no point in the work. Now that we ask them to make and test parts that the institute really needs and uses, they feel altogether different about it. We regard the school as a branch of the institute that will provide us with energetic and highly skilled workers."

That is one angle of the experiment. But even more important is the fact that young people come to regard cybernetics and electronics not as abstract concepts but as important tools for daily living. No matter what trade or profession they subsequently enter, they will have acquired a better understanding of the place science has in today's world and the opportunities it offers.

The Precision Mechanics and Computer Technology Institute provides teachers.

A lab session in Moscow School No. 2 for repairing simple electronic devices.

In a comparatively short time the students become sufficiently adept at wiring electronic equipment to qualify for jobs at research and computer centers.


FRESHWATER FISH
PIKE PERCH
CARP
CRUCIAN CARP
SALMON
TROUT
PERCH
BURBOT
RUFF
BREAM
CHUB
PIKE
TENCH
ROACH

THE COM

PLETE RUSSIAN ANGLER

BY DMITRI SAMARIN

NCE that benign fever called angling strikes you, it holds on ght. Few men escape it once they've ooked their first fish. Your catch may ot be much to look at—scrawny and ndersized—but it's yours. No matter our age, sex, occupation or social atus, there is nothing to compare ith the feeling of quiet exultation as ou pull in your first fish. Of course it always good for a story, if nothing se, but the fishing itself does things people.

Except for ponds in state preserves nd fish hatcheries that are assigned special piscicultural organizations, eople may fish all waters in the oviet Union without charge. The atch must be for one's own use, not r sale.

For the preservation and propaga- on of fish, special laws of the fferent republics and regions estab- sh bag and size limits. They also eclare which varieties may not be shed, either periodically or perma- ently.

Now let's make a cruise of the fish- g waters. The lakes and rivers in e North abound with salmon, bull- out, whitefish and umber. Anglers avel thousands of miles for northern in or fly fishing.

In the rivers of the Altai Territory d Transbaikal we have white sal- on and salmon trout that run as gh as 135-155 pounds. I would say at the excitement of a spoon-bait ttle with one of these giants com- res favorably with a tiger or bear nt.

The fish population of the central lt of the European part of the viet Union is most varied—zander, ke, sterlet, sheatfish, bream, ide, rp, perch, roach, tench, burbot, ce, gudgeon, ruff, bleak, and lots re. For the southern areas add veral species of carp and barbel to e list; for the Baltic Republics add l; and for Central Asia add various rp species. The western and eastern rts of the country are also hand- mely stocked.

nglers vary in inclination and habits about as much as fish do in ecies. The majority prefer surface hing. The noted Soviet writer Kon- ntin Paustovsky, who is of this per- asion, describes surface anglers in se lyric terms, "contemplators, ets. . . ."

Among them we have the "bream folk," serene people who prop several rods with signal bells attached in a cozy scenic spot in their favorite pools and wait it out placidly. Big bream do not bite often, but when they do, it is sheer and unadulterated bliss for the confirmed "breamer."

Then we have the adherents of bottom fishing. These folk speak lovingly of quiet nights by the water, campfires, the traditional Russian fish soup *ukha*, tea brewed black as tar, the heavenly tinkle that betokens a bite.

Hand fishers are a more energetic type. They use bait-hooks that float downstream close to the bottom. You make a cast with the bait going the full end of the line, pull in slowly and then cast again. Almost like work, with the rod in hand all the time, until you get a bite, then the work is all forgotten.

Spin-fishing enthusiasts are a convert breed, for the most part former surface fishers lured by the promise of bigger catch. For many of them the promise never is fulfilled, but they are not any the less hopeful or leisurely. These fidgety folk will run for miles along a river bank and make hundreds of casts on the dim chance that two or three "tails" (small pike) or small perch will bite. When they do, the game is very much worth the candle.

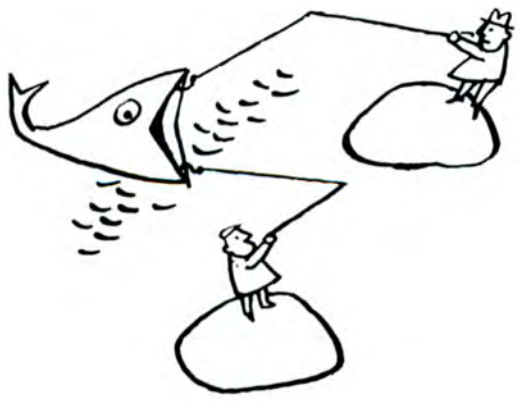
Most anglers are eclectic. They try every trick and every method, depending on season and time of day, the condition of the pool, the peculiar tastes and habits of the fish they are after, and their own private hunches.

Way back in antiquity the fishermen of the northern lakes worked out an intriguing method of baiting fish with tackle called *ryukha* —30 to 50 feet of strong line with a float, sinker and big hook attached, wound on a wooden block that resembles a hand grenade. The angler, in a boat, hooks on live bait, drops it close to the bottom, wedges the line into a slit in the wooden part of the *ryukha* and lets the gear float with the current or the wind. When the fish strikes, it pulls the line from the slit, and as it runs with the bait as much line as the fish needs is easily unrolled from the wooden block.

Present-day anglers have taken over the method their forefathers devised almost as is. All they have done

A terrific story in the making, even if it gets away, and a photo to prove it.

Judges in a Moscow angler's contest weigh the catch.



Soviet anglers come in all ages and sizes.

Could be bigger, this pike, but it was fun to hook.

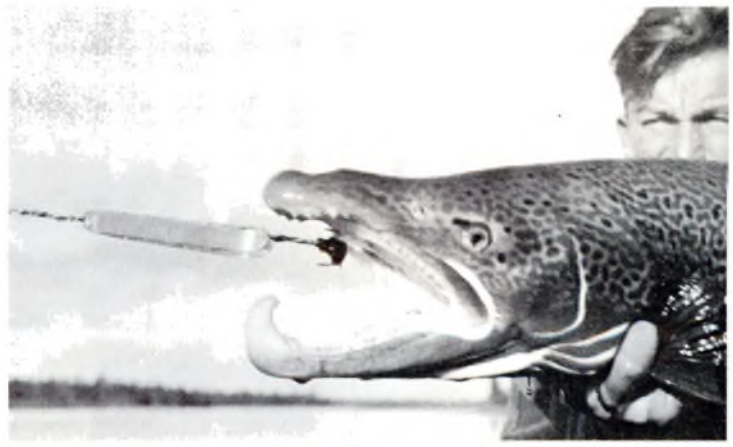
is to substitute for the primitive *ryukha,* which is not very visible in the water, a small disk made of wood, cork, or plastic about 5-6 inches in diameter and ¾-1 inch thick, with a groove around it to hold the reserve line. One side of the disk is painted red or orange, the other white. A round stick 6-8 inches long with one rounded end and one pointed end and an eyelet in the side is placed through a hole in the center of the disk. The round end is even with the white side, and the sharp end projects above the red side. The line coming from the groove in the disk passes through the eyelet and is dropped—with live bait on the hook and a sinker—into the water. The disk floats red side up, and when the fish bites, it turns over. You get big fish with the *ryukha,* mostly zander pike, perch and, less frequently, sheatfish and burbot.

Another old Russian angling trick is baiting with a bobbing spoon. In the old days it was used mostly for ice fishing, but later practice proved that it is no less effective for the open water, especially in the fall. The gear is simple—a short, stiff rod, preferably with a small reel; a line of medium thickness; and a spoon with a single or free-hanging triple hook. The spoon is raised from the bottom by swinging the rod rhythmically, alternating with short stops, letting it drop freely almost to the bottom, then raising it again with rhythmic swing. Repeat the whole cycle till the fish bites. Simple, relaxing and even successful.

Fishing with a *mormyshka* — a streamlined bit of lead, tin, silver, brass or copper with a small hook welded to it—resembles spoon-baiting somewhat. There was an item on *mormyshka* fishing in the January issue of *USSR;* this is additional data on the subject.

In recent years anglers have been using *mormyshkas* without bait. With the right tackle, skill, and a little luck, the fish bite. The tackle must be light and very sensitive—a rod 8-10 inches long with a pliant, elastic tip; a very thin (.004-inch) line; and a tiny light-colored *mormyshka* shaped like a ball. Instead of the usual motion, in *mormyshka* fishing you use a series of short jerks to lift the lure to the surface. It has to be learned by feel. Every angler has his own style for making his *mormyshka* completely irresistible to the fish.

There are loads of manuals and instruction books. They have their merits, of course. But they cannot substitute for the learning you do with real water, real tackle and real fish—willing ones preferably.



Caught by the skin of his teeth.

Not bad for one afternoon.

A good place to fish and think.

FISHING CLUBS

QUESTION: Are there fishing clubs in the Soviet Union?
ANSWER: A great many of them—at offices, factories, laboratories—wherever you have enough devotees. The clubs arrange fishing trips, lectures and instruction sessions for their members.

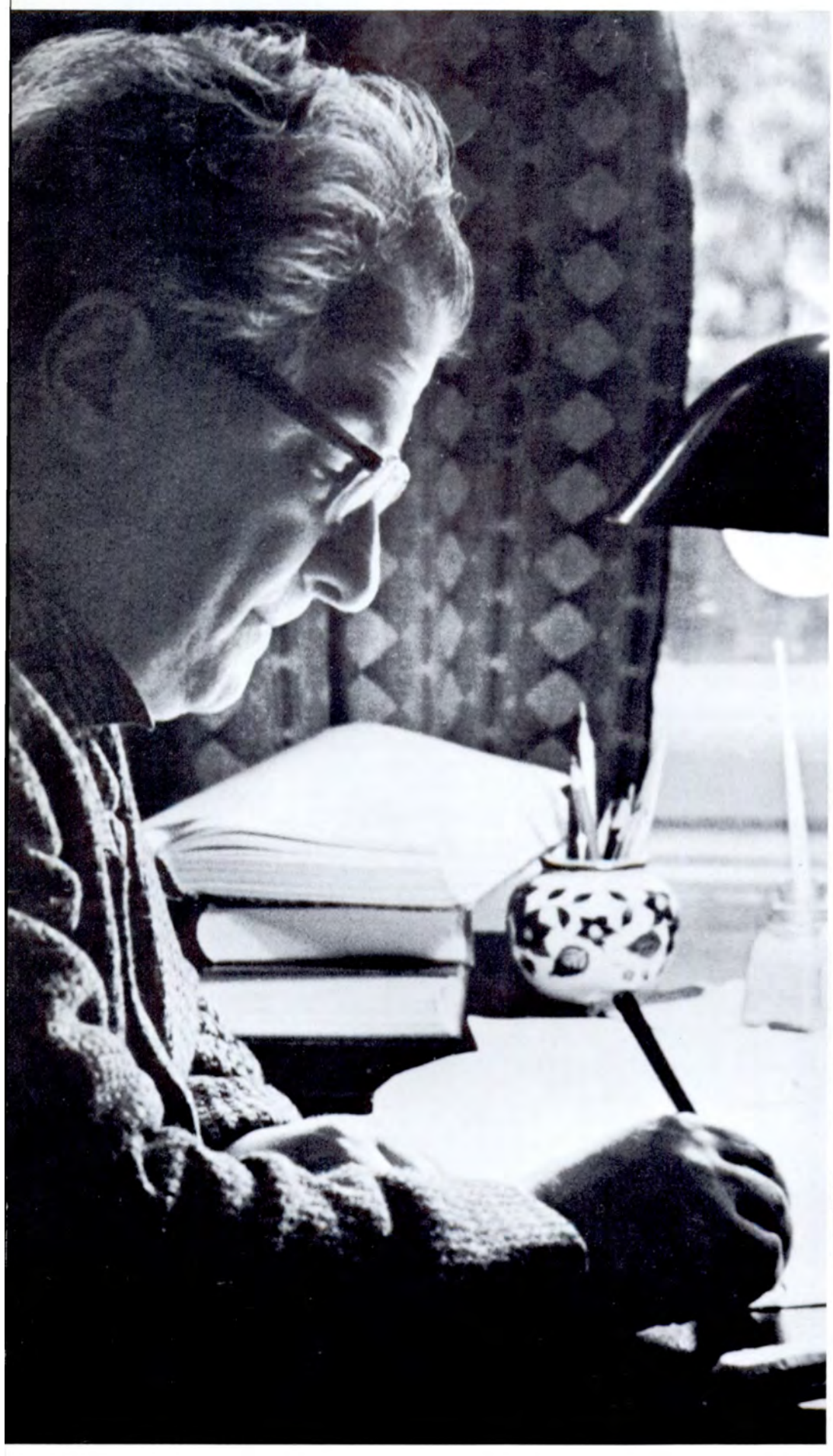
QUESTION: Is there any organization that unites these separate clubs?
ANSWER: Yes. They are members of local, district, city or regional fishing societies, fishing and hunting societies, or the fishing divisions of sports societies. When he joins one of these larger associations the angler pays a small membership fee—1 or 2 rubles a year.

QUESTION: What privileges does a member of a large association enjoy?
ANSWER: At the discretion of the local authorities certain pools, or parts of them, are assigned to these societies for sport, with commercial fishing prohibited. The societies restock pools, watch out for poaching and build and maintain fishing camps.

Members have priority rights at these camps. They pay 25 kopecks for a night's stay and 40 kopecks to rent a boat for a day. Non-members pay double these fees. Members are free to use the facilities at any time of year and may spend their vacations at the camp. They have the use of camp transport to and from the railroad station.

QUESTION: What are a member's obligations?
ANSWER: He is required to take an active part in the work of the society and of his own club; to be conservation-minded; to protect public property; to obey the fishing laws and see to it that others obey them; and to help in whatever way he can to keep the pools stocked.

QUESTION: Are there angling contests?
ANSWER: Yes, there are local, district and city contests for individuals and teams held regularly. An established point system is used for scoring. ★



I just had to tell stories

IRAKLI ANDRONNIKOV

PHOTOS BY VSEVOLOD TARASEVICH

Irakli Andronnikov is known in the Soviet Union not only as a writer and literary scholar but also as a talented narrator of his own stories. The models for his character sketches are the people around him; his narrative themes, the large and small events of Soviet life. He also does popularizations of scientific material. Andronnikov is his own best biographer, so we give him the floor for a few words about himself.

AFTER GRADUATING from a Tbilisi secondary school I majored in literature at Leningrad University and spent whatever free time I had at concerts and conservatory classes. Between lectures I would regale friends, acquaintances and passers-by with stories about the professors, singers and conductors. Happily my good friends found the stories funny, and their laughter helped me keep my equilibrium. It balanced off the sad fact that whenever I had to make a serious speech before a serious audience, I invariably flopped.

Once when I had to make a report on our great poet Mikhail Lermontov, whom I had loved since childhood, I produced such incoherent sounds and such a variety of coughs—all my thoughts had fled somewhere—that the kindly professor said, "Look here, my young friend! They tell me that you intend to devote yourself to music. I'm giving you a passing mark for that reason. I don't want to mess up your future. But try to remember this—that you do not, and probably never will, know anything about Lermontov."

I suspect that his pronouncement was one of the reasons I have spent more than 25 years studying the life and work of the poet.

As for my passion for music, it led me to the stage of the Leningrad Philharmonic Society. They decided to try me out as a musicologist. I was to comment on the music to be played that evening.

I am not likely to forget my debut in the new role. The hall was packed. I launched into my harangue. The audience laughed. They thought I was being funny! Failure again! I despaired. And so I parted with the Philharmonic.

I went back to my literary studies, to Lermontov and to my spare-time storytelling. I told them in hallways, on stairs, in waiting rooms, in publishers' offices, in friends' houses. I simply could not keep from telling them. I resigned myself to the inevitable and began to take my own funny stories seriously.

I studied them. I did not merely imitate people. I tried to find out what made them tick, to live with my characters the way Soviet writers Alexei Tolstoy and Samuel Marshak and that fine actor Illarion Pevtsov did. Then, as I kept on improvising my stories, I refined the characters, revealed traits that the general observer would not notice.

That is how these unwritten stories of mine got themselves born, changing every time I told them, growing more polished and mellow. They could be told now not only to people who were acquainted with the prototypes, but to anybody. I can explain it this way. To react to a portrait painted by an artist, you do not have to know the model. Similarly for the character portraits in my stories. I try to individualize them and make them typical at the same time.

Finally I told my stories to a large audience—in Moscow at the Union of Writers. And to my delighted surprise, they applauded, they liked them!

A long time ago Alexei Tolstoy and Samuel Marshak took me to see Maxim Gorky. I remember how nervous I was. But Gorky complimented me and told me that this special literary form I was using had great possibilities. That opened literary and dramatic prospects for me. I went on studying Lermontov and telling my stories to audiences.

During the war I was at the front. My world of impressions was enlarged, my audiences different and my portrait gallery grew larger. Writers, actors and scientists made way for generals, partisans and collective farmers.

In the programs I do now I make it a rule to devote one story to unraveling a scientific riddle, another to unknown facts about our great writers and a third to my travels in Georgia, where I was born.

I try to give my stories balance so that the past and the present, the serious and the comic do not oppose each other, but join to give a living picture the of times.

Never enough time, says Andronnikov. Here he dials with one hand, collects his papers with the other, as his wife reads him the news.

He's more likely to create his characters in the street than in his study. His gallery of sketches gives a living portrait of the times.

Both Andronnikov and his writings are well-traveled. His articles and stories have been published in England, Italy and other countries.

The smile is for a rare phonograph record he's found in an antique shop—the famous Russian novelist Ivan Bunin reading his own story.

"That night Chaliapin was to sing the chieftan Olofern in Serov's Judith."

"A palate? It was a real cupola—the perfect creation of a perfect master."

"I looked into his mouth and stood fascinated, unable to tear my eyes away."

CHALIAPIN'S THROAT

BY IRAKLI ANDRONNIKOV

PEOPLE'S ARTIST OF THE USSR Alexander Ostuzhev, a super actor and no less superb a man, shared a room with me when we both were patients at the Botkin Hospital in Moscow for a while. Though not everyone, perhaps, has seen him on the stage, there is hardly anyone who has not heard the story of his life.

Many years ago, before the Revolution in fact, young Alexander Ostuzhev, a Moscow Maly Theater actor distinguished for his talent, good looks, stage presence, impeccable manners and the remarkable beauty of his voice, fell seriously ill. Within a few days his hearing was gone. For good! And all his plans, hopes and prospects for fame with it.

But life without the theater was unthinkable for Ostuzhev, and he gradually convinced himself that if he could reach the very heights of dramatic perfection, his deafness would be no impediment. He knew himself well and banked on his will power, stubbornness and all-conquering will to work. He had faith, too, in friendship, and in the Maly Theater.

And an actor he remained!

To appear in the most modest role he had to learn the whole play by heart. He had to work frightfully hard at first to recognize his cues, to hold his own in a dialogue, to look as though he could hear his partner. If so much as a word slipped his mind, no prompter in the world could have put him right, and the entire act would have wobbled on to the end like a crooked wheel.

But his love for the theater overcame all obstacles.

Ostuzhev's name continued to figure on the billboards for many years. And not at the bottom of the list, among those who merely flitted on and off the stage with nary a word, but among the stars at the very top. He played Schiller's and Hugo's impassioned heroes, the avaricious knight in Pushkin's poem, Shakespeare's Antony.

At the age of 62, shortly before the war, Ostuzhev played an Othello, the like of which had rarely been seen in the Russian theater. For two and a half hours he came out for curtain calls while the whole of theatrical Moscow stood up to acclaim this magnificent actor for his great artistic and, one might even say, his great moral achievement. Next he appeared in the role of the freethinker Uriel Acosta in the play by Karl Gutskov, and scored another memorable hit. The roles he created rank with the best in the Soviet theater. All this is to Ostuzhev's credit, of course, though one cannot help wondering if there are many theaters in the world that would have chanced a deaf actor in their companies, that would have stood by him and carried him to triumphant success. The Maly Theater added a glorious page to its glorious history the day it decided to put its faith in Ostuzhev.

The old actor talked a lot about theatrical life.

"I was with the Maly for more than half a century," he said. "We were all like one big family there—actors and opera singers both. Singer Leonid Sobinov was a friend of mine. There's a funny story I must tell you about him, by the way.

"First I ought to mention that before the Revolution the Moscow Bolshoi Theater (an opera house) and the Moscow Maly Theater (a drama theater) used the same costumes. And since Leonid Sobinov and I had the same build, they made only one Romeo costume for the two of us, though he was with the Bolshoi, and I with the Maly. No sooner would Sobinov finish with Gounod's *Romeo and Juliet* at the Bolshoi than they would whisk the suit off to me at the Maly. There I would have the waist taken in a bit (since Leonid was a bit broader) and come out to play Romeo in Shakespeare's tragedy. But by the last act they'd be poking me in the back. 'Take that suit off, quick! Sobinov is singing Romeo again tomorrow!'

"Then I'd run into Sobinov myself and be raked over the coals: 'Who told you to tighten our tights?' he'd yell. 'I could barely find my voice yesterday. Couldn't breathe! At the intermission I took a look, and what did I see? That you've been tailoring again! I told them to rip your seam. Don't you dare do it again! . . . They'll fall off, you say? They won't fall off! And I don't give a damn if they do. Just fill your belly with air and keep it tight on the stage!'

"In those days—when I could still hear," Ostuzhev touched his ear lightly—"I was very fond of the opera and could go fairly often because the roles they gave me in my younger days were so *big* that I could take off my make-up and be fully dressed 20 minutes after the show began. Somebody would slap my face in the first act, for instance, and I'd be expected to run away and hide, and not come on stage again. And the Bolshoi Theater was as good a place to hide in as any. Or somebody would run a sword through me in a duel in the very first scene, and I'd be dead. Well, the Bolshoi Theater was a good place for a dead man, too. Sometimes I was the fellow for whom everybody in the play was looking because he had inherited a lot of money but didn't know it. And there was really no harm in not knowing it while I sat enjoying an opera at the Bolshoi! But a ticket wasn't to be had for love or money when Antonina Nezhdanova and Leonid Sobinov sang the main roles. Two weeks before the Bolshoi's repertoire for the season was posted every blessed seat had been sold for every performance.

"That was when I decided to make the best of the fact that the Bolshoi and Maly not only used the same costumes but the same director. He was a retired general, Von Bool, an exceptionally trim and polished little old man.

"I got an appointment with him at last, and I told him what was troubling me. Whereupon he summoned an official and the chief usher and told them in my presence: 'Kindly admit Mr. Ostuzhev to all productions of the Bolshoi Theater at all times, except on the name days of their imperial majesties . . .' Dismissing them, he turned to me, adding: 'I cannot reserve a seat for you permanently, Mr. Ostuzhev, but you may go backstage when ever you like.'

"What a joy that was!" (Ostuzhev folded his hands over his heart.) "He had deprived me of the honor of stretching my neck in the last row of the artists' loge where one couldn't see a damned thing anyway. Instead I had permission to go backstage at the Bolshoi whenever I liked and watch the masters of the Russian opera from the wings. That turned out to be a real school for me!

"The scientist, writer and composer, my friend, do their creative work in the solitude of their studies. The poet conceiving his verses can find solitude even in the streets. But the actor, even the great actor preparing to go on and create an incomparable role, feels he is in something like a market place backstage before the performance. Everybody keeps crawling in, kissing him, grabbing him by the arm, and whispering sticky jokes into his ear. I always realized what misery this gave such an actor say, as Fyodor Chaliapin, particularly when he was distracted by a multitude of trifles just before a performance. Though I knew him well enough I never pushed forward to exchange amenities when he was busy with an opera, even though I was sure he would not be offended. At a time like that the minute I saw him I'd step aside.

"But I could never resist watching Chaliapin put his make-up on! That 'as something extraordinary! The world never knew a greater make-up rtist!

"In general, I would say that every actor ought to be his own make-up ıan. Asking someone else to do the job is like asking you to make my face kpress what I feel. Just try! It can't be done! And nobody knew better ıan Chaliapin how his face was going to behave on the stage.

"He was a great artist. After a performance he would sometimes go to restaurant with his friends and, while waiting for the food to be served, ould pull a piece of colored chalk out of his pocket and sketch out ifferent facial expressions and self-portraits on the starched tablecloth. hen the restauranteur would come up, slyly pretending he had to change ıe soiled tablecloth, but actually to whisk away the old one with the ketches so that he could sell it to a Chaliapin admirer for a good price.

"When Chaliapin was starred at the Bolshoi, I was a denizen of its ackstage for the evening, watching unobtrusively from the door of his ressing room while he put on his make-up.

"He would be sitting there stripped to the waist between three mirrors, apping his blond eyelashes and looking at himself critically, with a 'hm' r a sniff now and then.

"On the table before him lay a black curly beard, a huge raven wedge f a beard with triangles cut into it to fit the cheeks. That was an evening e was to sing the chieftain Olofern in Serov's opera *Judith*."

Ostuzhev leaned forward excitedly, and it was not him I saw now, but haliapin surrounded by his mirrors—the proud tilt of his nose, the traight, strong neck and the bare mighty torso.

Ostuzhev went on:

"He touched the beard tentatively, then twisted his face with the fingers f his other hand as if to see what clay his features were made of today, hen shook the beard and lifted it to his cheeks with narrowed eyes."

Ostuzhev hung his fingers from his lower lip—an Assyrian beard! His rows came together and I was pierced through with the hatred of Olofern's lazing glance. But the eyebrows went up and the hands fell back, and ıere was my roommate Ostuzhev once again.

"He stared at himself," Ostuzhev went on quietly, "then reached for is crayons and paints and began to apply the dark background. He asted his black, arrowhead eyebrows into place, lengthened his eyes, arkened the bridge of his nose, and frowned."

And again Ostuzhev's clear eyes reflected the blue-steel of Chaliapin's aze. My roommate's hands went up to his imaginary beard, and I saw ıe Assyrian's ferocious look once more.

"Then Chaliapin coughed and rolled the first phrase round the room: Ah! They've been hiding you. . . . Those dogs . . . those worrrms!' " (Ostuıev was giving me a suggestion of Chaliapin testing the phrase!) "Deeply tirred, he lowered his head, beard and all, and tried a slanting glance ıth one brow raised. The effect was horrible. Then he took the beard off nd drew a hard brown line from the side of his nose to the corner of his ıouth with his thumb.

"And the room! Why, it was full of people! All sorts there, in starched ollars, evening gowns and dress suits, clucking away, guffawing, exchanging ıeater gossip, flashing their watches at one another, and doing everything ut blow their cigar smoke into Chaliapin's face.

"He turned around to them, said something, and looked back at his eard. Then he finally got it on, turned his head in all directions, tore it ff again, and painted big blue triangles under his eyes, right here.

"Then the laryngologist came in and said, 'Fyodenka, my boy! How's our throat?'

" 'It's all right, don't worry!'

" 'Don't be lazy, child! Let me have just one little look!'

" 'Well, all right! Aaaaaaah. . . .'

"Whereupon all the people in the room stopped their chatter and rowded in front of Chaliapin, trying to look into his mouth and expressing ıe noisiest approval while he kept on exhibiting his throat. 'Has everybody ooked?' he asked, 'How about you?'

"When he waved them away, at last, they all formed a circle, discussing hat they had seen with the air of conspirators in an opera. And how ıortified I was that I hadn't looked myself, for the whispers that reached ıe at the threshold where I stood told me that I had missed something upernatural, something I'd probably never see again. Breaking away rom the door, at last, I went in, timidly, approched Chaliapin, and leaded, 'Fyodor Ivanovich! Couldn't . . . I have a look, too?'

" 'Where were you before?' he turned to me and demanded. 'Standing at he door? . . . Why didn't you come in? . . . Afraid? . . . Poor little fellow! . . Now don't cry! . . . Is it possible you're the only one who's been left nenlightened? . . . How pitiful! What sad ignorance! . . . Well, have it our way: Take a look!' and he opened his mouth."

Here Ostuzhev made a long and dramatic pause.

"And—do—you—know—what—I—saw?" he nearly shouted in exultation. He put his hands out as though inviting me to wind some wool around them, rounded his palms, brought the tips of his fingers together, looked into the resulting hollow and showed it to me, exclaiming in a vibrant voice:

"A crater!"

Another long pause, and a shout:

"His palate!"

Now his palms formed a rounded vault:

"A real cupola! And it was under that cupola that the inimitable timbre of Chaliapin's basso was formed! . . . The tongue was like a wave quivering in its necklace of lower teeth . . . *There was not a superfluous detail in the whole of that throat!* It was the perfect creation of a perfect master, and I stood fascinated, unable to look away.

"Chaliapin finally closed his mouth and asked, 'What's the matter with you? Haven't you seen enough? What are you rolling your eyes like that for? Don't be afraid! I won't swallow you. Now get out of here, all of you! You're interfering with my work. I'm sick of you, you devils!'

"The whole company left, and I, too, popped out, went backstage, and saw Chaliapin pass in sandals, golden bracelets on his bare arms, wearing a diadem, silks and brocade—as though he had just come off a Babylonian bas-relief. Then I heard the tempered metal of his voice sound off until the theater rang with it. I stood looking and watching and listening to that enormous, singing bell of a man—especially when he hit the high notes with his tongue quivering.

"When the performance was over, I went home. And do you know what I did as soon as I got there? I reached for a mirror to see what my throat looked like! *And what did I see?"*

Ostuzhev put his two index fingers together and parted them slightly at the knuckles:

"The throat of a beer bottle! It was not a palate I saw, *but the ceiling of a cellar!* And the tongue? Why, it was no tongue at all, *but a fist!* And pitch darkness behind that!

"The next day I met a friend—a cultured man who had graduated from the conservatoire and written a lot about singers.

" 'I was backstage watching Chaliapin!' I boasted to him. 'He's one of nature's miracles, that's what he is! He's got a throat like this!' and I showed him. 'And what a palate!' and again I made the appropriate gestures.

"But did that impress him? Not at all! He didn't even smile.

" 'That must all seem very new to an ignoramus like you," he said after a while, 'but we who know what it's all about are not surprised. I know what Chaliapin's throat is like. It's a miracle, I agree! But not a miracle of nature! It's a miracle wrought by hard systematic training . . . Chaliapin was a born basso with rare vocal cords and . . . an ordinary throat. His first singing teacher, Usatov by name, was able to elevate his soft palate, widen his throat, and teach him to, how shall I put it, gargle his throat with sound . . . I'll show you the principle some day, the thing that helped Chaliapin polish his gift of nature. He's a man of Shakespearean caliber. He is terrifically demanding both of himself and others. Chaliapin is a vocalist who recognizes no technical limitations. He is a very hard worker, the kind who is never satisfied with himself. Don't chatter about a miracle of nature to me! Some people seem to think he was born a great singer, that he doesn't really need to learn anything, that during a performance inspiration drops on him like a halo . . . And all that trash: "Chaliapin chased someone out." "Chaliapin causes a riot!" "Chaliapin is worried whether his voice 'will carry' or 'won't carry' this evening." All these scoundrels who would like to reduce his golden talent to coppers . . . You'd do better to take an example from him! The perfectly controlled voice is a treasure for the drama theater as well as the opera. . . . Just keep your eye on Fyodor Ivanovich! There's plenty we can learn from him!'

"This talk took place . . . (Ostuzhev thought hard for a moment) in 1909, about 40 years ago. And I took my friend's advice and began to exercise my throat regularly. You're in vaudeville yourself and ought to be interested. Have a look at my throat!"

Ostuzhev opened his mouth and I saw a high, arched palate. The tongue swept down like a suspension bridge, opening the path to an enormous tunnel. Was this a throat? Oh no! It was the perfect creation of a perfect master. And I kept looking, unable to turn my eyes away.

Having closed his mouth and looked to see that I was sufficiently overwhelmed by his story and his throat, he flourished his shaggy towel, reached for his soap, covering the nonexistent tie on his pajamas with a habitual gesture of his palm, and went off to wash before going to bed.

The instant he left the room, I opened the drawer of my night table, drew out a mirror, and opened my mouth. . . .

And do you know what I saw? Pitch darkness, without a glint of prospect!

I have been exercising my voice, too, ever since. Recently, I had another good look at my throat. Alas, there's nothing to show for my exercises yet. But I haven't given up hope. All is not lost! I'll have another look at it in 40 years! ★

A vantage point for a photographer doing a story on Pushkin Square.

PUSHKIN SQUARE

THIS is one of the central squares in the Soviet capital, a quiet, restful haven in busy Moscow. On all four sides cars race along in an endless stream, traffic lights blink on and off, pedestrians move along on their multitudinous errands. But in the green, tree-shaded square itself you move out of the bustle for a while to smell the lilacs and watch the leaves rustle in the breeze.

Around the statue to Russia's great nineteenth century poet Alexander Pushkin pensioners take the sun with a book or newspaper, children dabble their hands in the fountain, and office workers spend a quiet lunch hour.

On the streets fronting the square are several newspaper and magazine buildings and two movie houses, one of them, Rossiya, the biggest in the country.

Photographer Nikolai Rakhmanov's camera saw the square from above, perched on the seventh-floor balcony of the *Izvestia* building.

PHOTOS BY NIKOLAI RAKHMANOV

The great poet Alexander Pushkin, for whom the square was named.

Favorite haunt of Moscow's Sunday artists.

Some of the square's feathered denizens.

The fountain becomes the domain of the small fry in the summertime.

ut for a very early stroll.

Camera-eye view of the tree-shaded square, one of many in the capital, from the seventh floor of the Izvestia *news building.*

ame it on the watch.

For footsore shoppers, readers or just sunners.

The square has been the live set for many an interesting film scene.

Vyacheslav Ivanov, a 24-year-old Muscovite and officer in the Soviet Army, holds the Olympic single sculls title.

CROSSING OARS

AMERICAN AND SOVIET ROWERS COMPETE

The sports section of the American-Soviet Cultural Exchange Agreement for 1962-1963, signed in Washington on March 8 of this year, provides for tourneys in rowing, track, weightlifting, ice hockey and chess. The first of these friendly encounters—between sculling teams—is slated for Philadelphia early in July.

Our commentators are Gerard Yelensky, who judges ratings of Soviet athletes, and Yuri Kalugin, vice president of the USSR Rowing Federation.

Yuri Tyukalov and Alexander Berkutov, candidates for the USSR team, joined forces eight years ago and placed first in the European championships.

YELENSKY: The earliest meeting of American and Soviet oarsmen was in Helsinki ten years ago at the Fifteenth Olympic Games. It was there that Yuri Tyukalov, a Leningrad artist, ended the American monopoly in rowing, the first time in the history of the sport. His American rivals were the first to congratulate the new champion and presented him with the Philadelphia Rowing Club's gold medal for the World's Best Oarsman.

At the next Olympics the Soviet contenders gave the American boatmen stiff competition. Although in the unofficial scoring our boys finished a dozen points behind the Americans, they did bring home two of the five gold medals the Americans had hoped for.

Win or lose, the relationship between the athletes of the two countries could not have been any closer. In Melbourne they lived under the same roof and were inseparable before and after the races. These friendly rivals wanted to see each other more often. The idea of contests in the singles, doubles and eights grew out of the Australia meeting.

The first match took place the summer of 1957 in Moscow, with the Soviet challengers once again winning the singles and doubles, as they had in the Olympics the year before, while the Americans won the eights.

In the Rome Olympic Games the USSR rowing team took top honors in the unofficial scoring, beating the Americans by 17 points.

That brings us to the second USSR-USA match, scheduled for Philadelphia on July 4, with the same contestants as five years ago.

KALUGIN: Our men began their training for Philadelphia during the winter. Besides general physical conditioning, they had regular indoor practice and on some of the less nippy days, bundled up in warm sweaters, they even practiced on an ice-cleared lane in the Moscow River.

To get to the probable contestants. First, there is Vyacheslav Ivanov, 24-year-old Muscovite and Soviet Army officer, who triumphed in the past two Olympics. Thus far he is still in a class by himself in the singles. Champion of the Soviet Union and Europe, Ivanov not only has the strength and the skill but astonishing perseverance and the will to win.

YELENSKY: If I can interrupt for just a moment to tell our readers that there is more than a slight possibility that Ivanov may change his travel plans at the very last minute. It all depends on a long-standing rival of his, Stuart Mackenzie of Australia. If the "Sydney fox" takes part in the Henley Regatta, then our Olympic champ will meet him there. Ivanov lost to the Australian in the 1957 and 1958 Henley regattas and again in the European championship. They haven't met since, and Ivanov is naturally thirsting for a return encounter.

KALUGIN: Thanks for reminding me. In case Ivanov does compete in the Henley Regatta, his place in the singles at Philadelphia will be taken by Oleg Tyurin, 25-year-old Muscovite who recently switched over to the doubles on the advice of his coaches.

We have two pairs hoping to cross the ocean for the doubles. The first are ex-Olympic and current European and USSR champions 32-year-old Tyukalov from Leningrad and 29-year-old Moscow engineer Alexander Berkutov, both approaching the critical age. Their most serious rivals are the 23-year-old Moscow serviceman Boris Dubrovsky, and Oleg Tyurin—also from Moscow—now attending a teacher training college. They have not yet won any top awards and lack international experience, but they do have the advantage of youth.

YELENSKY: How about the eights? Our coaches have a keen recollection of the several occasions our eights trailed the Americans; I'd guess that the choices will be made with a fine-tooth comb.

KALUGIN: I'd agree there. As it stands, we have four eights with just about even chances of getting to Philadelphia. For what it's worth, my own opinion is that the best choice would be the Zalgiris eight from Vilnius, Lithuania, the new USSR champions. They are all quite tall—their average height is 6 feet 2 inches—and their performance is consistently good. Recent crew additions are Zigmas Yukna and Antanas Bogdanavicius, European doubles champs. But unfortunately the other six crew members have no experience at all in international racing, a big drawback.

Their most formidable rivals are former national champs, the Navy, who have a wealth of international experience but a spotty performance record.

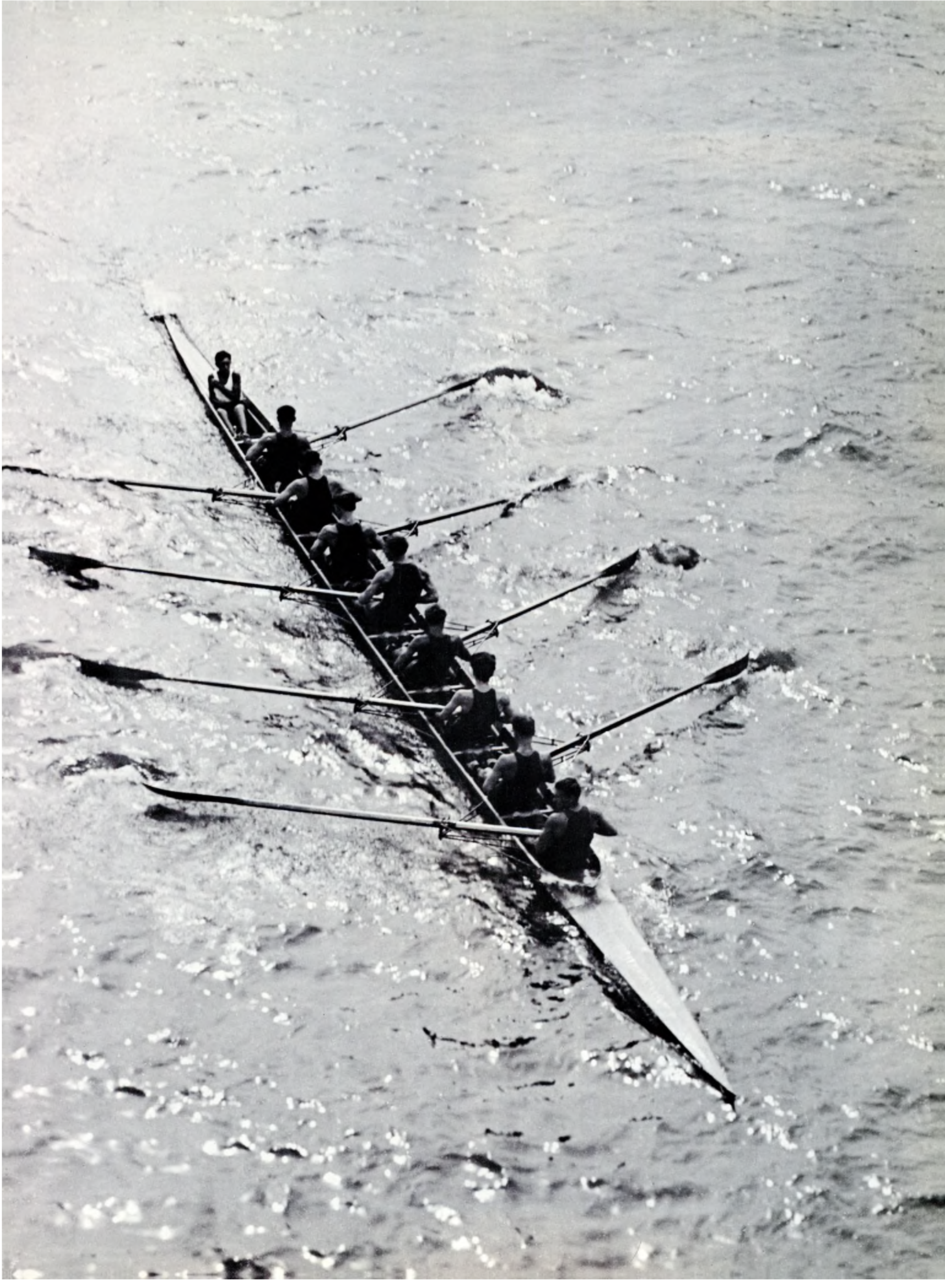
I also have a feeling that the Leningrad Trud (Labor) crew, half of which is new, is likely to give Zalgiris and Navy a run for their money. USSR coach Yevgeni Samsonov, with the team's "rejuvenation" in mind, believes Trud will be the top bidder for tickets to Philadelphia.

Last is the young Trud crew of Moscow. These lads had bad luck last year, but it's the general opinion that they have a big future ahead of them.

YELENSKY: Where and when will the final selections be made?

KALUGIN: Both the Henley and the Philadelphia contestants will be chosen at the elimination races to be held at Lake Kavgolovo, in suburban Leningrad, late in May. By the time our American readers see this, the winners will have been announced.

The races in Philadelphia and Henley are only a dress rehearsal for the really big show—the inaugural world rowing championship scheduled for Lucerne in September where American and Soviet rowers will have another chance to "cross oars."



Candid shots of Londoner Dick Nicholas at an England-USSR match.

In hot pursuit. USSR player Ivanov (on the right) and Brazil's Gremio.

Big question—whose winning goal in this pre-Olympic Bulgaria-USSR game?

Division A's 22 teams scored 988 goals last year competing for the USSR title.

Lev Yashin, goalkeeper on the USSR team for eight years now, has been proclaimed the world's best goalie on six occasions by the sports public.

SOCCER AS WE PLAY IT

BY LEV FILATOV
ASSISTANT EDITOR IN CHIEF
OF THE NEWSPAPER *SOVIETSKII SPORT*

STATISTICS tell us that in the Soviet Union one and a half million people play competition soccer. The Soccer Federation explains that these are athletes playing for their factories, colleges, collective farms, sport clubs or home towns. The figure does not include the uncounted millions of schoolboys who kick a ball around in the back yard leagues or who play the game at camp with great gusto but no rules.

The heyday for soccer fans runs from April through November, when the USSR Championship is under way. Twenty-two clubs compete in what might be called big league soccer. The clubs represent 17 cities in 11 of the union republics, extending from Leningrad to Tashkent. This is Division A. Division B—call it the minor league—has 149 clubs competing in the various geographical zones. The three top B teams get spots in the "cellar" of Division A and hope to move up the following season.

For about a quarter of a century the USSR title was the monopoly of three Moscow clubs—Dynamo, Spartak and Army. This monopoly was recently broken, and with it the hearts of a great many of their rooters. For two years now there have been new names at the top of the list. Last year's champion was the Dynamo Club of Kiev.

The other major soccer event is the play-off for the USSR Cup. What fans like especially about this scramble is that any long-range predicting is impossible. Even a forecast the night before the finals would be mostly wishful thinking. The USSR Cup has done more traveling than the USSR title. It has not only been to Moscow but to Leningrad and Kiev, and now it is in Donetsk, a coal mining center in the Ukraine.

In 1936, at the USSR Cup play-off in Moscow's Dynamo Stadium, 22,000 fans came to cheer the teams on. A crowd that small at a big game nowadays is a box-office flop. Soccer is not only our top participant sport—it is definitely the No. 1 spectator sport. The stadiums built to cope with today's crowds are virtual towns in size. Program planners for TV, radio and the newsreels give the game top priority.

What is it that grips the crowds? The excitement keeps rising in a succession of crescendos as two big teams go after the ball. Ninety minutes of soccer—played in two periods—will turn a "cold fish" into a frantic rooter. Soccer is a game in which skill and guts are applauded. And while the fan is quick to cheer a good play, he is just as ready to razz a goof.

Soccer resembles chess in a way—both games take a lot of planning. I've sat in on various strategy sessions. Engineers and builders would admire the thoroughness with which the plays are figured. I once happened to be in a clubroom after one of these sessions and overheard a diplomat telling the coach that he had found the discussion of soccer playing tactics very instructive.

Before a game the coach works out each of the plays on a blackboard and gives each player a particular job to do. During 90 minutes of playing time a player has the ball no more than three or four minutes at a stretch. The rest of the time he is on the move trying to confuse his opposite number or keep him covered.

In basketball, baseball, tennis and volleyball, scores are always changing. In soccer there may be no more than one goal scored in the whole 90 minutes. I recall the England-USSR match at the last World Championship. It was a case of "winner play on, loser go home." In a tie, the captains were to flip a coin to decide the winner. When the going got tough for the English, their captain, Bill Wright, gestured to our boys to flip a coin. When things got too hot for the Soviet team, our captain, Nikita Simonyan, did the same. They were both joking, but with tears in their eyes.

The game was like that critical moment in the last round in a bout for the world boxing title—when just one well-aimed punch is all that is needed. Finally the punch came—from Soviet forward Anatoli Ilyin. As soon as the final whistle blew, I rushed to phone in my report to the paper. Jennie, our office stenographer, said the usual "Let's have your story." And then I discovered I had left my notes on the bench. Now

when that happens to a reporter, the excitement must have been well above average.

Soviet soccer is young. Our clubs began international play only after the last war. The USSR national team made its debut at the Olympic Games in Helsinki.

Here are the figures. In the past ten years the USSR team has played 63 games and appeared in 21 countries on four continents. The squad chalked up 41 wins, 11 draws and 11 defeats. Goals scored: 151-60 in our favor. Trophies won included the gold Olympic medal at Melbourne and the European Cup. A few months ago our team made a successful tour of South America. We are proud to report that it was the only European team ever to leave South America unbeaten.

As I write this article, our boys are getting ready for the World Championship in Chile. The coaches of the USSR team—Gavriil Kachalin and Nikolai Gulyaev—have been paying particular attention to overall fitness. Candidates for the team skied, skated and did gymnastics, weightlifting, acrobatics and track-and-field workouts to get into shape.

The weekly training schedule followed roughly this pattern: Monday —gymnastics, Tuesday—soccer techniques, Wednesday—skiing, Thursday—soccer techniques, Friday—ice hockey or track and field, Saturday —soccer techniques and tactics.

Here is a picture of a training session. In the center of the gym we have star goalies Lev Yashin and Vladimir Maslachenko kicking the ball to each other. Then the ball is punch-passed. This develops the precision needed to ward off the balls that come in under the crossbar.

Elsewhere in the gym the forwards go through their paces. Their job is to weave in and out around obstacles in rapid succession and then make a sudden, speedy breakaway between two low-hanging sandbags. One careless step or movement is enough for the bags to swing a knockout blow.

The backs spend the time developing precision kicks. Kicking from a distance of 40 yards, their assignment is to land the ball in a two-yard-diameter ring. A bull's-eye is not easy, but no back can manage without precision kicking, since every attack originates on the defense line. The suddenness and impact of the attack depends on how carefully the backs address the ball to their goal line.

After an hour of these basic drills and other exercises, the real fun starts—kicking the ball toward the goal. About half a dozen balls shoot out in rapid succession, and the goalie does his best to stop them.

This is the second time the Soviet boys will be dating the Golden Goddess, the name of the world championship prize. As I said before, forecasting in soccer is a tricky business. There's no telling which of the 16 finalist national teams will be the lady's lucky partner. But coach Vincente Feola of Brazil's team, which holds the Golden Goddess, believes the Soviet team will be one of the main contenders.

SSR forward Bubukin kicks a goal against Norway.

What's the penalty in the book for a foul like this one?

ish fans in Moscow rooting their idol Aston Villa.

alty kick for Moscow Spar- vs. Central Army Club.

Harvesting in the Gorny Altai Autonomous Region. *See story page 16*
—Photo by Leon Dubelt

USSR

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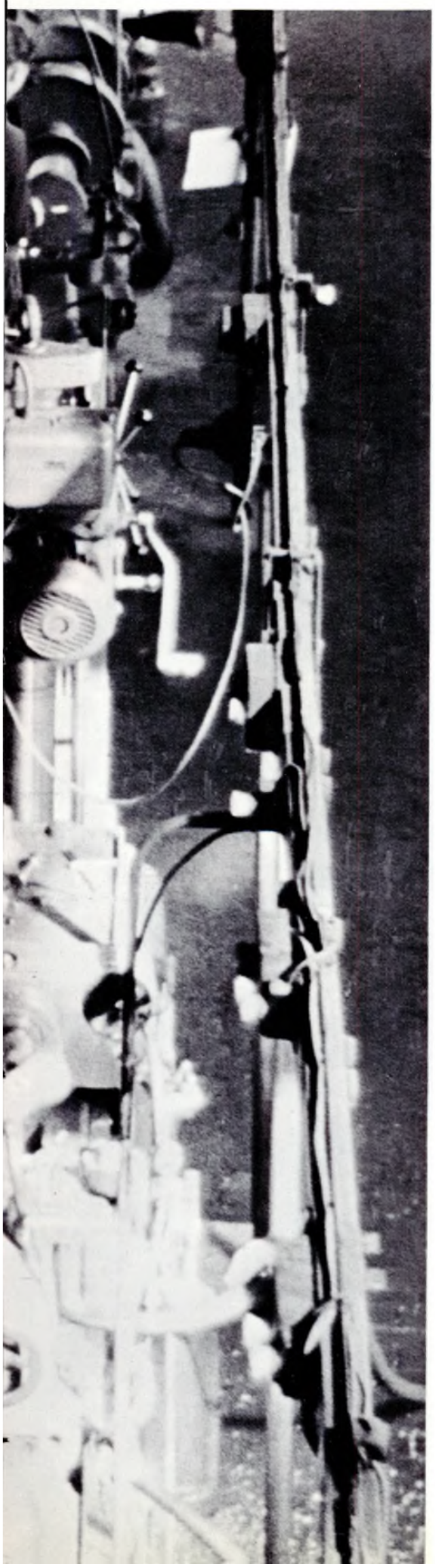
FACTORY

TEXT AND PHOTOS BY ANATOLI GARANIN

DIRECTOR



Karl Svilpe (center) is the 34-year-old director of a big Latvian electrical equipment plant.

ON A RECENT VISIT to Riga I met a man whose life story—a rather typical one in the Soviet Union—points up the opportunities a socialist society offers the individual to develop his own abilities, to rise professionally, and to figure prominently in public life. In our society, money cannot buy control of a factory nor can executive posts be inherited. The necessary ability and the wish to serve the public are the only requirements for key positions, whether in vocational, cultural or political life.

Karl Svilpe, the man I met, is the 34-year-old director of the Avtoelectropribor plant, which manufactures electrical equipment for automobiles and tractors. He was born and grew up in the small Latvian village of Balozi. His parents were poor farmers, and very early in life Karl learned what it meant to work hard for a living.

In 1940, when Latvia became a Soviet republic, new opportunities opened up for the 12-year-old boy—new enterprises, educational institutions and courses of all kinds were established everywhere. But, unfortunately, not for long. War broke out, the republic was occupied by the fascists, and once again Svilpe lived from hand to mouth, just about managing to keep alive.

When Soviet Army units first set foot on Latvian soil to drive out the invaders, Karl had turned 18. He spent the rest of the war years at the front, helping to finish off the enemies of his homeland. The war over, he combined work with study in evening high school. He graduated with honors and was accepted at Latvian State University.

He first got to know the plant he now directs as a student, when he became interested in instrument making, a new industry for Latvia then, and took his practical training at Avtoelectropribor. He hung around the plant in his free time, talking to workers, asking technical questions, watching them at the bench, trying his own hand at a machine. When he graduated, he was offered an engineer's job there.

After three years, he was promoted to the position of chief technologist. Respected for his professional knowledge and generally liked for his concern with and interest in people and public matters, Karl Svilpe was appointed to the post of director when it fell vacant in 1957. He was only 31 at the time.

The director's workday begins at 7:30 with a glance at brief reports on plant operations, a run through the day's mail, and appointments with a few early callers. At 9 o'clock he makes his rounds, talking to workers, foremen and engineers. A meeting with the shop superintendents generally follows. The middle of the day is left for conferences with economic council executives and visits to other plants and research institutes.

The after-lunch hours Svilpe reserves for his staff. Workers drop into his office to discuss personal matters and to get or give an opinion on a production problem. Not infrequently these informal talks generate valuable ideas for bettering production or improving the staff's working and living conditions.

Besides his professional duties Svilpe has public ones, serving as a deputy to the City Soviet and a member of the republic's trade union council. Not merely an observer, he participates in workers' meetings and sessions of the plant trade union committee, making systematic progress reports to his staff, keeping them informed, and listening to their criticism and suggestions.

"The worker sees everything and is vitally interested in his plant's success," Svilpe feels. "Every worker should know where things are going well and where they are not. That makes it easier to correct defects and meet quotas."

In the nine years that Karl Svilpe has been at Avtoelectropribor, its output has gone up more than sixfold.

He is also a deputy to the Riga City Soviet and a member of its executive body.

As director of a well-run plant, he keeps in close contact with the workers.

He briefs Economic Council head Georgi Gaile on a new product the plant is making.

He usually lunches in the plant cafeteria so that he can talk with the workers.

Greenery around the plant is good for his morale and everyone else's, he thinks.

Conferring with a benchworker on a suggestion—Svilpe gets many—for making better parts.

Svilpe was born and raised in a small farm village where his mother and sister still live.

He finds shopping a relaxing occupation after a busy day at the plant or the City Soviet.

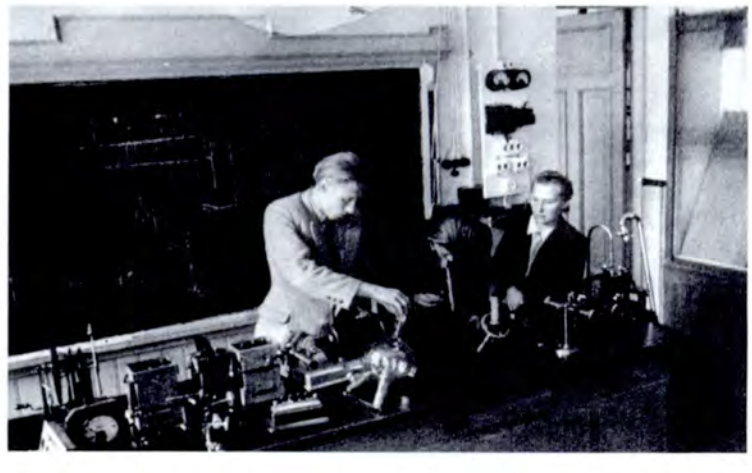
Most free evenings he spends at home keeping up with the technical journals in his field.

From the Svilpe family album. Young Karl with his parents. His father was a very poor farmer.

The house where he was born. Karl learned at an early age what working for a living meant.

During the nazi occupation Karl worked as a farm hand. He was 18 when Latvia was freed.

He helped vanquish the enemy, and after the war he was able to go back to his studies.



Some of the memories dredged up by the old photos in the album are anything but happy ones.

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NOVOSTI PRESS AGENCY — *ALL MATERIAL FOR THIS ISSUE COURTESY OF NOVOSTI PRESS AGENCY*

FRONT COVER: Maija Lielldidza and Eduards Pilags, performers of the Latvian Song and Dance Ensemble.

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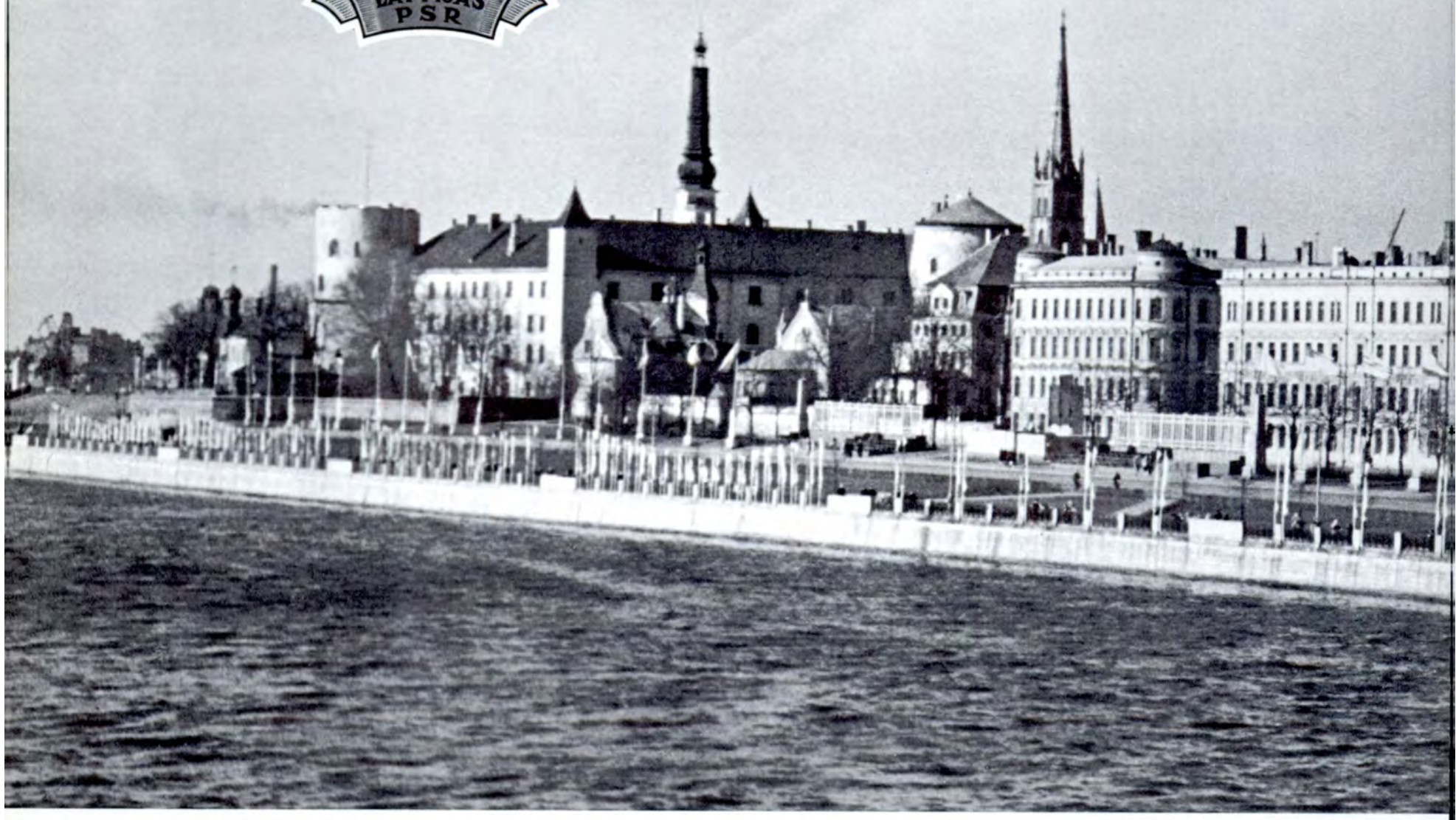
Latvía



BY VALDIS JURGENS

THE STORY OF RIGA is the story of all of Latvia, one of the smallest of the 15 Soviet republics in both population (about one per cent of the total) and area (one third of one per cent of Soviet territory). But life in Latvia has a faster beat and a larger meaning since it joined the Soviet Union in 1940, most vividly reflected in its capital city.

What is most typical of today's Riga? Toss this question at a dozen or two people at random and you will probably get that many different answers. And they will all be right—each of them testifying to the variety of activity in Riga and the versatility of its citizens.

A white-haired lady will tell you that for all the changing the city has done, the coffee shops still serve that fine traditional dish of whipped cream "just as delicious as in the old days." Her son may be an engineer at the VEF plant and he, very likely, will assert that his plant is as typical of today's Riga as anything could be. "We're turning out products that Latvia couldn't have hoped to manufacture in the old days."

All of Riga has changed, most notably its industrial profile, and the VEF plant is very typical indeed. Only a small factory two decades ago, its dramatic growth in many respects reflects that of Latvia generally.

VEF evolved from the old shops of the telegraph and telephone company and has expanded so much and been so modernized that it is virtually new. Its major product is an automatic telephone exchange, an item Latvia did not previously manufacture. Since the early fifties the republic has led the country in the production of these automatic exchanges, and it now turns out almost half the Soviet Union's total. VEF also has a national reputation for its radios; they won the Grand Prix at the Brussels World's Fair.

Latvian products walked off with 17 prizes at Brussels. The Riga Popov Radio Plant brought home one. This is another big plant that grew out of former semihandicraft shops, even smaller than those from which VEF originated. The Popov plant has as large and promising a future in the radio industry as expanding VEF has in the manufacture of telephone units and major aggregates.

The trend of Latvia's development in the Soviet period has been toward electronics and such other skilled-labor industries as precision machine building and instrument making.

The Riga Railway Car Works is an interesting illustration of this trend.

today

Because of a lack of orders after the First World War, the works confined itself to the manufacture of simple farm machinery, kitchen utensils and other such minor items, filling in with repairs where it could. In Soviet times, in the early fifties to be more specific, this plant won Latvia first place in the country for the manufacture of streetcars and coaches for suburban electric trains.

The Riga Electrical Machinery Plant, which produces motors and other equipment for these cars and coaches, has much the same biography. It is a re-creation of the Provodnik Plant that stood empty for 30 years. Before the First World War Provodnik's big shops had kept 15,000 workers employed.

Two of the many Riga plants, built anew, stand well up with the country's leaders in their respective industries. One makes electrical equipment for automobiles and tractors; the other, instruments for hydrometeorological stations—new products for Latvia.

Other new products include a small-size three-car automobile train for airports and large fairs, and an eight-seat baby autobus—both manufactured by the Riga autobus body plant. These trains and buses are in general use all over the country, although the first ones came off the line less than three years ago.

In pre-Soviet Latvia it was farming that shaped the economy; industrial efforts were largely confined to food processing, textiles and woodworking. Although these industries and agriculture have grown enormously since, they have lost the lead to the machine-building and other metalworking industries, concentrated mainly in Riga. The capital's dominant industrial role has diminished somewhat since the Second World War because of the growth of other Latvian cities, but Riga is still the largest manufacturing center in the republic.

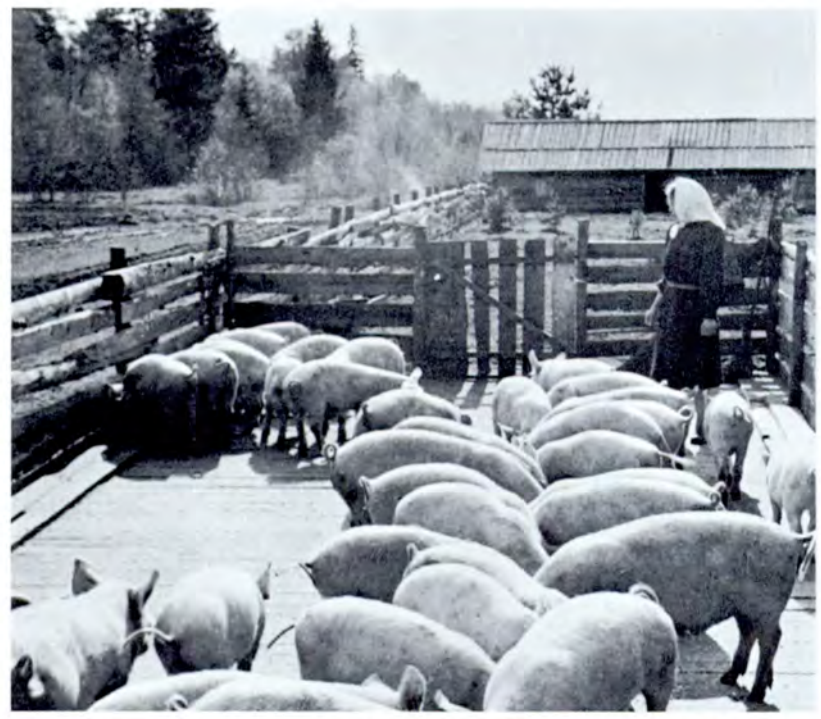
Latvia's total industrial production multiplied twelvefold and the output of its machine-building and other metalworking industries eighty fold during the years of peacetime construction in the Soviet period. In a single month Latvian industry now produces as much as it did during the whole prewar year of 1940.

In pre-Soviet times little Latvia never dreamed that its industry would reach its present proportions. With the help of the other republics, our

Assembly line at the Popov Radio Plant in Riga. It grew out of a small handicraft shop, as did many of the present-day industrial plants in Latvia.

A scene from Saulgriezi (Sun Rays), *a play based on Latvian folk themes, staged by the People's Theater of Latvia. It does contemporary plays too.*

The control board of the atomic reactor at the republic's Academy of Sciences. Lithuanian and Estonian as well as Latvian scientists carry on research here.



The republic's farmers concentrate on pigs and dairy produce. They plan, by 1980, to boost their meat output 2.3 times and milk yield 2.8 times.

Since the early fifties the Riga Railway Car Works has led the country in the manufacture of city streetcars and coaches for suburban electric trains.

The busy Riga Electrical Machinery Plant stood idle for 30 years before Latvia became a Soviet republic. The plant makes streetcar equipment.

Housebuilding is going on now all over the republic. A new street in Elgava. This town, like many others, was almost completely destroyed during the war.

After Leningrad, Riga, the capital of Latvia, is the second largest Soviet port on the Baltic Sea. It is free of ice during most of the winter months.

The much expanded and completely modernized VEF plant makes automatic telephone exchanges, one of many items that Latvia did not make in pre-Soviet days.

economic potential has grown immeasurably in the past two decades.

As soon as Latvia was liberated from fascist occupation, a continuous stream of industrial equipment, raw materials and fuel poured in. Engineers and workers came from all parts of the Soviet Union to help us get our old factories started and also build new ones. With the active support of the people of the entire country, Latvia has put 120 big plants into operation since the war.

Now we supply the other union republics with about 300 industrial items in exchange for goods we need. We receive about four times more freight, in weight terms, than we ship since we use large amounts of fuel and raw materials produced elsewhere. There is no branch of our economy not served in some way by one or another of the union republics. We can say without any qualification at all that the goods we turn out are the fruit of the efforts of the whole country.

Our farms specialize mainly in dairy produce and hog breeding. Our farmers have always been recognized for their skill in these traditional branches of our agriculture. The demand for our farm products has been growing from year to year, and although our livestock breeders long ago topped the output of the peak prewar years, it is not high enough for today.

For a communist society we must have food in abundance. A great nationwide rise in farm production is therefore a primary task of the 20-year program of communist construction. By 1980 Latvia plans to boost its meat output 2.3 times and its milk output 2.8 times.

Appraising our present reserves and untapped potentials, Arvid Pelse, First Secretary of the Central Committee of the Communist Party of Latvia, recently declared that these goals need not take 20 years. "This is clearly indicated," he said, "by the yields of our leading farmers. The best collective and state farms were able to multiply their output in a short time. We have fine people in our collective and state farms, people who are eager to fulfill the Party's farm goals. We have a big army of specialists with the knowledge and experience for the job and farms that have large quantities of machinery at their disposal."

With the whole Soviet Union assisting, Latvia re-equipped its farms with modern machinery after the war. But the new target figures will require more mechanization, particularly for field work with fodder crops and in the dairy farms and pigsties. Designers at the farm machinery plant in Riga have been working on new types of equipment specifically adapted to conditions in the northwestern part of the country. They will be manufactured in Riga and at two other Latvian farm-machinery plants—at Liepaja and Elgava.

The republic also has a reputation for its quality fish. Here, too, modern practice has augmented traditional skill. The big catches Latvian fisherman get nowadays are the product of skill and daring plus an excellent fishing fleet, something they did not have in the old days. They are no longer bound by the Baltic Sea, as they used to be. They venture into distant Atlantic waters where they work alongside fishermen from other republics—Russians, Estonians and Lithuanians.

Latvia's canned fish, put up in scores of varieties, is an old favorite of gourmets. The products of the Riga Kaija cannery were awarded a Grand Prix at Brussels. Since then many new and tasty varieties of canned fish have been marketed, some of them prize winners at other fairs.

Latvia expects to double its sea catch during the current seven-year plan period (1959-1965). About four-fifths of the catch will be made in international waters off the shores of Iceland, Greenland and Newfoundland, and in latitudes farther south in the Atlantic, new grounds for our fishermen.

The republic is represented in both chambers of the Supreme Soviet, the national legislature—in the Soviet of the Union and the Soviet of Nationalities. In the Soviet of the Union, where the common interests of the country's citizens are expressed and therefore representation is in terms of population, Latvia has seven deputies. In the Soviet of Nationalities, which represents the more specific interests of the various peoples and national groups of the USSR, Latvia, like every other union republic, has 25 deputies.

Our legislators are people like Vitalis Rubens, chairman of the republic's Council of Ministers; First Secretary of the Latvian Communist Party Arvid Pelse; steelworker Karlis Strautins from Liepaja; fisherman Izidor Vetra from Ventspils; Janis Kalnberzins, President of the Presidium of

the Latvian Supreme Soviet; Karlis Plaude, President of the Latvian Academy of Sciences; radio worker Brigita Stumbre; dairy worker Felicija Cuplinskiene; ballerina Ausma Vilcina; writer Zanis Griva; weaver Skaidrite Botane and swineherd Antons Bartulis.

These people, of many different walks of life, meet elected deputies from other republics to discuss and act on matters of national moment. One of our deputies, Janis Peive, who was head of the Latvian government until last April, has had the signal honor to be elected chairman of the Soviet of Nationalities twice.

Legislative power for the republic itself is vested in the Latvian Supreme Soviet, elected in accordance with the republic's constitution. Latvians make up 82 per cent of our Supreme Soviet, Russians 14.5 per cent and people of other nationalities 3.5 per cent—a good reflection of the national origin of our population.

It is a comment on pre-Soviet times that there was not a single woman in the old Latvian Seim. In the USSR Supreme Soviet there are ten Latvian women, and in the republic's Supreme Soviet there are 62.

One of the most striking characteristics of today's Latvia is the very wide participation of the people in civic life. An instance is the 21,000 deputies elected to our local Soviets. Another is the 18,000 men and women doing volunteer work in the various committees of these city, town and village legislative bodies. A third is the 25,000 and more citizens who serve on the councils of cultural, educational and medical institutions and as volunteer inspectors of retail stores and cafeterias.

Latvian citizens, to paraphrase a famous declaration, have reason to say, "We are the state!"

Between the First and Second World Wars Latvia's only major construction project was the Kegums Hydroelectric Station on the Daugava River. Not a single screw in the station was of Latvian make. The station was not completed, only three of the four projected turbines were installed. The Swedish contractors took the fourth back home with them when they found that the Latvian treasury could not pay for it.

Our output of electric power has grown very considerably in Soviet times. Latvia's power development program is now worked out in conjunction with that of its neighboring union republics. A power line from Estonia's Baltic thermoelectric power station to Riga was completed in 1960 to augment our inadequate supply of electricity. It now crosses the whole of Latvia and continues on into Lithuania where an even larger thermoelectric station is under construction. In Latvia itself a hydroelectric station is being built at Plavinas on the Daugava River. These are all links in a unified power network for the whole northwest of the country that will service the three Baltic republics, Byelorussia and the Leningrad area.

In this power system our republic will not only be a consumer but a producer as well, and a fairly large producer. Latvia's major contribution will be the power cascade on the Daugava River. The Plavinas project will reach its full capacity of 825,000 kilowatts in 1965. Then the Kegums station will be enlarged to a 200,000-kilowatt capacity. And after that a new station will be built on the Daugava at Doles Sala with a capacity of 520,000 kilowatts.

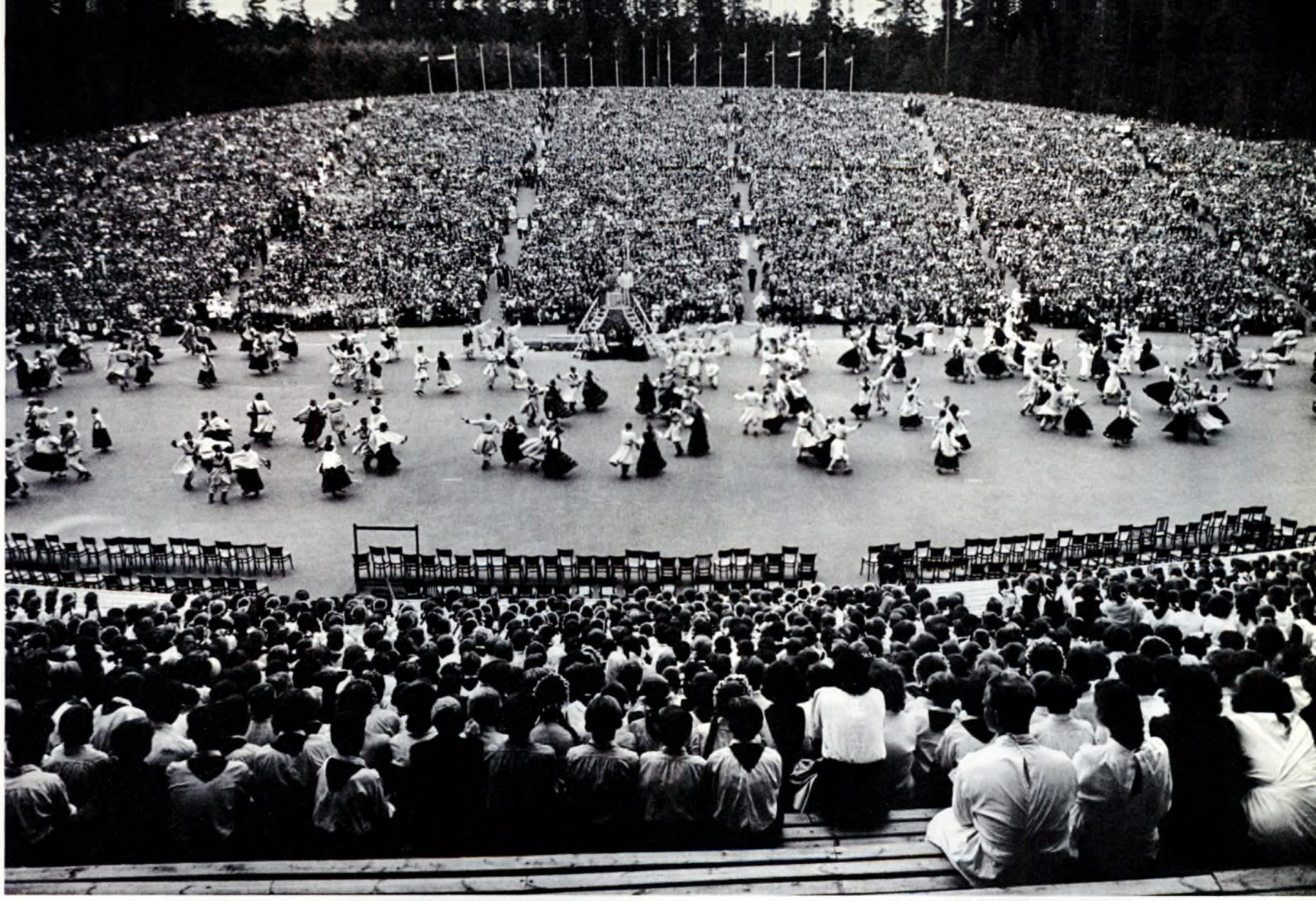
Large-scale construction of the kind going on today is new for Latvia. Several of the leading Riga plants are planning to expand. Some, like the metallurgical plant in Liepaja, are already in process of renovation. A synthetic fiber plant is being built at Daugavpils. Canneries on the Baltic coast are expanding one after another. This year a gas pipeline from the West Ukraine will be finished. Last year the Latvian Academy of Sciences' research atomic reactor at Salaspils was commissioned. New housing is going up all over. The republic looks like one grand building site.

Last year we supplied the country with the quantity of industrial goods scheduled for 1963 by the seven-year plan. Our output of farm machinery, rolled metals, automatic telephone exchanges, washing machines and refrigerators has already reached and surpassed the level planned for 1965.

This is today's Latvia, working with all the other Soviet republics to construct a communist society. We have not solved all our problems by a long way, nor have we tapped all our possibilities. But this joint effort of all the Soviet people will surmount all difficulties, solve all problems. This we know, because even today we can already see the outlines of tomorrow.

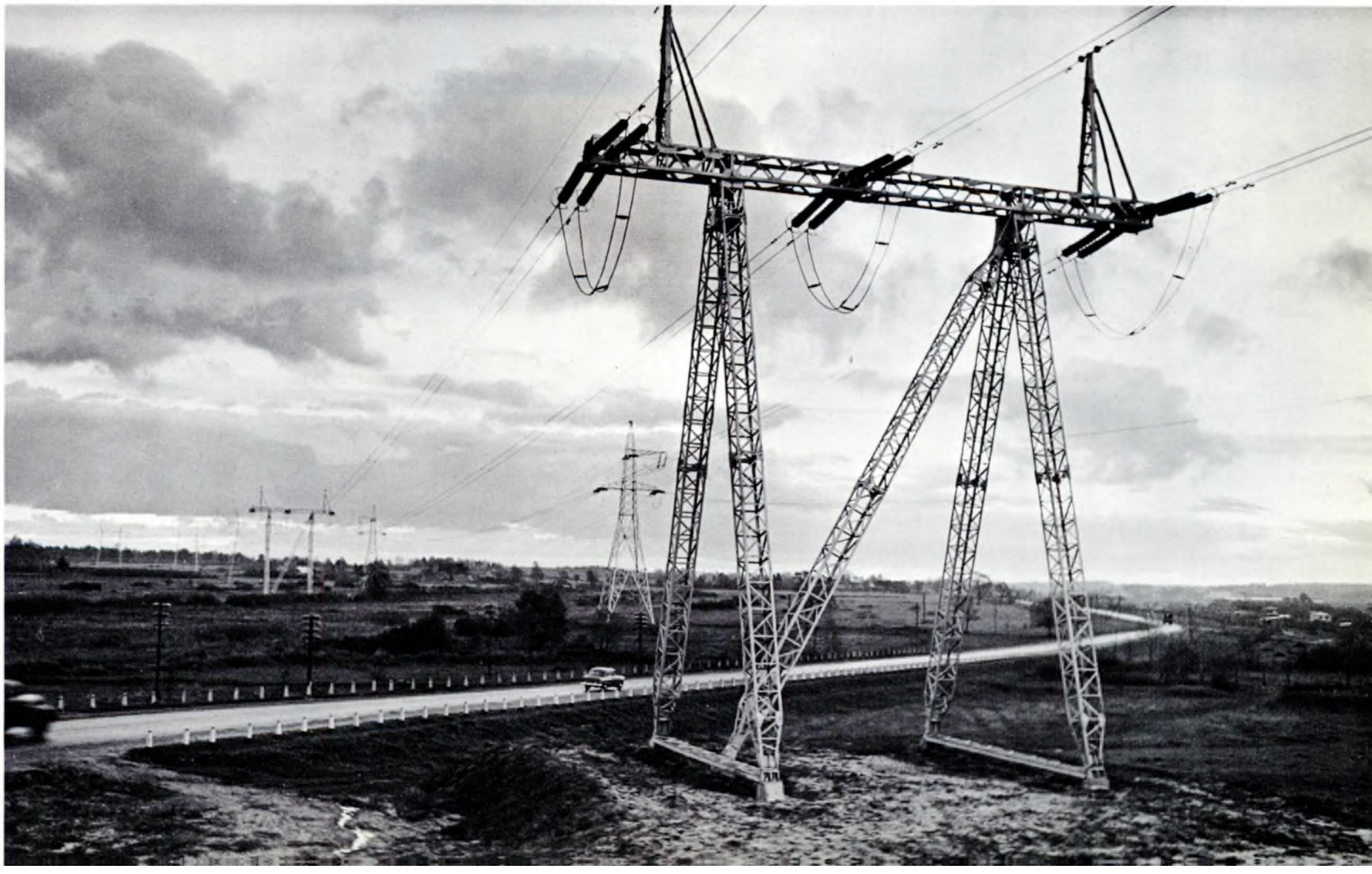
This picture is typical of long stretches of the Baltic Sea coast of Latvia, miles of fine white sand beaches and rolling dunes spotted with pine trees.

The valley of the Gauja River near Sigulda, with its ruins of the castles of German feudal knights—one of the many tourist attractions in Latvia.



These song and dance festivals are traditional affairs, with the participants preparing for them months in advance. The largest and most colorful one is held in Riga at the time of celebration of the Ligo holiday, in midsummer. It draws visitors from all parts of the republic and elsewhere.

Transmission lines will soon link Latvia, Estonia, Lithuania, Byelorussia and Leningrad Region in a united power system. Latvia will not only be a consumer in this system but a producer as well. Its main contribution will be a cascade of three hydroelectric stations on the Daugava River.



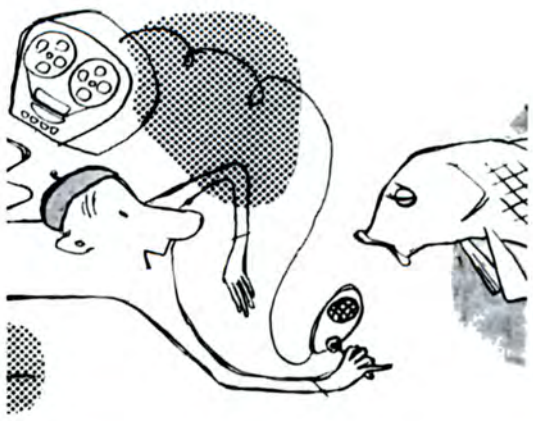
EVENTS AND PEOPLE

FISH TALK

Fish talk is Vladimir Protasov's specialty. He is a young scientist on the ichthyology laboratory staff of the USSR Academy of Sciences' Institute of Animal Morphology, and these last few years he has been making tape recordings of the sounds fish in the country's lakes and seas make.

Herring sound something like sparrows chirping, and sprats like bumble bees buzzing. The white sturgeon seems to have the broadest vocal range—it whistles, howls, yells and gnashes its teeth. The Black Sea maigre, when it lets water out of its swim bladder, sounds like a hammer.

Scientist Protasov exchanges fish talk with experts abroad. American ichthyologists recently sent him two recordings of Pacific Ocean fish sounds.



ULTRASOUND FOR MEDICAL TREATMENT

The UTP-1 is a new and important addition to the large number of ultrasonic medical instruments produced in the Soviet Union. The UTP-1 is designed for the treatment of radiculitis, sciatica and Bekhterev's disease (stiffening of the spine). Thus far the only positive results with Bekhterev's disease have been achieved with the UTP-1.

The new instrument is portable and can be used in home treatment. A special device controls the ultrasound dosage which is fed in a continuous or intermittent stream to the patient's body either directly or through water in a bathtub. The generator switches off automatically at the end of the treatment session.

GUSHERS IN SIBERIA

Geologists have been searching for oil in Siberia these past three decades. They found it in the western part of the region, great gushers that betoken enormous reserves. The first commercial installation is now pumping Siberian petroleum from the depths of the earth near the town of Tyumen with two additional installations added more recently in the middle reaches of the Ob.

Siberia had everything else in the way of mineral deposits, and geologists felt that it must have oil also. As far back as the thirties they roamed the great stretches of Siberia for this black gold but found no traces. After the Second World War the search was intensified with reconnaissance planes, specially equipped helicopters, tractors, bulldozers, self-propelled vehicles and light drilling machines. This large-scale offensive met with success.

The capacity of the oil-bearing geological strata grows as it moves northward. Preliminary estimates indicate that half of the region's petroleum reserves lie there. Scientists say the petroleum resources of Western Siberia can be matched only by the great deposits of the Near and Middle East.

A pipeline and railroad are being laid to the new oil districts.

ICEBREAKER'S LAST VOYAGE

The world's first icebreaker is making its last voyage. The *Yermak*, designed by the famous Russian sailor and scientist Admiral Stepan Makarov and built at the end of the past century, was a pioneer navigator in Arctic and Antarctic waters, the first Russian vessel to reach Franz Joseph Land. It was to the *Yermak* Alexander Popov in 1900 sent the world's first radiogram. The icebreaker has led dozens of convoys through the Arctic ice fields and made innumerable voyages to the Antarctic.

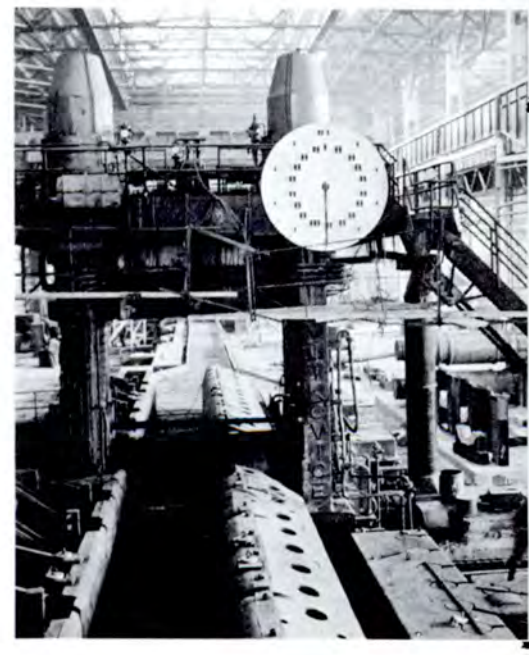
Other notable entries in its log book include the memorable February 1938, when the icebreaker picked up Ivan Papanin and his wintering party from their drifting ice floe off the eastern coast of Greenland, and the voyages it made between Kronstadt and besieged Leningrad in the last war.

The USSR Geographic Society has petitioned that the *Yermak* not be scrapped but be preserved as a memorial when the navigation season ends.

NEW STEELMAKER

The Orsk-Khalilovo Steel Plant in the Urals has put a big new 1120 blooming mill into operation. Built into it are more than 15,000 tons of structural steel. The entire country took part in the construction of this giant installation with its up-to-the-minute technological equipment and automatic control instruments. The parts were made by factories in 46 of the economic areas into which the Soviet Union is divided.

The manufacture and assembly of this giant installation is in keeping with the Twenty-second Party Congress decision on creating the material and technical base of communism. This mill makes it possible to modernize rolling processes and boost efficiency.



MAN-MADE SEAS

There is more blue in Soviet maps these days than there used to be; the course of many rivers has been altered and new man-made lakes and seas formed.

The first big reservoir was created a quarter of a century ago when the Dnieper Hydroelectric Station dam was built. The famous—or notorious—Dnieper rapids vanished under reservoir water, thereby solving the age-old problem of through navigation of the river.

Other large reservoirs came with the greater Volga project—a cascade of power plants along the whole length of the river. Volga water is now used for drinking, power, transport and irrigation.

The Rybinsk reservoir, built just before the Second World War, is half the size of Onega, the second largest lake in Europe.

In the postwar years, even larger man-made lakes appeared on the map. The most notable was Tsimlyanskaya Reservoir, created when the Volga-Don Canal and the Tsimlyanskaya Power Station on the Don were built.

The biggest of all artificial bodies of water, not only in the USSR but in the world, is the Kuibyshev Sea on the Volga which spreads for 2,500 square miles beyond the dam of the Lenin Hydroelectric Station. It has a capacity of more than 13 billion gallons. Lower down the river is the Volgograd Sea, another big reservoir.

Some of the newer man-made basins are the Kakhovka and Kremenchug reservoirs on the Dnieper, the Gorkovskoye on the Volga, the Kamskoye on the Kama, the Ust-Kamenogorsk on the Irtysh, the Novosibirsk on the Ob and the Irkutsk on the Angara.

The photo shows vessels on the Kuibyshev Sea.

FESTIVAL PRIZE FOR SOVIET FILM STAR

Lyudmila Kasatkina won first prize for her performance as Katharina in a Soviet film version of *The Taming of the Shrew* at the recent International TV Film Festival in Monte Carlo. The young movie star was cited for her charm, skill and sensitivity to the exacting Shakespearean role.

Her Monte Carlo triumph was the result of years of hard work and study. After graduating from the Lunacharsky Institute of Dramatic Art, Kasatkina was invited to join the company of the Central Soviet Army Theater, one of Moscow's finest. In her 13 years with the company she has done 33 different roles, mostly in contemporary Soviet plays.

Shown with her is script writer Klimenti Minz.

THIN-WALL TUBING

A mobile installation for manufacturing thin-walled tubing 2 inches to 2¾ feet in diameter and with a wall thickness of .01 to .04 inch has been designed and built at the Ukrainian Tube Research Institute in Dnepropetrovsk. The tubing is made of welded spirals of strip metal and can take pressures of up to 10 atmospheres. It is used for irrigation, factory and mine ventilation and many other purposes.

In the photo a group of designers and technologists are examining the new installation.

NEWLY CREATED MINERAL

About 70 years ago a big lunar crater, more than half a mile in diameter, was discovered in a remote part of Arizona. Speculation at the time was that it had been dug by a big meteorite.

A little more than a year ago American scientists, excavating in the crater, unearthed a mineral heretofore unknown in nature. It is now called coesite after Coes, an American scientist who had earlier derived this mineral artificially. Research has since proved that natural coesite originates from the colossal pressure of a falling meteorite on impact.

Last year two young Soviet scientists—Sergei Stishov and Svetlana Popova, working under Leonid Vereshchagin, corresponding member of the USSR Academy of Sciences, created a new type of silica, 50 per cent denser than quartz, under conditions of very high pressure and temperature. What they did, in effect, was to reproduce conditions that prevail at depths of 180 to 250 miles below the earth's surface.

American scientists wondered whether this unusually heavy silica might not be formed in nature by the impact waves of big meteorites. They searched in the old Arizona crater and found this same heavy silica that the Soviet researchers had produced artificially. The Americans named the mineral Stishovite, after one of its discoverers, Moscow University graduate student Sergei Stishov. Soviet scientists suggested the name Stipoverite instead to honor all of the discovers. The word was coined by using the first few letters of the three names—Stishov, Popova and Vereshchagin.

SEVENTEEN-YEAR SEPARATION

When the Nazis overran Byelorussia in the last war, they cleared out almost the whole civilian population. Anna Bocharova and her little daughter Lyuda were among those sent to the Oswiecim concentration camp. Parents at the camp were herded in one set of barracks, their children in another. Human beings had no names in these camps, they became numbers. Anna Bocharova had 70071 branded on her arm, her daughter 70072.

In February 1945, the fighting neared Oswiecim. The adult prisoners, Anna among them, were shipped off to forced labor inside Germany proper; Lyuda and the other children were left at the camp.

One day a Polish railroad worker came to Oswiecim with his wife, hoping to catch a glimpse of his brother who was imprisoned there. The Rydzikowskis saw five-year-old Lyuda staring at them through the gate with grief-stricken eyes.

They managed to get the child and took her home with them. They brought her up as though she were their own daughter. She went through grade school, then through a chemical trade school, began working and got married.

Lyuda's parents kept searching for her all these years, hoping she might be alive. Last February the Union of Red Cross and Red Crescent Societies sent word to the Ukrainian town of Yenakievo, where they live, that their daughter had been found.

Hundreds of bystanders looked on when the Bocharovs, the Rydzikowskis and the Skibickis (the surname of Arthur, Lyuda's husband) met at the Byelorussian Railroad Station in Moscow, and mother and daughter embraced after a 17-year separation.

The photo shows Anna and Lyuda Bocharova and Bronislawa Rydzikowski.

PEREGRINATING GEOLOGY LABORATORIES

Laboratories on caterpillar tracks make it possible for geologists to see gas, oil and other valuable natural deposits hidden in the earth. This peregrinating laboratory, called PSL-1, will disclose the secrets of the subterranean area under survey only during earth tremors. To wait for them to occur naturally is too uncertain for our present-day geologists so they create tremors when they need them by rocking the earth with explosives. The echoes are picked up by the sensitive instruments and recorded on photopaper rolls.

This Younger Generation

BY YEVGENI IVANOV
EDITOR, MOLODAYA GVARDIA PUBLISHING HOUSE

IT WAS DURING AN INTERMISSION the first day of the Fourteenth Congress of the Young Communist League last April, when the delegates were chatting, laughing and singing in the white marble lobby of the Palace of Congresses in the Kremlin, that a man standing alongside me said in broken Russian, "This is a sham."

"What do you mean?" I asked him.

"I mean all this applause and the laughter and the rest."

"What makes you think so?" I asked, surprised.

The foreigner countered with a question, "Do you really believe the people here are sincere?" Then, with complete conviction, "The new generation is different. All this business is staged."

We talked a little but without really reaching each other. He did not credit our sincerity and optimism; I saw no reason for his mistrust and skepticism. I had no opportunity then to try to make him—and those who share his opinion—understand how completely mistaken they are. Perhaps I can now.

Let us look into the hearts of Soviet young people. No difficult thing to do, because they express their frank thoughts and feelings in letters to the press and in forums and meetings broadcast on radio and TV. They talk freely of their plans, dreams, doubts and hopes, and of what happiness, love, country and vocation mean to them. These accounts are my generation's confession of faith.

This is what Volodya Denisov, a worker at the Kransnoyarsk Hydroelectric Station, wrote to a youth newspaper:

"Till my third year at the Novosibirsk Institute I majored in building technology. Then I became interested in hydroelectric station construction and transferred to the correspondence division of that faculty. I went to work on the construction site of a hydropower station. I still remember what I felt that first day on the site.

" 'This is home,' I said to myself. Perhaps I felt that way because the YCL committee had welcomed me like an old comrade, like one of their own.

"And that construction site really did get to be home. My first job there was pouring concrete. Then I became fitter-assembler on the head structures, and now I'm a carpenter on a composite team. Like the others in the team, I'm a Jack-of-all-trades. As for our accommodations, three of us live in a tiny room. We begin to realize how cramped we are whenever one of us goes on vacation.

"Right now we're getting ready for a 'major operation.' In spring a reinforced concrete plant will start work, and concrete will keep pouring without a stop into the body of our dam. The boys spend day and night in the foundation pit. From above they look like ants. You think there are just a few of them in the enormous pit, but as you keep looking, you realize how many of them there are—boys of our age—going without sleep, spotlights picking them out on the construction sites all over the country. They are so far away and unknown and yet so dear, like pals. So much so, in fact, that you feel like yelling: 'Hello, fellows. Isn't it swell to be so strong?'

"New cities, mines, open-hearth furnaces, big rolling mills, huge chemical plants and new railroads have cropped up in what were wide open spaces four or six years ago.

"Once somebody on the site said to me, 'You're a hick. You like all this because you haven't been around. That's why you're tickled with our measly little village and its half-baked movie!'

"Such 'fine' connoisseurs of life are few and far between in our parts. They don't count. They simply can't hatch themselves out of their egg of Philistine complacency. But we are going on with our building and know that in a few years our streets will be covered with shiny asphalt, that we'll be a regular spa, a much finer center for touring, mountaineering, and skiing than anything Switzerland has to offer. Tourists and school children will come here and marvel at our grand power station and beautiful town on the bank of the Yenisei River. And even though our names may not be inscribed here and they will be admiring the work of anonymous builders, that future is worth working for. That's how I look on life.

"My friend Slava Shemyakin, a good natured, even-tempered fellow who hails from Vologda Region, got a letter from his family saying: 'What do you want such a restless life for? Come back home. We built a new house, and you can be head of the household. We built it for you. At our age, we don't need much. . . .' When he read the letter he said, 'Do they really think I'd exchange our construction site for their four walls?'

"Whenever I go to the institute to take my exams, my professors wink at me. 'Well, romanticist,' they say, 'are you still as enthusiastic? Don't you find it hard going?'

"'No,' I tell them every time."

We can gather from Volodya Denisov's letter that young people find heroism not only in battlefield exploits and outer space voyages. They also see it in the daily grind where the sense of self—of the ego—gives way countless thousands of times to one's sense of responsibility for the welfare of the collective.

That does not mean that we are reverting to the asceticism young people displayed in the early years after the Revolution and during the Civil War. Times are different, and people are also different. The life our younger generation lives today is infinitely broader, every aspect of it. Love, personal happiness, friendship, rewarding work, job promotion—these are all there to be had.

The point is that it is not the "off beat," the eccentric, that gives you the profile of the Soviet younger generation. It didn't 45 years ago, in the early years of Soviet power, and it does not today. From time immemorial the old folk have found the young folk "different."

It is probably what the revolutionary workers of the turn of the century, who spent half their lives in czarist prison camps and jails, said about the younger participants in the Revolution and the Civil War who had not gone through their "mill," and, in their turn, what the heroes of the Revolution and the Civil War said about young people who "never smelled the smoke of battle." Now, too, the older generation wags its head in disapproval and complains that "young people are not what they used to be." They look down their noses at the crew cuts, the pointed shoes and the narrow pants and say, "We were too busy pushing the five-year plans through to go in for that kind of nonsense."

They forget, in carping at these externals, that there really isn't any difference in principle between the heroism of the youth in the years of the Civil War and that of the pioneers in the virgin land areas who give up the comforts of home to build farms and cities in the wilderness. It is the same revolutionary spirit, the same courage, that drives them. The times and the jobs and the people are different, but the spirit is the same. As for the narrow pants and the crew cuts or any other vogue they favor at the moment, haven't young people always thought their elders hopelessly old-fashioned?

Differences? Yes, but they are purely superficial. On anything basic—the spirit of the time or its real content—the youth and the older generation have no differences.

The Young Communist League Congress was no parade, no showy party. The 19 million YCL'ers in the Soviet Union elected 4,000 delegates to the Congress to thrash out serious problems.

Yevgeni Zhuravlyov, head of the Department of Computation Theory at the Mathematics Institute of the USSR Academy of Sciences' Siberian Division, told what young scientists were doing to develop Siberia's economy and culture. Nikolai Severinov, a miner from the Ukraine, spoke of the production records young people in the Donets Basin were setting with new coal mining machinery. Lyubov Tokareva, a schoolgirl from Archangel, wanted the Ministry of Public Education to make textbooks more readable.

The delegates shared experiences, checked progress and criticized shortcomings in the work of their own local organizations and of certain government agencies. The Ministry of Railways was taken sharply to task for not following through on valuable suggestions made by young workers in Saratov Region, the Ministry of Education of the Russian Republic for its delay in building more boarding schools.

The delegates summed up the contributions YCL'ers had made to the country's industrial progress. Since the last congress, held in 1958, they had built 48 open-hearth and blast furnaces, 34 steel- and pipe-rolling mills and shops, 40 coal mines and 95 chemical plants. They had laid 3,100 miles of track and electrified 5,000 miles of railroad.

Soviet young people had taken over sponsorship of 300 large industrial plants under construction and classed them as "All-Union Shock YCL Construction Developments," which means that the young people of a particular district, region, territory or republic consider these designated projects exceptionally important for the country's general economic progress. The YCL called on the youth to seek out jobs on these critical projects, to try to make work on these sites especially efficient and productive, and to organize study and recreation there better than anywhere else.

The YCL committees on these construction developments, through this activity program which touches on every interest of young people, has won itself an authoritative voice that is listened to not only by local project directors but by national ministries and economic councils as well.

People who do not know the character of our Soviet youth wonder why they volunteer for work on shock construction projects or for virgin land development. Is the pay better? Are working conditions pleasanter? Is it easier to carve out a career in these places far from home and accustomed surroundings?

Not at all. The pay is no higher and the work is often more difficult. What, then, draws these 18- to 20-year-olds to these distant places?

Young people are drawn naturally to things progressive, to work for social betterment. Patriotism, love of people, the wish to do great things for humanity—these are qualities especially characteristic of youth. But for Soviet boys and girls they are not abstract virtues That is why they ask for jobs on these shock communist labor teams and compete for production records. It is their contribution to the society they live in. They want to see power stations they built give light and warmth, new factories they put up manufacture more goods for people, beautiful new towns they laid out lived in by their countrymen. They are aware, too, that these construction sites are a hard, but very rewarding, school of experience, that they mold character. There they learn what they need to know as collective rulers of their country.

The number of these shock YCL construction sites is growing, the idea taking on the character of a youth movement, one which the Congress delegates endorsed heartily for its two-sided contribution—to society and to the spiritual growth of young men and women.

But Soviet youth does not live by work alone. Higher cultural standards and a better understanding of scientific and technological development are things which concern our young people vitally.

The proof lies in the 600,000 youth amateur art groups throughout the country. In schools, neighborhoods and places of work, there are training courses for directors of youth clubs, amateur art groups, film and photo clubs, book clubs, young correspondents clubs and sports clubs.

The variety of interests represented in these clubs is practically infinite. There are clubs where young people hear old Communists reminisce about Revolutionary days, and automation engineers lecture on the industrial future; international friendship clubs where they get to know young people from other countries and exchange impressions of their own trips abroad; clubs that exhibit the work of young artists; clubs that review the work of young actors and actresses.

There are 214 new youth unions and hobby clubs in Moscow alone. Youth universities of culture for the study of Russian and foreign painting, music and literature have sprung up all over the country. Thirty million young people are members of sports societies, which explains the good showing of Soviet athletes at international contests.

In the West, the word "Soviet" is sometimes used as though it were an antonym for the word "human" by people who have no understanding of our way of life. The word "human" implies industry, love of freedom, patriotism, honor, dignity, duty, friendship. All these concepts originated long ago, but they matured as society developed. Socialist man draws upon all that is fine and truly human from the spiritual heritage of past generations.

The reader will probably remember the four Soviet servicemen—Askhat Ziganshin, Philip Poplavsky, Anatoli Kryuchkovsky and Ivan Fedotov—who drifted in the Pacific on a tiny barge for 49 days in the winter of 1960 before they were picked up by an American naval vessel. The extraordinary courage and fortitude of these young men showed the Soviet character, the qualities inculcated by Soviet education. The four young men saw nothing heroic in the way they lived through that terrible ordeal; they merely behaved like men are supposed to.

Even more striking than the courage they demonstrated was their friendship and devotion for one another. One further proof, if any were needed, of the fact that "Soviet" means "human" in its best sense.

Nikita Khrushchev addressed the Fourteenth YCL Congress. He had the attention not only of the delegates but of the whole country's youth. He said, "To use the terminology of sports, what we are having is a relay race. We people of the older generation took the baton from Marx, Engels and Lenin. We ran with this baton as fast as was humanly possible. Now we transfer this baton of communist construction to you. I would even say that you have already picked up the baton. And you have picked it up on the run!"

These words are an expression of the gratitude of the older to the younger generation and of the ties that bind them. Yes, my generation did pick up the baton from our fathers and is carrying it. And not on foot, nor on horseback, nor even on a locomotive, but speeding it onward in rockets and spaceships. The velocities of our day call for men with good, healthy bodies and strong hearts. The Fourteenth YCL Congress showed that my generation's pulse is strong and its health excellent, admirably suited to the velocities of outer space. ★

Americans at home

BY LEV SERGEYEV

Artist Vitali Goriayev calls his graphic tour of the United States "Americans at Home." He made two visits—the first in 1958 with cartoonist Ivan Semionov at the invitation of the American Association of Editorial Cartoonists, when he stayed a month; the second, just before his one-man show which opened recently.

"I spent my first visit," said Goriayev, "getting acquainted with the work of American cartoonists; the second, seeing the work of painters and illustrators and going through the museums. I found that interest in Soviet art had grown in the interim and the time had come to exchange art exhibitions. I'm sure that Soviet art lovers would flock to see the paintings and drawings of such men as Franklin Watkins, Ben Shahn, Edward Hopper, Anton Refregier, Raphael Soyer and Charles White."

The drawings reproduced here give the reader an idea of Goriayev's impressions of his American cross-country tour.

An hour after Goriayev and Semionov arrived in New York, they were being interviewed in the office of cartoonist Dan Dowling of the New York *Herald Tribune*.

"What do you think of New York?" a reporter asked Goriayev.

"In the hour I've been here," the cartoonist replied, "I've been struck by three things—your skyscrapers look like cliffs; your men all look like athletes from the rear; your women all seem to be the same age, between 20 and 30."

The next morning's *Tribune* printed the interview with a photo of the three cartoonists—the two Russians and the American—each holding a sketch of the pianist Van Cliburn.

"What would you like to see in Washington?" the State Department representative asked Goriayev.

"I'd like to sketch the Capitol."

"Good. I'll arrange that for tomorrow."

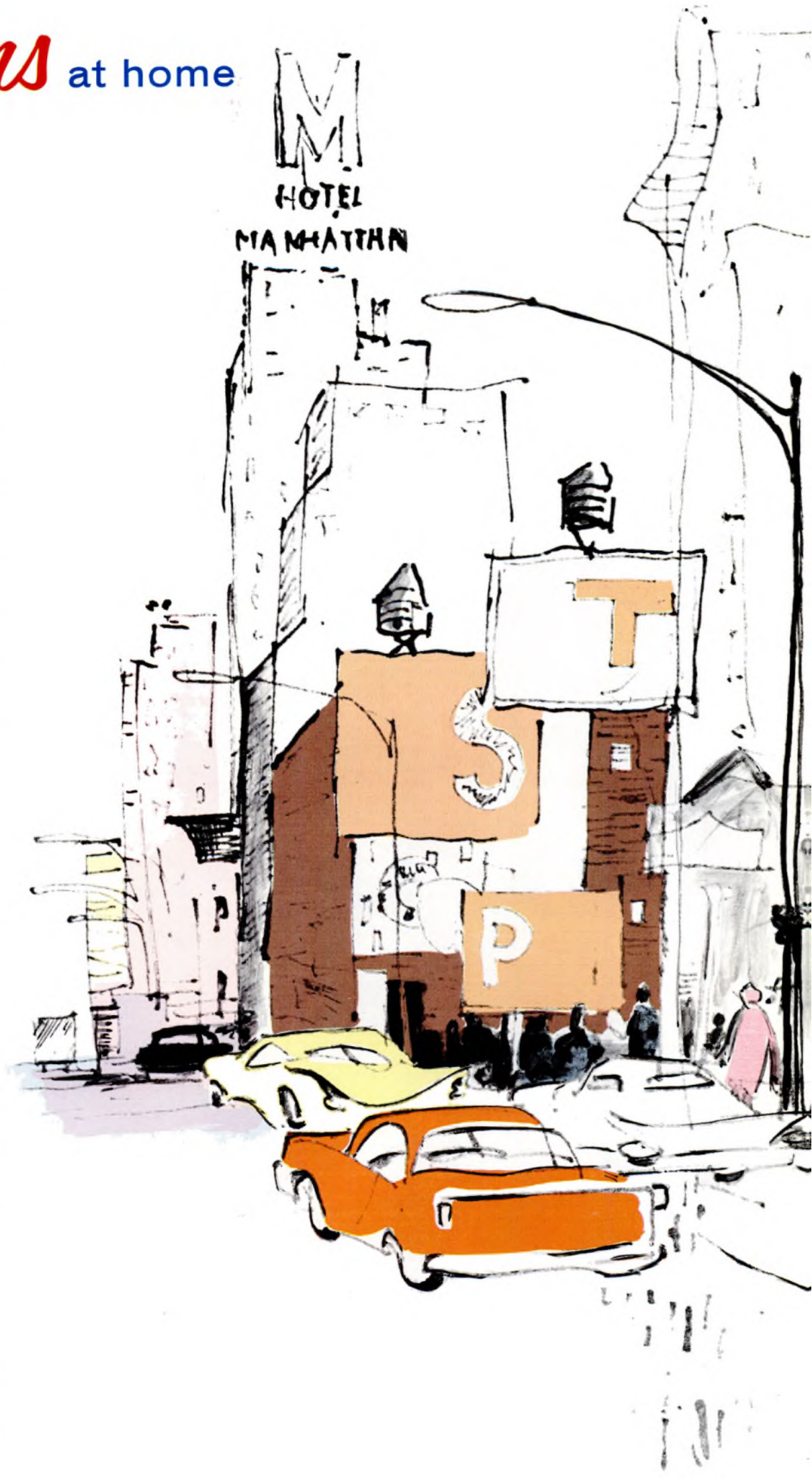
"Would it be possible to arrange it for today?" Goriayev asked.

"Of course." And a few minutes later the Soviet artist was standing in the middle of the busy avenue leading to the Capitol and sketching away, cars streaming past him on both sides. The reason for his imperturbability stood alongside him—a towering policeman who directed the traffic with no less dexterity than that exhibited by the artist.

The Washington Post featured Goriayev's drawing the next day, but without a credit line for his good genie, the traffic cop.

The day they were leaving Washington cartoonist Bill Crawford took Goriayev and Semionov to see the famous collection of nineteenth century French Impressionists at the National Gallery. Bill knows and loves French painting and was all prepared to give a guided tour.

But when they got to the Monets, it turned out to be the Soviet artists who did the guiding. They knew a couple of things about Monet that were new to Bill. And so the tour was a real exchange affair. Although Bill spoke no Russian,



and Goriayev and Semionov no English, they managed to tell one another a good deal about Monet. They all left the museum better informed and better friends than when they had come.

The annual Indianapolis 500-mile Speedway Race draws crowds from all over the United States, and the Soviet cartoonists thought they would like to be there too. They saw one of the racers catapulted from his car in a crazy skid and smashed to death against a concrete wall. The tragic accident happened near the grandstand, and though the whole thing was over in a minute, Goriayev had the scene down on paper.

The *Indianapolis Star* printed his sketch that evening with the comment that the Russian cartoonist had done it in 70 seconds.

No matter which American city Soviet tourists visit, the press greets them first. This seems to be an unwritten law of American hospitality.

The *San Francisco Times* photographer followed Goriayev everywhere. The paper printed eight of his drawings and a photograph of the Soviet artist with a church as background.

That same evening the photographer presented Goriayev with several of the pictures he had snapped, each with a church in the background.

Goriayev asked the interpreter, "Why did he take all my pictures near churches?"

The interpreter smiled, "He believes that there are no churches in the Soviet Union and that is why the people do not believe in God. I guess this was his way of bringing you nearer to God."

Goriayev was waiting in the library of the University of California for an art professor who was to show him around. Before long the cartoonist began to draw a girl and a boy reading.

A small crowd gathered almost immediately. No sooner had he finished the first sketch, than another couple sat down to pose for him. Soon everybody in the library was lined up, waiting patiently to be sketched. He did twenty in an hour, with many more waiting, and would have been captive for the day had the professor not made his appearance then.

But word had gotten around. As Goriayev was leaving the campus, his artist's eye was caught by a student sitting on a pile of red bricks. He was a striking figure with his white pants, yellow shirt, tanned face and crew-cut, and he knew it. That's why he was perched where Goriayev would be sure to spot him.

Goriayev did, of course, and repaid the young man's patience and enterprise with a sketch. Then two girls in bright-colored dresses turned up from nowhere and stationed themselves near Goriayev's car. That started another line, and he arrived at his hotel very late that day.

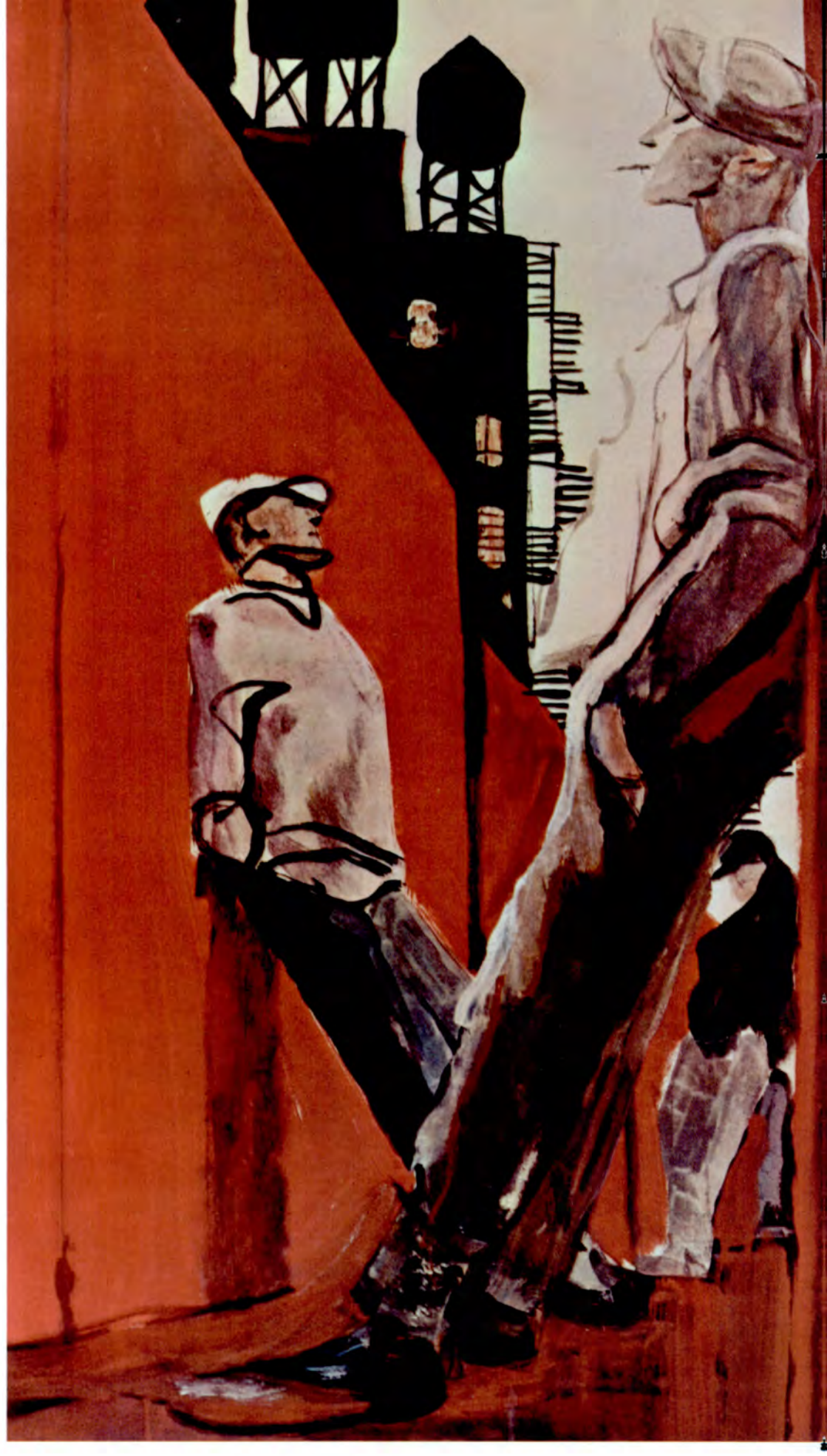
In San Francisco, Goriayev was invited to speak on Soviet art at the Academy. The hall was packed with student abstractionist painters on the warpath. They were expecting a real fight with this representative of Soviet art who rejected abstract painting.

Goriayev sensed the belligerent mood of his audience. They wanted his opinion? O.K.

"When I was at art school," he began, "I despised drawing at least as much as you do. I thought that I could start painting right away.

"Once we were asked to paint a landscape. I started out confidently enough, but it didn't seem to go. In my agitation I kept wiping the brush on my shirt front. I spent a long time on that landscape, but all I had was a mess. Finally I took off my shirt, ripped out the smeared part, framed it and handed it in. That was how I created my first abstract painting."

The howl that went up won him the first round and the audience.



Washington, D. C.

Lunch break in Chicago

Making advertising

In the park

WORLD COOPERATION IN MEDICINE

Nikolai Blokhin was born in 1912, the son of a physician. He graduated from a medical institute and specialized in surgery. During the war he headed a large hospital and subsequently used the experience for his doctoral thesis "Skin Transplantation in the Surgery of War Wounds," which he defended with great brilliance in 1946.

All this time he was teaching, and his highly original and stimulating lectures attracted not only students but experienced doctors.

Since 1952 Dr. Blokhin has worked in Moscow as director of the Institute of Experimental and Clinical Oncology, displaying outstanding organizational and scientific ability. In 1960 he was elected president of the Academy of Medical Sciences.

Besides shouldering a heavy burden of administrative work at the institute, Dr. Blokhin is engaged in a large research program. He is leading a new trend in the treatment of tumors.

He is editor of the journal *Vestnik Akademii Meditsinskikh Nauk* and is the author of many works, 40 on oncology alone.

The Academician has presented numerous papers at conferences and congresses at home and abroad and is a well-known figure in medical circles in the United States, England, Brazil, Austria, Sweden and other countries. In 1944 he spent several months in the United States familiarizing himself with the organization of medical practice there. His contacts with American scientists keep growing, furthered by a common interest—the fight for man's life.

Academician Blokhin finds time from his many duties for public service. He is a member of the District Committee of the Communist Party, a member of the Soviet Peace Committee, and was recently elected president of the Institute of Soviet-American Relations.

BY NIKOLAI BLOKHIN
PRESIDENT, USSR ACADEMY OF MEDICAL SCIENCES
PRESIDENT, INSTITUTE OF SOVIET-AMERICAN RELATIONS

THE EIGHTH INTERNATIONAL Cancer Congress will be held in Moscow July 22-28, 1962. We expect it to be the largest international conference yet held on malignant tumors and hope it will help pool the efforts of researchers in different countries and make it possible to find the answers more quickly to many of the questions that have arisen in our fight against the disease.

Cancer, like so many other medical problems, requires the cooperation of scientists in physics, chemistry, biology and other allied sciences. Modern technological advances and findings in virology, cytology, medical genetics and biochemistry must be employed to the full in oncological research. International cooperation in these fields is extremely useful, even vital, especially between scientists in the most highly developed countries where the technical level of research is high.

The contact between medical men in the Soviet Union and the United States is a convincing demonstration of the fruitfulness of cooperative effort. In the past few years we have had rewarding ties between American and Soviet researchers in cardiovascular pathology, malignant tumors and poliomyelitis. These growing contacts are a result of the Soviet-American agreement on scientific, technical and cultural cooperation.

The joint scientific conferences on cardiovascular diseases held at the National Institutes of Health in Bethesda, Maryland, and in Moscow considered major problems of hypertension, arteriosclerosis, and heart and blood vessel surgery. A group from the USSR Academy of Medical Sciences led by Professor Myasnikov visited several American cardiological institutions. These were undoubtedly interesting and useful exchanges.

The noted cardiologist Dr. Paul Dudley White of Boston headed an American delegation to Moscow and has continued to maintain contact with Soviet cardiologists. In 1961 he was elected a member of the USSR Academy of Medical Sciences.

Soviet-American cooperation on poliomyelitis has been most productive. Repeated joint conferences and reciprocal visits to scientific institutions prepared the ground for the large-scale polio vaccination campaign carried through in the Soviet Union. Our Mikhail Chumakov, Anatoli Smorodintsev and other scientists benefited from the experience of the American researchers. Dr. Sabin's live vaccine in candy form is being used for mass vaccination, with results so favorable as to promise the complete eradication of polio in the Soviet Union within the next few years.

Soviet-American contacts in malignant tumor research have been no less fruitful. We have had visits in the past few years from Dr. Kenneth M. Endicott, director of the National Cancer Institute; Dr. John R. Heller, director of the Sloan-Kettering Institute; and also from such other leading scientists from these institutes as Drs. Howard B. Andervont, Roy Hertz, Harold Dorn, C. Chester Stock, Henry T. Randall and others. Joint conferences, visits to laboratories and clinics, discussions at the microscope, at bedsides and laboratory animal cages—all this is very useful.

I visited the United States on four different occasions, saw several scientific institutions and met researchers in oncology. I look forward to meeting many foreign friends at the International Cancer Congress, particularly my American friends, who will certainly be taking an active part. I hope to see Dr. Sidney Farber of Boston, Dr. Alexander Brunschwig of New York, Dr. Richard B. Shimkin of Bethesda, Dr. K. B. de Ome of Berkeley and many others in Moscow again.

I should like to extend my triple greetings—as chairman of the Cancer Congress, as president of the USSR Academy of Medical Sciences, and as president of the recently founded Institute of Soviet-American Relations—to our American friends, and to express my earnest hope that our scientific contacts will continue to grow and strengthen in the service of medical progress, health and longevity. ★

CANCER FIGHTERS

Boris Peterson, deputy director of the Moscow research and treatment center.

BY DR. BORIS PETERSON
DEPUTY DIRECTOR, INSTITUTE OF EXPERIMENTAL AND CLINICAL ONCOLOGY

PHOTOS BY GEORGI PETRUSOV

MANY infectious diseases that once threatened life have been wiped out in our generation. Tuberculosis, poliomyelitis, encephalitis and others are in retreat before the attack of medical science, but we are still menaced by cardiovascular diseases and malignant tumors.

The USSR Academy of Medical Sciences devotes a great deal of its attention to the fight against cancer. Two large oncological institutes —one in Moscow, the other in Leningrad—are carrying on a constant search for new and better methods of cancer diagnosis, especially in its early stages, and treatment. Experimental oncology is also done at the biological institutes of the USSR Academy of Sciences. All this involves large-scale research.

The Institute of Experimental and Clinical Oncology in Moscow was set up only ten years ago, but it has already outgrown its present quarters. It will shortly be moving into a new group of buildings, a veritable small town—an experimental section with laboratories; a hospital for 400 patients with a surgery; a radiology section; a vivarium; and auxiliary facilities.

We have young students and researchers of world reputation at the institute. The average age of our scientists is 34. The staff includes five full members and three corresponding members of the Academy of Medical Sciences, 17 professors and Doctors of Science, 87 Masters of Science. The institute is headed by Nikolai Blokhin, president of the USSR Academy of Medical Sciences.

Our institute provides training in experimental and clinical oncology, offering clinical internships and training toward the degrees of Master of Science and Doctor of Science to 52 young physicians and biologists every year. A master's degree requires three years of study, a specified amount of scientific work and a thesis. The purpose of the clinical internship is to provide practical training in oncology. A doctor's degree, offered to experienced scientific workers, requires four or five years of study and research and a thesis on some topical subject.

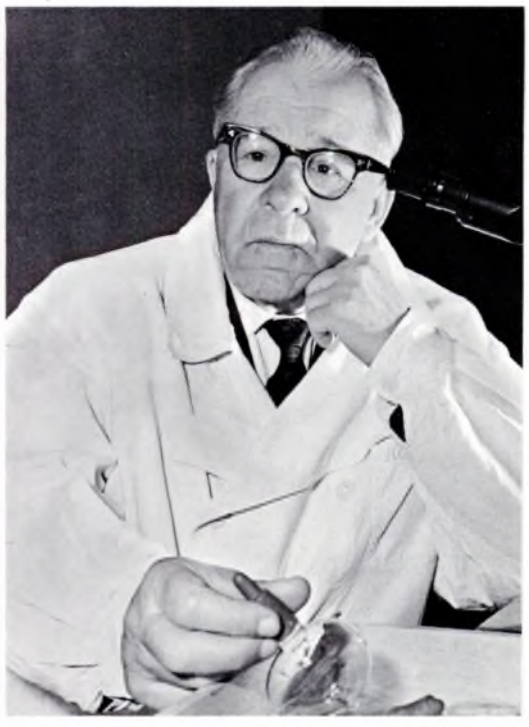
Many physicians from oncological dispensaries and hospitals in other cities take part in the work of the institute. Postgraduates, interns and candidates for a doctorate include many scientists from the various union republics.

Our research is directed mainly at introducing the findings of experimental oncology into medical practice, and we have departments handling the different areas of investigation.

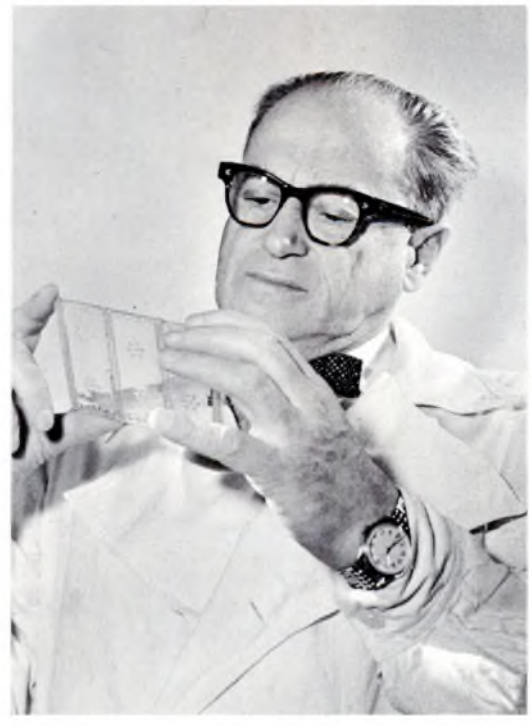
The etiology and pathogenesis of cancer is studied in the department headed by the noted scientist Alexander Timofeyevsky. For several years he and his staff have been looking into the nature of virus-like corpuscles that may be the causative agents of a number of malignant tumors. These corpuscles are grown in tissue cultures and studied virologically and under the electron microscope. The possibility of inducing malignant growth in tissues with these corpuscles is under investigation.

The study of specific antigens in human and animal tumors figures prominently in the institute's research program. The immunology laboratory isolates antigens from various tumors and makes diagnostic tests. The antigens are tested in the clinics. Animal experiments have demonstrated that malignant changes in tissue

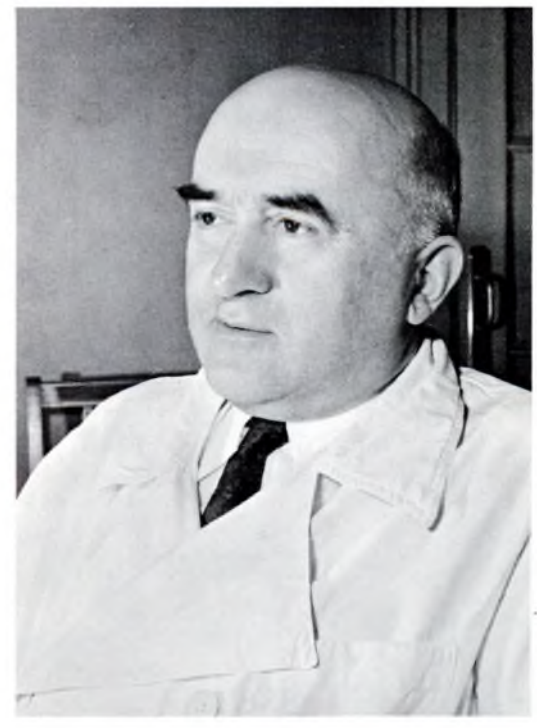
Academician Alexander Timofeyevsky believes viruses may cause some types of malignant tumors.



Dr. Lev Zilber heads the immunology laboratory, where cancer counteragents are investigated.



Academician Nikolai Krayevsky, a noted pathologist, is on the clinical staff of the institute.



Professor Mikhail Mayevsky's laboratory tests antibiotics and other drugs for cancer therapy.

are accompanied by changes in the composition of the antigens.

Carcinogenesis is given considerable attention. Three large laboratories have been set up to deal with chemical, physical (mainly radioactive) and occupational carcinogens. At this last laboratory the various agents encountered at work and at home are studied to ascertain their carcinogenic properties and sources, and preventive measures are worked out. Carcinogens have been found in some foodstuffs, specifically smoked foods, and remedial steps taken. Precancer research done under the direction of Lev Shabad has shed additional light on pathologic conditions likely to develop into cancer. Investigation of this kind brings cancer prevention closer since the treatment of precancerous conditions is the most effective way of preventing the disease.

Our biochemists, led by Vladimir Shapot, are working on topical problems—the relation of nucleic acids to carcinogenesis and the metabolism of various tumors. They have been producing interesting types of tumors, very similar to those found in man, in experimental animals. Tumors of the lung, sarcomas and tumors of the stomach have been induced in rats, hens and hamsters. Human tumors are being grown successfully in tissue cultures. Our tissue culture laboratory has derived strains of melanoma, sarcoma, cancer of the stomach, pancreas, etc.

The institute is doing original research in hormone therapy, studying the role of hormonal factors in the growth of tumors, and has found that hormonal disorders may trigger malignant tissue growth.

Several large laboratories directed by well-known chemists are doing experimental studies in the treatment of tumors with drugs. Alexander Berlin heads the analytical chemistry laboratory, and Georgi Menshikov the synthetic chemistry lab. These divisions produce anticancer drugs and turn them over to the experimental chemotherapy lab for potency tests. The pharmacology lab does a complete description of these drugs and determines the dosages. Then they are subjected to clinical testing.

Besides testing chemical preparations, the bulk of them chlorethylamine compounds, the biotherapy lab, headed by Mikhail Mayevsky, tests antibiotics and natural compounds, most of which are obtained mainly by the institute's chemical laboratories. There are a number of such preparations in wide use now—among them sarcolysin and dopan—in Soviet hospitals and abroad.

The clinical oncology department is headed by institute director Nikolai Blokhin. Working with him are Nikolai Krayevsky, Ludmila Novikova, radiologist Iosif Tagher and others. The division has several clinics, two of them surgical with 60 beds each. One is for patients with tumors of the lung, the esophagus, the cardia of the stomach, and of the bone and soft tissue; the other for tumors of the stomach and intestine, and urological disorders. There is also a gynecology clinic and a clinic for tumors of the endocrine glands.

The institute's therapeutic division treats patients with a generalized cancer process, myeloma, lymphgranulomatosis and other diseases, and tests the clinical effectiveness of the new anticancer compounds produced in our laboratories and in those of other institutes.

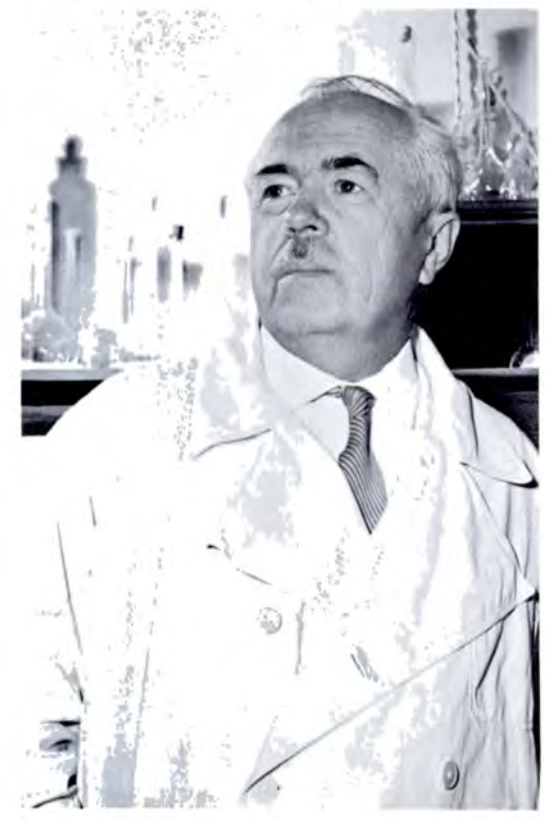
The large radiology department has two divisions, for diagnosis and for therapy, both with modern equipment.

Besides the clinical, biochemical, cytologic and

Dr. Lev Shabad studies the pathologic conditions which can lead to cancer if not checked.

Academician Ludmila Novikova, a gynecologist, is one of the leading Soviet cancer authorities.

Chemotherapy, Professor Leonid Larionov's specialty, is a potent and very promising weapon.



other laboratories concerned with the daily examination of patients, the institute has several smaller labs—immunology, tissue culture and others—that introduce experimental findings into clinical practice. Their very important function is to link the large research divisions with the clinics. The clinical department's major work is to examine the possibilities of combining the surgical, chemotherapeutic, hormonal and radiotherapeutic methods of treating tumors. This over-all approach is used in assessing the therapeutic value of sarcolysin and ThioTEPA for treating cancer of the stomach in nonoperable cases and in the postoperative period. In cases of lung cancer we study the action of embichin, ThioTEPA and sarcolysin after surgery. We also use these preparations during surgery.

According to preliminary findings, the postoperative administration of these compounds improves the patient's condition, retards the development of metastases (the transfer of the disease to other parts of the body), and decreases the likelihood of a relapse. Chemical and hormonal preparations are used widely in our gynecology and endocrinology clinics. We have found that this combined method of treating malignant tumors of the ovaries and the mammary glands yields good results.

Some preparations have proved effective in treating reticulosarcoma, Ewing's sarcoma and lymphogranulomatosis. Intensive study of the value of the use of antibiotics in treatment is also under way.

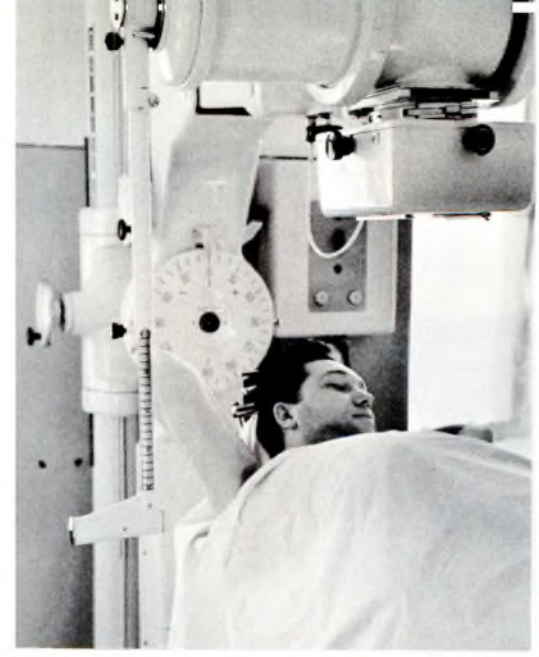
At the same time that we investigate these preparations we study ways and methods of administering them and try to determine how to eliminate undesirable side effects on blood formation. During the past few years, in treating malignant tumors of the extremities, our surgery clinics have been using the perfusion technique. The blood in a cancerous limb is cut off from the heart, filled with large doses of anticancer drugs and circulated by means of an AIK machine. The data we have show that this method brings about a regression of the tumor in a number of cases, and when combined with surgery produces favorable results.

Surgery, since it is still the principal method of treatment for tumors, receives much attention. Our surgery clinics are perfecting their operative methods and techniques. Various types of anesthetics are being studied, and complicated operations involving the removal or resection of several organs are performed.

We make a point of equipping our operating theaters with modern facilities, particularly with apparatus designed and made in the Soviet Union and widely used throughout the country. Surgeons abroad are familiar with such units as the UKB apparatus for suturing the bronchial stump during the removal of a lung or its lobe, the UKL apparatus for suturing the stomach and intestines, and the PKS apparatus for stitching vessels and securing anastomosis between the esophagus and the intestine or the stump of the stomach. Surgical experience demonstrates that this equipment has sharply reduced the incidence of complications during and after surgery.

The institute staff uses every possible weapon in its fight against cancer. Oncology, a study of paramount importance in our public health system, receives every assistance from the state and the Communist Party. Soviet scientists—medical men and biologists in cooperation with chemists, physicists and other specialists—are hard at work to eradicate the killing disease.

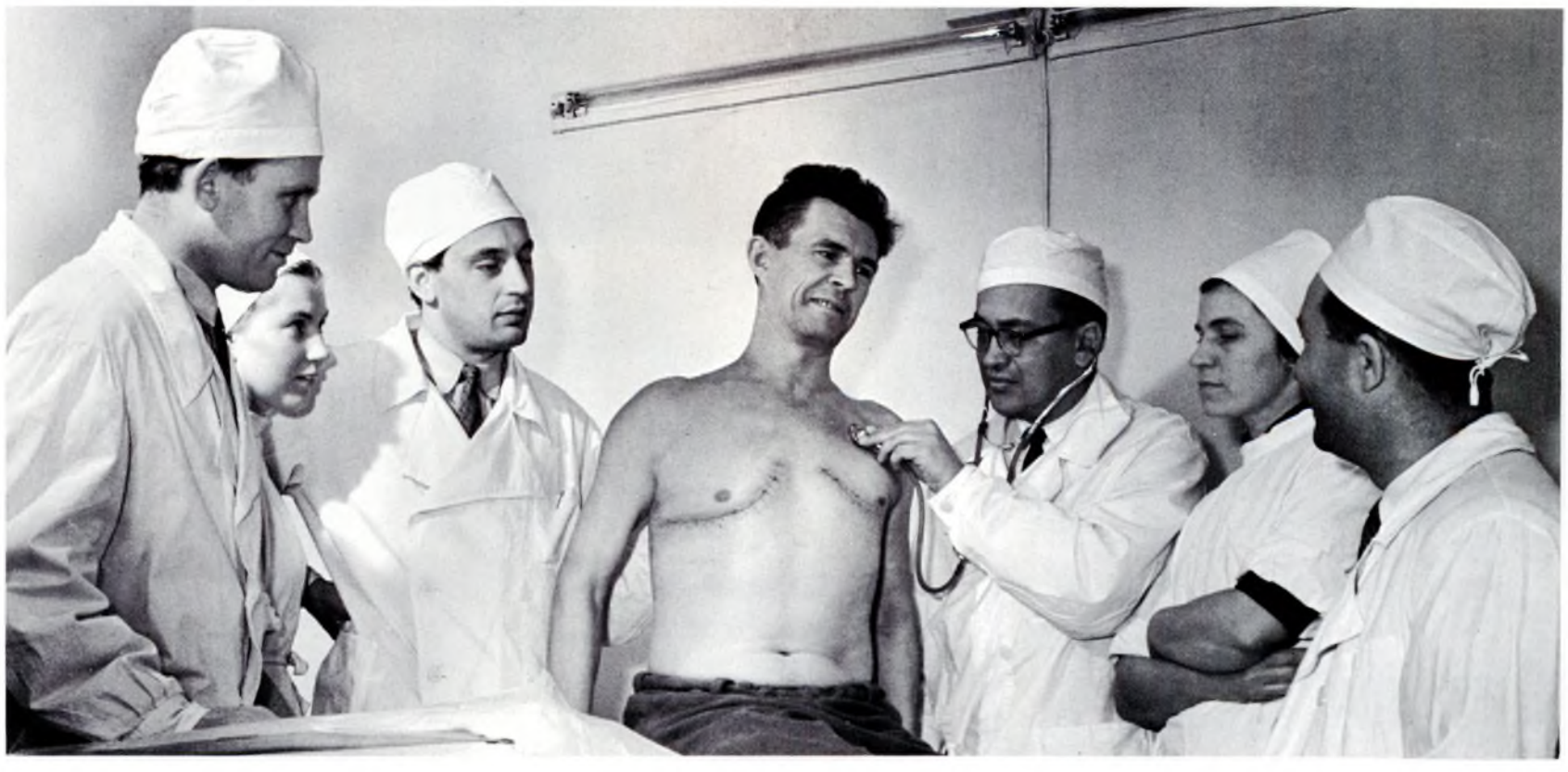
The Eighth International Congress will be another step toward that goal. ★



A rotating irradiation unit. The institute is equipped with the most advanced instruments.

The ultratom cuts the incredibly thin tissue sections required for electron microscope work.

Checking steeplejack Bulychev after a rare operation for double primary cancer of the lungs.



Sheremetyevo Airport near Moscow. Pierre Salinger, flanked by U.S. Ambassador Thompson and Alexei Adzhubei (with dark glasses), arrives for a visit.

PIERRE SALINGER GETS ACQUAINTED WITH THE SOVIET UNION

BY VIKENTI MATVEYEV
IZVESTIA COMMENTATOR

(Above) Salinger addresses a large gathering of Soviet newsmen at a luncheon in his honor. (Below) With Khrushchev at his country home near Moscow.

"IT WAS A LITTLE OF EVERYTHING" was the way a member of Pierre Salinger's party summed up the week spent in the Soviet Union. The White House Press Secretary agreed.

However, there was nothing brief or fleeting about Salinger's meetings with Nikita Khrushchev. The head of the Soviet Government devoted considerable time to him at the very beginning of his tour.

Salinger arrived in Moscow at the invitation of Alexei Adzhubei, Editor in Chief of *Izvestia*. I accompanied him on his journey to Leningrad and Kiev and was with him part of the time he spent in Moscow. There were so many meetings of different kinds during this brief stay that I lost count.

For instance, in one day Salinger called at the *Izvestia* editorial offices, chatted with staff executives of the Novosti Press Agency (APN), and attended a luncheon where he replied to questions coming from an audience of 200 of the Soviet capital's journalists. That same day he had a quick look around the offices and departments of the big *Pravda* printing establishment that lasted an hour and a half, and then remained on his feet for another hour and a half at a reception given in his honor by the U.S. Ambassador to the USSR.

On several occasions Salinger ran into fellow countrymen in the Soviet Union. The American tourists recognized him immediately, and lively conversations followed. He met an elderly American in Leningrad who had come to the Soviet Union to see his relatives for the first time in 45 years.

Salinger had a chance to speak with these relatives, and they told him of their grim experiences during the nazi siege of Leningrad when they lost many members of their family. They asked the American visitors to tell the people of the United States that all the Soviet people wanted to live in peace and friendship with every nation, including the USA.

This was a recurring topic that seemed to dominate all the talks Salinger had on Soviet soil. Literally at every step he could see evidence of the Soviet people's good will—at scheduled meetings and at chance meetings like the one on board the Krasnaya Strela express train from Moscow to Leningrad when he got into a conversation with a Tula soccer team and a fledgling author from Leningrad.

One girl in Kiev, on hearing of the approaching birthday of President Kennedy, gave Salinger a bunch of lilies of the valley to take back to the President as a gift from her. The Press Secretary said that even if the flowers should be wilted by the time he returned, he would carry them all the way to Washington and give them to Mr. Kennedy.

The following incident occurred at the airport when Salinger was about to leave for home. The Caravelle which he had boarded suddenly turned back from the take-off strip. The crew had noticed something wrong with the robot pilot and would not risk a flight with a faulty automatic pilot.

Alexei Adzhubei and other members of the send-off party smiled and cheered when Pierre Salinger stepped down on Soviet ground again. "This is symbolic," someone remarked. "Pierre Salinger will surely come back and see us again!"

During the hour-and-a-half delay the White House Press Secretary went sightseeing in Moscow. He took off for home only minutes after finishing a ride on a Moscow subway train.

The White House Press Secretary managed to squeeze in some sightseeing in his week's stay. At the Hermitage Museum in Leningrad.

On a tour of the Kremlin. The Czar Cannon is an ancient relic dating back to the reign of Ivan the Terrible in the sixteenth century.

Salinger talks with Boris Burkov (right), Novosti's board chairman, after visiting the Izvestia *and* Pravda *offices.*

In Kiev. A highlight of Salinger's visit must certainly have been his contact with ordinary citizens. They surrounded him everywhere.

THE ROAD TO PLENTY

This article, the second in a series of three on communism, outlines the steps that will be carried out during the next 20 years to give the Soviet people the world's highest standard of living.

The first article, in the June issue of *USSR*, dealt with the historical origins of Marxist-Leninist thought and its application in socialist construction, the first stage of communism.

The third, to appear in August, will forecast the changes that will take place in every area of Soviet life during the transition from socialism to communism.

FOR NEARLY HALF A CENTURY the Soviet people have been building a new society, a society where a man's worth is measured not by personal wealth or birth but by the labor he does for the common good. In this historically short period backward Russia has evolved into a world power with a highly developed industry and agriculture.

The Soviet Union's productive forces have grown at a rate unparalleled in history. In manufacture of key raw materials and industrial goods, it now stands second in the world. It has built up the material and technical basis for socialism, the economic foundation of a new society that lives by the principle, "From each according to his ability, to each according to his work."

The Soviet people have gathered the tangible fruits of their labor. Real wages of workers have risen 480 per cent, real incomes of farmers 500 per cent and more. Gas and electricity, television and refrigerators, books and newspapers are now an intrinsic part of the country's way of life. The gradual abolition of taxes added 400 million rubles to consumer income in 1961. Free medical treatment, free education, paid vacations, shorter working hours and better working conditions are all facts of Soviet life, demonstrable evidence of a rising standard of living. It is not pure chance that life expectancy in the Soviet Union has doubled in a matter of 40-odd years—to the age of 69.

"Socialism has, for the first time in history, given men the basic social rights—the right to work, to leisure, to material security in old age, sickness and disability, and to education," N. S. Khrushchev pointed out at the Twenty-second Congress of the Communist Party of the Soviet Union. "Socialism has given the Soviet people a great sense of faith in their own and their children's future, a sense of security. The socialist spirit of historical optimism has shaped their lives."

It is plain to everyone now that the emphasis on all-out industrial development adopted soon after the Soviet Union was founded was the right and only course to follow. It meant concentrating all the country's means and resources, but it is paying off generously—in social equality, higher living standards and eventual communist abundance—and all in an unprecedentedly short time.

Communism proclaims: "From each according to his ability, to each according to his needs." This principle of plenty, of an abundance of goods to satisfy every man's needs, is obviously practicable only in a society where labor will have been transformed from a means of livelihood into a prime psychological need. This is the goal of Soviet society, one that calls for new and big strides forward in material production, cultural development and character growth.

In 20 years the Soviet Union will have built the material and technical basis of communism. What does this mean? It means that the Soviet Union will move ahead to first place in industrial and agricultural production, not only in aggregate physical volume but in per capita terms as well. It means that the Soviet Union will have the world's highest living standard and that the basis will have been created for material and cultural plenty.

There is more than one way of achieving a high living standard. It can be done by raising wages and, at the same time, cutting prices and taxes. Or it can be done by augmenting the public consumption fund that the society uses to pay for a wide range of personal benefits—education, medical services, pensions, children's maintenance, and other community services. In the Soviet Union both methods are used, with the second preferred because it is more consistent with the communist principle.

The new Party Program envisages that the demand for quality foods, clothing, furniture, appliances and other consumer goods will be completely satisfied in the next two decades.

The housing shortage will be ended by 1970, and by 1980 each family will have an apartment of its own, consistent with the most approved functional and esthetic standards. Apartments will all be rent free, and there will be no charge for utilities—gas, water and heating—or for municipal transport.

Between 1961 and 1970, while wages continue to rise, the country will make the gradual change-over to a six-hour workday with one day off a week, or a 35-hour work week with two days off. In the more laborious and hazardous trades the cut will be to a five-hour day or a 30-hour week. In other words, by 1980 the Soviet Union will have a shorter and higher paid workday than any other country.

But how is the world's highest living standard to be arrived at? What needs to be done, for example, to end the housing shortage and give every family an apartment?

More houses have been built in the past five years than in the previous 15. About 50,000,000 people, nearly a quarter of the population, have moved into new homes. The Soviet Union ranks first in the world in both scale and rate of housing construction. In 1961 alone people moved into something like 2,200,000 new apartments in the towns and workers' townships. And in 20 years, says the program, the country's housing is to treble. How will it be done? By accelerating the growth of the building materials industry, improving building machinery and using the most advanced techniques.

Another example. In 1961 Soviet industry produced about 2,000,000 television sets, 686,000 refrigerators, and 4,200,000 radios and radio-phonograph

combinations. But for all this, shortages still exist, with no drop-off of demand in sight. In 1960 the output of refrigerators increased by 24 per cent; in 1961 the rise was 30 per cent. These are very high growth rates, but not high enough, evidently.

It doesn't take an economist to see that to manufacture these items in abundance requires a corresponding rise in the production of electric power, metals, plastics, lacquers and paints, and of the necessary equipment and machines. A refrigerator or a TV set is, after all, a cumulative product of many different industries.

This brings us back to the problem of building the material and technical foundation for an abundance of consumer goods. A great and advanced production apparatus operated by workers with superior cultural and technical standards will make for a level of productivity high enough to provide an abundance of material and cultural goods. This is the foundation on which the Soviet people will build communism.

The Party Program outlines the structural elements that will go into this foundation: complete electrification; comprehensive mechanization and automation; widespread use of chemistry; vigorous exploitation of new production areas, new types of power and new materials; the most efficient use of available resources; extensive scientific and technical development; technically well-grounded workers; a substantial edge over all other countries in labor productivity.

The foundation will comprise the most advanced production equipment and technological processes, huge power-generating facilities, vast raw material and fuel resources—all used at peak efficiency.

In these next twenty years industry and agriculture will be completely modernized. The Soviet economy, although one of the youngest, relatively speaking, will be the most advanced and the most productive. Industrial output will climb at least sixfold and agricultural production by some 250 per cent. In effect, this means multiplying the present potential by five more industrial and two more agricultural countries like today's Soviet Union.

Heavy industry will still take the lead, as it has heretofore. It will reequip the farms, the consumer industries, construction, transport, communications, shopping facilities, public catering, health, housing and community services.

This was the approach in 1920, when the plan to electrify the country was put to work, and in 1925, when industrialization was begun in earnest. It is the approach today. There is no need to labor the reason. An abundance of sugar or wool cloth, say, does not come only with a good sugar-beet harvest or big flocks of sheep; there must also be well-equipped refineries and textile mills.

Times change, however. Forty years ago the Soviet Union had no heavy industry. Over the 1929-1940 period the average annual rate of increase in the production of the means of production was nearly 70 per cent higher than the growth rate of the consumer industries. Between 1961 and 1980 the differential will not be nearly so great—no more than 20 per cent.

The heavy industry base is now built and is growing well. Its role in raising living standards and capital growth is substantially different now. The change of emphasis is indicated by the fact that the 20-year plan schedules a sixfold rise in the output of plants producing equipment for heavy industry and a 13-fold rise in those producing equipment for the light and food industries, agriculture, housing construction and public services.

The output of key consumer items is now higher than the predicted seven-year plan target figures. The quotas for the first four plan years will be topped by 1.38 billion yards of fabric, 87 million pairs of leather shoes, and 160 million items of knitwear. The revised targets show that by the end of the seven-year plan period Soviet consumer industries will be producing more than 10 billion square yards of textiles annually and nearly three pairs of shoes per head of population. This is more than Britain, France and West Germany combined produce.

By 1980 the output of all the consumer industries is to rise approximately fivefold. Textile output will increase more than threefold, to a total of 24-26 billion square yards. Shoe output will grow to nearly a billion pairs a year. There will be a tenfold rise in the manufacture of household appliances and cultural items. Food production will climb sharply, with a correspondingly sharp rise in food consumption per capita.

This is an immense challenge. To meet it the Soviet Union will be calling on all the achievements and findings of our twentieth century scientific and technological revolution and, in process, will be advancing that revolution.

The critical element in developing the country's productive forces is power—energy. Man is helpless without it. With it, he can veritably move mountains.

The most universal kind of energy is electric power. It can be transmitted instantly and in any quantity over any distance. It can be split into infinitely small fractions, and enormous quantities of it can be concentrated. Electricity can easily be converted into other forms of energy and, conversely, other forms of energy are convertible into electricity.

In 1961 the Soviet Union produced 650 times as much electric power as it did in 1919. The power stations on the Volga are unequaled anywhere, and the projects on the Angara and the Yenisei will be twice as big as those on the Volga. Power consumption per worker has risen swiftly, but there is still a shortage—the reason the program lays so much stress on electrification as the pivot of communist construction.

The rates of power production growth set by the program are higher than those for industry in general. The rise will be ninefold to tenfold in the two decades. The target is three trillion kilowatt-hours a year, 50 per cent more than the rest of the world produces today. The road to that enormously ambitious goal must cut through the building sites of 180 big hydroelectric stations, 460 big thermal powerhouses, and through atomic stations to be built in all parts of the Soviet Union; it must pass through designing offices and factories that will be building colossal 300,000-, 500,000-, 800,000- and million-kilowatt turbines.

The 20-year plan is predicated on the development of hydro, thermal and atomic power engineering. But the country's power balance is likely to change and the target figure reached earlier with the exploitation of new energy sources. A project is presently under construction in the White Sea coastal region which will convert the lunar forces of gravity—tidal energy—into electric current. Engineers are designing installations that will work on underground heat. Laboratories of the USSR Academy of Sciences are experimenting with batteries that will convert the sun's rays into electric power.

The prediction made by Joliot-Curie that atomic energy would be superseded by direct conversion of solar energy seems to be coming true. Atomic energy, which the Soviet Union was the first to use for peaceful purposes eight years ago, no longer seems to be attracting the amount of scientific interest it did. There is too little uranium in the world, and both its extraction and the disposal of its wastes are too difficult. Physicists are working hard to harness "star substance"—plasma heated to millions of degrees, which, fenced in by magnetic and high-frequency fields, will produce controlled thermonuclear reactions yielding inexhaustible supplies of power derived from nuclear synthesis.

Expansion of the iron and steel industry is another primary requisite for the foundation on which a communist society will be built. By 1980 Soviet steel output will climb to 250 million metric tons a year. This is nearly four times as much as was produced in 1960. In that same year the United States, Britain, France and West Germany combined produced 168 million metric tons. The target figure of 250 million metric tons means that the Soviet Union must in 20 years produce three times the present American steel output.

Until the mid-twentieth century all of man's material wealth derived from nature. We thought of chemistry as the science of substitutes. Today chemistry provides us with materials that we would find it impossible to substitute for.

Rayon silk is ten times lighter than the natural product, cheaper and eminently more practical, yet it is an artificial fiber obtained from a natural raw material—cellulose. Its properties are much like those of the derivative and cannot easily be altered. Gas and coal give us synthetic fibers—the widely used nylon, capron and pelargon. Soviet shops now sell a wide selection of fabrics made of lavsan, a synthetic product that defies rain, acids and alkalis and does not crease or shrink. Chemistry generously supplies us with fine fabrics, soft furs, superb paints, dyes and lacquers, and hundreds of other consumer items. It gives the farmer mineral fertilizers, herbicides, insecticides and substances that induce plant growth.

Development in chemistry, as in power engineering, shows the degree to which abundance hinges on technological progress. Chemistry is getting to be a formidable rival of the metal-making industries. These days our machines must be fashioned to meet constantly greater strain; they must function under conditions that grow more and more rigorous. Speeds keep increasing, and so do temperatures, pressures, impacts and vibrations. Moreover, machines must have high precision and great reliability. They must, therefore, be made of materials with preselected properties. The metal-producing industries are not always able to supply such materials; chemistry is. There is also the manufacturing method to consider. Chemistry is predominantly an industry of continuous processes, and continuous processes are more easily automated.

In 1961 the Soviet Union produced 398,400 metric tons of synthetic tars and plastics. That figure, by 1980, is expected to grow to 19-20 million metric tons. The output of artificial and synthetic fiber will increase by 15 times, and of mineral fertilizer by nine times.

The planned over-all replacement of equipment in industry, agriculture, transport, construction, the community and the home will require an accelerated development of the machine-tool industry. The Party Program foresees 2,800 new engineering projects and the renovation of 1,900 presently operating plants. The aggregate output of the machine-tool and metal-working industries is to multiply by 10 to 11 times in the next 20 years, and the output of semiautomated and automated production lines by as much as 50 times.

These figures imply essentially new designs, new techniques and all-

embracing automation. We will be seeing advanced technical ideas translated into metal and plastic devices that will be the last word in efficiency and ease of operation.

The Soviet machine-building industry keeps perfecting machine designs and manufacturing processes. Electric welding and ultrasound, high-frequency current and electrochemistry, stamping instead of cutting, precision casting instead of conventional casting in sand molds—all these advanced techniques save materials, power, labor, and time, and all have elements of continuity, making it simpler to incorporate them in an automated setup.

Automation is a must for Soviet industry. A few figures give the reason. With present labor productivity, the estimate is that another 200 million hands would be needed to meet the quotas scheduled by the seven-year plan. Yet, even without that monumental addition of labor power, the plan is doing excellently. The explanation lies in the fact that greater labor productivity accounts for 70 per cent of the augmented output.

While industrial output is expected to multiply sixfold in the next 20 years, the number of workers will grow by no more than a third. The bulk of the output increase will be coming from greater labor productivity, slated for a 300 to 350 per cent increase. It is comprehensive mechanization and automation that will do the job.

The automation program is planned in two stages. The accent in the first decade will be on comprehensive mechanization. What does that term cover? We assume basic production to be well mechanized if the processing of primary and other materials is done by machine. Often enough such auxiliary operations as handling, sorting, quaility checking, etc., are manual. Yet it is these auxiliary operations that are physically wearing, monotonous and unskilled, and therefore the most poorly paid.

We are developing all sorts of mechanisms today to do these auxiliary jobs—waste-clearing machines, conveyors, handling machines, finishing machines, checking devices. The machine-tool industry has set itself the goal of totally eliminating arduous physical labor between 1961 and 1970 and is getting on well with the task.

Here is an eloquent statistic. In 1932, it took 10,000 men to do the digging for the Urals metallurgy project. In 1962 excavators have completely replaced common laborers on the construction sites of the Temir-Tau, Tula and Lipetsk iron and steel plants.

The second stage will be comprehensive automation—mass conversion to fully automated shops and factories. Involved are very tough and challenging problems. Early efforts in this field go back only a dozen years or so when the first fully automated automobile piston plant was put into operation. Then came an automated bakery and Moscow's well-known automated ball-bearing shop. Now this whole ball-bearing plant is gradually being automated. Saratov has an automated plant making industrial glass, and Krasnodar an automated factory making block chains. The blueprints for a fully automated iron and steel mill were recently finished.

Automation derives from the findings of physics, electronics, mathematics and other sciences. Control instruments working on radioactive isotopes are now a commonplace at Soviet factories and mines. The present emphasis is on the development of cybernetic computers and self-adjusting devices.

Computers are used to diagnose diseases, decipher dead languages and calculate the trajectories of spaceships. Industry is beginning to use them to control the operation of oil refineries, blast furnaces and tube-welding mills. These remarkable devices choose the most efficient regimes and optimum designs for the shop, and do the bookkeeping—calculate wages, for example—for the office. Cybernetics experts are working on machines that will plan the development of whole industries.

But automation is not simply a technical problem; it is a social problem as well. The elimination of laborious and monotonous processes has also eliminated many trades and will be eliminating more as time goes on. Workers who handle bricks at building sites have been replaced by crane operators; ore loaders in mines, by operators of electric locomotives. At metallurgy plants we have telemetering engineers, men of a new trade. Turners, grinders, millers and ancillary workers who handled production wastes are giving way to highly trained programming engineers of automated lines.

We should underline the words highly trained. Automation does indeed call for a graduate engineer's background. There is an active recognition of the fact by Soviet workers. Forty per cent of them have a college or secondary school education, and hundreds of thousands are enrolled at evening and correspondence colleges.

Automation is a give-and-take proposition. It requires more knowledge but it also gives the worker the chance to acquire that knowledge by lightening his work and shortening his workday. The more he knows, the better job he does and the higher his earnings. An adjuster of automation production lines, for example, earns 50 per cent more than a lathe operator.

Automation is no threat to the Soviet worker or to the country's economic stability. Quite the contrary, both the individual worker and Soviet society as a whole have much to gain from greater productivity with less expenditure of human labor.

Soviet workers know this too, the reason so many are inventors and innovators. Two of them, V. Kudriavtsev and V. Shchadilov, were recently awarded the Lenin Prize for working out an automated assembly for clocks and watches. This innovator movement has assumed a mass character. In 1961 as many as 2.8 million of the ideas and inventions submitted, many of them authored by plain benchworkers, were used by industry. Soviet people have a vested interest in automation. They know it will improve working conditions, cut hours, eliminate the distinction between mental and physical labor and add to the national wealth.

Comprehensive mechanization and automation will affect not only industry but agriculture as well. Engineering will lighten farm chores and help bring greater yields. The Party Program devotes as much attention to agriculture as to industry; both are necessary for building the material and technical foundation of communism.

Soviet agriculture underwent a sharp change in 1953 when remedial measures were called for to increase food production. Farming had suffered serious damage from the war with whole rural areas devastated. Nor had it caught up to industry after the war by reason of mistakes in the administration of collective and state farms in the latter period of Stalin's life.

When it met last October, the Twenty-second Party Congress summed up the results of the post-1953 effort. In March of this year the plenary meeting of the Central Committee discussed farm problems in greater detail and outlined a wide-ranging plan for speedier agricultural development.

These figures tell the story of farm progress since 1953. In less than eight years the Soviet Union developed 103.7 million acres of virgin land. Hundreds of new state farms, large-scale producers of wheat and other foodstuffs, were set up in the newly developed areas. In a five-year period the nation's farms were supplied with 747,000 new tractors. The state cut prices on machinery and spare parts, lowered income taxes drastically, made credit cheaper.

Production statistics fill out the picture. In 1953 the farms raised 82.5 million metric tons of grain, about 6 million metric tons of meat, 36.5 million metric tons of milk, about half a million metric tons of butter and approximately 3.5 million metric tons of sugar. By 1961 the figures had climbed to more than 137 million metric tons of grain, nearly 9 million metric tons of meat, 62.5 million metric tons of milk, just short of a million metric tons of butter and more than 6 million metric tons of sugar.

But production is only one side of the coin. What about consumption?

Since 1953 the population has grown by 29 million, 28 million of the increase being urban. The increase is more than the combined populations of Sweden, Norway, Denmark and the Netherlands. In the same period, by reason of tax cuts, an end to government bond drives and other such measures, income went up by 42 billion rubles and the consumption of such staples as meat, milk, butter, eggs and sugar increased by 35-50 per cent. The rise in farm output, as rapid as it was, did not keep pace with the growth in population and purchasing power.

The 20-year plan has its sights set on double the present grain production, four times the meat output and three times the milk yield.

The whole country is vitally interested in reaching these goals as soon as is humanly possible. The connection between farm output and living standards is apparent.

"The way we and all Marxist-Leninists see it," said Khrushchev, "communism means full social equality of all members of society, a high level of consciousness and loyalty to communist ideology on the part of all citizens, an abundance of material and cultural benefits, and a happy and secure life for all the working people.

"We do not preach the equality of the primitive Christian communities with their low standard of living and their asceticism. That is alien to scientific communism. Communism should not be thought of as a table set with empty dishes, around which sit 'highly conscious' and 'fully equal' people. . . . That would be a caricature of communism."

That is why Soviet farmers are searching for ways of growing more food as quickly as possible, why the country's attention is centered on developing its productive forces, without which, as Marx and Engels put it, there will be "no more than a universal spreading of poverty."

The 20-year program predicates a far-reaching series of measures to raise productivity of farm labor by 400 to 500 per cent, at a rate faster than it schedules for industry. This means that wherever possible, manual labor must be replaced by machines. The iron and steel, machine-tool and power and fuel industries will induce this productivity rise by supplying the farms with all the machines, power and fuel they can use.

Farm development also hinges on a far-flung irrigation program for dry and desert areas, on the construction of canals and watering systems.

The basic changes in farm management outlined by the plenary meeting of the Central Committee are also an element in the development plan. The organizational changes aim at simplifying management, giving collective and state farms more independent control, supplying them more speedily with the items they need and, in general, seeing that government directives are more quickly and more effectively carried out.

So it is that the Soviet people are building the foundation for a society in which people and productive forces will grow together, in which there will be an abundant flow of social wealth and in which the great principle, "From each according to his ability, to each according to his needs," will be the rule of life. ★

On this route in Moscow the drivers, dispatchers and traffic cops are all kids.

JUNIOR DRIVERS

TEXT AND PHOTOS BY VICTOR AKHLOMOV

Rule for a good driver: See that your passenger is seated comfortably and the door locked tight.

"DRIVER Seryozha Aladyev next," announces the public address system at Children's Automobile Center No. 1 on Peschanaya Street, Moscow, and a black-eyed 12-year-old sixth grader with a happy grin on his face steps up to dispatcher Igor Moroshin, himself just turned 13. Driver Seryozha gets behind the wheel, and the car chugs off.

This first driving instruction center for children in the country is headed by Lazar Berman, a teacher by profession, who is doing the job on a volunteer basis.

Besides driving, the youngsters learn to service cars and do minor repairs. In process, they acquire good work habits. They also organize their own activities and keep the center spruced up.

The children are so taken with the technical instruction they get at the center that many of them have bought advanced physics textbooks used in the senior high school grades and are keeping several jumps ahead of the school syllabus.

These small Muscovites are working for junior licenses. The driving instructors, all non-paid volunteers, are assisted by traffic officers, who teach the rules of the road, and by lecturers from the Moscow Motor Transport and Road-Building Institute.

At sundown the blue Moskvich with a little red flag on its hood returns from its last trip. The young drivers line up, and route inspector Yasha Chernov makes his formal report—all trips up to standard, no mishaps or accidents en route. ★

He'll be the proud owner of a junior driver's license when he completes the training course.

Besides driving in traffic, he's learning enough about the insides of a car to do minor repairs.

KLYUC

TEXT AND PHOTOS BY VADIM GIPPENREITER

HEVSKAYA ERUPTS

THE SKY above the crater of Klyuchevskaya glowed at night. We saw that as soon as we reached Petropavlovsk, the Kamchatka regional center. We had no time to waste and set off by helicopter for the volcanological station at Klyuchi.

Klyuchevskaya is the biggest active volcano in Europe and Asia, 15,912 feet above sea level. On photographs you see it as a perfectly shaped, snow-white cone. Now the cone had turned black and dense smoke billowed from it. We came down for a landing through clouds of ash.

Klyuchevskaya had been erupting, with rock explosions and streams of liquid lava ejecting from the summit and frequently from lateral craters. There are 69 of these secondary craters on the slope of the mountain. But for more than a year neither tourists nor volcanologists had climbed to the top. No one knew what was happening there now.

We drove to the base of the volcano in a truck built for heavy, cross-country travel. As soon as we left the station we were in thick ash, the remains of the terrific explosion of the Bezymyannyi volcano in 1956. There was so much ash at the time, it had taken two months to settle.

We finally got to the seismic station set up at one of the lateral craters. It was six miles of tortuous path up to the top, from which the sound of deep rumbles reached us.

There were eight of us in the party: chief of the Kamchatka Volcanological Station Yevgeni Marhinin, four young members of the staff, two mountain climbers from Moscow, and myself as photographer.

The average incline of practically all volcanoes is only 30 degrees—affording none of the thrills of what alpinists call real mountain climbing, but there is plenty of danger from falling volcanic bombs.

We began the ascent early in the morning, alternating 45 minutes of climbing with 15 minutes of rest. The higher we climbed, of course, the more often we had to stop for a rest—and the stronger the tremors and the lower the rumble of the explosions inside the crater. The last few yards we walked on densely packed, light-gray volcanic ash. From the slopes spurted jets of yellow gas.

One final effort and we were at the summit, peering down at the floor of the gigantic crater bowl. It was filled with incandescent lava risen like dough and quaking from the explosions. In spots the lava was transected

Volcanologists at the Kamchatka station make regular ascents to the crater of Klyuchevskaya, the largest active volcano in Europe and Asia. Hardly a climb for the fainthearted—with jets of gas, flowing lava and rock bombs.

There are sixty active volcanoes on the territory of the Soviet Union, all of them on Kamchatka Peninsula and the Kurils. Klyuchevskaya towers three miles above sea level.

by cracks and flowed in soft, concentric folds that testified to the viscosity and mobility of the whole mass.

The crater is about 2,625 feet in diameter with walls 650-825 feet high. The uneven rim rocked from the explosions—nothing like the shock that comes with an earthquake, but an elastic to-and-fro movement in a horizontal plane, as though the entire mass of the volcano rested on a semiliquid foundation.

To steady my camera, I lay down on the rim and propped it on a rock. Just then the movement became more pronounced. But the rock was too low and the lens did not clear the rim of the crest. So I chopped away at it with an ice-ax, which sent chunks plunging down into the molten abyss. Suddenly a mass of sand and stones shot up into my face and into the camera from below as the rising currents of hot air hurled the chunks of crest back up.

The fantastic rhythm of the explosions, the flitting shadows of the gases, and the rocking of the whole mountain were hypnotizing. Somewhere in the depths of the volcano we heard a roar like a jet engine, and two or three seconds after that the lateral crater nearest us, with a mounting rumble, belched a dense cloud of smoke followed by a shower of volcanic bombs and ash 1300-1600 feet high. This explosion was followed by a second, and then a third.

We saw luminous rifts framed by a black crust appear in the center of this lateral crater. As we watched, the spot first brightened, then dulled as though the surface were cooling, and finally heated up to incandescence, turning from red to yellowish-white. Suddenly the whole quaking mass gushed up in a terrific flaming fountain. As the lava stream boiled up and poured out of the rifts, the whole crater lit up.

Volcanologists are on-the-spot observers, interested in everything: the initial velocity of ejection of the volcanic bombs, the explosion mechanism, and how much gas is compressed in the molten lava.

It was late when we bedded down in our tents. I, for one, knew that sleep was not likely, not with the crater thundering, the ash raining down on the tent top, and the ground under us quaking and quivering.

In the chill of the morrow's dawn we once again admired the bizarre spectacle. As the sky brightened.the summit of the volcano took on a rosy hue. Not long afterward the helicopter returned for us. I took some last-minute shots from a height of about 330 feet and a parting glance at the unearthly colors of the vapors and gases coming over the curiously shaped rim of the crater.

Nature's fireworks! Besides the central crater, the volcano has 69 others on its slope. The records show that Klyuchevskaya has erupted 39 times in the past 250 years.

RAFTING IN THE SAYAN MOUNTAINS

BY BORIS ZHUTOVSKY AND YURI KRIVONOSOV

PHOTOS BY BORIS ZHUTOVSKY

THERE were eleven of us—nine men and two girls. Or, if you prefer a vocational run down—nine engineers, one artist and one photographer. Vacation time was at hand. We could have gone to some seaside resort and spent the month lolling on the beach but that wasn't our idea of relaxing. After a year of hard mental work, we wanted plenty of action with our outdoor life. That kind of holiday, we knew from past experience, would keep us fit as a fiddle the rest of the year.

We planned to go to the Eastern Sayan Mountains for a trip along the Uda from its source to the town of Nizhne-Udinsk, a section of the river that ran through wild and unexplored taiga.

Our group registered at the Moscow Tourist Club where we worked out a schedule for reporting in at various points along the route. The idea was that if no word came from us at any of the prearranged times, search parties would immediately set out to look for us.

Equipped with hiking shoes, nylon rope, saws, axes and maps, we were all ready to go, except Mzia Kochishvili, who was defending her graduation thesis at the Oil Institute that day. Finally she came running, radiantly happy, clutching her diploma and a Pinocchio doll, a good luck charm from her classmates. We gave her time to catch her breath and then set out for the airport.

The azure Eastern Sayans rise above the city of Krasnoyarsk and stretch as far as Lake Baikal. The range, running east to west, is cut by deep gorges through which flow the Kazyr, Kizyar, Oka, and Uda rivers—all of them full of rapids.

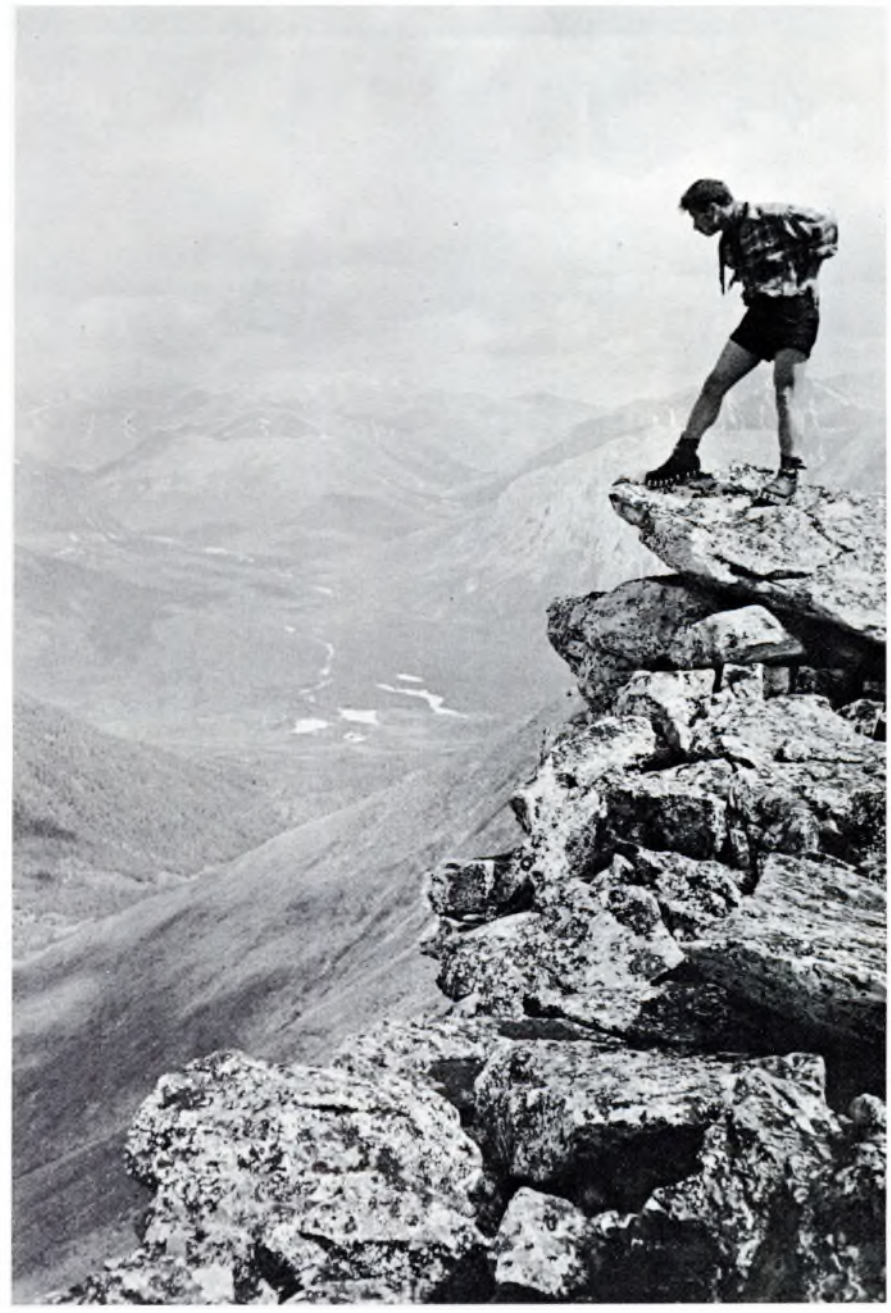
We came down at a small forest airport near the village of Verkhnyaya Gutara in Tofalariya District. The total population of this well-nigh inaccessible mountain district is 600. Most of the menfolk make their living by hunting and spend long periods on the heavily forested slopes. Their families live below in the foothills. The smaller children attend the local rural school; the older ones are at boarding school in Alygdzher, the district center.

Besides going after sable, ermine and squirrel, the hunters breed silver foxes and graze big, and very profitable, herds of reindeer running into the thousands. These sure-footed animals are the principal means of transportation on overland trips. Large caravans travel through the mountains for many months with scientific expeditions.

We left for the deep taiga with one of these caravans, up winding paths to the Kazyr Pass, where a reindeer herd had settled down for the summer in a sparse grove of cedars. It was warm and cozy in the herdsman's tent where we stayed.

In the morning we continued our climb, past the last trees into the tundra. Our feet sank into the whitish moss, and the frozen ground,

This is the way we rafted some parts of the rock-studded Uda.



Rotov Peak. A grand view of the Eastern Sayan Mountains.

Vacationing "pirate"—kerchief, beard, striped jersey and all.

We spent a lot of time searching for this fledgling's nest.

All you need in this kind of country is a hook and line; the fishing rods grow on the trees.

barely thawed, crackled as we walked. In jagged cracks in the rock we saw the gleam of fossil ice. Thin stalks of dwarf willows squirmed from between the gray boulders. The many small, delicate flowers fluttered in the wind that rarely stops blowing at that altitude.

We broke camp on the banks of the Uda, removed our gear from the backs of the reindeer, and parted from our guide. Now we were on our own. In a few days we felt quite at home on these wild shores. Power engineer Yuri Khabarov turned out to be a good carpenter who combined his carpentry skill with a knowledge of mathematics. He made long poles after figuring out the ideal shape for our purpose and the exact center of gravity.

To mark the completion of the rafts, our girls cooked up a real feast. That morning they had caught some large umber and were now making a Russian fish soup concoction, *ukha*. For dessert we had prune pancakes baked in tins that had held film.

We set sail on the rafts. Larches gray with the night's hoarfrost, dark pools tufted with foam, shiny wet boulders—all sped past us. Nothing like travel by water. With no knapsacks weighing us down, we could easily look around in all directions. On occasions, frequent ones, we had to jump into the river and push our "Kon-Tikis" past piles of rocks.

On the fifth day of our river journey a brown wall, wet in spots, loomed up to the right. High above us were tiny trees sharply delineated against the bright sky. The river veered to the left in a steep drop. What had been a barely audible noise just a short while previously became a roar. The rocks under us merged into solid white strips. Over toward the left bank was a narrow channel.

We put all we had into the poles, our muscles straining painfully, and pulled to the left. Mounting chest-high waves beat at us, almost sweeping us off our feet. The churning water surged all around us. Finally we pulled into a small cove for a safe landing.

A day full of trials and tribulations for us and for the rafts. They were obviously done for. The hike to Alygdzher would take three days. But there was no sense in building new rafts or repairing the old ones since big and unnegotiable waterfalls barred our way.

Arrived at Alygdzher, we took a full day's rest. Then we collected some horses and went in search of a new "shipyard." Once more we felled trees, sawed and planed logs until we had two new large rafts rolling on the waves. We continued our journey.

The smell of burning wood reached our nostrils. A fire somewhere in the taiga. A somber setting—an orange sun, like a large round button, hung over us, hard to look at without flinching, no shadows at all. The bottoms of the grotesque towering cliffs enveloped in a blue smoke haze. Panic-stricken birds all asqueal as they circled high, and still higher a helicopter rumbling about searching for the source.

Only some 30-odd miles more to go. The knapsacks on the rafts were a good deal flatter. Now they held only our precious souvenirs of the Sayan—rock samples, flower seeds and roots.

Suddenly white tents and men in shorts came into view—geologists, with surprise and curiosity clearly marked on their faces.

"Tourists? From the very top? How did you get through the rapids?"

"All right, as you can see."

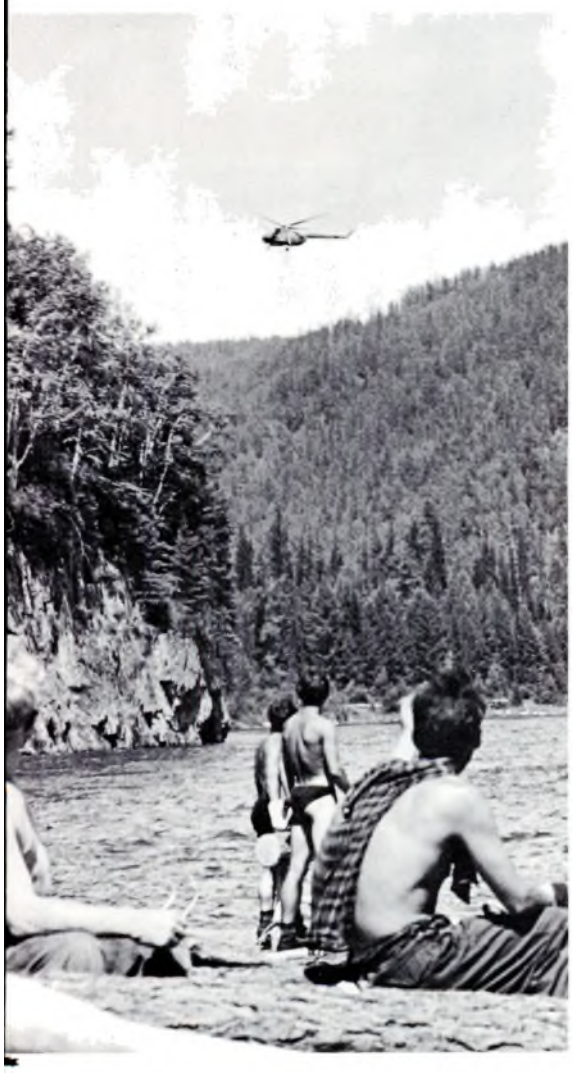
"We've been here since the winter. Busy out in the taiga. There's endless wealth hidden in the bowels of the earth all round here."

"So long. We have to be getting on."

Gradually, the shores pulled apart, the mountains fell back and we began to sight villages. The wilderness was giving way to civilization. We were almost at journey's end. ★

Our steeds picked their way very delicately across the Djugli, a fast taiga stream.

Flowers dotted the mountainsides and valley, mile-long stretches of lovely color.



We came upon a geology expedition doing a mineral survey.

A forest patrol helicopter is sighted as it looks for a fire.

WHY THE TWENTY-YEAR PLAN WILL BE FULFILLED

BY NIKOLAI IVANOV

THE NEW PROGRAM of the Communist Party of the Soviet Union, adopted at the Twenty-second Congress in the fall of 1961, declares the Party's major task in the next 20 years to be the building of the material and technical foundation for a communist society. This plan for developing the country's productive forces is very ambitious indeed. It presumes that by 1980 industrial output will have multiplied by six times and farm output by three and a half times.

These figures, in today's context, signify that the Soviet Union's annual industrial production in 1980 will double the present production of all the nonsocialist countries combined.

An economy of abundance, a communist economy, will give the Soviet people the world's highest standard of living. The concept is majestic, and the tasks that have to be carried through are staggering in their size and scope. Does the Soviet Union have the objective prerequisites for the colossal job? What guarantees are there?

The prerequisites and guarantees are built in; they are an intrinsic part of the 20-year program. The plan and the Party's guiding decisions that derive from it do not merely proclaim the goal but indicate concretely how and when the tasks outlined will be carried out.

The Party and its leaders are fully cognizant of the realities, of the immense effort that will be required. So are the builders—the men and women of this multimillion nation.

In one of his recent speeches Chairman Khrushchev urged the country to keep its eye on the tasks that needed doing right now. "It is easier, of course, to talk of what will happen 20 years from now," he said. "Why easier? To talk of 20 years from now is merely to talk of higher indices than we have at present. But to say that more needs to be done today than is being done is to talk of eliminating existing shortcomings. To do more today is to have more tomorrow."

Warning against the overenthusiasm of "hotheads" who think it possible to leap into communism without even taking "a running start," the Chairman said: "In building communism there is no way of leaping from the initial phase to the final phase outlined in the Party's Program. The path must be traveled on the ground, with hard work and struggle."

The Soviet people have no doubt that the material and technical foundation will be laid, and that it will take even less than 20 years to do it. This certainty of theirs does not come from blind faith in the communist idea; it is based on the undisputed facts and the solid accomplishments of the country's past industrialization plans and the progress of the current seven-year plan.

They do not ask the questions: "Is it possible? Can we do it?" They *are* doing it. They are in the very process of building a communist economy of abundance, and their creative labor is the guarantee that it will be built, just as it guaranteed the success of those famous five-year plans that so many skeptics prophesied would never be fulfilled. Labor for the public good, creative enthusiasm, collective work, mutual help, the merger of the personal with the general interest—these explain the invariable success of Soviet economic planning.

Izvestia, in a recent editorial, said, "Everything we are doing today—smelting metal and extracting oil, building houses and weaving cloth, transporting cargoes and drafting plans—multiplies our country's wealth, accelerates our advance to communism. This acceleration affects our great economy as a whole and the standard of living of every Soviet man and woman. It should be altogether apparent that the achievements of the Soviet Union and the present well-being of every Soviet family is the result of the persevering effort of those who built the Magnitogorsk Iron and Steel Works and the Volgograd Tractor Works, turned virgin soil to the plow and harnessed the Angara River, electrified the Moscow-Baikal Railroad and organized the production of lavsan. Labor is the path that leads to communism."

The human factor, however, is not the only guarantee of the success of the 20-year program. There are others.

The program of communist construction was adopted at the turn of the 1960's because the times called for it, because all the prerequisites were at hand.

But it is, obviously, not beginning from scratch. In the four decades past, backward Russia grew into a powerful and dynamic socialist state. Economically, the Soviet Union now stands second in the world, and in some critical areas of science and education it is ahead of all other countries.

While building a socialist society, the country was at the same time creating the basic prerequisites for the transition to the next phase of full-scale communist construction.

What were these basic prerequisites? First and foremost, a socialist system with its enormous creative potential. The Soviet Union accumulated great production capacities and found and is now exploiting vast natural resources. It equipped industry and agriculture with first-class machinery and developed an advanced technology on a foundation of advanced science. It trained millions of skilled workers and specialists capable of solving the most complex problems of communist construction.

Its progress and growth was and continues to be assured by over-all planning that concentrates the national effort on critical areas and shifts productive forces to meet the requirements of a given phase of economic development.

The rate of growth is another guarantee of the success of the 20-year program. The extraordinary speed of Soviet economic development has been apparent ever since the first five-year plan. The economy continued to grow even during the war against nazi aggression, though at a somewhat slower pace. The rapid rate of development made recovery from the effects of the war possible within a remarkably short span of time.

The 20-year plan has a good enough head start so that the country can set itself bold tasks and realistically expect to complete them much ahead of schedule. Now the halfway mark has been reached in the seven-year plan for 1959-1965, the major part of which constitutes the initial stage of the two-decade plan, and the official reports of the Central Board of Statistics—issued quarterly, semi-annually and annually—indicate that quotas are being overfulfilled. The seven-year plan scheduled an average annual increment in industrial output of 8.3 per cent for the first three years; the actual increment was 10 per cent.

As was true for the five-year plans, the target figures forecast have been topped. A miscalculation? If it is, everyone in the Soviet Union is pleased that it was made, for it means more pig iron, more steel, electric power, furniture, butter and sugar. It means the country is moving ahead more quickly toward its goal—communist abundance.

There is, of course nothing unexpected in these plan schedules being met ahead of time. The seven-year plan was drawn up to permit a certain degree of flexibility so there would be no overload in one or another area. In a rigid plan without any room for play, unfulfilled quotas in one sector may dislocate the whole process of economic development. Flexibility makes it possible to build up reserves and use them where they are needed to stabilize the advance along the entire front. So the "miscalculation" that resulted in the overfulfilled quotas might better be called "planned error."

To judge the increase in the growth rate, let us compare the data on industrial output during the years covered by the first five-year plan (1929-33), the fifth five-year plan (1951-55) and the first three years of the current seven-year plan (1959-61).

Number of new industrial projects put into operation (note that earlier industrial projects were very much inferior in size, complexity and volume of production to those built now)

in the first five-year plan	1,500
in the fifth five-year plan	3,200
in the first three years of the seven-year plan	3,000

Increase in power station capacity

in the first five-year plan	2.8 million kilowatts
in the fifth five-year plan	17.6 million kilowatts
in the first three years of the seven-year plan	20 million kilowatts

Increase in steel mill capacity

in the first five-year plan	2.8 million tons per year
in the fifth five-year plan	8.9 million tons per year
in the first three years of the seven-year plan	12.3 million tons per year

The picture is much the same in other branches of the country's economy.

The third year of the seven-year plan, 1961, taken separately, likewise shows an accelerated rate of growth.

If we compare investments in all the branches of the national economy, we see that—in comparable figures—they come to:

in the first five-year plan	7.4 billion rubles
in the fifth five-year plan	79.2 billion rubles
in 1961 alone	37.8 billion rubles

The Party Program notes that "along with a powerful industry, a flourishing, versatile and highly productive agriculture is an imperative condition for the building of communism." Soviet farming suffered seriously from the war and from errors and deficiencies in the management of collective and state farms. But in these past eight years a great deal of remedial work has been done. Capital investments in agriculture tripled over the period, totaling 6.6 billion rubles in 1961. Farm administration was reorganized. Between 1953 and 1961 gross agricultural output increased 60 per cent.

We often use the American economy as a gauge for Soviet economic development. Thus, we say that in the first decade of the 20-year program we expect to catch up with, perhaps surpass, the United States in both absolute and per capita volume of industrial and agricultural output.

The reason for choosing the United States as a yardstick is self-evident. It is the most highly developed, industrially and agriculturally, of the non-socialist countries. Like the Soviet Union, it has a population of many millions and great natural wealth. The size of the gross national product of the two countries is about the same. The comparison is all the more relevant because in many critical economic sectors the Soviet Union is approaching America's output. And in some it is already outproducing the United States.

In light of progress of the 20-year plan thus far, Soviet economists estimate that during this present decade, that is to say, within eight or nine years, the country's annual production in key industries will reach these highs:

electric power	940 billion kilowatt-hours
oil	430 million tons
mineral fertilizer	85 million tons
fabrics (all kinds)	16.2 billion square yards
steel	160 million tons

These levels will make the Soviet Union the world's leading producer, surpassing the United States both in absolute and per capita output.

Implicit in these figures is the speedier rate of development of the Soviet economy as compared with the American. The Soviet production increment in 1961 was 9.2 per cent. This large increment was not fortuitous; it was forecast in the plan estimates. The Soviet Union has a higher rate of growth in steel, coal, oil, cement, textiles, footwear, sugar and a number of other commodities.

At its present pace both industrial and agricultural output in the next eight or nine years will grow about 150 per cent.

Interesting, too, are the industrial development indices of the Soviet Union—and of the socialist countries in general—as compared with those of the rest of the world. They show, among other things, that in 1961 the volume of industrial output of the socialist countries was more than seven times that of 1937 and exceeded the increase in the nonsocialist countries almost threefold. By the end of the 20-year period the socialist countries will be responsible for about two-thirds of the world's output.

The Soviet economy is growing fast. Its estimates of future growth are altogether sober and realistic; they are based on past and present achievements. ★

Oleg Antonov and his staff of assistants build aircraft of all kinds, from gliders to big passenger liners like the AN-24 shown above. His first craft took to the air thirty years ago when he was still a student at a Leningrad institute. His gliders and planes have contributed any number of changes to world flight records.

AIRCRAFT

DESIGNER

BY IGOR TSYGANOV

PHOTOS BY YURI KOROLEV

HE FINDS THE TIME for everything—designing planes and gliders, keeping up with new books, going to the theater, a game with his daughter, painting and mosaic work, writing technical articles, training his spaniel, gardening, and a dozen or two other things. And everything is done effortless, as though by itself. His planes and gliders fly with the same natural ease.

The first glider Oleg Antonov designed took to the air some 30 years ago while he was still a student at a Leningrad institute. Not long thereafter tens of thousands of Soviet young men and women were training in Antonov gliders.

Many famous pilots fondly recall his US-1, an exceptionally easy to handle machine that came out in the thirties. It was followed by a sequence of gliders, each designed for simpler control, greater safety, more durability. They had the added virtue of being cheap to build, making mass production possible.

Besides training machines, Antonov designed many gliders for record-breaking flights. Pilot Iost used one for a very tricky flight over Mt.

He calls his design staff "young," himself included. Though at 56 he may not be the youngest in years, he certainly appears to be most energetic.

The drafting board in Antonov's home study faces a workbench. His other hobbies are easel painting, mosaic work and his spaniel.

Whether it's playing ping-pong or designing a new aircraft, he is obviously enjoying himself and does it with great skill and ease.

Karadag near the Crimean seaside town of Koktebel. Antonov's Rot Front-7 glider set several records; one, made a quarter of a century ago by Olga Klepikova, still stands. Not long ago his A-15 occasioned a whole sequence of changes in the world record books.

The latest, the A-13, has a tiny engine. If one air current is lost, the engine helps find another. If there are no updrafts at all, the engine can bring the craft home. This very small glider can do all the usual air stunts and is a world record holder.

Antonov does not follow the beaten path. His hallmark is apparent in every machine he designs, planes no less than gliders. You can see it in his 126-passenger turboprop giant AN-10 and his seven-seater air taxi AN-14, nicknamed the *Little Bee*.

An Antonov touch in both these planes is that they can dispense with concrete runways. The AN-10 is especially valuable as a transport plane for that reason. In summer the winged giant transports fruit and grapes from small southern towns that do not have first-class airports. The *Little Bee* needs no airport at all, any strip of flat land 150 to 180 feet long will do for a landing.

"We have planes linking practically every big center in the country," says Antonov, "but many smaller communities still do not have air service. That is our job now, to connect these thousands of small towns by air."

Simplicity combined with safety. These qualities are intrinsic in Antonov's latest design, the AN-24, which is completing tests and will soon be flying the domestic air lanes. ★

Passengers on his airliners feel just as comfortable and safe in their plane seats as do Antonov and daughter Tanya here at home.

AGRICULTURAL PRODUCTION AND RETAIL PRICES

BY VALERI YURYEV

ECONOMIC ANALYST OF NOVOSTI PRESS AGENCY

THE MEAT AND BUTTER retail price rise that went into effect in the Soviet Union on June 1 once again illustrates the truism that the condition of agriculture affects the welfare of literally every family in the country. Housewives now pay 40 kopecks to 1 ruble 10 kopecks for a pound of meat, an average of 30 per cent more than they used to. A pound of butter now costs from 1 ruble 50 kopecks to 1 ruble 90 kopecks, or an average of 25 per cent more. That is higher than prices in Denmark, Sweden and the United States, and about the same or lower than in a number of other developed stock-raising countries.

The immediate reason for the June retail price rise was the rise in the prices the state purchasing organizations pay the collective farms and state farms for livestock, poultry, butter and cream. That rise, in turn, was prompted by the desire to increase the income of the collective farms and state farms in order to speed the development of livestock breeding and the satisfaction of the population's ever growing demands for foodstuffs.

So much for the obvious facts of the matter. Probing deeper, we find that the advancement of agriculture in general and livestock breeding in particular is one of the most pressing tasks in our economic development. The Communist Party and the Soviet Government called attention a long time ago to the serious lag in agricultural output as compared with the over-all picture of the country's development. In 1953 a comprehensive program was launched to raise agricultural production. Its good results have become more and more tangible. In the past eight years gross agricultural output has increased 60 per cent. The grain shortage formerly presented a serious problem. Now enough grain is produced to satisfy all the country's needs for grain as food. There has also been a marked rise in the output of livestock products, for which the demand is particularly high. In fact there is not a single branch of Soviet farming that has not experienced general improvement, and this has paved the way for a sharp rise in the sale of consumer goods to the population.

Since 1953 the sale of meat and meat products has more than doubled, while that of milk and dairy products has multiplied more than fourfold. The results of various investigations show that today the Soviet people eat and dress much better than ever before. That is an incontestable fact borne out not only by statistics but by the daily life of every family in every town and village throughout the country's length and breadth.

But we can't ignore the fact that consumer demand for certain goods, primarily livestock products, is by no means being fully satisfied. The question that naturally comes to mind is: "How did that difficulty arise in the first place, and why was such an undesirable measure as raising the retail price of meat and butter finally decided upon?"

In their address to the people on the price rise, the Communist Party and the Soviet Government answer the above question frankly and exhaustively. They point out that in spite of the big advances that have been made in Soviet agriculture over the past few years, its level is still not high enough to fully satisfy the growing demand of our people for foodstuffs, especially meat and butter. This is not a matter of stagnation or of a slump, but of growing pains that are bound to accompany construction of the new life.

The Soviet population has grown by 29 million in the past eight years, the urban population accounting for 28 million of the total. In other words, the increase has been mostly in that section of the population which does not produce, but consumes, food products. Moreover, both in the cities and in the countryside the standard of living has risen greatly, thus increasing the demand for all kinds of consumer goods. Then there have been such developments as the increase in old-age pensions, wage increases granted to many categories of factory and office workers, and the rise in the collective farmers' incomes as farm production advanced, coupled with the gradual abolition of income taxes, all of which brought about an 87 per cent increase in the population's cash income over the past eight years.

As you know, of course, the well-being of a Soviet family depends not only on its cash income. The Soviet people also have an "invisible income" that increases every family's budget by an average of one-third. Its source is in the national budget appropriations for housing construction and the extremely low rents; free education from elementary school through the university and graduate school level; free medical services for the entire population; a national system of social insurance to which the workers themselves make no contribution whatsoever; and a diversity of other public services fully or partially financed by public funds. These public consumption funds have shown a steady annual increase, automatically augmenting the real income of the population. The result is that every Soviet family has been in a position to spend more money on food and clothing of better quality, and the already large effective demand of the population for all kinds of consumer goods has grown still larger.

The rise in the population's purchasing power was greatly stimulated by the policy of regular cuts in retail prices initiated by our government in 1947. The June price rise was essentially the first since the war, not counting the slight increase in bread prices introduced in 1947, which was substantially counteracted by a series of subsequent cuts. The only commodity that has become more expensive is hard liquor. Every price cut in the state shops, which today account for about seven-tenths of the country's total retail trade turnover, has been accompanied by similar cuts in the other sectors of retail trade—the collective farm markets and the cooperative stores.

Within the past ten years the total index of retail prices has fallen by 28 per cent (exclusive of alcoholic beverages), with an average drop of 33 per cent in the price of foodstuffs. It must be admitted, however that the cuts in meat and butter prices unfortunately lacked adequate economic grounds and were much larger than those made in other products, including vegetable oil, sugar and potatoes.

These were the main factors accounting for the rapid rise in the demand for consumer goods. They are all healthy growth factors testifying to our country's general economic progress and to the steady rise in the people's standard of living that has come with that progress. That standard will undoubtedly continue to rise even more rapidly in the future, as envisaged by the 20-year program for the creation of the economy of abundance essential for communism.

The construction of the new society demands that the lag in agriculture —so different from the over-all picture of rapid progress in our country— shall once and for all be eliminated, so that the growing popular demand can be satisfied. The Communist Party and Soviet Government have recently charted a number of practical measures to help the collective and state farms do just that, in line with the present tasks of further expanding production. One of the most urgent of those measures is the allocation of sizable funds for capital investments in livestock breeding, the most labor-consuming branch of agriculture. In the severe climatic conditions which prevail here, with the cold autumn and winter taking up seven or eight months of the year in most parts of the country, a great deal of work goes into the maintenance of the herds and production of fodder. Much more funds are required for the construction of buildings and the mechanization and electrification of meat and dairy farms than in other climates.

In addition to the collective and state farm investments for the purpose, many billions of rubles have been provided by the state over the past few years. It appears, however, that those appropriations have not been adequate. At the present level of mechanization in livestock breeding and of labor productivity in the collective and state farms, the cost of producing meat and milk is still very high. In many cases it is considerably above the price the government purchasing organizations pay for those products. As a result, many collective farms, instead of making a profit on stock raising, incur losses which have to be covered by other branches of their economy.

It is perfectly obvious that before stock raising can be profitable, the purchase price of livestock products must increase. But that requires additional funds. Where would they come from? The possibility of accumulating them at the expense of the collective farms themselves—that is, by reducing their profits—had to be ruled out from the start since that would have lowered the material incentive for farm development. Perhaps the additional funds could have been found by cutting the country's defense appropriations? In the present international situation, the Soviet Union must keep itself in constant readiness for any eventuality, and so it cannot weaken its defense might, at least not until the present dark clouds that loom on the international horizon disappear.

What about capital investments in industry? To cut them, however, would undermine the foundation of the country's over-all development, including that of agriculture, so that was no solution either. Nor was it possible to slow down the pace of housing construction, or to reduce expenditures for social and cultural services to the people. That is why the Communist Party and the Soviet Government had to decide on a rise in the price of meat and butter as the only course possible at the present time, unpleasant though it may be to the consumer.

The few days that have passed since the new prices went into effect have shown that the people in the cities, who are the ones particularly affected by the rise, have taken it in the right spirit. At mass meetings all over the country, in their many letters to newspapers and magazines, and over the radio and TV, men and women in all walks of life say: "Yes, temporarily we shall have to take a loss, but we are confident that in the end it will repay itself by helping to remedy the lag in livestock breeding, and then we shall have plenty of meat and butter at moderate prices."

As for the rural population, there is no need to prove the advantages of higher retail prices to them, for the whole point of the measure is to increase their material interest in expanding production.

There is no question that the Soviet people recognize the necessity for the June price rise and realize it is a temporary measure that will make it possible to create the basis for increasing the good things of life in the near future.

There are already quite a few collective and state farms in our country where the cost of production of meat and milk is much below the purchase price. There can be no doubt that before long all the farms in the country will acquire the necessary funds to make an upsurge in the output of livestock products possible.

The effort exerted today will raise labor productivity and greatly reduce the cost of production of foodstuffs. When the cost of production of enough items is reduced, purchase prices, and with them retail prices, will also be reduced. ★

Summer Fashions

DANCER
with a Thousand Faces

BY VICTOR BUKHANOV

PHOTOS BY VADIM KIVRIN AND YEVGENI UMNOV

"ALL SOLD OUT inside, are they? Don't let it upset you. I'll dance for you right here in the street."

This was famous Soviet dancer Makhmud Esambayev talking to an overflow crowd outside the Mir motion picture theater in Moscow. They had come to the opening of the new color film, *The World of Dance*, in which he is starred.

Esambayev was as good as his word, and a delighted street audience watched him as he did one of his dances. There was no accompaniment, but he needed none; there was music in his every movement.

In the film he does a sequence of nine dance scenes, a prologue and an epilogue that seem to give choreographic expression to the universal experience of all mankind—its childhood, the legends and tales born of its dreams, its tragic struggles, the happiness of the whole world unshackled.

Esambayev is known as the dancer of a thousand faces. In *Makumba* he is sad and troubled; in *The Herdsman*, comical and tender; in *The Hunter and the Bird*, fierce and wild; in *The Automaton* he seems to have no face at all.

Against a background of sun-baked steppes, he dances *The Hunter and the Bird*. There is the blood lust of the killer in his face one moment and the agonies of death the next. His eyes film over, and the audience no longer sees the exultant hunter but the proud dying bird as it falls to earth.

His representation of a cosmonaut is a unique choreographic achievement. He translates with extraordinary eloquence and force the thoughts, jubilation, excitement of the explorer rising from the earth into space and then returning to his own planet once again.

The dance sequences are tied together by historical, dramatic and pictorial threads. Wit and ingenuity are reflected in the settings. Drawings by Picasso, Masereel, Guttuso, Léger and Vasilyev set the tone and mood, helping by their terse expressiveness to take the audience from land to land and from one period in history to another.

Esambayev is now 38, but he has the supple body of a much younger man that comes with hard work. He is a seasoned traveler and has toured many parts of the world—France, Italy, Jamaica, Cuba, the countries of South America, India. He learned his dances from great artists and simple people. Life in fashionable hotels, night clubs and temples of worship are equally familiar to him.

Very happy that his film is such a success in Moscow, Makhmud was perhaps most pleased with the picture's reception in remote Chechen-Ingushetia, his birthplace in the Caucasus.

At the Moscow opening, Esambayev told the audience: "I always walk around in a fur hat. I do it because I am afraid of catching cold, because I want to hide my thinning hair, and because that is what my forebears did. But today I stand before you bareheaded, the son of a small and obscure people who has found his way onto this big screen; I have taken my hat off to you and to all the people in our country in boundless gratitude." ★

SPORTS ON STAMPS

BY ILYA ZBARSKY

SOVIET WINTER ATHLETES made headlines last season. What's more, they prompted several new postage stamp issues. Their brilliant performances in skiing, skating and hockey inspired post office artists to design the stamps shown here along with some of the older winter sports issues.

Highlight of the season was the Men's World Speed Skating Championship held in Moscow last February, commemorated in the four-kopeck skater stamp. It comes in two shades—a nice point for the serious collector. Some have a white glue backing, others gray. The white glue makes the stamp thicker, giving the impression that the stamps are printed on different kinds of paper.

The post office at Lenin Stadium, where the championship was held, used a special cancellation mark reproduced here. It reads, "USSR, World Skating Championship for Men, February 17-18, 1962, Moscow P.O. G-277."

The white glue stamp is inscribed "Soviet Skaters—World Champions" to commemorate the victory won by Victor Kosichkin at the Lenin Stadium and Inga Voronina's triumph at the World Championship for Women held at Imatra, Finland.

The next headline meet was the USSR Winter Games in Sverdlovsk, with the country's leading athletes competing. Action shots at the games were reproduced in varicolored stamps. The four-kopeck shows a slalom race, the six a run for the puck in hockey, the ten—figure skating. Incidentally, in this last event the Soviet contenders placed second in the European and World Championships.

While the Winter Games were on, the Sverdlovsk Post Office used the special cancellation mark shown here—a pair of skiis across the Winter Games emblem, with the USSR flag centered in it.

Ski wins at the World Championships held in Zakopane, Poland, also inspired our stamp designers. Nikolai Kamensky won the silver medal in the jump, and Alevtina Kolchina the gold medal in the women's cross-country.

More than ten postage issues are designed around the theme of skiing, testimony to the popularity of that sport in the Soviet Union. ★

Academician Nikolai Blokhin opening the 17th anniversary meeting of the link-up at the Elbe of American and Soviet troops.

Lt. Col.T.M. Horne, Assistant U.S. Naval Attaché, with veterans of the Elbe linkup I. Anikovsky and G. Simakin.

Soviet Marshal Ivan Konev (left) at Friendship House with Maj. Felix Sachanen, U.S. Assistant Air Attaché.

Air Marshal Alexander Golovanov made an address at the gathering on April 25.

Lt. Col. Reitz, Army Attaché; Maj.Sachanen; Tamara Mamedova of the Soviet-American Institute; and Marshal Konev.

THE ELBE LINK-UP, A SYMBOL OF PEACE

"WHEN THE TROOPS of the United States and the Soviet Union, fighting together in a war against Hitler Germany, met at the Elbe on April 25, 1945, millions of people the world over hoped that there would never be another war, that the link-up would serve as an eternal symbol of the triumph of light over darkness, reason over madness.

"Those who met and shook hands at the Elbe are not likely to forget that sunny April day when the armies of the two great nations that had routed the Nazis joined forces," said retired Colonel Ivan Samchuck at a public meeting in Moscow last April to commemorate the seventeenth anniversary of the Elbe link-up.

The meeting was sponsored by the Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries, the Institute of Soviet-American Relations, the Soviet Committee of War Veterans and the Soviet Peace Committee. Representatives of the American Embassy attended. The major speech was made by Chief Air Marshal Golovanov, member of the board of the Institute of Soviet-American Relations and member of the Presidium of the Soviet Committee of War Veterans.

"Since the war," he said, "the Soviet people, in the spirit of the friendship and cooperation that characterized the common struggle against fascism, have been striving without halt to make peaceful coexistence the cornerstone of American-Soviet relations. Our people revere the memory of Franklin D. Roosevelt, who charted the only correct and realistic course—friendship and alliance with the Soviet Union.

"Today we must make the bitter and tragic admission that the hopes and aspirations of those hundreds of millions who saw in the victory over fascism a pledge of future peace have not been realized. For these many years the friendship of our peoples, sealed with blood, has been darkened by the threat of another destructive war, before which every previous tragedy of human history is of small account.

"The Soviet people," concluded Marshal Golovanov, "earnestly hope that common sense will stop the arms race. This is an obligation we owe to those who fell, who gave their lives to safeguard the peace for the generations to come after them. Together let us strengthen the cause of peace to which we pledged our allegiance at the Elbe. Long live the friendship and cooperation of the peoples of the United States and the Soviet Union!"

The meeting was also addressed by participants in the Elbe link-up. Those present adopted an appeal which reads in part:

"The general public of our countries can do much to promote cooperation and mutual understanding between the USSR and the USA, former allies in the struggle against fascism, with regard to general and complete disarmament and the preservation of peace. If we unite our efforts in this great cause, we will be supported not only by the people of our two countries but by all people who want to live securely and quietly in a world without armaments and wars.

"There is no task more important in this world of ours so overstocked with lethal weapons than the complete destruction of the entire military machine and the eradication of every means for waging war. Let us stretch out our hands toward each other, as we did at the Elbe 17 years ago, and declare ourselves for general, complete and controlled disarmament, for the prohibition of nuclear testing for all time. Together with all the other peoples, we in the two most powerful countries can save the world from the nightmare of destructive war. The future is in our hands! Let us make it a peaceful and tranquil future!" ★

SUB

BY VENIAMIN TIKHOMIROV
CAPTAIN, NAVAL RESERVE

PHOTOS BY YEVGENI HALDEY AND
NIKOLAI VERENCHUK

The Malyutka, *Soviet North Fleet's M-172, returns to its base.*

Commander Fisanovich (center) and men of the Soviet North Fleet decorated by the USA. On his left are Fleet Admiral Golovko and Rear Admiral Duncan.

Commander Valentin Starikov, whose sub successfully eluded an enemy net.

The commander of the M-172, Hero of the Soviet Union Izrail Fisanovich.

MARINE COMBAT

A GLANCE at a few of my old photographs, and the war days come back to me. I served with the North Fleet as correspondent. How clearly I recall the unvarying Arctic daylight, that day in July 1943 those pictures were taken when medals and decorations were awarded by the United States to the men of the Soviet Navy's North Fleet for distinguished service under fire. The ceremony was held in the city of Polyarny, where the North Fleet was based. Rear Admiral Duncan conferred the medals on behalf of the President of the United States.

Almost at the same time a group of American sailors were decorated by the Soviet Government for valor and exceptional courage in the struggle against fascism. The Order of the Red Star was bestowed on Captain Harry S. Alexander, Second Mate Clyde Andrews and Third Mate Edward M. Feserston.

One of the Soviet officers awarded the Navy Cross was Hero of the Soviet Union Commander Izrail Fisanovich, commander of an M-172 submarine called the *Malyutka (Little One)*.

The diary I kept at the time reads, "On August 21, 1941, Izrail Fisanovich made the first raid on an enemy base, at Pechenga, and sank a fascist transport."

Here is the story.

The *Malyutka* got through to the enemy-held shores of Varanger Fjord. In a pounding storm, the sub hunted for nazi ships one day, a second, a third. But the sea was empty, the fascists had evidently taken shelter in their bases.

Whereupon Fisanovich decided to go into Port Pechenga after them. Slipping through the narrow channel of the port was very risky, with ships guarding the entrance and the likelihood of encountering antisubmarine devices as well. Fisanovich knew that he might run into the kind of trouble Commander Valentin Starikov had.

Starikov's sub had torpedoed two transports at an enemy base and then ran into an antisubmarine net on its way out of the harbor. Should he drive full speed ahead and try to break through? But if the net were mined, an explosion in the immediate area of the sub would mean death for everyone in it. And surfacing in full view of the shore batteries was obviously out of the question. Starikov heard the engines of approaching submarine chasers. The Germans had evidently decided to play a waiting game, certain that they had the sub in their hands.

He took a desperate chance, ordered full speed astern with a maximum trim by the stern. The ship heeled over so far, the men could hardly stay on their feet. There was a real chance that the electrolyte in the batteries might spill at such an angle. If it did, the batteries would short-circuit, flame up, cause an explosion—and finis!

But the ship broke loose, bypassed the net, and successfully ran the gauntlet of depth charges out to the open sea.

An antisubmarine net was a dangerous enemy, and Fisanovich did not forget that for a minute. He got into the bay without trouble, raised his periscope and found himself staring at a submarine chaser. He had a bad few moments wondering whether they had been spotted. But the sub chaser made for the open sea and the *Malyutka* submerged again undetected.

Fisanovich brought his boat into the harbor and ventured close enough to the surface again to raise the periscope. All was quiet. The enemy's observation post was perched on a high rock. A big transport was tied up at the dock.

"Full speed ahead!" the commander ordered. He visualized the target nearing as the chronometer ticked off the seconds. Another look through the periscope, and a tense command into the microphone, "Torpedo attack!"

Fisanovich had a perfect view of the big transport being unloaded. She had brought food and ammunition for the nazi troops in the north.

"Tubes ready!" he ordered. And torpedo men Nikolai Seregin and Vasili Nemov froze at their posts. "Fire!"

Free of the torpedoes, the submarine darted upward. The missiles struck home, exploded—a solid hit. But there was no time to celebrate. They had to get away fast.

The fascists were going to try to bottle them up in the bay. Fisanovich maneuvered to get out. No easy matter. The fjord was heavily mined; the bay was small, its soundings misleading. And depth charges kept exploding around them.

He risked another look through the periscope to get his bearings. What he saw was anything but heartening. The harbor exit was a good way off and two submarine chasers were rapidly nearing.

The ship submerged again. The explosions were so close now that the electric bulbs burst and compressed air whistled out of the pipes.

They lay on the bottom, silent, the emergency lamps on, the crew ordered not to talk or walk about. As the minutes dragged by, it got harder to breathe. The men did not move, to save oxygen. They stood at their posts, awaiting the next order, even if it meant enduring the same agonies as Commander Vasili Tamman's crew had.

That was the time 13 sailors had spent 12 hours in a flooded section of a submarine. A nightmare—the men standing in pitch darkness, with the icy water rising to their necks, barely able to breathe. The commander had tried everything during those endless hours to save the men and the ship. Finally he shouted through the voice tube, "Open the emergency valve!"

That meant someone in the sunken section had to dive and feel about for the valve. An almost impossible job, with the air practically exhausted and the men numb and so crowded together they could hardly move.

Somehow the valve was opened and compressed air forced through it to save both the men and the ship.

Fisanovich knew that he could depend on his crew in a crisis like this or any other. They remained silent and motionless for several hours, until the enemy ships, deciding that the submarine was done for, took off. The *Malyutka* then broke out of the harbor and went back to her former combat position. The following day she sank another enemy transport.

Izrail Fisanovich's M-172 carried out 18 such raids, downing 14 enemy ships with a total displacement of 76,000 tons. The crew was awarded the Guards' title and the Order of the Red Banner. Every man on the *Malyutka* had several combat decorations. In the fall of 1944, while fulfilling a combat assignment, the sub was lost with all hands on board.

The submariners of the North Fleet fought the fascists under very tough conditions, but they chalked up many victories. One of them flashed around the world.

This happened in the summer of 1942. The submarine K-21, commanded by Hero of the Soviet Union Nikolai Lunin, had already sunk 20 enemy ships and now lay waiting near the northern coast of Norway. A radiogram from staff headquarters had warned Lunin of an approaching fascist squadron led by the *Tirpitz*. The enemy was moving to intercept an Allied convoy heading for Murmansk.

Soon after Lunin set out to meet the squadron, his hydrophones picked up noise to the right of the bow. The periscope showed the silhouette of a destroyer in the lead. As the other ships came into sight, the sub dropped to a lower depth.

The hydrophones picked up more noises, and the commander took another look at the surface. He saw enemy ships on all sides, the K-21 smack in the middle of the squadron. Lunin fixed on the battleship *Tirpitz* for attack. He raised the periscope and changed course 15 times to make certain of his prey.

At the long-awaited command "Fire!" the torpedoes leaped to the side of the *Tirpitz*. There were two explosions.

The attack was so bold and unexpected that the fascists did not have time to chase the sub; they were too busy convoying the crippled battleship back to its base. The *Tirpitz* was put out of action permanently.

These are some of the memories my old photos bring to mind. ★

American Farmers In Russia

BY LEV PETROV

These visiting Americans see the Moscow sights before starting on their farm tour. They felt very much at home in the Kuban, whose climate is similar to Georgia's.

Chairman Ivan Markovsky gives his guests from Georgia the Michurin Collective Farm's history and some vital statistics before he takes them on an inspection tour.

Cattleman and farmer John Spooner sees a good pea harvest. Another Georgia visitor said the land was as rich and as well worked as the good farms back home.

The guests thought the Michurin farm's wheat was okay. The farm ha 25,000 acres sown to field crops and 2,000 acres of fruit and grape

EVERY SO OFTEN you meet someone with whom you get to be really close friends almost immediately. That's exactly what happened when I accompanied a 55-man group of American farmers from the state of Georgia on a trip to Krasnodar Territory and Rostov Region.

When the group was welcomed at the airport on arrival, the leader, Glenn Segars, assistant to the Commissioner of Agriculture of Georgia, said, "We call ours a good-will, people-to-people tour. The farmers of our state decided to visit the socialist countries to have a look at the way the Russian, Polish and Hungarian farmers live and to tell them how we American farmers live. The saying goes, 'It's better to see once than to hear a hundred times.' We wanted to see things with our own eyes."

Their first day in Moscow the Americans were invited to visit one of the largest poultry farms in Moscow Region, at Bratsevo. Georgia ranks second in the United States in egg and poultry production, so that the Americans were very much interested.

Said Fred Haley, a big poultryman, "I like the size of your farm and the way you organize production. I must admit that I did not expect your level of mechanization to be up to that of a well-mechanized American farm. You keep your poultry clean, and you pack your produce well, much like we do. Except that we do more colorful packaging for advertising purposes.

"But I wouldn't be altogether frank if I mentioned only the things I like," Mr. Haley went on. "In my opinion, there are some shortcomings. The most important one is that facilities for egg-laying, incubation and chicken-fattening are all in the same place. That isn't wise. In an epidemic it would be hard to isolate the infected chickens, and all your poultry would die. I know your breeders say that they reduced disease to a minimum, but poultry raising is a very delicate business."

Julius Bishop, another big poultry man, went on to say, "The Bratsevo farm really amazed me. Even by our standards it is big and light, with fine sanitary conditions. Your people do such a good job tending poultry that it's hard to think of any improvements. I was surprised to find that poultry diseases are rare and that you use antibiotics so widely for prevention. In our country not every farmer can permit himself that luxury.

"Mr. Nikulitsky, your manager, told me that you get an average of about 185-190 eggs per hen. That's a lot. As for criticism, I have some of that, too. My feeling is that you still do too much work by hand, and that, naturally, raises the cost of production. I hope you'll get around to rectifying that very soon."

The day at the Michurin Collective Farm, the Americans thought, was the most interesting they spent in the Soviet Union. The group was heartily welcomed by the collective farmers. "Every meeting," said Ivan Markovsky, farm chairman, "gives us one more opportunity to know each other better and to share experiences."

He showed the visitors around and kept up a running commentary in between the questions thrown at him. The present setup, he told them, was organized in 1950, when four small collective farms merged to get more out of their combined lands and assets. The merger gave the farm a total of 36,000 very fertile acres, of which 25,000 are sown to field crops, 2,000 are orchard, and the remainder pasture.

The crop yield is good—about 45 bushels of wheat and 60 bushels of corn per acre. The farm has 4,600 head of cattle, including 1,300 cows that yield an average of 615 gallons of milk a year.

There are about 7,000 people living and working on the farm, some 3,600 of them busy with field crops. In response to several questions about gross income and overhead, the chairman gave these figures:

gross income is 3.4 million rubles, of which 2.4 million is profit;

11 to 13 per cent goes to the state for taxes;

25 per cent is used for construction and for the purchase of machinery;

15 per cent for fertilizer, seed, irrigation, fuel, repairs;

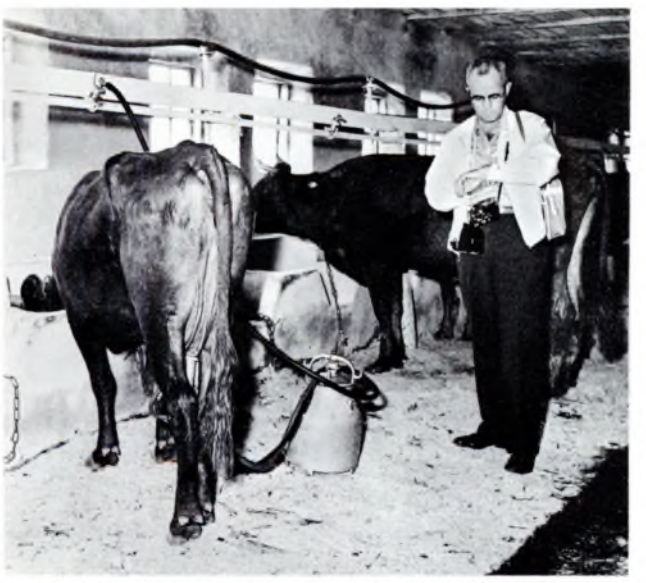
42-45 per cent for the remuneration of collective farm members for the work they do;

7-10 per cent goes for pensions to retired collective farm members.

In addition to cash payments, Markovsky explained, the farm members are paid in kind—with meat, wheat, rice, vegetables and other foodstuffs they raise.

Dr. E. V. Patrick wanted to know how many doctors and nurses the farm had, and he was

Zootechnician Vera Makarenko described the work the farm does at its artificial insemination station.



One of the Americans times the electric milker. His comment, "Does as well as the milker I use on my own farm."

A number of the Georgian dairymen and cattle breeders were especially interested in the farm's work with pedigreed animals. At present the fast-growing livestock section has 4,600 head of cattle, including 1,300 milk cows.

told, "Six doctors and 40 registered nurses."

Georgia cattlemen Jack Gilchrist and John Spooner asked about pasture land and pedigreed cattle, and the group was shown around the livestock section, the grazing areas, the artificial insemination stations and the repair shops. They were invited to farm members' homes and accepted with pleasure.

The comment of Glenn Segars, leader of the group, was typical of many. "I was very glad to visit the collective farm. We saw what people can accomplish with their labor and a desire to create a happy and prosperous country."

Edward King said, "This is a big, well organized farm. There is one thing you ought to do, in my opinion—make more use of electricity for auxiliary jobs. That lightens the people's work and increases their earnings."

William Horne's comment was, "This is rich land in your Krasnodar Territory, like the southern part of our state. I'm glad to see that land in the Soviet Union is not wasted, as we had thought previously, but is put to good use, that it is worked as skillfully as ours."

When the time for good-bys came, Segars said. addressing Ivan Markovsky: "Mr. Chairman, in our country we have a mountain with the heads of some of our national heroes carved in it. This mountain is made of very hard stone. I want to present to you a small souvenir made from that stone with the hope that our friendship will be just as firm and solid. I would like to thank you and, through you, all the people on your farm for the gracious way you welcomed us."

Before they left Moscow, the Georgian farmers were received by Dmitri Polyansky, Chairman of the Council of Ministers of the Russian Federation, who said that he was very happy to welcome the American farmers on Soviet soil. "You come at a time when we are trying to work out a big farm development program, and we would be grateful for your comments and suggestions."

The visitors expressed their gratitude for the very cordial reception they were given everywhere that they traveled.

"We are here on a good-will visit," Segars told Polyansky. "Back home we heard of your successes. But now that we've seen what you've accomplished, we fully believe in your achievements."

William Horne added, "Your farm development is on the upswing. With your rate of growth and such people, you will be doing great things in the near future."

The group then directed questions to Dmitri Polyansky. Julius Bishop wanted to know which form of economy is preferred—collective farms or state farms.

Polyansky said that both are progessive and effective. In the Russian Federation, he explained, 55 per cent of the total agricultural yield comes from collective farms and 45 per cent from state farms.

In answer to a question from Spooner regarding business contacts, Polyansky replied that business contacts would undoubtedly help promote the friendship and mutual understanding that both Soviet and American farmers want.

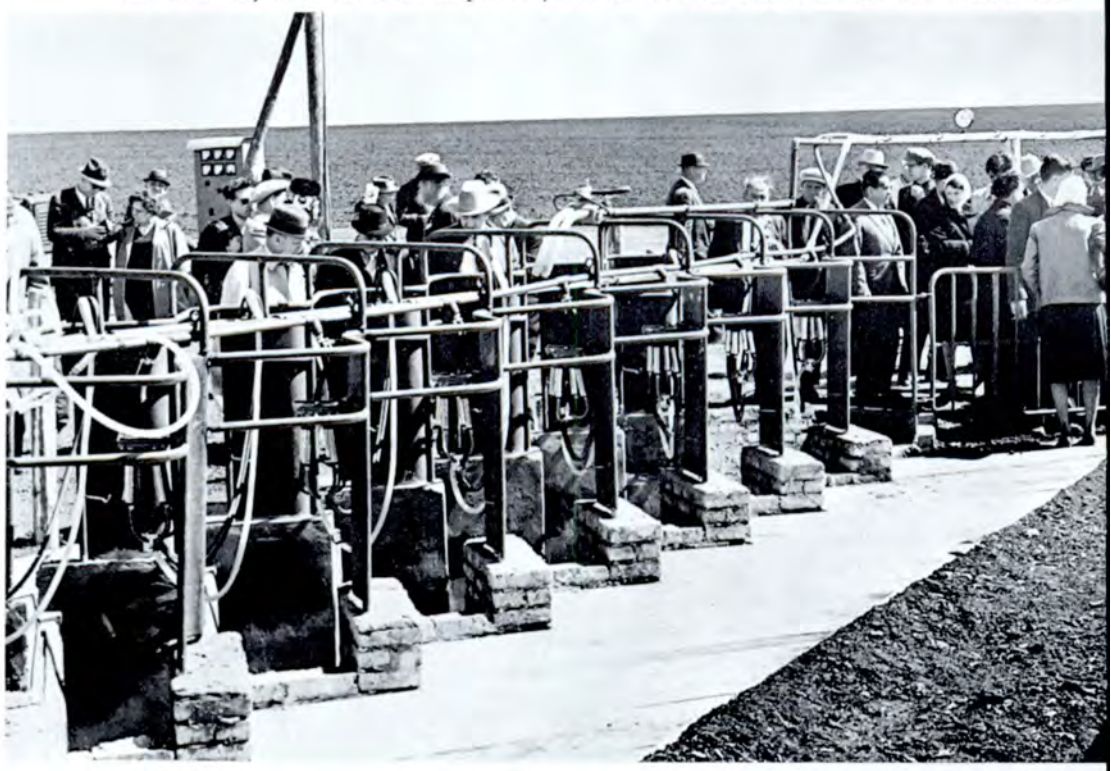
Horne invited a group of Soviet farmers to visit Georgia. "We learned a lot and can promise you that when your Russian farmers are our guests, we will show them many things that they and the Soviet state will find useful."

Polyansky thanked them and said that Soviet farmers would certainly avail themselves of the invitation. He also said that Nikita Khrushchev had sent his personal greetings and best wishes.

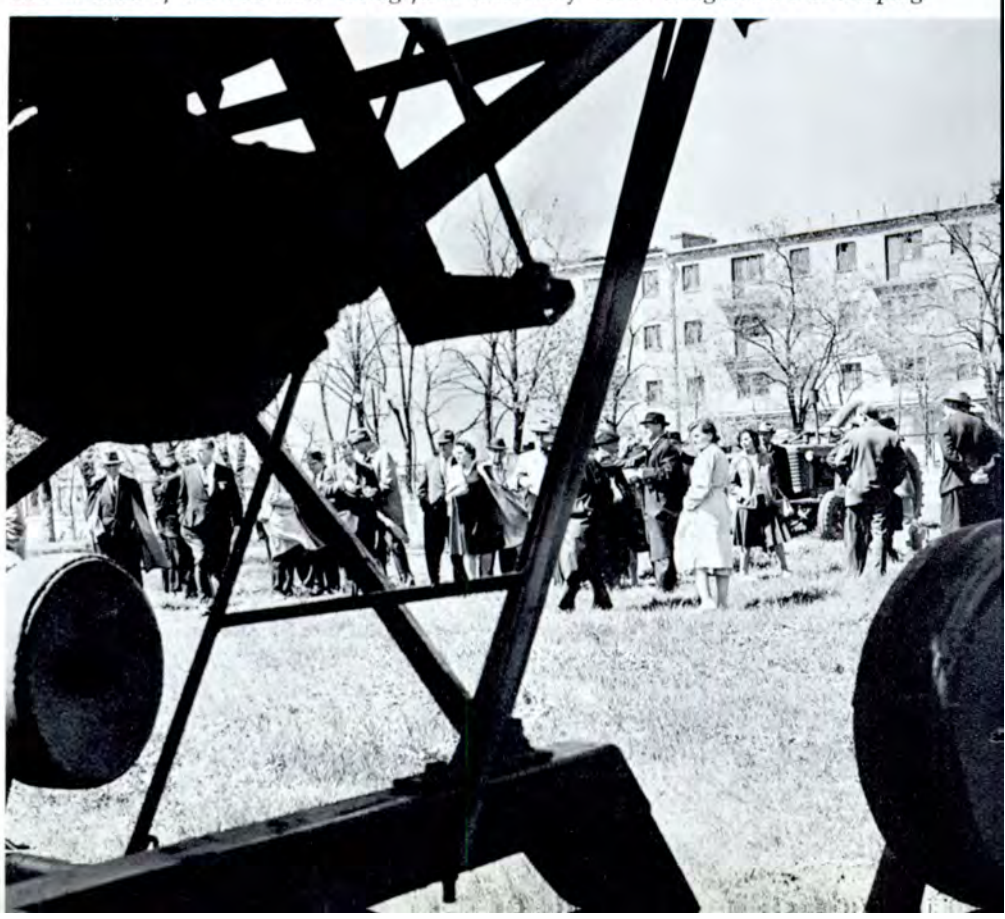
As for myself, I found the trip too short—the Georgian farmers spent only a week in the Soviet Union—but I hope to see them again before too long. "Visit us in Georgia, Lev," they said when they left. "Come when your Russian farmers do. We'll see to it that you get the same royal welcome you gave us."

Jesse Newsom's wit (up front, hatless) helped brighten the bus trip between stops. Glenn Segars, delegation leader, was very enthusiastic about this exchange between farmers.

The Yelochka electric milking machine, used widely on Soviet dairy farms. During their one-week stay the Americans inspected farms in the Moscow, Krasnodar and Rostov areas.

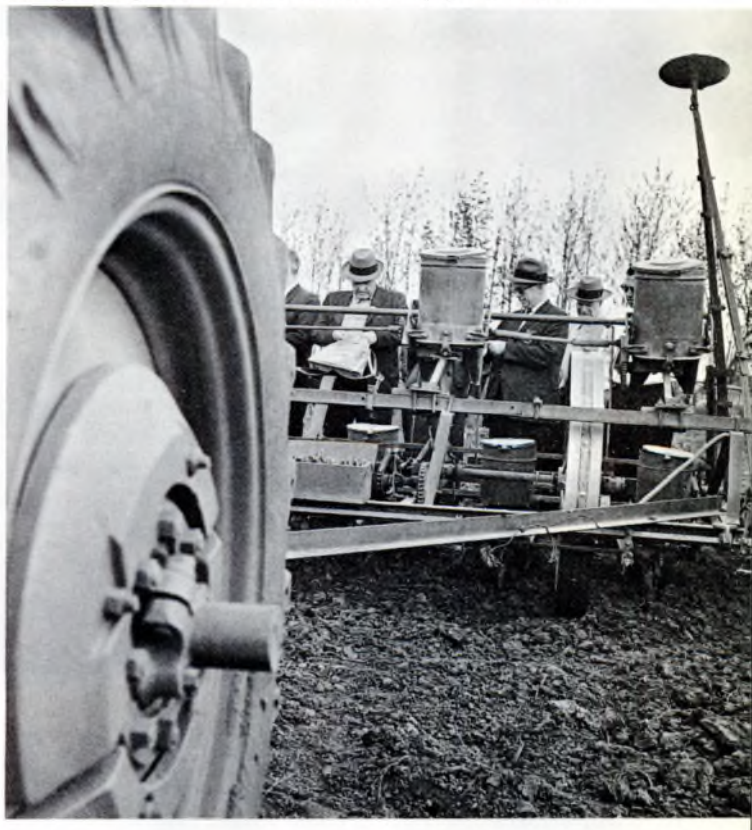


A visit to the Institute of Electrification and Mechanization of Agriculture for a look at some of the new labor-saving farm machinery Soviet designers are developing.



Universal combine for field crops. While visiting the Bratsevo poultry farm near Moscow, expert Fred Haley commented on the high mechanization level.

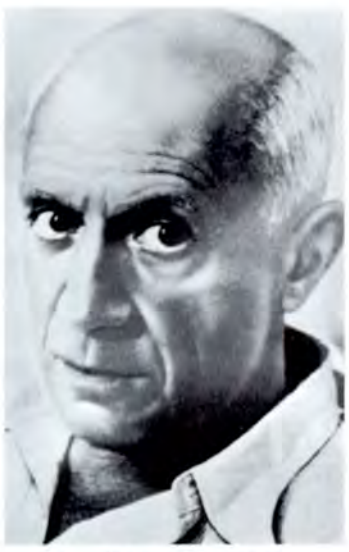
The Americans asked questions about everything from corn-planting methods to distribution of farm income.



Before they left Moscow the Georgians were received by Dmitri Polyansky, Chairman of the Council of Ministers of the Russian Federation. The chairman accepted with pleasure the invitation for a group of Soviet farmers to make a reciprocal tour.

LENIN PEACE PRIZE WINNERS

Kwame Nkrumah



Pablo Picasso

Istvan Dobi

Faiz Ahmad Faiz

Olga de Espinosa

BY ACADEMICIAN DMITRI V. SKOBELTSYN
CHAIRMAN, COMMITTEE ON INTERNATIONAL LENIN PRIZES
FOR THE PROMOTION OF PEACE AMONG NATIONS

THE International Lenin Prize for the Promotion of Peace among Nations was conferred this year on five eminent statesmen and public leaders.

The aspiration and struggle of working people for peace, freedom and happiness are forever associated with Lenin, with his teachings and his titanic activity. His great ideas light mankind's road to successful solution of the vital problems of today, the road to general peace and prosperity.

The five prize winners, well-known figures in their various countries—people of different social positions, vocations and political loyalties—are all united by their humanism, their uncompromising struggle for peace, freedom and happiness for all peoples. They are unanimous in their striving to save mankind from a terrible nuclear holocaust.

The Peace Prize was awarded to Dr. Kwame Nkrumah, President of the Republic of Ghana, for his leadership in the African national liberation movement. Dr. Nkrumah enjoys the universal respect of the peoples of all the African countries. The world knows him as a courageous and resolute fighter for peace. "While the disarmament problem remains unsolved and until agreement on this matter is reached," he said at the Belgrade conference of nonaligned nations, "the conditions necessary for the preservation of peace will not be present. . . ."

People of good will everywhere will greet the awarding of the Lenin Peace Prize to Pablo Picasso, world-famous painter and humanist. His name is familiar to millions, his paintings on display in the museums of almost all the world's capitals. For Picasso, painting, to quote his own words, is "a weapon in the defensive and offensive war against the enemy," and the enemy is fascism.

When Spain, in 1936, fought against fascism, Picasso was on the side of the People's Front. During the years of World War II he was with the French Resistance. In the postwar period his name has been inseparably connected with the struggle for peace and democracy.

His *Dove of Peace*, a world-famous drawing, brought him an earlier International Peace award in 1950.

Istvan Dobi, President of the Presidium of the Hungarian People's Republic, who has worked tirelessly for the relaxation of international tensions, was awarded the Lenin Prize.

Istvan Dobi has devoted all his working life to progress and world betterment. He has invariably championed international peace and friendship and the application of the principle of peaceful coexistence of nations with different social systems. His work on behalf of the peace movement is widely recognized, particularly in the European countries.

Faiz Ahmad Faiz, outstanding son of the Pakistani people and celebrated Eastern poet, was honored with the Lenin Prize. Faiz was one of the organizers of the Association of Progressive Writers. During the dark period of 1949 he worked actively to convene a conference of progressive writers of Pakistan. At the time he headed *Imrose* and the *Pakistani Times*, the largest Pakistani progressive papers.

For these and other progressive activities he was jailed on a trumped-up charge and threatened with death. He spent five years in prison. On his release, he worked with greater passion and sacrifice for the cause he had pledged his life to. In 1950 he was elected secretary-general of the Pakistani Peace Conference. He is vice president of the Pakistani Trade Union Congress.

Peace fighters everywhere, and in particular those in the Latin American countries, are gratified that the Peace Prize award went to Olga Poblete de Espinosa of Chile.

She is a professor at Santiago University, a dedicated worker in the peace movement and the fight for women's rights. She organized the Chilean women's movement, which played a very important role in securing political equality for the women of her country. In 1959 she was awarded a gold medal by the World Peace Council. She is secretary of the World Peace Council.

The new International Lenin Prize winners as well known to progressive people the world over. Their popularity and prestige are further proof of the great scope of the peace movement.

Everything that is honest and good in each nation is engaged in a tireless struggle for peace. This is the guarantee that the forces of peace will score a victory over the forces of war. ★

RECOGNITION BY THE PEOPLE

BY VLADIMIR ORLOV
COMMITTEE FOR LENIN PRIZES IN LITERATURE AND THE ARTS OF THE USSR COUNCIL OF MINISTERS

THE LENIN PRIZE is conferred each year for original and significant contributions in literature and the arts, and the pure and applied sciences. Nominations are submitted by learned societies, professional groups and mass organizations, and the awards are made after nationwide discussion.

Among the prize winners for 1962 is the world-famous Emil Gilels. He was cited for the strength and lyricism of his interpretations and his rare virtuosity. His playing is a musical assertion of humanism. He infuses even the old classical works with today's dynamic ideas.

Vladimir Favorsky, a veteran graphic artist, sculptor and stage designer, was awarded the Lenin Prize for his book illustrations. His subtle etchings of a host of characters from the classics give the books he illustrates the venerable beauty and grace of ancient frescoes on the walls of famous temples.

Petrus Brovka's poetry gives the traditional Byelorussian folk motifs a new and modern content. His verses are lyrical evocations of his native countryside and people. His book *As the Days Go By*, known not only to Byelorussians but to Russian and foreign readers, won him the Lenin Prize.

Kornei Chukovsky, that most versatile author of children's books and literary criticism, was awarded the prize for his study of the life and work of the nineteenth century Russian poet Nekrasov. This scholarly work reflects the extent of Chukovsky's efforts to search out original texts, fill in elisions and correct changes made by czarist censors. Chukovsky's grace of style makes this meticulous piece of literary criticism read like an engrossing novel.

Sculptor Lev Kerbel was granted the Lenin Prize for his monument to Karl Marx. The figure of the founder of scientific communism seems to grow out of the rock. The historic inevitability of the victory of his teachings appears to be symbolized in the organic unity of the figure and the granite monolith from which it is chiseled.

The Lithuanian poet Eduardas Mezelaitis received the award for his latest book *Man*, which met with a remarkable unanimity of opinion in critics and readers. *Man* is a philosophic exploration in verse of the time of great discoveries, about the greatness of man, conqueror of the universe. Its hero is our contemporary, boldly looking to the future, the master of his destiny. He is the builder of the new society, the inheritor of the best his forebears have created.

The prize was awarded to Academician Lev Pontryagin and his assistants for work on the mathematical theory of optimal control of various processes. This very important area of investigation has wide and practical bearing on guidance and control systems and has the close attention of scientists as well as people in industry, the government and the Party. Academician Pontryagin, who is blind, has proved what amazing keenness a man's mind can have.

Ukrainian Professor Alexei Pogorelov was honored with the national prize for his work in the geometry of convex surfaces, the laws of their deformation and rigidity. His studies derive from practical design problems in highly complex modern machines and structures in the same sense that the old geometry derived from the need to solve land tenure problems.

Academician Lev Landau and Professor Yevgeni Lifshits were honored with the prize for a series of monographs on major problems of theoretical physics used by physicists and scientists in related fields both in the Soviet Union and abroad.

Academician Alexander Polkanov, geologist, and radiochemist Erich Gerling received the award for a study that establishes the absolute age of rocks, a matter of great practical importance in predicting the location of mineral deposits and estimating the industrial prospects of large sections of the country.

Their study bears the formidable title "Development and Introduction into Geological Practice of the Potassium-Argon Method of Determining the Absolute Age of Geological Formations." But the principle involved is very simple. To determine the age of rocks, scientists use a geological timepiece similar to the ancient lantern watch that told time by the level of oil in a vessel. In this case, the combustion is not chemical but nuclear. A process of slow fission—nuclear smoldering—goes on in rock of all kinds. The ash resulting from the burning of nuclear fuel is argon—a gas that remains trapped in the crystalline structure of the mineral. The age of the rock is determined by the quantity of argon accumulated in the mineral.

A posthumous award was made to medical researchers Vladimir Shamov and Sergei Yudin. Their studies demonstrated that the plasma from a dead person was as effective for transfusions as the blood of live donors. Moreover, they found that this blood has an unusual property. For preservation it does not require the addition of the usual anticoagulants that can be injurious to the patient. The scientists introduced transfusion of fibrinolysis blood into medical practice. The blood is also used in the manufacture of so very essential a preparation as gamma-globulin.

In 1908 the famous Russian globe-trotter Pyotr Kozlov discovered the dead city of Khara-Khoto and brought back a library of manuscripts and xylographic writings in an unknown language. Scholar Nikolai Nevsky deciphered the manuscripts and, in process, discovered the language of the Tanguts, an achievement that ranks with the greatest in linguistic research. He established a vocabulary of more than 5,000 words and reconstructed the Tangut phonetic system, thus providing the key to the highly developed culture of the Tangut state. Nevsky's work required a thorough knowledge of Chinese, Tibetan and Indian philology; of the languages of the peoples of the East, both old and new; the systems of the written languages of the East; and the history and literature of the Asian peoples. The prize was awarded posthumously.

The Lenin Prize went to two groups of power men headed by Dmitri Azaryev and Artavazd Akopyan for designing and constructing long-distance power transmission lines and developing equipment for a very high tension, formerly obtained only under laboratory conditions with so-called lightning generators.

The Lenin Prize was awarded to a group of specialists for the discovery and exploitation of an immense oil deposit in the Turkmenian Republic that dwarfs all presently known deposits in Central Asia.

Faizurakhman Begishev and other oil men won the prize for radical improvements in drilling and extracting that will speed development of the Soviet Union's largest deposit, at Romashkin. By pumping water into the oil stratum, they shift the oil level and pressure most advantageously.

A group of bridge builders were awarded the Lenin Prize for an engineering feat performed while they were constructing a bridge across the Yenisei. Ten ferroconcrete arches weighing a total of 32,000 tons were tugged down the river and fitted, while afloat, into the spans of the bridge.

Another group of engineers, headed by Konstantin Silin, were honored for developing a caissonless method of laying deep ferroconcrete foundations. It employs the principal of vibration, which loosens the ground so much that it is possible to sink foundation columns as though in a liquid.

The prize was awarded to Rostislav Alexeyev and a group of fellow designers for building the high-speed hydrofoil ships *Raketa, Sputnik, Meteor* and *Volga*.

The new Palace of Congresses in Moscow is responsible for two groups of Lenin Prize winners—the capital's chief architect Mikhail Posokhin and his coworkers for their design of the structure, and the engineers and technicians headed by Alexander Khrushchev for devising acoustic and high-fidelity sound reproduction equipment.

These are the results of this year's selection of works and candidates for the Lenin Prize. Even this incomplete review shows that Soviet science, technology and culture are achieving new and great successes.

THE ARTISTRY OF EMIL GILELS

BY DMITRI KABALEVSKY

IT WAS almost 30 years ago that Emil Gilels, then 16 years old, held audience and judges spellbound at the First All-Soviet Musicians Contest. That superb performance over, there was not a shadow of doubt in the minds of the judges who the first prize winner for piano would be.

Gilels took more than the prize that day in 1932, he took his place with the leading Soviet pianists. The reputation of the young musician grew with every year that followed. His subsequent triumphs at international contests in Brussels and Vienna surprised no one. And soon Gilels' name was coupled with those of the world's great pianists.

The three decades that followed on that memorable Moscow contest were eminently successful years, but they were also years of enormous effort. Peerless as his mastery of the instrument was, he was reaching for even greater heights. By constant additions to his repertoire, he soon had acquired command of the world's finest compositions for the piano, from the early eighteenth century pieces to the music of our day. And all along he was developing that rare performer's quality—gift would be a better word—a penetrating insight into the composer's thought and style, this without obtruding himself, but also without ever losing his own identity as interpreter.

Gilels should, with justice, be described as one of the great music educators of our days. The cycles of serious music he keeps offering listeners are significant contributions both artistically and educationally. Some time ago he did all of Beethoven's piano concertos, an unparalleled musical feat. At present he is giving a concert cycle on the "History of the Piano Sonata," from Scarlatti and Haydn to Prokofiev and Shostakovich. These cycles stand comparison with Anton Rubinstein's famous historical concerts, with those given later by Sergei Vasilenko and, in our own day, with David Oistrakh's cycle of violin recitals.

Gilels has the respect and great affection of Soviet composers for his brilliant interpretations of contemporary works. Sergei Prokofiev, for example, was eager to have Gilels do the first performance of his Eighth Sonata, one of his finest compositions. He was the first Soviet pianist to play Dmitri Shostakovich's Quintet, Trio, Preludes and Fugues, as well as Arno Babadjanyan's Heroic Ballad for piano and orchestra, to American audiences.

One of the happiest musical experiences of my own life was his magnificent performance of my Second Sonata. In tribute to his talent and artistry and in gratitude for his unfailing readiness to help with tactful and very expert advice during the taxing process of composition, I dedicated the work to him.

What distinguishes Gilels' talents, where does this artistic power of his come from to move the hearts of millions all over the globe—Russians and Frenchmen, Czechs and Americans, Japanese and Rumanians, Australians and Spaniards? I believe that the power that makes his art so modern, so much an incarnation of the best and most advanced artistic thought of our socialist society, is the consummate spiritual and physical health of his art, his optimism which, with all its ebullience, leaves not a single nuance of the infinite shades of feeling—from unconquerable heroism to the most tender sympathy—unexpressed.

His art, it seems to me, has a kinship with Prokofiev's. In both we have a search for the sun, for happiness, for beauty. That is why Gilels' playing, like Prokofiev's music, for all its intensity, is always joyful, even when it reveals dramatic or tragic imagery.

I have known Gilels for many years. I admire him not only for his gifts as a musician but for his moral integrity, his quality as a man. Modest, unassuming, quiet, even shy, Gilels is a man of great will power and resolution. I have seen his reaction to very trying circumstances on several occasions.

I remember one concert after a very exhausting three days' flight from Moscow to London, with night stops. From the airport he went directly to Festival Hall where several thousand Londoners had been waiting more than an hour for the celebrated but unfamiliar performer. Gilels was the first Soviet pianist to play in England, and he was very conscious of the importance of the concert.

He asked for a cup of strong black coffee and then went on. I recall the expression of utter and complete composure on his face, but behind it I could almost feel his straining to gather all his powers—his fortitude, will and experience—conscious that he was representing Soviet music in another country. The applause that greeted his appearance died down. A few minutes of expectant silence and he began to play Beethoven's *Appassionata* with all the fire the composer had put into it.

Still vivid in my mind is a recital he gave in Budapest soon after the war. He fell seriously ill in Vienna, and for the two days before the concert suffered excruciating pain and could not swallow a morsel of food. This time, too, it was impossible to call off the recital. It was his first appearance in Hungary, and tickets had been sold out long before.

A high-speed Willys raced him along the highway that connects five European capitals to Budapest. There was time for only one rehearsal with the orchestra before rushing to the hotel to change into a dress suit.

The program was made up of three concertos—Bach, Beethoven and Tchaikovsky. I listened to him in amazement. Here was a miracle being wrought before my eyes. Only this morning the man lay in bed suffering and speechless, and now his exuberant, sunny art was holding thousands of listeners entranced. The miracle was this artist's will power, stamina, talent and skill.

Gilels has traveled the length and breadth of the Soviet Union—north to south, and from its western boundary to the Pacific coast—delighting great numbers of listeners not only in the big cities but in small towns and remote settlements as well. I would say that he is one of the best loved, most popular musicians in the country.

A world-renowned pianist, a splendid teacher—this is Emil Gilels, a fine man and a great artist, winner of the Lenin Prize. ★

PALACE OF CONGRESSES

ALTHOUGH the Palace of Congresses is one of the newest public buildings in the Soviet capital, opened only last October in time for the Twenty-second Communist Party Congress, it must have been seen by well over a million people by this time.

The sparkling glass and aluminum structure is one of Moscow's show places, a sightseeing must for visitors from other Soviet cities and abroad. In spite of its very modern feeling—or because of it, perhaps—the Palace forms a natural part of the architectural ensemble of the Kremlin, infusing today's mood and spirit into the venerable museums and cathedrals that surround it.

The Palace is built on the site of the former Cavalier Corps building, a cheerless structure, dating from the time of Czars Nicholas I and Alexander II, that detracted from the architectural unity of the Kremlin buildings.

Although the Palace is 395 feet long, 230 feet wide and 95 feet high—a huge structure—the impression it gives is of unusual lightness. To make maximum use of the building plot as well as to maintain the architectural harmony of the building ensemble, the Palace goes 50 feet below ground. The foundation and supporting walls of the section below street level are made of continuous reinforced concrete. The walls are faced with Ural marble tile.

The project, both in design and construction, posed many problems because of its polyfunctional character. It is intended for Party congresses, international meetings and festivals, theater performances, concerts and film showings. All the necessary requirements have been met with such ingenuity that the team of architects and of acoustic engineers responsible were awarded the Lenin Prize this year for their contributions.

The interior is striking, with its fine proportions and simplicity of form. The auditorium is lighted by 5,000 fixtures, 4,500 of which are concealed in the aluminum sections of the cambered, suspended ceiling. The spectator has a good view of the stage and can hear perfectly from every seat.

The stage, already used by many famous concert artists and theatrical companies, is the largest in the country. Intricate devices permit sets of the most complicated shapes and sizes to be installed and shifted easily and quickly. For a film showing, a 42-by-98-foot screen is automatically moved onto the stage. Behind it are five loud speakers, each the size of a two-story house.

The special sound amplifying system permits the most complicated acoustic effects. The walls, ceilings and seats are covered with either sound-absorbing or resonant materials. A line spoken on the stage is relayed through 7,000 speaker units. Mounted inside the seat backs are midget speakers that transmit every syllable to the listener. More than a hundred microphones are installed on the stage, and 500 loud speakers regulate the sound level in the auditorium. The ambiophonic system takes advantage of reverberations from the walls and ceilings. It can, if desired, produce an echo effect.

The 862 rooms in the Palace are reached by wide staircases, elevators and noiseless escalators. The many corridors, passages and service areas are finished with elegant simplicity. The walls, ceilings and columns in the main halls are faced with marble and tufa from Georgia, Armenia, Siberia and the Urals.

The banquet hall, with its special parquet floor, seats 4,000. Surrounding it is an outdoor gallery with an impressive view of the Kremlin.

NVITE MAKES

DRAWINGS BY ALEXEI KOLLI

THERE'S nothing more stimulating than thinkin about a vacation. Nothing can dampen a holida mood—not even the discovery, after breaking a traffic rules to pile into a plane or train on tim that it is heading in the wrong direction.

When a man's caught the vacation bug, everythin takes on a rosy hue. About a month ago, as I headec for the elevator to take me up to my ninth-floc office, I saw a small crowd at the bulletin boarc The trade union was offering 20-day Volga cruise for 145 rubles, first class, round trip. Here's luck, thought, there's nothing I like more than wate especially if it's connected with fishing.

My wife says that if she'd known that when proposed to her, I'd still be a bachelor. Earlier thi spring we spent a weekend at a trade union re home in the woods near Moscow. There were a the daytime sports, and movies and dancing in th evening. What else could a man ask for? But then c dinner I overheard one of the guests talking fis with the waiter. In a flash I was all ears—a fisherma recognizes another fisherman a long way off. I intrc duced myself, and before we knew it we were makin plans to go fishing the next morning.

I told my wife the good news. At first the ful impact of my statement did not register. But whe I got her out of bed at 4 A.M., all yawns an stretches, she began to suspect she might not like thi pastime at all.

Our small company walked briskly to the river— anticipation spurred us on. We made my wife com fortable against a tree trunk, cast our lines an waited. So did the fish. For some reason they di not choose to bite, they decided to test our patience My wife began making sarcastic remarks like: " wonder who's the bigger fool—the poor fish tha lets itself be caught or the poor fish that sits waitin for the other one to bite?"

We anglers are men of a superior breed. We d not let such time-worn jibes ruffle us. But soon m wife's remarks became chillier than the morning ai around us. The fish lay silent on the river bed, nc daring to move. Naturally.

Of course we caught nothing. The result is that no my wife, who is ordinarily very sweet-temperec undergoes a complete transformation when she hear any mention of fishing. . . .

All day long I wondered how to suggest tha cruise, that is, not suggest it directly—that woul be disastrous—but to get *her* to suggest it an then say "YES!" before she could change her min When the working day ended, I had not yet hit o a suitable line of action. I was still thinking abou it as I got out of my coat at home. My wife notice that I seemed to be preoccupied.

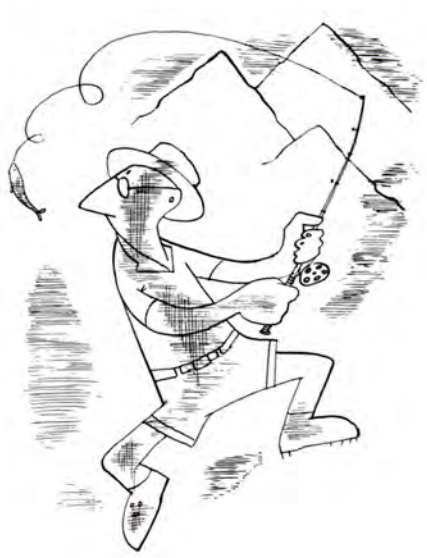
VACATION PLANS

"What's the matter, honey?" she asked. "Did you ave a hard day at the office?"

I mumbled something unintelligible, but we've been arried long enough for my wife to interpret that s, "Uh-huh."

"Have something to eat. You'll feel better," she aid.

We sat down to dinner. My wife and I have given p having meals with our daughter, who has lately eveloped very definite ideas on what is good for er mother and father. One by one, my favorite ishes have vanished from the menu. Second helpings re a thing of the past. My wife, too, has come in for is diet reindoctrination. So now whenever we get ie chance, we dine without our darling daughter



nd wash the dishes after each course to make sure ie doesn't find out we have mutinied.

As we quickly attacked our dessert—first on our aughter's "don't" list—my wife suddenly said: "The vanovs are planning a vacation. Don't you think it's bout time we did?"

I almost choked on what I was chewing. As ıy wife pounded me lustily on my back, I put in ıst a bit hopefully: "I must be getting old. I think I ıught to be getting out into the sun more."

"Yes, I think we could both do with some sunning," ut in my wife.

"What about a cruise down the Volga?" I hispered. "They've got some heavenly beaches there. We could book a first-class cabin. It's about three weeks and . . ."

"Yes, let's," said my wife, falling into the trap.

I moved my chair up closer, put my arm around her, and warmed up to the subject. "And we could sit up on deck watching the scenery float by. . . ."

"That would be wonderful," murmured my wife catching the mood, her head on my shoulder. I swung my free hand, with the knife still in it, up and down—I thought I was holding a rod again.

"No, you don't!" My wife jumped up. "If that's what you've got on your mind, just chuck it out!"

"But, honey."

"Don't honey me! If you love me, you'll never even think of fishing."

Of course, I love my wife. What husband doesn't? But why can't wives be reasonable? What does fishing have to do with love?

My philosophizing was interrupted by my One-and-Only saying: "We're going to the mountains or nowhere." I nodded resignedly—after all, there are mountain streams with trout. . . .

"I know what you're thinking, but we're going where there isn't a brook or lake within rocket flight range."

"Yes, dear," I answered. What else could I say?

At that moment our daughter came in. "Came in" is not quite accurate. Our daughter never simply comes in—she rushes in. When she is home I usually have the feeling that I am not just moving but being propelled.

She planted a kiss on my forehead, hugged her mother and asked, "What were you two conspirators discussing?"

"Er, nothing. Just this year's vacation."

"What's there to discuss? I've already made my mind up for you."

"You've what?"

"I've made my mind up. We're going camping."

"Camping? Over or with my dead body!" I bellowed.

"Please, Daddy, you'll raise your blood pressure. I've already taken care of everything. I've rented the tent, all the gear and a three-seat collapsible canoe. Here are the receipts and the maps. And now, I've got to run, I'll be late."

For the nth time I asked myself: "When are you going to stop letting that girl walk all over you?" And for the nth time I heard myself reply: "Never."

Meekly we submitted. At the public library we borrowed books on camping, and my wife read up on how to treat snake bites. On Sundays she took to practicing campfire building. I thought I was beginning to regain my equilibrium and even started to get my fishing gear ready for one trip—secretly of course. Everything was going along fine until my mother-in-law came to visit us, unexpectedly as usual.

"I was afraid I'd get here too late," were her first words.

"Too late for what?" I worried.

"I rushed to get here before you made any plans for the summer. I've decided to go on a driving tour with you. We'd make a nice foursome."

It took some minutes before any of us responded. My daughter merely stamped her foot and said: "Aw!" My wife asked what the weather was like in Irkutsk, and I asked whether she had seen Konstantin Simonov's latest play. But then I saw a ray of light. I could drive that car into some ditch near a river, and get in some fishing while we were waiting for the repair crew.

But my mother-in-law was adamant. "This year we'll drive to the Central Asia deserts," she said.

I don't quite remember what I said, or what anybody else said. I do remember my mother-in-law staring at me for several minutes, and if looks could kill, this story would have been written by a corpse. All she said was: "I think you need a rest. Badly."

I think I do too. But what shall it be—a Volga cruise, the mountains, a camping trip, or maybe a stay at a sanatorium for neurotics, as my mother-in-law suggests? ★

SPORTS ROUNDUP

BY GERARD YELENSKY

TRACK AND FIELD in the Soviet Union is a hale and hearty septuagenarian. It gets younger by the day and wins more and more followers. In the mid-twenties we counted our athletes by only the tens of thousands and ranked sixteenth in Europe. Now our track-and-field participants number in the three millions.

In 1952 Soviet track and field made its Olympic debut with headline results—second place after the United States. In 1956 the Americans retained their superiority. But then the scales began to tip toward the Soviet boys and girls. In 1958 and 1959 they ran up higher team totals in the US-USSR matches, and a year later they did even better at the Rome Olympics. Still, the American men's team remained invincible.

Is there any chance of the Soviet men's team coming out on top at the Palo Alto match on July 21 and 22, since (as of last year, this is) the count for men and women will be taken separately?

Our prediction is not based on national records alone. Individual records are not a reliable yardstick by which to measure the performance of a whole team. What's more, sometimes the record holder doesn't ever again come close to the record he has set. Sports scribes feel safer using the results of the ten best.

With that as gauge, here is the picture as we see it.

Soviet track and field is most vulnerable in the sprint. In the 100- and 200-meter class we think our performers are about seven years behind the Americans, and in the 400-meter even more.

It's not that the Soviet Union has no fleet-footed young people. It has. Ardalion Ignatiev, a schoolteacher from Chuvashia, won the bronze medal at the Sixteenth Olympics for his 400-meter performance. He shaved the USSR record down to 46 seconds, but he could not reach the world-record class because he began his running career so late—at 20!

Our sprinters have always been handicapped by the fact that they do not begin earlier. For the student generation, sprinting is not the popular sport it should be.

The same holds for the broad jump, with European champion Igor Ter-Ovanesyan, 24-year-old Armenian graduate student, the single bright spot. He became the planet's No. 1 broad jumper in June when he bettered Ralph Boston's world record (8 meters 28 centimeters—27 feet 13/4 inches) by 3 centimeters (1 inch) in Yerevan.

There are many Americans who run faster than our middle-distance men. It's true that Vasili Savinkov put on an encouraging show last summer when he ran 800 meters in 1 minute 47.4 seconds. But he will have to whittle another 1.5 seconds off his time to bring the Soviet record up to the American.

We hope he does not run into the same bad luck Ionas Pipine did. This Kaunas student ran the 1,500 meters in 3:41.1 in 1957 and since then no one in the Soviet Union, including the record holder himself, has been able to duplicate the performance. But two American runners bettered it—Jim Beatty with 3:40.2 and Dyrol Burleson with 3:40.9.

Soviet athletes are making progress in the pole vault and shot put all right, but the sad fact is their American opposites are making more of it, and making it faster.

Last year's statistics show that our Soviet athletes lag behind their American rivals in virtually half of the 22 men's events contested in the US-USSR matches. Not that we have given up hope. Soviet coaches expect that the first and most intensive half of the summer season will see Soviet showings change for the better. That old grit and never-say-die spirit is there in large quantity. Soviet athletes have often enough walked home with the medals when the odds against them were heavy. Maybe they will again. At any rate, we look forward to a stiff fight in every event.

Ten years ago Soviet high-jumpers on the average did about 5½ inches less than the Americans. Our boys had trouble clearing 6½ feet until a young Leningrad coach, Pavel Goikhman, worked out a series of what were then revolutionary exercises to give the athlete a simultaneous physical and technical build-up. One after another of his trainees began clearing the 6½-foot mark. Then in July 1957, Yuri Stepanov, a Leningrad student, cleared 216 centimeters (7 feet 1 inch) and for the first time in 62 years the record returned from across the ocean.

Later everybody watched with bated breath as the Soviet vertical take-off wizard, Valeri Brumel, competed against the Boston "grasshopper," John Thomas. Brumel won with a soaring jump of 225 centimeters (7 feet 4 inches). But the contest is not over yet and we look forward to new records.

Much will depend on the backups. Ours, we think, is dependable. No. 2 man, Victor Bolshov, a 22-year-old college student from Grozny, clears 215 centimeters (7 feet 3/5 inch) with ease, 2.5 centimeters (9/10 of an inch) more than his American opposite, Bobby Avant.

Among Brumel's possible successors we have the very promising 16-year-old Lvov high school athlete, Igor Matveyev, who set a USSR junior record with a jump of 203 centimeters (6 feet 8 inches), 9 centimeters (3½ inches) better than Brumel at that age.

We would figure the high-jump potentialities of both countries about equal. Which means that neither side can afford to rest on its laurels.

The decathlon is one large question mark. The king of that event, Rafer Johnson, abdicated by becoming a movie actor. But he left a staggering legacy in his 8,683-point world record.

Both the USSR and the U.S. have two men who have topped the 8,000 mark. Yuri Kutenko, an Army man from Lvov, ran up an 8,360-point total last summer and Vasili Kuznetsov, the Moscow schoolteacher who formerly held the world record, came three points short of Kutenko's total last season.

Both these men are 30. Their American counterparts are younger. A year ago this June, 21-year-old Philip Mulkey ran up an unprecedented 8,709 points. Because of certain technicalities, it was not acceptable for world-record purposes, but it was clear that here was a new star in the decathlon firmament. If Dave Edstrom (8,176 in 1960) regains his form, the U.S. will have an almost invincible pair. We can expect thrills aplenty when these four get going at Palo Alto.

In the jumps the guessing will be close; in the decathlon, any forecast I make would be only wishful thinking.

This is also true for the discus. Soviet discus throwers have been trailing behind their American counterparts for several years. At a meet last month they finally succeeded in closing the gap. Vladimir Trusenev, a 30-year-old Leningrad fitter, registered a throw of 61.64 meters (202 feet 2½ inches), topping by 92 centimeters (3 feet 2 inches) the official world record held by Jay Sylvester of the USA.

Soviet distance men have run off with the honors more than once. In the past two years the Americans have been trying seriously to narrow the gap. Max Truex did 5,000 meters in 13:48.0 and 10,000 in 28:50.2. But Muscovite Pyotr Bolotnikov with 13:36.8 and 28:18.8 still leads the world's ten best, and matching him will not be easy.

Soviet runners have nothing to worry about in the steeplechase, the walk and the hop, step and jump. They have a good-size lead. In both events we nave several equally strong athletes, all of them stars of the first magnitude.

At the Fifteenth Olympic Games the American hammer throwers were not rated

as serious opponents. Only three years later the whole sports world was talking about Harold Connolly. At Melbourne he took the world record and the gold medal away from us. It looked like a new headliner had come to stay.

But at the Philadelphia meet in 1959 Connolly took a surprise beating from Vasili Rudenkov, a Russian mechanic. The California teacher made a comeback the following summer with a new world record of 70 meters 33 centimeters (230 feet 9 inches).

Then in Rome, the hammer throw created another sensation when Rudenkov took first place and the world record holder placed eighth. But that was only half the job Rudenkov had set himself to do. The global record still remained in the United States. Last year Connolly again chalked up the world's best throw—69 meters 88 centimeters (229 feet 3 inches).

So we have a continuing duel between two well-matched rivals. They match in several other respects. They are both 31 years old; both about the same height, 6 feet 4 inches; both weigh 227 pounds; and both got married in the same year. We have a feeling that when they next meet at Stanford University there will be a new record set.

Soviet reserves in this event are good. Yuri Bakarinov, a 24-year-old college man, has a throw of 67 meters 30 centimeters (220 feet 9 inches) to his credit and Anatoli Samotsvetov, a 30-year-old engineer, is credited with 66 meters 53 centimeters (218 feet 3 inches). Both are dependable backups for the champion. Connolly, as yet, has no adequate replacement.

In the javelin throw the American record is better than the Soviet. And yet victory in this event at the US-USSR matches has invariably been won by Soviet athletes. In 1959 American Al Cantello chalked up a new world figure—86 meters .04 centimeters (282 feet 1 inch). The following year his fellow countryman Bill Alley raised it by another 42 centimeters (16½ inches). And yet, at the Seventeenth Olympic Games both were outsiders. Cantello only managed tenth place, and Alley was even further back.

The gold medal was won by Victor Tsibulenko, an Army athlete from Lvov, who has been very consistent. He ranked with the world's ten best for 12 years running. Tsibulenko is backed up by other high-rating throwers like young scientist Vladimir Kuznetsov who holds the Soviet record. His best throw is 84 meters 90 centimeters (278 feet 6 inches). In 1961 the USSR had four javelin throwers among the world's top ten.

In these last seven events I forecast victory for the USSR.

Last year the U.S. won a 124-111 victory in the men's contest. Soviet fans took comfort from the fact that their team bettered the previous year's showing by 6 points. The 1961 picture shows the American men's team holding only a minimal advantage. And this small margin, we believe, is going to be hard fought, with a cascade of national and world records as a result. The Soviet team expects to make some of them.

There will be 10 women's events at the US-USSR games, but we figure on keen competition in only four. In the three previous meets the Americans won seven medals out of a possible nine in the 100-, 200-, and 400-meter relay. Wilma Rudolph, best all-time sprinter, reinforced her team markedly. So much so that her non-appearance in the 200-meter race in Moscow last year cost the U.S. first place. It was won by USSR champion Mariya Itkina, college athlete from Minsk. Soviet sprinters can hardly count on beating Wilma Rudolph, but they do hope to carry the sprints and even the relay.

Last year's broad jump was one of the highlights of the meet, with two records set. Tatyana Schelkanova, Leningrad television engineering student, brought the world record back home by jumping 6 meters 48 centimeters (21 feet 3 inches). In Leipzig this June at an international competition she upped that record by 5 centimeters (1.9 inches). American Willie White set a national record with 6 meters 40 centimeters (20 feet 11 inches) and a week later added another inch to the figure. Of course, she hopes to beat Schelkanova, but we don't think it likely. Tatyana is in fine fettle; early this year she chalked up a new world indoor record. She has several top-ranking rivals at home, three of whom have jumped 6 meters 30 centimeters (20 feet 8 inches) time and again. Willie White has no dependable backup yet.

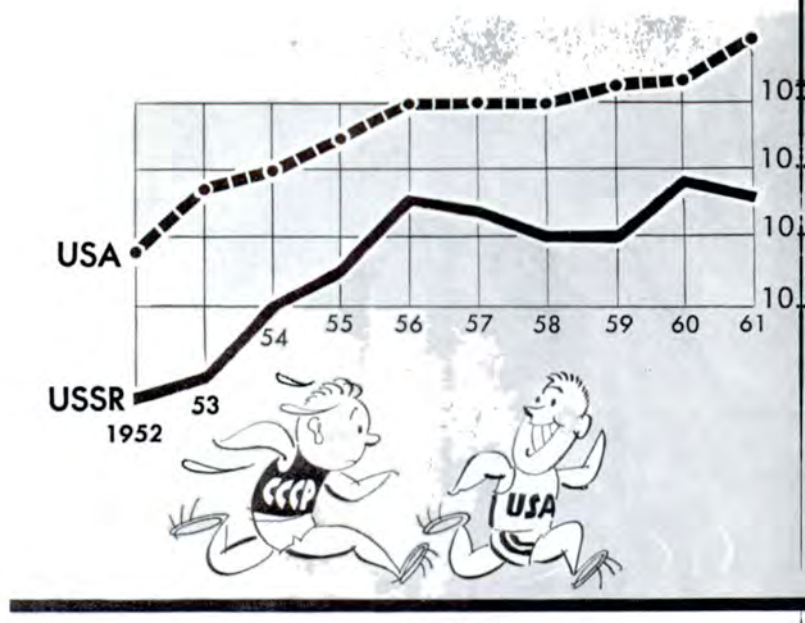
The USSR should take the remaining events. Our girls are stronger in the 800-meter as well as in the hurdles, with Olympic champ Irina Press in the lead. Incidentally, she has just graduated from the Leningrad Railroad Engineering Institute, and her diploma project, an aluminum viaduct, is as phenomenal as her hurdling.

Her elder sister, Tamara, will be getting a civil engineer's diploma in a year. Tamara is the world champion in the shot put (18 meters 55 centimeters—60 feet 10 inches) and the discus (58 meters 98 centimeters—193 feet 6 inches). Ten years ago people would have thought these distances incredible. But they do not spell the limit for this 24-year-old athlete who stands 5 feet 11 inches in her socks and weighs 207 pounds. The U.S. records, held by Mrs. Earlene Brown, are somewhat lower: shot put—16 meters 69 centimeters (54 feet 9 inches); discus—53 meters 91 centimeters (176 feet 10 inches). Six of the top USSR women athletes have bettered those figures.

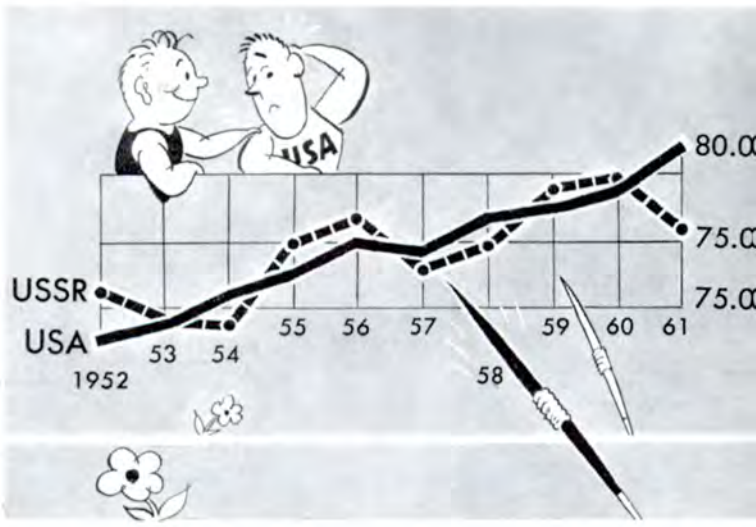
There was a time when American high jumpers were the world's best. They won the gold medals at three Olympic games. But in the past five or six years they have not been moving along as fast as their Soviet counterparts. Attractive power engineer Taisya Chenchik of Chelyabinsk holds the USSR record—178 centimeters (5 feet 10 inches). She was first in all three US-USSR track-and-field meets and is the favorite for the fourth as well. Besides Taisya we have five other women who do better than 170 centimeters (5 feet 7 inches).

Last year's match brought the Soviet girls a 68-39 victory. No special upsets are expected this year. The USSR team will, of course, try to up their winning total.

To wrap it all up—we feel that the U.S. and the USSR are about even in track and field. That means really exciting competitions. Past meets have provided a large quota of thrills. We figure on even more thrills this year.

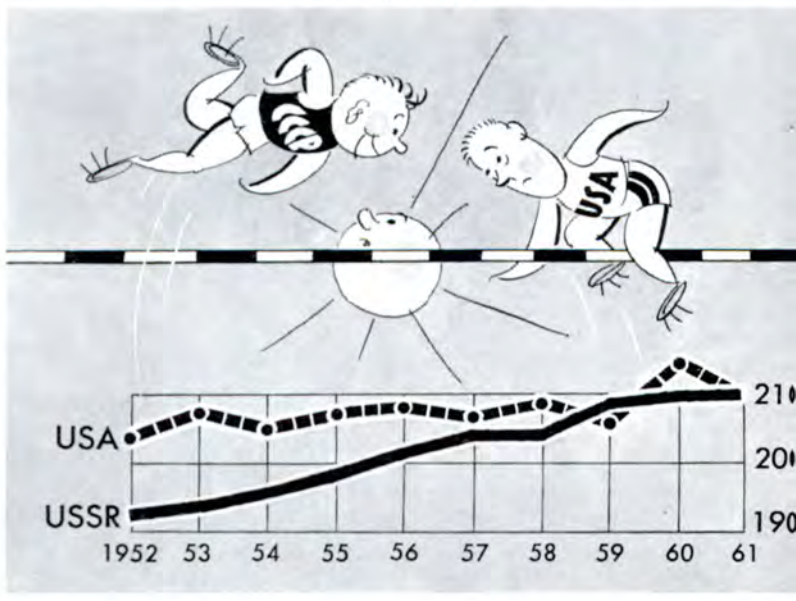


Sprinters



Javelin throwers

High jumpers



Power engineer Taisya Chenchik is Soviet high jump champ.

Mariya Itkina, out front in the 200-meter race, is the USSR record holder.

Vasili Savinkov, leading, is the USSR 800-meter record holder.

Vasili Rudenkov was the hammer throw winner in the Rome Olympics.

Tatyana Schelkanova holds the world's broad-jump record.

Victor Tsibulenko, present Olympic champ, is a consistent winner.

VISIT THE HORSE SHOW in Moscow

Dear Friends,

We are happy to invite you to the International Show-Fair of Thoroughbred and Sporting Horses to be held in Moscow from July 29 to August 19, 1962, by V/O Prodintorg jointly with the USSR Ministry of Agriculture.

About 200 of the best breeds of saddle horses, trotters and draft horses reared in the Soviet Union will be exhibited at the Show-Fair for export sale. They will include stallions, mares and geldings from three to six years of age. Each horse will have an official certificate of origin.

The health of the horses and the caliber of the farms and districts supplying them will be guaranteed by a state certificate issued by the veterinary authorities of the USSR Ministry of Agriculture in conformity with the International Convention of 1936.

To ensure that your stay in Moscow will be as comfortable as possible, we suggest that you arrange for accommodations (hotel, food, etc.) through your Intourist agency.

Address of the Show-Fair: Horse-Breeding Pavilion
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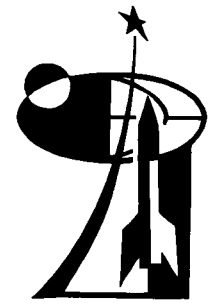
BY PAVEL BARASHEV



ORBIT ROUND THE EARTH

AFTER Gagarin's name had flashed round the earth during that first heroic flight into space, people waited and wondered when the next step into the cosmos would be made. Who was this cosmonaut No. 2 who had been standing by to substitute for cosmonaut No. 1 in case of emergency? What was his name? What did he look like?

There were very few people who had seen and talked to him, and they had put their notes away until the second flight was announced.

Gagarin, of course, knew cosmonaut No. 2. He also knew the day the flight would be made.

At 5 o'clock on the morning of August 6, 1961, Cyrus Eaton—host to a group of distinguished scientists and peace advocates — knocked excitedly on the door of Gagarin's room in the Canadian village of Pugwash with the good news. He expected to find the cosmonaut sound asleep after having just arrived from Brazil, where he had toured extensively. Eaton found him wide awake, already dressed and shaved.

"*Vostok II* has been launched," Eaton said.

"I know," Gagarin replied calmly, "with Gherman Titov on board. We'll probably be reaching Moscow by plane by the time he returns to earth."

As soon as the Soviet IL-18 airliner took off from Halifax and headed east, Gagarin asked the stewardess to open a bottle of champagne. When glasses were filled, he raised his high in Russian fashion and said, "Here's to Gherman Titov, for his space flight and his terrestrial orbits!"

In slightly more than 24 hours, Titov made 17 orbits of our planet. He followed that with a series of terrestrial plane trips to countries and peoples all over the globe who wanted to honor the Hero Cosmonaut.

The first to give him a gala welcome was the German Democratic Republic. Then he traveled east to Mongolia, and later far south to that equatorial gem Indonesia.

When I think of Indonesia now, I do not see the exotic palm groves and the beautiful lagoons on the coasts of large and small islands that stretch west to east for 3,100 miles, a distance longer than that from New York to San Francisco. Nor do I picture the Bali villages with their handsome, quiet and versatile inhabitants and their ancient way of life.

What comes to mind are the great squares in Jakarta and the halls in Surabaya where hundreds of thousands of Indonesians gathered to hail the Soviet cosmonaut. There must have been millions who came to see him during his two-week visit.

In Jogjakarta I asked Salim Djadaf, a local college student, what he thought was the reason for such an outpouring of people and so cordial a welcome for Titov.

Djadaf said, "I can't answer for them all, but for myself, I think of him not so much as a personal hero but as a heroic representative of that new society which your country has already created and which many countries still have to build. Heroes have always won the hearts of men, and in Titov's country they are not a rare phenomenon by any means. Otherwise, you could never have built so great a nation in 40 years."

It is true enough that heroes win men's hearts because they symbolize the strength and courage to which all men aspire. But I think there are also other reasons for the heartfelt welcome given Gherman Titov.

"I saw our planet from afar. From those great altitudes, I saw it all," the cosmonaut said frequently when he spoke. "It is beautiful but too small for dangerous nuclear gambles. To preserve our planet we must preserve the peace."

It was for his passionate plea for friendship among nations that people applauded Titov in Burma, in Vietnam, in Rumania and the other countries he visited.

His first visit to America, the seventh of his terrestrial tours for peace and friendship, was actually his second sight of the United States. His first view was from the spaceship *Vostok II* on that memorable August 6, 1961. As he sped through outer space, Titov clearly saw the lights of New York, Washington and San Francisco from the ship's porthole. He told that to American newsmen when they broke through the police line to the gangway of the plane he alighted from.

Titov had come to participate in the work of COSPAR and spent two weeks in the United States. Everyone must have seen and heard him, since the almost daily press conferences and interviews were all televised. To judge by the fondness with which they spoke of him, Americans must have liked his matter-of-fact reports, his friendly but businesslike talks with John Glenn, and his replies to questions from reporters.

The day after he arrived in the United States the Soviet Embassy in Washington received scores of letters addressed to Major Titov. Bud Palmer, a movie cameraman from New York, said, "Your visit does honor to the United States." And a Mr. and Mrs. Yost wrote from their farm in Michigan, "We could meet you only on the radio and television, but this meeting made a great impression on us. We understand now why your country and your people are so proud of you. We are very sorry not to be able to shake hands with you."

But many Americans did manage to shake hands with the hero. There was this touching incident in one of the lounges at the Seattle airport, filled, as usual, with newsmen, police and passengers patiently waiting for a glimpse of Titov. As he appeared in the covered passageway that leads from the field to the lounge, a girl made her way through the crowd. She was so excited that everyone, even the reporters, made way for her and the bouquet of lilacs she was carrying.

"These are from my garden in Tacoma," she said, after identifying herself as Marle Breite. "I was afraid I would be too late to meet you and drove like mad."

When Titov took the flowers and thanked her, she said, "I'm very happy now." Then she added in Russian, blushing with emotion and excitement, "*Dobro pozhalovat.*" ("Welcome.")

On his way home Titov was shown some more of the letters addressed to him. One, from Orris Madsen of Kansas City, read in part, "May you retain pleasant memories of this trip and may it lead to better understanding, long friendship and unity between our two countries and all the countries of the world."

Titov listened to the translation and then said, "That is precisely why we are pushing and will continue to push into outer space." ★

COSMONAUTS

BY COLONEL YEVGENI PETRO

The flight of Yuri Gagarin and Gherman Titov signaled the beginning of a new space era. The history-making ship Vostok, *in Nikita Khrushchev's words, was "the first Soviet swallow in the cosmos." More and more Soviet people, he said, would fly the uncharted routes of space, would explore nature's secrets and place them at man's service.*

Who are the people destined to push farther and farther into the trackless universe? How are they prepared for these pioneering voyages into space?

In this article Colonel Yevgeni Petrov, one of the commanders of the Soviet Cosmonauts Group, tells the dramatic story.

SOME PEOPLE called it a "council of war" on the eve of the general offensive. But it was not a military conference; this was the "high command" of science in session, people of the most varied specialties—engineers, mathematicians, medical men, physicists, flyers, chemists, astronomers, biologists. The conquest of the universe was on the order of the day, and they were meeting to decide who would lead the first assault.

There was long debate on where they were to look for the men who would be ready to venture into the great unknown after a comparatively short course of training. Some argued for the men of the submarine fleet. Life itself, they said, had singled out the strongest, those with the most stamina, for that branch of service. Others spoke for the high-altitude men —the parachutists and mountaineers whose courage and endurance was a byword. But most of those present were in favor of aviators.

Each of the speakers buttressed his choice with supporting evidence, all argued with equal conviction. There were some who refused to be held to one or another vocation, claiming that any strong, healthy man had the makings of a cosmonaut. Many inclined to this view thought athletes were the likeliest candidates. Others argued that the special toughening athletics gave a man was of little value here, that any physically fit person was suited for space flight. The one obligatory requirement, they thought, was an engineering background. All the pros and cons were carefully weighed.

The scientists finally fixed on flyers. The Air Force, they decided, would have the men best equipped to venture into the cosmos. To make a spaceman, more was needed than the hardihood and perseverance that many of the other professions demanded. The spaceman had to think fast, act on the right decision in a split second. He had to know a great deal about flying. He had to be able to make observations under stress. Who were the men most accustomed to doing all this? Flyers, unquestionably! They were trained to make fast, precise judgments.

For all that, it was not every flyer who could cope with space conditions. They approximated most closely the conditions a fighter pilot had to contend with. He had to appraise and react to constantly changing situations. He had to be the solitary but all-round specialist on his ship—both pilot and navigator. The spaceman flying alone would be doing the jobs of several men—carrying on observations, watching instruments, communicating with earth, taking notes and pictures, making navigational calculations and flying his ship.

A man who could do all that would be the man to make the first solo assault on the space barrier and come back the victor. The "high command" of science, therefore, unanimously decided to look for their spaceship commanders in the Air Force, with this admonition from the cosmonautics theoretician and the spaceship designer to the Air Force generals and doctors, "Please give your most careful consideration to the method of choosing and training these future cosmonauts of ours."

In choosing our candidates we paid primary attention to spiritual and ethical qualities, ideological views and social attitudes. If a man fell short in the basic attributes, he could not hope to come through the many tests space flight would put him to.

It was highly conscious judgment and not blind, automatic reaction that would be required of a cosmonaut. He would obviously have to have good muscles and a strong, steady heart, be in tiptop shape generally. But "tip top" is a flexible word, and even as between one fighter pilot and another the choice would have to be very fine.

We encountered some curious things when we visited Air Force units to look over their preliminary choices. Since it was obvious that the healthies men were needed, weightlifters were often chosen. I particularly remembe one flyer of mighty build who came to us for a talk and examination. H seemed to be the man for the job on all counts. His breathing, pulse an blood pressure were absolutely normal, but when we checked his heart we heard a slight murmur. The deviation was insignificant. He was perfectl fit to fly a plane but not a spaceship.

When we told him that quite frankly, he was surprised and a litt bewildered. He was perfectly healthy, he pleaded. "I'm a weightlifter! An a champion!" That murmur probably came from too much exercising wit the weights, from the fact that he hadn't properly combined lifting wit other sports, and probably, too, because he hadn't had himself medicall checked as often as he should have.

One air base commander gave us a list of his ten likeliest candidates with the comment: "You'll find each one better than the last." At firs glance they seemed a splendid lot of men for the job, but a closer loo showed that only five of them came up to our medical specifications. W hated to disappoint these fine young men, but what could we do? Require ments were requirements.

The full appraisal of the candidates came somewhat later in Moscow and a very rigorous appraisal it was. The slightest aberration or, as Yur Gagarin once put it, "the slightest scratch" put a man out of the running The final set of tests was run on special equipment. The flyers were gen erally familiar with compression chambers and centrifuges, but this wa something new and much more taxing than anything they had gone throug at their own posts. The elimination process began all over again. One flye fainted, another vomited. In these cases, all further tests were ruled out.

The excited talk in the corridors of the Air Force hospital where ou formidable commission did its work finally quieted down. Those who ha been eliminated went home. Our future cosmonauts left for their variou posts to collect their families, and those responsible for getting them read for flight got down to the job of organizing the training center. A detailed program had been drawn up for a plan outlined by the scientists.

First we called on the medical men, then on scientists in other fields Factories and design bureaus all responded quickly to our requests. Th cosmonautics theoretician and the spaceship designer gave us more of thei time. Very soon not merely a score or two, nor even a hundred, bu thousands of people were working on the solution of this new problem The countless brooks began to merge into a great river.

This was a time of hard and painstaking work that often went on roun the clock. All sorts of problems came up. We had to find special quarter and equipment, search for men with special skills. We had to think every thing through and check it in theory and practice. There were endles arguments on the details of the program drawn up jointly by scientists doctors, engineers, flyers and other specialists. But it was finally approved

Our program relies on an active, conscious approach to the job. Tha conscious participation makes itself felt throughout. Our candidate are moved by love of country and sense of duty, but their participation i entirely voluntary, unqualifiedly so, through the whole training period.

These are young officers fired by their own enthusiasm, men with sense of the romanticism of life. But the romance of outer space is special kind of romance, a blend of industry, perseverance, courage an strength. All this was very frankly told them. We wanted the "lucky" chosen ones to have no glowing illusions, to have a realistic view of thei new assignment, a clear picture of the difficulties they faced.

We began with physical training. Not all the flyers understood why Some were puzzled, even irritated. Why all the suddenly intensified setting up exercises every morning and all the gymnastics and track-and-fiel work? And why so much less attention to the centrifuges, vibrostands an other special equipment?

We had to do a lot of convincing to bring them around to seeing it ou way. Our prospective cosmonauts had to change many of their notions. There are some people, young flyers especially, who regard any doctor wit suspicion. To them he is the fellow who is cantankerous about trifles always looking for something to latch on to. Several of the latecomers t our group felt this way, annoyed at the medical checks before and afte training. "More and more indicators! Endless checkups! You'd think w were a bunch of guinea pigs!"

There were, inevitably, constant checkups and eliminations. "They can't be avoided," the doctors patiently explained. But the grumblers were not convinced. The medics, they felt, were out to cook up some nonexistent defects.

Take Gherman Titov, for example. He would hear the doctors out, then

often do things his own way or ignore their instructions altogether. When they insisted that he follow instructions, Gherman became irritated. But they would not give an inch. They argued with him calmly, even with a little humor. "No one takes medicine because he likes it. The best medicine for you is athletics."

Gherman agreed, but he felt imposed upon by what he considered unnecessary medical supervision of his training and personal life, limitations on his freedom.

But then he underwent a change. It had nothing to do with his mood and spirit, although they had risen a couple of degrees. There was something else that surprised him—he felt stronger. He seemed to weigh less, he walked and ran much more easily.

Not all cosmonauts were in perfect shape when we began their physical training. A bit of running or volleyball tired some of the men very quickly. They complained of muscle pains. But they were soothed by the physical training instructor. "Don't worry about it," he said. "In a short while you won't know yourselves." And one of the doctors added, "Just note down your present blood pressure and pulse. You'll find it interesting to make comparisons after a while."

The suggestion was duly followed. In a month their pulse rates had slowed down, even though they were exercising harder. They began to look upon the doctor as an older comrade, a well-wishing friend or, what was more to the point, an experienced athletic coach. He was not only checking pulses, they felt, but helping the instructor to build them up. That broke the ice, and the cosmonauts and medics became close friends.

A foreign correspondent once asked Gherman Titov, "What helped you to fly around the earth 17 times?" The cosmonaut replied with his usual quick humor, "My ship." Everybody laughed of course, but the answer was not altogether a joke. The cosmonaut never made a truer statement.

For all the words spoken and written about the first men in outer space and all the laurels they were crowned with, the miracle was not theirs alone. A large share came from the men who built the spaceship.

We met these men in the course of our work. We had the same cares and a common aim. The spaceship designer called on us soon after we had begun preparing the cosmonauts. A slow-moving, heavy-set man with a pleasant face and wise eyes with a mischievous twinkle, he was in fine spirits. "I've decided to drop in on you, as you see," he said. "What a beautiful place this is! How fragrant the pines are! And it's so quiet and restful."

But, of course, he had not come for rest or quiet. He set off at once on a tour of inspection of the laboratories and classrooms.

"Not bad for the time being," he concluded, and then added quickly, "but only for the time being. You ought to lay out new laboratories and install the latest equipment. There'll be little progress without that. Please work up a draft for a new building. Jot down all the things you need and send me the list."

When our draft was ready a few weeks later, he examined it carefully. "There's a lot missing," he said. "Here's what we have to do." With decided strokes of a blue pencil he made his corrections on our draft. Then he got down to the details. "We've got to have some effective mock-ups. And don't be bashful. If there's something you haven't got, ask for it. I'll find it."

Many of the things we needed were supplied by our friends in the factories. When the new classrooms and installations were ready, they got a final going-over and nod of approval not only from us and the cosmonauts but also from the people who had helped equip the place.

Our distinguished guest was pleased that day, but only until he reached the sports field. "Good enough," was his cautious comment. "It'll do for the time being. But what you need is a really good gym. You've got to have an indoor swimming pool. That's really imperative!"

The inspection was still on when an Air Force car pulled up. A general came out, and the spaceship designer hurried over with the pleased exclamation, "What luck you've come just at this moment!"

His talk with the general was brief but memorable. With his customary frankness, he gave the general his impression of our work, complained of delays in urgent matters and then demanded, "Why don't you say something, friend? Somebody got your tongue? Aren't you interested in our new models?"

"Why yes," said the general unperturbed. "I'll be glad to see the surprises you've got for us."

"I'd rather you came as a helpmate than as a visitor. Aviation, after all, is a relative of space travel."

"You could even say that aviation is the mother of space travel," countered the general. "All these eagles came here from our fighter groups."

"Well, they're not the only ones who came from the Air Corps. I also took my first flight from your nest," the space designer said. "Twenty-five years of my life went into aviation."

When we visited the plant, we were welcomed by the spaceship designer himself. He greeted us like old friends and got down to practical talk. "I want you to get used to your new home. It's right there, in the next room. One of you will man it." Then with a smile, "It may be Yuri or Comrade Titov." We were surprised and pleased that he remembered our names.

He mentioned a date. The boys could hardly believe the flight was so close. Who was going to be the lucky first?

"Now let's have a look at the shops," he said. He kept talking as we trooped down a corridor that led to a large building. "There's one thing I'd like you to keep in mind. We weren't the only ones who built your machine." His nod took in the huge shop where men in white coats were working. "This is only the place where the business is finished. You have to look for the beginning in many other places. The job was done by our contractors; all we do is the assembling."

He was telling the cosmonauts that the project was the creation of many minds and hands, not only of the designer and his assistants but of a great team of people whose names for a variety of reasons could not yet be made public. For the time being they were anonymous. Some had earned the title Hero of Socialist Labor more than once, others had state prizes and the highest awards. Among them were men no older than the cosmonauts who held high academic degrees. A very young scientist, for example, whom his colleagues addressed only by his first name, lectured to them on rocketry.

"It's not likely that any of us will ever be as valuable," the cosmonauts remarked, partly in jest, partly from modesty.

The spaceship designer's comment was, "It was man, not the gods, who turned the first wheel to shape a clay urn." He nodded at the engineers gathered round him. "These are your teachers. They're the people who deserve your respect and attention. You'll be learning about your ship from them."

The cosmonauts got acquainted with their new teachers and went on to have a look at the spaceship, shining on its platform. Each man must have had the same thought, "Will the alloy stand up under a thousand degrees of heat while breaking through the atmosphere?"

A worker with a bristling mustache guessed what we were thinking. "Don't worry," he said. "This thing is made of solid stuff, and made very well."

We talked to another worker, a middle-aged man busy over some wiring in the ship's cabin. We watched him for a while, then somebody said, "Yes, it isn't the gods who turn the first wheels." The worker looked up and said quietly, but loud enough for everyone to hear, "You're right. Not gods, skilled workers."

The cosmonauts quickly made friends with the men at the plant—the benchworkers, technicians, engineers and scientists. Once accustomed to their new home, they learned fast, even contributed ideas to improve the spaceship.

Some of the engineers were a little wary of these suggestions at first. "Let these fussy chaps get a finger in and we'll be remodeling the whole ship," was their thinking. But the spaceship designer settled the matter with the comment, "Make all the suggestions you like, they may be useful."

The cosmonauts worked tirelessly to familiarize themselves with the ship. After a lengthy discussion one day the designer said, "It's time we began to test you. We'll invite a board of examiners to see what you've learned. Agreed?"

Soon afterward the whole group gathered at the plant, everyone on time and with the old school pre-exam fever. The board of examiners was late. To relieve the tension Yuri Gagarin suggested, "Why waste time? Suppose I talk, and you correct me if I'm wrong."

He took the seat in the spaceship cabin and began a recital of the *Vostok's* construction, its equipment, and the conditions a pilot would be meeting in orbit. He was nearing the end of his recital when the examiners arrived.

Chief Air Marshal Konstantin Vershinin approached the cabin, followed by the board members. "What are you doing," he asked, "reviewing your studies or lecturing?"

"Both, Comrade Chief Air Marshal!" Gagarin answered smartly.

"If that's so, let's begin at the lecture end," said the Marshal smiling, "if you have no objection, Comrade Gagarin." It became so quiet that we could hear the clock in the cabin ticking.

Yuri gathered his thoughts and began, "The Soviet cosmic sputnik ship *Vostok* is designed for orbital flight. . . ." Then followed a detailed account of this miracle of science and technology—the ship that was to lift man into outer space. Yuri didn't know then that he would be the ship's first pilot, but he talked of it with the familiarity of a man describing his own workshop. In his mind's eye he was already guiding the *Vostok* on its trip through the universe.

After a couple of months our cosmonauts were ready to admit that the athletic training was indispensable; they felt stronger and had much more endurance. The program expanded when our sports field and outdoor gym were equipped with jumping nets of the kind circus acrobats use for their incredible stunts. In a few weeks the men were doing some very complicated exercises on these trampolins, not up to circus standards perhaps, but their performance was neat, bold and certain.

High-diving from a platform and springboard was an important unit in the training program. The first lesson made it evident that none of them really knew how to dive. The instructor had to do yeoman work before he got the first man to jump from the diving tower. Flyers are not timid people, to say the least, but after climbing to that dizzy height and walking out to the edge of the unsteady springboard, not every man had the will power to dive into the water far below. But it was not long before they all got over their high-diving allergy and learned to control their bodies just as they had on the trampolin. They acquired some of the instructor's grace and agility.

Nor were our cosmonauts enthusiastic about parachute jumping. Like most flyers, they were accustomed to carrying the item as standard equipment, but they hated to have to use it. The first jumps, as expected, were

the hardest. Later, some of them confessed that they hadn't slept well the night before. Valeri was in especially low spirits. He was naturally lean but he seemed to grow thinner before his first jump. "How I bailed out," he said afterward, "I don't remember. I was just beginning to think about it when the straps jerked and the chute exploded above me."

Boris did best of all, surprised everybody with his first jump. He stepped calmly to the hatch, made a wisecrack about something or other, and stepped overboard. And how beautifully he controlled his body during the free fall! The instructor complimented him, his face breaking into a smile for the first time. "That's what I call bailing out," he told Valeri when he met him on the ground later on. "You'll all be learning to bail out like Boris," he kept repeating. "You'll be asking me for more chances to bail out."

The group spent several weeks at a distant airfield in the steppes and did several jumps a day. Those who made good progress were soon permitted to bail out over water. That needed special training for a good landing. Our para-cosmonauts had to learn to get out of their straps and part with the chutes a dozen or so yards above the surface and then dive headfirst into the water. Full-kit diving has no resemblance whatsoever to the kind you do in a swimming pool. In spite of that, the whole group came through this baptism successfully; all their timidity washed away before they were through.

This curious conversation took place just before the group was to leave the airfield. The instructor announced, "We're finished with the program. We've had all the parachute training we need."

"What do you mean? No more jumps?" the boys asked incredulously.

"No more for the time being. We're flying home."

Then came this surprising response. Every one of them began to argue that he needed at least one more jump to round out his experience. The instructor laughed, "What did I tell you? Remember I said you'd be asking for more some day?"

When the cosmonauts began to storm the heights of mathematics, Vladimir turned out to be the center of gravity, so to speak. The math was difficult, and the boys had trouble with it. Many of them had forgotten the algebra they had studied in secondary school and later at aviation school, and since the science instructor worked constantly with integrals, this was a decided hindrance. All they could do in the predicament was shrug their shoulders and hope for the best. Vladimir, on the other hand, took to the subject like a fish to water; he had only recently graduated from an engineering academy.

Caesar Vasilyevich, the rocketry teacher, was a calm and amiable person. He spiced his lectures with jokes and smiles, patiently repeated the formulas, and kept going back to algebra and geometry fundamentals. Nevertheless, the students would crowd around Vladimir the moment a lesson was over, with:"Explain this to us. It isn't clear."

Vladimir's invariably good-natured response was, "Well, let's see if we can find our way out of this." His explanations were simple and concise. "Almost as good as those Caesar gives," the boys agreed.

Vladimir would spend hours at it. That willingness to share what he knew was one of his finest attributes, a quality that cosmonauts cherish most. Mutual help and support becomes their way of life. The man strong in one area gladly helps his comrades and looks to them for help when he needs it.

One of the cosmonauts told this story. He was visiting an institute doing research in cosmonautics and the talk was strictly shop. Suddenly the conversation shifted to art. One of the scientists asked him what he thought of Picasso and went on to say, "What marvelous brush strokes! And the range of color and tone! Fantastic! As though an artist from outer space were having a look at our world! Really remarkable!"

The cosmonaut agreed, of course, out of politeness, although he knew very little about Picasso. But he went home disgusted with himself. Here people had spoken to him as though he were as well-informed as they, and what was he, actually? An ignoramus! He realized for perhaps the first time how much there was to know.

The cosmonaut must, of necessity, be a highly educated person, with so many of the sciences bearing directly and indirectly upon his work. He needs to know a great deal about psychology, electronics, sports, medicine, metallurgy and many other things.

I cite this not so much to show that our cosmonauts work hard at learning as to point up the fact that this new vocation makes great cultural and spiritual demands on a man.

Our cosmonauts take to education avidly. Apart from their required studies, they do independent work in many scientific fields. All of them attend lectures on new technological developments. Their friendship with the spaceship designer helps. He stimulates their intellectual curiosity and gives of his time generously. Although our library has been greatly enlarged, it is beginning to be inadequate.

Some of our officers, we must admit, were indifferent readers until recently, preferring a game of billiards or dominoes to a book. Gherman Titov once called a round table conference and scolded them for wasting their leisure time. He suggested they listen to some poetry and read them a few stanzas. When he asked the poet's name, one of them ventured "Pushkin."

"If he's Pushkin, then you're Gogol," said Titov to a burst of general laughter. "The poet was Aseyev."

Our young people have become very much interested in art, perhaps because they now have a keener perception of the beauty in the worl around them. They go to art galleries, museums, theaters and histori spots together. Until rather recently there seemed to be no time for suc things but now they use their leisure hours for cultural activities.

Our cosmonauts lead a rounded and interesting life. They take pleasur in museum art as well as in Russia's lovely landscapes.

One piece of equipment we use is called a "running path." The cosmo naut in training steps onto a belt that begins to speed up under hi feet. He runs faster and faster to keep from being thrown off the path The pace is regulated from a control panel operated by an engineer an a doctor. Since the trainee wears numerous indicators, the pair at the con trol panel have a constant check on his physical condition and can adjus the speed to conform.

It was Grigori's turn to run . . . four . . . five . . . six . . . seven . . . eigh yards a second. That was the best he could do. It wasn't only *his* top limit none of his comrades made a better showing, except for one who reached th nine-yard figure. The "running path" is built for a maximum of ten yard a second. But that, evidently, is beyond the powers of the world's fastes runners, especially since a sprint on this path is nothing like one on terr firma.

"Where did you pick up that charge of energy?" someone asked Grigor when he got off the belt. The phrase was apt, our trainees were charged witl energy in both the literal and figurative sense. Running, athletics, higl diving, swimming, flying, parachuting and this "running path" all gav the added speed, endurance and agility. Winter brought skiing, skating an high ski jumps.

Cosmonaut No. 3 distinguished himself as a skater and even more as skier. He had learned to ski in the north woods where he worked as forestry technician. The blizzards there, he said, often blotted out the sky and the snow was deep enough to dive into. But the work had to go o regardless, and the only transportation to the site was skis. This quiet, un assuming young man looked like any of our other prospective cosmonauts but the northern elements had endowed him with exceptional endurance.

We also tested our men on the "rocking platform." It looked easy—all trainee had to do was to mount a round table that could be rocked in al directions and hook himself to a safety belt attached to a rope hung from th ceiling. The operator at the control panel then set the platform "dancing" at all sorts of odd angles. The test did not give our men any serious trouble Like most of their flying brethren, the cosmonauts were accustomed t keeping their balance, and the training on the "rocking platform" strength ened that ability.

The rotor presented more complicated stresses and strains. This installa tion rotates in three planes—the cabin rotates on one axis, the frame o which it is fixed on another, and the whole installation on a third. There wa every reason to believe that the cosmonaut in flight might find himself o just such a merry-go-round.

All sorts of instruments and the TV screen help the doctors keep an ey on the condition of the trainee. But for this kind of training you need mor than good health, you need all-round preparation and uncommon endurance

When the cosmonauts were first introduced to the centrifuge, there wer no eager volunteers. It was only after an embarrassed silence that a diffiden little fellow named Ivan spoke up. "How about my trying it?" He sounde anything but optimistic.

"By all means!" said the doctor, and waved him to the chair. Withou wasting any time, he attached the electrodes to Ivan. His condition had t be checked throughout, nothing left to chance.

A surprising fellow, this unobtrusive little Ivan. He always looks worrie when he starts anything but regains his composure the minute he gets going

The first strain he was put to seemed to have no special effect. A steppe up tempo made no difference either. "Can you take any more?" the docto asked.

"Let's have it."

The third strain was a tough one, Ivan could hardly move. It was no fun– the man weighed 130 pounds, with the centrifugal load he weighed 1,300 Your blood grows heavy then, your body feels as though it were full of lea and the whole world around you seems to have sunk to the bottom of th ocean.

When the chair came to a stop, Ivan stayed there for a while. He ha to rest, waiting for the physical and nervous stress to ease. The doctor watched while his body accommodated itself.

A quarter of an hour after the test the trainee feels as if a mountain ha been lifted from him. Walking and moving about seem so easy that he think the added strength comes from the centrifuge. Actually, he's only revertin to normal.

Silence. Is there anything better for complete relaxation? But cosmi silence is nothing like the soothing terrestrial variety. Far from relievin nervous tension, it heightens it to a dangerous point. We need special saf guards for such silence. Besides that, the cosmonaut must have strong nerve for prolonged travel through this soundless world.

The soundproof chambers give the trainee an approximate laborator acquaintance with the quiet he will be experiencing in cosmic flight. Ho will he react to the strain? We know that prolonged isolation from the oute world is hard to take. It can be endured, but only if the man undergoing th silence and solitude has a sure belief in the purpose and aim of his ventur and if he does not at any time feel himself alone spiritually.

Every training test is a moral test as well. But the soundproof chamber tests the psychological stamina of a man and his spiritual potential like nothing else so far devised.

I remember the first "baptism of fire" in this chamber. There was that pregnant moment of silence when the cosmonauts were asked who wanted to make the first "flight." Finally Valeri said, "I'll try it."

How Valeri felt I didn't know, but we were all a bit worried. This was the first time one of our men was to enter that unknown realm of silence. There was no danger; watchful researchers would be there all the time. What troubled us was something else—how would the first man react? The behavior of the rest hinged largely on that. Registering instruments of the latest type kept constant watch. Valeri behaved strangely at first. He seemed to be in an unreasonable hurry. Finished with one thing, he moved to another after only a moment's thought. He reached suddenly for the telegraph key and hurriedly began to send the message, ". . . air temperature . . . pressure . . . humidity."

But the initial excitement subsided as soon as he adjusted to the situation. He began to work according to schedule, rationally and without undue haste. He kept an eye on the instruments and reported from time to time. He skillfully repaired one of the devices that went out of order. When he was not busy at assigned tasks, he wrote and sketched.

The pressure was changed several times and the routine disturbed by bright shots of light and harsh sounds, but he reacted rationally and in good time to all disturbances. He slept soundly, awoke exactly on schedule, and moved promptly to his assigned tasks. Valeri came through the test with flying colors and returned from his "cosmic" voyage in perfect health and good spirits.

Finally the day came when the prospective space pilots were to get their first look at the cosmodrome. It is a strange feeling one has in this bizarre place—of great and momentous events in the offing.

Life moves along evenly at the cosmodrome, even in the critical hours and minutes of a rocket launching. Procedures fall neatly into place and time, routines are polished to perfection.

The men were most impressed, of course, by the rocket carrier and the spaceship. It was the first time any of them had seen the two in a single merged unit. "Waiting for us," someone said. "It's probably tired of carrying dogs into orbit and wants a man to make the trip."

But this time, too, the scientists and designers had decided to send up a dog and not a human cosmonaut. How many of these friends of man had already been launched into the cosmos? No one had yet flown as high as some of these world-famous mongrels.

The cosmonauts were shown a handsome little dog with smoke-colored fur. Tail wagging trustingly, the animal licked everyone's hand. "What's its name?" asked one of the fellows.

"Dymka or Tuchka (Smoky or Cloudy), I don't know exactly," answered a laboratory worker.

"That's hardly a name for a hero!" And the cosmonauts immediately proposed several more heroic appellations, all of them rejected as unsuitable for the cheerful little space traveler. But then an officer, a Hero of the Soviet Union everyone knew, came in. Gagarin glanced at his gold star medal and said, "Let's call her Zvezdochka (Little Star)."

Everybody liked the name, and Zvezdochka it was when the little dog went into space.

The cosmonauts witnessed the launching. Something to see! An amazing spectacle, especially when the huge rocket, enveloped in flame and smoke, begins to rise slowly from the ground. Its speed grows with every split second as it soars into the sky, becomes a hardly perceptible dot, then vanishes altogether. If our cosmonauts had any doubt about the reliability of our rocket engineering, they lost it that day. They were convinced then—mind and heart—that the spaceship created by the Soviet people would carry them into orbit and safely back to earth.

"I envy the next cosmonaut, he'll have a more serious job to do," Gherman Titov said after his trip into space. Every new flight is a fresh leap forward. The role of the cosmonaut as pilot has been growing apace. Gherman Titov, as we know, tested the manual controls of his ship. He was able to turn it in any direction at will. Cosmonauts No. 3 and 4 will probably be doing more complicated maneuvers.

In this idle speculation? Nothing of the sort! It is a very real possibility. The cosmonaut's most active work still lies ahead. Titov's envy is, obviously, of the well-wishing variety. But there's no need for him to worry. There will be plenty for everyone to do—Titov as well as his comrades. This is all the more likely since we are nearing the time of collective flights. Spaceships will then be operated by whole crews, just as airliners are. The men will be pilots, radio operators, navigators, scientists, engineers and doctors, but they will all be cosmonauts.

The command of these ships will go, by right, to such experienced pilots as Yuri Gagarin and Gherman Titov. Their ships will be making interplanetary voyages—the first perhaps to the moon, the second to Mars or Venus.

Our ships and men have already climbed to cosmic heights. The leap we have made is big and, at the same time, small. Big, because it has opened the door to the unknown world—the first flights gave us priceless information on the nature of the universe. Small, because we are at the very beginning of the cosmic era. The conquest of space is so enormous a task that it will be making demands on our rocketry we would have thought fantastic only a short while ago. ★

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FRONT COVER: Estonian girls. — *See story on page 10.*

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COMMUNISM AND THE STATE

USSR magazine has been carrying a series of articles on communism since June. The first dealt with the historical origins of Marxist-Leninist thought and its application in socialist construction, the first stage of communism. The second, in July, outlined the tasks to be carried out during the next 20 years. The following, the third and final article in the series, tells about the changes taking place in Soviet life during the transition from socialism to communism.

By PYOTR ROMASHKIN

DIRECTOR, INSTITUTE OF THE STATE AND LAW
CORRESPONDING MEMBER, USSR ACADEMY OF SCIENCES

THE STATE as an institution is one of the age-old problems of history. There is probably no philosopher, historian or sociologist of stature who has not pondered its origin and development. The state and man . . . the state and society —what relation do they bear to each other? Is the state a blind force hostile to man, a force that suppresses his individuality, that saps his creative energy, or is it, on the contrary, a harmonious expression of the people's will, the good spirit of society that protects, defends, conciliates? That is the heart of the problem.

Marxist-Leninists regard the state not as a permanent and unchanging but as a transient structure. They look on it as an instrument that expresses the interests of the classes ruling a society at a given moment of history.

Take the Roman state, for example. All its activities—legal, military, fiscal—were designed to perpetuate the rule of the big slaveholders and landowners. So too in feudal society the state represented the interests of a small stratum of the nobility and, subsequently, of the nobility and the emerging bourgeoisie. Its endless extortions—its taxes and corvées—were a heavy yoke on the millions of serfs, small artisans and handicraft workers.

Marxism-Leninism considers that the state made its appearance with the division of society into classes. It was a product of irreconcilable class contradictions, an instrument of rule of one class over another. The foundation of this rule was economic power. Commanding the whole wealth of society, all its means and tools of production, the slaveholders developed a legal structure for the rule of their class over the rest of society. The feudal lords did the same to perpetuate their rule over serfs and artisans. Resistance in any form by the oppressed classes was put down ruthlessly under cover of such high-sounding phrases as the common weal and the people's interests. The state, no matter what its form, has always been the instrument for enforcing the dictatorship of one class over another.

The Socialist Revolution in Russia was made by the have-nots—the working class and the peasantry. The working class was the leader of the Revolution, moving and leading the peasantry in that struggle. Its revolutionary program encompassed the peasants' ancient dream of obtaining land. With the victory of the Socialist Revolution, the working class and its peasant ally took power.

The new, people's power was embodied in the Soviets of Workers', Peasants' and Soldiers' Deputies in the villages, districts, towns, regions, territories and republics. The supreme organ of power became the All-Russian Congress of Soviets.

The very earliest decrees of this new power demonstrated that the Soviets were truly representative of the millions, of the overwhelming majority of the people. The factories, mills, mines, railroads became the people's property. The banks were nationalized, the land was turned over to the peasantry.

Soviet Russia withdrew unilaterally from the First World W and set about rehabilitating the economy and developing t culture of the country. The measures undertaken by the Sovi Government in the people's behalf roused the frenzied resistan of the groups it had overthrown—the bourgeoisie and landlord the reactionary clergy, the kulaks, the officers of the old czari army. A life-and-death struggle ensued.

The same desperate resistance had been put up in other hi torical periods—by the troops of the cruel Spanish governor, t Duke of Alva, when the Netherlands revolted; by the monarch in the seventeenth century English revolution; by the moneyba Girondists against the French Montagnards.

During the trying days of civil war and intervention by foreign powers, the construction of the new society—the go of the Soviet state—had to be postponed. The more immedia objective was to break the resistance of the overthrown classe to defend the gains of the Revolution from both internal ar foreign enemies. This was an extended period of struggle. I repercussions, in the form of counterrevolutionary conspiracie were still being felt ten to fifteen years after the Revolution.

In these critical circumstances a firm hand was require Strong measures were taken against saboteurs and speculator counterrevolutionaries and conspirators. Decrees called for stri revolutionary discipline. Laws were passed on universal cor pulsory labor for members of the overthrown classes. Thu Soviet power, regardless of accusations of dictatorial method safeguarded the Revolution, fulfilling one of its historic mission

These harsh measures were not taken by choice. Long befo the Socialist Revolution in Russia the founders of scientif communism—Marx, Engels and Lenin—studying the experien of previous revolutions, had theoretically substantiated the nece sity of setting up the dictatorship of the working class after t victory of the proletarian revolution. They maintained that on the dictatorship of the working class—the moving force of t Revolution—could break the resistance of the hostile class doomed by history and ensure the completion of the social tran formation the Revolution had begun.

The course of the Russian Revolution confirmed the corre ness of that theoretical proposition. While it put down the resi ance of its enemies—and that meant restricting the rights counterrevolutionary elements—Soviet power was, at the san time, laying the ground for large-scale democratic reforms, f securing the participation of millions of people in the country management, in building the nation economically and culturall

At no time did the working class aim to perpetuate its ru to establish itself as a privileged social group. It proposed build and consolidate socialism and thus destroy any class equality—the rule of one class by another. That aim pointed the transient character of the dictatorship of the proletariat. was a temporary necessity, required to complete the Revolutio transform society and create a genuine state of the whole peop

Moreover, the working class ruled in alliance with other wor ing people, above all with the poor and middle peasantry, wi which it had a community of aspirations and interests in t victory of socialism. All this determined, from the very outs the profoundly democratic character of proletarian power as government in which the minority does not dominate, in whi the majority really governs. Here we have the fundamental d ference between a state with the working class in power and a other state, past and present.

What emerged was a new type of democracy, socialist dem racy, based on public ownership of the means and instr ments of production. And as the state develops, that democra grows ever broader and more inclusive.

Under conditions of successful socialist construction, the sistance of internal antagonistic forces gradually weakens a there is, consequently, less need for coercion. The dictatorsh of the proletariat develops into a state of the whole people.

What made the change-over possible in our country? In t first place, the fact that a socialist economy replaced private a state capitalism and small-scale commodity production, putti an end to the economic dependence of one group on anoth The class structure of society also changed—those hostile to t Revolution disappeared and with them the reason for cl antagonisms.

The working class, with a leading position in society, no longer a proletariat in the old sense of the word, that is say, the class of have-nots. It has grown in political and cultu

ature, has become stronger and better organized, and, with ıdustrialization, it has increased numerically.

The once individualistic peasantry, by virtue of voluntary col-ctivization, has become socialist, deriving its wealth from col-ctive labor based on modern techniques.

A new people's intelligentsia has made its appearance, flesh of ıe flesh of the industrial worker and the farmer.

In a society free of class contradictions and struggles, a unity f aim began to develop between workers of town and country.

All these groups have ample scope for expression in this ever xpanding socialist democracy.

n 1936, the Soviets of Workers', Peasants' and Soldiers' Depu-ties were reorganized into Soviets of Working People's Depu-es. That meant their conversion from organs representing lasses into organs that represented all working people, irrespec-ve of class grouping. The first Soviet Constitution, in 1918, as ell as the second, in 1924, denied voting rights to former gen-armes and police, czarist army officers, the clergy, and to those ho exploited others or were hostile to the new regime. These strictions on suffrage were no longer necessary and were bolished by the 1936 Constitution. This was an expression in ıw of the country's democratic growth.

But there were also periods when this naturally developing rocess of democratization was restrained. The Stalin personality ult was one such restraining factor. It grew out of a time and situation when democracy was necessarily restricted to defend ıe new state against underground counterrevolutionary groups nd foreign encirclement, and was strengthenend by the concen-ation of vast personal power in Stalin as head of state, inevi-ıble during the period of the Second World War.

After the war, by reason of various factors—his authoritative osition within the country and internationally, strained rela-ons with the West, the difficulties of postwar economic recon-ruction, and an entourage that exaggerated his role in Soviet istory—he managed to hold on to the extraordinary powers iven him by the people for the war period.

The arbitrary use of power retarded the development of the ountry's democratic institutions for a period, but it could not lter their basic character.

Stalin's abuse of power has been fully and courageously ex-osed. Soviet standards of democracy and the principle of collec-ve leadership in the Party and government have been restored, roviding a firm guarantee against any repetition of the cult of ersonality in the future.

As the country moves toward communism and a classless soci-ety, the state will gradually wither away. A high level of evelopment of productive forces, an abundance of goods, com-lete political unity, and a socially conscious citizenry will pro-de the conditions to make the state, in the present-day meaning f the word, unnecessary. The people will manage the country's fairs directly through their mass organizations.

This does not imply that the state will be abolished and im-ediately replaced by communist self-government. The process ill obviously be gradual. The socialist state will be preserved all its essential features while a communist society is being uilt. Its tasks will be manifold—to supervise the construction f the material and technical foundation of communism, to edu-ate people as Communists, to provide for a steady rise in living andards. The state will continue to protect the rights and free-oms of the citizen, see that socialist law and order are main-ined and socialist property safeguarded. It will be the duty f the state, as before, to see to the country's defense and secur-y and to maintain friendly relations with other states based on ıe policy of peaceful coexistence.

With progress toward communism some institutions of the ocialist state—the courts, the procurator's office, the militia, and her bodies responsible for maintaining order—will gradually ıtlive their usefulness. Mass economic, cultural and educational ganizations will take over more and more of the functions resently discharged by government agencies.

For example, with a greater development of the productive rces there will be more need for economic planning and man-gement. But the responsible bodies will be committees of citi-ns and not a specific group of officials or professional execu-ves. These citizens will, quite naturally, have the special knowl-dge and skills required to make judgments in the particular area f competence of the committee. Each citizen will be contribut-g his professional skills or talents to a committee in some field f science, art, industry, education, law, sports, etc.

What direction is Soviet democracy taking? We can already see the shape of the future. More and more people are involved in the management of the country. Every year more draft legislation is presented for nationwide debate before discussion and adoption by the Soviets. In the recent period there have been such mass forums on school curriculum reform, farm development and industrial reorganization. Millions of people gave their reactions to this proposed legislation at meetings and via the press, radio and television.

The discussion on the Draft Program of the Communist Party of the Soviet Union—a document that projects the country's direction for the next two decades—once again illustrates the general participation in setting national policy. A total of 82 million people took part, submitting suggestions and amendments. Many were incorporated into the final draft.

There is an ever greater measure of public control of legislative and administrative bodies. The executive committees of the Soviets, the heads of departments of the Soviets and the directors of factories and institutions of all types make reports at regular intervals to their staffs and to the public. Thus, all the activities of the organs of power and administration become public knowledge and are subject to public control.

Citizen participation is also enlarged by changing and renewing the membership of legislative and administrative bodies at specified intervals. The strict application of the elective principle for all public offices without exception, the periodic reports to the public and the changes in the membership of leading bodies from time to time all mean that new people are being continually involved in administering the country.

Another illustration of the trend to communist self-government is the growing number of jobs in the various Soviets filled by vounteers. In many Soviets the work of paid officials is now being done by factory workers, teachers, doctors, engineers, salesclerks. The point here is not economy but the fact that people are beginning to have so highly developed a sense of public duty and of civic competence that they can govern on this mass scale. Volunteer assistants to the local Soviets now number some 20 million.

The attitude toward labor has changed. The people see it now not only as a source of livelihood but as a psychological need. They want to give society more than they get from it. This is the communist attitude toward labor. Presently about a fifth of the country's working adults are joined in the national Communist Labor movement. More than three million workers, technicians and engineers have been awarded the honored title Communist Labor Shock Worker. The title of Communist Labor Collective has been conferred on 187,000 teams and 800 enterprises. It is the rare Soviet plant that does not have its scores of worker-inventors and innovators. In the first two years of the seven-year plan alone 4,600,000 rationalization proposals and inventions were introduced into production, with large savings in manpower and materials.

Production conferences play an important part in plant management. These permanent consultative groups take in some seven million wage and salaried workers.

The role of the mass organizations has grown. Today no important decisions at a plant are arrived at without the participation of the trade union. It directs and organizes sports, carries on cultural work and runs the sanatoriums and vacation resorts.

The country's young people have set up Komsomol groups they call "Seven-Year Plan Headquarters" and "Spotlights" that work with management and the trade unions to fight waste and incompetence.

The cooperatives, women's organizations and pensioners' councils are playing a larger part in government. More people are active in parent-teacher organizations, on tenants' committees, library councils, groups to promote housing construction, etc.

An increasingly larger contribution is being made by volunteer public order squads and comrades' courts to eliminate petty crime, drunkenness and vandalism. More than a hundred million people—almost all the able-bodied people in the country—are joined in this work, a testimony to mass social consciousness and participation in government.

The reduction of the workday to seven hours gives citizens more time for participation in civic activities. The new Program of the Communist Party of the Soviet Union provides for a six-hour day or 35-hour week to be introduced in this present decade. Greater labor productivity will make even a shorter workday possible. And that, in turn, will mean an ever larger measure of communist self-government. ★

EVENTS AND PEOPLE

SPACE EXPLORATION CONTINUES

The 1962 Soviet program for upper atmosphere and cosmic space exploration is unusually many-sided. The new series of sputniks—Cosmos I, II, III and IV—added much to our knowledge of the universe.

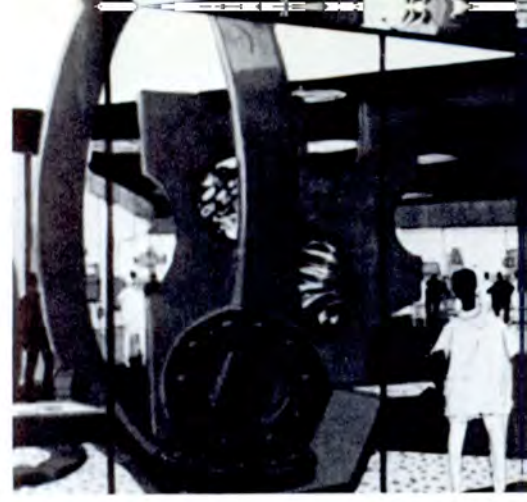
Cosmos IV was in orbit for more than three days and traveled about 1,200,000 miles. During the entire flight the various systems and instruments worked without a hitch. After completing the scheduled research program, the sputnik, on orders from earth, landed in a designated spot. This launching supplied invaluable data on the upper atmosphere and outer space.

NEW IMPROVED AIRLINER

The TU-124, a new plane designed by Andrei Tupolev, recently made its maiden flight from Moscow to the Black Sea coast. The ship is much smaller and lighter than the same designer's TU-104. Its take-off weight is 32-34 metric tons, and it will carry 40 to 60 passengers, depending on the cabin design.

The TU-124 incorporates several advances. Instead of the TU-104's turbojet engines, it has two very economical double-contour engines mounted toward the tail so that there is less noise in the passenger cabin. The plane also has a landing speed low enough for use on short runways and unpaved landing fields.

The TU-124 will be used for both domestic and international flights. This year tourists will be making fast and comfortable trips to the Soviet Union in the new airliner.



WINDOW ON THE SOVIET UNION

The USSR's biggest industry and trade show this year, held in Brazil, drew large and admiring crowds. Governor Brizola of the state of Rio Grande do Sul said that the exhibition had left an indelible impression and would be of great benefit to that South American country. Oscar Niemeyer, the eminent Brazilian architect who is designing its new capital, said he had seen nothing to compare with it.

In 1961 the Soviet Union displayed its products at more than 30 international fairs on every continent to an estimated 20 million people. This year Soviet goods are on display in many

ELECTRONIC JAZZ BAND

The photo shows inventor Nikolai Bogoslovsky with his Yalta Electronic Jazz Band. Everybody in the famous Soviet resort town knows Bogoslovsky. He has designed several new machines—automatic cooks and waiters—that will soon be in general use in the hotel and restaurant industry, and for his own amusement—an electronic double bass and a violin without strings. A year and a half ago he thought he'd try his hand at a whole electronic jazz band.

His band—he named it Yalta—imitates the horn, oboe, trumpet, cello, bassoon, and other standard orchestra instruments. The unusual thing about Bogoslovsky's band is that he has reproduced the sounds of percussion instruments electronically—the first time that has been done anywhere. A jazz drummer, as everyone knows, has to manage a dozen or so instruments at one time—drums, cymbals, castanets, etc. Bogoslovsky's electronic drummer plays a good many of these instruments.

His installation is programmed to reproduce the rhythms of the waltz, tango and other dances. It has perfect pitch and rhythm and never gets tired. With the percussion device setting the rhythm, it sounds like an orchestra performing.

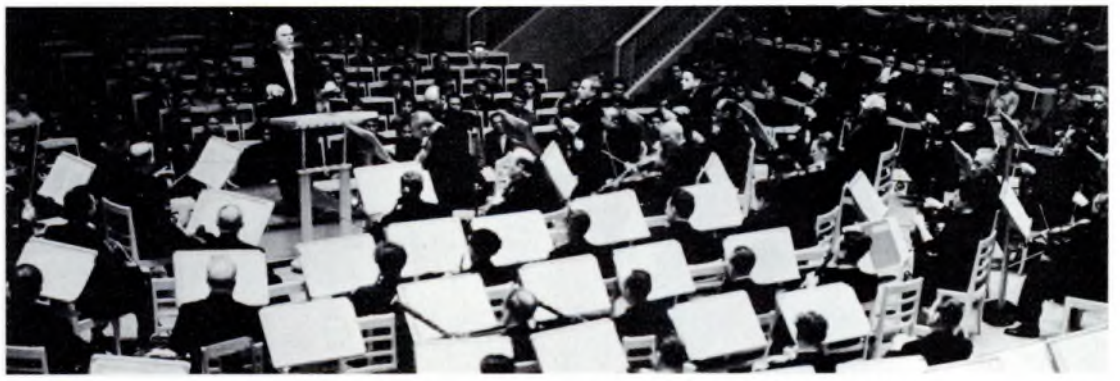
countries where they were never before shown, in Guinea, Libya, Ghana, Nigeria, the Sudan, Cyprus and the Democratic Republic of Vietnam.

The exhibitions are generally patterned to give a fuller idea of the Soviet Union, its state system, natural wealth, and the creative labor of the Soviet people. Reporting on the Soviet Exhibition held in New York's Coliseum a few years ago, American newspaperman Joseph North said, "If you do not have money or a passport for a trip to the Soviet Union, take the subway to 59th Street, enter the Coliseum on Columbus Circle, and immediately you are in a different world, the world of socialism. Ten thousand different items will tell you what socialism is."

NEW ICE SHOW

The photo is a scene from the ice show *In Wonderland* staged at the Sports Palace of Moscow's Central Lenin Stadium by a new and very gifted Ukrainian group that rivals the Moscow Ice Ballet Company.

Since they knew that Muscovites would make the inevitable comparisons with the Moscow and foreign ice troupes that had played the capital, the Ukrainians took particular pains preparing for their Moscow debut. They made a big hit. They were generously applauded for skill and grace, particularly for the imaginative way they combined national folklore with themes from the tale "Christmas Eve."



A QUARTER CENTURY OF MUSIC

The USSR State Symphony has just celebrated its twenty-fifth birthday. In the two and a half decades this distinguished orchestra has played for about five million people at more than 3,000 concerts. It has toured Rumania, China, Poland, Czechoslovakia, Austria and Belgium. In 1960 the orchestra performed in the United States and Canada, the first such visit of a Soviet symphony orchestra. In a seven-week tour it gave 39 concerts in 21 cities.

Conductor Konstantin Ivanov has been leading the orchestra for the past 16 years. For all its quarter-century the group shows no sign of aging. As older musicians leave, they pass on the orchestra's tradition of fine musicianship to the talented young people who take their places.

TRANSOCEANIC CHESS DUEL

Ernest Kim, an eight-year-old schoolboy from Tashkent, and Aaron Davis of Providence, Rhode Island, have been playing chess by mail for more than a year now.

Ernest is an old hand at the game of kings in spite of his youth. At the ripe age of five, he was already beating veterans any number of times his size and age. The young "grandmaster" has not yet, however, developed the aplomb of older players. When his opponent concedes defeat, Ernest chortles with glee; when he himself has to sacrifice a game, he's prone to shed some tears.

A delegation of editors of American youth newspapers visited Tashkent, and the editor of the *Michigan Telegraph* asked Ernest for a game. This was the Soviet youngster's first international encounter. The visitor was checkmated on the fifteenth move.

The photo shows Ernest pondering a move.

MATHEMATICS SCHOLAR

Three years ago a paper by Alexander Kirillov was published in the "Proceedings of the USSR Academy of Sciences," an unusual distinction for a 22-year-old mathematician still doing graduate work at Moscow University. Corresponding member of the USSR Academy of Sciences Izrail Helfand said of this and subsequent papers of the young scholar that "Alexander Kirillov's studies are remarkable for their conclusiveness and insight into the heart of the problem. They are outstanding papers."

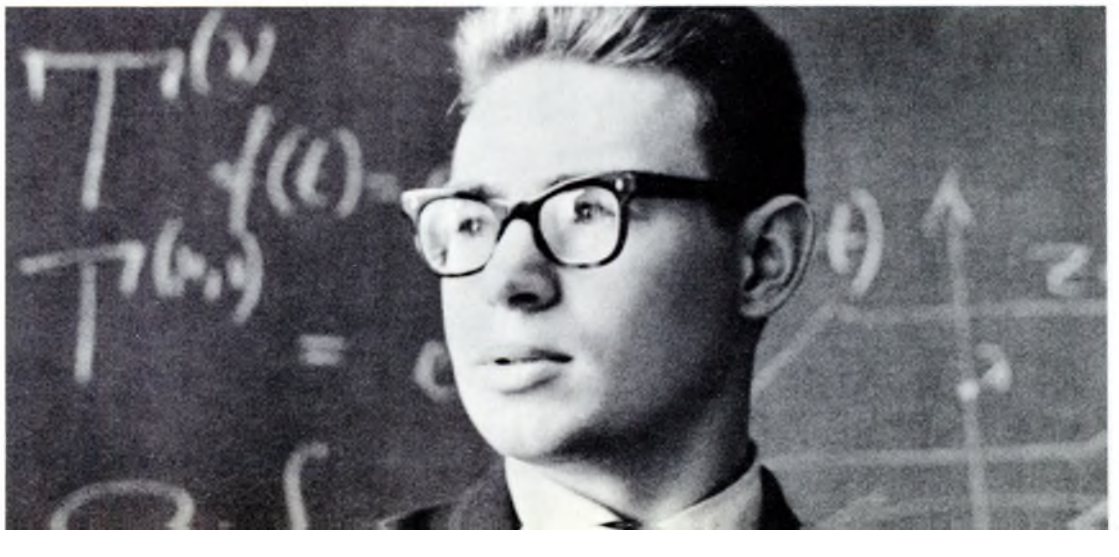
Kirillov's biography is still short, but already very distinguished. He graduated from secondary school with a gold medal and from Moscow University with a Bachelor of Science degree *cum laude*.

Early in his university career he showed a penchant for research, and in 1959 won first prize in a contest for student scientific work.

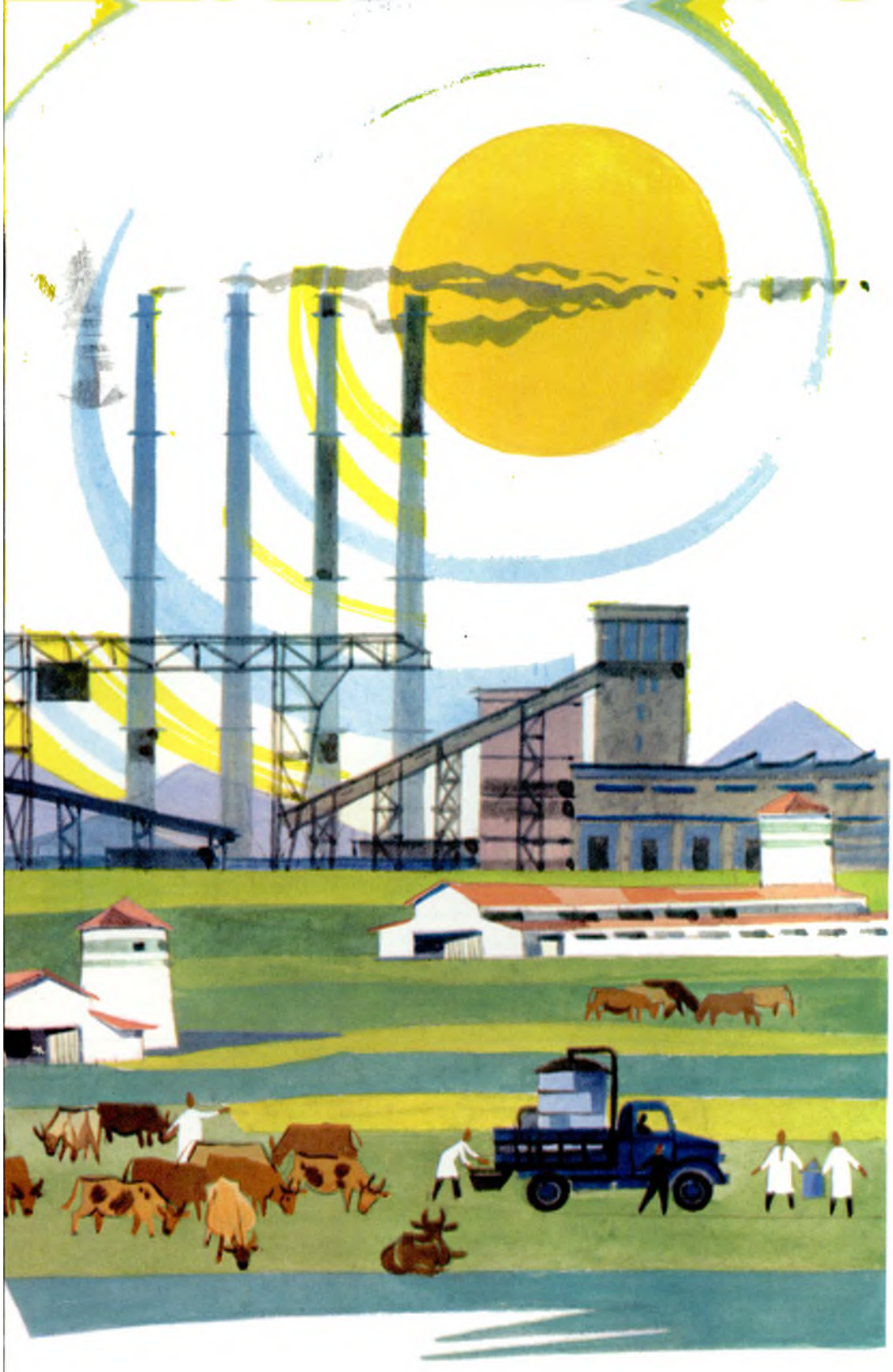
He is also a fine, all-round athlete—holds the university high-diving crown and ratings in camping and gymnastics.

Alexander spent several summer vacations working on state farms as plow operator and then as leader of a field team, for which he was awarded a medal which carried the inscription: "For the conquest of the virgin lands."

His most recent honor came after a defense of his graduate thesis on "Unitary Conceptions of the Lie Nilpotential Groups." His paper was so impressive that the faculty council voted unanimously to award him a doctor's degree in science instead of the master's degree for which the thesis had been done.



В. ЩАПОВ



ESTONIA

TRAVEL NOTES BY VELLO JUURIMAA

PHOTOS BY VICTOR SHCHAPOV, SEMYON NAUMOV AND ALEXEI TERTISHNIKOV

BLUE WAVES topped with white ridges, symbolically striping Estonia's flag, reminds you that ours is a maritime republic. The Baltic Sea all but embraces it, leaving nearly a tenth of Estonian territory on 800 islands.

The Baltic washes our northern and western shores. To the south we have a land frontier with Latvia. But there is water again in the east where we are separated from the Russian Federation first by Lakes Pskovskoye and Chudskoye (Peipsi in Estonian) and then by the Narva River.

Some ten miles from the sea the turbulent Narva (the word means waterfall in ancient Estonian) was harnessed in 1955 by a power plant with a dam backing up a big reservoir. Thus another lake—this one man-made—was added to the 1,500 with which nature graced Estonia.

Our republic is small—220 miles west to east and 150 miles north to south, a few hours' travel by train or car in either direction. The northerly landscape is subdued but picturesque, rolling country with field and forest alternating—the reason the republic's emblem is encircled by a sheaf of wheat and a pine branch.

The most interesting travel route is along the northern coast, where nearly half the population lives. This is country rich in legend. Estonian history goes back to the second half of the first millenium before Christ. In these parts the traveler will also find relics of later epochs—fortresses, castles, churches and other structures that preserve the memory of the Middle Ages, when Estonia fell successively into the hands of the Germans, Danes and Swedes.

But as interesting as these remnants of bygone times may be, the most notable attractions by far are the young and fast growing industries that have sprung up in these ancient cities in Soviet times, the towns newly founded, and the construction projects that pulsate with today's activity and tomorrow's promise.

It is this juxtaposition of the old and the new in Estonia that so intrigues the visitor.

Estonians love their national epic *Kalevipoeg* and seem really to believe the story it tells. The Tallinn guides, at any rate, never forget to inform you that the republic's capital grew up around the grave of the legendary hero Kalev, whose whole life was spent in great feats of valor for his people.

According to one of the legends, Kalev's widow Linda carried slabs of rock in her apron to cover her husband's grave. She piled up the hill on which Toompea, the oldest part of Tallinn, stands today. One day a big rock slipped through a tear in her apron and rolled back down. Linda, grieving and exhausted, burst into tears that cascaded down the hill and became the lake now called Ulemiste.

Every New Year's Eve for all these past centuries an old man has risen from the lake to inquire whether Kalev's descendants have finished building their city. Each time the answer is no. If he were ever to hear that nothing more was to be built, the lake would rise at once and inundate the city.

For all we—or the city fathers—know, the old man of Lake Ulemiste may still be keeping a close check on the construction program. At any rate, the city keeps growing, and now you can see building sites a long way from Toompea Hill.

Tallinn, from the top of Toompea, is a dense conglomeration of steep red-tiled roofs heaped around the ancient hill, with graceful spires that thrust skyward here and there. Only far beyond them do you see modern structures.

An excursion through Toompea and other old parts of the city is like a trip to the Middle Ages on a "time machine," especially since so many of the alleys are too narrow and twisting for a car. But the farther you go toward the city limits, the wider and straighter are the streets and the newer the buildings.

After a walk through the medieval section of Tallinn it is hard to believe that a stone's throw away are modern factories turning out electric motors, high-precision measuring instruments, complex equipment for the shale, oil and chemical industries, besides radio sets and a wide range of other consumer items.

Go into any of these factories, visit a construction site or just walk through the streets of new Tallinn and you will see that bold and youthful dreams of the future motivate life in the ancient Estonian capital. This is true of the whole republic.

Estonia's main points of concentration in the current seven-year plan are electric power, machine tools, precision instruments and building materials. Animal husbandry and fishing,

the traditional Estonian occupations, are also slated for speedy growth.

I recently met a group of foreign tourists who were traveling in Estonia, and we got to talking about the Baltimaa Electric Power Station in the city of Narva, which works on fuel from the neighboring shale basin. The first turbogenerator was put into operation in 1959, the last one will begin operation by 1965. The total capacity will then be 1,625,000 kilowatts. As soon as this project is finished, construction of the Uus Baltimaa station, with an even larger capacity, will get started.

In the group were several tourists from Sweden, a country with a great deal of experience in power construction. They wondered how a little republic like Estonia could build such big stations. I explained that the whole Soviet Union was lending a hand to build the Baltimaa project, that equipment was being shipped by more than 70 industrial plants in various Soviet cities. The station, I also told them, had already been tied into the joint power system of the northwestern part of the USSR.

Practically every major project in Estonia has this fraternal character. Turn off the road halfway between Narva and Tallinn to Kunda, a small city on a bay. It has a cement factory built before the 1917 Revolution. A new giant plant is going up alongside it, the Punane Kunda Cement Works. The builders are of all nationalities, including Estonian, and the equipment is being manufactured in several Soviet cities and in the German Democratic Republic as well.

The new cement plant has two rotating furnaces going already, the third will be in operation by 1964. Each of the new furnaces has three times the capacity of all the furnaces in the old factory. When this goliath of a plant is finished, it will be producing more cement per capita than Britain, France or the United States.

Back on the Tallinn-Narva Highway from this side trip to Kunda, we pass smoking, cone-shaped hills, standing singly or in groups along the road, characteristic topography of a mining region. This is the Estonian shale basin, with mining towns and communities stretching in a long chain.

Everywhere you go in this flammable shale region you hear the story of the peasant who built himself a new bathhouse, with a stove made of slabs from a nearby quarry. The bathhouse all built and the owner ready for a wash, he set a match to the stove and all of it burst into flame, bathhouse included.

The first shale mine was sunk here during World War I, and Kohtla-Jarve, the basin's principal city, grew up around it. Underground and open quarry mining is now spread over a large area, with shale processing plants in three centers. The shale, and the gas and oil obtained from it, are presently used for fuel in Estonia and elsewhere. But a new development is in the offing.

Both oil and gas refined from shale have been losing ground to natural gas and oil extracted in other parts of the Soviet Union. These fuels will soon be reaching Estonia through new pipelines to be laid.

The future of shale, therefore, is not in fuel but in the production of chemicals, particularly those difficult to extract from oil and natural gas. The possibilities are now being investigated by Estonia's shale scientists.

The northern coastal regions we have just visited are responsible for nearly 70 per cent of the republic's industrial output. The rest of Estonia is mainly agricultural, with large industrial plants in only two cities—Tartu and Parnu.

Away from the coast are long stretches of country without towns or villages. Mile after mile, on both sides of the road, you see tranquil forests alternating with collective farm fields and marshy glades interspersed with pastureland where cattle graze—then more forests.

On the shore of a lake half hidden behind trees, a lonely cottage with a red-tiled roof will suddenly turn up. Then much later you come on another lone house. You check off mile upon mile of this solitary landscape and finally come to a large village, almost a town, with rows of houses surrounding an imposing structure that is either a school or a hospital.

This is the profile of rural Estonia—isolated homestead cottages inherited from pre-Soviet times and collective farm settlements that have been growing up since. Here, too, we find the old and the new intermingled.

From year to year more of the outlying homesteaders have been resettling in the big new collective farm villages. This is the culmination of an agricultural revolution that began when the first Estonian collective farms were founded a decade and a half ago. A revolution indeed—it altered not only land ownership but the very psychology of the peasant and his social outlook.

These fences of stone slab that once ringed these homesteads also ringed in the minds of the owners. They lived isolated from the whole world, separated even from their neighbors. The lonely little houses look romantic only to the passer-by. The new collective farm villages have preserved all the value of country living and have added cultural advantages the old homesteader never had.

Although they are building a new life, Estonians cherish their age-old traditions. Villagers, and even city dwellers, dress in the national costume on holidays and give the streets an old-world color and atmosphere. For all that, the styles set by Tallinn House of Fashions designs are often adopted by women all over the country.

Choral singing continues an old tradition. Singing is more than a pastime with Estonians, it is a passion. You won't find an urban or rural club without a chorus with a repertoire of old folk songs and modern melodies. Local festivals are held every year, and every fifth year the republic's best singers, musicians and dancers compete at the all-Estonia festival.

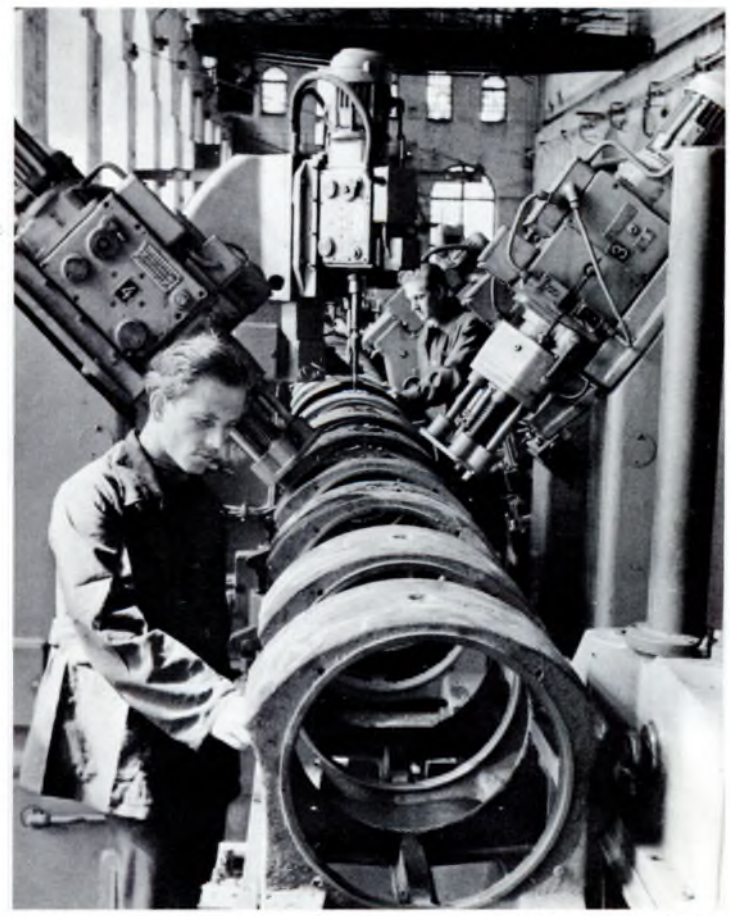
Two years ago, to celebrate the republic's twentieth Soviet year, Tallinn built an amphitheater of phenomenal size. The stands accommodate nearly 100,000 people, and the 350-foot stage holds a chorus of 25,000. The opening song festival featured a combined chorus of nearly 40,000 men and women who filled not only the stage but a considerable section of the front arena designed for mass dancing as well as some of the audience tiers.

The miles roll by under the wheels of our car. Each turn in the road shows us a new and fresh view. Estonia has many guises, all of them different, not unusual for a large country but a constant source of surprise to travelers in our little republic, who often feel that they are touring several countries at the same time.

Old Tallinn still has many narrow lanes like the one above. The imposing building on the left is the opera house.

The Baltic all but surrounds the republic. Tallinn is the Soviet Union's third largest port on that sea, after Leningrad and Riga, and is responsible for a substantial part of its foreign shipping.

After the Second World War Tallinn began to manufacture concert and studio grands. Within a comparatively short time the Estonia piano became very popular with discriminating musicians. The instruments have won awards at exhibitions abroad, including New York.



Automatic production line for electric motor bodies at the Volta Works in Tallinn. Volta-made motors for various uses go to some 5,500 well-satisfied customers in the USSR and 50 other countries.

The Baltimaa Electric Power Station, Estonia's largest, runs on shale. It has six operating units and one in construction.

(Below) Victor Palm, assistant professor of organic chemistry at Tartu University, was in the USA in 1960 on a research project.

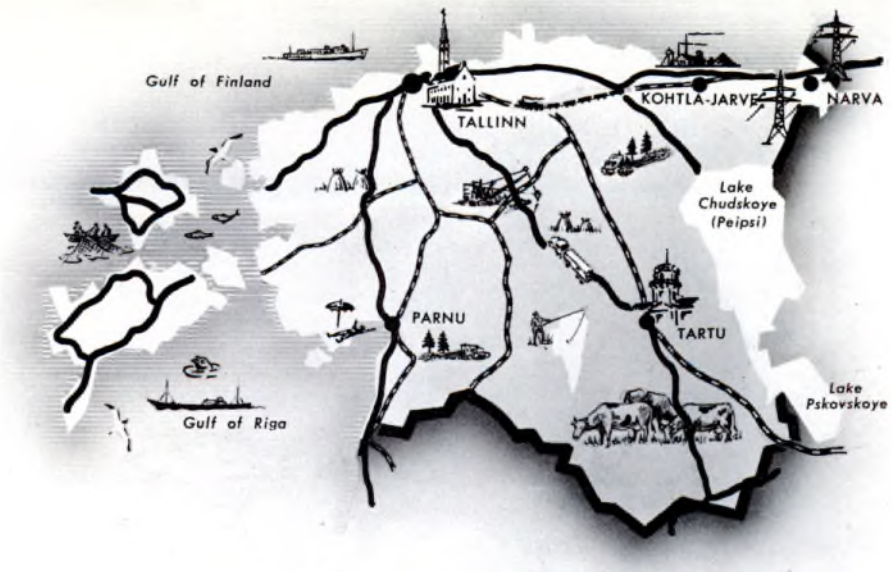
Vello Aas, civil engineer, and Hillar Avilo, concrete factory foreman, work together to ensure a satisfactory product for road-building.

Kohtla-Jarve, an attractive, flourishing town with a population of 30,000, grew up after the war around a small mining community, one of a number of new settlements that sprang up in the shale basin with the increase in the number of mines and the development of the processing industry.

Estonia is proud of its highways and keeps building new ones all the time. Territorially the republic is quite small—220 miles west to east and 150 miles north to south. It can be crossed in a few hours.

Tartu University, founded in 1802, is one of the oldest and biggest in the country, with five faculties and an enrollment of nearly 6,000. About half the students hold regular jobs and study by correspondence.

Parnu is a seaside resort town that draws 40,000 summer vacationers. It is also an important industrial center, processing the Baltic Sea catch and the farm crops grown in the southern part of the republic.



FACTS AND FIGURES

The Revolution spread from Russia to Estonia in 1917, but the counter-revolutionaries, supported by foreign interventionist armies, were able to put it down. For two decades following, Estonia was cut off from the Soviet Union. On July 21, 1940, Estonia re-established Soviet power and on August 6 of the same year joined the Soviet Union.

For the first three years of the seven-year plan the republic's industrial output increased by 40 per cent instead of the 27 per cent scheduled as the target figure. Today Estonia's industry produces 13 times as much as it did before the war. It now manufactures more in a single month than it did in a whole year before 1940.

Estonia's major natural resource is shale, used as fuel by power plants and as raw material for gas, oil, gasoline and various chemical products. There are twice as many shale mines as before the war. Estonia ranks first among the 15 Soviet republics in per capita production of hard fuel.

The republic's per capita electric power output is somewhat lower than the average for the country, but by 1965 it will rank first among the union republics and generate more power per head of population than does West Germany, Britain or even the United States today.

The "Made in Estonia" trademark appears on electric motors turned out by Tallinn's Volta Plant, on radio sets manufactured by Tallinn's Punane RET Plant, on measuring instruments, cable, excavators and equipment for the oil and shale industries.

Estonia is small compared with the other Soviet republics, but it is third highest in total volume of textile manufacture and is far ahead of all the others in per capita output. The republic's per capita output of knit goods is also higher than average for the country.

Estonia specializes in dairy farming and breeding pigs for pork and bacon. It is first in the country in milk and meat yield. The republic's collective and state farms derive 80 per cent of their income from livestock breeding. Their per capita output of milk, butter, meat, bacon and eggs is higher than the country's average. As far back as 1957 Estonia produced more milk and meat per capita than Finland, Sweden, Holland and other countries famous for their animal breeding. As of now, the republic stands second only to Denmark in this regard, with the gap narrowing each year.

The per capita output of Estonia's fisheries and its fish canning industry is higher than the average for the Soviet Union. Each year a larger part of the catch comes from the Atlantic fishing grounds. This year 62 ships of the Estonian fleet worked the Atlantic.

The republic's school enrollment is three times the pre-Soviet figure, and enrollment in schools on the college level has multiplied by almost four times. The number of specialists with a college education has increased from 5,000 in 1940 to 25,000 today.

Most of the 2,200 researchers and scientists in the republic are associated with the Estonian Academy of Sciences, founded in 1946. The Academy has 24 research and scientific centers.

Estonia has 109 newspapers, magazines and other periodicals with a combined circulation of 1.1 million copies, making 1,704 magazines and periodicals for every thousand persons.

More than 1,110 books are published annually in a total printing of nearly eight million copies—nearly seven books per person. Fiction is printed in editions of 30,000 to 40,000. During the Soviet period more than 850 fiction titles in other languages used in the USSR were translated into Estonian. Translations of foreign authors, both classic and contemporary, were also published. In the same period about 450 works by Estonian authors were published in other languages in a total printing of some 11 million copies. ★

TARTU

TARTU is a small Estonian town where you see the traditional blue student's cap everywhere you go. Even the stadium watchman—a sociable old soul—was wearing one his grandson had given him. The students themselves, he told us, had built the stadium.

"They've changed a lot," he said. "In my time they guzzled beer on Sundays; now they haul bricks. In all my 45 years as watchman, I've never seen such an active bunch."

He told us about a group of students—majors in physics and philology—who went to work one summer on a construction project. They objected when fellow students wanted to send them off with speeches and music. "This isn't a picnic, you know; we're going to work. Why all the fuss and bother? We don't go to class to the sound of music, do we?"

Three years ago only 200 students volunteered for vacation-time jobs on construction sites. The rest apparently thought manual labor unbecoming to budding intellectuals. The Youth Committee that had organized the work project was disappointed—but not for long.

"This time it's only 200 out of 3,000," one of the committee members said, "but these 200 are tops. They'll come back with money and work skills. Their enthusiasm will be catching. See if I'm not right!"

And that's what happened. Jaan Jooras, a philology student and a chap who can make a walk around the block an exciting adventure, headed the first student team that worked on the construction of a cement plant in Kunda, North Estonia. The photos the team brought back have such captions as: "Built this 100-foot tower ahead of schedule." "Laying out a volleyball field for the workers' settlement." "We lecture to collective farmers." "Hauling bricks is also part of the day's work." "Preparing for a concert we announced as 'A Greeting from the Students.'" "Digging a quarry."

Jaan Jooras and the photos were so persuasive that the following summer almost a thousand students signed up.

The Youth Committee was delighted. With vacation work on the way to becoming a tradition, there was talk of festivals and prizes. How

Tartu is very much a college town, with its own traditions, old and new. The blue Estonian student cap is omnipresent, everybody in the town wears one.

All the students are active in sports, and many earn a PT Instructor Certificate as well as their graduation diploma.

BY ALLA GERBER

PHOTOS BY NIKOLAI RAKHMANOV

UNIVERSITY TRADITIONS

about, ran the suggestions, honorary builder's certificates and free resort accommodations as prizes, and an annual ball when they return from the construction sites? Traditions should have their proper appurtenances from the very outset.

A summer on a construction job is one of the newest Tartu University traditions. There are others that go way back. One is the song festival the university chorus has every year, an occasion for the whole town.

Membership in the chorus is a notable distinction. Candidates must pass a test and a six-month probationary period. The chorus is managed by a board appointed by the students, which plans the tours and programs and organizes the song festivals.

A baton—The Staff of the Independent—circled with iron rings to mark each of the many places where the chorus has sung on tour, is passed on, with appropriate ceremony, to each newly elected board.

"We do not interfere with the chorus," said Rector Theodore Clement, "the students have a free hand. But they are aware of their responsibility to one another and to their audiences, and I can truthfully say that they rarely take an unconsidered action."

At the first concert of the season, the new members are officially installed—with music, speeches and the pinning-on of badges—in a ceremony that acknowledges that they measure up not only as choristers but as comrades. With this graduation diploma, each member receives a certificate that qualifies him to teach singing. This gives a second specialty to the teachers in training.

The students are devotees of the university café. It has three halls, one for non-smokers, another with a small stage—all of them simply but beautifully appointed. The café is well-frequented but always quiet and inviting. Examination time, it becomes a study hall.

I went to the traditional Wednesday Candlelight Evening. The café was charming, with just the right note of intimacy created by the flickering candlelight and shifting shadows, the soft dance music and the tinkle of glasses.

The café has no manager; it is run by the Student Council. The chairman, Pete Leppik, another philology major, can talk about the café for hours on end, if you let him—and staccato, as though rushing to include all the details.

"Each of the five university faculties takes responsibility for the café for a month and runs eight affairs during the period—a Quiz Party with prizes for the best answers, say.

"Practically everybody who comes to Tartu drops in at our café. Writers frequently lecture to us. We have debates on religion, the Stanislavsky method, modern poetry. Students tell about their trips through the Soviet Union and abroad. The chorus gives its concerts here, and weddings and birthday parties are almost regular features."

No wonder the place is so popular.

Not that everything always runs smoothly at the university. There are students who do not take kindly to the newer traditions. For some of them, to be independent means to cut lectures and be late to classes. Freshmen seem most susceptible to the disease. Recently emerged from under the teachers' wings, they are heady with their new-won freedom.

When the truant is called to the dean's office, he merely shrugs his shoulders. "That's the dean's job, isn't it," he says, "to bawl you out?"

The Youth Committee put its collective heads together and decided on a different tack. "What if we deal with the kids ourselves? They think their teachers like to pick on them, but they can't accuse fellow students of that." The student committees grew out of that thought.

The first one was organized in the physics and mathematics department. Without its approval the rector could not expel a student or take his stipend away. Now there are student committees in each department.

The fact that they manage their own affairs is the reason for the initiative shown by Tartu students. When you do something at your own bidding, not someone else's, when you use your brains and energy because you want to, not because you have to, you look for things to do and problems to solve.

The university always had the idea that a teacher should have two specialities. But nobody did anything about it.

Two years ago several student teams went through the outlying rural areas to see how teachers who had graduated from the university in the past ten years were doing. They were doing very well, on the whole, respected for their learning and their civic and social participation. The one complaint the villagers had, reported the student investigators, was that their children did not learn singing, drawing and housekeeping. Why? Well, the university did not teach these subjects, and if it did, chances were a teacher of history would consider it beneath her dignity to teach girls to sew—assuming she knew how to sew herself, that is.

How to remedy the situation? The students suggested that a sequence of training courses be offered in art and housekeeping with end-term examinations and that each sophomore choose one or the other as a supplementary specialization. The students took to the idea, tackled the lectures and training sessions seriously, and equipped themselves with a very useful second teaching subject.

Before leaving Tartu I visited the university museum—a dismal-looking place—where mementoes of the old days are displayed. There on the wall was a placard: "Our motto is self-management. Our slogan is freedom and independence." And alongside it were some old drawings of students swilling beer.

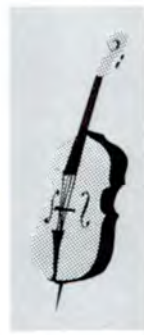
The student showing me around pointed to the drawings. "They thought that to live by the rule 'I'll study if I damn well choose to' meant to be independent. Some of them studied for ten years without earning diplomas. They acquired their 'life experience' by duelling with forks and their spiritual values at beer sessions and necking parties."

Traditions are not always worth inheriting and not all of them improve with age. Self-discipline has acquired new meaning at Tartu University today. ★

This group at the university perpetuates one of Estonia's oldest traditions. Several of the student choruses rank among the republic's best. Their repertories include modern and folk songs.

Future school teachers get training for a second specialty at a variety of extracurricular groups.

THE TCHAIKOVSKY INTERNATIONAL MUSIC CONTEST



PRIZE WINNERS AT THE SECOND TCHAIKOVSKY COMPETITION

PHOTOS BY OLEG TSESSARSKY AND MIKHAIL OZERSKY

JOHN OGDON (GREAT BRITAIN), shared first prize for piano:
I am very happy to have done so well. And I have been charmed by the Moscow audiences, by their warmth, cordiality and deep appreciation of music. The Tchaikovsky Competition was a great event in the musical world. It made an important contribution to USSR-British friendship and cultural contacts. After giving a few concerts in England, I shall be very happy to return to the USSR to play for the exacting Soviet audiences.

BY BORIS YARUSTOVSKY

Professor of Music
Member of Second Tchaikovsky International Contest Committee

THE SECOND Tchaikovsky International Contest, an impressive review of young musical talent, ran for more than a month in Moscow. France, Czechoslovakia, Poland, the United States, Hungary and many other countries were represented on the stage, in the audience, and on the panel of judges. Contestants came from such distant parts of the world as Brazil, the Philippines and Cyprus. All told, more than 150 contestants took part, 20 of them from the United States.

Seated at the judges' table were such world-famous musicians as violinists David Oistrakh, Joseph Szigeti and Efrem Zimbalist; cellists Maurice Mareschal, Gregor Piatigorsky and Mstislav Rastropovich; pianists Lev Oborin and Emil Gilels; Thomas Armstrong, President of the Academy of Music of Great Britain; and Professor Guido Agosti of the Italian National Academy of Music.

From every point of view this was an international test of virtuosity, a bid by gifted young performers for recognition. A triumph at Moscow meant access to the world's finest concert stages.

The fact that the contest is dedicated to Tchaikovsky is of more than sentimental significance to genuine musicians. In a decade or so we will be celebrating the centenary of the first performances of the composer's great works—his *Variations on a Rococo Theme for Cello and Orchestra*, his First Piano Concerto and his Violin Concerto.

The first round, the elimination trial, required the contestants to do a work of Bach that would demonstrate ability to carry a dialogue of several musical voices. Two of the compositions in this round tested technical ability.

In the second round the musicians had to play some large virtuoso composition of their own choice, written by a composer of their native country. The required works included a chamber composition of Tchaikovsky and one of the new works written especially for the contest by a Soviet composer.

Music lovers, I expect, will soon be hearing these new works—Kabalevsky's scintillating violin rondo, Pirumov's temperamental piano toccata and Vlasov's lyrical cello improvisation—from their own concert stages. They were very well received at their first performance in Moscow.

For the third round, each of the contestants still in the running could play a concerto of his own selection in addition to the required Tchaikovsky concertos. The choices made were interesting reflections not only of the performer's ability but of his taste and individuality.

John Ogdon, for example, an experienced English concert artist, selected a short, brilliant Liszt concerto. Vladimir Ashkenazi of the USSR selected a rather "feverish" concerto by Prokofiev. The third round tested feeling for ensemble —how well the performer could hear himself and the orchestra and "compete" with the massed instruments.

And the results? We are, of course, pleased and honored that the judges, famous musicians from several different countries, voted unanimously to award three of the four gold medals to Soviet contestants—cellist Natalya Shakhovskaya, violinist Boris Gutnikov and pianist Vladimir Ashkenazi.

The three are well-known artists, especially Gutnikov and Ashkenazi. Both these young musicians have already won prizes at international contests and have given brilliant performances in various European and American countries.

The fourth gold medal was awarded to John Ogdon. Despite his relative youth, this 25-year-old Britisher is a seasoned contest victor. He won prizes at Liverpool and Bolzano and in the contest sponsored by the Liszt Society. He gave a particularly impressive performance in the third round.

For all the participants the Tchaikovsky contest was a memorable experience. To some of those who did not win it was a school that taught them what they need to be victorious in future competitions. ★

VLADIMIR ASHKENAZI (USSR), shared first prize for piano:
Although I had taken part in two international piano competitions—in Warsaw and in Brussels—I was fully aware how difficult a test of skill the Second Tchaikovsky Competition would be for me. The joy of being a winner is great, but so is the responsibility that comes with it. Now I must live up to the title of winner of a competition named after a great Russian composer.

BORIS GUTNIKOV (USSR), first prize for violin:
Victory in this competition did not come easy, with so many really talented violinists in the field. I am very happy that I was lucky enough to win the first prize. However, it puts me under a great obligation. It was hard to win the award, and it will be hard to live up to it. I truly hope to justify the title of Tchaikovsky Competition prize winner by working as hard as I possibly can.

NATALYA SHAKHOVSKAYA (USSR), first prize for cello:
The Second Tchaikovsky International Competition is my fourth contest. In 1957 I won the gold medal at the World Youth Festival in Moscow; and in 1961, first prize at the USSR Musicians Competition. This year I took second prize at the Dvorak Contest in Prague. But the Tchaikovsky Competition prize is the one that means most to me. I am very happy about it.
I met Gaspar Casado, a wonderful Spanish cellist, at the contest. He promised to send me the score of his composition **Requiebros** to include in my repertoire. I am most grateful to the jury for having appraised my performance so highly.

JURY MEMBERS ON THE TCHAIKOVSKY COMPETITION

MAGDA TALIAFERRO (BRAZIL), *member of piano jury:*

I should like, first of all, to comment on the splendid organization of the competition. Everything was beautifully arranged: The contestants were provided with everything they needed—classrooms for practicing, good hotel rooms and, what is most important, excellent instruments. In other countries one rarely finds such good organization.

I should like to add that I have long been one of the great admirers of the Russian school of piano playing, as well as a follower of its principles. I have had occasion to meet young Soviet pianists before. This time I met a new galaxy of gifted musicians—Ashkenazi, Virsaladze, Kamyshov and Mdivani. I would include the talented Chinese pianist Yin Cheng-tsung in the group, since he too really follows the Russian school.

The French musicians, my pupils Christiane Billaud and Evelyn Ursat among them, made a good showing.

DAVID OISTRAKH (USSR), *chairman of violin jury:*

We jury members had no small problem. Each of the violinists we heard was very much an individual with his own particular facets of musical talent, so that we had to find criteria by which quite different performers could be judged.

H. Suzuki (Japan) and P. Messuereur (Czechoslovakia), who won Certificates of Merit; Marilyn Dubow (USA), who received the special Soviet Composers Union prize; and M. Strauss (Czechoslovakia), awarded a special diploma, are young violinists of great potentiality. At other competitions they might well have won prizes. It was the strong field at the Tchaikovsky Competition that lost them top honors.

Here we have a new galaxy of musicians being launched on their careers. I am confident that whether they choose to become soloists or play in an orchestra, become teachers and train other musicians or work with chamber music groups, they will do honor to the title, winner at the Second International Tchaikovsky Competition.

EFREM ZIMBALIST (USA), *member of violin jury:*

By the first round it was clear that the standard of skill of the contestants was higher than at the First Tchaikovsky Competition. The test program was also more difficult. At the previous competition, if I remember correctly, there were only a few fine violinists. There were many more at this one and it made the competition particularly keen. How keen may be judged from the fact that even the seventh prize was shared by two contestants—Soviet violinist Alexander Melnikov and Betty Hagen from Canada.

The ballot system used by the jury to judge the players was good, flexible. To prove it, I can now reveal a little secret, not about this competition but the previous one. I had given Valeri Klimov the highest mark, 25 points, throughout the competition and he proved himself a great violinist. His concerts in the United States were magnificent. I also remember young Shikhmurzayeva from the last competition. All in all, the Soviet school of violin playing does a most effective job.

EUGENE LIST (USA), *member of piano jury:*

I have seen what an important role the Tchaikovsky Competition plays in the lives of young artists. They are all eager to take part; and no wonder, for the Moscow competition gives grand creative impetus to their careers.

Such contests of musicality and virtuosity are excellent schools. A performer must muster all his spiritual and physical powers when he plays for such highly qualified juries.

Among my own fellow countrymen I should like to single out the talented musicians Roy Bogas and Eleanore Schreiber.

For me, as pianist and composer, each day of the competition brought the great pleasure of discovering new talent and new artistic personalities, a pleasure that was heightened by the friendliness and cordiality of the Muscovites. This was my first visit to the Soviet Union, and I was delighted to find how much Soviet people love music.

Violin judges (left to right): Leonid Kogan (USSR), Efrem Zimbalist (USA), Georgescu (Rumania), David Oistrakh (USSR), Joseph Szigeti (USA).

Mixed emotions. These are American and Soviet musicians listening to their rivals performing.

Leslie Parnas of the USA and Valentin Feigin of the USSR shared the second prize for the cello.

Conductor Kirill Kondrashin with Soviet pianists Eliso Virsaladze and Genrich Neugaus (left).

SIR THOMAS ARMSTRONG (BRITAIN), *member of piano jury:*

It gave me great pleasure to meet in Moscow colleagues from various countries. Even before arriving in Moscow I was sure that the standards of the Tchaikovsky Competition would be very high. And they proved even higher than I had expected. I am sure that the influence of the Tchaikovsky Competition will be felt throughout the world. Young musicians of many lands were present, and they returned home enriched even if they did not carry back any laurels. I am certain their efforts were not in vain. I want to wish them every success and trust that they will find gratification in their chosen fields and will benefit the society in which they live and work.

GREGOR PIATIGORSKY (USA), *member of cello jury:*

I was amazed at the interest Soviet people showed in the Second Tchaikovsky Competition. It was magnificent. The contestants representing the USSR were well prepared—they had to be, since they had to win the right to enter the competition. They were carefully selected. Unfortunately, things are not done that way in some other countries. Take the United States, for example. If a young musician's father or aunt has the money to pay for his trip to Moscow that is good enough reason for him to take part in the competition. Of course this is not always so, but the point is there is no real organization. For this reason, even the most talented musicians come to the competition insufficiently prepared.

Take Leslie Parnas. He did well in Moscow. But did he really do as well as he could have? At one time he was a pupil of mine. Only after I arrived in Moscow as a representative of the United States on the jury did I learn that he was participating in the competition. Other American contestants also prepared for this important competition quite on their own.

I admire your serious approach in training gifted young people.

Talented American pianist Susan Starr thanking the conductor and the "wonderful Soviet public."

English pianist and prize winner John Ogdon with a bevy of pretty Soviet music lovers.

Piano contestant Cheng-tsung and jury member Eugene List.

(Left to right) Winners Irina Bochkova and Boris Gutnikov (USSR), Yoko Kubo (Japan), Shmul Ashkenazi (Israel), Nina Beilina (USSR).

HOW THE TWENTY-YEAR PLAN WAS DRAWN UP

BY VLADIMIR KATZ, ECONOMIST

THE BIRTH OF THE SOVIET UNION, the first workers' and farmers' state, opened up new economic and political perspectives and possibilities. One of the most important, and most characteristic of socialism, was national planning. If the term needs defining, we could call it a tool for the purposeful development of a country's economic and cultural resources.

Large-scale national planning cannot be done arbitrarily. Before it becomes feasible, a society must reach the point in its development where the means of production—the factories, tools and instruments of labor, the land and its wealth—are owned by the nation, the people in common. Only then do we have the objective conditions necessary.

When the Soviet people carried through the 1917 Socialist Revolution they created these objective conditions. They nationalized the means of production and declared them public property. Then the country could proceed to chart its course of development.

Soviet planning bodies guided themselves by this one principle—the earliest and fullest satisfaction of the people's growing material and cultural needs.

This word "needs" brings to mind a question colleagues in other countries often ask me. "Why didn't you start expanding your light and food industries right after the Revolution? Why didn't you plan things so as to give people the clothing and food they needed as quickly as possible?"

"How could we?" I answer. We had practically no machine-tool industry of our own, we had to import modern equipment. Before we could provide people with clothing and foodstuffs, we first had to build modern factories and modern machines to make those things, to say nothing of the machines we had to have for farming, construction, and transportation.

Besides, there was the other need, even more pressing than the scarcity of shoes and clothing, the very basic need to exist as a sovereign state, to grow as a free socialist country despite encirclement by unfriendly powers.

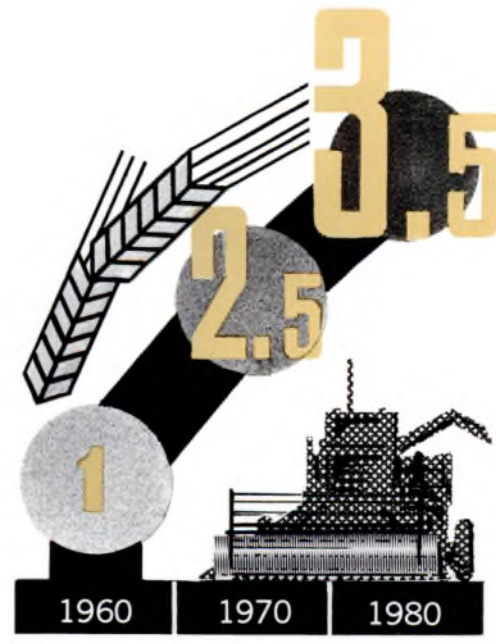
These, then, were the domestic and international needs that our planning agencies had to take into consideration.

They also had to consider the country's potentialities—its rate of economic growth, the productivity of its labor force, its capital investment resources. The plan had to balance development of industry and agriculture, of one branch of industry with others dependent on it, of production and consumption.

All these complex interrelationships had to be kept in mind.

Lenin's famous GOELRO was the first long-term plan of economic development for an entire country in history. Adopted in 1920 for a 10- to 15-year period, it called for the construction of 30 large power stations with a total capacity of 1.5 million kilowatts of electric power, the most critical element in a modern industrial economy. Fifteen years

Development of Soviet Industry
1960-1980



Output of Agricultural Products
1960-1980

ater the plan had not only been carried through but the quota set had een exceeded by two and a half times. GOELRO was the foundation or the early five-year plans.

Each of the plans had a single major goal. The first five-year plan oncentrated on building heavy industry and organizing large-scale, col- ectivized agriculture. It transformed the backward agrarian country nto a modern industrial power with a highly mechanized and productive griculture and created the basis of the socialist economy.

With the second five-year plan completed and the third five-year plan egun, the Soviet Union moved to a leading position among the nations f the world. It proved strong enough to bear the brunt of the war gainst fascism, thereby demonstrating its economic, political and ilitary strength.

The war ended, we faced the grave problem of rehabilitating the ar-torn areas and once again reaching prewar production levels. That as the goal of postwar planning. Within a five-year period, by the eginning of the fifties, prewar levels all along the line had been reached nd surpassed, to place the Soviet Union second only to the United tates among the world's industrial giants.

In 1959 the Twenty-first Congress of the Communist Party adopted he plan now in effect for the seven years from 1959 through 1965. he concentration goal is all-round development of the country's pro- uctive forces to the point where the material and technical foundation s laid for a communist society. The nation's fast growing economic otential, its continued technological progress and increasing labor roductivity all make for rising living standards.

Today the Sovet Union accounts for a fifth of the world's industrial utput. It produces more than England, France, Italy, Canada, Japan, elgium and the Netherlands taken together. The combined population f these industrially advanced countries is 280 million, 60 million more han the Soviet Union.

From this position a more ambitious plan is being launched, one with 0-year goals. That plan is incorporated in the new Communist Party rogram, the third, adopted last October by the Twenty-second Party ongress.

For the first time in history a country has reached a level of economic maturity high enough to enable it to pledge to undertake within the oreseeable future a mighty productive spurt that will make possible the atisfaction of all the needs of all its people and the implementation of he principle "from each according to his ability, to each according to is needs."

The twenty-year plan was compiled by research bodies locally and ationally, by the Central Statistical Board, ministries and government epartments, the various regional and territorial planning bodies of the conomic councils, the local Soviets, the individual factories and collec- ive farms. The whole country was involved, with the State Committees for Current and Long-Range Planning coordinating the collective effort.

Special research institutes of various kinds provided the planning bodies with the data to set target figures. The Institute of Nutrition of the USSR Academy of Medical Sciences, assisted by other research bodies, worked out scientific consumption standards—the protein, fat, mineral and other caloric food requirements as they varied with age groups, climatic zones and national customs and habits.

The study established these yearly diet requirements per person:

meat and meat products—191.3 pounds
fish and fish products—35.7 pounds
milk and dairy products—1,029.5 pounds
vegetable oils and fats—22 pounds
eggs—365
sugar—97 pounds
vegetables and melons—361.5 pounds
fruits and berries—293 pounds

With this table and the 1980 population estimates supplied by the Central Statistical Board, the planning bodies could calculate the country's general food requirements and set production quotas for agriculture and for those branches of industry directly related to agriculture—farm machinery, chemical fertilizers, building materials, etc.

The 20-year plan farm quotas represent, by comparison with the 1960 figures, a fourfold increase in meat production, a close to threefold rise in milk yield, a more than fourfold increase in egg production, almost a threefold increase in vegetables and melons and a more than tenfold increase in fruits. That will more than take care of all home consumption needs and leave something over for reserve.

The 1980 target figures for light industry were arrived at in the same way. The Trade Research Institute and other research agencies submitted these validated consumption figures per person per year:

fabrics—70 square yards
knit goods—8.25 items
leather footwear—3.3 pairs

These figures, too, represent triple the fabric output of 1960, four times the knitwear output, and double the quantity of footwear. The program also includes necessary reserves.

These and other figures gave planners the information they needed to estimate the total fund of consumer goods of all kinds required for 1980. Estimates were also made of 1980 income, wage fund, and the public consumption fund, which pays for schools, hospitals, pensions and other welfare items.

Since the consumption fund is about three-fourths of the total national revenue, we can estimate fairly accurately what the national revenue will total in 1980. Preliminary calculations indicate that it will be about five times the 1960 figure.

The question we really pose here is how large the national revenue must be in 1980 to satisfy all the material and cultural needs of the

Soviet population, with this second question as corollary—is the projected national revenue total realizable in terms of predicted rate of production growth? The answer is yes.

The decisive factor for production growth and therefore national revenue growth is labor productivity. It is responsible for more than 75 per cent of the present annual increment in the Soviet Union's national revenue. As time goes on, Soviet economists expect the country's per worker output of electric power, plant and equipment to show a substantial increase. That, together with the growing use of chemistry industrially and over-all electrification, will multiply labor productivity some 4.5 times by 1980, an increase that will take care of more than 90 per cent of the total increment in the national revenue and make it possible to cut working hours still further and raise wages still higher. By 1970 we will have a general seven-hour day—six hours in some trades—and thereafter the workday will gradually become shorter.

Not all of the national revenue, of course, goes back directly to the consumer. A quarter of it is reserved in the accumulation fund, to expand production, to build more housing and cultural institutions and for other such public needs.

A proper balance must be maintained between accumulation and consumption to provide for both a high rate of growth and ever greater consumption. Our economists estimate that the accumulation portion of the national revenue will increase only slightly over the 20-year period provided capital funds are properly invested. They expect that it will rise from 28 per cent of the national revenue in 1960 to 30 per cent in 1970 and stay at that level thereafter.

The Soviet economists think it necessary to allow for faster growth in industries that produce the means of production than in those that produce consumer goods. Otherwise, they explain, there will be no technological progress, no way of providing factories with the most modern equipment, no uninterrupted growth in labor productivity.

The 20-year plan foresees a decided expansion of heavy industry but on a more moderate scale than heretofore. In contrast to previous years, its priority development will not exceed 20 per cent. The plan brings the rate of development of consumer goods industries closer to that of industries producing the means of production, but it schedules an especially high rate of growth for industries that make plant and equipment for consumer goods production.

To achieve a balanced development of agriculture and industry the plan provides for approximately the same high rates of growth for both in the first ten years. In the following ten-year period, however, agriculture will not need so high a rate of growth since it will be producing enough to meet all the demands of the consumer and industry. Moreover, chemicals will be crowding out natural raw materials in the textile industry. In the 20-year period Soviet agriculture as a whole is slated to increase its output 3.5 times.

A distinctive development in the 20-year period, envisaged in the plan, is the shift of emphasis toward the non-material-producing sectors of the economy—the service, cultural and welfare areas. The very considerable rise in labor productivity will make it possible to develop these areas more intensively. In 1980 the number of workers engaged in material production and related areas will increase by 10 to 15 per cent over 1960, whereas the increase in the service and cultural areas is expected to be much larger—almost three times the 1960 figures—to absorb a third of the employed labor force. Capital investments in these non-material-producing areas will also be climbing.

The fulfillment of the 20-year plan will make the Soviet Union the world's leading producer and give its citizens the highest living standard any country has yet achieved.

Development of Soviet Industry 1960-1980

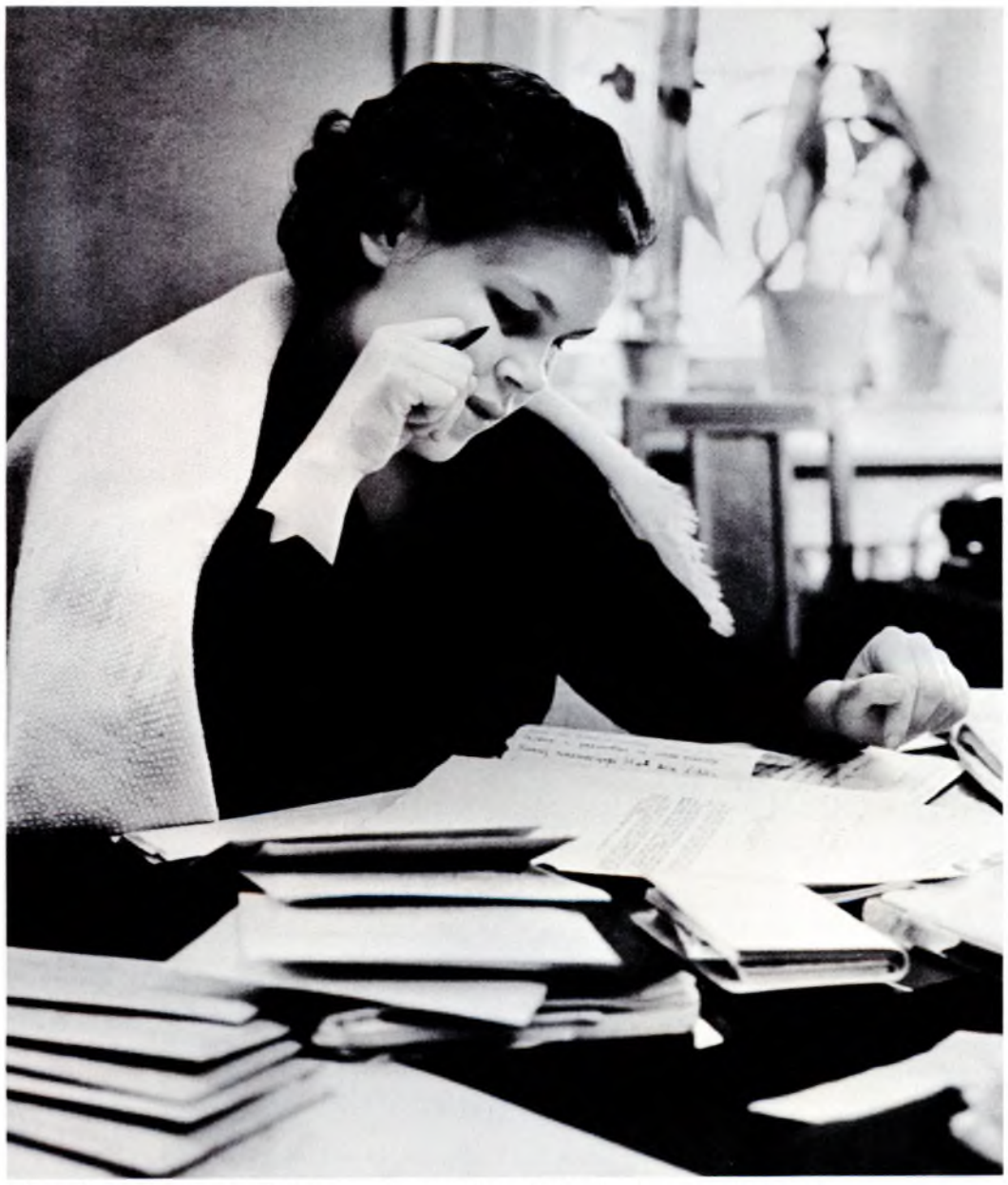
(in July 1, 1955 Prices)

	1960	1970	1980	Number of times 1980 level exceeds 1960 level
Gross industrial output in wholesale factory prices (in billion rubles)	155	408	970-1,000	6.2- 6.4
Production of means of production—group "A" (in billion rubles)	105	287	720-740	6.8- 7
Production of consumer goods—group "B" (in billion rubles)	50	121	250-260	5 - 5.2
Electricity (in billion kwh)	292.3	900-1,000	2,700-3,000	9.2-10.3
Steel (in million metric tons)	65	145	250	3.8
Oil (in million metric tons)	148	390	690-710	4.7- 4.8
Gas (in billion cubic meters*)	47	310-325	680-720	14.4-15.2
Coal (in million metric tons)	513	686-700	1,180-1,200	2.3- 2.34
Output of machine-tool and metal-working industries (in billion rubles)	34	115	334-375	9.8-11
Mineral fertilizers (in million metric tons)	13.9	77	125-135	9 - 9.7
Synthetic tars and plastics (in thousand metric tons)	332	5,300	19,000-21,000	57 -63
Artificial and synthetic fibers (in thousand metric tons)	211	1,350	3,100-3,300	14.7-15.6
Cement (in million metric tons)	45.5	122	233-235	5.1-5.2
Fabrics of all kinds (in billion square meters**)	6.6	13.6	20-22	3 - 3.3
Leather footwear (in million pairs)	419	825	900-1,000	2.1- 2.4
Goods for cultural & household use (in million rubles)	5.9	18	58-60	9.8-10.1

Output of Agricultural Products 1960-1980

	1960	1970	1980
Grain (in billion poods***)	8.2	14	18- 19
Meat (in million metric tons slaughter weight)	8.7	25	30- 32
Milk (in million metric tons)	61.7	135	170- 180
Eggs (in billion eggs)	27.4	68	110- 116
Wool (in thousand metric tons)	357	800	1,045-1,155
Cotton wool (in million metric tons)	4.8	8	10- 11
Sugar beets (factory-processed, in million metric tons)	57.7	86	98- 108
Oil-bearing crop seed (in million metric tons)	4.3	8	9- 10
Potatoes (in million metric tons)	84.4	140	156
Vegetables and melons (in million metric tons)	19.2	47	55
Fruits, berries and grapes (in million metric tons)	4.9	28	51

* One cubic meter equals 35.314 cubic feet.
** One square meter equals 1.195 square yards.
*** One pood equals 36.113 pounds.



Maria Rozhneva is one of the many women deputies in the Supreme Soviet of the Russian Federation. Her mail from constituents is constant and voluminous.

A LADY LEGISLATOR

BY VLADIMIR STRELKOV

PHOTOS BY ALEXANDER NEVEZHIN

Her full-time job is assistant forelady in the Kupavna textile mill. Deputies are not paid for legislative work, only their postage and travel expenses are covered.

THE POSTMAN gives the young woman who opens the door a huge pile of letters. "Practically the whole morning's mail is for you, as usual," he says.

She is a short, pleasant-faced woman with kindly, deep-set eyes and high cheekbones, and wearing a plain cotton dress. She smiles her thanks and takes the letters. They are addressed to Maria Rozhneva, deputy to the Supreme Soviet of the Russian Federative Republic, town of Kupavna, Moscow Region, from her constituents—factory and office workers, collective farmers, plant directors, all sort of people.

She goes through the mail before sitting down to breakfast—also as usual—and puts aside several letters to be taken care of that day. One is from Lyusya Volkova, a worker at the textile mill, asking the deputy to help her get new living quarters. Her mother, sister and she, Lyusya explains, have their own house, but it is so old and dilapidated that it is no longer fit to live in.

Maria Rozhneva was only 21 when she was elected for her first term. She was nominated by her neighbors and workmates of Kupavna, a small textile town 60 miles from Moscow, where she has lived since the end of the war. She learned her trade as textile worker there, became a spinner, and is now an assistant forelady of the mill. A warm, responsive human being, she very quickly earned the respect and affection of the people with whom she worked.

This is her third term in the highest legislative body of the Russian Federation. Deputies to the Supreme Soviets of all 15 union republics are elected for a four-year term. They are not paid, the government covers only their mail and travel expenses. Maria Rozhneva has a full-time job at the mill and does her legislative work after hours.

She knows the needs and interests of her constituents since she works and lives among them and everybody in town knows her. In the course of a short walk, she is likely to be stopped by a dozen people for as many different reasons, some of them insignificant, but they all have her courteous attention.

Now, for instance, she is on her way to see what can be done about Lyusya Volkova's housing problem when an elderly man standing outside a store greets her with this outburst, "The arrangement was that they were to pay me 10 rubles every time I cleaned up the street in front of the shop. Now they tell me they'll pay only five from this time on because there's less dirt."

Strictly speaking, this hardly falls within the purview of a deputy's functions, but the old man so obviously depends on her to get him his just rights that she goes into the store to see the director. A few minutes' time, and the matter is ironed out to everybody's satisfaction. Rozhneva continues on her way to Lyusya Volkova's house on the edge of town.

Housing is still Kupavna's No. 1 problem. Even though a great deal of building is going on, there are not nearly enough modern apartments to go round yet.

Rozhneva asks, after taking a look around the premises, "How about my putting you down for an amateur building team?"

Lyusya says, "Fine."

This is an idea initiated by the deputies to speed up housing construction. People who do spare-time work on building projects have priority on the apartments they help put up. The volunteer workers are paid the same rates as regular construction men.

The townspeople have accepted the idea enthusiastically. In the past two years 465 families have moved into apartment houses built in this way. Deputy Rozhneva sees to it that the textile mill management provides building materials on time and that people who need apartments most urgently get the chance to join these amateur building teams.

Her obligations are many and varied, but there are two things very close to her heart. She has been campaigning hard for a ban on night work for women and for nursery or kindergarten accommodations for every child in town—both part of her same goal, to make things easier for working mothers.

The mills operate on three shifts. A worker is on the night shift one week, the morning shift the next, and so on. The night shift, although an hour shorter, pays the same as the others.

The mill managers have been taking a long time to arrange the shifts. Too long, Rozhneva thinks, even though she is aware of the problems involved. To get faster action, she raised the question at one of the highest forums in the land—the Twenty-second Congress of the Communist Party of the Soviet Union—to which she was a delegate.

The town has three nurseries and three kindergartens, not enough to take care of all the children of working mothers.

"We have to build more," Rozhneva has insisted at meetings with the mill director. "I know what it's like to hold down a job and take care of two children at the same time."

She kept hammering away until the mill allocated the necessary funds. A new, big, combined nursery-kindergarten building will be ready this fall.

The town has one carry-out kitchen, and Rozhneva is campaigning for more. She says, "Aside from the personal values involved, it makes sense even in production terms. The more a woman is relieved of her household chores, the more time she has to study and improve her skills."

At present one out of four workers in the mill has either a secondary, secondary-technical or college education. Rozhneva's aim is to make that true for four out of four. She has persuaded many people to enroll at the mill's technical school or to attend lectures at the People's University.

Kupnava is not all of her electoral district. It takes in the entire Noginsk District, of which the town is only a part. Rozhneva makes periodic visits to the other towns, with place and time announced beforehand for people who may want to see her. She reports to the townspeople on her activities, hears their requests and complaints, and discusses the matters in question with the local Soviet and the factories or agencies involved.

The deputy takes three days a month off from her job for these tours of her district. She receives her regular pay at the mill while she is gone but no additional compensation other than travel expenses.

During her first term she had something of a problem with elderly factory directors who did not take kindly to "that 20-year-old girl" telling them what to do, even if there were very good grounds for what she wanted done. Two of them just ignored her, paid no attention to her letters or to the complaints she passed on from constituents. Rozhneva thereupon had both directors called to the regional Soviet for a hearing. She had no trouble after that.

The deputy visits Moscow fairly frequently for conferences with government leaders and for meetings of the Central Committee of the Textile and Light Industry Workers Union. She serves on the Industry and Transport Committee of her republic's Supreme Soviet and in that capacity passes on State Planning Committee proposals.

Maria Rozhneva would seem to be holding down three jobs—textile worker, legislator and housewife. But she manages them well—even to the cleaning and cooking. Her mother, a former working woman now on pension, helps out. At home, Maria discards her other two roles and becomes the loving wife and mother. She wakes Irina at six each morning, the seven-year-old complaining sleepy-eyed about "that bad morning shift" and why doesn't mother choose another. Maria braids the child's hair and sends her off to get dressed while she prepares breakfast.

At the table 12-year-old Volodya chatters away about his newest hobby. It's stamp collecting now. His hobbies change almost weekly. At first he worked at his music, followed that with photography, then decided his aim in life was to be a cosmonaut. Now he's wavering between flying into outer space and stamp collecting.

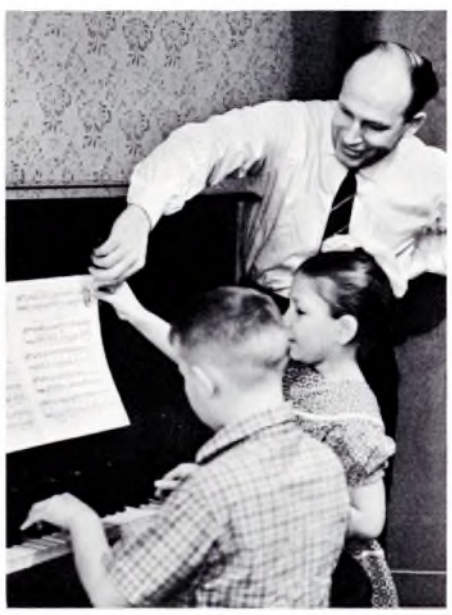
Husband Victor is an army officer and as busy as the rest of his family. Right now he's taking courses at an evening college to prepare himself for civilian life. But there is one inviolable rule in the Rozhneva household—no work on Sundays. That's when the whole family drives out to the woods several miles outside of town and Victor spends the day on the river with rod and reel.

Maria's hobby is cooking. She keeps a notebook near her stove. On one page you're likely to find this entry: "Put the meat through the grinder twice, season with onion and pepper, and add milk. . . ." the recipe for her famous Ural dumplings. On another page is likely to be a note about a conversation she's had with a constituent who dropped in with a problem while she was preparing dinner.

The deputy shows a delegation of visitors from Mongolia the mill's up-to-the-minute machinery.

A meeting of the executive of the Textile and Light Industry Workers Union in Moscow. Rozhneva has been campaigning for a ban on night work for women.

The rest of the family—Volodya, Irina and husband Victor, an army officer.



The female half of the family discusses the menu. The lady legislator is a notable cook.

RED-LETTER DAYS

AS VICTOR KUPRIANOV SEES THEM

WE SOVIET PEOPLE like to **celebrate. It must be in our blood. We** like to get together and be **merry.**

Any pretext is good enough. **Ivanov buys new furniture. He isn't happy** if there's no one there to **enjoy it with him. So he invites his friends and** they have a party. Vasilyev **redecorates his apartment. That too is cause** for a celebration. And then, **of course, there are all the red-letter days.**

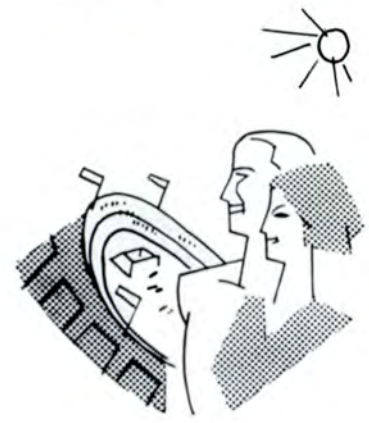
August gives us ample opportunities **for partying. Sunday, the fifth, is** Railwaymen's Day. This is the **occasion for celebrating on a nationwide** scale. On this one day **everyone refrains from railroad jokes. In the** morning, as my electric shaver **hums through its job, I invariably hum** along: "I must be nice **to railroadmen, I must be nice to railroadmen."**

Carnivals are held in **the parks for the occasion, and there are gala** concerts at all the theaters **and arenas. The radio schedules railroaders'** request numbers all day long. **And on this Sunday all referees, I suspect,** are partial to railwaymen's **teams in all sports. There's even something** for the male who stays home, **with his TV on and radio going full blast.** It gives him a reason to say **to his wife, "I think we ought to drink a** toast to the railwayman."

Saturday, the eleventh, is Physical Culture Day. That means parades and sports displays all over the country. The idea is to popularize physical fitness and get more people interested in sports. Also it's the day we make our resolutions not to skip our setting-up exercises. Actually, August is a fine month for skipping them, with the school children away at camp and wives and mothers-in-law off to the country with the little ones.

There's no wifely hand, then, to yank the blanket off and throw a cold wet sponge at you. But oversleeping won't help; you will be reminded later in the day to keep physically fit. At 11 A.M. the radio has setting-up exercises for men and women at work. At the factories the physical training instructor takes over, and everyone goes through what the British like to call "physical jerks." Incidentally, if you ever decide to visit the editors of *USSR* magazine, don't do it at 11 A.M. That's when all the editors and the office staff will be bending and stretching to keep fit. You'll have to join in, to be sociable.

A word to pensioners: Don't think that this physical fitness campaign is just for the younger set. Physical training for the past-middle-aged is the vogue now. They have two-hour sessions three times a week all year round. The old folks are enthusiastic about the idea. They say it's a wonderful antidote for frayed nerves.

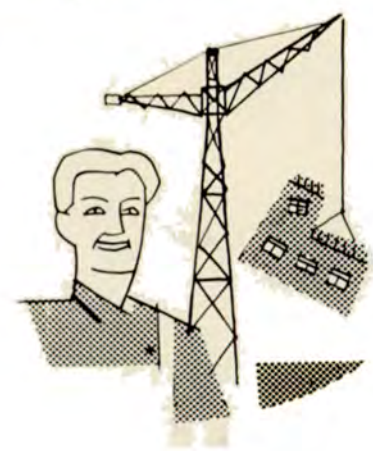


After an eventful and thrilling Saturday, the eleventh, full of big-league **contests and** gala sports parades, we wake up and discover that Sunday, **the twelfth, is** Builders' Day. The builders are doing a tremendous job on **our giant** construction program. As a consumer I'm grateful to them for **their** promise to give us all modern apartments. No more housing shortage, **no** more such moving appeals as: "Need Apartment Desperately. Am **Living** With Mother-in-Law."

On Sunday all parks hold building exhibitions at which our construction **workers** display their achievements. On the average 1,000 Muscovites a day move **into new** apartments. In two decades' time we will all be enjoying modern housing, rent-free. And no charge for public utility services, either.

When I was a boy, "building houses" was one of the most exciting games. **The dirtier you got, the** more fun you had and the more realistic it was. **We'd come home** with our shoes caked with cement and hands blackened **with tar.** My mother would explain that good little boys didn't get so dirty **and punctuate** her words with smart taps on my bottom. I took the taps **with** good humor, although I did wonder at the time how you could build **a house and not** get dirty.

The present younger generation is deprived of the pleasure we used to **have.** They don't build houses the way they used to. Everything is prefab. Huge trucks deliver rooms, and even whole apartments, ready-made to the building site, where they are assembled. The man operating the crane is the only one who can still talk about the romanticism of building.



Saturday, the eighteenth, is Aviation Day. The highlight is the big air show at Tushino Field near Moscow. It is not held exactly on that particular date; it is on some Sunday in the general neighborhood, depending on what the weatherman promises. More than a million Muscovites turn out for the show, which includes a display of new aircraft and a diversified air sports program—aerobatics, skydiving and anything else that a man can do in the sky.

In the old days, as you sat on the turf edging the field, you could spot the planes from afar, and before they were overhead you'd have time to discuss their comparative merits. Now, in our age of supersonic aircraft, by the time you hear the noise, the plane has already landed 100 miles away. The only way to see the planes at all these days is to watch your TV screen. And you have to listen to the explanations carefully, otherwise you'll never know what you're looking at, with all these swept-back wings, swept-up tails and swept-out something else.

Once I watched a father taking his son through the hangars and showing him the latest models. I envied him as he rattled off their names and commented: "This is a vertical take-off craft, that's a new turbojet, here's a flying wing, that's a flying boxcar, and this . . . that must be one of the new hush-hush models." I walked around what looked like a blunt cigar on wheels. On the far side I read the inscription KVAS. The only *kvas* I knew was our national drink, like your Coca-Cola.

Everything at the air show is thrilling. People have a lot to talk about. But the consensus of opinion is: "It's good to have all that. But it would be better to know that it will never be used."

Sunday, the twenty-sixth, is Miners' Day. On that day the morning papers carry a list of mine workers awarded government decorations. Reading the list takes most of the morning. Then come the festivities that mark all red-letter days. The younger miners like to get married on this day. Not a bad idea. They'll never forget their wedding anniversary.

This is also a day of celebration for us Muscovites who have never been near a mine and who have never seen or used coal. There are parties in all the parks, and Moscow families turn out in force. This is also about the time the children come home from camp and the college crowd gets back from vacation. For the young people, it's a perfect day for a dance and a walk in the park holding hands, as what day isn't. And for Mr. and Mrs. Muscovite, the August heat is a perfect excuse for a bottle of beer. On the way home he'll buy her a bouquet of flowers just to recall their courtship days. ★

COMMEMORATIVE STAMPS

BY ILYA ZBARSKY

The celebration days established in honor of workers in Soviet industry and transport are commemorated in stamps. In August we have several such red-letter dates—for miners, builders, aircraft workers and railwaymen.

Miners' Day, first celebrated in 1948, was memorialized in a series of three stamps in 30- and 60-kopeck and one-ruble denominations (in the old currency).

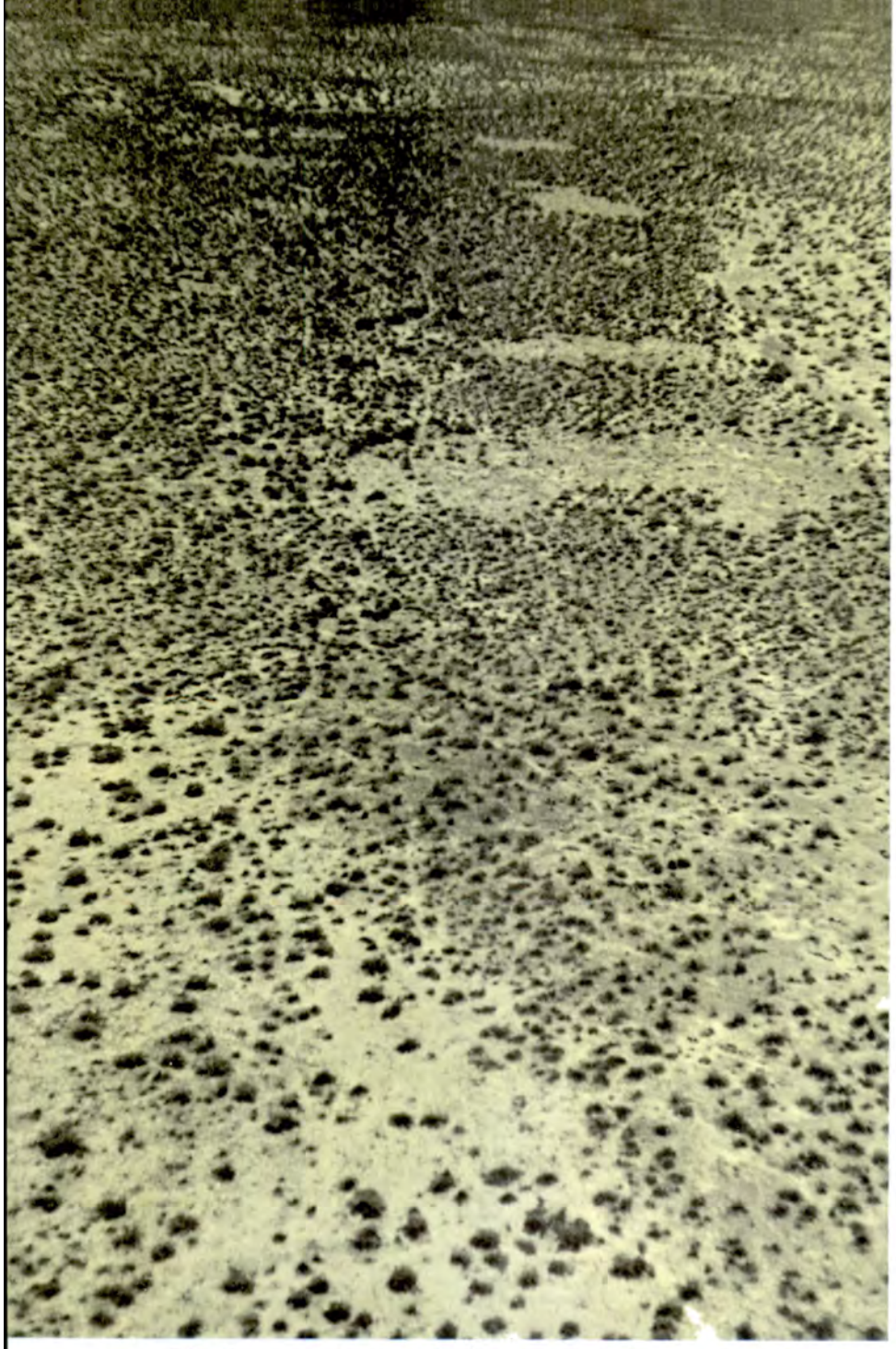
In 1956, to mark Builders' Day, a three-stamp series in 40- and 60-kopeck and one-ruble denominations was issued. One of them shows the construction of a large-panel prefabricated house, another the construction of a factory.

The first Aviation Day stamps—10, 30, 40, 50 kopecks and one ruble—were overprinted "August 18, USSR Aviation Day" in different colors. They were not circulated without the overprint.

Physical Culture Day falls in late summer and is commemorated by a large number of stamps.

Railroad workers have their day in August. The commemoratives picturing the big diesel locomotives used in the Soviet Union are particularly interesting.

In addition there are Soviet Army and Navy Day, International Women's Day, Press Day, Radio Day, Children's Day, and several others. ★



The Hungry Steppe was a dead, sun-scorched plain a few years ago.

The best way to see this great stretch of newly revitalized Central Asian desert.

HUNGRY STEPPE

Construction work continues. Prefab irrigation canal sections ready to be set into position.

"THE SOIL of the Hungry Steppe is a dark gray clay. In some places there is *solonetz* (strongly alkaline soil). The wells are the only water source, and the water invariably tastes salty. The Hungry Steppe deserves its name—in the summer it is a dead, sun-scorched, yellow-gray plain with no life whatsoever. The herds are driven off, the birds fly away, and even the turtles go underground. Scattered about here and there are the bones of camels and horses, and broken stalks of umbellate plants that look like bones, which make this bare land even more oppressive." This is from *Turkestan Region*, a book published in 1913.

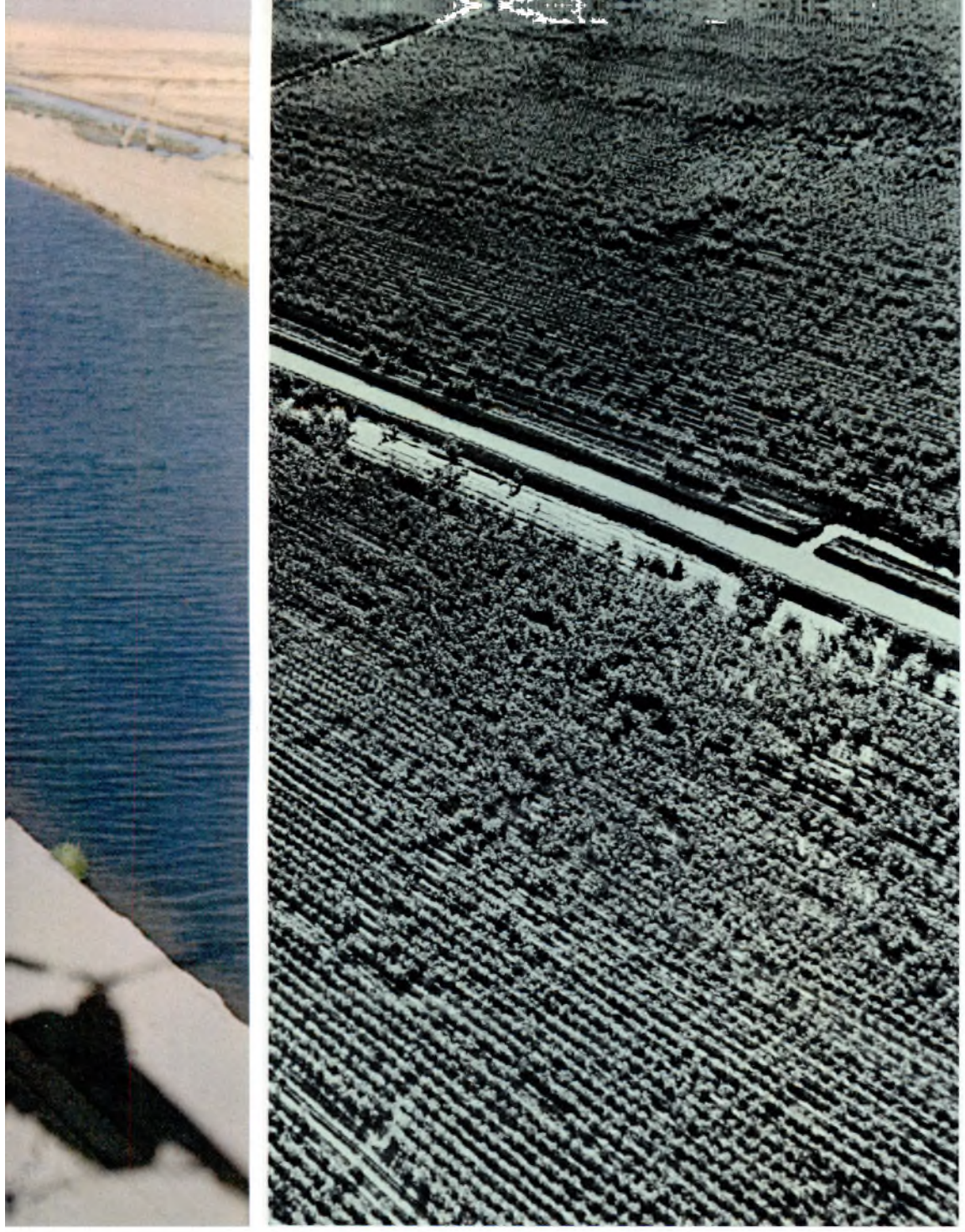
The description still fitted the country we were flying over in an Mi-1 helicopter. But our pilot, Vladimir Kamalov, suggested we reserve judgment until we reached the newly developed part of the Hungry Steppe, a vast area where three Central Asian republics—Kazakhstan, Uzbekistan and Tajikistan—meet.

He had been flying the Tashkent-Samarkand route for about a year when he was assigned to Yangi-Yer. "I went there the usual way," he said, "checking the route with the map from time to time. Then suddenly I began to have my doubts as to whether I was on course. The map said there should be desert under me and what I saw were cotton fields. 'Well,' I told myself, 'they probably cultivated just this short stretch,' and I continued on.

"But what the devil! There it was again. The map said desert and I was flying over a good-sized community with two-story brick houses and other solid-looking structures. This was no mirage. And the map was a recent one, put out in 1960. There's something funny here.

"I got in touch with my unit by radio and checked my instruments. Everything checked out. But five minutes later another urban-type settlement appeared. And once again my map had no indication on it, no cotton plantations, no automobile roads. Our cartographers are lagging behind life. One short year and their maps are completely out of date."

He was right. These days our maps become obsolete rapidly. In 1958, before the Twenty-first Congress of the Communist Party, a map of the Uzbek Republic came out. And last fall, at the time of the Twenty-second Congress, a new



Acre upon acre of cotton fields outlined by a network of irrigation canals.

BY VLADIMIR KRUPIN

PHOTOS BY DMITRI BALTERMANTS

one was published. Let us see what has happened to the Hungry Steppe between the two congresses. A light blue ribbon—the South Hungry Steppe Canal—now stretches from the Syr Darya to the sands of the Kyzyl-Kum. This man-made river, with a flow of 400 cubic yards per second, is transforming the dead plain into fertile soil. The new town of Yangi-Yer (New Land) is the center of operations in the campaign to revitalize the Hungry Steppe.

We talked to Kharmat Khadyrov, an elderly bearded man on one of the state farms. In the spring of 1958, he told us, he and a friend, Mamur Khajiyev, unloaded a truckful of young fruit saplings and planted them on the barren steppe. Khadyrov had looked forward to that moment for many years. For its sake he had worked as a pick-and-shovel man on the construction of the Farkhad Hydroelectric Station and had then taken a job on the Farkhad State Farm.

We were talking in a blooming peach orchard —he had planted the saplings.

"A wonderful peach," I said, biting into the sweet, succulent fruit. "That old name—Hungry Steppe—hardly seems appropriate any more."

The Farkhad State Farm, where Khadyrov still works, has 620 acres of orchards. Only a beginning, he says. In the southern part of the region 125,000 acres of vineyard are being laid out. The aim is to replace Samarkand as the center of the currant industry.

This grand experiment in natural regeneration brings visitors—reporters, government officials, irrigation engineers—from every continent. I met Professor Pinto, a visitor from Portugal and a rather reserved man, hardly one inclined to enthusiasm. He said, "Incredible! What a tremendous sweep! I find it hard to believe that so much was done, and so quickly."

I agreed with the professor. It must have been harder for early settlers like Khadyrov to believe that the rusty-looking, parched clay would be growing fine peaches. Hard even now to accept the prediction made by some Hungry Steppe planters that only ten years from now the region will be growing a million metric tons of cotton. Particularly hard, when I saw how sudden and devastating an attack by the elements can be. In a matter of hours I watched the cotton plants on a small, newly cultivated section near Kyzyl-Kum wither, burnt out by the hot desert winds.

Water, that generative fluid, can be lethal if it is not handled properly. Too much creates swampy areas at the edges of the fields, which acquire a white, salty crust when dry. This is a two-front battle being fought here—to prevent salt formation and to cut water loss.

From the air, the country looks like a checkerboard. Gray-blue arrows—the concrete trough systems—divide the cotton fields into green squares threaded with dark, flexible hoses that reach to the furrows. Hovering over the transparent mist of the water sprinklers are the colors of the rainbow. From the tail of our plane a gray stream of chemicals pours out, soil building going on!

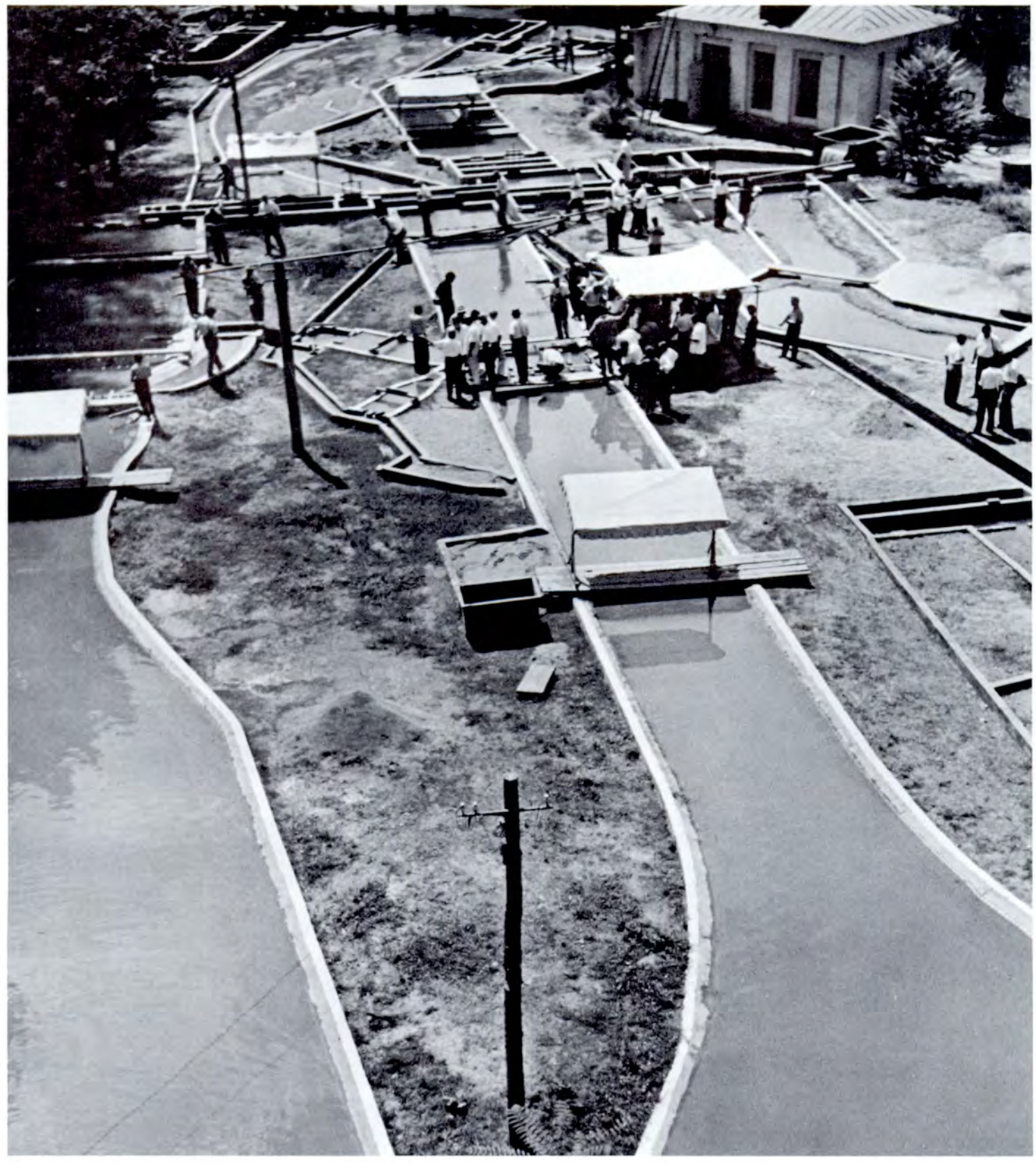
State Farm No. 6 plans to be harvesting 1,600 pounds of cotton per acre this year. The forecast was much more modest in the spring. The plantation is a new one, set up only a little more than a year ago. It stretches over 13,500 acres—a problem in a region where you need one man for every two and a half acres to do nothing but water the fields.

There was no sign of water this spring. But the growers gambled that it would come when the crop needed it. It came.

At State Farm No. 6 we saw what looked like an entire tent town at the edge of the planted area. Some hundreds of thousands of bees are kept there, we were told, having been brought to these blossoming cotton plantations from places 50 to 100 miles away. The tents shield the apiaries from the sun.

One last item about our visit—we thought it symbolic. At the Farkhad State Farm they had originally marked the boundaries with willow saplings instead of the usual pegs. The vineyard watchman showed us the spot—a shady wooded area now, after only three years.

Water here was once doled out practically by the spoonful.



The Water Conservation Institute experiments with irrigation methods for the Hungry Steppe.

Irrigation and modern machines like this one have created a verdant garden out of desert.

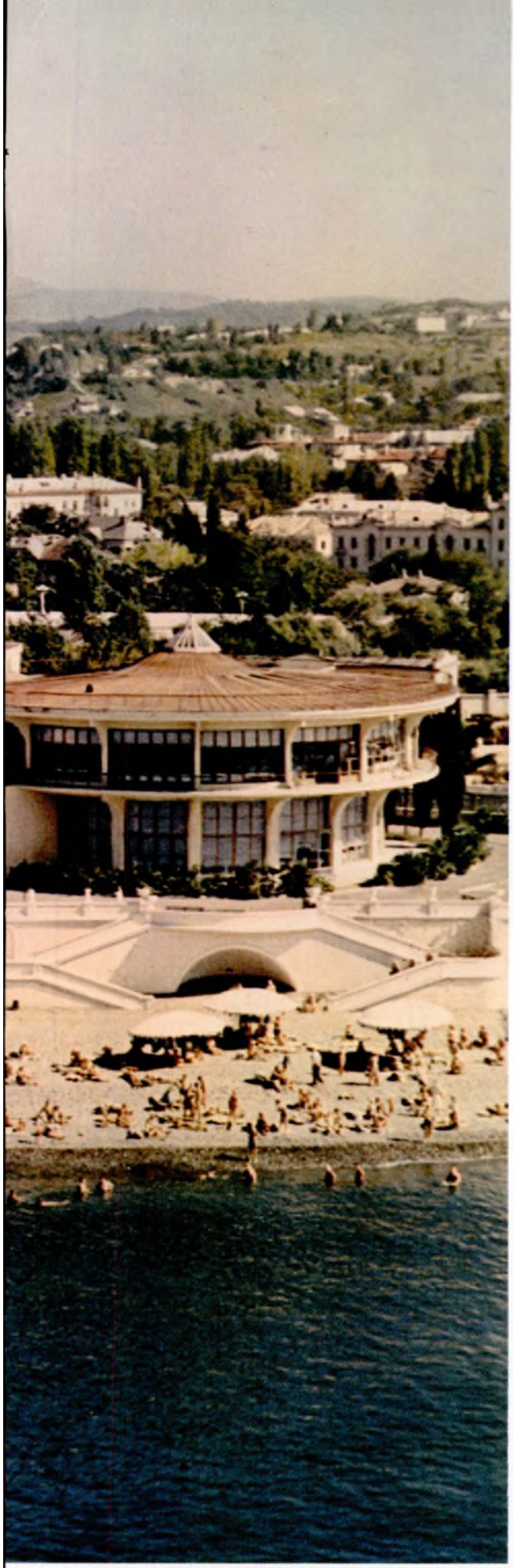
Peach orchard at the Farkhad State Farm. Kharmat Khadyrov grows new varieties of fruit.

A community of several hundred thousand bees borders the blossoming cotton plantation.

One of several Hungry Steppe settlements of grape and cotton growers too new for the map.

SOCHI

PHOTOS BY IVAN SHAGIN



Each hotel in this famed Black Sea vacation town has its own landscaped park.

Sochi lies in an amphitheater of emerald-hued mountains with snow-topped summits.

Miles of sun-flooded white sand beaches lined with resort hotels and sanatoriums.

Ships of all countries bring vacationers to Sochi. The Rossiya, *a Soviet liner.*

THERE are few spots in the world lovelier than Sochi. Its warm sea, scenic beauty and unrivaled climate have made this part of the Black Sea coast of the Caucasus one of the largest and most popular resort centers in the Soviet Union.

Approached from the sea, Sochi—an amphitheater of coastal mountains with snow-covered summits and slopes carpeted with emerald green vegetation—is a sight never to be forgotten. The town and sanatoriums, many of them former palaces, are set in this natural grandeur.

Half a century ago warm sulphur springs were discovered in Matsesta, near Sochi. In a special decree signed by Lenin and issued during the first years of the Soviet Government, this whole section was set aside as a health resort area for working people.

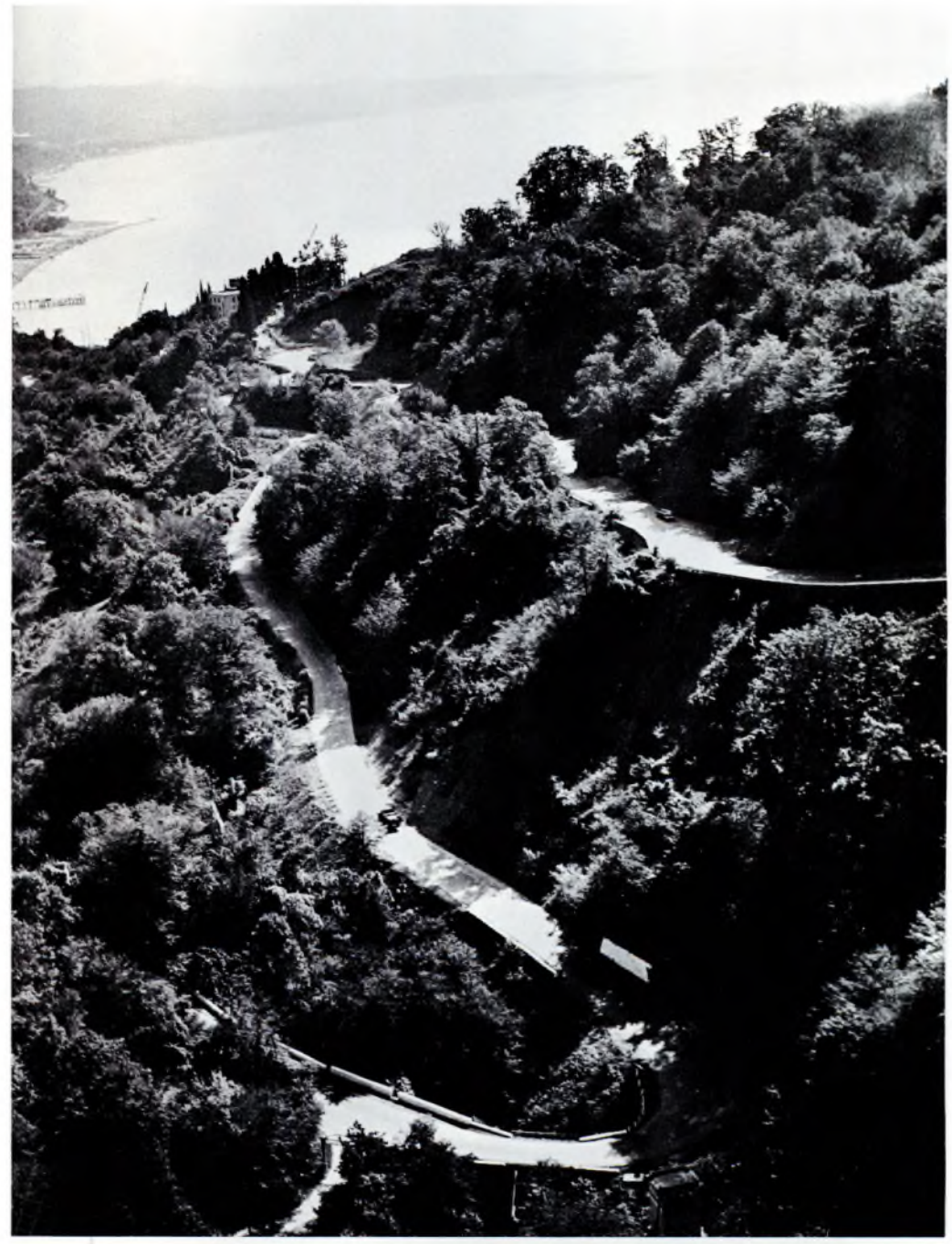
More than half a million vacationers come here every year for rest and treatment—miners from the Donbas, steelmakers from the Urals, scientists, textile workers, railroad men, collective farmers.

The Sochi-Matsesta area keeps expanding. More than a hundred million rubles are allocated by the government annually to build new sanatoriums.

Sochi has its own theater and several concert halls. Its bathing beaches stretch for dozens of miles.

On a recent visit to the resort, Jean Can, a French journalist, commented, "The Soviet Union now has its own Riviera, just as beautiful as the French Riviera, but very different. Everything here was built by and for the people. Fifty years ago Russians dreamed of going to the French Riviera; today French workers dream of going to the Caucasian Riviera."

Lobby of one of the sulphur spring sanatoriums for which Matsesta is noted.



(Left) Stairway to the sea. The luxuriant semitropical vegetation is typical.

Mountains and sea combine to make this the country's most popular resort area.

Half a million people come here every year for treatment, rest or just fun.

Yevgeni Belenkov, 40-year-old machinist, is studying engineering at night.

The engineers and shop workers pool their know-how at these informal sessions.

MEN PLUS MACHINES

BY NIKOLAI STEPANOV

PHOTOS BY LEONID BERGOLTSEV

Lathe operator Konstantin Kislyakov is the author of a book on work procedures.

THE SHOPS at the Kharkov Turbine Plant are huge, as are the components to be machined and the tools to machine them. But all this bigness, we found on our visit, goes hand in hand with micrometer precision and split-second accuracy.

We watched the assembling of a new 100,000-kilowatt-capacity turbine with tens of thousands of parts. A minuscule error in turning one of the components, and the results of many months' work by designers, engineers, technicians, machinists could very well be spoiled. Not to speak of slowing down the construction of some hydroelectric power station on the Volga or the Yenisei.

Some of the components are so intricate that even a simple outline traced on paper looks like a confusion of lines to the layman. The men at the machines see each of the lines in three dimensions. They are true artists in their craft, people with clever fingers, clear and searching minds.

We watched turner Yevgeni Belenkov, a man of forty. His turning-and-boring lathe was machining a component for the big turbine. To give you an idea how big "big" is—the blank Belenkov was working on weighed nearly 400 tons, its diameter measured 75 feet. He had to machine it within several microns—a micron is a thousandth of a millimeter!

His job requires not only skill but also extensive technical know-how. They call Belenkov a "near engineer" at the plant and will probably be dropping the "near" before long—he has already done five years of study at the polytechnical institute by correspondence.

We met turner Konstantin Kislyakov, another "near engineer," at his apartment. That was a "free" evening for him, he told us; he was going to spend it working on the manuscript for a booklet—the fourth he will have published—on his work experience.

Kislyakov told us that on his last few vacations he had toured several European countries. He spent a good deal of his travel time going through factories and talking to machinists.

When he was being shown around the Renault plant in France one of the engineers put this question to him. "Don't you find this true, that with today's mechanization the machinist is being replaced by the machine; the operator really doesn't need much skill any more."

Kislyakov disagreed. "Judging from our experience, it's just the other way round. He needs to know more than he ever did before. He not only picks up more know-how with every new machine installed, but his entire mental outlook broadens."

He read pieces of his manuscript aloud to us in which he makes the same point. He estimates that fifty per cent of the men at the plant study at evening and correspondence institutes, and another twenty-five at general and technical evening secondary schools. To meet the great demand of operators for the theory behind the machine work they do, the plant has organized a special training center.

The machine in the Soviet Union, say men like Kislyakov and Belenkov, is narrowing that age-old gap between mental and manual labor. ★

MASTER BOOK

VLADIMIR FAVORSKY is known for his fine woodcuts in his own country and far beyond its boundaries. His originality and talent, the wisdom and honesty of his esthetic credo, the high-principled stand he takes on all matters creative and human have won this distinguished artist the love and esteem of people everywhere.

His work has influenced graphic art not only in the Soviet Union but throughout the world. Produced at various periods in a highly creative life, the engravings give esthetic expression to the attitudes and ideals of today's man. Illustrator of the works of Pushkin, Tolstoy, Gogol, Krylov, Shakespeare, Mérimée, Burns, Heine and other great novelists and poets, Favorsky is a perceptive and deep-thinking interpreter. His woodcuts share with the viewer the wealth of ideas and emotions, the pleasure and the understanding he himself gets from books.

His creative principles are immutable. He probes into the author's world of images and ideas, trying to fathom the work's meaning, style, nuances. He loses more of his own individuality thereby but gains in uniqueness and versatility of expression. His work is always recognizable, no matter the period, by the purity and clarity of his plastic idiom.

He has concentrated in the main on wood engraving and has achieved well-nigh perfect mastery of that medium. Now his lines define a clear mass and picture its solidity, now they convey an intricate play of light and shade, the smooth surface of water, the lacy crown of a tree, the severe contours of an architectural ensemble.

In his hands the chisel is used to tell a story on several literary and graphic planes. His people are one with their literary images. His illustrations for the ancient epic *The Lay of Igor's Regiment,* done in recent years, or for Pushkin's *Boris Godunov* and *Little Tragedies* are good examples. His interpreta-

[LLUSTRATOR

BY VOLYA LYAKHOV

tions are artistically and philosophically true. He extracts that universal element which makes them as meaningful today as they were in the writer's own time. Nevertheless, Favorsky's characters are hardly schematic.

His illustrations for Pushkin's works show these qualities more strongly than in his other work. The reason for this lies, firstly, in the artist's feeling for the national texture of Pushkin's poetry and, secondly, in his having done so much of Pushkin that he is most sensitive to the poet's meaning.

Favorsky was awarded the 1962 Lenin Prize for these illustrations, testimony to the country's appreciation of his artistic services.

His art is in the tradition of Russian realism so deeply rooted in the country's life and character. It is a product, on the one hand, of attitudes of many generations toward the world, nature and man; and, on the other hand, of the spirit of innovation and creative search without which all art trends die.

His art and his life exemplify the Russian spirit of obligation and duty to one's community of fellow men. Forty years ago, in unheated classrooms, he gave the youth an understanding of art. And in the war against fascism he lost two of his sons at the front. In the one, Nikita, we lost an artist of exceptional promise.

Ever since childhood Favorsky has lived in an atmosphere of art that dominates his home to this very day. His daughter works in ceramics and his young granddaughter has begun to make linoleum cuts.

Many artists, young and old, visit the master for advice. He has written copiously on problems of art content and form. His are not abstract generalizations. Artists, architects and actors consider him their mentor, the man who has helped them find themselves in their own art. His disciples include etcher and painter Andrei Goncharov, cameraman Sergei Urusevsky, and Sergei Obraztsov, founder and director of the finest puppet theater in the Soviet Union.

In any Soviet art exhibition Favorsky's name invariably heads the list of book illustrators. An instance is the Soviet Children's Book Exhibit shown in the United States last year. The books he illustrated attracted marked attention for their artistry and content.

Some viewers expressed surprise that so gifted an artist chose to illustrate children's books. There is nothing strange about that. Favorsky's credo is to serve life. What better way than to teach children and give them pleasure!

When Favorsky incises the lines in a landscape illustrating a story of Leo Tolstoy or Mikhail Prishvin, when he does a woodcut for a Robert Burns poem about young love, he is defending man's right to happiness, serving that life to which his work is dedicated.

VLADIMIR FAVORSKY ON ART

. . . Oil paintings are seen only by those who visit the museums. Black-and-white drawings come right into the home in book illustrations and prints. Clearly enough, in this time of revolution and cultural awakening, with great masses of people responding to the fine arts, black-and-white drawings have an important role to play.

. . . Every work by an artist should be a revelation for the viewer, helping him to see ordinary things and customary phenomena in a new light.

. . . Many young artists and writers have asked me how they can be original. In the first place, I tell them, they should not even think about it. A conscious striving for originality makes for poor art. Studied originality usually goes hand in hand with emasculated feelings, thoughts and truths. The individuality—originality—of an artist derives primarily from his ability to see and depict life.

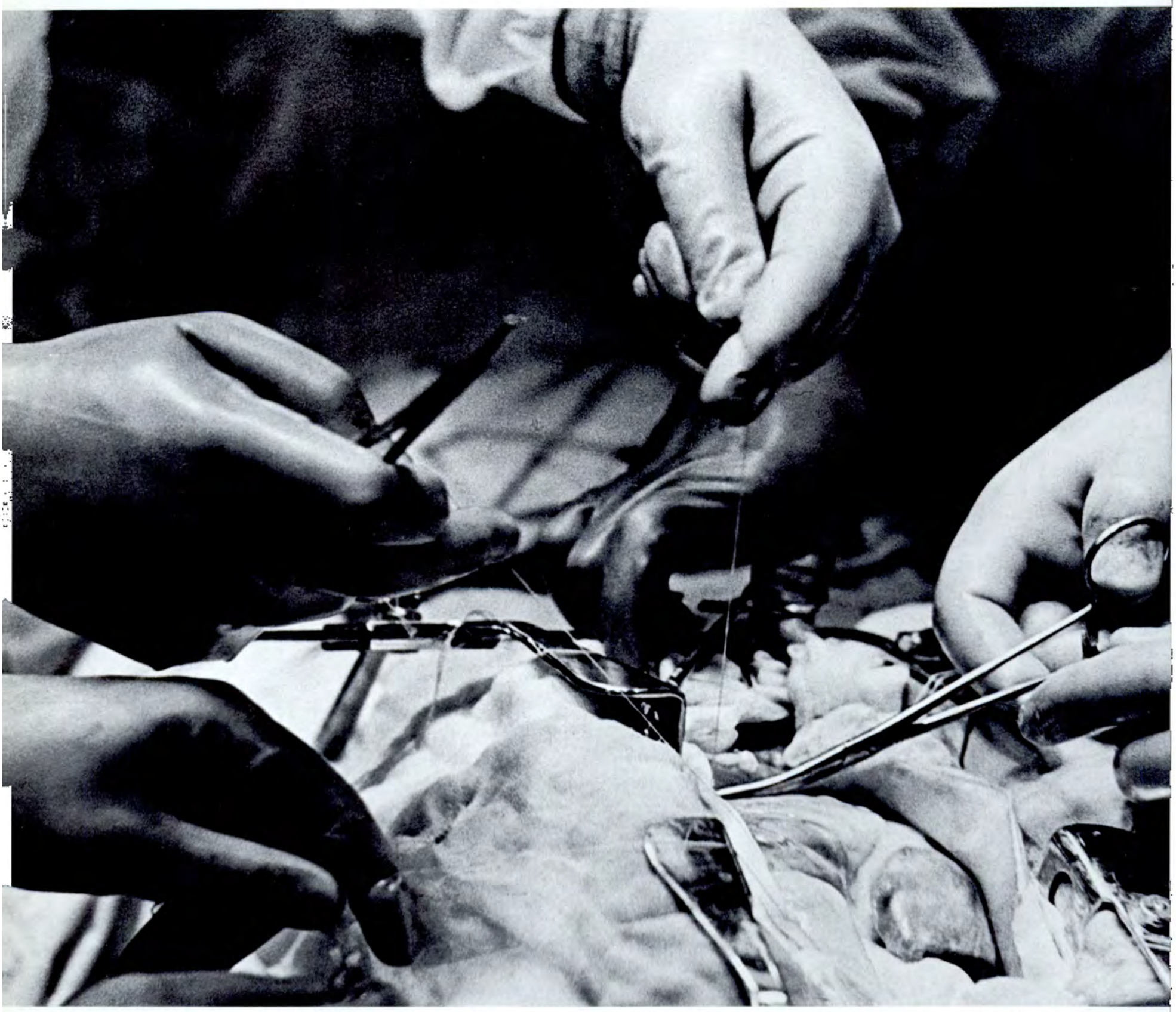
Illustration for stories by Mikhail Prishvin

For The Avaricious Knight *by Alexander Pushkin*

For a volume of Shakespeare's plays

For a poem by Robert Burns

For Pushkin's Boris Godunov



At the Moscow Institute of Cardiovascular Surgery. Heart surgeons today make use of plastic heart septums and machines to circulate the blood.

THERE are 15 people in this operating room, their attention centered on the open chest of the patient and the pulsating heart exposed to view.

Under the narcosis mask is Leonid Artemyev, a young worker from Kirov Region with a serious heart defect. Before he was born, something went wrong with the little pulsating tube that normally develops into what is perhaps the most perfect pump nature ever devised, and his heart was left without an interatrial septum.

It was only 15 years ago that the noted surgeon Academician Alexander Bakulev performed the country's first successful operation for a congenital heart defect. Four years later he was successful in correcting an acquired heart defect. At the time there were barely ten surgeons in the world who would venture such an operation. Now there are thousands of people alive and well whose hearts have been repaired by surgery.

They will tell you that they owe their lives to the surgeon. But that is only partially true. They are alive because of the joint work of people in many specialties. At the Institute of Cardiovascular Surgery of the Academy of Sciences in Moscow we have surgeons, therapeutists, X-ray specialists, anesthesiologists, physiologists, biochemists and engineers gathered round the operating table.

Many specialists in medicine and other fields examined Leonid Artemyev before the decision to operate was reached. Some checked the electrical activity of his heart muscles. Others, after making the blood visible for X-ray investigation, looked at the defect in the septum and determined its size. Still others made intricate chemical analyses. And, finally, a group decided on the best type of artificial heart to use.

The operation almost finished, the machine that has served as a substitute heart for the 40 minutes of surgery is switched off, and the final sutures are made in the thorax. The patient is carefully lifted from the operating table.

At his bedside a special solution is fed into his vein, drop by drop, oxygen is pumped into

FIFTEEN HEARTS AND ONE

BY MIKHAIL TSENTSIPER

PHOTOS BY ALEXANDER UZLYAN AND YEVGENI UMNOV

A mechanical heart. The machine does the work of both the heart and the lungs while the surgeon is operating.

Professor Sergei Kolesnikov (on the right) is operating and Grigori Tsukerman assisting. Open-heart surgery is no longer a rarity. The institute has taught hundreds of doctors the technique.

These nurses are in charge of the instruments during a heart operation. The patient's life depends on their functioning properly

his lungs and other pumps suck in air and remove fluid from his thorax. The tiny beam of an oscillograph records the curve of the heart's work and is carefully watched for several days by the attending physicians and nurses.

The institute has taught hundreds of doctors the techniques for heart surgery. It will not be long before the operations now performed in only a few centers will be done in a large number of special hospitals.

In the medical sciences, no less than in physics and chemistry, what seemed fantastic only yesterday is today's commonplace. Very soon we will find nothing unusual in stopping heart action for hours by "deep freezing" the body, or in replacing all defective valves of the heart and the blood vessels that feed its muscles. It is altogether likely that a small machine may be devised to do the work of the heart completely for a period of years. The institute already has tiny guides for heart pulsation. These can be sutured under the skin, to keep the heart pumping at a given rate for several years.

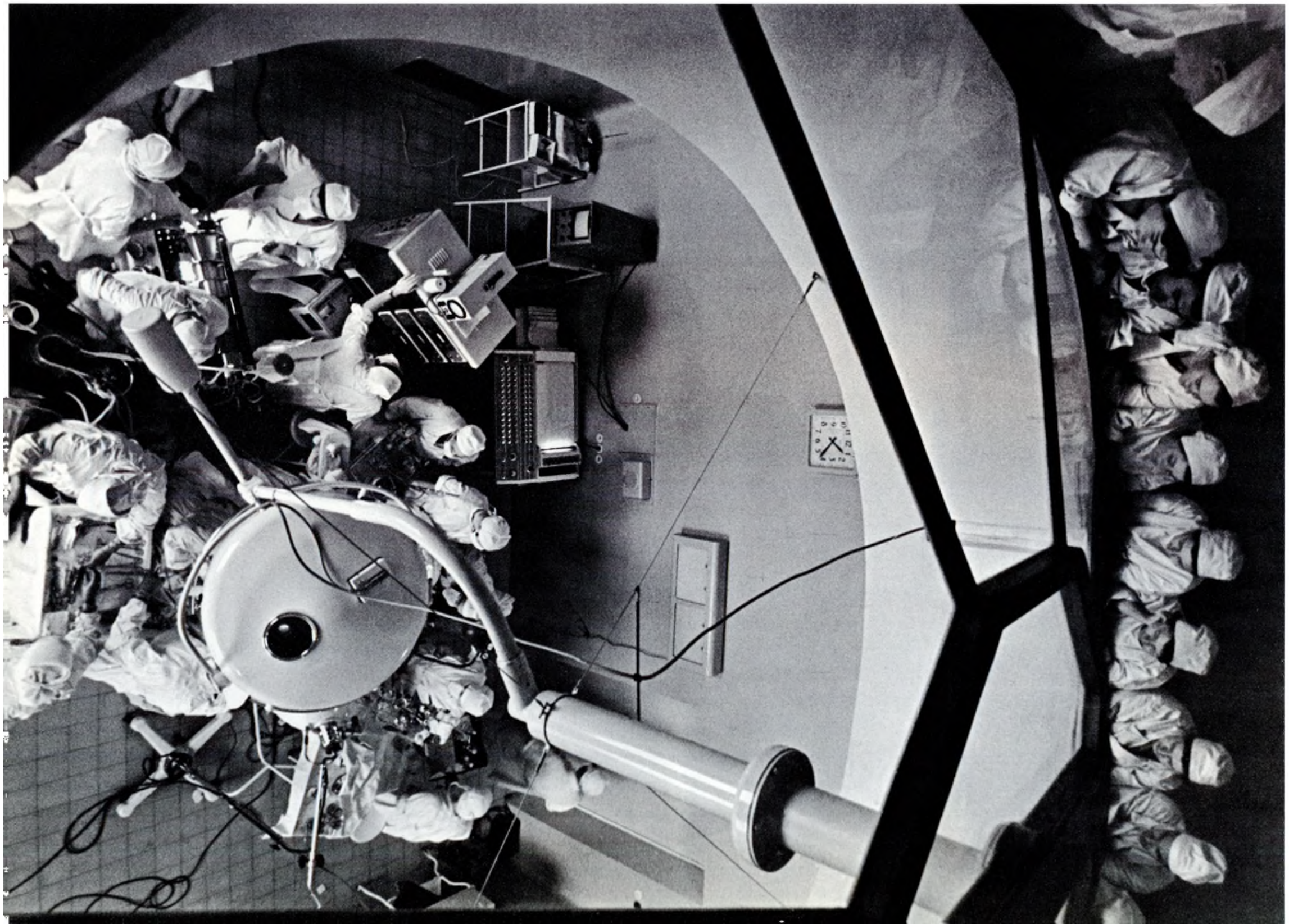
Besides the Moscow Institute of Cardiovascular Surgery—the world's largest of its type, with 250 beds—there are about 100 other clinics and hospitals in the Soviet Union that do cardiac surgery. Between them, they have done many thousands of successful operations.

Such eminent American surgeons as Drs. Blalock, Morrow and Beck have praised the scope of the institute's work and its unique equipment. They spent several days there last summer.

The cost of cardiac surgery with artificial blood circulation is considerable. The necessary materials alone run somewhere around 500 rubles, let alone payment to the medical personnel involved—surgeons, anesthetists, nurses, etc.—hospitalization, the two- or three-week preoperative examinations, the postoperative treatment and the rest.

An expensive business, but not for the patient in the Soviet Union. He gets it all free. ★

Modern surgical techniques and efficient instrumen make for a positive prognosis of heart disease toda



CHILDREN'S TV

BY NIKOLAI ANASTASYEV

PHOTOS BY ALEXEI KOLLI

THE APARTMENT HOUSE I live in is a big one, and it has its normal quota of children. Their noises vary with the seasons, but the intensity is a constant factor. Summers you hear soccer noises coming up from the courtyard; winters, ice hockey noises. The other seasons have their own special noises.

But spring or summer, fall or winter, each day at 5 P.M. a profound silence settles on our courtyard. This is the hour Moscow Central TV Station starts broadcasting the children's programs, and youngsters switch on their sets and sit with eyes glued to the screen, learning, discovering, marvelling.

Programs for this large and critical audience are prepared with more than the usual care. The children's division of the station is a whole institution by itself, with its own writers, editors and production people. It prepares broadcasts on everything under the sun—past, present and future—from the discovery of the wheel to interstellar spaceships.

You want to know how the earth originated? Tune in to a program called "A Hundred Million Years Ago." You like stories? Here is a dramatization of a Charles Dickens' novel, a play by Alexander Fadeyev, a story by Jack London. Interested in old civilizations? Listen to "A Day in Ancient Greece."

The preschool-agers' favorite announcer is Nina Kondratova. "Auntie Nina" is what they call her in fan letters they dictate to their mothers to send off to the studio. She and her partner, puppet rabbit Tyopa, show the tots how to cut out paper butterflies and teach them other entertaining and useful things on the "Skilled Hands Hour." Theirs is a very absorbed and attentive audience.

For the younger teen-agers, the 13-year-olds and thereabouts, the TV has "How to Build Models," fascinating sessions with real excavators, lathes and rockets. That the youngsters take the program seriously is evident from the models they often bring to the studio.

"Angry Pages" is a charming vaudeville program with a large children's audience, in spite of—or perhaps because of—the fact that the characters invariably get into one variety of mischief or another at home or school.

The Young Pioneer magazine "comes out" the last Saturday of each month. It shows viewers what members of this children's organization—the largest in the country—did the past month.

"Literary Victorina" is another engaging program—about books, naturally—run by funny old bookworm Pyotr Petrovich, a wonderfully entertaining teacher.

Vastly popular with youngsters are sagas of heroic deeds and fantastic journeys into the unknown.

Volodya, my neighbor's boy, who loves to throw tricky questions at me, plied me with this one. "I bet you don't know who Lado Ketskhoveli was."

Ketskhoveli was a Georgian poet and revolutionary who was murdered in prison in 1903 by the czarist gendarmes.

I said, "I know who he is, but tell me, how do you happen to know about him?"

"TV," he answered blandly. It's the source of a good deal of his unexpected information. These true stories of past and present fighters for justice are dramatized in "People We Should Emulate." The hero of one of the programs was the soldier Musa Jalil, gifted poet of the Tatar Republic who was tortured to death in a fascist concentration camp. Another, that Volodya and I saw together, was about a Pioneer in remote Berezaika who rescued her drowning girl friend.

These tales of great deeds of the past and the everyday heroism of ordinary Soviet citizens set Volodya dreaming, as they do all youngsters.

One of the broadcasts, aptly called "Winged Dreams," was played by the heroine herself. Valentina Grizodubova, who captained the famous *Rodina* plane in the thirties, told her young listeners about the record-breaking long-distance flight she and crew members Marina Raskova and Polina Osipenko made from Moscow to the Far East. Her narrative was illustrated with actual photos. Their forced landing in the taiga, the hardships the flyers endured in the thickly forested country, the planes searching for them for days on end, and the happy moment they were found alive and well made a thrilling real-life tale.

Most of all, the juniors love adventure and popular science films. True, there aren't enough of either.

Thousands of letters pour into the studio daily to Shabolovka, Children's Editors, an address youngsters all over the country know. The letters query, suggest, answer questions that the latest Victorina program posed, and tell how much the writers liked or did not like this or that program.

After each of Nina Kondratova's "Entertaining Alphabet" hours, she gets mail illustrated with drawings of things whose names begin with the letter of the alphabet she talked about so entertainingly. The drawings may not be very representational—a horse, for example, may look more like a couple of compasses—but the spirit is there. Curious Alyosha Pochemuchka (from the Russian word *pochemu*, meaning "why"), the puppet who helps Nina teach the children how to draw and model clay, also gets letters with answers to the questions he asks. The studio has been running an exhibition of the works of his pupils.

To the TV people these letters are a happy reward for all their work. It means their audiences are listening and looking and learning.

Volodya asked me the other day, after I'd spent a couple of evenings listening to children's programs with him, how I liked them. I said, "Most of what I saw I liked; there were some programs I didn't. But then I'm not a kid. The main thing is that the TV people know what Stanislavsky said." I interpolated to explain that Konstantin Stanislavsky was a talented stage director and actor, but I needn't have bothered—he had heard all about him on TV. "What he said was that for children you have to do what you do for grownups, only better."

A WEEK'S PROGRAM FOR CHILDREN

MONDAY

P.M.

(First Program)

5:20—"Ring Out, Young Pioneer Song!" Honored Art Worker of the RSFSR Vladimir Loktyev teaches a new Pioneer song.
5:55—"A Hundred Days at the Equator," story of the naval expedition made by the research ship *Vityaz*. (For older children.)
6:30—"Young Leningraders Prepare for Young Pioneer Celebrations," to mark the 40th anniversary of the Soviet children's organization.

(Second Program)

6:00—"Our Daily Dozen," gymnastic exercises.
6:15—"Know More about Your Country," an excursion over the Moscow countryside. (For elementary school age.)
6:50—"The Military Secret," a film about World War II featuring the patriotic feats of Soviet children.

TUESDAY

(First Program)

5:40—"The Mailman and Mail." (For preschool and elementary school age.)
6:30—"The World of Adventure." (For junior high and high school age.)
9:30—Program by young amateur actors.

(Second Program)

6:15—School News.
7:00—"The Care of Birds," (a film).

WEDNESDAY

(First Program)

5:05—"Brave Youngsters," Leningrad Puppet Theater performance, broadcast from the Television Theater.
6:30—"From the Young Pioneer Chronicles," the traditions of the school Young Pioneer organizations.
6:50—"Nature and Man." Documentary films: *Man, the Master of the North* and *Our Friend the Starling*.

(Second Program)

7:00—"What is Resonance?" (For older children.)
7:30—"Moscow Trademark," broadcast from the assembly shop of a portable typewriter factory.

THURSDAY

(First Program)

5:35—"Your Red Tie," broadcast about Pioneer traditions.
6:30—"The Secret of the Green Leaf," the work of Academician Timiryazev on the physiology of plants. (For junior high and high school age.)
8:00—"Song Helps Us to Build and Live," composer Alexandra Pakhmutova and her songs.

(Second Program)

7:00—"TV Magazine *Youth*." "Moscow Prepares for the YCL Congress," "A Portrait of Our Contemporary," "Out with the Idlers!" and "Youth in Soviet Art."
8:30—"The Distant Past," (latest expedition of Soviet archeologists).
9:00—"Let Our Hearts Beat," from the cycle," Our Contemporary." New work done by young scientists. (For junior high and high school age.)

FRIDAY

(First Program)

1:00—*Old Man Khottabich*, a film about how schoolboy Volka let a kind genie out of a bottle and got him to help him at school.
5:45—"Youth Reports." YCL'ers of Moscow and Leningrad schools compare notes. (For older children.)

(Second Program)

6:10—"Stories About Metal." The production and use of aluminum.
7:30—"There Are Such Cities in the World and Such People on Earth," the city of Kachkanar, in the Ural Mountains. (For junior high and high school age.)

SATURDAY

(First Program)

12:00—"Journey into the Land of Drawings." Broadcast from the TV studio of Gorky City. (For preschool and elementary school age.)
1:30—"Hello, Land of Young Pioneers!" (Film.)
5:00—Concert by the boy's chorus of the Gnesin Music Teachers Training Institute in Moscow.

(Second Program)

5:45—Scanning the pages of the magazine *Around the World*. (For junior high and high school age.)
7:00—"Uncle Styopa Visits." Sergei Mikhalkov reads his poems for children.

SUNDAY

(First Program)

4:00—"Poem of Youth," premiere of television play by A. Musatov about Hero of the Soviet Union Klava Nazarova.
5:45—"Hello, Finland!" (Preparation for the Eighth World Festival of Youth and Students.)

(Second Program)

12:00—"Gift to Moscow Pioneers," the opening of the Palace of Young Pioneers.

PHYSICISTS OF GEORGIA

BY ELEFTER ANDRONIKASHVILI

DIRECTOR, GEORGIAN INSTITUTE OF PHYSICS
MEMBER, GEORGIAN ACADEMY OF SCIENCES

PHOTOS BY VICTOR RUYIKOVICH

Mt. Elbrus, where Georgian physicists study the particles that make up the atomic nucleus.

With this huge electromagnet scientists can study particles of the highest energy levels.

MOST PEOPLE are aware of the work being done by scientists in learning about the structure of the atomic nucleus and controlling its energy. There is much less general knowledge of their unremitting efforts to determine the properties of the particles that go into the formation of atomic nuclei.

For decades we believed that these particles, protons and neutrons (their common name is "nucleons") are elementary, that is to say, they have no internal structure. But as more and more of these "elementary" particles, including mesons of various types and hyperons with different properties, were discovered in laboratories throughout the world, doubts began to arise as to whether they were indeed elementary. Some of them proved unstable; upon disintegration they turned into two or three lighter particles. That fact alone pointed to the presence of a certain internal structure in the unstable particle.

Many research centers here and abroad have been studying the properties of unstable heavy mesons and hyperons, among them the Georgian Academy of Sciences' Institute of Physics. Over a period of years, at laboratories on the slopes of Mt. Elbus originally intended for studying cosmic ray physics, observations were made on nucleon-nucleon collisions that usually take place at energy levels accelerators cannot reach.

As a result of these collisions, elementary particles, among them hyperons and heavy mesons (also called K mesons), generally fly apart in "scatterings." At our institute Zurab Mandjevidze, Georgi Chikovani and their coworkers studied many of the properties of the unstable particles resulting from nucleon impacts.

The nature of the scattering of light unstable particles (pi mesons) is now known. It is believed that they scatter from a mass of matter the size of a nucleon. Nina Rainishvili, a researcher at our institute, has measured the so-called transverse momentums of heavy unstable particles (K mesons) and arrived at the conclusion that the mass from which they scatter is much smaller than a nucleon. This gives us very important data on the structure of the region where the interaction of nucleons takes place. Only scientific caution prevents me from stating that the data also give us direct information on the structure of the nucleon.

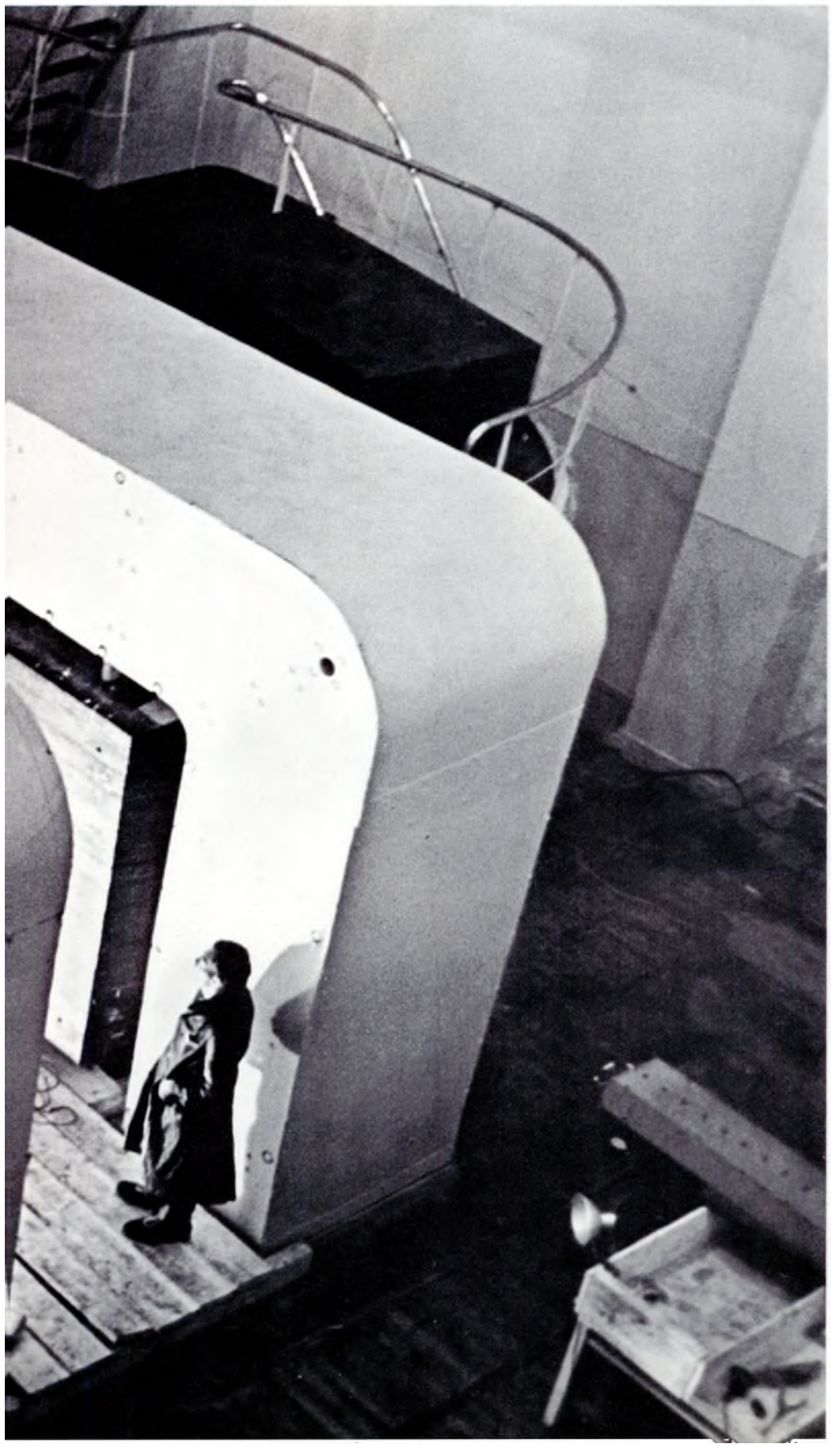
The data we have thus far relates only to nucleon energies that approximate the energy interval achieved in modern accelerators like the proton synchrotron at Dubna. Now our task is to obtain information on the behavior of the same particles at higher energy levels. For that we need more powerful installations than those at Elbrus.

For several years our institute has been preparing to work with the new equipment installed at the recently completed research center in Bakuriani. A hundred-ton electric magnet with a pole area of ten square feet will curve the path of high energy nucleons that move as part of the cosmic rays. An ionization calorimeter developed by Moscow University's Professor Natan Grigorov will measure their energies. Finally, a very large cloud chamber with a volume of 66 gallons will register the results of the collision between the nucleons and the atomic nuclei of the barrier material.

Why nature produced the mu meson is one riddle among many in the science of elementary particles. It is the lightest of all mesons and at the same time the most stable and long-lived.

Till now we have assumed that the mu meson does not result directly from the nucleon-nucleon interaction as other mesons do. Nevertheless, it takes part in all the secondary processes that develop from the meeting of primary particles. Because it is "nuclear passive," the mu meson does not interact with atomic nuclei or nucleons, with the exception of very weak forces of an electromagnetic character. In this sense it resembles an electron. The mu mesons of cosmic rays interact so weakly with matter that they penetrate the earth to a depth of about 325 feet and can thus be registered in deep caves.

Institute researchers Mark Bibilashvili and Rafael Kazarov have been studying the space



Elefter Andronikashvili, author of the article and director of the Georgian Physics Institute.

Institute researchers Dadeshidze and Kakauridze.

and energy distribution of mu meson showers for some years now. The time is at hand for experiments of a more definitive type. Moscow University physicists have observed a phenomenon that can be interpreted as the direct formation of mu mesons during the collision of ultra-high energy nucleons. What remains now is to definitely ascertain whether mu mesons arise directly from the interaction of two nucleons.

To get the answer Georgi Chikovani, one of our leading institute researchers in cosmic ray physics, will be using both our underground laboratory in Tbilisi and our new station in the Tskhra-Tskaro Pass, 8,200 feet above sea level. At the station we have a huge and unique installation—a 1,000-ton electric magnet with a total pole area of 43 square feet and a distance between poles of 5 feet. Its strong magnetic field will make it possible to analyze cases in which mu mesons carry a hundred times more energy than can be obtained with modern accelerators.

With this installation we plan to conduct a large number of experiments. Among others, we will be investigating the nature of nucleon-nucleon collisions at energies hundreds of times higher than those of artificially accelerated particles. It is most unlikely that we will be reaching such energies in natural conditions on earth within the next ten years—one reason these studies interest us so much.

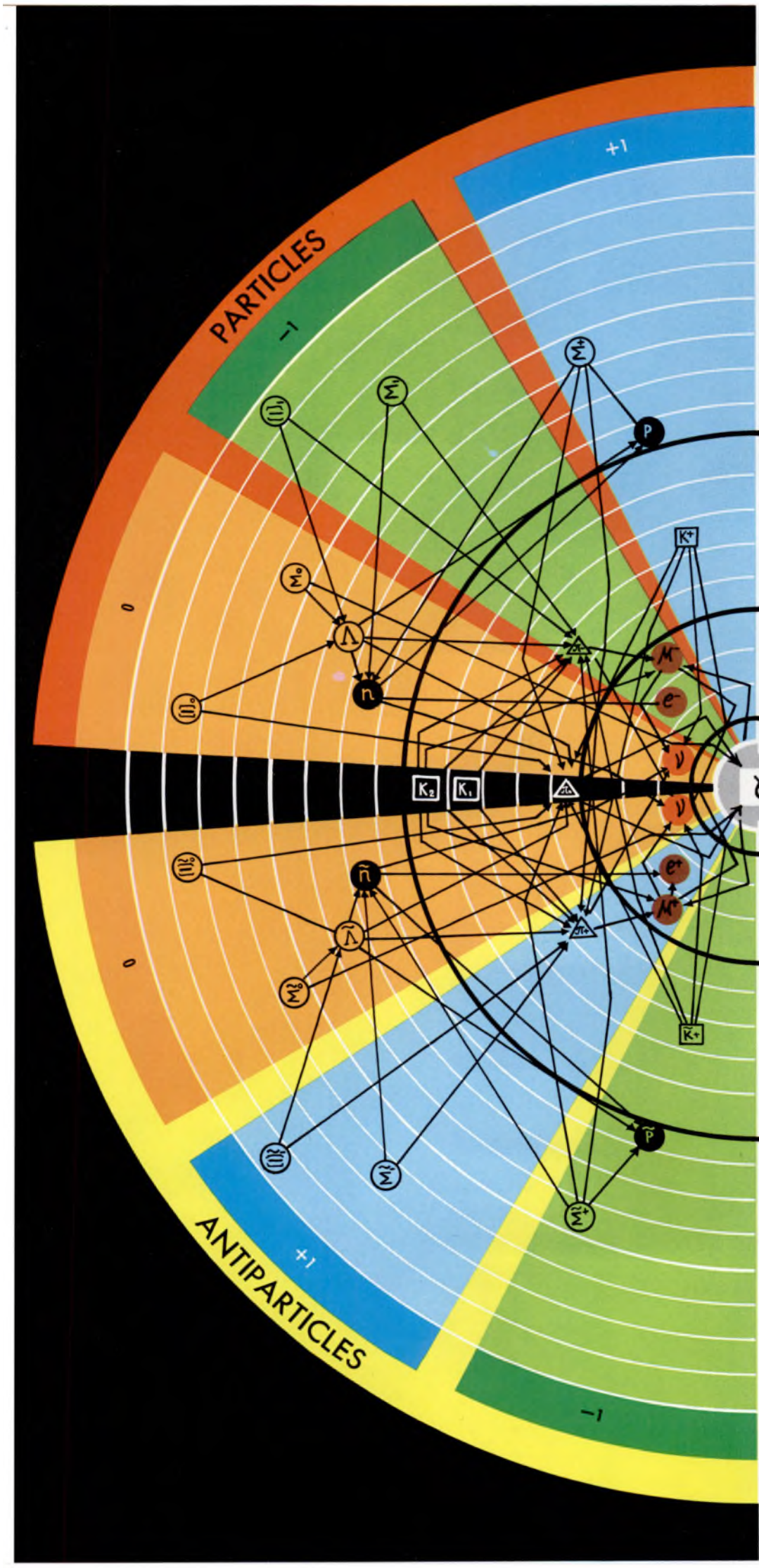
The point is that the higher the energy of colliding particles, the smaller the details of nucleon structure we can observe. This was confirmed by a series of experiments by Moscow University physicist Professor Nikolai Dobrotin and his coworkers. Their experiments, similar in many respects to ours but done with considerably less powerful equipment, showed that the colliding nucleons of higher energies interact and exchange parts with masses close to those of pi mesons. We hope that further study will give us more information on the structure of elementary particles.

We also have close working relations with the Joint Institute for Nuclear Research at Dubna. Sergei Matinyan, one of our young theoreticians, has formulated conditions for an experiment in which two varieties of K° mesons —$K_1°$ and $K_2°$—that differ in their lifetime, that is, in their stability properties, may be observed.

These two varieties of K° mesons are distinguishable by a slightly perceptible mass difference whose sign and quantity are still to be determined. This theoretical conclusion is the basis of an experiment now being done at Dubna by the Joint Institute staff and a group working under Zurab Manjavidze, who heads a laboratory at our institute.

My survey has covered only a small part of the large amount of research in the various fields of physics that our institute has under way. ★

The table contains 30 elementary particles that are represented by circles and squares. The sign "+" indicates the positive charge of the microparticle, the sign "—" the negative, while the sign "o" shows the absence of charge. A swung dash above is a symbol for antiparticles. Particles and antiparticles are shown in the table separately in sections. The more the mass, the further from the center of the circle is the particle. The particles are also grouped in classes: baryons, mesons, leptons, photons.



MASS	NAME		CLASS
2581	XI	HYPERONS	BARYONS
2565	XI	HYPERONS	BARYONS
2341	SIGMA	HYPERONS	BARYONS
2333	SIGMA	HYPERONS	BARYONS
2328	SIGMA	HYPERONS	BARYONS
2183	LAMBDA	HYPERONS	BARYONS
1839	NEUTRON	NUCLEONS	BARYONS
1836	PROTON	NUCLEONS	BARYONS
974	K MESONS		MESONS
974	K MESONS		MESONS
967	K MESONS		MESONS
273	PI MESONS (PIONS)		MESONS
264	PI MESONS (PIONS)		MESONS
207	MU MESON (MUON)		LEPTONS
1	ELECTRON		LEPTONS
0	NEUTRINO		LEPTONS
0	PHOTON		PHOTON
∞			
∞			
∞			
$2{,}2.10^{-6}$			
4.10^{-16}			
$2{,}6.10^{-8}$			
$1{,}2.10^{-8}$			
1.10^{-10}			
6.10^{-8}			
∞			
1010			
$2{,}5.10^{-10}$			
$0{,}8.10^{-10}$			
(10^{-19})			
$1{,}6.10^{-10}$			
$1{,}5.10^{-10}$			
2.10^{-10}			
LIFETIME (IN SECONDS)			

SYMBOLS

~ SIGN OF ANTIPARTICLE

±0 SIGN OF CHARGE

FERMIONS

BOSONS

STRANGE PARTICLES

WE NEVER TOOK ANY TALISMANS ALONG

BY LUDMILA KHARLAMOVA

Drawings by Andrei Sokolov

I AWOKE with an oppressive feeling of impendi disaster. The clock said 2 p.m., but what was tw o'clock in this world of boundless black sky a prickly unblinking stars!

I opened my eyes and glanced at the instrumen out of habit. The blue, green and red eyes blinke like confused and guilty children up to some mi chief. The luminous hands on the dials tremble slightly, and the needles of the oscillographs zig zagged in panic. I did not look at the Great Ma trying to postpone the moment as long as possible.

I did not look at the Great Map. Unhurriedly, a though I still had a long life to live, I turned to th biometers and began to study the familiar dials.

I had never examined them so carefully, even ba

school when I'd seen them for the first time. Temperature . . . Pressure . . . Humidity . . . Oxygen . . . Everything in order. Even the little cardiograph had not caught the alarm. My heart pumped on calmly and smoothly at 70 beats a minute.

That, at least, was consoling—to find something constant that I could put my faith in—to the end. Fear gone, I turned to the Great Map. For a split second I was ready to believe that I'd only dreamed it all—the wakeful night and the futile attempts to find an error in the line of the trajectometer.

I looked at the Great Map. We called it "great" because it took up almost a whole wall of the pilot's cabin. On the concave black screen shone two blue lights, tracing the pattern of the constellations glimmering in the sky. Not far from the center of the screen a red dot was climbing slowly, trailing a fine silvery thread in its wake. That thread, stretching all the way from the screen's edge in an ideal straight line, veered sharply to the left at the middle.

"Why has the automatic equipment stalled?" I asked the Map.

I asked as though it could answer me, as though anybody but myself could answer me. But I could not tell why the automatic equipment had not come on. The Great Map should have switched it on at the smallest deviation from the course. It should have, and hadn't. That was all I knew. I also knew that for me it could be the beginning of the end.

Until now I had believed the Great Map. More than that, I had respected it, taken delight in it. It was a real miracle—a glorious combination of precise calculation and bold dream.

Up till now I had believed in the Great Map. With sure precision, it had guided me through the starry worlds. It had warned me of danger, and the automatic equipment, obeying its orders, had steered my ship away from chips of dead planets, from streams of meteorites, from accumulations of cosmic dust. And when the bright short-lived sparks faded from the screen, it had brought the rocket back to its fixed route.

But now it was to no purpose that I strained my eyes staring at the Map. The bluish lights sparkled like icy crystals, tracing the fanciful pattern of the

constellations. The creeping red dot in the center glowed dully like an extinguished sun. The silver thread of its tail followed like a clear moonbeam. But where the rocket had turned, the screen was black and empty—without sparks and without lights. In vain did I increase the power of the radar systems at the risk of burning them out. The sensitive waves sped ahead, reconnoitering, and . . . did not return. The screen was black and empty, there were no obstacles, and the rocket, off its course, was flying no one knew where.

"Remember that the most precious thing you carry is your life," they had told me before I had taken off.

But there are things even more precious than life. I had wandered over the sparkling ice deserts of dead worlds and groped my way through thickets of unearthly plants. The winds of other planets had brushed against my face, and three suns had shone down on me from a black sky. I had to get back to tell people about it.

There are no predicaments a man cannot find a way out of, they say. I had a way out. It was dangerous and uncertain, but it was a way out. All I had to do was switch off the automatic equipment, and, guiding myself by the stars, try to direct my rocket back to earth. How optimistic that sounded —"all I had to do was switch off the automatic equipment." In a world that had no top, no bottom, and where everything—movement, time and space—was relative, where the only point of reference was the weak light of distant stars, I had to find the curve, unmarked anywhere or by anything, along which the rocket could meet the earth.

I patted the levers of the manual controls. They were unfamiliar, felt clumsy in my hand. I never thought I would be entrusting my life to them! Once we had studied them as carefully as we had all the other systems of the interplanetary ship; we studied them so that we might forget about them. We never noticed them in flight. They were there and that was all. Like the parachute. It was checked and laid in its place, but nobody used it. Nobody, ever. Why? I had never thought about that till now.

The red dot kept creeping to the left. If I were lucky, I'd manage to bring the rocket back to its former line. But if I weren't? I tried not to think about that. I had never felt so helpless and alone—a miserable grain of sand lost in the boundless ocean of the universe. . . . I tried not to, but I kept thinking of those who were waiting for me on earth. Would I ever see their dear faces? I didn't even have a photograph with me. We never took them along on our flights. It had been that way since the time of the first cosmonaut. Why? I had never thought about that either.

Ever since the time of the first cosmonaut we never took any photographs or talismans with us. "I knew that I'd return to the earth and see my near and dear ones with my own eyes," said the first cosmonaut. So we did not take any photographs with us either. It was not superstition. It was belief in those who equipped us for our unknown and distant journeys. Why had I lost faith in the Great Map that had guided me with such confident certainty through the stellar worlds? It was made by kind and clever hands, the hands of friends waiting for me back on the earth. It embodied their talent, their experience, their work. No, I would not switch off the automatic equipment. I waited and looked at the Map. Only now did I see an unclear spot near the rocket. It pulsated and glimmered, now blending with the black background of the screen, now growing faintly light. The red dot slipped almost to the very edge. The dosimeters clicked hurriedly, registering the faint trace of an unusually bright glare. The rocket carefully skirted an ominous stream.

. . . We never took any talismans along, but we always returned to earth. ★

WHEN THE COAL MINES CLOSE DOWN

BY LEONID ARNAUTOV

OUR CAR speeds along the Moscow-Simferopol Highway. In the distance are towering cone-shaped hills—the pit dumps. The road runs through the Moscow Coal Basin region.

This old industrial area has been going through big changes in recent years. A number of mines have closed down now that natural gas is piped in from the North Caucasus. The invisible fuel is several times cheaper than coal, burns without smoke, and contains no harmful admixtures to pollute town and city air. For these various good reasons gas is fast replacing coal in Moscow and neighboring industrial centers.

But that is not the only reason for shutdowns in the Moscow Basin. Coal mines that are not worth mechanizing or that cannot be mechanized are being closed down one after another, but new large collieries, with their major processes completely mechanized, are being opened simultaneously. Machines have made the miner's job easier and more productive and have reduced the number of necessary underground workers.

Every element would seem to be present to make the Moscow Coal Basin a depressed area with a critical unemployment problem. Actually, nothing like that is happening.

Some 1500 miles from Moscow is Shchekino, where several mines have been shut down. But instead of the dreary, depressed town you might expect under the circumstances, the highway is bordered by well-kept apartment houses. A wide-screen movie theater stands on a lot that was recently empty. On another, is a new medical center and a television relay station next door.

Several of the streets—Sportivnaya, Koloskov, Yasenkovskaya—are less than two years old. The town has built 3,000 modern apartment units in two years, and the jibs of tower cranes looming above the streets are proof of the fact that new houses are on the way.

What strikes your eye first, however, are the big "Help Wanted" signs. They list scores of jobs—computer operators, salesclerks, cooks, fitters, lathe operators, draftsmen, drivers, electric welders, plasterers, carpenters, assemblers, crane and excavator operators.

We visited the Shchekino building-trades school where the former workers in the closed mines learn new trades. These ex-miners will head teams of bricklayers, concrete workers and assemblers. The school has all the earmarks of a good educational institution—well-equipped classes, a wide range of visual aids, a self-disciplined student body, even pre-examination fever.

Some of the students, Pyotr Danilkin, for example, are old-timers who have been mining coal for decades. Others, like Mikhail Prasolov, Pyotr Bizev and Anatoli Zaitsev, are young men who have done it for only four or five years. But none of them, regardless of age or length of service, has ever had a minute's anxiety about being without a job.

"I used to cut coal at the 1-2 Zapadnaya mine," Danilkin says. You can still see the specks of coal dust imbedded in the palms of his hands. "When production started to drop there, I was asked if I wanted to go to this school and learn how to erect reinforced concrete buildings. There's a job waiting for me as soon as I'm ready for it. The chemical plant nearby is building new shops, and the personnel men keep coming over to find out how we're doing, when they can expect us on the job, and if we need any help."

The state covers all the training costs—teachers' salaries, textbooks and manuals, visual aids—even pays for the overalls. Tuition is free. Danilkin and the other trainees get a monthly stipend of 140 rubles. Students who live farther away get free transportation.

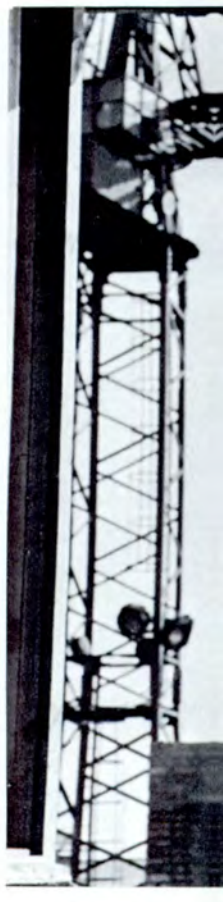
The miners say, "Ivan Konyukhov, chairman of our trade union organization in Shchekino, sees to it that neither the men nor their families suffer when a mine is shut down. In the event of trouble or difficulty with management, the trade union is there right away."

"We're a family of four," Anatoli Zaitsev says, checking them off on his

Many of the miners who were laid off are learning new skills at the building-trades school. The trainees get a monthly maintenance stipend of 140 rubles.

Valentin Davydov, shown with his son, is one of those who were transferred when the Moscow Basin mines shut down. He is now deputy head of a chemical plant.

Personnel worker Vera Spikhina points out parts of the country where experienced miners are needed.



Former miner Vasili Sinyukov adjusted easily to driving an electric locomotive on the Moscow-Kursk Railroad. He did much the same work underground.

Ivan Novikov was recently transferred to one of the large, mechanized mines. With the rise in productivity, the country's need for miners is decreasing.

Building new houses in Shchekino. No ghost towns in the Moscow Coal Basin. Mines are closed but other facilities are expanding.

fingers, "myself, my wife—she doesn't work—a boy of four and a three-year-old girl. But even in this transition period we're living pretty well."

Evenings, the streets of Shchekino are lively, the club buildings and Houses of Culture brightly lit. Posters announce a concert at the Miners' Palace dedicated to the famous Russian composer Balakirev, a dance at the House of Culture of the chemical plant and a forthcoming hockey match between Shchekino and the neighboring town of Alexin.

There is no migration out of Skuratovsky, Severo-Zadonsk, Rudnev, Novougolny and other towns in the region where coal mines have been shut down—they are all making the change-over with a minimum of dislocation.

Yakov Chukseyev, vice chairman of the Tula Economic Council, tells us, "Changing the Novomoskovsky and Shchekino chemical plants, which used to be major consumers of Moscow coal, over to natural gas is only half the job. The other half is to make sure that new plants are built simultaneously to absorb the labor released when the mines are shut down. We've had to cope with the problem before—in the case of depleted mines—but not on this scale. The mines in the Bolkhov District shut down a long time ago, but you wouldn't know it by the animation and activity in Bolkhov.

"When we set up new industries and factories in mining communities and towns, we naturally try to make use of the old structures and power lines. In the buildings above-ground we might set up a mica factory, an artificial fur plant, a furniture factory, a gas apparatus plant, or automobile repair shops."

Igor Strelkov, secretary of the Tula Regional Trade Union Council, says, "Personnel retraining and placement is a vital part of this whole Moscow Coal Basin fuel shift. We're solving the problem with the help of the public and the trade unions generally. The coal miners' union, the one most immediately concerned, works along with the Economic Council and state planning agencies to decide where and what kind of new plants should be set up and what mass retraining facilities would make for the best and speediest adjustment.

"We try to give the men skills and jobs as closely related as possible to their old ones. For example, many of the electric mine locomotive drivers went to work on the Moscow-Kursk Railroad. The timberers readily tackled carpentry jobs. Many of the tunnelers are now working on phosphorite deposits.

"When several of the Skuratovsky mines were closed down, some of the men took jobs at the Lomintsevsky mines not far away. Others, who preferred to stay where they were, got work quarrying gypsum, a valuable building material. In some areas whole groups of miners agreed to move to large, mechanized mines in nearby districts.

"Then we have men who do not want to change trades. They like mining and do not mind moving to other parts of the country. These men have a wide choice of jobs. Personnel men come here from the mine areas of Vorkuta in the Arctic region, the Kazakh steppes and elsewhere with offers. Fare, food allowance en route and moving expenses for the family are provided. An extra inducement is housing priority or a state loan if the miner should want to build his own home."

When the decision was taken to change the "structure of the fuel balance," to use the economist's phrasing for a cut in coal production because cheaper and better fuels are available, the input per ton of fuel was not the only concern, nor the most important one. The primary consideration was the man who cuts the coal, the reason why you'll find no ghost towns anywhere in the Moscow Coal Basin. ★

The Petrovs found a warm and friendly welcome at Cornell. Craig Peterson (left), Julia Petrov, Margaret Kendon, Dmitri Petrov, Fred Parker and Andrew Silard.

32 WEEKS AMONG AMERICANS

Gentlemen:

We are the couple from Moscow -Julia, 28, and Dmitri, 32 -who spent the 1961/62 academic year in the United States as graduate students. It was done under the USA-USSR exchange program, according to which 36 students from each country completed their studies this June. For the first time Cornell University, at Ithaca, New York, was host to Soviet students, and we studied there for more than seven months.

Julia is majoring in modern history of the Philippines, and Dmitri's field is American contemporary history. While at Cornell, it was natural for us to receive various impressions.

Before leaving for home, we would like to share some of our impressions and feelings about America, which may be of interest to the readers of your magazine. We will be pleased if you find these notes suitable for publication.

Sincerely,

Юлия и Дмитрий Петровы

WE have often been asked what impressed us most in the United States. Well, in the first place, we should like to stress that our ideas and notions of American life didn't change basically. That is because generally the Soviet people know quite a lot about and have deep respect for the native land of George Washington and Thomas Jefferson, Benjamin Franklin and Thomas Edison, Abraham Lincoln and Franklin Roosevelt, Mark Twain and Ernest Hemingway.

Moreover, back home we had many opportunities to become aware of the spirit of American technical progress and scientific achievements not only through the vast number of publications available but also through personal contact with American tourists and visitors. And, of course, one can become acquainted with the best in American literature both through original writings and translations widely published in the Soviet Union.

But the thing that surprised and pleased us most is the great and sincere interest of Americans in our country, in the everyday life of the Soviet people, our customs, way of thinking, and aspirations. There is evidence of this keen interest everywhere: in the rather broad study of the Russian language, in the publication of numerous books and articles on Soviet affairs (though at times these are of rather dubious value), in the striving of Americans—at least those whom we met—to comprehend and study all aspects of Soviet life. The extent of their interest is really limitless, beginning with the system of education, the fundamental principles of the Soviet state and the rights of citizens, all the way down to details of our personal life.

We were also very impressed by the friendliness, hospitality and kindness of the Americans who were our hosts. All of them, and especially the people at Cornell—whether officials, students, professors, librarians or housewives—did their best to make us feel comfortable and at ease. Thus, the clerk at the campus store was attentive enough to know in advance the kind of cigarettes we preferred. Even the occasional acquaintances whom we met only briefly were amiable and considerate. At times some delicate subjects were politely avoided to prevent tension. It was understandable that both sides preferred to deal with subjects which brought us closer rather than those which could divide us.

And so it happened that we spent the seventh year of our married life in the United States. All in all, we lived among the Americans for 32 weeks. Those were really extremely busy, crowded days.

From the very beginning we behaved like typical freshmen, or maybe sophomores, since we were getting accustomed to college life with its characteristic rules and regulations. We diligently attended the assigned lectures and seminars and regularly prepared papers for our advisors. We spent hour after hour in the library reading books and collecting material for our master's theses. We read the entire Sunday issues of the *New York Times* for practice in English. And we participated in social events, such as parties, meetings and panel discussions. A real cultural exchange was carried out: In return for Julia's research articles and Dmitri's pamphlet and book on Abraham Lincoln, we were presented with publications of interest to us.

In other words, we did everything the other students usually did, including playing tennis and basketball. Our schedule was extremely intensive. A lot of people wanted to meet us, and quite frankly we sometimes did not have a spare hour to study. But of course we felt that personal contacts were as important as research, and we really could not refuse to meet anybody who wanted to talk with us.

There is a Russian folk proverb, very popular in the Soviet Union: "It is better to have one hundred friends than one hundred rubles." And now we do have more than a hundred American friends who showed a real interest in us. They helped us not only to fulfill our study programs but also to overcome our homesickness. Naturally one of our best friends was the mailman who delivered our overseas correspondence daily.

In sharing our personal impressions, we won't separate the good impressions, which after all predominated, from the unpleasant ones. Many

Julia and Dmitri Petrov with Craig Peterson and Margaret Kendon. The American and Soviet students discovered they had much in common.

Craig Peterson (Chicago), Daniel Snowman (London), Joan Clark (New York), Dmitri and Julia Petrov (Moscow), Margaret Kendon (Philadelphia) and Igor Smirnov (Moscow).

imes we were invited by families and schools and had a chance to travel, hough with special permission from the authorities. For instance, we were ucky enough to spend a second honeymoon at Niagara Falls during the ast spring recess. We worked—unfortunately only a few days—in the amous Library of Congress in Washington. Julia participated in the annual onference of Orientalists in Boston, and Dmitri, in connection with his esearch, enjoyed a visit to the Hyde Park Memorial Library. As a result ve had many talks and discussions on various subjects. At times these ecame controversial but never hostile or rude.

From our very many and varied experiences we could see that the aver- ge American, as a rule, is a friendly, exceedingly informal, efficient and ractical person who wants a quiet and prosperous life. We could also see hat there is still a lot to be done to reach mutual understanding but that he American people are sincerely striving to attain it.

We did not expect to find tuition in private colleges like Cornell University o high, and we found the price of books not nearly low enough. We were old that only a small percentage of bright students receive scholarships nd fellowships, while at home our tuition is free for every student every- where and each receives the same state scholarship every month. Our books re cheaper. That is why our students are not forced to earn money while tudying, the way many American students are compelled to do. In addition, ur students, like all citizens, have the advantage of complete, free medical are.

Generally speaking, we found the American students buoyant, kind and nquiring, like their counterparts in the Soviet Union.

A comparison with who famous ancient tales of a thousand and one nights inevitably comes to mind when we think of the numerous and diverse uestions we were asked in this country. Our American colleagues wanted o know things about the Soviet Union which even experts would have ound difficult to answer properly. But the question about our six-year-old on's being at a boarding school didn't belong to the difficult ones. And nce, when a little girl asked what we thought about Russian butterflies, ve felt embarrassed since neither of us had any opinion on this intricate ubject.

There were also other experiences, of a different kind. While in Buffalo, teacher said to us:

"It is a known fact that the students in your country hate Soviet life."

"What makes you think so?" we asked, astonished.

"I know for a fact since I was in Moscow for two weeks," he declared irmly.

"In that case, you force us to say that American students dislike their way of life exactly twelve times as much."

"What makes you say that?"

"Because we've already spent six months in this country."

Of course, this was a joke, but it made us call "quits." Such extreme attitudes, we think, are not common among Americans.

Among the thousand questions we were asked about the Soviet Union during our talks and discussions, one fundamental and vital question kept cropping up: "How can we improve and advance the relations between our countries, and in what way can we lessen the tension?" We were happy to hear many realistic ideas on cooperation which often originated with the Americans themselves.

By all means, things must be done to improve our relations, and that doesn't depend on us alone. The minister of a Presbyterian church in a small town expressed this idea in the following way in a letter to us: "We should have spent our time talking over the fear that each of our countries has of the other and what can be done about it. This, I believe, is a concern of most of our people that they don't know how to talk about. How to recapture the good feelings and confidence of the Roosevelt days is a problem. I think many of our fears are groundless, and maybe frank talk would be helpful."

Probably the best answer to this No. 1 question can be the small poster which was presented to us in San Francisco by a stranger who, we were told, was a retired teacher. It declares: "Our only shelter is peace!" We sincerely share this idea.

Now all the pictures are taken, all the movie film developed, and numerous slides made. The materials for our theses have been collected, and farewell letters are written and sent. The thirty-second week has come —time to part with the lovely campus and our new friends. We take away many fond memories of these people, who really want our countries to reach mutual understanding. At one time, in Ithaca, a worker expressed the idea that luckily for the whole world, the people of good will on American soil are in the majority. We should like to hope that it is true and that they will be victorious. These favorable impressions we shall recount to our countrymen at home. We shall tell them about the good feelings of the Americans toward the Soviet people. We all want honest cooperation. There is no reason for enmity. Our disagreements can be resolved success- fully. We hope that these conclusions are shared by all.

Before leaving this country, we greet all the Americans we met here from the bottom of our hearts and wish them good luck. ★

FIRST ANNIVERSARY OF THE INSTITUTE OF SOVIET-AMERICAN RELATIONS

BY TAMARA MAMEDOVA
EXECUTIVE SECRETARY

THE INSTITUTE of Soviet-American Relations, dedicated to better understanding between the United States and the Soviet Union, has just completed its first year of activity. It was founded on August 31, 1961, at a meeting held in the Grand Hall of Friendship House in Moscow attended by representatives of public, scientific and cultural organizations, industrial and farm workers, and leading scholars and artists.

The institute was not the brain child of any one person. Its need had long been apparent to people in public life, particularly those who had had the opportunity to meet, talk and work with Americans. These people took the initiative, confident it would meet with a favorable response abroad.

The new institute, headed by the eminent researcher in cancer Nikolai Blokhin, president of the USSR Academy of Medical Sciences, is a member of the Union of Societies for Friendship and Cultural Relations with Foreign Countries comprising 39 Soviet mass organizations and 15 trade unions, all of which work actively with their counterparts in more than 118 countries.

When the institute was founded, its Constituent Assembly addressed an appeal to all American citizens and organizations who support cooperation between the United States and the Soviet Union. The replies were many and favorable. They came from ordinary and high-placed Americans, from people prominent in the sciences and the arts, from public leaders and from various cultural and professional bodies. There was also a large and encouraging response from Soviet citizens and organizations.

The institute has an executive board of 150 men and women whose vocational interests take in all the major spheres of human endeavor. This past year the board has been searching for the most suitable organizational structure and the most effective methods of work.

Through the 53 organizations which are members the institute has been carrying out its vital function of informing the American and Soviet peoples of each other's accomplishments and way of life. Among these members are such bodies as the USSR Academy of Sciences, the Academy of Medical Sciences, the Academy of Architecture and Building, the Institute of World Economy and International Relations, the Academy of Pedagogical Sciences of the Russian Federation, Moscow University, the Likhachov Automobile Plant, the Bolshoi Theater, the Moscow Engineering and Construction Institute, the USSR Chamber of Commerce, the Mosfilm Studios, and various collective and state farms.

The structure of the institute that best conformed to its main direction of activity—to put people of the same or kindred professions in touch with each other—was outlined after lengthy debate.

The institute has four major sections and a number of committees. Both the sections and the committees are headed by specialists in their respective fields recognized the world over for their contributions.

The committee and section heads are all vice presidents or members of the executive board. All institute offices are elective.

The Social Sciences Section is headed by Anushavan Arzumanyan, director of the Institute of World Economy and International Relations. He is also one of the vice presidents. His section includes four committees—economics, sociology and philosophy, history and disarmament.

Professor Alexander M. Markov heads the Medicine and Biology Section.

The Literature and Art Section is headed by film director Sergei Gerasimov, People's Artist of the USSR, and includes five committees—theater, music, literature, fine arts and cinematography.

Alexei Shakhurin, former Minister of Aviation and a Hero of Socialist Labor, heads the Scientific and Technical Section with its four committees—agriculture, science, technology, construction and architecture.

A Law Committee and an Education Committee complete the list of professional groupings. These two do not belong to any of the sections.

Aside from these, there are two other independent committees—the Women's and the Youth Committees.

No limits are set on the size of committees; some have 40 members, others many more. The Education Committee, for example, has more than 100, including schools and colleges.

On each of the committees are specialists in the given field, people who want to work with the institute, and Soviet citizens who just want to know more about the particular aspect of American life and culture the committee is concerned with.

The institute carried through several noteworthy activities this past year. Early in 1962 it organized a permanent seminar in Contemporary American Science and Culture for the general Soviet public. Lecturers were Soviet scientists and cultural leaders and Americans visiting the country as tourists and members of delegations. Professor Harold J. Berman of Harvard lectured on American law to the Law Committee; artist Sheatz of California spoke to Soviet artists on modern American art; Professor Linus Pauling lectured to scientists on atomic testing. An exceptionally successful evening commemorated the eightieth anniversary of the birth of Franklin Delano Roosevelt, with Academician Nikolai Blokhin speaking on the contributions made by the great president to American-Soviet relations. U.S. Ambassador Llewellyn Thompson and his wife were present.

A public rally on the seventeenth anniversary of the Elbe link-up of Soviet and American troops in the last war was held jointly by the institute, the Soviet War Veterans Committee and the Soviet Peace Committee on April 25, 1962. Attending were Marshal Ivan Konev, Colonel-General Alexei Zhadov, veterans of the Elbe link-up, war heroes and representatives of the American Embassy and U.S. military attachés.

The institute celebrated the centenary of the birth of William Wallace Campbell, the eminent American astronomer, with a most interesting meeting. Professor Alexander A. Mikhailov, director of the Pulkovo Observatory, came to the capital to talk on Campbell's life and his many contributions.

A regular program of American film showings and reviews sponsored by the institute has been attracting wide attention. Full-length features included films directed by Stanley Kramer and William Wyler and those starring Kim Novak. Among the documentaries were "John Glenn's Flight," "Tour of the White House with Jacqueline Kennedy," "Art Heritage" (about the Metropolitan Museum of Art), and "The Man in the Moon."

The institute is visited by many tourists and delegations, and the staff is always happy to help acquaint them with Soviet life and to arrange get-togethers with their professional counterparts.

The Agriculture Committee organized a meeting between visiting farmers from Oklahoma, Georgia and Virginia and Soviet farm specialists. The guests found the meetings most informative and thanked the institute heartily for the opportunity of having these informal talks with Soviet farmers.

Gardner Cowles, publisher of *Look* Magazine; Professor Philip Mosely; Robert W. Dowling, president of the City Investment Corporation; member of Congress Edith Green; Senator and Mrs. William Benton and many other Americans visited the institute during the year.

Professional get-togethers were arranged for film directors Otto Preminger and William Wyler, screen actress Kim Novak, conductor Franz Waxman, composer Samuel Barber, soprano Dorothy Kirsten and many others.

These various meetings have done much to promote mutual understanding between the peoples of the two countries as well as useful business contacts.

The institute was happy to respond to the initiative of the American section of the Women's International League for Peace and Freedom for a conference of American and Soviet women on current world affairs and certain problems of Soviet-American relations. The conference, held at Bryn Mawr College, was attended by 10 Soviet and 12 American women.

The institute considers these personal meetings and direct exchanges invaluable for the creation of that climate of trust and understanding so necessary for friendly relations between our two countries.

The feeling was confirmed on a recent American visit I made with several members of our institute. The party was made up of leading figures in science and the arts and included the playwright Nikolai Pogodin; poet and playwright Anatoli Sofronov, editor of the popular weekly *Ogonyok*; Rector of Kiev University Ivan T. Shvets; Professor Vladimir Trukhanovsky, editor of the USSR Academy of Sciences' journal *Problems of History*; Professor Alexander I. Rakov, Leningrad oncologist; Professor Georgi Ostroverkhov, prominent surgeon; law professors Boris S. Nikiforov and Yevgeni V. Boldyrev; Professor of Economics Abram Mileikovsky; and cameraman Boris I. Volchek, professor at the Moscow Cinematography Institute.

During our three weeks in the United States we visited Washington, Philadelphia, New York, Chicago, Los Angeles, San Francisco and other cities. Wherever we went, we met with a gracious welcome. We found that people everywhere were interested in the Soviet Union, the Soviet people, in better Soviet-American relations and in the activities of our institute. The suggestions made to us for broadening cultural exchanges were stimulating and will unquestionably be useful. All through the trip we received the friendliest assistance from organizations, public officials and newsmen.

Upon returning home, members of the institute who visit the United States give their impressions of the trip to lecture audiences and through the press and radio and TV broadcasts.

In the year since its founding the institute has demonstrated that it merits the respect and attention of people in both countries. Its activities keep broadening. The very fact that it was created is evidence of the earnest desire of the Soviet people to live in peace and friendship with the American people, as good neighbors should. That this is possible is evident from the long tradition of fruitful and mutually advantageous cooperation between the two countries. ★

MOUNTAINEERING

BY ARI POLYAKOV
Master of Sports
PHOTOS BY MIKHAIL ANUFRIKOV

THE GEOGRAPHY of the Soviet Union explains why mountaineering is so popular in our country. There are two mountain areas—the Caucasus and Pamirs—the size of the British Isles, and a third, the Tien-Shan, almost as large.

Mountaineering became a mass sport during the Soviet years. Records show that before 1914 only 59 climbers had scaled Mt. Elbrus, Europe's highest peak, 47 of them foreigners; since 1917 more than 13,000 Soviet climbers have reached the summit.

A big alpine base is now being built on the slopes of Mt. Elbrus, with paved roads leading to modern hotels and a four-mile suspension ropeway rigged between Azau Clearing (7,550 feet above sea level) and Shelter 11 (altitude 13,800 feet).

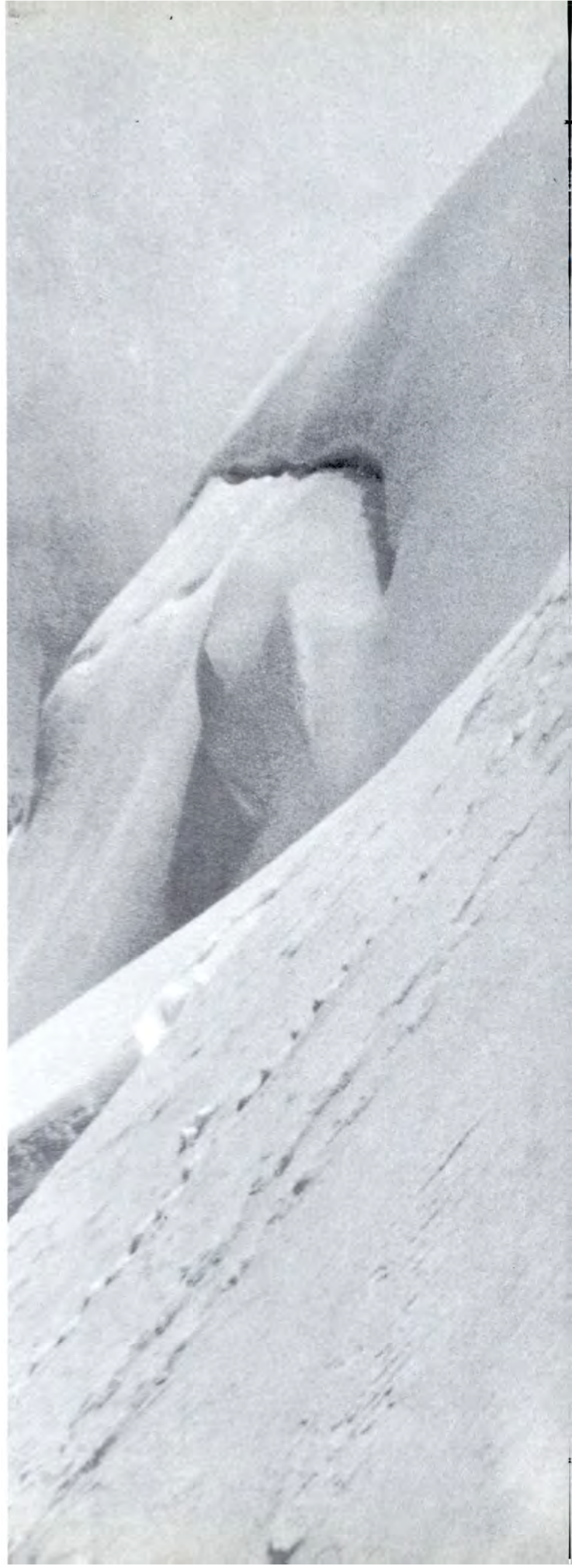
Next year alpinists will be able to climb to the top of Mt. Elbrus in one day. Lifts are also being erected for the year-round use of ski enthusiasts.

Twin-peaked Ushba, in the Caucasus, is known to many world alpinists as a very tough climb. It was first scaled by Cockin, a British mountaineer, in 1888. The first successful ascent by Soviet climbers was in 1934. Since then more than 500 Soviet alpinists have reached the Ushba summit. The Soviet Alpinist Federation issued a special commemorative badge for the conquerors of Ushba. Soviet climbers visiting England in 1960 presented one of these badges to the British Alpine Club to mark Cockin's pioneering achievement.

Tien-Shan. An old dream of engineer Victor Abalakov's—to scale Pobeda Peak. The last few yards of a long and gruelling climb.

The Caucasus. A lowlander would say that he can think of a more comfortable, if somewhat less airy, bedroom than a mountain top.

The Pamirs. Experienced climbers Valentina Cheredova and Pyotr Budanov back up a party on a tricky stretch of loose snow.



Novice mountaineers get their training at alpine bases maintained by various sports clubs. There were twenty such training centers in the Soviet Union's mountain regions in operation during 1961 and they attracted more than 12,000 young vacationers. In the summer these camps accommodate four to five groups in succession for 20-day training periods.

Some of these camps are open for the winter school holidays. Usually about half of the guests pay nothing, the other half pay 30 rubles—a 70 per cent discount—with the remainder of the bill paid for by their trade union from the state-provided social insurance funds.

These bases provide equipment and skilled instruction without cost. Instructors are graduates of a special training school in the Caucasus, who use their summer holidays for coaching novice climbers. They are paid by the trade unions.

Every base has experts whose job it is to follow the progress of all climbing parties. Their permission is required for the ascent, and they maintain rescue personnel in a state of readiness. Solitary and unorganized climbs are not permitted in the Soviet Union.

Ascents are graded for difficulty. There are five grades and five subgrades, ranging from la—simple exercises for the beginners—to 5B, for master climbers.

There are three categories for skill. To qualify for the Master of Sports title one has to make many ascents, including six grade 5's. To date 467 Soviet climbers hold the title, 50 of them women. The title Honored Master of Sports of the USSR, the country's highest athletic award, is conferred on those who have done exceptional work in popularizing the sport and on leaders of the most daring ascents and expeditions. The title is now held by 41 climbers, including three women.

Alpine teams compete for the annual awards in wall, traverse and altitude climbing, and the three top winners in each division are awarded gold, silver and bronze medals.

Soviet mountaineers—376—have climbed all four of the country's highest peaks—Communism (24,590 feet), Lenin (23,400 feet), Yevgeni Korzhenevsky (23,300 feet) all in the northwestern part of the Pamirs, and Victory (24,400 feet) in the Tien-Shan range. Another 20 have climbed Mustag-Ata and Kungur-Tag, two 22,965-foot peaks in the People's Republic of China.

The record holder for high-altitude climbs is Honored Master of Sports Kirill Kuzmin, an engineer by profession, who made seven ascents of these peaks—two each of Communism and Lenin, and one each of Victory, Mustag-Ata and Kungur-Tag.

Honored Master of Sports Yevgeni Ivanov, war veteran, follows close on his heels with six ascents. He is the only Soviet alpinist who has climbed all four of our highest peaks and Mustag-Ata and Kungur-Tag as well. He scaled Korzhenevsky last year and, incidentally, celebrated his fiftieth birthday up there above the clouds.

Besides the mountaineering sections of sports societies, there are alpine clubs at many industrial plants, business offices and educational institutions.

The activities of all these alpine groups are coordinated by the Soviet Alpinist Federation, part of the National Union of Sports Societies.

The executive committee of the federation, made up of 17 of the country's best climbers, is elected every two years. It grades peaks for difficulty, confers awards and titles, investigates mountaineering accidents and draws up membership rules. One of its major functions is to chart tricky mountain routes and pass upon applications from parties planning ascents.

Through the federation, Soviet alpinists keep in touch with their counterparts abroad. During the past two seasons climbers from Britain, France, Austria, Switzerland, Germany, Czechoslovakia, Poland, Rumania and Bulgaria have scaled the Caucasian Mountains. Our alpinists have also climbed foreign peaks, most recently in Britain, Austria and France.

The 1962 season promises to be a big and busy one for Soviet mountaineers and their alpine guests from many foreign countries.

USSR

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TODAY'S SOVIET YOUTH

BY VICTOR ROZOV
SOVIET PLAYWRIGHT
PHOTOS BY VSEVOLOD TARASEVICH

In a Leningrad shipyard

In a laboratory

In a youth café

THIS IS A SUBJECT I enjoy writing about. For one reason, because it is so much a part of the work I do. The characters in my plays and scenarios are chiefly young people, and I try to make them prototypes of their whole generation.

To begin with, today's young men and women are amazingly interesting people. They present a broad panorama of variety and contrasts. They are effervescent, vociferous, bubbling over with life. In one look around you see romanticists and skeptics, enthusiasts and cautious characters, the completely dedicated and the waverer, the poet and the philistine.

Today's youth is the third generation of our young society. This somewhat arbitrary classification I make by counting off 20-year periods since the Revolution and the Civil War. Twenty years, I think, is about the time in which one generation is fully succeeded by the next.

The first Soviet generation—the young people of the Civil War period—were the children of factory workers, peasants and the least prosperous section of the intelligentsia. With little if any education but with incorruptible hearts and flaming courage they took up arms to defend the newborn Workers' and Peasants' Republic. The youth of those years were the passionate fighters for the Soviet system, the demolishers of the old order, the first builders of the new state, the new economy, the new culture.

That was when millions of our young people got their introduction to fractions and learned who Shakespeare was. It was a time of great discoveries, of learning big things and small, and the youth avidly drank in everything new.

Perhaps the most authentic portrait of the young man of the period is Pavel Korchagin, the hero of Nikolai Ostrovsky's novel *How the Steel Was Tempered*. And, just in passing, ask at any library and you find that this book, although it has been printed in millions of copies, gathers no dust on the shelves; it is still very popular with young readers.

The young man of the thirties, the second generation, was an altogether different person. In those 20 years our country traveled a long and difficult road, building a new society and, simultaneously, molding a new citizen. Universal and free education did its good work and we—I say "we" because that was my generation—were far more literate and cultured than our predecessors, the pioneers of the Revolution.

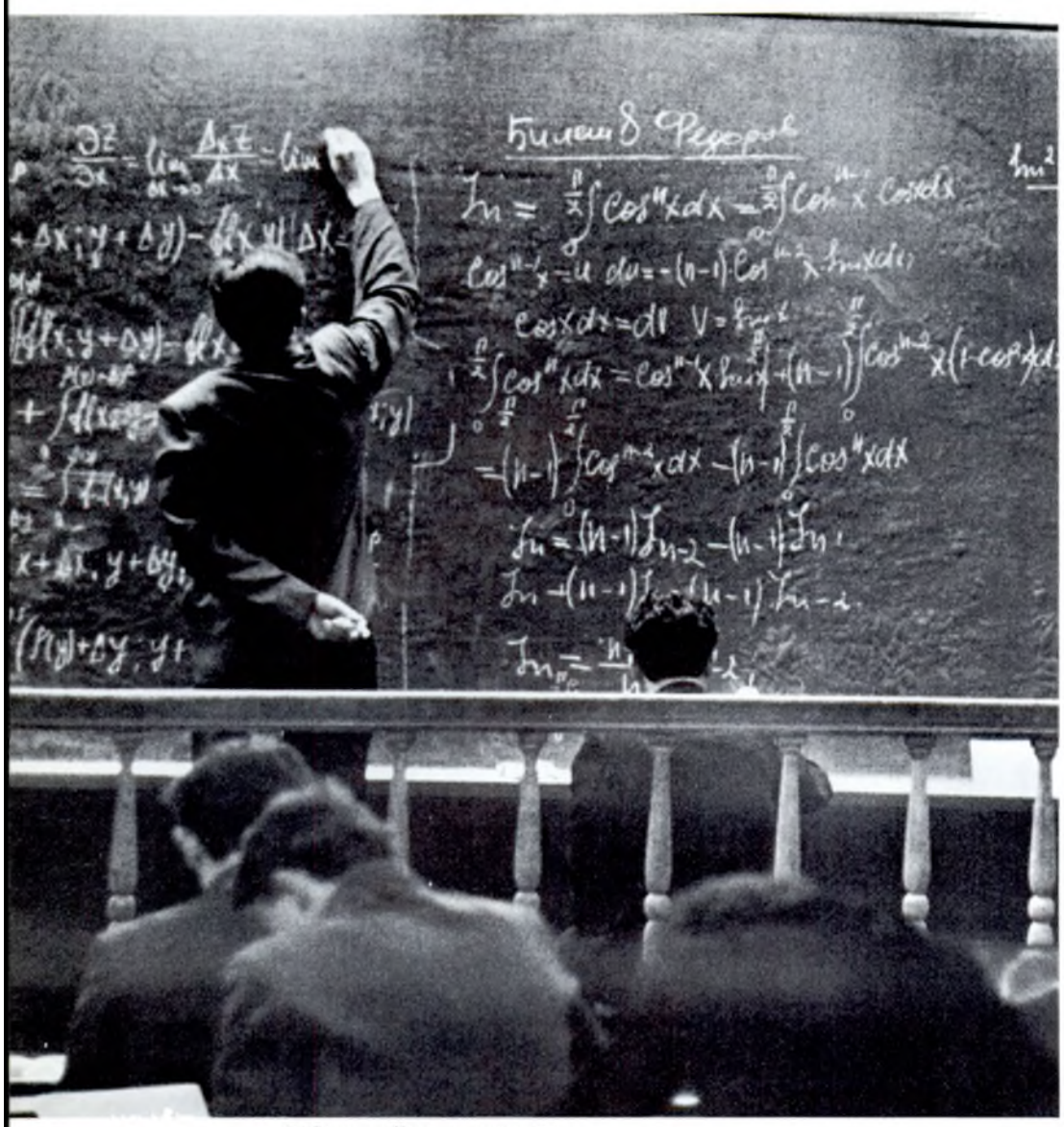
We had never held a rifle, but we did know the feel of a hammer and shovel, a pencil and slide rule. Nor did we follow the ascetic way of life of the generation before that I remember so well from childhood. I don't mean to imply that we didn't have our share of hardships in a country which was spending every ounce of energy to pull itself up from the backwardness of centuries.

It is in the nature of youth to be scornful and intolerant of everything that smacks to them of a dead and hostile past. In the early years after the Revolution neckties, ribbons, silk shirts, felt hats, perfume, the waltz and all such things were looked down on by our young people. Even a clean-shaven face might put one's moral and social standing in jeopardy. In the eyes of Russia's young workers and peasants all these things were reminiscent of the wealth and privilege that for centuries had ruthlessly exploited their forefathers.

I well remember, in the late thirties, how our elders used to reproach us for what they called our frivolous attitude toward life and the way they held up Pavel Korchagin and the young people of former years—their own generation—as examples. Watching us do the fox trot and tango, they'd shake their heads and mutter, "Nothing good will come of all this . . . young people today have no moral fiber. . . . Now when we were your age . . ." and so on and so forth. They seemed to be unaware, many of these old folks, that these same millions of young men and women who saw nothing wrong in a tango or a silk dress were also constructing the country's new factories, bringing the new spirit of collective life to the farm, building schools and universities for the generations that would follow them.

All our thoughts had been given to peaceful labor, but when World War II broke out, we took up arms at the dictate of heart and conscience to defend not only our country but what the Revolution had won for us. The young people of the late thirties proved themselves worthy of the ideals they had inherited from their parents. Together with the older generation they threw out the fascist invaders and preserved the country's freedom and independence. Streets, squares and schools in many Soviet towns bear the names of heroes of this second generation. And these streets, schools and towns, as well as factories, mines and farms by the thousands, were rebuilt in an unbelievably short time by the labor and talent of that generation.

Now another 20 years have passed, and another generation has come into its own. It is interesting to compare a young man of the Civil



Taking college examinations

At the end of the workday

War period with today's young man. They are two quite different people.

What are the characteristics of today's youth, their ideals and aspirations? What are they searching for? What can we expect from them?

I see the distinguishing qualities of today's young people in their concern with the inner world of ethical values, their desire for self-improvement, and their growing refusal to tolerate anything that prevents men from leading a really fulfilled life.

The desire for learning is practically universal. Our whole population is educating itself. A great many members of my generation were unable to complete their formal schooling. They went to the front directly from colleges and institutes, some even from their senior year in high school. After the war there was not much more time for schooling, they had to do their learning on the go, so to speak.

Youth today has magnificent, practically limitless, opportunities for education, and the thirst for knowledge is greater than it has ever been. Not so long ago education meant the knowledge required for a trade or profession. Now study is a compelling, psychological need. This, it seems to me, is an attribute of the man of the new society our people are building. The fact that the attribute is common not only to thousands but to millions of young people testifies to the practicability of the goals we have set ourselves.

At a get-together with students taking the lecture courses in literature, music and art offered by the University of Culture at the Likhachov Auto Plant in Moscow somebody made the comment that every worker in the plant seemed to have become infected with the study bug. Not too long ago workers in the major departments, who had always made high wages, rarely bothered to take evening classes. Now they flock to them, not nearly so much because they want to raise skills and earnings as because a person without a good cultural background feels like a social oddity these days.

On a trip to Bulgaria I heard this expression, "To see any distance ahead, you have to study." These days it is not need or calculation that motivates study but an eagerness to see farther ahead. Learning, young people realize, is a source of endless personal pleasure.

The young people of today astonish me with their quick grasp of the new scientific ideas that much older and more knowledgeable adults find either extremely difficult to understand or entirely incomprehensible. I sometimes have the feeling that a part of the human brain, inactive until now, has just begun to function in these youngsters.

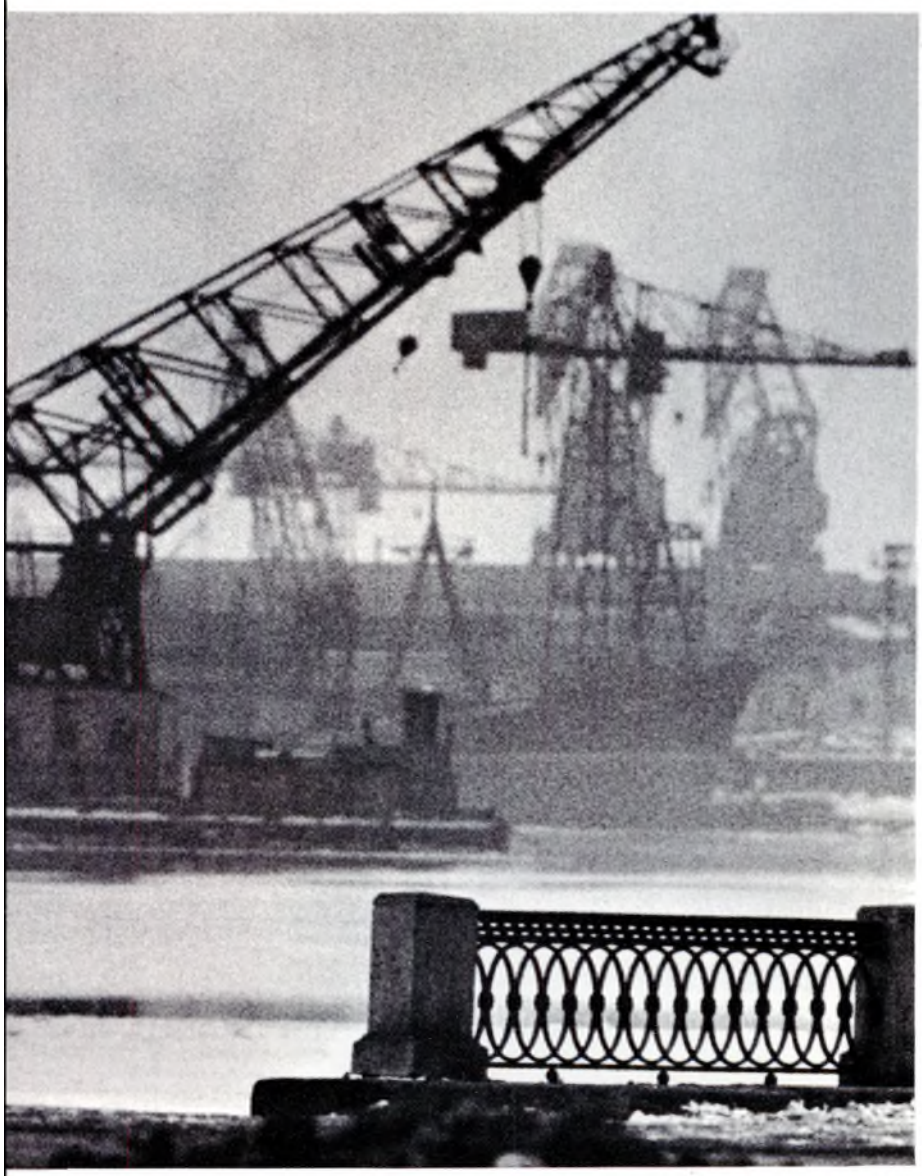
They are enormously interested in technical literature. Magazines like *Tekhnika Molodyozhi (Technology for the Youth)*, *Znanie-Sila (Knowledge Is Power)*, and *Nauka i Zhizn (Science and Life)* are sold out the day they appear on the newsstands. In subways and suburban trains you see almost as many young men and women reading books on science and engineering as Russian and foreign novels. This is not school assignment reading, it is reading out of interest, curiosity, for broader intellectual horizons.

This is something new, and it carries over into other areas. In choosing a vocation, young people seem to be guided more by whether they like the field of work than by prospects of high pay. When they find they've made a bad choice, they start training all over again. A nephew of mine was in his third year at an automation engineering college when he came to the conclusion that engineering wasn't for him, that mathematics was his real interest. He finished the course, but he did the equivalent of a university course in mathematics along with it before he graduated and went into the electronic computer field.

Several of the correspondence students in a writing workshop I teach at the Gorky Literary Institute in Moscow are technical college graduates with good jobs and good earnings, but they have a passion for writing. I have no way of knowing whether they will ever qualify as professional writers—I do not believe you can train a writer in school courses the way you can an engineer—but I do know this, that these young men are not wasting their time in the institute, they are learning to see farther ahead.

I must confess that it is something of a disappointment for me, as a writer for the theater, to see the majority of our young people moving into the sciences and technical fields. Four years ago I used to talk about this with bitterness, but the situation has improved. We have the beginning of a flow of fresh young talent into the arts. Young poets and prose writers like Anatoli Kuznetsov, Anatoli Gladilin, Yevgeni Yevtushenko, Andrei Voznesensky, Vasili Aksyenov, Robert Rozhdestvensky and many others are making themselves heard. They search, go astray sometimes, but push forward stubbornly. All the Moscow and Leningrad theater openings I have seen recently have had gifted young newcomers in the leading roles.

I must make one other comparison, not very favorable to my own generation, I'm afraid. Young people making their way professionally in the arts a decade ago were quite often infected with the germ of careerism, they



In the gym of a student sports club

were out to get ahead at all costs. Young people entering the arts these days are prompted by the finest of motives, one Stanislavsky phrased so well, "You have to love art more than yourself, the artist." I am pleased to find this quality in today's youth, and not only in those who work in the arts.

Their keen interest in foreign languages is still another proof of the broader horizons of our present younger generation. Tens of thousands of young men and women are presently learning languages at special courses and study circles. We have growing numbers of children at schools where language teaching begins in the second grade, a guarantee that the next generation will be very much more familiar with foreign tongues.

I have already mentioned the heightened interest of young people today in man's inner world of ethics and spiritual values and their efforts at self-improvement as admirable attributes of today's youth.

From where does this heightened interest in moral values arise? The more superficial source, undoubtedly, is the general rise in living standards, the basic improvement in working and living conditions. One Soviet writer put it very well. When we began building the new society, he said, there was a lot of old rubbish inside and out. We had no time to tidy up the whole house and left half of it as it was. Now we are ready to go after that half, too.

The more basic source, tied in with living standards, of course, is the broad spread of education and, with it, the realization of the hard truth that the most difficult part of building a new society is molding the new citizen of that society.

Can man be changed? Can he be cleansed of milennia-old accretions of his less desirable traits and passions? Is what Rousseau said true—that man is born clean as a slate ready for any kind of writing? Or is the truth that human beings are born greedy, self-centered, malicious, vengeful?

My thought is that we are born neither angels nor devils, that we are something of both. Which will dominate? This is where environment—the influence of society, the family and upbringing—plays the decisive role.

Shakespeare has Hamlet say, "Give me that man that is not passion's slave, and I will wear him in my heart's core, aye, in my heart of hearts." I've always liked these lines. A man and his passions are like a rider and his horse. The wilder the horse and the harder to check, the firmer must be the rider's hand. The aim of Soviet education is not only to develop skills and sensitivities but also, perhaps primarily, to develop will and decision. Here is a small illustration of what I have in mind.

On a stroll with my son—he was five at the time—I bought him a bar of chocolate. Just then we ran into a little friend of his, a boy about the same age. "Share your chocolate," I told him. My son broke the chocolate bar into two pieces—very unequal pieces. I waited to see which one he would offer his friend. He hesitated for a fraction of a second and then held out the bigger piece. Had he done it without thinking, without a conflict, I should probably not even have noticed the incident. But he did stop to think, and he made a decision. His feelings pulled him one way and his obligation another, but he came through with flying colors.

Another illustration. In the twenties a physician I know had a large private practice besides his work in a state clinic. This was quite a solid addition to his income. But after a time he stopped taking fees from his private patients. This held true even during the tough years of the Second World War, when his family, like so many others, was having a hard time of it. When I asked him why, he said, "I don't feel right about it somehow."

I've wandered a bit from this question of whether human nature can be changed. Youth today answers with a decided "yes." My play *In Search of Joy* tries to differentiate between real joy and what we call pleasure. Most of the pleasures, I concluded, are purchasable, but true joy cannot be bought with money, it takes a different currency. At the many forums and discussions on the play this conclusion of mine gets the overwhelming support of audiences.

The Central Children's Theater of Moscow asked the older children among its viewers to answer this question, "What are you most interested in?" The answers show that youngsters today are interested in literally everything. This is one of the typical responses. "I am interested in the future of my generation and, of course, in my own future. . . . I am interested in the music of Prokofiev, the poetry of Carl Sandburg, the singing of Yves Montand and the situation in Tahiti—and that isn't all. I want to know about Japanese painting, spaceships and the Middle Ages." This was written by a fifteen-year-old Moscow high school boy named Victor Imoshechkin.

Leafing through the pile of questionnaires, I was pleased to see how broad the interests of our young people are, what a craving they have for knowledge, what high standards they set themselves.

At a Komsomol meeting

At the Hermitage Museum

They are interested in love, friendship, duty, career, recreation, their relations with older people, books, art, fashions—in everything from the latest style in shoes to the meaning of life. Their criteria are demanding, the solutions they look for ideal.

Not long ago I received a letter from a group of architecture and engineering students, asking my help on a project they had in mind. They wanted to design and build a town for themselves where people would live by the highest ethical standards.

Well, the reader may say, this is youthful romanticism. That's quite right, but it is joyful romanticism, socially constructive romanticism, not the old, self-seeking, foolhardy, devil-take-the-hindmost adventurism. It is worth noting that the great majority of workers on big construction projects like the Bratsk and Krasnoyarsk power stations are young people. This kind of romanticism is part of the very atmosphere they breathe in this creative now socialist world. Do we have the other kind of young people? Of course we do. We have the young opportunists, the smug philistines who think the universe turns around them, the spoiled ignoramuses, the wastrels and even the criminal. But all these taken together are only a drop in the ocean of youth who study, work, build. Small as it is though, the drop worries us—antisocial diseases of this kind can be acutely contagious.

I should like to spend a minute on a category of youth that comes in for a good deal of table talk these days. The more irascible members of the older generation classify these youngsters—because they dress well, I suppose—as *stilyagi*, style hounds.

The real *stilyagi*, however, are empty-headed young men and women without a single fresh or worthwhile thought. Their range of interests is as narrow as it is dull—dancing, drinking and petty rowdyism. They are no new phenomenon. There were *stilyagi* in Russia back in the seventeenth century. You can read about them in the satirical journals of the day, different only in name from our present breed.

The young people I have in mind are not *stilyagi* at all. Most of them are thoughtful, well educated, interested in music, art, science. But they are not violent partisans in such "world-shaking" matters as rock-and-roll or abstract art, although they may like or dislike one or both.

It is a characteristic of youth to be critical and to be direct and outspoken in their criticism. The young people of today, I am inclined to believe, are particularly critical and intolerant of anything that disfigures life. That attitude derives from two factors. The first I have already mentioned—the rise in ethical standards as a result of more and better school ing; the second is the campaign against the Stalin cult of personality.

Unless one has followed the changes that have taken place in the Sovie Union since the Twentieth and Twenty-second Party Congresses—the wid democratization and the open exposure and criticism of the evils that aros from the Stalin cult of personality—it is impossible to understand ou young people today and their abhorrence of anything that smacks o bureaucracy, bombast and hypocrisy. That attitude is general. One find it in college students, in young professionals, artists, scientists and indus trial workers. This is not the *stilyagi* type of mentality at all, regardless o how sharp their dress may be. I had a get-together recently with youn workers at the Likhachov Auto Plant and that was the kind of young me and women I met there.

Now what *don't* I like about the younger generation? Something I meet too often—a disrespect for their elders, and that includes parents. What ever reasons there may be for the attitude, there is no justification for it Arrogance in an adult is unpleasant enough; in young people it is positivel sickening.

Another thing I don't like is the know-it-all attitude I find much to frequently in young people. I am fearful sometimes that the young critic may, in all righteousness, become as bad, if not worse, than those the criticize. Young wine in ferment is a fine drink. But young people grow up, and if old wine begins to ferment that means it has gone sour. Ther is nothing that can be done then but to pour it down the drain.

Love stands high on the list of ethical problems for young people. Som readers may think it strange that I say high on the list rather than a the top of the list. But that's where life puts it. And there is nothing wron about that, to my mind. How about the work a person does? Where doe that go on the list? I'd say the young physicist ought not to give up hi work and follow his beloved to the ends of the earth. I'd say he should d everything in his power to keep her by his side, and in such a way that hi strong passion for creative work will not suffer.

But what if the dilemma cannot be resolved? Then the victim, I a afraid, is most likely to be the lady concerned. In the old days decision of this sort were the prerogative of the artist, actor and writer—and wer made with a grand flourish. But now we have many fields of effort that a

Performing at an amateur musicale

no less creative and have as strong a hold upon the creator as painting, writing or composing. That is why I put love high on the list but not at the top.

Common to all our young people is a hatred of war. No need to go into a long explanation of how the virus of war contaminates the very breath of life. It is worse for the young than for the grown; an atomic blast would not even leave them the past that the adult has lived through, let alone a future. But even the nuclear bomb unexploded, simply hanging overhead, is murderous. It radiates fear and hopelessness, paralyzes mind and body. It is no simple problem fighting the psychological radiation of the bomb.

The imminent threat of the nuclear bomb weighs as heavily on our Soviet youth as it does on young people anywhere in the world. They have two weapons to fight that creeping psychological radiation: first, the faith that a nuclear war can and will be prevented, that reason will triumph over madness; second, the meaningful substance and purpose of their lives.

Their opportunities for education and work are unlimited. Unemployment is a word that has only academic meaning for our young people. There has been no unemployment in the Soviet Union since the thirties. But when we talk about job opportunities, we mean more than work to make a living by; we mean a job in a field you like, one where you can show the stuff you're made of, one that will use your brain and heart, one in which you can make a social contribution.

A normal, healthy person wants to use his potentialities. The young people in our country are given every chance to do so. The very workaday environment they live in, great projects in construction wherever they look, gives them the faith and confidence that a lasting peace can be won.

The youth of this third generation, I am certain, are as loyal to the Soviet ideals as the generations that preceded them. They are perhaps more fortunate than we in that they will be living in the communist society they and we are now building. But our envy is not of the bitter variety. Our time has been interesting in its own fashion, and we have done our share of the job they will be completing. And should, heaven forbid, today's generation have to rise to the defense of the country, they will do no less than we did.

Finally, what should we be expecting of our youth today, in the light of their large abilities and opportunities? I would say progress in the sciences, further development of the new social relations and the living application of the new ethics. ★

Victor Rozov is a Soviet playwright who writes mainly about young people. His characters are never in any way exceptional. They are young people whose seemingly unromantic lives are packed with the most ordinary happenings. But the writer possesses the gift of revealing a character's soul through trifling occurences, and of evoking sympathy or antipathy for the people he depicts. Thus light and shadow alternate in his works, the contrasts being skillfully used in educating the new man. Essentially all Rozov's plays deal with one great theme—Soviet youth's craving for peaceful and constructive labor and the realization of its ideals. Great faith in the goodness and integrity of the younger generation is typical of this playwright.

Victor Rozov was born in 1913, in the town of Yaroslavl. Soon after, his family moved to Kostroma, where Victor finished school and got a job in a textile mill, spending his evenings at rehearsals of the young workers' amateur theater. Love for the theater brought Rozov at the age of 20 to Moscow, where he was enrolled in the school of the Theater of Revolution. In 1938 he joined this theater's company. During the war he was severely wounded at the front and was hospitalized for a year. After his recovery he worked with a frontline theater company.

After the war Rozov helped to organize the Kazakh state theater for children and adolescents at Alma-Ata, and worked as a stage director at the theater of Moscow's Central Railwaymen's House of Culture. He entered the Gorky Institute of Literature and in his sophomore year wrote his first play, Her Friends, *which was staged by the Central Children's Theater.*

Since 1953 Rozov's plays have been staged with great success. His comedy Good Luck!, *such of his plays as* Life's Pages, In Search of Joy, *and the drama* Ever Living *invariably attract a full house. Rozov used the theme of* Ever Living *for his screen play* The Cranes Are Flying, *produced by the Mosfilm Studios. This film won world popularity and at Cannes was awarded the Gold Palm. The French magazine* Cinemonde *and the newspaper* Figaro *awarded it the Victory Prize.*

Some of Rozov's best plays have been staged by theaters abroad and are shown to audiences in Poland, Rumania, Bulgaria and Czechoslovakia. The comedy Good Luck! *has been published in Italy.* In Search of Joy *and* Good Luck! *have been presented over British TV in English.*

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FATHERS AND SONS OF NEW RUSSIA

BY VALENTIN CHIKIN

DIRECTOR, *KOMSOMOLSKAYA PRAVDA'S* INSTITUTE OF PUBLIC OPINION

1917-1920. The trying days of civil war and intervention. Young people led the subbotnik *movement that swept the country—volunteer work on rest days to rebuild the shattered economy.*

FYODOR PETROV

Member of the Communist Party since 1896

Our younger generation faces difficult tasks—tasks that grew out of the postwar period—virgin soil reclamation, the giant seven-year plan construction projects, urban housing, the farm development program, advances in science. I feel that our young people are coping with tasks and that we oldsters have every reason to be proud of them.

VERA KETLINSKAYA

Leningrad Writer

Older people have a habit of deploring the young. "We weren't that way," they say. I don't take kindly to such complaints. In their day, too, there were all kinds of young people—including the philistines and the egotists. But a generation has to be judged by its best people, those with ideals and aspirations who pick up the torch of progress from their fathers.

Is there any venture today that does not evoke the enthusiastic response of our young people? Wherever they are needed—the virgin lands, remote construction projects north or south—there our youth volunteers go.

1920. Wherever hands were needed, young people, some of them not yet grown out of childhood, stepped into the breach. Maturely, consciously, they set out to fight for and build a new life.

THE Public Opinion Institute of the youth newspaper *Komsomolskaya Pravda* early last year polled Soviet young people to find out what they thought of their own generation.

Some 17,000 young men and women from every section of the country aired their views. Members of the older generation also had a word or two to say on the virtues and foibles of today's youth.

When the present generation does a self-portrait, the poll indicates, it tends to use the parents' and grandparents' generations as models. The choice is significant; they are the heroes of the Revolution, the first five-year plans and the Great Patriotic War.

But all of them end with the same self-portrait after they make comparisons. Some, not many, like Timofei Lavrentiev, a 24-year-old Moscow radio engineer, declare, with that categorical finality people say is so characteristic of youth, that "the young people of prewar years, the generation of the Civil War, the first five-year plans and the collectivization period had more moral fiber, were better, more devoted, more selfless."

But there are others, like Osat Tuyev, a 22-year-old Tashkent engineer, who are sure that "our generation can stand up with the best."

Obviously the question cannot be decided by a show of hands, although from the strict mathematical point of view the young man from Tashkent has a very large majority on his side. Only 178 of the 17,500 polled, one per cent, agree with the Muscovite.

Most of the young people refused to get agitated about whether they were better or worse than their forebears. They thought, and rightly so, that it was an academic question and directed themselves to the real ones: ***How is youth today maintaining and furthering the revolutionary tradition of its fathers? What new contribution to life is it making?***

The 17,446 young people who answered the questionnaire drew a composite self-portrait with these basic character highlights:

—patriotism and love of the socialist motherland;

—devotion to the Party and the ideas of communism;

—lofty moral qualities, such as will power, courage, truthfulness and consideration for others;

—a striving for knowledge, industry, collectivism;

—enthusiasm, fidelity of purpose, optimism;

—hatred of national and racial oppression;

—fervent advocacy of peace and international amity.

One of the interesting things about the list is that the questionnaire we sent out suggested no choices. The young people themselves chose these as the qualities they most admire. Another interesting thing is how closely the choices correspond to the ethical code for the builders of communism in the new Party Program published much later.

The country went through a multistage process of development, from the initial embryonic forms of communist economic management and self-government to the complete and final victory of socialism within the limits of the vast country. Each stage brought its own problems and its own tasks. But whatever the task—whether it was to overtake the economic backwardness of Russia, battle against foreign intervention, defend the gains of the people from fascist invasion—the young people made their important contributions, impelled by the same revolutionary spirit that had moved the generations before them, by revolutionary romanticism, if you will.

It was this revolutionary romanticism that motivated the "25,000-ers," the 25,000 townspeople in the twenties who brought economic and cultural literacy to the villages. That same revolutionary romanticism was responsible for the heroism of our fighting men in the Second World War. It was likewise responsible for the nationwide movement that textile worker Valentina Gaganova began when she voluntarily sacrificed the high wages she was making as leader of a high-producing team to take over leadership of a low-producing group. The motivating force in each case was dedication to an ideal inherited by sons and daughters from their fathers and mothers.

Nikolai Artamonov, 28-year-old concrete layer, speaks for the entire younger generation when he says: "The Revolution goes on. Everywhere in our work and our living we see character being reshaped. We see millions throwing off all that is false and old, and putting on the new and the beautiful."

What is defined in the phrase "revolutionary romanticism?" A high level of political understanding, for one thing; devotion to the revolutionary cause, for another; the will to struggle for the common interest; and the drive and enthusiasm that come from a clear vision of the goal.

This romantic spirit is an attribute of masses of people, it is not the romanticism of the Byronic hero.

Don Carlos, Infante of Spain, looks back and exclaims bitterly, "Twenty-three years and nothing done for immortality."

Soviet 23-year-olds have already built themselves a monument that will last through the

1920-1925. Famished, cold and war-torn, revolutionary Russia nevertheless embarked on a mass campaign to teach the illiterate millions. The teachers, for the most part, were young people.

Marshal RODION MALINOVSKY
USSR Minister of Defense

To my mind, the most striking quality of our young people is their conviction of the rightness and ultimate victory of our common cause.

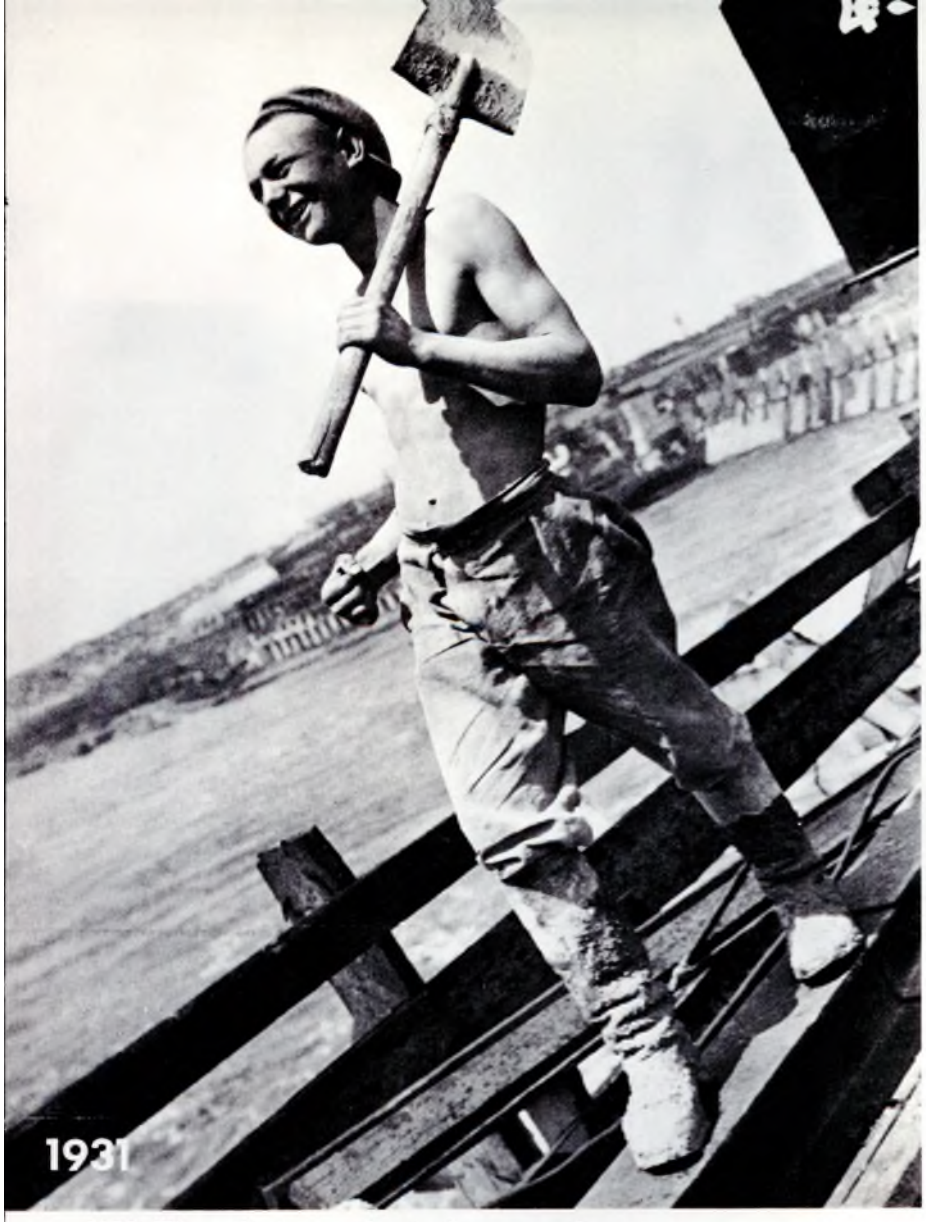
Effort and achievement give life meaning. The difficulties in any undertaking must be overcome, not evaded, for it is in the struggle against the difficulties that will, courage, persistence, strength and resourcefulness develop. I feel certain that our young people will prove worthy of their forebears.

JUSTAS PALECKIS
Lithuanian Supreme Soviet Presidium

A man past 60 is in a position to make comparisons, and my belief is that we have never had such a winged younger generation as today's. It does not grope in the dark; it is fully aware of its goal; it does not look for a special place in the sun but takes its place with the other fighters for the general good. We older people have regard, affection and great respect for the young men and women who will be replacing us.

The finest characteristics of our young people I consider to be their understanding of the important tasks that our country has to carry through, their feeling of personal responsibility for each of these tasks and their wish to arrive at answers independently.

1931. "Village" had been the synonym for benighted ignorance in old Russia. The 30's saw the transformation. A Gorky Auto Plant mechanic teaching a collective farm girl to use tools.

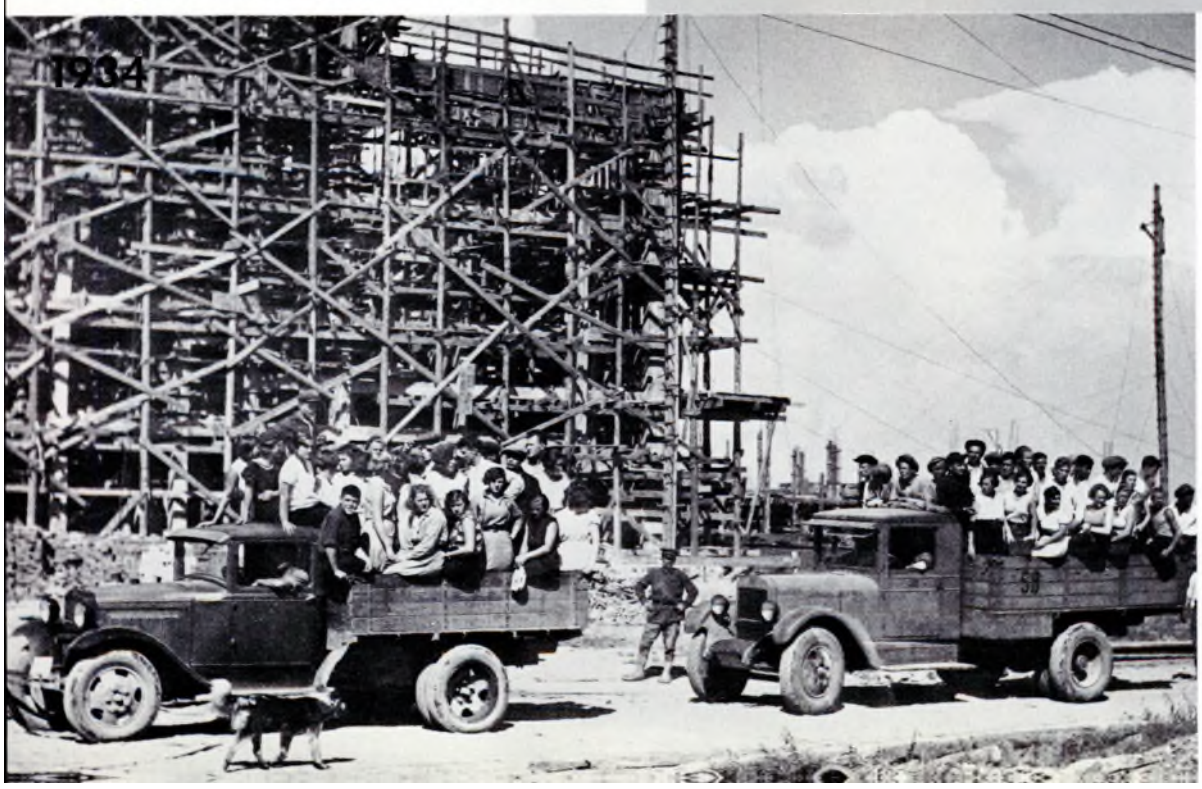


1931. The enthusiasm and grit of young workers like this made up for the lack of machines and experience. He and his generation built the first power stations and the giant factories.

STANISLAV STRUMILIN
Member, USSR Academy of Sciences

I am pleased with our youth and the fact that its highest aspiration is to study and know. I believe that optimism and determination are most characteristic of our young people and that these qualities spur them to go on studying and experimenting even under the most trying conditions. My wish, from the very bottom of my heart, is that our youth stay ever young, preserve its youthful love of truth, be generous in friendship and faithful in love, cast off old prejudices without regret and fight for its beliefs.

1934. One of the great youth projects of the 30's, the new industrial city of Komsomol-on-Amur arising in the Far East. Two years before the photo was taken, this had been wild taiga.



ages. In the past decade there has been no project of any significance—the reshaping of Siberia, the Communist Labor Team movement, virgin land development, the mass self-government movement—in which the young people have not played a part, often a decisive part.

Our questionnaire did not ask specifically what major projects the present generation has to its credit. But the answers, either directly or by implication, listed a score or more. Two of them, in the opinion of 4,730 of the persons polled, mark the generation's coming of age—virgin land development and the Komsomol construction jobs of the seven-year plan, those for which young Communists made themselves personally responsible.

Our present 20- to 30-year-olds have earned their many honorable titles—"Builders of Communism," "Virgin Land People," "Trail Blazers of the Future," "Heroes of the Seven-Year Plan." And one other—"Explorers of Outer Space." Preceding generations elaborated the theory of space flight, but it was the youth of today that first looked down at our planet from cosmic heights.

A comparatively small number of the answerers —only 669—mentioned their generation's contribution to space exploration. But the number would unquestionably have been much larger had we held our poll three months later than we did, after April 12, 1961, the day Yuri Gagarin made his round-the-planet flight. Soviet cosmonaut No. 1 is 28, cosmonaut No. 2 is 26. They both have biographies that read much like that of any other Soviet young man of the current generation.

The young people of today grew and matured, in mind and body, as they built cities in the Siberian taiga, gathered the harvest on the virgin lands, broke through the gravitational barrier into outer space.

Anatoli Rudik from Lugansk Region, 25 years old, wrote, "I started working at 16. After my army service, I took a job in a mine and worked as a waste-pile man, hewer, electrician and welder, in succession. I wanted to try my hand at everything. I also studied evenings and graduated from secondary school with honors, a silver medal. I was elected secretary of a Young Communist League group and then worked on the City YCL Committee. At present I'm a student.

"At the end of my life I want to be able to say that I haven't lived only for myself but have helped make other people happy. That's the real purpose and aim of life. Without it, I believe, life wouldn't be worth living."

The Socialist Revolution planted the seeds of a new morality that would, so the Party believed, remold human character. The seeds are yielding today's good fruit. The revolutionaries of the

past were isolated beacons in an ocean of self-interest, cruelty and servility. Today there is nothing left of this centuries-old ocean but a puddle here and there. Millions now think and act as these few revolutionaries did.

There are, as there always have been, young people who are not moved by heroism, who feel no flicker of enthusiasm, no stir of romance. But history leaves no memory of these people, and their lives do not influence its course. They do not speak for their generation.

An analysis of the poll reveals a spiritual and ideological kinship between the two generations. The sons are carrying on the revolutionary traditions of their fathers and applying them to the new situation. But there are some people, in both generations, who feel that their years somehow absolve them from responsibility. An absolute majority of the young people who were polled denounce their own generation for its lack of respect to its elders. They attribute it to bad upbringing—something that must be overcome.

Others deny the old maxim "You can't teach Grandma to suck eggs!" and turn it on its head. They write about older people who by their behavior, frame of mind and way of thinking do not deserve respect from younger folks. With good reason they quote Karl Marx, who said that people who educate others should be educated themselves.

A good many of the older questionnaire answerers make the same point. Sixty-year-old Dmitri Kazmenko from Gorky worked with young people for 15 years on farms and for 20 years at the Gorky Auto Plant. He thinks they are fine and admires their wonderful character. If some young people have a streak of cowardice, toadyism, bureaucracy and selfishness, their elders are to blame, he says. "Our young people sometimes have these traits because they are tolerated and even held up as a basis for practical living. When their seniors tell them the boss is always right and it is useless to fight him, some of the young people give in and discard their principles in striving to achieve their aims." The conclusion he draws is that if oldsters want to be respected, they must be the models in their thinking and behavior.

One more aspect of this same question. Some fathers—you find them in every generation—forget that they were once young themselves. They don't take the trouble to understand their children and their unqualified answer to anything new or unfamiliar is "No!" Progress to them means doing things the way they have al-

1941-1945. Soviet youth left its peacetime pursuits and with Americans, Britishers, Frenchmen and the young people of the other Allied nations crushed the enslaving fascist armies.

GRIGORI DUBININ

Leningrad Worker

Youth today seeks education. It follows the prompting of our time in this respect. The days of our first five-year plan are gone; that was when muscle power was the first requisite. Now science decides everything, and our young people, fully conscious of that fact, demonstrate an enormous amount of persistence and will power in their eagerness to learn. And their efforts are vastly productive. Work and study—that seems to be the maxim by which our present-day young people live.

VASILI SUKHOMLINSKY

Secondary School Principal, Kirovograd

I have given much thought to the spiritual life of the younger generation.

To my mind work is the greatest joy in life, and idleness the younger generation's most dangerous enemy. It pains me to watch young people "killing" time. Labor offers limitless possibilities for creative pleasure. It not only gives us our daily bread but is the source of our spiritual well-being and our diversions as well.

1954-1960. Virgin-land development — a great chapter in the postwar history of Soviet youth. In these few years 350,000 young settlers opened up 104 million Siberian and Kazakhstan acres.

1962. To the youth of the 20's communism was a wonderful but far-off dream. The present generation is building communism on a foundation of automated industry and mechanized agriculture.

ways done them. They feel slighted and think traditions are violated when a new idea or a new way of doing things is suggested. These laggers-behind-the-times scold young people without sense or justification, and there we have the source of misunderstanding.

The answers show that young people today are doing their own thinking and that they have small patience with those who parrot phrases.

"Of course we must learn from our fathers and grandfathers, from the people of the thirties and the Civil War period," they say. "But that does not mean that we must do things the way they were done 30 years ago. Certainly we must make use of their ideas, but only after we test them to see whether they stand up today."

It is precisely independent judgment that the 20- and 30-year-olds appreciate more and more. They look on the progressive traditions of their fathers as beacons lighting up the road ahead, but they are sharply critical of members of their own generation who unthinkingly and mechanically follow old traditions that sometimes impede progress.

Young people always take to the new, we know, but they take to the new somewhat differently today than they did ten or so years ago. And for this dual reason. First, with the early sixties our country entered a decisive phase in the building of a communist society. We are building communism now and evolving new economic, political and cultural forms in the process. Second, along with the cult of personality we swept away the impediments that had checked the independent thinking and hindered the creative effort of millions. Today we are thinking harder, searching more, relearning many things.

We have young people who wonder whether they were not born too late, whether all the great things have not been done already. But then, didn't the Komsomols of the thirties envy those who fought in the Revolution? And didn't the young people in the fifties bewail the fact that they were born too late to work on the great building projects of the first five-year plan? About this, 28-year-old Natasha Denisyuk of Khabarovsk writes, "How many times have I heard young people say, 'Oh, if only I had been born 30 or 40 years ago. Times were different then.' But the years passed and we grew up, and we learned that ours, too, is a wonderful time, with just as many great things that need doing." ★

EVENTS AND PEOPLE

OLD GEORGIA'S TREASURES

In the autumn of 1961 an archaeological expedition of the Georgian Academy of Sciences discovered a rectangular burial chamber dating back to 600 B.C. carved in the rock beneath the ruins of walls built in 100 B.C. The site of the excavation was the village of Vani in Colchis, the legendary land of the Golden Fleece. Research has revealed that a young woman of 25 had been buried there. The unusual wealth of the burial would indicate that she was the wife of the governor of the province.

Most of the ornaments found in the sepulcher were exquisitely made of very fine gold. Particularly lovely are two ancient diadems, shown in the photo. One of them is smooth, finished with boss work in the Georgian style, and the other has a plaited stem with widening ends on which pictures of animals are engraved. This ornament has hooks for four pairs of earrings, and these were also found during the excavations.

Two pairs of earrings are in the form of a ring with rays bestrewn with fine gold beads radiating from it. Of special interest is the third pair, made in the form of two horsemen placed on a chariot. The tiny gold horses are covered with a net of pearls. Hanging from each earring on tiny chains is a cluster of pendants in the form of massive golden acorns.

Among the other treasures which were unearthed were four golden oval-shaped bracelets with sculptured heads of animals at the ends; three rings with carved figures of animals and a fourth with an animal attacking a man; a tiny amber seal in the form of a cube with a golden eye revolving around an axis and a hare carved on one side and a deer on the other.

The woman's chest was adorned with a multicolored plate suspended by golden clasps.

The exceptionally fine work, pleasing proportions and good taste of the necklaces found are particularly striking. One of them consists of very small golden birds, with heads and tails of the tiniest pearls and eyes of colored paste. Another is in the form of gold filigree fruits.

In addition, about a thousand tiny gold ornaments were found.

Unfortunately the articles made of silver and bronze, which are of no less scientific interest, are in poor condition and require special laboratory treatment which has not yet been completed.

Excavations and studies of the ancient city are continuing and we are eagerly awaiting new interesting findings.

RADIO PILL

This little tube, eight millimeters (three-tenths of an inch) in diameter and less than two centimeters (seven-tenths of an inch) long, is a radio transmitting station. Informally it is called a "radio pill," formally, a radio capsule for examining the gastrointestinal tract.

This is radioelectronics replacing the rubber tube. The tiny transmitter is swallowed as easily as an ordinary pill. As it moves through the stomach and intestines it sends signals to a receiving and recording device outside.

One of the sensors of the "radio pill" reacts to the slightest temperature change, another measures acidity, a third is sensitive to pressure changes.

The receiver antenna catches the radio readings and records them on a moving tape to give the diagnostician a chart of the acidity, temperature and pressure changes for the entire course of the capsule's movement.

These "radio pills" open new possibilities for internal examination and diagnosis.

PLASTIC OBJETS D'ART

There are so many things to see and do in Sochi, the vacation resort in the Caucasus described in the guidebooks as the "Gem of the South," that you are likely to miss a small light-colored building perched on a mountain slope, the Sochi Art Salon, unless you happen to notice the shop window. One glance at the bright display of ingenious shapes and unusual colors will lure you inside for the first of many visits.

The vases, ash trays, coffee sets, inkstands, desk sets, decorative fish and a "porcupine-type" pencil holder on sale are all made of ordinary plastic instead of porcelain and ceramics, but they are turned out with such beauty by Sochi master craftsmen that they delight the eye.

These items are souvenirs, but of a very special sort. They are both useful and decorative and will grace the living room of the most finicky of housewives.

The Sochi plastics industry is no more than ten years old. The first few souvenirs turned out by the plastics shop set up by the Sochi art workshops sold immediately. Local artists and craftsmen thereupon looked for ways of using the synthetic for decorative objects and worked out an ingenious process for the production of many-piece articles of varicolored plastics. Forge presses of a unique design had to be made and standard presses adapted for the manufacture of items in complex press forms.

Now about 100 people are busy in the plastics shop and research laboratory turning out the many lovely objets d'art designed by Sochi artists for pleased vacationers.

In the photo are two figures representative of the work of Sochi craftsmen.

WORLD COAL-MINING RECORDS

Soviet newspapers recently announced that Kuzbas miners had set a new world record for cutting coal. Not long ago a mine combine team that cut 15-20 thousand tons of coal a month in the region was considered very special indeed. Now many teams are at that production peak.

But Nikolai Malyutin's team at the Chertinskaya Yuzhnaya Mine, working with a narrow face K-52m combine, cut 50,020 tons of coal in a single month and broke the world record for coal productivity that the Karaganda miners had held for a long time.

Malyutin's team cut as much coal on their single slope in a month as whole mines do in the same time. The team worked on an ordinary 460-foot face with a seam thickness of about three feet.

Their achievement involves more than so many tons of fuel added to the nation's total. What they have done is to build a highly creative, therefore highly productive, unity of the separate skills and processes involved in their work.

The photo shows Nikolai Malyutin (bottom row, second from the right) and his team after setting the world coal-cutting record.

FROM ONE GAGARIN TO ANOTHER

The world's first cosmonaut, Yuri Gagarin, discovered that he has a very young namesake, born November 29, 1961—first name Yuri; patronymic also the same—Alexeyevich; and surname Gagarin. Little Yuri is the son of a tractor operator at the Mednovsky State Farm in Kalinin Region.

The newspaper *Sovietskaya Rossiya* carried the story with a photo of the baby. Thereupon the cosmonaut addressed an envelope to the junior Yuri Gagarin at the Mednovsky State Farm containing a photo of the senior Yuri Gagarin inscribed "To little Yuri Gagarin with best wishes, Gagarin."

ARCTIC EXPLORATION

A quarter of a century ago a plane touched down at the very top of the globe and landed four Soviet explorers on a drifting Arctic ice floe. Ivan Papanin, Ernest Krenkel, Pyotr Shirshov and Yevgeni Fyodorov spent 274 days on the floe and drifted almost 1,600 miles. The observations they made were of primary scientific importance.

The summer of that same year, guided by the data provided by the polar station, Soviet flyers Valeri Chkalov and Mikhail Gromov made their nonstop USSR-USA flights over the North Pole. Since that time drifting laboratories have been set up at many points. The latest is North Pole-11, now in the Arctic basin.

Soviet enterprise opened the long-locked regions of the frozen continent with the Northern Sea Route, a waterway that the mariners of all countries dreamed of for ages, and built science towns, marine ports and industrial cities on the unexplored shores of Siberia. No little credit for this is owed to that first drifting Arctic science laboratory of a quarter of a century ago and to those that came after it.

In the photo are the men who made up the first wintering party (left to right): Pyotr Shirshov, Ernest Krenkel, Ivan Papanin and Yevgeni Fyodorov.

AN AUTHOR'S THREE SCORE AND TEN

At 70, Konstantin Paustovsky, the noted Soviet writer, looks forward to many more years of the rich, active and busy life he has led since his youth. He worked as a streetcar inspector, a factory worker, a reporter. He fought in the First World War and the Civil War with a medic's kit in one hand and a correspondent's notebook in the other. During the first five-year plan (1929-1932) he went off to the desolate shores of the Caspian Sea where construction was under way to write *Kara Bugaz*, one of the best books on the great labor feats of the Soviet people.

Right after World War II he published *A Story of Life*, a story cycle based on biographies of people of different walks of life—farmers, writers, seamen, Civil War heroes, fishermen—all men who typify their time.

Paustovsky is a much respected and admired writer. He loves life and people, nature and art. His pen is both a weapon and a tool: a weapon to fight for truth and justice, a tool to help build a communist society.

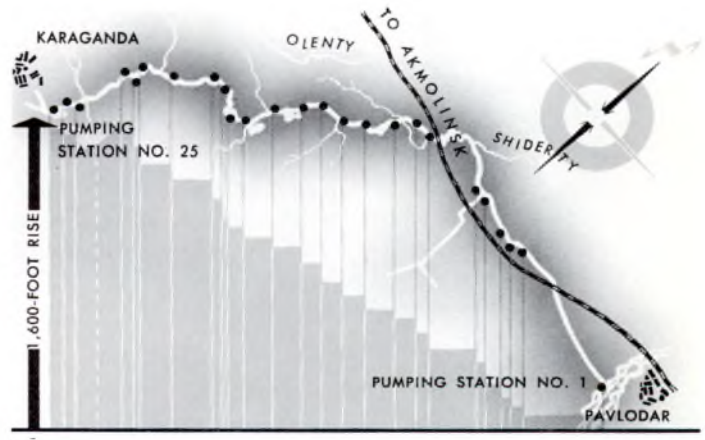
HIGH-SPEED FREIGHTER

A northeaster rages for days, slamming mountain-sized waves against the ship's sides, but she sails on without cutting a pound of steam. The Molucca Strait is left behind. Three days later Ceylon looms into sight. One day more and Minikoi Island, known to seamen the world over, is passed. Another three days and the *Leninsky Komsomol* sails into the Gulf of Aden, after an Indian Ocean crossing of seven days.

This big and very fast Soviet steam turbine vessel is celebrating its third birthday afloat. On one occasion, approaching Suez, the *Leninsky Komsomol* overtook the *Chitrol*, a fast British liner. The ships were so close that, through binoculars, you could see the surprised look on the faces of the passengers lining the starboard side. The British ship put on all speed but it was soon left far behind.

Another item of note, reported by the Singapore press—the *Leninsky Komsomol* takes on an unheard-of cargo weight: 13,844 tons of natural rubber. And one last item—in Shanghai the ship's jibs loaded 13,000 tons of rice in 48 hours.

The *Leninsky Komsomol*, which can cruise for 12,000 miles without calling at a port, has steam turbines, automatic control and a speed of about 20 knots. Her carrying capacity is 14,500 tons and her displacement, 22,100 tons.



MAN-MADE RIVER TO FLOW UPWARD

Siberia's Irtysh River will soon be watering the dry lands of central Kazakhstan. Rich deposits of minerals and building materials have been discovered in that part of Soviet Asia, and more water is needed for the new industrial, mining and farm centers and their growing populations. The Irtysh-Karaganda Canal, one of the seven-year plan projects, will stretch for 300 miles. It will also rise by 1,600 feet, the difference in levels between the Irtysh and the city of Karaganda, where the canal ends. Powerful stations will pump about two cubic kilometers of Irtysh water uphill to Karaganda every year.

youth's HAPPINESS 1962

We have a mountain of mail, 4,000 letters, some as thin as postcards, others almost notebook thick. They are postmarked from every place in the Soviet Union and from several foreign countries. All of them are addressed to Yekaterina Maltseva, an 18-year-old YCL'er from Orekhovo-Zuyevo.

They began arriving when we published a letter of hers in "Our Readers' Forum" of one of the January issues of our paper. She wanted to know what happiness is, where one finds it, and how one must live to have a happy, interesting and useful life. Komsomolskaya Pravda *asked its readers what they thought. Today we are summing up this forum we call "Happiness, 1962."*

The 4,000 responses to Yekaterina Maltseva's letter are 4,000 voluntary confessions, 4,000 friendly counsels.

What is happiness? What are its constituents? Where does one look for it? Millions of people through the generations have asked themselves these questions. History records the replies of such diverse men as the Greek philosopher Plato and the Russian scientist Lomonosov. Karl Marx answered his daughter's jocular question with the statement, "Happiness is struggle."

Gather the many different definitions of happiness by the world's best minds and you have a volume of formidable dimensions. And yet, it would be hard to find the young man who by the age of 18 has not asked himself that same time-worn question.

Is it really necessary—this tormenting search for an answer to a question that has already been answered so many weary times? Isn't the 18-year-old today who wonders what happiness is like a man trying to invent the bicycle in the space age? Hardly. The ancient question is still very much in order. To be sure, many great men have defined happiness for us. But time moves on, and life changes most things—including the concept of happiness.

What makes for happiness today and how do you know when you have it? These are the replies of Katya Maltseva's contemporaries, excerpts from their letters.

Antonina Kuimova, a teacher in the village of Shakunya, Gorky Region, writes: "I was 17 when I graduated from secondary school and volunteered for the front. I had the chance, during those difficult years, to see the way ordinary people turned into heroes in battle and siege, when a man is put to the severest test. I saw the way men fought for each other, saved one another, shielded comrades from bullets, shell splinters and bombs with their own bodies, shared a last piece of bread.

"Our people are wonderful. They deserve our utmost love. For their sake we must defend peace, fight for peace. This is where happiness lies."

Moscow student Leonid Troyanov believes that "to be happy every person must have faith in himself, in his own strength. He must never think, even to himself, 'I'm a small man.' He must never feel that he is weak, insignificant, commonplace, a tiny letter set in such small type in the great book of history that nobody would notice if it fell out.

"A man has to feel the equal of all other men, he has to feel that he is the paint on the canvas of earth without which it would have no beauty, the chord in the grand symphony of life without which there would be no harmony. Every man should know that he is needed. He must never feel in the least contemptuous of himself or of others."

Miner Nikolai Volgin writes: "As to what happiness means to me, I don't really know. I haven't lived long enough yet. But I would like to tell you about Nikolai, a man I work with. He's a lot stronger and more skilled than most, but his earnings are usually lower because he volunteers for work in the worst shafts. Besides that, he sends almost half his wages to friends who are studying at institutes. Like himself, they have no parents or relatives and were brought up in a children's home. To Nikolai every person is a friend and brother. People like Nikolai make themselves happy by making others happy."

These are from three letters we chose at random. Any five, fifty, five hundred others we might have chosen would say the same things. Analyze these 4,000 letters and you arrive at this single conclusion—that happiness is not something hidden behind the four walls of a comfortable, well-fed life. For happiness, say Yekaterina Maltseva and her contemporaries, the younger generation, you must have peace, of course. That is a primary necessity. Another is work. And, to their minds, equality and fraternity are as necessary for happiness as water and food are for life.

Let us open another letter—this one from Vladimir Momont, who works in the city of Severomorsk on the Kola Peninsula. He says:

"Six years ago I thought happiness was big wages, good clothes, a pretty girl, and 'good' friends to have a fine time with.

"Slowly, very slowly, life ground that nonsense out of me. It straightened me out, pushed me into civic activity and made me go to school.

"What does one need to be happy? A great dream that gets you moving, true friends, faith in the future, a job you like. You have to love nature and people, everything that is beautiful and good in life, and you have to try to make it richer and even more beautiful."

There is very little one can add to Vladimir Momont's letter. Perhaps this one thing—that happiness in the present is also a step toward happiness in the future. Our young letter writers all make Peace, Work, Freedom, Equality and Fraternity requisites for happiness. The happiness they envision for the future is larger than themselves. It is worldwide.

Can there be individual unhappiness in a happy society? Even a communist society is no guarantee against disillusionment in love, failure in work, doubt as to whether your life might not have been better spent.

How then does one learn to live happily? What does one have to be like to find happiness? And where does one look for it?

"My happiness was born one frosty February night in the troubled year 1920 when I ran away from home to join the Red Army," writes 56-year-old pensioner Nikolai Goltsev of Zaporozhye District.

And 20-year-old Alexei Petrovsky writes, "In 1960 I worked on the construction of the Sokolovsko-Sarbai Combine. It was then I declared December 2 a personal holiday. It was not my birthday, it was just my first day of work. I felt like I'd been born a second time. There was nothing special about that winter day, it was frosty and sunny, but when I was walking home from work it seemed to me that everything was singing. I felt as though the people I passed were looking at me and saying to themselves 'There goes His Majesty the working class!' I strode along importantly, stepping high and looking respectfully at my hands, smeared with dirt and oil. They seemed to have grown larger. I was very happy. . . ."

Two letters and two birthdays of happiness—40 years apart. Two milestones on the long road our country traversed—breakup and building. Nineteen twenty was a year of bayonets, trenches, hunger and typhus. It was a year when one was a soldier at 14, when happiness was a rifle in the hand defending what the Revolution had won. Nineteen sixty sketched the outline of a gantry crane in the skies. It was a year of giant electric stations, great plants in construction, and railroads cutting their way through the taiga like parallel steel daggers. That was the year happiness marched in overalls down the streets of new cities.

The future had to be fought for in the cold and slime of the trenches. Now the grandchildren of the heroic soldiers of the Revolution volunteer to pioneer the virgin lands. They grin at their blistered, begrimed hands.

Happiness is not something you wait for, it isn't inherited or hatched in a warm parental nest. As soon as your wings are strong enough, you fly off in search of it. It's to be found in work and struggle.

Nikolai Goltsev, who ran away from home at the age of 14, later helped build the Dnieper Hydroelectric Station. He was no longer a soldier then, but a worker and a teacher of workers. He trained many of the men who are now captains of our country's industry. They tried their wings on the shores of the Dnieper, toughened them in the struggle against high winds. The happiness of these men was born on the Dnieproges construction site.

To fritter away one's youth is to ruthlessly trample upon the young shoots of spring. Valeri S., a Leningrad student who did not care to divulge his full name, headed his letter "Romanticism? It Doesn't Wear Well." We printed it in "Our Readers' Forum" column. Valeri looks down on "romantic drivel" in favor of such "sensible" things as a nice apartment, a car, a well-paying job and a good marriage. This is his idea of happiness. And "there are a lot of people who think as I do," he adds defiantly.

The arithmetic of life does not support Valeri S. We found no more than a dozen letters that went along with him. The other thousands of our letter writers and readers considered themselves romanticists.

One was Alexei Gerus of Dolinsk, Sakhalin Island. He looked on Valeri S.'s kind of happiness as the happiness of a "mole who thinks its dark hole is the finest kingdom in the world." Alexei Gerus counters Valeri S.'s arguments with the story of his own youth.

"I grew up in a children's home. In 1944 I ran away to the front and was adopted by a regiment as a mascot. After the war I studied at a Suvorov military school. But, driven by wanderlust, I left. I learned to repair shoes, became a plasterer and worked as a cook in a peat-cutting camp for three years. Then I traveled to the Komi Autonomous Republic and went through a miners' school there. I worked in a mine for three years and then got the urge to study again. In two months I prepared for and passed my exams for a secondary school diploma and was then admitted to the Byelorussian State University. At 28 I finished the university course and came to work here on Sakhalin Island.

"All these years I had that romanticism Valeri S. thinks is such an untrustworthy guide to living. While I was getting through my tenth year of high school and university entrance exams, I worked as a laborer on a high-voltage line construction project and lived in a dormitory. There were times I did not have enough money to get to Minsk for my exams and had to make the trip as a stowaway. But I was happy and wouldn't have wanted to live any differently. Why was I happy? Because my life was full, every day of it. I got satisfaction out of every ounce of energy I expended."

There are millions of romantics like Alexei Gerus. The romanticism of the construction of a new society helped him to find his place in life, to find the happiness that comes to those who use their strength and powers to bring happiness to others. Valeri S. and Alexei Gerus may live in the same country but they certainly do not speak the same language.

It was not too long ago that Yuri Mikhailov of Chelyabinsk also thought "practically"—à la Valeri. He writes: "I am 23, and up to a year or so ago I thought, 'Why go way out to some construction site or virgin land development when my folks can get me a job with good pay and I can have an easy time of it?'

"After graduating from secondary school, I roamed around town evenings with friends like myself looking for entertainment. What happened was that I grew listless, there was nothing I cared about. I would have stayed that way, I guess, if not for this thing that happened to me.

"I dropped into a department store to buy a penknife. At the hardware counter was a young couple picking out a stainless steel set of cutlery. The man picked up a spoon with the trademark of the Chelyabinsk Metallurgy Works and said, 'Let's buy this one. Maybe it's a set I made!' The spoon seemed to have a special shine as he held it, there was such pride in his voice. I suddenly felt ashamed of myself and dashed out of the store.

"The incident hit me hard. I began to ask myself whether there was any point to the way I was living. Over my parents' objection I went to work in a factory and asked for a transfer to the evening division of the institute where I was studying.

"I can't tell you how happy I am when I see a tractor—my tractor—coming off the conveyor!"

This is how a heritage of old ways is discarded when you encounter a man who has shaped his life with his own hands, a man who is really happy. All philistine arguments collapse at the touch of those hands.

Real happiness is a combination of the social and the personal. Happiness is born the moment a man feels he is needed, that what he does is important. It grows if that first spark flames to incandescence in the common fight for a common cause, if it is strengthened by knowledge, by work one loves, by rejection of the old way of life. It is then that the biography of each man's happiness blends completely with the biography of his country, the biography of general happiness.

Happiness is a citizen, first and foremost, always reacting to the world around itself. "I want to take part in everything," writes Pyotr Karnaukh of Molodechno. His thought appears over and over again in the letters sent to our forum.

Student Nikolai Belov of Moscow says, "Happiness has a specific address, a specific geographical location. I envy those who know where it is for them."

"There are three billion happinesses on earth," writes Sergei Sapozhnikov, a student from Ryazan. "There are as many different kinds of happiness as there are people."

But each of these various happinesses must be measured not only in relation to the individual but primarily from the viewpoint of its effect upon the society he lives in. Our view must be on a grand scale. As worker Andrei Bogdanov says: "Happiness today has to be measured not only from the roof of one's home, but from the height of a spaceship's orbit." From this distance, and this distance only, can we judge where happiness lies and how to get to it. No map, atlas or address bureau can give you the information.

"The young man of today," writes excavator operator Nikolai Yermolov from the construction site of the Ruza Hydroelectric Station, "will not be happy trying to ride to communism hanging on the back of the train. He has to be up front, constructing communism, fighting for it."

A good many letters came from people who are building up the wilderness regions of the Far East and Siberia. They gave such specific addresses for happiness as Bratsk, Krasnoyarsk, the Abakan-Taishet Railroad and other construction sites.

Bricklaver Georgi Babkin of Amursk describes his feeling of happiness when he looks at the houses he built in Amursk, a new city with a majestic background of taiga lake and distant blue mountains. He came to the construction site four years ago when the taiga stood as untouched as it had for centuries past, with only a scattering of Nanai huts on the hills sloping down to the Amur River.

It was hard walking along the Amursk roads those days. The earth was clayey, did not absorb water, the mud was knee-deep. But Georgi Babkin helped to build a city on that soil. He did all sorts of work, from digging foundations to building walls, whatever needed doing in the battle against the grim and treacherous Far East climate.

Four years later a city of four- and five-story houses lined up along asphalt streets stood on the bank of the Amur—a symbol of human persistence and happiness. And Georgi Babkin now strides down the streets of Amursk happy and proud.

Not everyone in Siberia is a builder in the literal sense. Some give medical treatment or teach school, others act in plays, grow corn in fields wrested from the taiga, fish and do a thousand and one other things. But all of them are trail blazers. They build their city with every job they work at and derive happiness for themselves in the process.

They love their part of the country and almost wax poetic when they describe it's beauty and its challenge. Doctor's assistant Alevtina Vlasova was graduated from a medical school and took a job in the Verkhoyansky District of Yakutia. Any geography textbook will tell you that Verkhoyansk is the birthplace of Grandfather Frost, there aren't many colder spots.

In the North Vlasova learned to speak Yakutian, to ride a horse, to drive a team of horses, but, most important, she learned what gave her happiness. She was happy when she nursed a boy back to health, when she delivered her first baby, when the local nursery opened, when a power station was built. It was here that Vlasova learned to see the beauty of nature.

Kamchatka, Sakhalin, Nakhodka, Taishet, Bratsk, Nurek, Mirny—these red dots on the map that locate construction sites are the addresses of romantics, of happy people.

But is romanticism to be found only in these far-off places where man fights nature? Most parts of the country have long been civilized, complete with subways and refrigerators, places where life is ordered, with few surprises, and the wild animals are all in the zoo. How can one pioneer and trail blaze in these humdrum communities?

Our forum participants have opinions on the subject—decided ones. "What has geography to do with it?" asks teacher Alexander Azovsky. "Is Siberia the only answer? Aren't there unhappy people in Siberia, too? And aren't there happy people in the old and long settled districts?"

This is what Gleb Knabengof of Lomonosov, Leningrad Region, tells people who think happiness is to be found only in distant places, "Look around you—at what you have done, at what others have done, for what still needs doing, and you'll find plenty of work and plenty of happiness right where you are. You don't have to go looking for it far away."

There is no map that will tell you where to find happiness. It comes from within, from a man's attitude toward life, his aspirations.

Happiness is a polyglot word with as many shades of meaning—simple and complex—as the solar spectrum of a rainbow has colors. Happiness is what your eyes are capable of seeing—the world's beauty, the beauty in men, in work.

Construction sites, virgin land projects, outer space voyages—these are the symbols of our time, of man's grand ventures and quests, of his creativity. In our country we often use these symbols as figurative yardsticks by which to judge achievement. No matter how ordinary and unimportant a man's work may be, we feel that he is turning up some small piece of virgin land, venturing some little distance into outer space.

By courtesy of the newspaper *Komsomolskaya Pravda*

SCHOOL AND THE CENTURY

BY MIKHAIL SKATKIN
CORRESPONDING MEMBER, ACADEMY OF PEDAGOGICAL SCIENCES

PHOTOS BY ANATOLI GARANIN

WHEN WE WERE AT THE PEAK of our school reorganization campaign, three years ago, a French newspaperman asked me, "What makes you think you need a new curriculum? Your schools do such a good job now, so much better than ours, that I don't know what more you can expect to accomplish."

He was not the only one to ask the question. I heard it from many Westerners—leading magazine editors, educators and legislators—who envy us our "secret weapon," the term they sometimes use to describe our schools.

But the acknowledged virtues of our educational system did not blind us to its faults. We felt that the schools were not adequately measuring up to the new and greater demands being made upon them by the country's fast-paced economic, scientific and cultural development.

The new Communist Party Program, adopted at the Twenty-second Congress, defines our task in these words, "The school must produce harmoniously developed people, trained theoretically and practically for creative labor in all spheres of life."

Clear enough, but not nearly so simple a statement as it looks. What, for example, is a harmoniously developed person in a changing time like ours? Here the debate begins, with parents and teachers having their say.

They are in general agreement on this point—that a person who has a good background in the humanities but no idea of the key scientific and technical problems of our day can hardly be considered well educated. And vice versa.

But is it possible to teach children, even if only sketchily, today's main scientific achievements? Isn't that more than we can expect? After all, don't we have noted specialists who are absolutely lost as soon as they take a step outside their own particular field?

Soviet teachers say, "It is practicable. It's a matter of teaching, of explaining complex phenomena in simple, easy-to-understand terms."

When we began our curriculum reform, our educators, both theoreticians and working teachers, made a thorough study of the accumulated Soviet school experience, especially that of the first decade of the country's history when so much emphasis was placed on polytechnical education and labor training. We analyzed the bold pioneer effort made during Lenin's lifetime to give the younger generation work training in town and countryside.

There were many things to impede this effort. One was a lack of experience. The teachers, often unintentionally, had tended to make education a passive process. When the students left the classroom, they did not know how to use their accumulated knowledge in practical life. This we discovered as we moved into the new period.

The reorganization was slow getting under way. We did not have enough skilled, imaginative teachers who were flexible enough to make the transition. After all, our "theory-minded" students were the products of "theory-minded" teachers, educated in "theory-minded" colleges, who taught a "sterile" physics, chemistry and biology, and had only the scantiest knowledge of modern production.

But we were committed to the change-over. We were determined to abandon old traditions, revitalize teaching methods, refashion the curriculum.

We learned by doing. Applied knowledge, here as elsewhere, was true learning. The teachers experimented. They looked for new ways to make children see interrelationships in nature, to apply their knowledge of physics in their chemistry and biology classes, to use their learning as an instrument for perceiving the world around them.

Some of the teachers tried—unsuccessfully—to carry their classes directly from the scientific concept to technological application. A technical process is associated with a cumulation of phenomena. To understand the operation of an internal combustion engine, for example, one must be familiar with various branches of physics and the fundamentals of chemistry. We found that the study of the internal combustion engine had to be put aside until at least the tenth year.

Then we tried to use technology as a stepping stone to science. But that too failed because the method violated the logical order of presentation.

A kind of intermediate link was necessary, special courses somewhere between theory and practice. That seemed reasonable, but what special courses should be included for the polytechnical emphasis we wanted?

Three years ago, after lively debate, we introduced the fundamentals of mechanical and electrical engineering in our schools. These subjects are relatively easy to grasp and are basic for a wide range of vocations. To consolidate their class study, children are taught fitting and assembly work; the principles of regulating, adjusting and setting machine tools; the use of control and measuring instruments; and how to read and draw sketches and diagrams.

We did not work out a rigid syllabus, needless to say. The individual school has plenty of room for initiative. Secondary School No. 1 in Volgograd, for example, trains boys and girls to run lathes, milling and grinding machines. The fundamentals of machinery are given as a unit in a technological course and electrical engineering is a separate course.

At School No. 8 in the same city, where children learn electrical and radio precision instrument assembly in their work training, the procedure is reversed. The fundamentals of machinery is a separate course, while electrical engineering is a unit in a larger course.

The students in many of the Ukraine's schools spend four or five hours a week and a whole month during summer vacation in factories applying their theoretical knowledge and learning work skills. Some Latvian schools offer extracurricular work-training courses where students are given an idea of specific vocations and of general scientific and technical trends.

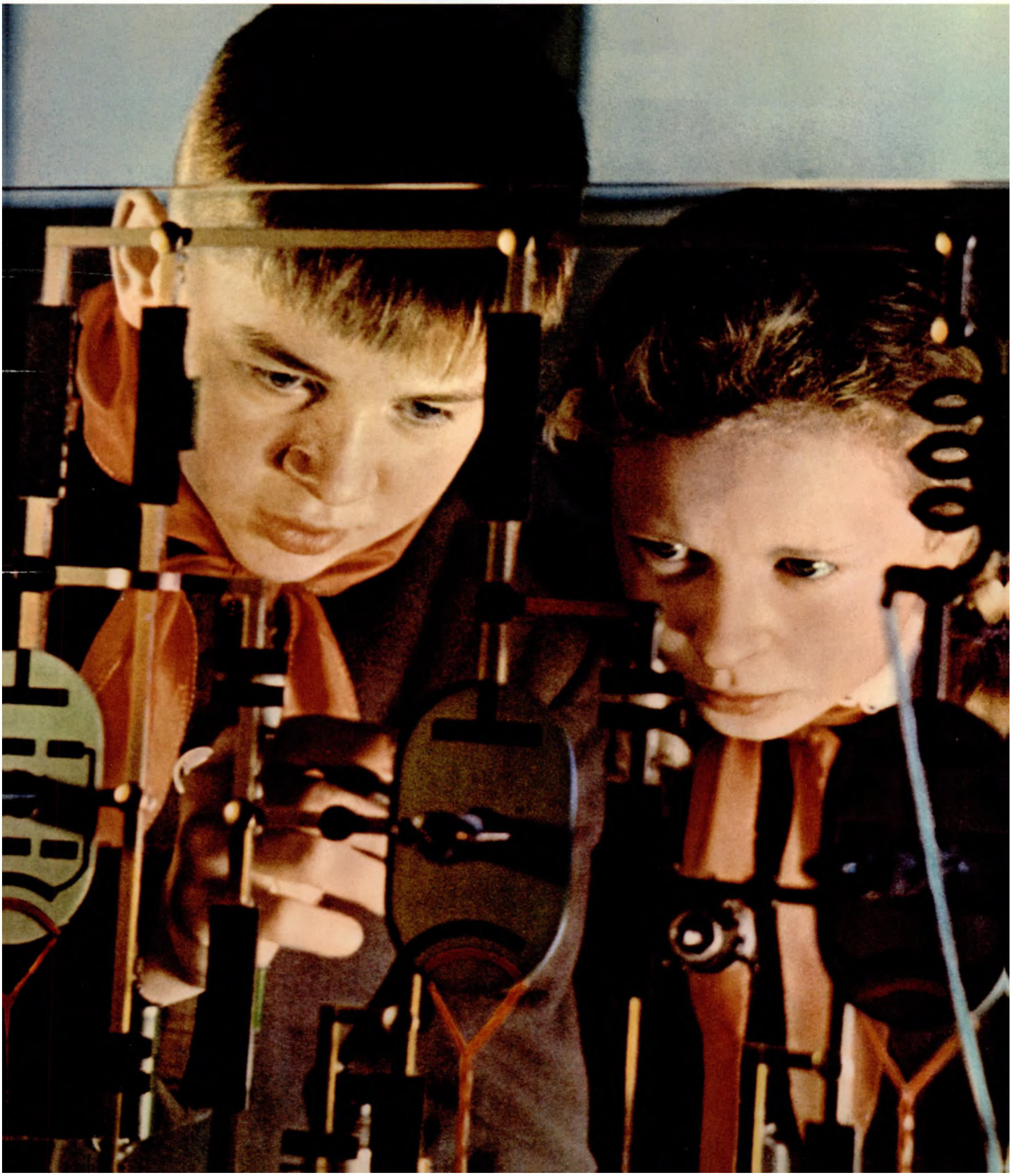
Now that our children are learning something of modern technology, we have had to revise our teaching of science. By way of experiment, two Moscow schools are teaching the fundamentals of higher mathematics in the tenth and eleventh years. Other schools in the capital have rearranged the physics syllabus to allow more time for the teaching of the structure of the atom, the concept of plasma, and electronics.

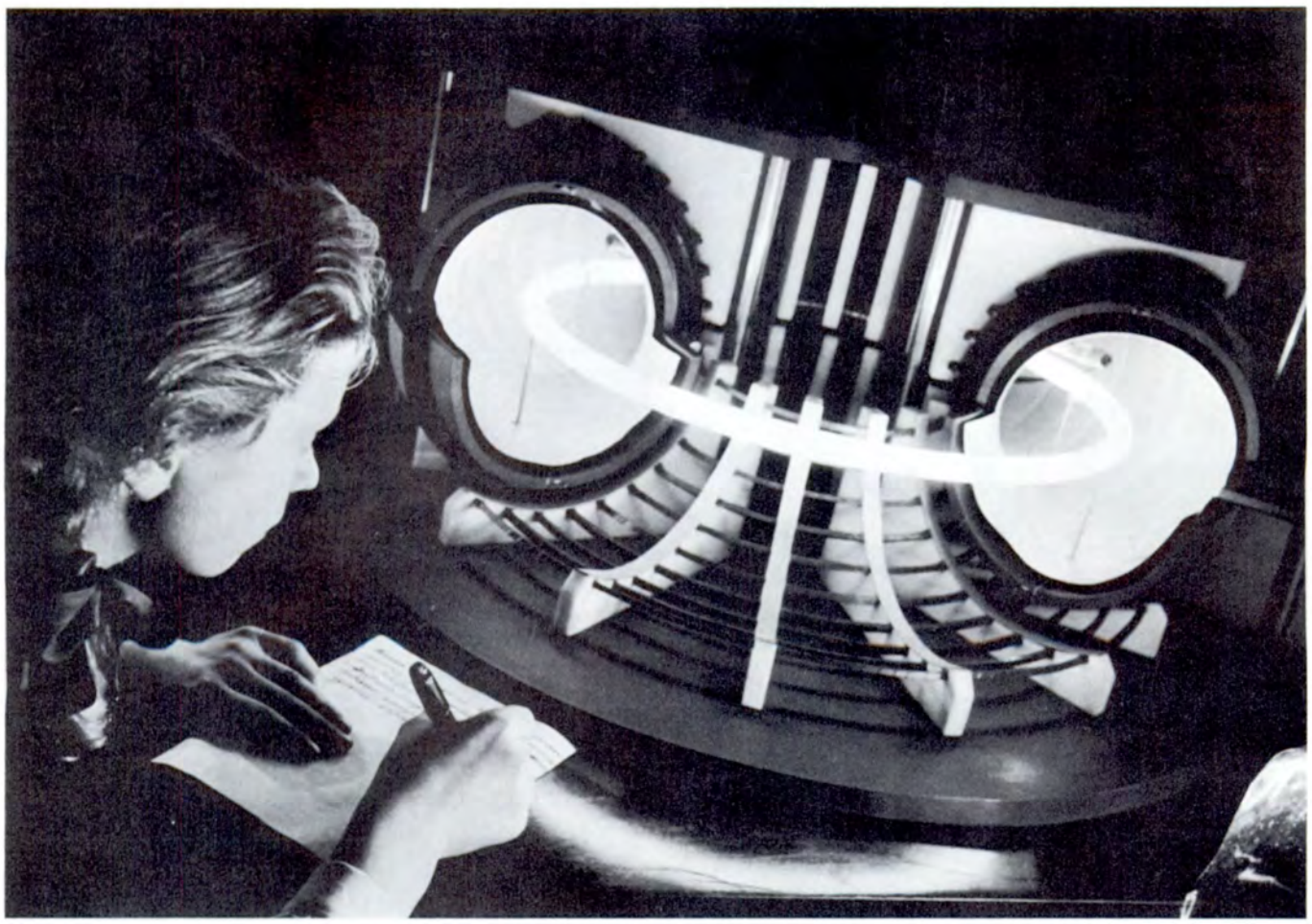
The practical work students do at factories, shops and industrial laboratories gives substance to the theories they learn and enables them to see the interrelationship of the various sciences. The intent is to acquaint the child with the machine as early as the concept can be grasped so as to allow maximum time for teaching the scientific principles underlying modern production and the skills to apply them in one or another area. The new courses of study in all subjects provide for instruction at factories, power stations, laboratories, museums and exhibitions. Factories have been instructed by the Soviet Government to furnish school workshops with tools and equipment. Some of the polytechnical laboratory assignments are done at the factory directly. Schools make large use of filmslides, motion pictures and television.

Although the reorganization is not complete as yet, its value is no longer in question. High school graduates who take jobs at factories find their bearings quickly and tend to grasp complicated processes better than old workers on the job. Thousands of these young people have become innovators and inventors. Schools on the college level find their entering students better prepared.

In the next 20 years of communist construction we will be seeing enormous changes. Cybernetics, electronics and automation will be setting the pace in all branches of the national economy. They will be the yardsticks for progress in industry, building and transport. The future will not catch our young people unprepared. The Soviet schools are working purposefully to prepare them for answering tomorrow's scientific and technological questions.

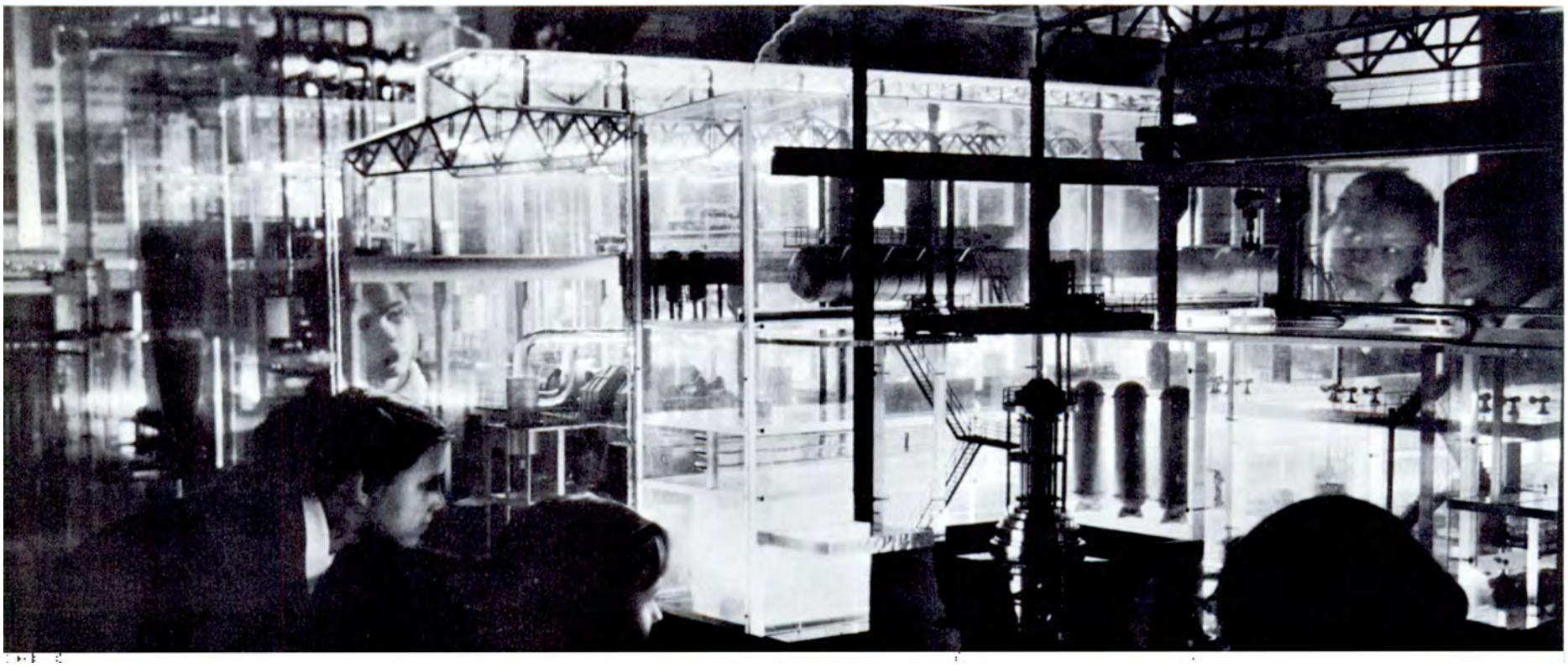
First steps into the big world of electronics. These Soviet grade-school children are being taught the operative principle of thermionic amplifiers.



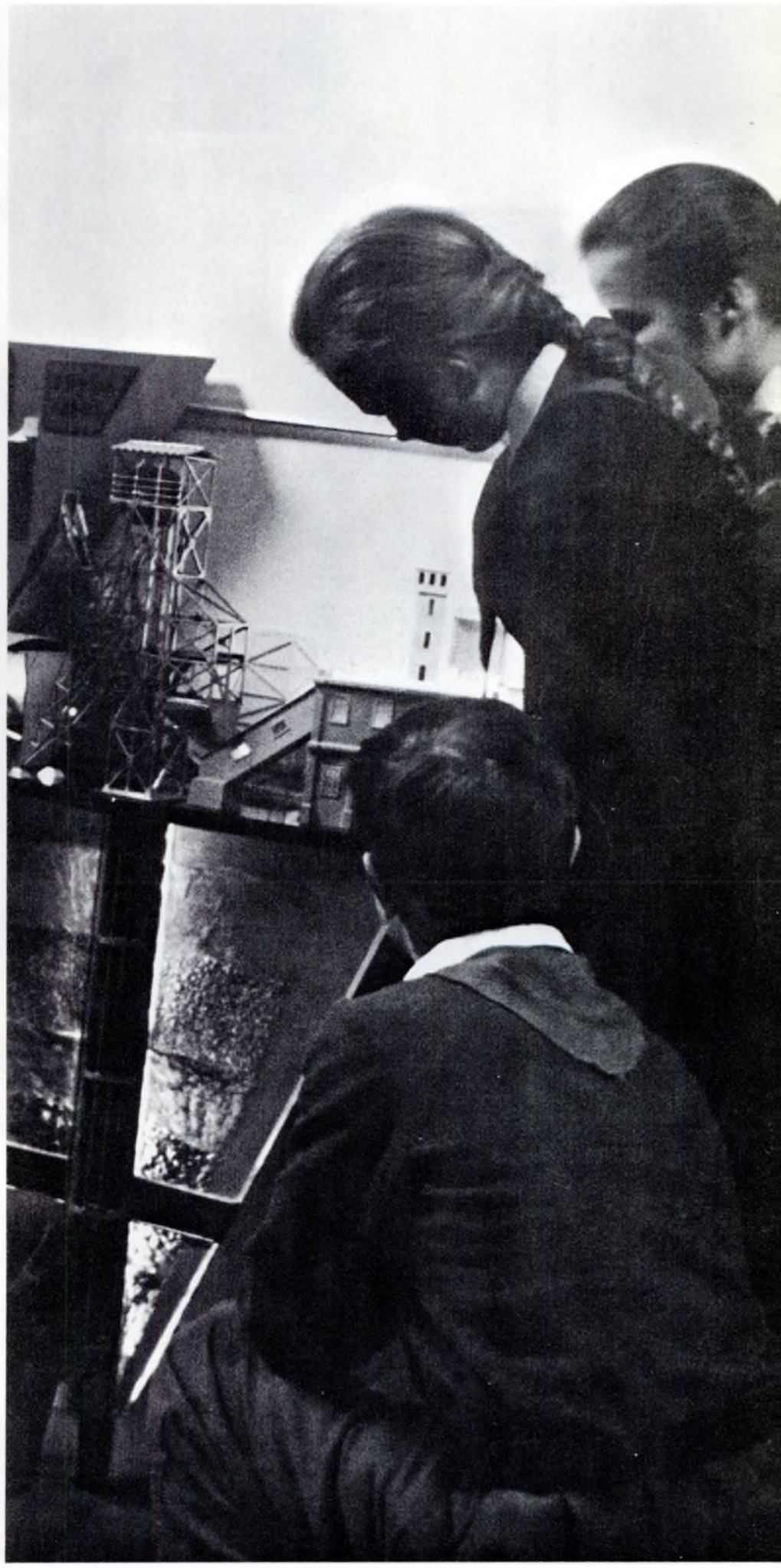


The strange object is a thermonuclear installation for studying plasma; the intent observer, secondary school student Tanya Agafonova.

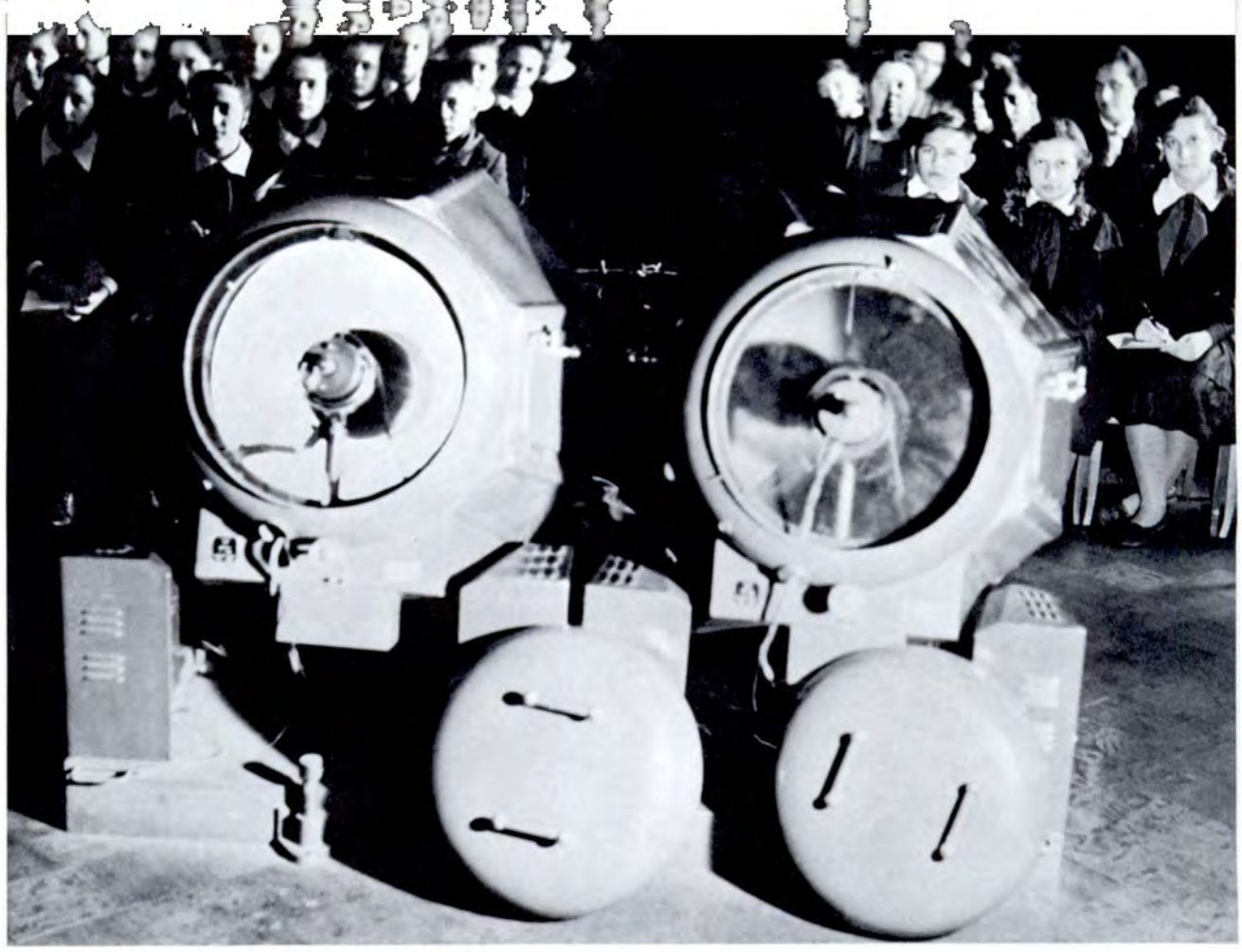
The application of the theory learned in the classroom. This is an operating model of an atomic power station to be built near Voronezh.



School excursion to the Polytechnical Museum. Curator Timofei Byzov gets many a young visitor interested in engineering history.

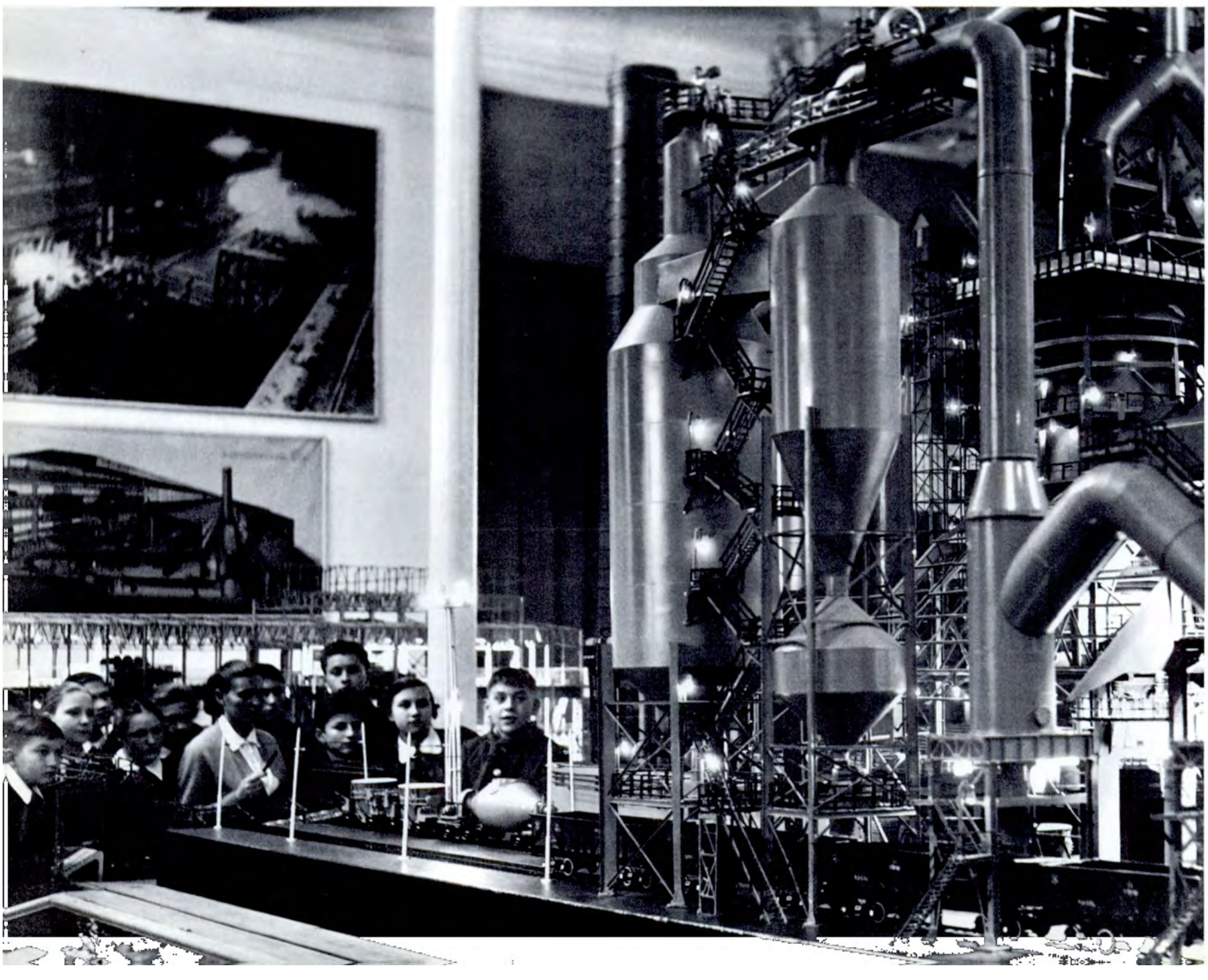


Safety engineering. The cage is descending the mine elevator shaft. If the cable should snap, automatic controls immediately take over.



Seventh-grade children at a lecture on television principles. The devices in the foreground are television cameras.

Study of this blast furnace model makes the chemicophysical processes involved in steel smelting easier to understand.



A MOTHER'S LETTER

This letter appeared in the newspaper Izvestia. *We are publishing it in a slightly abridged form.*

MY SON VOLODYA lived with me in the Arctic from the age of 12 on, first in Yakutia, near Tiksi Bay, then in the town of Pevek, in Chukotsk, where I was transferred in 1954. Volodya was in the eighth grade at the time. It was a very friendly class; all the boys were YCL'ers and went in for sports.

One Sunday in February a hockey cup match was held between Volodya's school team and the firemen's youth team. The temperature that day was 22° below zero. The school team won the cup. Volodya was so carried away by the game and his school's victory that he did not notice his toes were freezing. He became aware of it only after the cup had been awarded to the team. His comrades pulled his boots off and rubbed the frostbitten toes. He came home all excited, told me about the school's victory, but did not say a word about his toes.

A month later he began to limp and complain of pain in his feet. But he kept going to school and skiing in the hills. One day I came home from work to find him in bed. The doctor said he had contracted rheumatism. That night his temperature went up to 104°. I ran clear across town to call one of the young doctors at our hospital, Dina Nikolayevna Barinova-Shushkanova. She dressed at once, and on the way I told her about my boy's trouble. After examining Volodya, she arranged to have the boy driven to the hospital immediately.

That night he was operated on. The diagnosis was a terrible shock. He was suffering from blood poisoning, and the disease was progressing rapidly. In a month I hardly recognized my boy. One operation after another was performed to cut out the suppurating areas and the infected parts of the bone. I sat at my boy's bedside for four months and was never alone all that time. I shall always remember how persistently and devotedly the staff of the hospital worked to save him.

Pevek is a small town, so it did not take long for the news of my son's illness to get around.

The schoolteachers and children did what they could for him. I shall never forget the way Volodya's chums came to the hospital every day and bashfully pulled out of their pockets chocolate and caviar they had brought him.

At the time, Volodya was being kept alive by transfusions. Radio operator Sergei Melnikov, whose blood type was the same as my boy's, gave his blood three times in two months. He refused to take the donor fee. "It's for Volodya," he said. "I only hope it helps him get well."

Once, after a very difficult operation, the boy had to have a blood transfusion immediately. When the announcement was broadcast over the radio, 17 volunteers came running to the hospital.

Then one night, while the hospital was asleep, my boy suddenly grew worse. I asked the orderly to call Dina Nikolayevna. At 2 A.M. the doctors held a consultation. The boy's brain was affected, he was delirious. They sent a cable to Magadan, and the regional chief physician, Dr. Y. N. Obikhodov, flew to Pevek at once.

Dr. Obikhodov stayed with us a whole week. He had a wonderful assistant in Dina Nikolayevna. I can still see her bending over my boy's bed, trying to find the vein in which to inject blood, her face wet with perspiration. I stood behind her, holding the flask with the plasma. The boy did not even moan. Dina Nikolayevna began to look for the vein at 8 P.M.; it took her until 11 to find it and make the transfusion.

The day finally came when they told me that nothing more could be done for Volodya in Pevek and that I had to take him to Moscow, although there was little hope that they would be able to do anything for him there. To keep the boy's mind off death, even if only for a single moment, the school sent him an Honorary Diploma for his participation in the hockey game. He asked me to hang it on the wall next to his bed. The school also sent him a certificate showing that he had finished the ninth year, although he still had two months to go. He did not want to leave for Moscow without that certificate. I was moved to tears by the warm concern of the teachers' council.

I would have to travel 7,000 miles with my dying boy, and I was exhausted. But this time, too, I was not alone. Burkhanov, head of the Central Northern Sea Route Administration, provided a special plane for us, and we would not have to spend more than 30 hours in the air! A special contraption had been built for carrying him from the hospital to the airport—a tractor-drawn trailer with a cot and spring mattress suspended from four poles. The boy was carefully lowered into it, and 12 of his friends took turns keeping it steady throughout the trip over the thawing tundra. We traveled that way for a long time.

Fifteen minutes after we arrived at the airport, the plane, which had been waiting three hours for us, took off. I don't know who put my things on board and saw to my papers. There was only one thing I could think about—would I get my son to Moscow alive? Many others, I found, had the same thought. The plane covered the 7,000 miles in 27 hours. At every airport we were scheduled to land, information was radioed ahead from our plane about the boy's condition. And each time the plane was met by doctors. At the Moscow airport an ambulance from Botkin Hospital was waiting for us. Volodya spent two months in that hospital. There was almost no hope of saving him.

For two tense years Dr. Anna Dmitrievna Savchenko fought for his life, performing operation after operation. Twice he almost died from shock on the operating table. It cost the doctor herself much of her health. But that brave, determined and gentle woman had set her mind and heart on saving his life. How lovingly we must treat such doctors!

Three years went by before he was out of danger. At first Volodya learned to sit, then to stand, and finally to walk. Had the medical treatment and the transportation not been free, I would have had to work the rest of my life to pay the fees. And even then it might have been impossible to save his life.

Until we went back North, Volodya studied in Moscow School No. 36. His homeroom teacher was Nikolai Fyodorovich Blagushin. Soft-spoken but straightforward, he had gone through the war as a scout and parachutist, and had stared death in the face more than once. After the war, in spite of a disability, he went back to teaching. When he learned of Volodya's illness, he came round, gave him a hug and said:

"Now then, boy, buck up!"

After that he was Volodya's mainstay. The whole class followed suit. When he left the hospital, still very weak and shaky on his crutches, Volodya was helped along to school by his classmates. He finished the tenth grade while convalescing.

What was he to do now? Volodya wanted to go to a technical institute and become a radio engineer. Once again people helped us. On their advice I went to see the director of the correspondence department of the Leningrad Higher Engineering Naval School. He listened to my story, picked up several first-year textbooks and said: "Here, give these to your son. Let him attend our lectures. He can take the entrance examination while he's studying." That was how Volodya was admitted to the institute. Now he is in his fifth year.

Since correspondence students are required to work, Volodya decided two years ago to get a job like everybody else. Vladimir Kirilin, secretary of the Frunzensky YCL District Committee, helped him find one. Now my son is 24 years old. He is not only a fifth-year student but a technical designer as well and he hopes to be an engineer soon.

It took me four nights to write this letter. I could not help crying as I remembered the things we lived through. More than once I put the letter aside but then picked it up again; I felt that I had to write and tell our story. There just aren't enough words to express my gratitude. All I can say is "thank you" from the bottom of my heart.

Maya Trufanova

Moscow

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Excerpts from the Speech Delivered by N. S. Khrushchev at the World Congress for General Disarmament and Peace (July 10, 1962)

THE WORLD CONGRESS for General Disarmament and Peace is one of the most significant events of our time. Envoys from nearly all the nations of our globe, people of different races and nationalities, classes and social groups, parties and political convictions, men and women of various religions and atheists have put aside all that divides them and have come together to discuss the most urgent issue of our time —how to block the way to war.

Mankind is living in a momentous epoch. The unprecedented acceleration of social progress, the tremendous revolution in science and technology, in our knowledge of nature, are capable of bringing immense boons to all people on earth.

But we must never forget that the sinister forces of aggression and evil threaten to turn the achievements of human genius against mankind and civilization. . . .

Disarmament—the Compelling Need of Our Time

We must all face the facts squarely. The threat of a new world war really exists. Mankind may be drawn into it if resolute measures are not taken. It is all too obvious that thermonuclear weapons are being continuously improved; their accumulation in the arsenals threatens to reach the critical point where, as they used to say, "the guns start speaking of their own volition," and, as we can now say, paraphrasing this, "where rockets with thermonuclear warheads will start flying by themselves." Nuclear weapons are being located in an increasing number of countries. More and more military units are getting them. This continually heightens the danger of the adventurist groups' starting a new world war.

Never before have war preparations proceeded on so gigantic a scale as today.

Even according to official figures the world spends 120 billion dollars on war purposes every year. This is equal to about half the capital investments made in the world economy. . . .

The arms race is consuming a colossal amount of the people's labor. Today more than 20 million people on our planet are serving in the armed forces, and more than 100 million are devoting their energies to military pursuits. Seventy per cent of the world's scientific personnel are, in one way or another, employed in the military sphere. . . .

In the present conditions, world war should not be measured by old criteria and considered in outworn categories. We have to face up to the fact that the weapons of war have changed radically, qualitatively, and that their destructive force has increased to unheard-of proportions. What does this imply?

Firstly, modern weapons cannot in any way be compared to the old ones. The explosive force of just one powerful hydrogen bomb is many times as great as that of all the explosives used in all the wars in history, including the First and Second World Wars.

Secondly, nuclear-missile war erases the line between the battlefield and the rear entirely. What is more, it is the civilian population that will be the first prey of the weapons of mass annihilation. In a war of that sort just a few thermonuclear bombs are liable to wipe out entire states, let alone the biggest industrial centers with populations of many millions. . . .

Last but not least, with the current alignment of forces and the new types of weapons, the nuclear war contemplated by the militarists would not confine itself to the territories of just two countries. It would be universal and would bring destruction and death to millions of people all over the world. . . . This is a grim truth about the actual nature of thermonuclear war. And if the Western statesmen today keep this truth from the peoples, they are committing a crime against humanity, including the peoples of their own countries. . . .

As long as the various national stockpiles of lethal weapons remain and grow, the war threat will grow too. The path to genuine peace is general and complete disarmament. . . .

Our Soviet state was born with Lenin's well-known Decree on Peace. Lenin rejected most vigorously the suggestion to have the sword depicted on the Soviet coat of arms. "The sword is not an emblem for us," he said. It was the hammer and sickle that became the emblem of the Soviet land—a symbol of peaceful and constructive labor. We have stood, we now stand, and we shall always stand upon Lenin's principles of peaceful coexistence. **That is the only doctrine of relations between states with different social systems that accords with the historical conditions of our age, on whose basis peace can be preserved.** No matter what people think about the way of life in countries with a social system different from their own, the world is whole and indivisible in face of the threat of nuclear disaster. Here we are all members of the human race.

Many people in the West are asking more and more frequently: "Does mankind have a future?" I should like to reply to them: Yes it has, and it is going to be a radiant future. We believe that mankind will find the strength to curb the atomic maniacs.

In this age of nuclear weapons, this age of rockets, the danger of a deadly nuclear war cannot be eliminated unless the means of mass annihilation are destroyed and nuclear weapons prohibited. We favor the complete destruction of the material means of warfare. . . .

The Soviet Disarmament Program

. . . The Soviet Government suggests at least immobilizing all nuclear weapons, paralyzing them by destroying all means of their delivery from the outset, at the very first stage of disarmament. We propose abolishing at one stroke rockets, aircraft, warships and submarines that can carry nuclear weapons, atomic artillery installations and all military bases on foreign soil, and withdrawing all foreign troops from the countries concerned. . . .

To greatly ease the threat of armed conflict between countries, the Soviet Union also proposes that at the very beginning of disarmament the numerical strength of national armed forces

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be substantially cut and conventional armaments be reduced accordingly. We think it possible to carry disarmament through to the end in four years. This is a short but fully adequate time limit.

We are willing to seek and find mutually acceptable formulas for all the provisions of our draft treaty, and to compromise wherever necessary—that is, of course, if it will not harm the cause of general and complete disarmament. . . .

Our position is simple and easy to understand. We are in favor of completely abolishing the various kinds of armaments, one after another. Furthermore, every step toward general and complete disarmament envisaged in our draft treaty is invariably accompanied by measures for strict international control. . . .

We call on the Western Powers once again to accept our proposals for general and complete disarmament, and then we will accept any control measures they may propose. . . .

World opinion favors the conclusion of a disarmament treaty and offers advice as to how to surmount the differences. Certain propositions advanced by the philosopher Bertrand Russell in his message to this congress are noteworthy in that respect.

Lord Russell says:

"I should like all negotiators from the West to state: 'I am firmly convinced that a nuclear war would be worse than the worldwide victory of communism.' I should like every negotiator from the East to declare, 'I am firmly convinced that a nuclear war would be worse than the worldwide victory of capitalism.' Those on either side who refuse to make such a declaration would brand themselves as enemies of mankind and as advocates of the extinction of the human race."

We, the spokesmen of the socialist world, have never said that we are prepared to launch a thermonuclear war for the sake of a communist victory throughout the world. Our leader V. I. Lenin proclaimed the policy of the peaceful coexistence of states with different social systems back in the early years of our Revolution and stated that the struggle against the capitalist system should be transferred to the spheres of economic competition. We stand squarely upon these Leninist principles.

We do not interpret Mr. Russell's message as an appeal for an ultimatum: either war and atomic death, or recognition of communism, and, vice versa, either nuclear war or the recognition of capitalism. We believe that if either side works for the victory of its ideology and policy by augmenting its armed forces and its threats of war, things will surely move toward a worldwide nuclear war. **We declare to the whole world that the policy of starting a world war for the victory of communist ideology is alien to us.**

We proceed from the fact that there are two systems in the world—one system of states based on capitalist principles, and another based on the Marxist-Leninist doctrine, on socialist principles. An ideological and political struggle is in progress between these two systems. We believe that this struggle should not be projected into a war between states with different social systems, that the matter should be settled through peaceful competition. Let every country of the socialist and the capitalist world prove the advantages of its system by peaceful endeavor. . . .

A World Without Arms Would Be a Great Blessing for All Mankind

. . . The conclusions arrived at by a team of experts who recently prepared, on instructions from the United Nations, a report on the economic and social consequences of disarmament are worthy of note. The report stresses that disarmament would produce beneficial results and lead to an improvement in the condition of the peoples of all countries. If the governments proceed with determination to switch funds from military to peaceful uses, the report points out, "no country need fear a lack of opportunities for the useful employment of the resources that would become available to it through disarmament." . . .

Disarmament would benefit the whole Western economy. The only losers would be a small handful of arms manufacturers, who would be deprived of the possibility of plundering the peoples through arms supplies. . .

Disarmament would also bring tremendous advantages to the underdeveloped countries which are beginning to embark on vast projects of national revival and to the peoples fighting for their liberation from colonial tyranny. . . .

Needless to say, the peoples of the Soviet Union and all socialist countries have a vital interest in disarmament. The Soviet Union and other socialist countries have been compelled by the arms race to spend large sums on strengthening their defenses. We could make proper use of the funds that would be released through disarmament to carry out peacetime projects for the people's happiness. . . .

. . . In the past four years we have been spending an annual average of about 10 billion new rubles on defense. It is easy to see how much faster our gigantic construction program would proceed if these vast resources were put into peaceful development. . . . We are ready to disarm at any moment, even tomorrow, if the capitalist countries do likewise. . . .

The Peoples Can and Must Achieve Disarmament and Preserve Peace

Mankind can and must live without war. War in the present epoch is not fatally inevitable. But neither is peace fatally inevitable.

The question is whether the peoples today are able to stop the race toward death, toward a new war. We say unequivocally: Yes, they are. Today there are real and powerful forces capable of protecting the peace. . . .

General and complete disarmament is truly a great goal and calls for great activity and great efforts by all peoples. With a live sense of the crucial and serious nature of the hour, I should like to declare from this rostrum to all men and women, regardless of their social background and convictions, to the generation that has lived through the terrors of war and to the young people who know about war only from what their elders tell them: **This is the time to act! In the name of life on earth and the happiness of all men, in the name of the future of mankind, show firmness and determination in demanding a ban on atomic weapons, and general disarmament!**

CONGRESS DELEGATES SPEAK

WE CAN AND MUST GET ALONG

HUGH HESTER
U.S. GENERAL (RET.)

Cooperation between the Soviet Union and the United States is absolutely essential. The different ideologies can and must get along together within the framework of coexistence. War is not only madness but suicide in the age of nuclear weapons. The great scientist Einstein said before his death that the splitting of the atom changed everything, even our way of thinking.

All this means we should conduct negotiations at all levels and on all questions.

The United States should trade with the communist countries just as it does with capitalist countries. The people of our countries should be free to visit one another. Exchange of information and culture should be expanded to facilitate mutual understanding and to lessen tension. . . .

International cooperation is today our only hope in the mutual attempt to secure peace and abundance on earth. We should devote all our efforts to that goal.

WITHOUT PEACE THERE IS NO LIFE

MARY LENDL
MIDWIFE OF NIGERIA

I have a husband and children at home and, like all mothers, I worry how things are when I am so far away and how my son and daughter are getting along. But I am here to defend them—my own children, those I have helped deliver, and those yet to be born.

I earnestly hope that the wonderful words of Nikita Sergeyevich Khrushchev about humanity's primary duty—complete disarmament and the prohibition of nuclear weapons—are carried into life. Without peace there is no life. This I know as a mother, a woman and a midwife.

MOST REPRESENTATIVE PEOPLE'S FORUM

GEORGE TAYLOR
COMMITTEE AGAINST NUCLEAR WARFARE (BRITAIN)

I would call the Moscow Congress the most representative people's forum in the history of the peace movement.

The major highlight of the congress, to my mind, was the speech made by N. S. Khrushchev. He gave a profound and thoroughgoing analysis of the present situation.

I agree with Chairman Khrushchev that the key to peace lies in general disarmament, and the chief thing in the disarmament problem is the complete prohibition and destruction of nuclear weapons.

The Soviet program for general and complete disarmament is very concrete. I think this program should be adopted as a basis.

Extremely important, in my opinion, is Khrushchev's declaration that the USSR will under no circumstances resort to war for achieving the triumph of communism in the world.

DESTINY IS IN OUR OWN HANDS

GAETANO AMODEO
PROFESSOR (ITALY)

The destiny of peace is in the hands of the people themselves, and the citizens of all countries should take concrete and vigorous action to preserve it.

The main purpose of the present congress is to harmonize differing viewpoints. Peace is a priceless treasure, in our age especially; it must be fought for energetically and stubbornly.

PEACE IS THE WORD FOR LIFE

KARL LUDWIG OPITZ
WRITER, FEDERAL REPUBLIC OF GERMANY

There has never been a case in history when the government of a victor country proposed to the vanquished people that the chapter be closed of the last world war. The speech made at the Moscow Congress by the head of the Soviet Government, his appeal to the peoples to struggle against the danger of new wars, for a peaceful settlement of the German question, are permeated with a feeling of humanism and great human tact. To the German nation, which is responsible for the misfortune of millions of Soviet families and can only beg for peace, comes the victor nation with a proposal for peace. This is an unprecedented act.

Even if one is to approach the concept of peace from different political viewpoints, the Liberal or Democrat, Communist or Republican understands that this is a question common to all mankind. For peace is the prerequisite of life on earth in general. One does not have to be a Communist to agree with Nikita Khrushchev.

NEUTRALS MUST ALSO FIGHT FOR PEACE

MARCEL RUBIN
COMPOSER (AUSTRIA)

Khrushchev spoke in the huge congress hall as a plain man to people just as plain, all of us representatives of the human race, the reason his speech was so clear and his arguments so convincing.

Until now many people in Europe have harbored illusions that a possible atomic war would bypass their country, that it might not be much worse than an "ordinary war."

The Soviet Premier did a great service by dispelling these dangerous illusions. He showed that the whirlwind of atomic war would overwhelm the entire globe and would be just as disastrous to large as to small nations. It is plentifully clear now that the neutral countries must also fight actively for general disarmament.

AN END TO WAR AND POVERTY

MUHTAR ABAROUDI
MAYOR OF TANGIER

For us Moroccans general disarmament has vital importance. For only in peacetime conditions can the peoples build for progress and enjoy the fruits of their labor.

Peace for Morocco, an undeveloped country, is an essential prerequisite for building the national economy, achieving real economic independence and ending poverty and famine.

FOR THE GOOD OF THE PEOPLE

HARRY RANKIN
LAWYER, VANCOUVER, CANADA

The World Congress for General Disarmament and Peace in Moscow will have tremendous significance for strengthening peace on earth.

An important event in the work of the congress was the speech made by Prime Minister N. S. Khrushchev.

I would like to stress that N. S. Khrushchev paid much attention to the role of the intellectual in the peace movement. Only a few years ago many scientists and other intellectuals stood aloof from the general movement for peace. Now ever larger numbers of scientists, writers and lawyers are joining the movement for peace. This is as it should be for they must help in the struggle for peace.

I agree with the head of the Soviet Government that now both sides, the

Pilot Cosmonaut Yuri Gagarin and Karel Hoffman, head of Radio Czechoslovakia.

Alexius, Patriarch of Moscow and All Russia, as he addresses the congress.

Among the more than 2,400 delegates is this gaily robed trio from Ghana.

West and the East, have to conduct talks persistently, with a view to achieving a compromise agreement on disarmament and other questions. In the interests of all the people on earth it is necessary to conduct talks until an acceptable solution is found, no matter how much effort or time it takes.

OUR FRONTIERS WILL STAY PEACEFUL

VEIKKO SVINHUVUD
FINNISH M. P.

The fact that representatives of more than one hundred states are gathered at the Moscow Congress demonstrates beyond doubt that the movement for general disarmament and peace is the common cause of all people.

The speech made by the Soviet Prime Minister Nikita Khrushchev made the greatest impression upon me. The frontier between the Soviet Union and Finland, as everyone knows, stretches for more than a thousand kilometers. Understandably, many of the questions that concern our friends in the Soviet Union are no less vital to us Finns. The frontier between the USSR and Finland is today a boundary of peace, and I believe it will always remain such. The great faith the statesmen of Finland and the Soviet Union have in each other is an earnest of this.

CYPRIOTS DEMAND IMMEDIATE DISARMAMENT

JOHN POTAMITIS
M. P.; PRESIDENT, CYPRUS PEACE COUNCIL

We Cypriots are particularly interested in solving the disarmament problem, the crucial problem of our day, because foreign military bases have been set up on our territory. They cause fear among the country's population, rob the people of peace of mind and, what is particularly important, subject them to the danger of horrible disasters. That is why we have no differences on this question—all honest Cypriots are of the opinion that the solution of the disarmament problem cannot be put off! Disarmament is equally necessary for all countries, large and small, for all the peoples of the world, and it must be carried through.

PEACE IS A COMMON LANGUAGE

M. WIPULASARA THERO
PRESIDENT, NATIONAL ART SOCIETY, CEYLON

I am glad to have had the opportunity of participating in this most important conference for general and complete disarmament. Gathered in Moscow are representatives of the peoples of five continents, of various political, religious and social groupings of the population. All of them have one common goal—PEACE. Although the congress participants are of different nationalities, they speak one language—the language of peace and love of mankind.

As a Buddhist priest and fighter for peace, I say: There is no nobler cause for any of us than the struggle for peace.

I maintain there is no problem in this world that cannot be solved by negotiation. This congress shows that Americans, Russians, British—representatives of all nations—can achieve mutual understanding.

HISTORY'S WARNING

WALTER ANDERSSON
TRADE UNION CHAIRMAN, STOCKHOLM

N. S. Khrushchev's proposal for a treaty on general and complete disarmament is a good idea. It must be acknowledged that the accumulating of weapons will sooner or later lead to war. All of human history shows this.

The nuclear weapon tests now going on are fraught with great dangers, they menace people's health. They must be stopped, as N. S. Khrushchev, Professor John Bernal and others have urged.

All people should have to consider the decisions of the World Congress for General Disarmament and Peace seriously and regard them as their own program in the struggle for peace.

WE WANT TO BUILD SCHOOLS, NOT BARRACKS

SIDIBE ABDOULAYE
HEAD OF MALI REPUBLIC DELEGATION

The congress of fighters for peace has enormous importance for the peoples who have recently freed themselves from the yoke of colonialism or are still fighting for national independence. Those who have achieved political independence, like the Mali Republic, are faced with the problem of achieving economic—real—independence. For this the whole social and economic structure set up by the colonialists must be abolished and replaced with one that will give our people better living conditions. We want to build schools, not barracks.

There is much to be done in our country. We back the idea that the thousands of millions spent on armaments be spent for peaceful purposes.

We are convinced that the decisions of the Moscow Congress will play a leading part in mobilizing the peoples of the world for justice and peace.

REGEARING TO PEACETIME ECONOMY PRACTICABLE

MARTIN HALL
SCIENTIST, LOS ANGELES, CALIFORNIA

I particularly want to note that various opinions are widely represented at the congress and that the proceedings are entirely free and democratic. Our delegation is the largest of all United States delegations ever to be part of an assembly like this one. Together with the other members of the American delegation I served on the commission concerned with the economic aspects of disarmament. We arrived at the unanimous conclusion that the regearing of the economy to a peacetime footing is not only essential but possible. This, of course, is much simpler for the socialist countries, with their planned economies, than for the Western countries. But even for these countries, including the United States, the regearing of the economy is quite practicable.

Therefore, it is now a matter of achieving general disarmament and peace. I think our efforts at the congress will help to pave the way toward this.

OUR HEARTS COMMAND IT

D. TUMUR-OCHIR
ACADEMICIAN, MONGOLIAN PEOPLE'S REPUBLIC

We are gathered here at the command of our hearts because we want peace and not an all-destroying nuclear war that will bring only grief and misfortune. But we Mongolian people know that peace is not achieved with folded arms. The future is in our hands and we must act. The Moscow Congress is living confirmation of the fact that the people are fighting for peace, against war.

WE SPOKE FREELY AND OPENLY

LORENTZ ECKHOFF
NORWEGIAN DELEGATION HEAD

The congress was a tremendously significant event. In the beautiful new Kremlin Palace of Congresses, people from all corners of the globe, dressed in the most varied costumes and speaking many different languages, talked freely and openly, specifically and pointedly. All of them were thoughtful people not afraid to speak their minds. Their speeches were the determined voice of the public, with which governments cannot help but reckon.

Despite the difference in views, the delegates were unanimous that atomic bomb tests must be stopped at once.

The climax of the congress was most certainly the speech of Prime Minister Khrushchev. It was long and took about three hours, but the listeners' attention did not flag for a moment. The ideas he developed were momentous and carefully considered, his delivery forceful. The speech was convincing evidence of Soviet Russia's striving for peace and progress; it was permeated with concern for building a world in which all people would live happily in security and plenty.

MARCHING TRIUMPHANTLY TOWARD PEACE

J. STUART INNERST
QUAKER LEADER OF SOUTHERN CALIFORNIA

The Moscow Peace Congress has been an unforgettable experience to this American. One reason is that the Russian people have given us the "red carpet" treatment. Nothing has been left undone that could minister to our comfort and happiness. We have been met with courtesy, kindness and generosity at every turn.

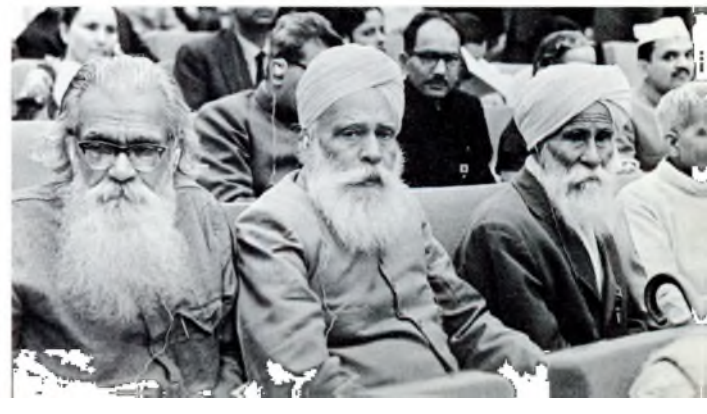
A week in any strange country is too short a time on which to base final judgments. But what I have seen and heard during the past eight days convinces me that the Russian people want peace and want it very much. It has become a passion with them.

I shall not soon forget the arrival of our plane at the Moscow airport. Awaiting us were a group of young people bringing wild daisies and other flowers they had taken the trouble to gather. They put them into our hands

A subcommittee on political and technical aspects of disarmament at work.

A Japanese artist-delegate, Kiya Taka, sketches one of the Kremlin buildings.

These venerable delegates came to Moscow to present India's views on peace.



with a warmth of welcome that was written all over their faces. It was an expression of Soviet-American friendship that was to be repeated many times during the ensuing days.

One morning as I was approaching the Palace of Congresses, a boy of seven or eight put a sweet william in my hand. The lovely smile on his face deeply touched me. To one who has had a deep and active interest in peace since early adolescence this friendliness was a heart-warming experience. There is no stronger deterrent to war than friendship. If it could be sufficiently nurtured and strengthened, the arms race would steadily decline and come to an end.

That is one reason why the Moscow Peace Congress is important. It brought together more than 2,400 people from 120 countries. I cannot recall any other previous international gathering where so many countries were represented. The number included the largest and the smallest nations, the oldest and the youngest. There was a place for all, and freedom for all to speak their minds.

To mingle and converse with the many young leaders of the new African states and with the older and more seasoned representatives from Asia and Europe was an exercise in building trust and promoting understanding. Hundreds will leave here with a new insight into the people of other countries and into the problems that must be solved on the way to a peaceful world. During the congress you frequently heard the expression "fight for peace," but the net result of the congress will be to help people *cooperate* for peace.

That was seen in the unanimity with which the Congress Message to all the world was approved. Out of 2,195 votes only two opposed it and seven refrained from voting. There were doubtless many who were not entirely satisfied, but they realized that in cooperating for peace, there must be give and take.

Those who attended the congress were impressed with the fact that a diversity of viewpoints was presented. When the invitation came from Professor J. D. Bernal to attend the meeting of the Preparatory Committee at Eskilstuna, it stated that a new approach was to be tried in setting up the Moscow Peace Congress of 1962. We were invited to come and point out any improvements that might be made over previous congresses and offer suggestions for a new type of program.

I accepted the invitation and went to Eskilstuna, to find that there was indeed the utmost freedom to present one's views and to make recommendations. That freedom was extended to the present congress. An illustration in point was a paper submitted by a group of peace leaders from my country who felt that they could not cooperate. They were given the opportunity of presenting their views from the congress platform. Other illustrations could be cited. If this practice continues, the World Peace Council will continue to grow.

There were many inspiring and thought-provoking moments in the speeches delivered from the platform. The most impressive peace message, however, was that given by the boys and girls and young people of Moscow the evening they presented a cultural program of music, dances and sports.

The great finale, in which the entire cast of a thousand participated, marching and singing for peace, left an indelible impression on my memory. It symbolized what we hope may soon become a reality, namely, all the peoples of the earth marching triumphantly toward a world of peace and plenty. It now remains for those who have attended the congress to go home and do their utmost to achieve that end desired by all.

PEOPLE FROM A HUNDRED NATIONS

HOLLAND ROBERTS
BUREAU MEMBER OF THE WORLD PEACE COUNCIL

The notable July Parliament of Peace at Moscow marks a new high-water mark in the struggle to end the arms race. Here the representatives of more than a hundred nations met to raise their voices against the atomic clouds that darken the sky and threaten to blot out the future of humankind.

Men, women and youth of every shade of color and of wide diversity of opinions spoke out together. For six days and most of many nights we worked in plenary sessions, commissions and groups to iron out our many differences and to see whether it would be possible for us to point out to governments, to statesmen and to all people everywhere the path to peace.

Agreement came with difficulty, but recognition of the rising war danger and the absolute necessity of safeguarding the lives of our children overcame every objection. We won unity in the face of sharp differences because we recognized that peace is a necessity—as vital as air, water, sun and food—to the rising generation.

The 750 women and 1,790 men who came to the great hall in the Kremlin at the call of the World Peace Council proved that members of a score of religious faiths—Buddhist monks in their bright orange robes from Burma and Nepal, Roman Catholics from Poland, Czechoslovakia and Hungary, Greek Orthodox Catholics from the Soviet Union, Methodists and Quakers from the United States and Episcopalians from England—could work together with Unitarians and nonbelievers in harmony on the fundamental question that now grips the thoughts of every thinking inhabitant of our earth. Black, brown, yellow and white sensed that the barriers that have separated mankind are crumbling and stretched out their hands to break them down. Marxists of many types worked amicably side by side with Communists, Social Democrats and conservative exponents of capitalism.

How was it possible for the Committee for Nuclear Disarmament, the Committee of 100, the British Peace Committee, active leaders of the Committee for a Sane Nuclear Policy such as Homer Jack and Erich Fromm to unite in solid agreement with the Soviet, Chinese, Far East and Eastern Republic peace committees?

One answer is that the Call to the congress was underwritten by men of the stature of Bertrand Russell, Albert Schweitzer, Canon Collins, Nehru, Ilya Ehrenburg and Linus Pauling. The universal respect in which they are held broke down mistrust. Their voices silenced the cold warriors in wide areas of the earth. Along with their endorsement was the swelling support from Africa, Asia and Latin America. The new nations and the uncommitted countries came thronging into the sunlit halls and corridors of the magnificent modern Palace of Congresses. The beauty of the long swinging robes of African men and the saris of the Indian women threw the spotlight on the swiftly growing power that has brought strong allies into the world movement for the outlawing of war.

Highlights of the work were the many meetings with delegations from other lands and the vivid exchange of information and ideas to raise the level of our thought and build an international outlook, and the two-hour session when we listened to the major policy statement made by Premier Krushchev. For us from the United States, his clear insistence upon immediate unconditional complete disarmament with full inspection made a deep impression. It was a satisfaction to us to hear his pledge to work for friendship with the people of our country:

"Our Government has instructed me to declare from this rostrum that the Soviet people want to live in peace and friendship with the gifted and industrious people of America. The Soviet and American peoples have no reason to be hostile to each other. Peace and friendship are their common interest."

For the nearly 200 Americans who came to the congress the days brought ever widening perspectives of friendship with all the peoples of every land. We were welcomed everywhere with a warmth and cordiality that made every day blossom with rich new human relations. Most of us met for the first time, yet in a few days we learned how to work together under the leadership of our talented, able chairman, Dr. Carlton Goodlett of San Francisco. There was unanimity in full support of the Message of the Congress to the Peoples of the World urgently calling for a treaty to end all atomic weapon tests everywhere—"in the atmosphere, in outer space, underground and under water" as a first step in abolishing all nuclear arms and moving to complete, universal disarmament. There was no single word of objection or question in our delegation meeting.

Later that night when we stood together with the 6,000 peace workers celebrating the sealing of our agreement, we felt the full significance of the final sentences of the peace Message we were sending out to the world: "Passivity harms the cause of peace. On us all depends the dawn of the day when mankind will be liberated from the threat of nuclear death. We who want peace are many. If we all act, and if all who act act together in friendship, we could clear the road to our common aim, enduring peace."

(All statements have been retranslated from the Russian.)

Eriberto Harra from Mexico receiving congratulations on his 83rd birthday.

This congress participant from Poland gladly fills a request for his autograph.

Italian writer-delegates Danilo Dolci and Giuseppe Dessi (right) on a bus.

MESSAGE

TO THE PEOPLES OF THE WORLD

FROM THE WORLD CONGRESS FOR GENERAL DISARMAMENT AND PEACE

JULY 9-14, 1962

We have come to Moscow from the four corners of the earth. We have various professions and differing convictions. We have for a week discussed with utmost frankness the questions arising from the danger of nuclear war that hangs over mankind. This has helped us to know one another better, and we are convinced that it is possible to find a way out of the situation that today threatens every country and every people.

The arms race increases tension and mistrust between nations; the tension and mistrust between nations promotes the arms race. A vicious circle has been created. The destructive power of weapons grows more and more frightful; yet voices are heard demanding the unleashing of a preventive war.

Nevertheless we firmly believe that disarmament is not only imperative, it is possible. Yesterday it was a dream only of the best minds of humanity. Today disarmament has become a practical task facing each and every one of us.

Lifting the burden of the arms race would bring benefit to all:

Disarmament would release resources that could be applied toward raising the standard of living in all countries;

Disarmament would save funds that could be applied toward increasing the rate of development of countries as yet economically underdeveloped;

Disarmament would involve the disappearance of all foreign military bases and the withdrawal of all foreign troops, thus aiding the peoples struggling for national independence.

Disarmament must be general, complete and under strict international control. There can be no disarmament without control, no control without disarmament.

We have thoroughly studied the obstacles that hinder its realization, and we know that its achievement will be hard. There are those who oppose even negotiations, some from blindness and inertia, others from private interests or from military ambition. We are convinced, however, that all obstacles can be overcome. Weak aspects can be pointed out in every disarmament plan, but we hold that it is better to agree on a compromise acceptable to all than to pursue the arms race.

However, experience has shown that it would be a dangerous illusion to believe that disarmament can come of itself. It is impossible to rely only on the diplomats and military specialists, who prolong discussions from year to year. Only the efforts of the peoples of all lands can compel the statesmen to find a solution. Divided protests are not sufficient. It is time for a mighty movement of resistance to the arms race and all war preparations.

If humanity has escaped being plunged into nuclear war during the past seventeen years, this is due, above all, to the tireless efforts of the peoples fighting for peace. But we must openly recognise that there are still many who stand aside from active struggle against the arms race. There are still many who are not alert to its dangers, many who have not yet realized the full seriousness of its threat nor their responsibility for saving peace. And to all these we say: "Realize the dangers of the days in which we live; rally to the ranks of those who are fighting for disarmament and peace."

Time does not wait! Thermonuclear weapons may soon be found in the arsenals of dozens of countries, and the improvement of the means of delivering such weapons may make control impossible.

We are firmly opposed to all testing of nuclear bombs and similar devices: firstly, because of their threat to life and health of this and future generations, and secondly, because they increase the tempo of the arms race.

We earnestly appeal to the governments of all the nuclear powers. We call on them to reach, without delay, agreement on renunciation of all tests of nuclear weapons and conclude a treaty banning forever all such tests everywhere—in the atmosphere, in outer space, underground and under water.

This would be a first step toward the complete prohibition and elimination of all nuclear arms and means of delivering them.

Our chief and urgent task is the conclusion by the governments of a treaty of general and complete disarmament under strict international control. We therefore call for businesslike and practical discussions on all the plans put forward, permitting the swift conclusion of the treaty.

Under the pressure of public opinion, and thanks to the action of the uncommitted countries, the positions of the chief negotiating powers in respect to the principles of disarmament have to a certain extent grown closer. But serious differences of opinion are still producing a deadlock. Only if the peoples intensify their pressure can a treaty be secured.

It is for the forces of peace to set an example toward bringing about better understanding and dissolving mistrust. To this task we believe our congress has made a powerful contribution. Ways must be found, appropriate to every country and every organization, for continuing this beginning.

Passivity harms the cause of peace. On us all depends the dawn of the day when mankind will be liberated from the threat of nuclear death. We who want peace are many. If we all act, and if all who act act together in friendship, we could clear the road to our common aim, enduring peace.

MOSCOW
July 14, 1962

AUTUMN

THE VAST DOME OF THE SKY is a light blue. It is no longer hot, but it is not yet cold. There are no rain clouds, and the winds are not as wild as they soon will be. The sun does not blaze down as before, but it still shines brightly. These are the last warm days of the year.

The mosaic-patterned leaves gladden the eye. The trees, aflame with color, wave their branches like bright flags in the translucent air, gold-leafed invitations to the autumn fair. At this forest festival you forget the passing charms of summer. The night is now four hours longer.

The leaves flutter down, clinging to your shoes in yellow patches. In the tranquil, melancholy woods September burns a smokeless fire of red birch leaves and sprinkles the ground with coppery mushrooms. A prickly carpet of pine needles holds fast the fallen leaves. The spider weaves his web around the fir and catches leaves instead of flies. The iridescent dew sparkles on the lacy threads.

". . . I sat, looked around and listened. The leaves rustled quietly overhead. I could tell by their rustle what time of year it was. It was neither the gay, laughing tinkle of spring, nor the soft, long whispers of summer, nor yet the timid, cold murmur of late fall, but only a barely audible soughing . . ." This is the Russian writer Turgenev, describing autumn on the way.

September mornings are fresh and brisk. The sun gilds the curled gray bark of the venerable birches. From the branches where the leaves are still thick the birds try out their voices, but their chirping is only tentative. They no longer warble but sing in muted voices. The most absent-minded of them is the lightheaded finch. He forgets that summer is over, and his silvery twitter suddenly breaks the autumn stillness of the woods.

September is a pensive month; it bids the summer farewell. Pansies still grow amid the dry scrolls of yellowing leaves, and the eglantine, forgetting the season ended, once again glows pink. The meadows are smooth mown and checkered with hay stacks. The water lilies still bud and flower as though summer were wondering whether to go on or to linger a while longer.

A wonderful time for mushrooming, hunting, nut and berry picking. Overhead, above the tree crowns, you suddenly hear the honking of cranes. "Good-by, Mother Rus! We're off to the south," is how the people translate their call. The thrushes are in no hurry to leave; there are still plenty of ash berries to peck at. Nor are the swallows ready to take off. They crowd the highest birch tops with their young, chattering without end, planning their migration to the Egyptian Pyramids.

The chimney swallows spend the night among the reeds. They know the water is warmer than the earth this time of year. The starlings, heralds of spring, flock for their fall family song festivals. They serenade the mushroom hunters on their way to the woods.

The voice of retreating summer still mingles with the calls of the rooks, starlings and black grouse, as though vainly searching for its lost nest. The colors begin to fade as nature dozes. The fallen leaves crackle underfoot and the ear catches the late song of a warbler through the drumming raindrops.

But the falling copper leaves still shine even in the rain. Only the night dims the autumn colors—the coppers, the yellows, the flaming reds of the birch—and returns the green of summer to the sleeping forest.

Russia's golden autumn is an alluring time of year!

By DMITRI ZUYEV

PHOTOS BY IGOR VINOGRADOV, GEORGI PETRUSOV AND VALERI ROZHDESTVENSKY

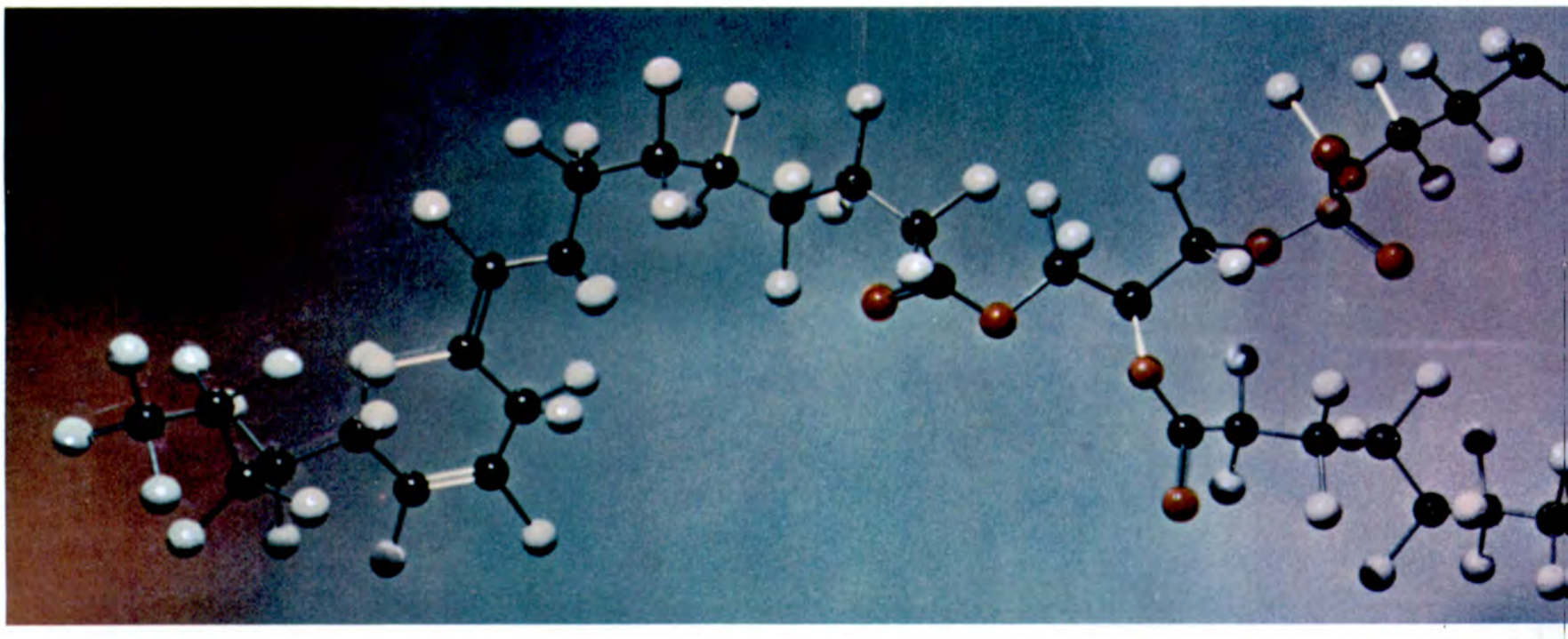
An autumnal snap in the air announces winter is on the way, but Tverskoi Boulevard still gets its usual quota of baby carriages.

For students summer ends in fact, even if the calendar says otherwise, whenever the school term opens. On Moscow University campus.

Fall lingers for a while at Recreation Park in the capital. Here the grass is still green, and ferries still ply the river below.

Autumn begins to shade off into winter. The trees in the Moscow Botanic Gardens are almost bare and the visitors mostly elderly folk.

MADE BY STUDENTS



BY YURI GORIN

PHOTOS BY ANATOLI GARANIN

SOVIET technical school students have adopted a new motto, "Don't only design it, build it!" Most of the colleges have student-run design shops and research societies where this "idea-to-finished model" approach is gaining favor.

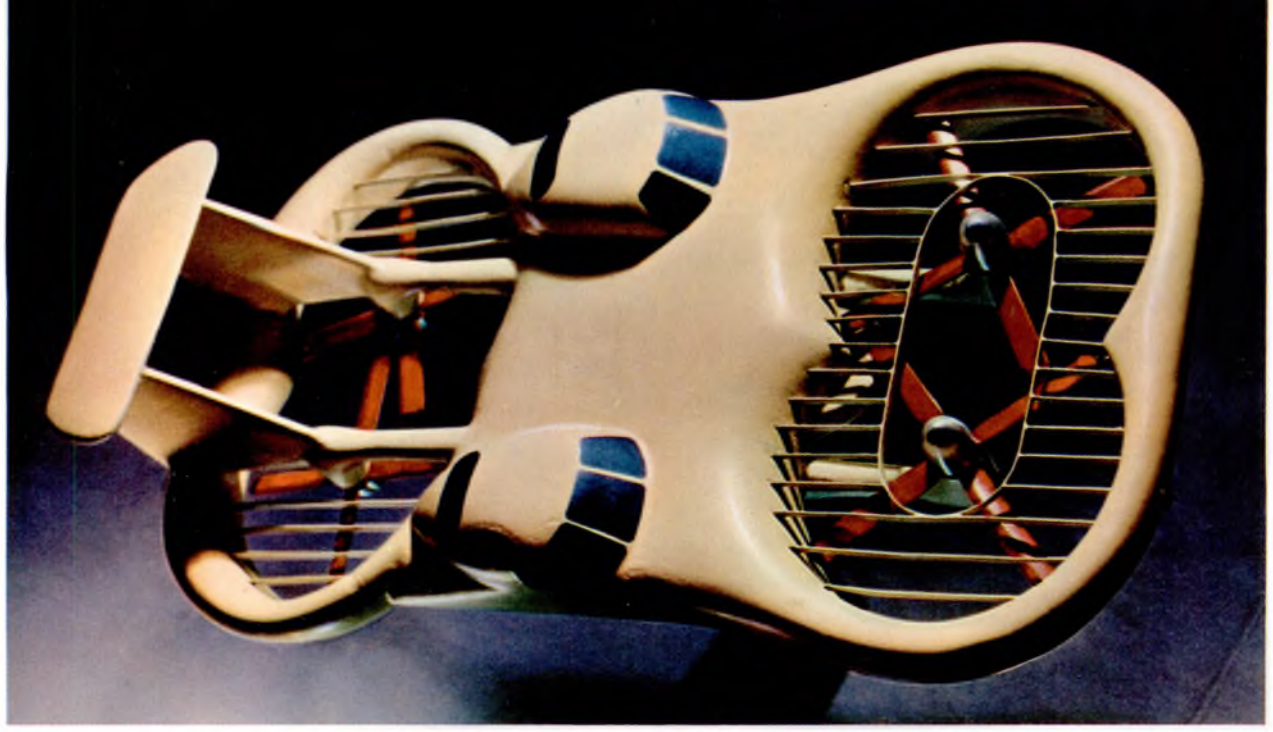
Moscow college students not long ago exhibited technical equipment they had designed and built—some 5,000 machines, instruments, models and diagrams. The featured exhibits received wide commendation for their originality of design, unusual simplicity, and their clever and ingenious solutions of technical problems.

A few of the displays:

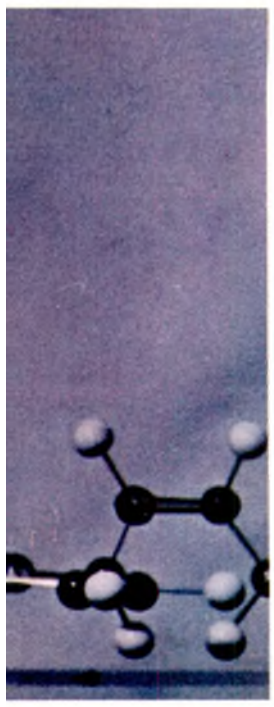
Chemical engineers in all countries often come up against the problem of processes that are affected by constantly changing factors; an example is the varying composition of initial raw materials. Students at the Institute of Chemical Engineering produced what they call a correlator, a machine that makes allowance for those changing factors and, without any human intervention, works out the best possible production regimen.

The designers experimented with their machine and then decided to apply it to medical practice, specifically to serious heart ailments. After making some minor adjustment, they worked out a correlator that keeps watch on the patient's condition, registers the findings on tape, and administers medication when it is called for. The correlator promises to be an indispensable physician's tool.

Students at the Economic-Statistical Institute in Moscow set themselves the task of building a machine that would speed up the processing of various statistical data. The MEST digital



Engineering student-inventors call this car of the future, geared to any kind of travel, a flying platform.



Molecular model of an alkaloid synthesized by student chemists. It was derived till now from a rare plant.

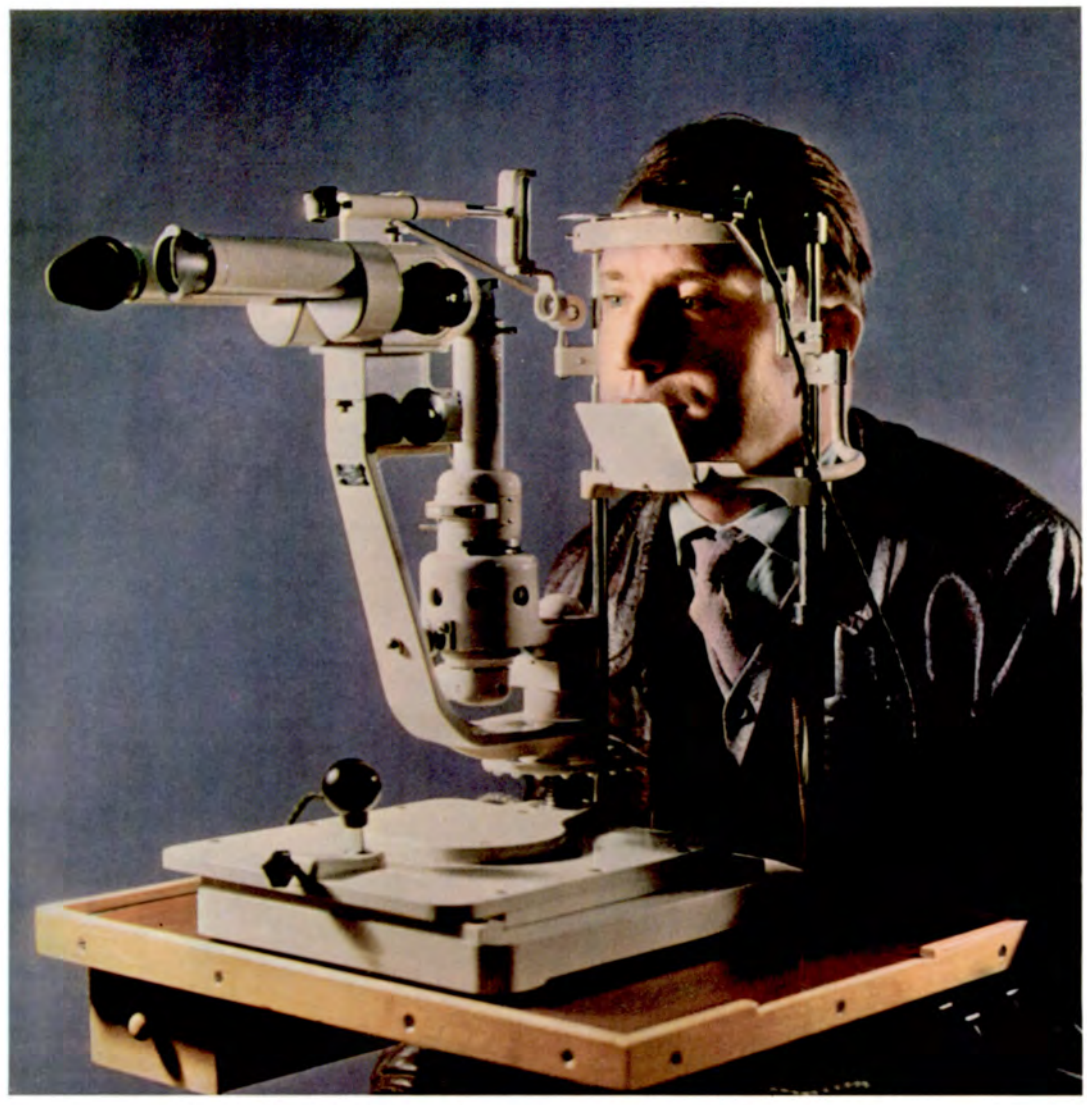
A group of students of the Moscow Medical Institute made this translucent model of the heart with all blood vessels clearly delineated.

electronic statistical machine they designed and built is completely original, does not duplicate any of the known computing mechanisms. Its electronic eye can simultaneously scan more than 1,500 perforated cards per minute, summarize and group the data, and transmit them to a memory device. A special mechanism can boost the machine's speed eightfold to process 12,000 perforated cards per minute. Used in collecting census data, authorities say the machine can save millions of rubles.

Some of the displays masquerade their serious intent. An electronic dog, made jointly by electrical engineering and medical students, has very sensitive conditioned reflexes. It reacts to light, turns its head toward a human voice, and barks at strangers.

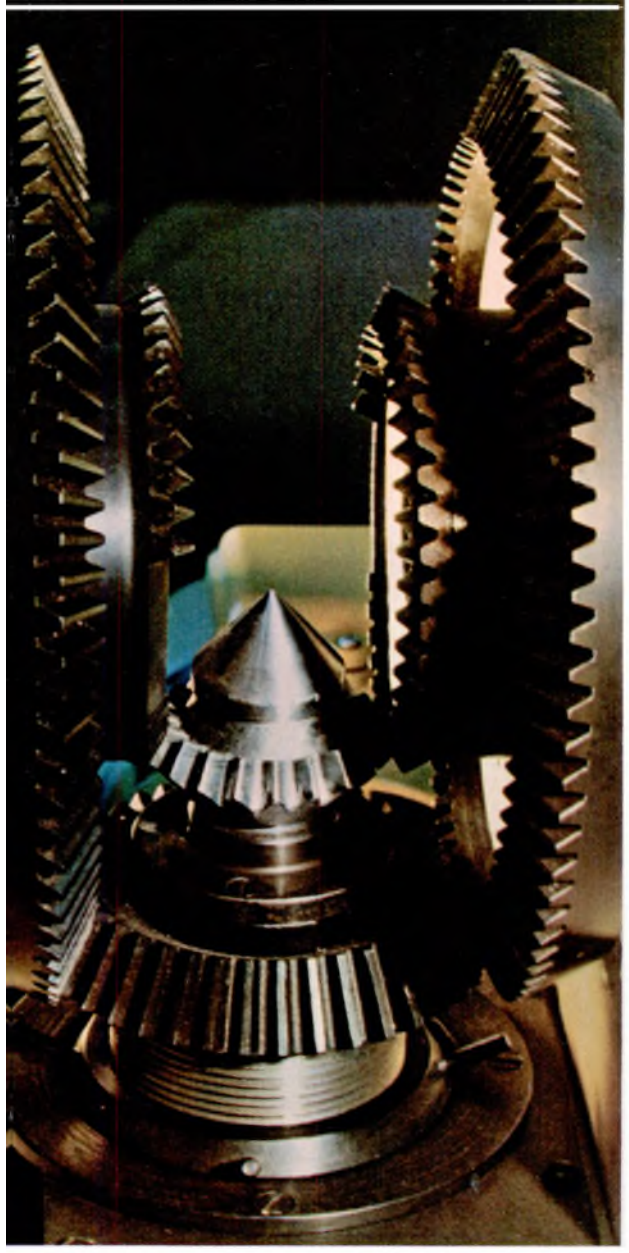
The exhibit that draws much laughter is an electronic examiner made by students of the Power Engineering Institute. The machine asks the question and you give the answer. This is one examiner without the usual human frailties—no irritation, no display of favoritism—it always makes a completely objective estimate of your knowledge. Of course, there are all sorts of tries at outwitting the examiner—switching the person answering, for example—but it can't be fooled. The examiner is equipped with a Polaroid camera and "knows" every face.

The joint creative research in the student design shops provided by the study program develops in the students the necessary habits of research and the ability to think independently, and expands their world outlook. Many of the things produced by the student design shops are being introduced into production.

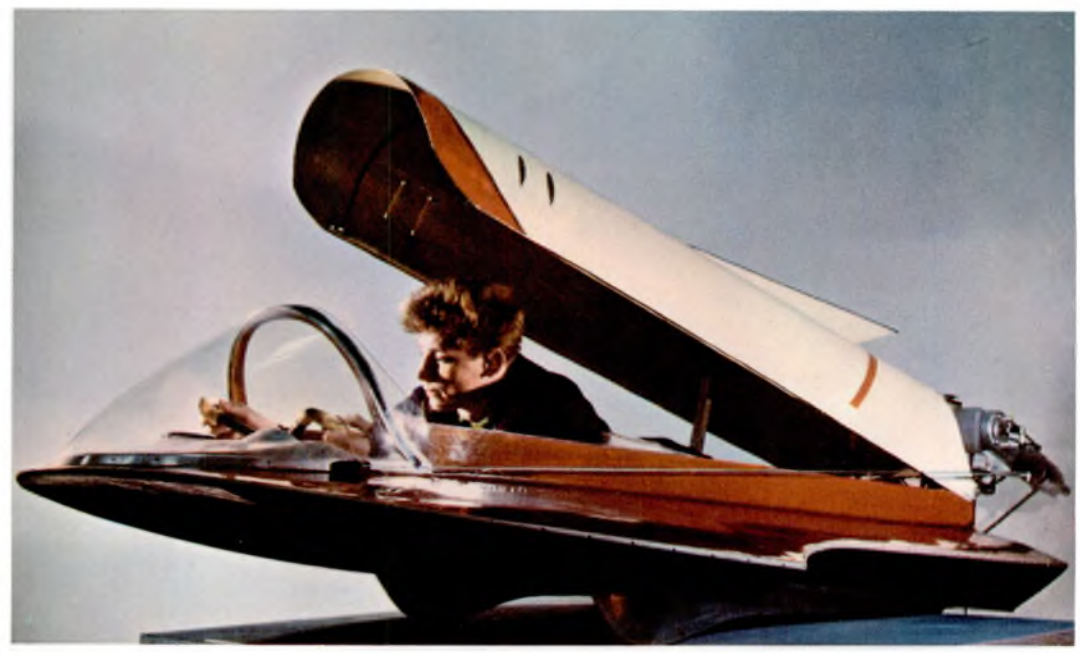


The equipment designed and built by students shows a fresh approach to the problems at hand and provides clever and ingenious solutions to technical questions.

Liquid jet engine of a helicopter a quarter the weight of the two-seater now in use, designed by Moscow Aircraft Engineering Institute students.

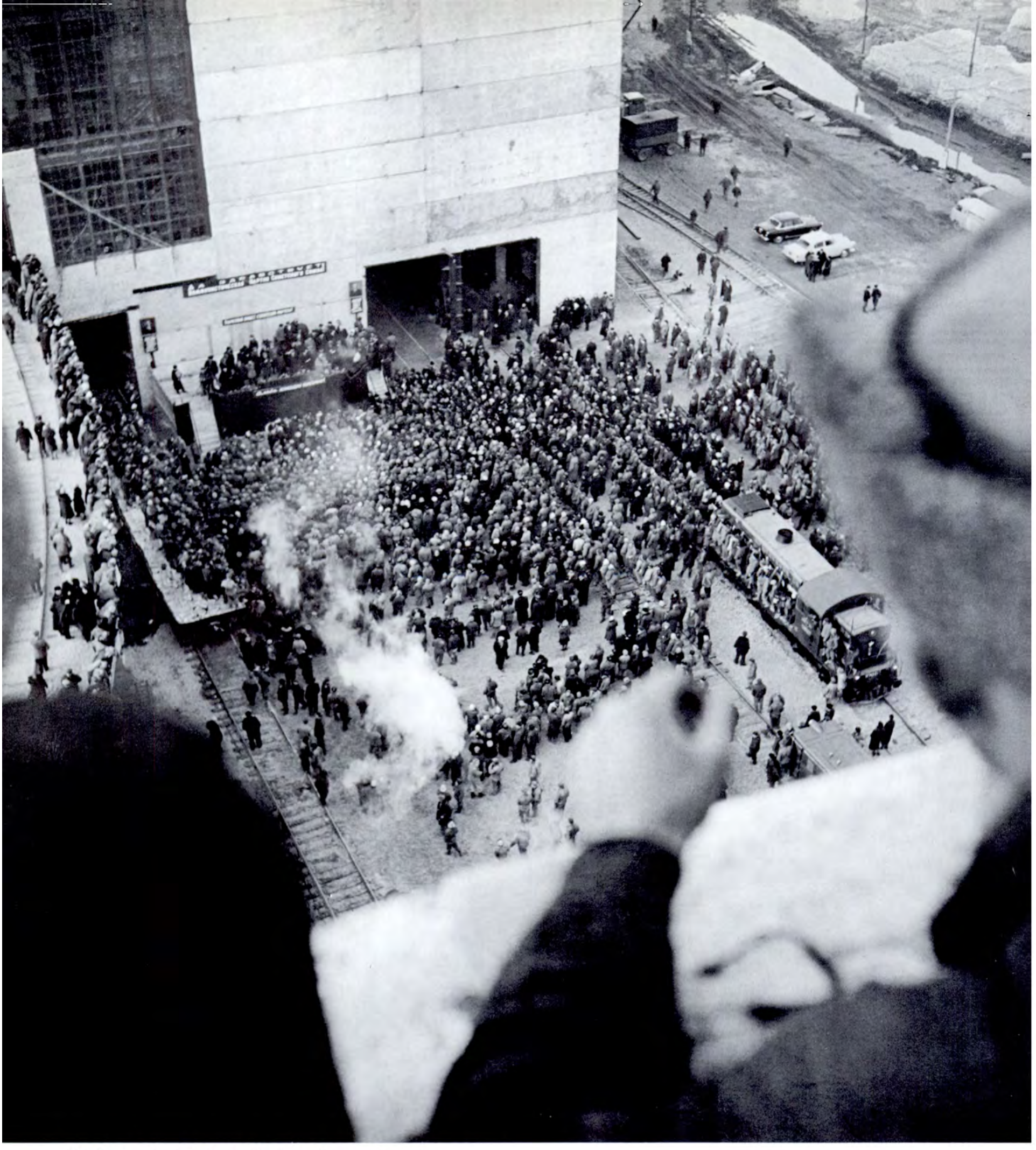


A student-designed machine for making oil boring bits speeds production twenty fold and cuts the labor involved to a sixth.



Racing scooter with an ingenious 35-h.p. suspended engine. It does much better than present speed records.

Interior of a modern apartment decorated by the student design shop of the Surikov Industrial Arts Institute.



The Komsomols at the Lenin Metallurgy Plant congregate for a meeting celebrating the completion of the first batch of steel.

KOMSOMOL

SHOCK PROJECT

BY OLEG KUPRIN

PHOTOS BY GENNADI KOTUSOV

I HAVE BEEN WANDERING around the Lenin Metallurgy Plant in Zhdanov on the Azov Sea all week collecting material for this story. The old plant is being reconstructed—more accurately, being built anew—and the builders are nearly all young people, members of the Komsomol (Young Communist League).

Aside from the usual administrators—construction chief, section superintendents, team leaders and the like—there is another supervisory group here, a very large one made up of all the Komsomols on the job. They voluntarily, and without any fanfare, declared this a "Komsomol Shock Project," which means that they assumed personal responsibility for getting it done properly and fast, something Komsomols have been doing on especially important construction jobs all over the country.

The planners of the project hadn't reckoned on the Komsomols' unceremoniously cutting their time schedules. The young builders finished assembling the new equipment of a section of the plant much before they were expected to and waited for the next batch of equipment to arrive. The factory responsible for the delivery, however, was working strictly to schedule and could be expected to send the new equipment when it was due, but no sooner. A rush request could be made, of course, but whether the reply was favorable would depend on how busy the factory was at that time of year.

This is where the Komsomol group walked into the picture. Without bothering the management, it addressed itself directly to the young Communists at the factory with the question, "What's to be done and how?" and a movement for accelerating production of the machine aggregates began, not at the executive level, but right at the bench. Since the problem was being tackled not by a score or so of minds but by several thousand, it was, of course, solved—a fairly typical example of Komsomol activity on this big job.

Here is another.

When one of the sections of the project began to fall behind and slow up the rest, the Komsomol group threw its best men—engineers and organizers—into the breach to help the management find the reasons for the slow-up. They stuck to the job until the situation reverted to normal.

Every so often you see a sign with the word "Shame!" written in large letters stuck up in a section that's falling behind. This is one I copied, "Shame on engineer Ivanov and the Komsomols of his section. They are as clumsy as bears and a drag on the other sections."

Ivanov and his Komsomols will have to pass that sign 20 times a day and meet the jibes of friends in the other sections. The sign won't be there long if they can help it.

But other signs get posted, too. In large red letters they inform all and sundry of the accomplishments of the various sections, teams and individuals.

Many of the older people on the project seem to have caught some of the infectious Komsomol spirit. Even so hard-bitten a man as Nikolai Zarubin, who heads the team building the open-hearth furnace and darts around from one end of the project to the other, always with a troubled scowl on his face, was heard to say, "I yell at the builders all the time, call them loafers. Actually I enjoy watching them. You have to see it to believe it—the way those boys and girls work."

One of the older men I interviewed, a knowing and very capable shop superintendent, had come to the project from Siberia where he had also headed up a shop.

Was he sorry he had come? Far from it. There were mostly young people here, and he found that refreshing. He was teaching them things and picking up a couple of pointers from them too. Picking up what? Something of their dreams and their daring, I thought. He talked of his new shop like a father about his new offspring, lapsing into such jubilant statements as, "You never saw anything like it! . . . Nothing like it anywhere!"

The big rejuvenation project was begun a few years ago. On the outside wall of the huge rolling and slabbing mill is the inscription in yard-high letters "Komsomol Shock Project" against a background of the familiar Komsomol badge with the silhouette of Lenin. Every second worker on the project carries a red Komsomol membership card with that silhouette in the pocket of his or her overalls.

Anatoli Yevmenov told me the story of one of these cards. As secretary of the Komsomol Committee of the building trust, he is responsible for all Komsomol activity at the plant.

"It happened last fall when we were assembling the rolling mill," he began. "A lot of new people came to the site, among them Lyosha Morozyuk. He'd just finished his tour of duty in the Army. An ordinary chap, nothing special about him. He worked on a team that was laying track, worked by day and studied nights. Eventually he went to evening school. Lyosha liked the project, particularly the rolling mill that he hoped some day to superintend. He had another aspiration—a girl, of course. Her name was Masha, and she worked in his section."

Lyosha's team was laying track to the mill on this particular day. It was getting dark by the time the workday was over, and they had to decide what to do with the tools and cable since they had to come back to the spot the next day to finish the job. Instead of lugging the equipment back to the main office, which was quite a way off, they decided to leave it in a shed nearby overnight and one of the boys with it. The job fell to Lyosha.

He made himself comfortable in the shed. He could hear the throb of big construction. The familiar noise, he said later, kept him company. From a distance the heavy rhythmic thuds sounded like a giant's pulse.

Then, through his half-doze, he heard an explosion, and he was suddenly enveloped in flames. A drum of benzine had exploded and was burning fiercely. Lyosha managed to roll the blazing drum through the door. His clothes caught fire and practically burned off his back, and with them the Komsomol membership card in his pocket.

The diagnosis at the hospital was third-degree burns—there was hardly an unscorched spot on Lyosha's body. The doctors said, "His condition is serious but not hopeless. What he needs is blood and skin."

The bus had to make two trips from the site to the hospital to transport the crowd of Komsomols who wanted to give blood and skin to Lyosha. They arranged to look after him night and day. For a period Masha practically lived at the hospital after working hours.

When he was on the way to recovery, the thing that bothered Lyosha most was that his Komsomol card had been destroyed. It was much more than a piece of paper to him. It had been his ticket to the construction site and symbolized the many friends he had made, boys and girls who had volunteered blood and skin to save his life.

A special Komsomol meeting was called in the hospital ward with only one item on the agenda—a duplicate membership card for Lyosha Morozyuk. Anatoli Yevmenov read the resolution aloud and presented the card to Lyosha. His hands were still bandaged, so Anatoli held the card with Lenin's silhouette up for him to see, and Lyosha looked at it with his eyes a little damp.

"That's the story," Yevmenov concluded. "Lyosha is fine now, he's back laying rails."

"And Masha?" I asked.

"You guessed right. They're married and expect the first addition to their family shortly. Masha is on maternity leave."

I dropped in to see the Bodarenkos. They have a small apartment in a house in town full of young specialists like themselves. Yura and his wife are both construction engineers. They studied at a technical institute in Dnepropetrovsk and after graduating came out to the Komsomol shock project in Zhdanov. I talked to Yura while his wife was in the kitchen.

Four months after he came to the project, Yura was appointed senior design engineer. He held that job for a year and then one day asked for work as an ordinary mechanic on the blast furnace construction. After considerable insistence he got what he wanted and shifted from the quiet of the drafting room to the clatter on the job, and from the sizable salary of a senior engineer to the comparatively modest wages of a mechanic.

I asked what prompted him to make the change. Difficulty with people? Some personal involvement?

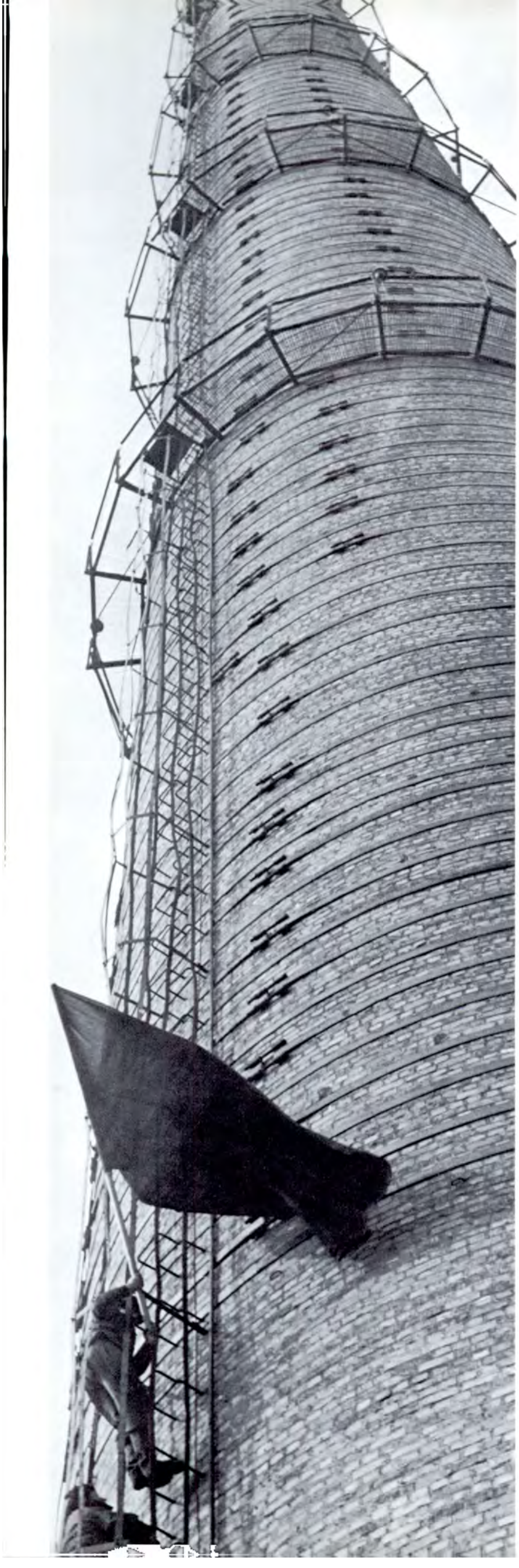
Apparently nothing of the kind.

"You just didn't like your job, was that it?"

"Oh, no. I found the job very interesting. I just didn't want to get tied down to the drafting board. I think every designer ought to work at an actual construction job, get the feel of things, before he gets down to his drawings. That's why I decided to be a mechanic. We're not doing too badly," he added. "We keep pretty busy."

I could see what he meant. The bookcase in the corner of the room was filled to overflowing, mostly with technical material. These two young engineers were obviously keeping up with the latest developments in their field. Books and magazines lay scattered about. On the window sill lay a skin-diver's helmet. Yura noticed my glance and said, "We both like to peer about in the undersea world."

There are many young people like the Bondarenkos on the project—peering, learning about themselves and the world they live in.



Sasha Sidorenko heads a Komsomol group at the plant tha ferrets out and helps to remedy shortcomings in the work

As each new installation is finished, the red flag is hoisted by an outstanding worker—welder Stepan Gaidai, this time.

Youth is always searching for truth and beauty. "It's not always easy to find," says gas torch operator Anna Yakovets. She has the strong hands of a worker, something of a contrast with her pretty face and figure. There is beauty in the strength of those hands, too, not so evident at first glance. They betoken an inward grace and probity.

Anna had worked in a factory making nets. Her workmates were all old friends, the surroundings pleasant, the job easy. Then one day she read a poster announcing the rolling mill project, and the old job began to pall. She made up her mind to apply for work on the project, one of many young people in the area who did.

Her job wasn't anywhere near as easy as the old one, but she felt more alive than she ever had before and infinitely more interested, with one thing after another to learn. First she was taught to operate a concrete mixer, then she became a gas torch operator. She worked on the foundation of the rolling mill, then on the construction of the slabbing mill, and now she is helping to build the cold rolling shops.

Anna was on the way back to her dormitory after work one day when a truck pulled up. The driver opened the door and asked if she wanted a lift. The dormitory was some way off, and there was plenty of time to get acquainted. The driver's name was Anatoli, a pleasant good-looking chap, and evidently no fool.

Anatoli picked her up the next day and every day thereafter. Soon they were spending all their evenings together—movies, dancing, or strolling in the park. Then one day, as he was driving her home from work, Anatoli proposed. He spoke of the future, said there was no problem of money, his was a money-making job. "You can always work out a deal with the dispatcher," he said, "so he'll credit you with an additional trip you didn't make. Then you can also do a little work with the truck on the side, if you know what I mean. Principles are fine if they don't get in the way of making money. We'll do all right."

Anna's strong hands gathered into fists and she said, "Let me out!"

"What's wrong?"

"Plenty!" Anna said. "You just stop the truck and let me out!"

She walked back home and did a lot of thinking on the way. Marry a man like that, whose principles you could buy for a few rubles! Not for her! He was a fake, this Anatoli, not a real man at all! She would wait until a real man came along.

All the young people at the project were lively, very wide-awake, always ready for fun. All but Stepan Gaidai, I thought the first time I saw him.

The new open-hearth furnace was being dried, and the men were standing around it, warming up. One of them was a welder with his mask pushed askew, a phlegmatic fellow in a pair of pants that looked like he had slept in them. He talked in the most languid kind of way, as though he were sitting over a cup of tea rather than building an open-hearth furnace.

"Where did I begin? Is that what you want to know? Well, I began at the beginning. See the spot—it's marked '—8.' Where did I finish? Up there," he pointed, "at mark '+41.'"

I already knew that this very lazy-looking fellow was welding a turbine pipe 720 meters long and doing it at a prodigious rate, so fast, they told me, that his team could barely keep up with him. Probably why, I thought, he chose to talk in the sleepy, mocking way he did. The story was that he often spent his nights at the project.

The high 41-meter mark was not his limit. He topped that mark the day the first open-hearth furnace was put into operation. The occasion was celebrated at the project with a dance. To the music of an invited orchestra, thousands of rubber boots stamped out jazz rhythms on the clay. Then came a meeting, congratulations and a special ceremony.

We watched two tiny figures climb the ladder to the top of the hundred-meter stack of the furnace. Crawling up with them went the red flag of the Komsomol Shock Project. It was being hoisted by Stepan Gaidai, that fellow I thought so phlegmatic at first sight.

A few hours after that the river of molten steel was set flowing in a shower of sparks, like fireworks saluting the Komsomol leader Sasha Sidorenko, the tracklayer Lyosha Morozyuk and his wife Masha, the engineers Bondarenko, the gas torch operator Anna Yakovets and that lazy-looking Stepan Gaidai, who were building this most modern metallurgy giant. ★

Anna Yakovets wields a mean gas torch. She left an easy job in a net factory for a hard one in Zhdanov.

Assembler Anatoli Vilner combines work and study. He is a freshman at the plant's technical school.

When the reconstruction project is finished, the plant will be producing double its former output.

THE ECONOMICS OF EDUCATION

BY STANISLAV STRUMILIN

In relating the shape of things to come with the future of the younger generation, we invariably try to visualize what our sons and daughters will be like when they grow up. And this leads to a question that concerns everyone—education. Is it accessible to all? Is it accomplishing the goals we have set it? What system of public education is best?

The author of this article is the prominent Soviet scientist Academician Stanislav Strumilin, who prepared a study on the economic and social aspects of the Soviet school system for UNESCO.

SOVIET EDUCATION aims at preparing the child for practical life and productive labor and at providing the adult with the opportunity for further training and education to meet his own vocational and intellectual demands and the needs of society.

The basic goals are to mold harmoniously developed members of a communist society and to solve a cardinal social problem—the elimination of any essential distinction between mental and physical labor.

The Soviet educational system is also geared to the tasks facing the country. It is a powerful lever for economic development and raising labor productivity.

Cultural and economic progress are closely interrelated in the Soviet Union. Investment in public education meets the needs of the individual citizen and the needs of the socialist economy at the same time.

In our day, with production increasingly dominated by automation, telemechanics, cybernetics and electronics, the proper application of science becomes the decisive factor in the rapid growth of a country's productive forces. For this, science must become the property of ever greater numbers of people.

The population of czarist Russia was almost entirely illiterate. Soviet power set out on its cultural mission by teaching millions upon millions to read and write. A Soviet Government decree of December 26, 1919, called for measures to teach every adult below 50 to read and write. Between 1920 and 1939 more than 57,500,000 adults who had been altogether illiterate and 38,500,000 adults who could barely read or write completed literacy courses at schools and in study groups.

In 1924 Gosplan, the State Planning Administration, was considering a program of universal, compulsory and free education for children with a minimum of four years in the first stage. It was then we made our first thoroughgoing study of disbursements for education and their effect upon the country's economy.

We compared the income and labor productivity of various categories of working people with their educational backgrounds and other occupational factors, and saw at once that even primary schooling gave a better return than an equivalent amount of time spent at the workbench. A year of reading and writing, for example raised labor productivity by an average 30 per cent, while a year of practical training of illiterate workers raised their proficiency and output by no more than 12 to 16 per cent. On the average, a year of schooling resulted in a proficiency rise 2.6 times greater than a year of training at the workbench.

The 1924 estimates placed the cost of the primary school program—with enrollment figured to increase from four million to more than eight million children in ten years—at 1,622,000,000 rubles. The accretion in national income derived from the higher proficiency of schooled workers by the end of that ten-year period, with only five of them actual working years, would total more than two billion rubles, it was estimated—more than the sum spent for education.

That first big educational program was carried through, in the main, by 1934. Four-year primary schooling was made compulsory throughout the country, and a seven-year school program was set up in the towns and cities. The new Program of the Communist Party of the Soviet Union sets new and much higher goals—compulsory eleven-year secondary schooling with a general-polytechnical curriculum for all children of school age in both urban and rural areas by 1960-70, and schooling on the college level for all those who want it.

These enrollment figures (in thousands) show how Soviet school facilities have grown:

Year	Combined Elementary-High School: General 5-10 Year Schools	Combined Elementary-High School: Specialized	Schools on the College Level	Total	Percentage of 1930
1914	506	36	112	654	22
1930	2,042	587	288	2,917	100
1940	13,796	975	812	15,583	534
1950	14,612	1,298	1,247	17,157	588
1960	17,392	2,060	2,396	21,848	749

In the past 20 years—this includes the war years—the population of the Soviet Union grew from 190.7 million in 1939 to 208.8 million in 1960—an increase of 18.1 million, or 9.5 per cent. The employed population rose from 88 to 99 million—an increase of 12 per cent. The number of people with a college-level and secondary education, in spite of war losses, climbed by 43 million, or 270 per cent. The percentage of workers and collective farmers with a higher and secondary education rose from 4.3 to 31.6. For industrial workers separately, the rise was 38.6 per cent, with even larger increases for specific trades. For metal workers and metallurgists it was 53.5 per cent, for printers it was 64 per cent, and for other trades the rise was higher.

State expenditure for public education grew with the school system, at a faster rate than did the aggregate expenditures in the national budget. In

1960 the appropriation for education comprised 14.1 per cent of the budget, as compared with 10.6 per cent in 1932. In cash this represented a 25 fold increase. School appropriations totaled 2.25 billion rubles in 1940, 5.7 billion in 1950, and 10.3 billion in 1960.

Engineers and agronomists are of the greatest importance to the Soviet national economy, and these fields of study are therefore favored. The Soviet Union for some years now has led the world in the number of trained engineers and agronomists. At the end of 1960 it had 1,115,000 engineers and 1,931,300 graduate technicians. For all that, Soviet colleges, not worried about training too many engineers, graduated another 120,000 engineers and 250,000 technicians that year and went ahead with an expanding technical training program.

It might be noted, for comparison, that in 1960 the United States had some 525,000 engineers and that in the past few years the annual addition has not been more than 38,000.

The general level of education in the Soviet Union has been rising rapidly and will be rising even more rapidly with the introduction of free, universal, eleven-year secondary schooling.

More than 20 million employed men and women with a comparatively low educational background will reach retirement age in the current decade. Their places will be taken by more than 30 million secondary school and college graduates. The cumulative effect will be that personnel with a high level of education and the skill to handle the up-to-date machinery at their disposal will predominate in the working force. The annual total of college and secondary school graduates more than doubled in the past ten years, and in 1961 it came to nearly two million. In the next 20 years, therefore, we may expect the educated population to grow by at least 70-80 million.

More schooling has its attendant economic effects. The one most apparent is higher earnings for better skilled people.

At present there are wage differentials between professions and trades and between skilled and unskilled labor. In the metal-working industry, for example, an engineer's income is 30 to 40 per cent higher than a skilled worker's and the wage gap between a skilled and unskilled worker is about 50 per cent. These differentials stimulate people to learn and to improve their skills. As we improve proficiency, we increase the social product correspondingly. We must keep this in mind when we look into the returns on our educational investments—that a part of the surplus product comes from better schooled working people.

Between 1940 and 1960 Soviet national income rose, in comparable prices, from 33.5 billion to 146.6 billion rubles—by 338 per cent. The manpower total that produced the income increased in that same period from 54.6 to 68.4 million—by only 25 per cent. No question but that vocational proficiency acquired through higher and secondary schooling alters labor dynamics very decidedly.

Estimates show the part of the national income attributable to greater labor proficiency to be 23 per cent of the whole. This greater proficiency accounts for at least 33.7 billion rubles, the cash return, so to speak, on investment in schools.

Let us compare educational expenditure (we include in this figure not only current outlays for education but the value of fixed assets in education as well as in science and art—the outlays for building and equipment of related institutions—theaters, art galleries and museums—since these, in the final analysis, also serve the same purpose) with the accretion of national income resulting from education over an extended period.

According to the Central Statistical Board 1930 expenditures were 1,205,000,000 rubles, 1940 expenditures 4,370,000,000, 1950 expenditures 5,388,000,000 and 1960 expenditures 16,237,000,000, all in current prices. The following table uses 1940 as the base year. All figures are in billion rubles at comparable prices:

	1940		1950		1960	
	rubles	per cent	rubles	per cent	rubles	per cent
Outlays and fixed assets in education and related areas	4.37	100	5.39	123	16.24	372
Accretion of national income derived from education	5.39	100	11.31	210	33.72	626
Current annual outlays	3.13	100	4.25	136	10.30	329
Excess of accretion over outlay	2.26	100	7.06	312	23.42	1,036
Excess of accretion over fixed assets in per cent	52%	—	131%	—	144%	—

We see, then, that the accretion of the national income derived from higher and secondary education has increased more than sixfold while the net income, minus current expenses, has increased about tenfold. As a result, the return on the investment in education exceeded all known indices, rising from 52 per cent to 144 per cent a year.

These "profits" from educational spending are likely to surprise the layman, especially since they never appear in official statistics. But we still have a few "profit" sources unaccounted for, the innovators movement for instance. The All-Union Society of Innovators and Inventors has a current membership of 2,350,000. In 1960 alone 2,536,000 ideas and improvements introduced in production resulted in economies of close to 1.5 billion rubles.

But the bonuses and prizes to the innovators and the savings to the country are, in a sense, secondary values. The primary value is indicated in this statement by a Soviet worker, a participant in this mass movement. He writes: "It seems to me that the major return from innovations is not the savings in rubles and kopecks, although those too keep growing all the time. The wonderful thing is that an idea for something new seems to kindle a man, to eradicate boredom and indifference. It is good to be alive and a joy to work when a new problem presses you for an answer."

This type of creative productivity serves as a powerful, even though indirect, stimulus to economic development and adds considerably to national income.

We have no way of figuring how much the eminently creative labor of the scientists augments the national income. The number of scientific workers in the Soviet Union rose from 98,000 in 1940 to 400,000 in 1961—more than fourfold. In another 20 years the total will be in the millions.

Soviet scientific progress is not retarded by commercial secrecy or the monopolization of private ownership, the reason science under socialism moves ahead so fast. The popular saying has it: "For a country to try to progress without science is like a blind man trying to walk without a guide—he keeps stumbling." Nikita Khrushchev phrased it this way, "Science is our compass. The way to victory is to organize people and move ahead by this compass."

The Soviet people, sole owners of their country, have put education within everyone's reach. They use their schooling to good effect, and the knowledge they acquire is a hundred fold reward for their efforts, for it not only provides material comforts but, in the process, molds the socialist man of the future. ★

HE DECORATES FACTORY INTERIORS

TEXT AND PHOTOS BY ANATOLI RUSSOV

TO GIVE Vladimir Ivanov a proper statistical background, let us start off with a few figures. The Soviet Union has 14 art schools, institutes and art academies on the college level attended by 5,068 students. Last year 560 of them graduated and took jobs in various parts of the country.

But these dry figures do not describe the 560 earnest young people any better than the word "work" describes the zeal and excitement which the young artists, illustrators and decorators plunge into it. Work for them is a long-hoped-for realization of dreams, plans and projects—not all the same, of course, in each case. For some it means boldly original book illustrations; for others, new and unusual textile designs; and for still others, plans for unique modern buildings.

Vladimir Ivanov graduated from the Leningrad Mukhina Art School's monumental and decorative arts department three years ago with plans of his own. In his last years at school Ivanov had ideas for designing new kinds of factory buildings—attractive, pleasant to work in, with lots of air and light. The title of his diploma thesis was "Artistic Decoration of the Interior of an Oil Refinery."

After he successfully defended his thesis, Ivanov took a job in Ryazan, the town where he was born and grew up. His childhood was not an easy one—his father was killed in action in the early days of the war.

His diploma project gradually developed into a working drawing, and now construction men are building the shops of an oil refinery under his direction. And so we have the actual contours of a student's dream taking shape.

This is the most recent of Ivanov's projects. He has done others—the chemical workers' Palace of Culture and the Polyanka jewelry shop. All the projects—done in collaboration with his colleagues, architect Nikolai Istomin and sculptor Igor Khramchenko—have won prizes. The winners decided to do the décor of the jewelry store without pay, as a gift to the community.

The City Soviet recently appointed Ivanov chief artist of the regional architecture authority. In addition he teaches painting at the Ryazan Art School and has been in charge of a studio for three years at the House of People's Art, used by 22 interested employees of the town's appliance factory.

A versatile artist at home in various genres, he favors contemporary themes centered around the worker.

He is working with Igor and Ada Khramchenko on a bas-relief for the new post office building in Ryazan.

Although he's more adept with the paint brush than the spade, he does a professional job planting trees.

Ivanov and his colleagues supervise the final touches to the decoration of the Polyanka jewelry store, designed under his direction.

A jaunt after dinner with his family—five-year-old Vladimir junior and wife Yulia, an instructor at the Ryazan Economics Institute.

Vladimir is active in community work. For three years he has been in charge of a studio for young workers at the House of People's Art.

SINGING TRAINS

BY YEVGENI VISTUNOV

OUR TRAIN stopped at a way station deep in the taiga. In spite of its railroad appurtenances —the bronze bell at the door and the timetable framed behind glass—the lone building, darkened by time and weather, looked more like a hunter's shack than a station.

"This is certainly a hole," said one of the passengers.

Nobody responded. Tired of the interminable journey, we were all dozing. The car was quiet, the air stuffy. Suddenly the sleepy silence was broken by a song.

". . . To build new plants,
New towns
In the taiga . . ."

We came to life. All of us crowded round the windows as though we had been waiting for something to pull us out of our lethargy. A train was clattering past, the cars decorated with greenery. From the open platforms high-spirited girls and boys were yelling to us.

"Where are you off to?" shouted a sailor in my compartment.

Several voices called back in chorus:

"To Korshunikha!"

"To Bratsk!"

"To Abakan!"

The singing train did not slow down. The last car clicked past, trailing that happy buoyant song in its wake.

"Ah, if I could only throw off a couple of dozen years, I'd be on that train with the YCL'ers," one of my traveling companions, a tall old man in a railroad official's uniform, said to the sailor.

Soon after, another singing train passed us, and then a third. When, near Irkutsk, a fourth swept by with a lively song about restless youth, the snow, the wind and the nightly flight of the stars, the old railroader could contain himself no longer. He swung around in his seat and said, "Let's match them with a song."

He cleared his throat and began to sing "Kakhovka," an old song of the 1918 Civil War. We joined in quietly. Heartened by our support, his voice picked up volume.

The song ended, he said, "I fought Kolchak and chased the Japanese out of the Far East. We sang different songs those days. Now they're about the seven-year plan, construction sites and communism."

As often happens when people travel together and one person happens to strike a common chord, we were soon opening our hearts to one another. Strangers a moment before, we were people of the same mind and heart, united in feeling by the singing trains. We wanted to be young again, to be passengers on those trains, to sing and laugh with those young people, to get off with them somewhere, to build a factory, a railroad, a new town.

But we rolled on, watching the lights of small and big stations, the frames of bridges and the towers of transmission lines flicker past. The stars shone down on the Siberian expanses. It was long past midnight before we fell asleep.

In my travels about the country I have met plenty of singing people, professionals and amateurs. But for spirit, strength and courage I have never heard the equal of the singing of the girls and boys on the trains that speed toward the great Siberian construction sites. ★

SCHOOLS ON POSTAGE STAMPS

BY ILYA ZBARSKY

WHEN THE SCHOOL YEAR BEGINS in September, it seems as though the whole Soviet population were heading for the classroom—grade school children, institute and university students, people, young and old—doing after-work studying. Even the small fry start off for kindergarten, where they play educational games, dance, recite nursery rhymes and listen to music.

Study is the theme of many postage issues. A 15-kopeck blue stamp issued in the 1947 kindergarten series shows a teacher reading to a youngster. An olive-colored 10-kopeck stamp that appeared in 1930 to commemorate the All-Union Pedagogical Exhibition depicts school children working on their wall newspaper.

The strong polytechnical emphasis of the Soviet school curriculum is illustrated in a 40-kopeck violet stamp showing secondary school students at a factory machine getting work training. A reddish-brown two-kopeck stamp shows children putting up a letter box.

A blue one-ruble stamp pictures an evening high school class for young workers. The course of study is the same as in the regular day high school. These students get paid leave to prepare for examinations. They are eligible, after graduation, for college entrance.

Last year a series titled "Study, Work and Live in a Communist Way" was issued. The three-kopeck stamp pictures a trigonometry class.

A 10-kopeck commemorative was issued in honor of Moscow University's skyscraper main building, called the Palace of Science. The stamp, issued both with and without combed perforations, shows two students —a girl and a boy.

Friendship University, attended by young people from many of the world's underdeveloped countries as well as by Soviet students, opened in Moscow in 1960. A 40-kopeck stamp (overprinted four kopecks in 1961 because of the currency change) was issued to mark the occasion. It shows a group of Latin American, Soviet, Chinese, Indian and African students with the university building as background. ★

VEROCHKA

BY YURI KRUTOGOROV

PHOTOS BY GEORGI ZELMA

AS SHE WALKS BY THE POND of her Kuban village the old men, lazily dangling their fishing rods, smile and wave to her. "Hello, Verochka," they call, and the children she passes yell, "Hi, Verochka!"

Everybody has been calling this bright-eyed girl "Verochka"—people from her own village and others who know her only by reputation—ever since the Conference of Leading Farm Workers was held in Krasnodar, the center of the Kuban region. When the chairman announced that the next speaker would be the noted poultry raiser Vera Ivanovna Kutilova and a 22-year-old girl walked up to the podium, Nikita Khrushchev, who was sitting with the presidium, smiled and called out, "Vera Ivanovna nothing. That's Verochka!"

Two years ago, when she was still at school, Vera and three of her friends, Anna Shevtsova, Nina Tishchenko and Shura Rybalko, organized a poultry raisers team and announced their intention of breeding 20,000 ducks. The collective farmers smiled at their ambitious goal but helped the girls clean the silt out of the old pond anyway.

The team was dead serious, however. With the idea of becoming zootechnicians, the girls had read up on poultry raising and knew what they were doing. They spared neither time nor effort and were on hand at sunrise, day in and day out, to feed the ducks and get them to the pond.

There was one stormy night the girls are not likely to forget, when the ducks were frightened by a storm and almost crushed one another to death. Vera ran through the pelting rain to open the poultry shed, and the girls managed to get every one of the ducks to the pond. That season the girls proudly delivered 24,000 ducks to the state procurement agency.

Vera and her friends are now students at an agricultural institute.

It was shortly after that comment of Nikita Khrushchev's that Vera began to receive letters from poultry raisers in places as distant as Siberia, the Far East and Georgia, asking how the team did it. The letters all begin—as you might expect—"Dear Verochka."

Vera organized the five-girl team two years ago. The girls pledged themselves to raise a record 20,000 of these ducklings.

Champion poultry raiser Vera Kutilova and her team mates studying for their exams. They attend an evening agricultural school.

They did better. Last year they bred 24,000 and were congratulated by Nikita Khrushchev at a Kuban conference of leading farm workers.

AZERBAIJANIAN DISHES

An old Eastern saying has it that generosity paves the way to heaven. Generosity is the distinguishing feature of the peoples of the Caucasian republics, particularly the Azerbaijanians. Very often the European, unaccustomed to spicy, piquant seasoning, finds almost anything the skilled Eastern cook places before him hard to eat. Below are recipes for preparing two of the most popular Azerbaijanian dishes, piti soup and mutton bozartma.

Mutton Bozartma

One portion of this dish is made of: 1 lb. mutton, 1½ oz. butter, 1½ oz. onion, 3½ oz. tomato, ½ oz. myrobalan plums, 1½ oz. greens (dill or mint), pinch of black pepper, pinch of salt.

The mutton is cut up into pieces, salted, sprinkled with pepper and fried in a pan. The vegetables are fried simultaneously in another pan. Then the meat and vegetables are put into a saucepan and stewed until tender. Garnish with greens before serving.

Piti Soup

Needed for one portion: ½ lb. mutton; ½ oz. large peas; 1½ oz. mutton fat; ½ oz. onion, sliced; 3½ oz. potatoes; ½ oz. myrobalan plums; pinch of black pepper, pinch of saffron, pinch of salt.

The soup is cooked in an earthenware pot or in a saucepan. The mutton is cut up into pieces and boiled along with the peas, which have been soaked. The scum is removed with a skimmer. The onion, salt, pepper, potatoes, washed myrobalan plums and chopped up fat and saffron are added 20 minutes before the meat is done.

Butter and tomatoes may be substituted for mutton fat and saffron.

Wearing Apparel Show

PHOTO BY GEORGI PETRUSOV

"EVERYTHING for man's sake, for man's good," is the theme of a show of wearing apparel in Moscow's Central Exhibition Hall. The 9,000 items on display—clothes made of natural and synthetic yarns, knitwear, shoes and furs—represent the work of 1,032 factories, fashion houses and scientific research institutes.

The large display hall is aglow with colors representing every part of the country. The soft orange shades of Moscow in the fall and the pearly gray-blue of the Leningrad skies blend with the golden and violet hues of the sunny Central Asian republics and the orange-lemon and black of the Caucasus.

Alongside bright-colored Ivanovo cotton prints with decorative Russian ornamentation are the severe colors of natural clay and linen of the Baltic republics. There are gay bathing suits made of synthetics, dressy coats of artificial fur, a fine Ukrainian knitted fabric of nylon yarn, Byelorussian items of lavsan, shoes crafted by Georgian masters.

The coat display includes all types and shapes for wearers of every age and taste—from the orthodox straight-line garment to high-fashion models that bell out below the hip. There are raincoats of water-repellent and leatherette fabrics, coats and jackets of artificial fur, and lightweight short coats and jackets with warm linings of foam plastic.

The show features garments made of part nylon and lavsan fibers that are crease-resistant. The Yunost (Youth) exhibit draws interested crowds. Yunost is a firm with several factories near Moscow that specializes in children's clothes made of artificial fur, lavsan and nylon.

Furs, for which Russia has been famous for centuries, are prominently displayed. On view are coats of mink, astrakhan, nutria and sable, and others—as well as jackets and hats—of such inexpensive furs as lambskin, rabbit, suslik, mole and water rat, dyed, bleached or painted by new and improved processes.

Shown are knit goods of wool and part-wool napped cloth, synthetic yarns and the soft, fluffy, synthetic fiber lavsan that look exactly like the natural fabrics.

"Chemistry for the People" is a display of the fabrics created by science and of items manufactured from them—raincoats, children's overalls, hats, gloves and heels of nylon; suits, coats and sweaters made of a wool-and-lavsan mixture.

The Moscow exhibition shows the large assortment of wearing apparel presently available to the consumer and the still larger assortment that will soon be available. About 70 per cent of the items on display are already being produced; the remainder will be in production within a year or two. ★

Bolshoi

PRIMA BALLERINA

BY NATALIA BABOCHKINA

PHOTO BY MIROSLAV MURAZOV

The Bolshoi Theater will begin a three-month guest tour of the United States this month. The group will open on September 6 with the ballet* Swan Lake *at the New York Metropolitan Opera House. Subsequent performances will include the ballets* Spartacus *and* Giselle; *the one-act ballets* Paganini *and* Chopiniana; *"Shadows," from the ballet* La Bayadere; *and* Walpurgis Nights, *a ballet act from the opera* Faust. **The Dance Class, *a dramatization of the different movements of the classical ballet, will also be performed.

The following is the group's itinerary:

New York	***September 6 —September 29***
Los Angeles	***October 5 —October 16***
San Francisco	***October 18 —October 24***
Chicago	***October 26 —November 3***
Detroit	***November 5 —November 7***
Cleveland	***November 9 —November 11***
Washington, D. C.	***November 13 —November 18***
Boston	***November 20 —November 25***

MAYA PLISETSKAYA is the consummately graceful and very charming prima ballerina of the Bolshoi.

I am a neighbor of hers. Every morning at 9:30 I see her, carrying a small bag, her hair combed smoothly back to a tuft of curls at the nape of her neck, leaving for dancing class. If she has a new role in preparation, I know she will be staying in class for a long rehearsal.

Maya has already done 15 leading parts. In preparing for a new role, she first works out the movements in her head, at home, and then, in the rehearsal room, transmutes the pure flowing movement for which she is famous. Yelizaveta Gerdt, under whom she trained at ballet school, taught her that method.

When Maya arrived for her first rehearsal of *Romeo and Juliet*—it was not easy to do Juliet after Ulanova's superb performance—she had the whole part fixed in her mind. She had worked out the pattern of the role almost completely, leaving only the details to be fitted in. The triumphant first performance proved the efficacy of that method.

Plisetskaya works hard, rehearsing for hours on end, frequently forgetting to eat. She is intensely serious about her work and astonishes people with her incredible tenacity and stamina.

As of this writing, she is rehearsing for her American tour. She will appear in *The Dance Class*, a dramatization of ballet exercises staged by her uncle, Asaf Messerer, one-time lead at the Bolshoi and now a teacher in its ballet school; as Odette-Odile in *Swan Lake;* and in several concert numbers, including "The Dying Swan," "The Kurdish Dance" from the Khachaturyan ballet *Gayane* and "Shadows" from *La Bayadère.*

Besides performing with the Bolshoi, Maya does a good deal of civic work. The Bolshoi company is a patron of the virgin land district Yeselsky in Volgograd Region. The artists perform at the state farms and help the village amateur choral and dance groups with their programs, costumes

QUESTIONS AND ANSWERS ON THE SOVIET YOUTH

These questions were among the many about Soviet young people that Americans asked Andrei Sakharov, a staff member of our magazine, who recently visited the United States.

QUESTION: Can any young person join the Young Communist League (Komsomol)?

ANSWER: Yes, anyone between 14 and 28 can join, assuming of course, that he or she shares the principles of communism, which are the ideological background of the Komsomol, and pledges to be of service to Soviet society.

Service to society covers a pretty broad area. It can mean good work at school or on the job, going out of your way to help a comrade, participation in community activities, or supervising the recreation of younger children. In general, it means being a cooperative citizen, a good human being, and a credit to the organization.

It is the rare case when a Komsomol group refuses to accept an applicant. It happens only when the candidate is proved to be incorrigibly selfish, malicious or immoral.

QUESTION: Are there any youth organizations besides the Komsomol?

ANSWER: Yes, many. The National Union of Students has affiliates in the various institutes and universities. Burevestnik (Stormy Petrel) the youth sports society, is one of the biggest of its kind in the country. Sputnik, a tourist organization, promotes travel of Soviet young people to foreign lands and of foreign young people to the Soviet Union. There are many societies for those with the same interests—young naturalists, philatelists, architects, composers, writers, artists, etc.

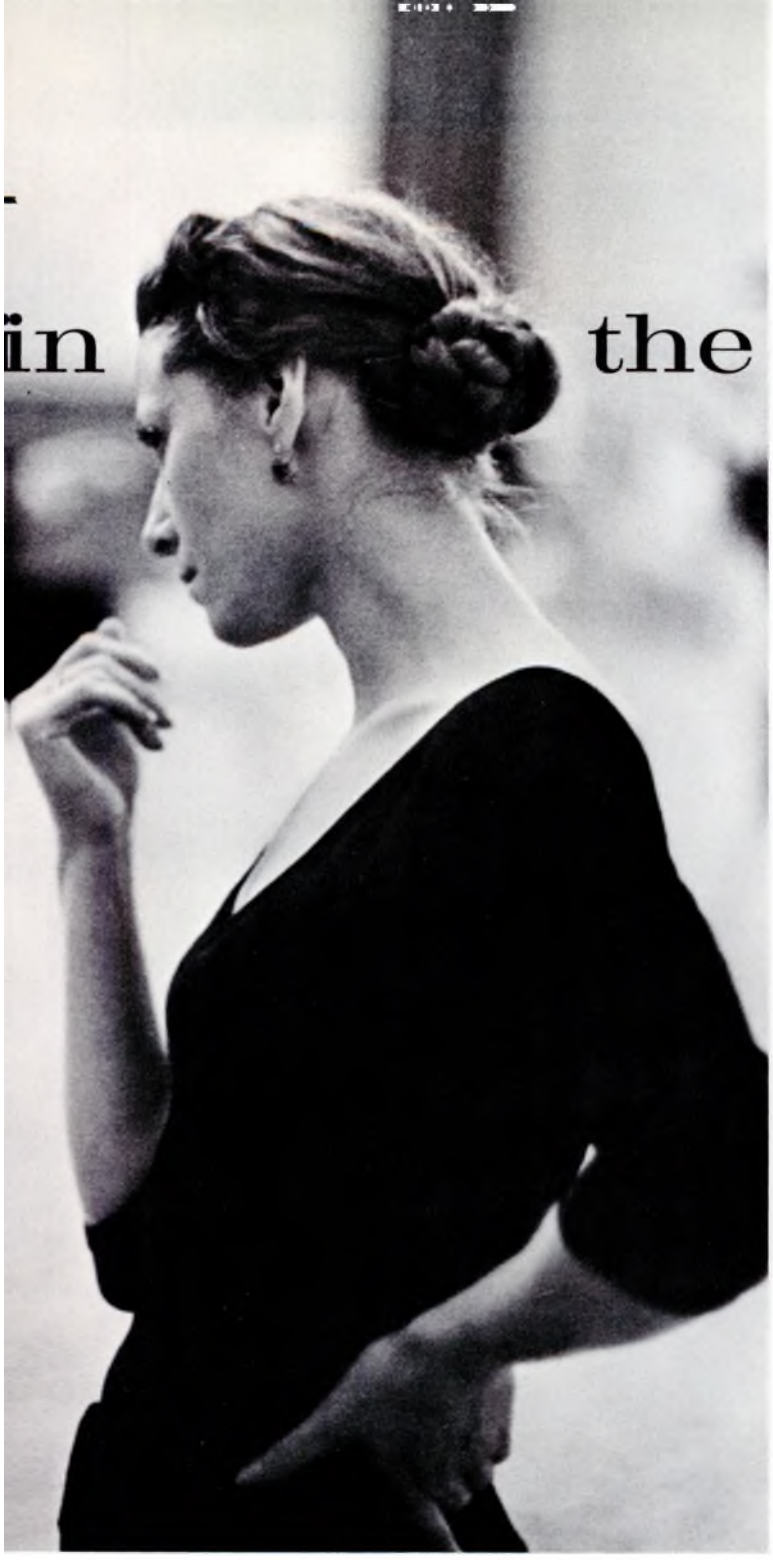
These and all other youth societies have both Komsomol and non-Komsomol members. All the youth and student groups are represented on the Committee of Soviet Youth Organizations, elected at an annual plenary meeting.

QUESTION: How do young people get jobs after college graduation?

ANSWER: A law passed in 1943 states that every young man and woman graduated from a specialized secondary or higher school must be provided with a job in line with his or her vocational training, abilities and inclinations. In practice it works out this way. Every school has a job committee that gets help-wanted information from plants, offices, laboratories, etc., all over the country. The graduates are supplied with complete information on the jobs available—salary, working and living conditions, promotion possibilities and the rest—and make their choice.

May a young graduate reject all the jobs offered him? He may. Is he penalized? No. The matter is left between him and his conscience. But he is expected, as a kind of moral obligation to the society that gave him 16 years of free education—11 in the primary and secondary grades and five in college—to work for two years at one of the jobs offered him.

It stands to reason that not every graduate wil



in the United States

and sets. The Bolshoi is also the patron of the Gorky Vegetable State Farm near Moscow and School No. 635 in Moscow. Three or four times a month soloists of the Bolshoi's ballet, opera and orchestra give free concerts at various institutions and industrial plants. Maya generally performs at these affairs.

Off stage she dresses simply but in very good taste. She has a delightful sense of humor and is apt to be quite impish in the company of friends. Her laughter then is so hearty and contagious that you might doubt for a moment this is the celebrated dancer with the classic, cameo-like features.

Four years ago she was married to the young composer Rodion Shchedrin. Maya is gay and sociable; Rodion is retiring and shy, completely wrapped up in his music. But the old saying that "opposites attract" seems to be very true in their case. They make an ideal couple.

"I like staying at home evenings," says Maya, "looking at TV or reading while Rodik (her pet name for her husband) works in his room. He's writing a piano sonata; it'll be a very good one."

Music, after dancing, is the ballerina's passion. Her favorite composers are Mozart, Bizet, Tchaikovsky, Stravinsky and, of course, Shchedrin. She knows every bar he ever wrote, which is really not so surprising since she has to "approve" them. In gratitude for her tremendous help, Shchedrin dedicated his first ballet, *The Little Hunchbacked Horse*, and first opera, *Not Only Love*, both staged by the Bolshoi, to her.

They have a summer home outside Moscow, and I often see them coming back from a weekend, their car loaded with flowers. Maya has the proverbial green thumb and grows every kind of flower imaginable.

The ballerina is a soccer fan, a faithful rooter for the USSR team and its center forward, Victor Ponedelnik, in particular. She rarely misses a game he plays.

Maya reads a good deal, and takes in as many theater premières, films and art exhibitions as she can cram into her busy schedule. ★

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get the job he thinks he merits, in spite of the effort of the committee to suit job to graduate, and the other way round. The large numbers involved makes an ideal choice for every single person unlikely.

If a graduate prefers to look for a job on his own, without the school job committee's assistance, he is free to do so. In that case the plant or office that wants to hire him puts in a request for him to the school job committee.

QUESTION: Can young people change jobs or trades?

ANSWERS: Certainly. That is entirely up to the individual, and this applies to all workers, regardless of age. Whatever his reasons—whether he wants more money, more interesting work or just a change of locale—nobody can stop a man from leaving a job. No reasons are necessary; all he is required to do is to give the customary two weeks' notice for the management to find a replacement.

Change of trade is a somewhat more complicated business, but only because a person must begin learning a new profession or a new skill. Study is not a problem—education is free and available to every citizen equally. We do, of course, have people whose jobs or skills are made superfluous by automation, but they are either placed in industries closely related or are retrained at state expense and their maintenance provided for during the retraining period.

But in any case, there are absolutely no restrictions whatsoever on workers changing jobs or vocations.

QUESTION: What is the minimum legal working age?

ANSWER: Sixteen, although young people are not encouraged to take jobs at that age. The feeling is that boys and girls that young belong in school. The law forbids the employment of young workers at hazardous or especially taxing jobs. Until he comes of age, at 18, a young person puts in a maximum five-hour day, but he must be paid for the full seven-hour workday nevertheless.

QUESTION: Do Soviet young people have a chance to travel to foreign countries?

ANSWER: They not only have a chance but thousands of them do, every year—to Europe, America, Asia and Africa. They make their arrangements through Sputnik, the youth tourist agency. Travel is comparatively cheap. A two-week tour of such European countries as Britain, France or Italy costs between 140 and 160 rubles; an American tour will run from 256 to 300 rubles; a trip to Finland, Poland, Hungary, Czechoslovakia and other neighboring countries between 100 and 120 rubles.

Intourist, the official tourist agency, also arranges youth tours, but at slightly higher rates. Automobile touring is becoming increasingly popular.

QUESTION: Do Soviet people get the chance to read foreign newspapers?

ANSWER: Yes. The USSR has agreements for the exchange of periodicals with many countries. Foreign newspapers and magazines not sold at newsstands are available in libraries.

QUESTION: Which foreign languages are studied most?

ANSWER: German used to be the most popular language, but English has been running ahead in recent years. French and Spanish are studied widely in Soviet schools and colleges, and Italian, Arabic and Chinese also have a large student following.

QUESTION: At what age do most people marry?

ANSWER: Men at 24-25, women at 21-22. Men usually graduate from college at that age and get started on a career, and women generally are in their senior year. Young industrial workers with a high school education as a rule go on to evening school for a few years after they begin working, so that they tend to marry at approximately the same age as young people in the professions.

As the law stands now, the minimum legal age for marriage in the Russian Federation is 18, and in the Transcaucasian republics and the Ukraine 16, but such early marriages are rare.

QUESTION: What are the most popular sports?

ANSWER: With men—soccer in summer, skiing and skating in winter. The girls favor gymnastics, skiing and skating. Volleyball, basketball and track-and-field sports are popular everywhere with both sexes.

FRIENDSHIP WON THE DAY

USSR-USA Palo Alto Meet

BY VLADIMIR BOGACHEV

THE HUGE STADIUM at Palo Alto, which only a minute earlier had been roaring with excitement, suddenly became so quiet you could hear a pin drop. It was almost unbelievable—7 feet 5 inches. A youth in a red jersey, who was getting ready to clear this height, stretched his arm up toward the bar. But he could not reach it.

My neighbor, an elderly American sports writer in a baseball cap, shook his head in disbelief.

"No man will ever jump that high," he said. "There's a limit to everything."

I had seen Valeri Brumel jump and break records before—in Moscow's Lenin Stadium and in New York's Madison Square Garden. I knew of his perfect technique, his amazing ability to concentrate all of his energy during the last fraction of a second before his explosive take-offs near the pit. But I did not dare to argue with the skeptical veteran American reporter. This time the bar was set 16 inches above Valeri's head. Better to wait and see what would happen.

Valeri raised his arm. He was ready. In large, slow strides he started toward the bar. Then faster. Faster. One powerful thrust, and Brumel soared into the air, his right arm bent at the elbow then smoothly extended forward, his left tightly pressed against his body. His knees were bent in the Brumel way, and he was looking down into the pit from above.

If you go through a hundred pictures of different high jumpers, you will never mistake Brumel for anyone else. It is an amazing thing. Valeri always looks absolutely the same when he is clearing the bar—no matter at what height, no matter what take-offs he uses, whether he jumps outdoors or indoors. Not many sportsmen can match the invariable sameness of his expression.

But back to Palo Alto. Valeri fell into the pit and looked up at the bar. It was shaking just a little, but it stayed on the poles. He had made it.

Eighty-one thousand people rose to their feet to greet this fantastic breakthrough by the 20-year-old student from Moscow. "Bravo, Valeri! Atta boy!" the crowd roared. I looked at my neighbor in the baseball cap. He was rubbing his eyes like a man who had seen a miracle and wanted to make sure it had really happened.

American jumper John Thomas was among the first to shake hands with the victor. He ran up to Brumel and exclaimed in fractured Russian: "*Ochen horosho*" (very good). Two years of keen competition in Rome, New York, Moscow and now Palo Alto had made them respect each other as worthy rivals. But they had also became really good friends. Last year at the AAU meet in New York, Thomas said to Brumel, "Try to beat 7 feet 5 inches, Valeri!" And now this friendly challenge had been met.

"Congratulations Valeri," said Gene Johnson, who finished second in the high jump. "Keep going higher." He hugged Brumel. "I'll see you in Moscow next year," he added. The Soviet jumper was obviously touched. "I wish you the best of luck, Gene," he said as he patted him on the shoulder. Two smiling youths—one a blond Russian, the other an American Negro—wishing each other well. It was truly symbolic of international amity and good will.

I met Valeri in the press box. He has just received the Helms Prize as the best sportsman of 1961. The boy was tired, but his face was radiant with joy. Reporters asked him what he felt during his record-breaking jump. Valeri smiled shyly.

"You know," he said, "the bar didn't look so high from the place where I started my run. It wasn't until the whole thing was over that I realized it was 16 inches above my head."

Brumel thought for a moment. "I felt I could break the record this time," he added, "and frankly, I began to feel nervous several days before the meet." Fingering his gold medal, Valeri continued, "But not during the jump. I wasn't a bit nervous then. The crowd in the stadium was very warm and friendly. I could feel that they wished me well."

"Are you planning new records this year?" he was asked.

"I want to raise today's record an inch or so," Brumel said, "but that will require a lot of training."

If Brumel was the hero of the second day of the Soviet-American track-and-field meet in Palo Alto, Harold Connolly definitely won the laurels on the first day. His hammer throw that broke the world record (231 feet 10 inches) demonstrated beyond any doubt that this talented American athlete is at the peak of his abilities. Some sports writers had been in too much of a hurry to write off this Olympic champion as a "has been."

Many other records were broken during the Palo Alto meet between the two greatest track-and-field teams in the world. Leah Bennett, a slim, 19-year-old student from the University of Hawaii, came in third in the 800-meter race. But her time was an excellent 2:10.4, and she broke the United States national record. Watching Leah at the finish line, Soviet coach Gavriil Korobkov showed real delight. "We'll hear more about this girl," he predicted. "She has a brilliant future ahead of her."

The dramatic 1500-meter race for men resulted in two national records. Jim Beatty, finishing first (3:39.1), bettered his own United States record. Ivan Beletsky, who managed to pass America's Keith Forman on the last lap, became a new USSR record holder (3:41.0). In the shot put, in which American sportsmen have always been superb, Leningrader Victor Lipsnis came unexpectedly close to the magnificent Dallas Long and Gary Gubner. Losing by only 1½ inches to the New Yorker, Victor set a new record for the Soviet Union (62 feet 1½ inches).

Naturally there were some upsets for both teams. Yuri Kutenko suffered a kidney-stone attack and had to withdraw from the competition after three events in the decathlon. The hopes pinned on the Soviet discus thrower Vladimir Trusenev never materialized. Olympic champion Al Oerter won this event easily, eclipsing the previous meet record.

Max Truex, American long-distance runner, who some sports writers predicted "would finish Russian supremacy in the 10,000-meter race," was no match for the experienced Soviet champion Pyotr Bolotnikov. Obviously too nervous, brilliant American pole vaulter John Cramer could not clear the first height and was eliminated without scoring a single point for his team.

Some advance prognostications, of course, fell flat on their faces. Tex Maule, *Sports Illustrated* correspondent, had predicted a United States victory in the combined men's and women's events with a score of 176:167.

"We can, for the first time," he wrote two weeks before the meet, "win in the combined scoring of men's and women's events. If this happens, we may also, for the first time, recognize the combined score as official."

As expected, the American men's team won the meet with a score of 128:107. But the Soviet girls, in a keen competition, managed to more than bridge this gap, winning 66:41.

Aside from the scores and the gold medals, the Palo Alto meet was a tremendous success in terms of the true Olympic spirit which prevailed between the Soviet and American sportsmen.

The Soviet runners will never forget the hearty 19-year-old Texan, Ray Saddler. They affectionately named him "Vasya," and Ray never objected. The Negro youth was really touched when he bade farewell to his departing friends. "Vasya has become your brother," he said with a captivating smile to the Soviet sprinter Prokhorovsky. "A good journey home. I am looking forward to seeing all of you again in Moscow."

The pretty young blonde, Cynthia Wyatt, could always be seen in the company of Soviet shot putter Galina Zybina. Galina and Cynthia were inseparable—like old friends.

Before flying home, American decathlon man Paul Herman came to wish the ailing Soviet champion Yuri Kutenko a speedy recovery. "May our peoples be friends," they said to each other in Russian and English. Language was no barrier. They understood each other very well.

The closing ceremony at the Stanford University stadium was an unforgettable demonstration of good will between the sportsmen of the two greatest countries of the world. And 81,000 people gave both teams a heartfelt 20-minute ovation.

It is no cliché to say that there were no losers at the USSR-USA meet at Palo Alto. ★

Winner Tamara Press about to make her record-breaking shot-put throw.

Valeri Brumel clearing the bar to set a new world high-jump record.

Soviet and American athletes march together in the closing ceremonies.

FROM HEART DISEASE TO WORLD SPORTS CROWN

BY GERARD YELENSKY

HE LEFT the doctor's office with a slip that read: "Colliery 4-6, Personnel Department. This is to certify that the state of health of Rudolf Plukfelder, electrician, requires that he be transferred from an underground to a surface job. The diagnosis is compensated heart disease."

It comes as a terrible shock to be told at 18 that brisk walking and a host of other things you've always done as a matter of course are taboo from here on in. Rudolf slowed down and confined his physical exercise to an accordion. The melodies he played at this period in his life were mostly sad.

The colliery management helped him learn a new trade—electric welding—and gave him a surface job at good wages. But the idea that he was going to be a semi-invalid all his life hounded the young man until he came across a book that kept him up all one night.

The book was Boris Polevoi's *A Story about a Real Man*, a gripping story based on the life of the Soviet flyer Alexei Maresyev, who was shot down behind the enemy lines in the last war. Wounded and starved, he crawled through deep snow for 18 days before he was found by his own people and taken to the hospital. His frozen feet had to be amputated.

But Maresyev, feet or no, was determined to go on flying. He learned to walk on artificial legs without crutches and then achieved the impossible—he taught himself to dance and run. Finally, he bulldozed the authorities into sending him back to the front as a fighter-pilot.

The indomitable will of the flyer caught Rudolf's imagination. He searched out and read everything he could find on remedial physical culture. He exercised and rubbed down with ice-cold water every morning. One day several months after he had begun this Spartan regime his older brother Nikolai caught him jogging around the outskirts of town. "You must be crazy doing this with your bad heart," Nikolai scolded.

"I've been doing it for the past three months and my heart is fine, so far. Promise me you won't tell mother."

Rudolf carried on with his "treatment," gradually increasing his running speed and distance. It was heavy going. At times he felt stabs of pain in his heart, his lungs yelled for more oxygen, and his legs seemed to be filled with lead. There were moments when he wanted nothing so much as to flop on the grass and forget the whole business. But he kept pushing himself.

He got to the point where he felt fit enough for athletics. One day he saw a notice at the miners' club inviting all comers to learn Greco-Roman wrestling. Rudolf applied, and the coaches, eyeing his muscles and build, accepted him without question.

He learned fast and soon developed into a first-class wrestler. But when his name appeared on the billboards for a match, his doctor showed up at the club and put a sudden end to a promising mat career.

Rudolf looked around for another sport he could practice by himself and chose weightlifting. At first the miners teased the young man as he sweated it out with a barbell, but that didn't last long. The strongest of them began to puff away at weights that the boy lifted with ease, and very soon he was teaching his older pit mates the ABC's of the "Iron Game."

Just about then he decided that he needed more systematic training than he was getting, so he registered for a three-year correspondence course at one of the many Soviet secondary physical culture schools. He was not interested in a diploma—he had no intention of leaving his mine job—but he had arrived at the point where he wanted to achieve real mastery of the sport. The heart ailment, the reason for the whole business, had become a secondary consideration.

But it became a first consideration again when he was to make his debut at an official weightlifting meet. He had to put up a stiff fight against the medical examiners for permission.

Rudolf scored an easy victory and came back from the regional Russian Federation competition in Moscow with a silver medal and invaluable experience. He was past 25 at the time.

The young lifter's rapid rise to sports fame began in 1956 when he won the Russian Federation championship. The year following he changed 12 national and world records. The thousands of tons of iron he had lifted in years of training were transmuted into a treasured few ounces of gold in the medal he was awarded as champion of the Soviet Union.

October 3, 1959, was a red-letter day in his life and in world sports history. Competing in the middleweight division of the World Weightlifting Championships in Warsaw, Plukfelder lifted a total of 1,008.6 pounds, 27.5 pounds more than the aggregate scored by the winner in the next class, the light-heavyweight. He even surpassed half of the heavyweight contenders, although his own weight was lighter than theirs by 70-90 pounds.

Before the Seventeenth Olympic Games, the experts predicted two sure winners—Yuri Vlasov in the heavyweight division and Rudolf Plukfelder in the middleweight. Watching the Russians' final training session, foreign contenders were especially impressed with Plukfelder's skill. The Soviet athlete was at his best, lifting astonishing weights, when suddenly, in his initial effort in the snatch, he shivered and dropped the barbell. A doctor rushed up, thinking the Soviet challenger's heart had failed, but he had only strained his back. Ordered to bed, he lost his chance at an Olympic gold medal.

He felt the disappointment keenly. The first week or two after he got back home to Kiselevsk he spent all his free time with his three young daughters and did not show up at the gym. He promptly spiked the rumors that he had quit sports on account of his setback at Rome by an appearance at the local club.

Rudolf had done a good deal to stimulate interest in the sport locally. The trade union committee had fixed up a special gym for weightlifters where 30 young men now practiced regularly, coached by two of Plukfelder's pupils—Alexei Vakhonin, a machinist who held a Master of Sports title, and Anatoli Korzh, a physical training instructor.

The near-world-champion resumed training, quickly regained his form and the following spring, to the plaudits of local fans, left for the Soviet capital to take part in the annual Moscow International Prize meet. Waiting for him was the famous American lifter Tommy Kono, the "Iron Hawaiian," who had captured world honors in the lightweight and middleweight classes on eight different occasions. Tommy was to meet him in the next weight category. But Rudolf, unfortunately, had another accident, an injured hip this time, that forced him out of the competition. Besides taking first place at Moscow, Kono registered a 1,014-pound total to eclipse Plukfelder's world achievement.

Fans believed that it was the end of the line for Rudolf, that he would never regain the world crown, but they did not reckon with his determination and perseverance. At the Vienna world championships last year he won his second gold medal and avenged his defeat by Tommy Kono in Moscow.

Three months after the victory in the Austrian capital came another triumph, at the national title meet in Dnepropetrovsk.

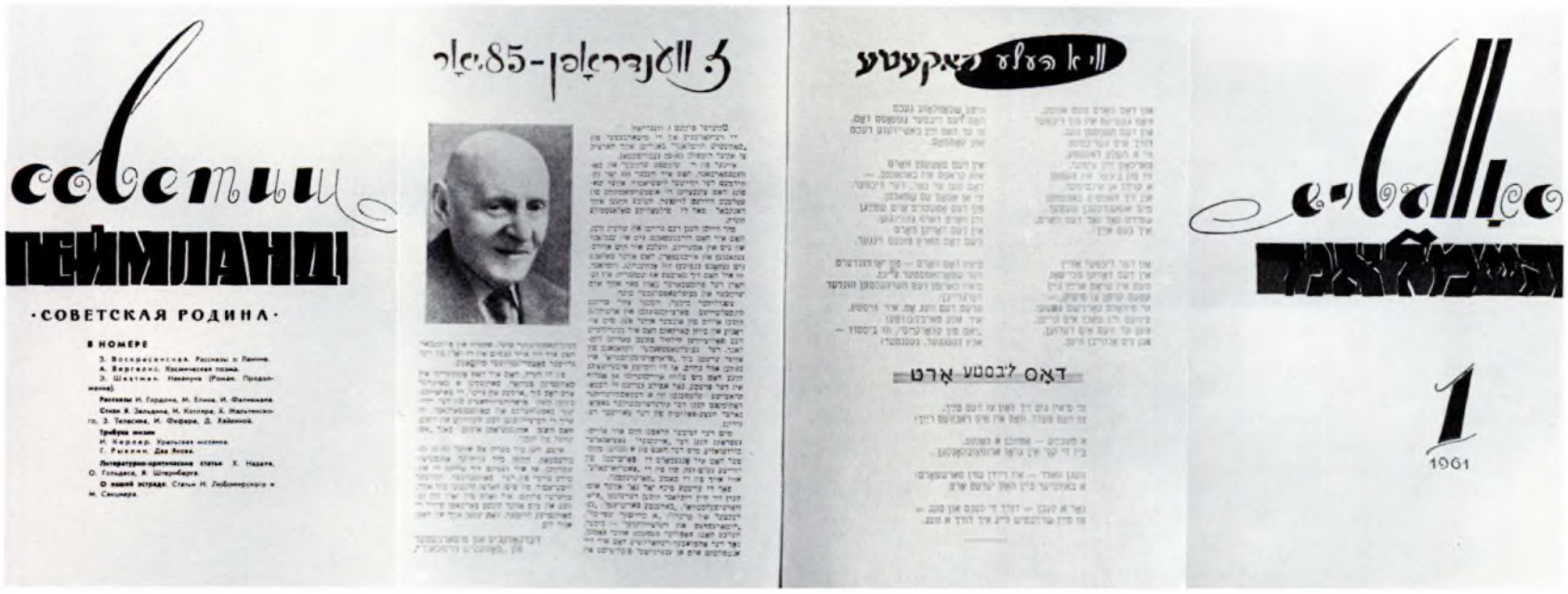
Before he himself stepped onto the stage, Rudolf was congratulated on the victory of his pupil Alexei Vakhonin over Vladimir Stogov, five-time USSR bantamweight title winner.

Keyed for a record effort, Rudolf racked up a pair of new world figures—a 313-pound snatch and a 1,019.6-pound total. The latter is the fourth highest in the history of the sport ever scored by light-heavyweights, although performing in the next lower category.

This month, ten days after his thirty-fourth birthday on September 6, Plukfelder will be defending his world crown in Budapest.

As for his heart disease, it's been cured for good and all by Rudolf's unusual method of treatment. The doctors still find it hard to believe. ★

SOVETISH HEIMLAND



BY SEMYON CHERTOK

THE FIRST ISSUE of the Yiddish magazine *Sovetish Heimland (Soviet Homeland)* was published last September. Each month since, this journal with its bright yellow cover has appeared on the newsstands and has been mailed to a large number of subscribers in the Soviet Union and abroad.

I met the editor, the well-known Jewish poet Aron Vergelis, at the magazine's editorial offices on Kirov Street in the heart of Moscow.

Vergelis was born in Volyn, the Ukraine, in 1918, but lived with his parents in the Far East for a good many years. He graduated from Moscow University with a major in literature. Then came the war and service at the front.

His first literary success was *Iosif Bumakin*, a poem about a Jewish lieutenant who threw himself in front of a blockhouse embrasure to stop enemy fire. It was followed by two books of verse, both equally well received, *Thirst* and *Second Rendezvous*.

I asked Vergelis to tell me about his magazine's contributors.

"We have more than a hundred Jewish writers contributing to *Sovetish Heimland*," he said. "They live in Moscow, Odessa, Minsk, Kishinev, Chernovitsy, Birobidjan, Novgorod, Perm, Vilnius and Ioshkar-Ola. They are of various ages and their literary styles, of course, are different, but their backgrounds otherwise are not too dissimilar. Most of them were factory and office workers before they became writers, most are college graduates, and nearly all of them saw service in the Second World War.

"We have a large group of Soviet Jewish writers. Iosif Rabin (Moscow), Iyekhiyel Felikman (Kiev) and Nota Lurye (Odessa), whom we call the Jewish Sholokhov, among the prose writers; Moisei Teif and Girsh Osherovich among the poets; Lyuba Vaserman, a novelist and poet, well known in both media. She lives in the Jewish Autonomous Region. She was born in Poland, went to Jerusalem in the 1920's where she worked as a maid, then came to the Soviet Union and began writing.

"One of the most popular of our Soviet Jewish writers, Zinovi Vendrov, recently celebrated his eighty-fifth birthday. Beset by poverty, he left western Byelorussia for England at the turn of the century and lived there for many years. He then migrated to the United States but in 1930 returned to his native land."

"What is the magazine's main trend?"

"The main trend of our magazine is to publish material that reflects Jewish life with depth and honesty. Our writers show how the Jew emerged from the stuffy, confining, tradition-bound little world depicted in the classics into the broad arena of life. The new literature derives from the new life of the Jews in the Soviet Union. The children of the disenfranchised and humiliated under czarism have become scientists, engineers, doctors, factory directors, statesmen, political leaders—first-class citizens and builders of the new world. Our literature depicts the life of the Soviet Jew today, in the 1960's."

"What did your staff and readers like most in the first six issues?"

"We received a large and favorable response to Tevye Ghen's *In My Home Town*. Written in diary form, it was particularly interesting for its description of a large industrial city. The old writers, for the most part, confined themselves to depicting life in the Jewish pale with their *luftmenschen*, people who lived on air, Sholom Aleichem called those grandiose dreamers whose feet were way off the ground. The fact that Tevye Ghen describes the Jews of a large industrial city and that his hero is not a meek tailor but a metallurgical engineer speaks for itself. For the foreign reader interested in Soviet Jewish life, this novel is likely to be a revelation.

"Dora Teitelbaum, the American Jewish poet, wrote that she could not put the book down. 'Teyve Ghen,' she commented, 'mingles the hum of factory motors with the whispers of love. He creates a hero whom the most harrowing trials do not break, a man resurgent as the growing earth itself that covers even a bare and lonely grave with new grass. Gedal, once a prisoner at Oswiecim, a man who cannot bear to hear laughter, learns to respond with a smile to the warmth of the new life round him.'

"Iosif Rabin's *In a Urals City* treats a kindred theme. It is the story of a man who has lost his beloved during the nazi occupation of Minsk and who, with the help and understanding of his coworkers, slowly finds happiness again.

"Iyekhiyel Shraibman's sparkling tales are the readers' favorites. Avram Gontar's lyrical short story "Just a Plain Family" was very well received by the critics. Our readers sent us several hundreds of admiring letters on Eli Shekhtman's outstanding work *On the Eve*. This novel of epic scope, published serially in the first five issues of the magazine, describes the little-known life of Jewish settlers in a Ukrainian village in the first half of the twentieth century."

"How about your poetry contributors?"

"We print several poems in each issue. Regular contributors are Dora Khaikin, Iosif Kotlyar, Zyama Telesin, Motl Saktsiyer, Meyer Kharats,

Shike Dritz, Chaim Maltinsky, Rakhil Baumvol, Iosif Kerler and Mendel Lifshitz. They write on all sorts of subjects, from love to the big building projects, but they have been turning more and more to broad social themes. Motl Grubian has done poems on the Congo and Cuba, Peisakh Yanovsky on the conquest of the North, Motl Gruvman on Leningrad.

"We published Moisel Geit's *The Brothers*, a story in verse about 11 soldiers in Kursk, each of a different Soviet nationality, who take an assignment to clean up a mine dump left by the fascists. Love of country and solicitude for their fellow men sustain them through the dangerous mission. The whole city looks on with fear and hope as the 11, led by the Jew Gorelik, a sappers captain, go to work. A slight misstep, a miscalculation, would mean an explosion, frightful destruction and loss of life. But courage and resolution win out over death. The drama of the poem is so intense that the reader's interest is carried along to the very last line.

"*The Warning*, by the major Jewish poet Girsh Osherovich, is of particular interest. The theme follows on Nikita Khrushchev's statement that only a madman would unleash an atomic war. The poem carries us into the terrible aftermath of a nuclear war. There are only four survivors—the man who unleashed the war, the man who fought against it, a mother and her child. It is the mother who calls the madman to account and punishment."

"The magazine has published translations from the literature of other Soviet nationalities, has it not?"

"Yes. All our literary magazines try to acquaint their readers with the literature of the other peoples of the Soviet Union. Our readers abroad were thus able to read the poems of Alexander Tvardovsky, Alexander Prokofiev, Yevgeni Yevtushenko, the Ukrainian poet Maxim Rylsky, the Byelorussian poet Maxim Tank, the Daghestan poet Rasul Gamzatov, Moldavian poets and the poetry of the peoples of the Far North.

"In fiction we published translations of *Jamila* by the Kirghizian writer Chingiz Aimatov, Konstantin Simonov's *Jubilee*, and a large excerpt from Konstantin Fedin's novel *The Campfire*.

"We published the very fine critical essays *Gorky and Peretz, Gorky and Asch, Gorky and the Jewish Anthology*. This last title refers to an anthology of Jewish literature projected in 1902 that Gorky helped to compile, but which was never published. There was considerable interest in our photographic reproduction of a page from Alexander Pushkin's notebook containing several Jewish words and in a reprint of the first Jewish translation of a Pushkin poem, done a hundred years ago."

"Your general articles and Writers Tribune department must draw considerable mail from readers."

"Yes, I've already mentioned Vendrov. His article 'Youth—Our Pride' for our Writers' Tribune, a very topical theme, attracted a good deal of attention. It is amazing how sensitive this 85-year-old writer is to young people and how he understands their problems.

"Our readers are also very partial to Chaim Melamud of Chernovitsy. He wrote a series of articles titled *Visiting a Team Leader*, about the Soviet people of the thirties and forties. A long essay, *Virgin Land*, by the Moscow writer Samuel Gordon; Iosif Kerler's *Urals Mosaics*, about people in a Urals machine-tool plant; and *Three Trips to Paris* by twice Hero of the Soviet Union Lieutenant General David Dragunsky also had a very good reader response. These and other articles we have published will soon be reprinted by the Soviet Writers Publishing House in book form."

"The names you have mentioned up to now are all well known. What new writers has *Sovetish Heimland* published?"

"We've opened our pages to quite a number of beginning writers. Our first issue carried some very fine poems by the Moscow poet David Bromberg, by Max Riant of the Jewish Autonomous Region, by Peisakh Yanovsky of Perm, Girsh Reles of Byelorussia, and Motl Gruvman, a lieutenant colonel in the Soviet Army. New names keep cropping up in our literature all the time. One of our issues published nine new poets under the titles *New Voices*. Our readers liked especially the poems of Peisakh Plotkin of Bobruisk and Tashkent mechanic Isaac Itskov's *My Home is Uzbekistan*."

"Your writers deal with current subjects, naturally, but do you publish the Yiddish classics?"

"Oh, yes. We don't limit ourselves chronologically. We published a series of poems by the noted poet and playwright Samuel Galkin, who died in 1960, the verses of Mirra Khenkina and Aisik Platner and of Yakov Zeldin —he was killed in action in the last war—and excerpts from Peretz Markish's *The Legacy*. We ran Noyakh Lurye's story *No Companion of Death*, about Ukrainian farmers who saved the life of a Jewish shoemaker during the fascist occupation. Next year we will be publishing a poem about Lenin written by Azra Finiberg, a previously unpublished poet killed in the war.

"We have a real treasure—a group of Sholom Aleichem's unpublished letters—that we are preparing for early publication. We created something of a sensation in the world of Yiddish literature with our discovery and publication of Sholom Aleichem's last novel *The Mistake*. The American newspaper *The Day* began to run the novel in 1915, shortly before the writer's death, but discontinued the serial after printing the first few chapters. The rest of the book never appeared anywhere. We were fortunate enough to get the manuscript from the United States.

"I'd like to mention two things we plan to publish in the future. One is *The Riga Ghetto Diary*, notes written by one of the ghetto captives obtained through his relatives which comprise a shattering document. The second is just being deciphered—the notes of an inmate of Oswiecim found in a bottle under a heap of ashes. Although the pages are blotted with blood, the little we have been able to make out so far shows this to be a manuscript of great moving force."

"What foreign writers have you published?"

"The Yiddish verse of the Israeli poet Peisakh Binetsky and translations from the Hebrew of Alexander Pen, Khai Kadmon and other Israeli poets.

"From American works we have chosen poems by Soreh Fel-Elin, Dora Teitelbaum, L. Miller, Ben Grin, Arn Kurts and Hanna Safran. Incidentally, Hanna Safran visited us not long ago. We are preparing an essay on the work of the American Jewish writer S. Daixel, known for his *Indian Stories*, and a selection of the works of authors who write in both English and Yiddish. We have established what I hope will be close ties with foreign Yiddish magazines—*Parizer Zeitshrift* in Paris, the *Zamlungen* and *Ikuf* in New York, and the *Yiddishe Shriften* in Warsaw."

"Do you get many letters from abroad and does the foreign press comment on your magazine?"

"We frequently get letters from the United States, France, Poland, Israel, Rumania, Argentina, Uruguay, Brazil, Cuba and the many other countries where we have readers. (Foreign subscriptions to *Sovetish Heimland* may be made through the Mezhdunarodnaya Kniga agency.) Here are a few lines from Professor Shmuyel Aizenshtat of Tel Aviv. He writes, 'An old progressive, a scientist and cultural worker in Israel, I am with you heart and soul!'

"The letters vary, of course. Some of them show that people abroad still harbor queer notions about Jewish life in the Soviet Union. One of our correspondents, for instance, asked whether the Jewish arts weren't forbidden. We referred him to the cultural chronical we publish regularly on such items as these: half a million people attended Yiddish concerts during the year; such artists as the well-known Sidi Tal, Laureates of the All-Union Variety Show Contest Nekhama Lifshitz and Anna Guzik, Laureate of the All-Russian Variety Show Contest Emil Gorovets and the very popular singer Zinovi Shulman performed for large audiences.

"The chronical reviewed the very successful performances of the People's Jewish Theater of Vilnius and the People's Jewish Chorus of Riga, the latter numbering a hundred singers, and listed the newly published editions of Sholom Aleichem, Mendele Mocher-Sforim, Itskhok Leibush Peretz, David Bergelson and Osher Shvartsman. Most of these books, incidentally, were reviewed by our magazine.

"Since the war, the books of more than 70 Jewish authors have been translated into the Russian. A six-volume collected works of Sholom Aleichem was published in 225,000 copies. This is the first time Yiddish books have ever been published on such a scale."

"How many copies of the magazine do you print?"

"Twenty-five thousand. By way of contrast I might say that Yiddish literature magazines in the United States, Israel and other countries are never published in more than two or three thousand copies.

"We often get visitors from abroad. Our most recent guests were the American writer Hanon Ayalti; the artist Anatoli Vinogradov; Rabbi D. Hollander of New York; a young American teacher Hanon Kogan; and Label Katz, president of the American Jewish fraternal organization B'nai B'rith. Ruth Rubin, the American collector of and writer on Jewish folk music, spent a fine evening with us, she said. We also had the pleasure of entertaining 30 members of the American Jewish People's Chorus and any number of foreign tourist groups.

"As for newspaper and magazine comment, I'd venture to say there is no country where *Sovetish Heimland* hasn't been mentioned. We have an impressive collection of press clippings. The *New York Times* wrote our magazine up in considerable detail, as did the *Freiheit*, *The Day*, *Yiddishe Kemfer*, the *Jewish Daily Forward* and many other papers. So did newspapers in Israel, Cuba, France, Poland, Great Britain, Rumania, Argentina, Uruguay, Brazil and Canada. Although we do not always agree with what they say about us or accept their critical estimates, we are pleased, of course, that our magazine has attracted such wide interest and attention." ★

JUST A PLAIN FAMILY

Avram Gontar, Jewish poet and novelist, was born in Berdichev in 1908. He started his working life as a bricklayer and went to the Odessa Teacher Training Institute where he majored in literature. His first work was published in 1927.

BY AVRAM GONTAR
DRAWINGS BY MENDEL GORSHMAN

SIMA SLUTSKAYA phoned early in the morning to tell me she would be waiting in her car at 12 o'clock sharp near the wide staircase of the Ukraina Hotel opposite the house where I lived. Her voice quivered a bit with pride that she was able to pick me up in her own car, but that was forgivable. After all, this lively young girl had sacrified an hour of a free day for a superannuated cavalier like me, and I should be more than willing to overlook a momentary weakness.

The Sunday before I had met Sima's father, my townsman Ruvim Slutsky. Our escalator encounters—he going down and I up, or vice versa —had occurred several times previously, and nearly always at the Dynamo Subway Station.

Sighting each other from afar, we would wave our greetings. And the closer the escalator brought us, the wider and warmer his grin; so there was no reason whatever for me to sing out the trivial and almost meaningless question "How're things?" as we slid past.

But this time the bright lights over the escalators revealed a strange glint in Ruvim's eyes, and I waved and yelled for him to wait for me at the bottom.

A minute or two later we were standing under one of the marble archways of the corridor leading to the platform.

"How lucky we met!" said Ruvim. "I was just going to phone you. Sima will pick you up next Sunday."

What was it all about? Simply that the whole of the multitudinous Slutsky family was gathering in Moscow that day. What for? Sima, Ruvim's youngest daughter, was getting married!

Floating down the wide streets of Moscow at Sima's side, I could not help thinking that if I were not in love with Kutuzov Avenue where I live, I would probably agree with Slutsky's claim that there was no more beautiful thoroughfare in the capital than Leningrad Avenue.

Eternally humming Gorky Street was colorfully alive, day or night, with moving cars and crowds, more so than any other street, and perhaps any other city. Even those who stopped in Moscow for only a few hours on their way to some other place know Gorky Street well. People who had never been to the capital dreamed of Gorky Street. Even in hot far-away Africa it was common knowledge that people ate ice cream in Gorky Street in the fiercest frosts. Just beyond the Byelorussian Station Gorky Street sweeps straight into Leningrad Avenue and loses itself in vast boulevards stretching for miles and miles.

These boulevards are bordered by minor asphalt thoroughfares. The wide sidewalks are lined with flower beds that stretch to the foundations of the tall houses. The strollers here walk a little slower, though the cars out in the center lanes go faster. And the farther one goes, the less the commotion, the fewer the decibels, until one walks or rides into the atmosphere of a lovely resort around the Dynamo Stadium, a town of flowers in summer and of sparkling snowdrifts in winter with rows of trees draped in hoarfrost lining the taut blue thoroughfares from end to end.

But the avenue is gayest when the ocean of lights has spread to the horizon in the evening, for that is when the slender girls and their young men are no longer troubled by the eyes of the prying. Young mothers wrap their babies in quilts of down and trundle them out in baby carriages on springy tires—may the tots sleep sweetly, every one of them! In the winter Grandfather Frost reddens their little cheeks; in the summer they are lulled to sleep by the fragrance of the flowers and lindens. Working men and women relax on the balconies, in the courtyard gardens, on the benches around the fountains and along the boulevards.

Cradled in the car beside Sima, the youngest daughter of my townsman from Berdichev, I let my thoughts roam back over the years.

I remembered the late autumn of the harrowing war year of 1941 when I was assigned the task of bringing some 200 adolescents from Bashkiria to the marine school in Arkhangelsk. Looking through the list, I happened upon the familiar name of Slutsky—Vladimir Ruvimovich Slutsky, and it occurred to me at once that the boy might be the son of Ruvim, friend of my childhood and youth. My heart warmed to the youngster, of course. I could almost see the back yard of Meyer the gooseman on the Berdichev "sands," a suburb notorious for its poverty and dirt. But this was an especially desolate yard, even for the "sands." The weeds round the huts sunk into the earth rose higher than the shutters. They grew everywhere: on the porches, the walls, even on the shingled roofs. The cackle of the geese the owner of this dilapidated household raised for market rang to the very heavens. The neighbors knew that Basya, the gooseman's eldest daughter, had lost her mind from that everlasting cackling. She would sometimes dart out of the little room where she was kept and start a fight with the geese in the big pens. Then the geese would raise such a tumult that even we children who had grown up in that yard were convulsed with fear. Basya would be thrashing around among the terrified white and spotted fowl, grabbing at their feathers and kicking them with her bare feet.

I still had a vivid recollection of Ruvim's mother, Leah, a spare dry figure of a woman

always carrying a woven basket in each hand, leading her brood "of little hens and cocks," as she called her children. One of the girls was really called Hindele, chick hen, and one of the boys Hendele, little cock. Next in order of age came Braindl, Froika, Zindl and Ruvim.

My friend Ruvim, the youngest, was nicknamed "Naked Prince" by his mother. Someone once stole his pants on the bank of the Gnilopyat River, and he had run home naked as the day he was born. Everybody called him "Naked Prince" after that.

We had not seen each other for all of 20 years, but I remembered my pal as if we had parted yesterday.

Our paths had separated in the twenties when I left Berdichev for college in Odessa; he went to work in a big metallurgical plant in Kharkov.

The Jewish youth of those years left the little towns and headed for the big cities, some to study, others to get jobs in the factories and plants. All paths were thrown open to us then, and everyone was eager to go where his heart and eyes dictated.

Meeting again many years later, we hardly recognized one another and marvelled over how much all the Moishkes and Shloimkes, the "little hens and cocks," had changed. I later met these people I had grown up with on the Berdichev "sands" in the Far North, in Central Asia and many other places, and found their names among the famous scientists, foremost workers, noted artists and cultural figures, as well as on the lists of living heroes and those who died for their country.

Glancing through a newspaper some years ago, I was not surprised, therefore, to find Ruvim Slutsky cited with the best workers of his plant, all of them decorated by the Government for their labor exploits.

These were the thoughts and feelings that awoke in me when I saw the name Slutsky.

Although I was anxious to see the boy, I did not send for him; I wanted to see if I could single him out from the 200 fair, dark and brown-haired youngsters.

In one of the corridors of the boarding house where these future sailors were waiting for their departure I noticed a boy of 11 or 12 who had stretched out his slight body on the floor and was drawing a picture in red and black. Looking more closely, I saw that he was trying to draw a face with a huge red tongue, and a heavy black hand covering the all too talkative mouth—the usual warning poster of those times.

The boy was Ruvim's son. The resemblance was striking. Every gesture of his reminded me of my old friend. I saw the familiar glint of his hungry eyes and the same uncertain smile. Aware that I was looking at him, the boy threw me a disquieted glance now and then.

After watching him work silently for some moments, I murmured as if to myself:

"Is Grandmother Leah still living?"

The boy jumped up, staring.

I patted his shoulder and calmed him down.

"Your name is Slutsky, isn't it? You are Vladimir Ruvimovich, aren't you?"

"Yes, Slutsky. They call me Volodya."

That same evening I called on Leah, whom the war had driven to distant Bashkiria from Berdichev.

If she had not felt responsible for her grandson's life nothing would have made Leah leave her native "sands," and her old bones would certainly have rotted in the church square where thousands of Berdichev Jews were shot by the Hitlerites.

She drew photograph after photograph from the drawer of an old dresser: sons and daughters, sons-in-law and daughters-in-law, "little hens and cocks" now wearing the Red Army uniform or workers' overalls. She eyed me very sternly, ready to attack if I dared to say a slighting word about any of them.

But she saw my smile, and her spirits rose. She reached into the same drawer, pulled out a stack of letters and scattered them over the table. She was ready to read each and every one of them to me from beginning to end, but stopped herself, embarrassed.

"Forgive me, please! I don't know why I'm taking up your time."

As I looked at Leah's children staring back at me aloofly from their frames, I felt a curious stir of anxiety, and this perhaps not very original thought struck me: "To see how a person had changed one had to stand some distance away from him, just as one did to look at a painting. Could these people be Leah's children?"

"Would you have recognized me?" I asked her.

"At your age your father looked like an old man, done with his life," was her answer.

The prospective sailor boys and I set off on our trip within a day or two, sailing to Arkhangelsk through the Balaya, Kama, and Volga rivers. When I returned by train myself, spending several days in Moscow on the way, I carried a letter from Volodya Slutsky to his parents.

The Gorky Street so celebrated for its sparkle received me in a somber mood this time, for Hitler's army lay in the immediate vicinity of the capital. My documents were checked by a patrol at the very first crossing, and I had to produce my pass any number of times before I reached the address I was looking for.

The darkened street lights, the blue parking lights of the cars and trucks, the blacked-out windows and the sandbags piled against the houses reminded me of a line in the poem the soldier-poet Osher Shwartzman had written to describe a scene like it in the Civil War days, "The enemy is at our gates!"

Neither in Arkhangelsk nor in Bashkiria, where life went on much as usual, had I felt the breath of war as plainly as in Moscow. Both people and streets were different, unfamiliar. Every face bore the stamp of heavy responsibility. People listened to the broadcasts apprehensively and read the newspapers closely. There were no baby carriages anywhere. The tall lindens on the Moscow boulevards where mothers used to air their children were now mooring masts for antiaircraft balloons. Girls in uniform were busy doing something around these trees.

Ruvim's wife, Anna, opened the door. Back in our home town of Berdichev they called her Hanka the tailor Elik's daughter. I still remembered her in her youth: a graceful girl with dark pretty features. "I should only have such a year," was the Jewish saying that came to mind at the sight of her.

She ushered me into her room, as though I were expected, and invited me to sit down, taking the chair opposite.

After talk about her son, I could not help remarking:

"I would have recognized Hanka the tailor Elik's daughter anywhere, even in the street."

The surprise lifted her from her seat.

"You mean . . ."

"Yes . . . I'm the son of Yudel the bricklayer. Don't you remember Ruvim's little friend in Meyer the gooseman's back yard?"

We youngsters were not the only ones Hanka, daughter of the tailor Elik, fascinated when she came out for a stroll on Belopolye Street near the Shrentsis Theater on Saturday evenings. We all knew that the lawyer Shapiro, quite a figure in town, worshiped the ground she walked on. He had already sent the matchmakers to the tailor. Then, when he was being measured for a suit by her father, he had tried to put in a word or two for himself. But Hanka would hear of no one except Ruvim Slutsky, a turner at the Progress Plant. It was for his sake that she polished her high-heeled slippers with special cream, for his sake that she ironed her dainty white blouses and plaited her dark hair into the most witching braids. And she had her way in the end, for she left Berdichev with Slutsky and no one else. They worked together and studied together at an evening factory school. At the beginning they had to live in separate places even though they were married. She lived in the dormitory of the factory school, and he in the plant rooming house.

The new cutting tools Ruvim Slutsky had designed and a new method of tempering them he had worked out won him recognition at his large plant in Moscow.

"They give him the most important jobs now!" related Anna proudly. "When the war began he joined the people's volunteer corps, but the plant called him back right away. He comes home only once a week. You'll be sure to meet him if you stay over till Sunday."

I did not meet Ruvim that time. We met at the Druskeniki health resort many years later.

That was when I heard what had happened to the Slutskys—a plain Jewish family that rose from poverty to a good living.

When Sima pulled up before the house where the Slutskys lived, the whole family came

out to meet us. I was surrounded by men and women, children big and small, each one wanting to know if I recognized him or her.

I knew Volodya at once, of course. He was a tall man of about 30 with smart military bearing. He shook my hand and asked me the unexpected question:

"Do you remember Grandmother Leah?"

I already knew that Volodya had graduated from the Naval Academy and was now a graduate student. His father had shown me several magazines with essays Volodya had written.

"The 'Naked Prince' will see his son an admiral some day!" joked Ruvim.

"Leah's walls and ceilings were always damp!" exclaimed a little woman who took my coat. "That's why her grandchildren want to go to sea. My son is a sailor too."

I recognized her voice. She was Braindl the Cossack, of course! I would have remembered that voice a hundred years! Her stentorian commands had rung in my head since childhood. Frail though she was as a girl, her word was law not only for her little brothers and sisters but for all the children in the yard. She was quite right when she said, "I built my own destiny!"

Braindl had won the heart of one of the noisiest and strongest chaps on the "sands." Shloimke the Eagle struck terror into the hearts of the most desperate madcaps of the neighborhood. The surprising thing, however, was not that the Eagle followed Braindl about like a shadow but that she had managed to make him, Shloimke, take to the school bench. It was only when he graduated as a veterinarian that they were married.

In Tyumen, where Braindl runs a sanitary-epidemiological station, all of the local executives know her. Because of that energetic old woman with her iron will many of them have had to pay fines right out of their own pockets for breaking sanitation rules. I was more than sure that she still remembered Meyer the gooseman's yard, famous for its dirt even on the "sands."

Ruvim warned me to say nothing in Braindl's presence of her husband Shloim and her eldest son; both had fallen at the front at the very end of the war and she was still grieving. Although no one had ever seen her tears, everyone knew there was not an hour when she did not mourn her dear ones.

Talking to Braindl, one got the impression that there was nothing more important in the world than her sanitary-epidemiological station. But come to think of it, most people feel that way about their work.

What did Sima, our future philosopher, think of this?

"Sima dear, what's the most important thing in life to you?"

"Right now the most important thing is for me to get my chauffeur's license, the paper that says in black on white: 'First-class Chauffeur!' she answered without hesitation. "I'll have all the cares I want and more when the time for them comes!" she laughed.

Hinde, Leah's second daughter, who had been an English language teacher for nearly 30 years, did not care very much for Sima's answer.

"At your age we had other things to think about, Sima!" she scolded. "Let's hope you don't come to grief with that car. Though I contributed to it too, I was really opposed to such a present."

Sima threw an arm around her aunt's neck.

"If you're sorry you gave the money, Aunty Hindele, I'll give it back to you. When I graduate from the institute I'll be earning more than you do."

That was how I found out that each of the guests at Sima's wedding had contributed a share toward that car. It was a wedding present from her aunts and uncles.

Zinovi Slutsky, an engineer at the Gorky Auto Works, had driven the car to Moscow from Gorky. I hardly recognized this tall man who wore an artificial limb in place of his right leg as the urchin Zindl of the "sands."

"It's a good little car!" Zinovi said. "When we were children we used to hitch rides on Haim Podkove's britska. I can still feel his whiplashes." Here he bent Sima's head to his shoulder and whispered in her ear:

"Don't listen to your aunts and uncles, Sima darling! Just keep driving. Nobody's going to use a whip on you. My children, too, think their parents are conservatives. You see better than we can. Your eyes are younger, and you can see much farther."

In spite of myself my eyes shifted to Zinovi's artificial leg; whereupon he laid his hand on my shoulder and said:

"And how did *you* grow so gray so early in life, brother?"

That is all I have to tell about my former neighbors of Berdichev, a plain Soviet family.

"But what about Leah's other children?" Maybe you'll ask me, "What about Hendele and Froika?"

The only answer I can give you is that the eternal flame on the grave of the Unknown Soldier will keep them forever alive in our memories.

Translated from the Yiddish magazine *Sovetish Heimland*

Monument to Field Marshal Mikhail Kutuzov.

BORODINO-GLORY OF RUSSIAN ARMS

THERE are episodes in the history of a nation that are remembered through the ages, and dates, the mention of which fills the heart with pride for one's people, for one's country.

For the Russian people, for the people of the Soviet Union, September 7, 1812, is such a date. On that day at Borodino, the Grand Army of France—gathered from a dozen countries in Napoleon's triumphant march across Europe and speaking a dozen tongues—met a resistance so fierce it was bled white and a month later was forced to flee Russia.

Shortly before he died, Bonaparte said in his military biography, "The most horrible battle I ever fought was the one near Moscow." The adjective was well chosen. Borodino was the beginning of the end of the empire he had built. It set off a new wave of patriotism in Russia against the foreign invader and gave heart and courage to the European peoples Napoleon had conquered.

The staunchness of the Russian people and their love of country was hard tested as never before at Borodino by a military leader of genius and an enemy superior in men and materiel.

Borodino is memorable not for 1812 alone. On that same historic battlefield in October 1941 the descendants of the soldiers of 1812, the Soviet Army's 32nd Infantry Division, drove back the German fascist divisions trying to break through to Moscow.

Borodino is a hallowed spot for the Soviet people. The obelisks and memorial plaques in memory of the heroes of 1812 stand alongside those dedicated to the heroes of the Second World War.

The Borodino military history museum has on display trophies of the 1812 battle and busts of its heroes. A monumental building with a panoramic representation of scenes from the battle is presently being erected on Kutuzov Prospect in Moscow.

Field Marshal Mikhail Kutuzov commanded the Russian army at Borodino. He said of the battle, "This day, when the infantry, cavalry and artillery all fought excellently, will be an immortal monument to the courage and fine bravery of the Russian soldiers."

The following excerpt on the battle is from Leo Tolstoy's epic *War and Peace.*

Russian poets, artists and writers have immortalized the courage of the soldiers at Borodino. Alexander Kotsebu's conception of the famous battle.

In 1812 Kutuzov's troops drove Napoleon's hordes from Russian soil. In 1941 history repeated itself when Soviet soldiers stopped the nazi invaders.

WAR AND PEACE

BY LEO TOLSTOY

THE PRINCIPAL ACTION of the Battle of Borodino was fought on a seven-thousand-foot space between Borodino and Bagration's earthworks. Outside this radius the Russians had made a brief diversion in the middle of the day with Uvarov's cavalry, on the one side, and on the other, beyond Utitsa, there had been the skirmish between Poniatovsky and Tuchkov; but these were isolated and relatively trifling episodes in comparison with what took place in the center of the battlefield. It was on the open tract of ground visible from both sides, between Borodino and the earthworks beside the wood, that the real engagement was fought in the simplest and most artless manner imaginable.

The battle began with a cannonade from both sides of several hundred guns.

Then, when the whole field was shrouded in smoke, two divisions, Dessaix's and Campan's, advanced from the French right, while Murat's troops moved on Borodino from the left. . . .

Napoleon's generals—Davoust, Ney and Murat, who were near that terrain of fire and sometimes even rode into it—more than once led huge masses of orderly troops that way. But, contrary to what had invariably happened in all their former battles, instead of the news they expected of the enemy's flight, these disciplined masses returned as disorganized, panic-stricken mobs. The generals formed them in good order again, but their number was steadily dwindling. In the middle of the day Murat sent his adjutant to Napoleon with a request for reinforcements.

Napoleon was sitting at the foot of the knoll, drinking punch, when Murat's adjutant galloped up with the assurance that the Russians would be routed if His Majesty would let them have another division.

"Reinforcements?" exclaimed Napoleon in grim amazement, staring, as though failing to comprehend his words, at the handsome boyish adjutant who wore his black hair in floating curls like Murat. "Reinforcements," thought Napoleon. "How can they want reinforcements when they have half the army already, concentrated against one weak, unfortified Russian wing?"

"Tell the King of Naples," said Napoleon sternly, "that it is not noon yet, and I do not see my chessboard clearly yet. Go."

The handsome young adjutant with the long hair heaved a deep sigh, and, still holding his hat in his hand, galloped back to the slaughter.

Napoleon got up and, summoning Caulaincourt and Berthier, began talking to them about matters that had nothing to do with the battle.

In the middle of this conversation, which was beginning to interest Napoleon, Berthier's eyes were caught by a general who was galloping toward the knoll on a lathering horse, followed by his suite. It was Beliard. Dismounting, he strode rapidly up to the Emperor and boldly, in a loud voice, started to argue the absolute need for reinforcements. He swore on his honor that the Russians were lost if the Emperor would let them have only one division more.

Napoleon shrugged his shoulders and continued to pace up and down without answering. Belliard began to talk loudly and vehemently to the generals of the suite gathered round him.

"You are very hotheaded, Beliard," said Napoleon, turning to the general again. "It is easy to make a mistake in the heat of the battle. Go and have another look and then come back to me."

Beliard had hardly disappeared from sight when a fresh messenger from another part of the field galloped up.

"Well, what is it now?" asked Napoleon in the tone of a man irritated by repeated interruptions.

"Sire, the prince . . ." began the adjutant.

"Wants reinforcements?" asked Napoleon with an angry gesture.

The adjutant bowed his head affirmatively and began to deliver his report, but the Emperor turned away, took a couple of steps, stopped, turned back and beckoned to Berthier.

"We must give them the reserves," he said, with a slight upward gesture of his hands. "Who do you think should go?" he asked Berthier ("that gosling that I hatched into an eagle," as he afterward called him).

"Sire, send Claparède's division," replied Berthier, who knew every division, regiment and battalion by heart.

Napoleon nodded assent.

The adjutant galloped off to Claparède's division, and a few minutes later the Young Guards, who were drawn up behind the knoll, moved out. Napoleon watched them in silence.

"No!" he cried suddenly to Berthier. "I can't send Claparède. Send Friant's division."

Though there was no advantage of any kind in dispatching Friant's division rather than Claparède's, and even obvious inconvenience and delay now in recalling Claparède and sending Friant, still the order was carried out to the letter. Napoleon did not observe that in relation to his troops he played the part of the doctor, whose action in hindering the course of nature with his nostrums he so truly gauged and condemned.

Friant's division vanished like the rest into the smoke of the battlefield. From every side adjutants continued to arrive at a gallop, all with the same story to tell, as though in collusion. They all asked for reinforcements, all said the Russians were standing firm and keeping up a hellish fire under which the French troops were melting away.

Napoleon sat on a camp stool, deep in thought. Monsieur de Beausset, who was so fond of traveling and had eaten nothing since early morning, approached the Emperor and respectfully ventured to suggest lunch to His Majesty.

"I hope I may already congratulate Your Majesty on a victory?" he said.

Napoleon shook his head. Monsieur de Beausset, supposing the no referred to the victory and not to the lunch, took the liberty of playfully observing that there could be no mortal reason for not having lunch when lunch was available.

"Go away . . ." Napoleon jerked out gloomily, and turned his back.

Monsieur de Beausset's face beamed with an Olympian smile of pity, regret and unction as he swaggered back to the other generals.

Napoleon was in the depression that grips the gambler who, after a long run of luck during which he has recklessly flung his money about and won every time, suddenly finds, just when he has carefully figured all contingencies, that the more he calculates his play, the more certainly he loses.

His troops were the same, his generals the same, there had been the same preparations, the same dispositions, the same proclamation *court et énergique*. He himself was the same—he knew that—and knew that he was vastly more experienced and skillful even than he had been before. Even the enemy was the same as at Austerlitz and Friedland—yet the crushing weight of his arm fell impotent, as though spellbound.

All the old methods that had invariably been crowned with success had already been employed. Today, as usual, he had concentrated his batteries on a single point, had thrown forward his reserves to break the enemy's line, had ordered a cavalry attack by "the men of iron"; yet not only was there no victory but from all sides the same tidings kept pouring in of generals killed and wounded, of reinforcements needed, of the impossibility of beating back the Russians, and of the demoralization of his own troops.

Hitherto, after he had given two or three orders and uttered a couple of sentences, marshals and adjutants had come galloping up with congratulations and radiant faces, announcing trophies captured—whole corps of prisoners, sheaves of enemy eagles and standards, cannon and stores—with Murat begging leave to let the cavalry loose after the baggage trains. Thus it had been at Lodi, Marengo, Arcola, Jena, Austerlitz, Wagram and so on, and so on. But now something strange was happening to his men.

Notwithstanding news of the capture of the earthworks, Napoleon saw that things were not going the same way—not at all the same way—as they had in his other battles. He saw too that what he was feeling, all the men about him, with their military experience, were feeling too. There was gloom on every face; each man avoided his neighbor's eye. Only a Beausset could fail to grasp the import of what was happening. Napoleon, of course, with his long experience of war, knew very well what it meant for the attacking side still not to be in sight of victory after straining every effort for eight hours on end. He knew that this was equivalent to defeat and that the merest chance now—at the critical point the battle had reached—might ruin him and his troops.

When he ran his mind over this strange Russian campaign, in which not a single victory had been won, in which not a flag, nor a cannon, nor an army corps had been taken in two months; when he looked at the barely concealed gloom on the faces round him and heard reports that the Russians still held their ground—a terrible nightmarish feeling seized him, and he thought of every ill-starred eventuality that might seal his doom. The Russians might fall on his left wing, might break through his center; he himself might be killed by a stray cannon ball. All this was possible. In former battles he had only considered the chances of success, but now an infinite number of possible disasters presented themselves, and he foresaw them all. Yes, it was like a dream in which a man imagines a murderer advancing to attack him. He lifts his arm to strike his assailant a terrible blow he knows should be crushing, and then feels his arm drop limp and powerless as a rag, and the horror of inevitable death comes upon him in his helplessness.

The news that the Russians were attacking the left flank of the French army filled Napoleon with just such horror. He sat in silence on a camp stool below the knoll, with bowed head and elbows on his knees. Berthier came up and suggested that they ride along the line to ascertain the state of affairs.

"What? What did you say?" asked Napoleon. "Yes, tell them to bring my horse."

He mounted and rode toward Semeonovsk.

In the slowly dispersing powder smoke, over the whole plain through which Napoleon rode, horses and men singly or in heaps were lying in pools of blood. Neither Napoleon nor any of his generals had ever before seen such a frightful sight or so many slain in so small an area. The roar of the cannon, which had not stopped for ten hours, wearied the ear and gave a peculiar character to the spectacle (like music accompanying a pageant). Napoleon rode up to the high ground of Semeonovsk, and through the smoke he saw ranks of soldiers in uniforms of unfamiliar colors. They were Russians.

The Russians stood in serried ranks behind Semeonovsk village and its mound, and their guns kept up an incessant roar all along the line, filling the air with smoke. It was no longer a battle: it was a prolonged massacre, equally fruitless for the French and the Russians. Napoleon pulled up his horse and again sank into that brooding reverie from which Berthier had roused him. He could not stop what was going on before and around him, something he was supposed to be directing and that was apparently dependent on him, and for the first time, because it was failing, the thing struck him as pointless and horrible.

One of the generals riding up to Napoleon ventured an offer to lead the

Old Guard into action. Ney and Berthier, standing near Napoleon, exchanged looks and smiled contemptuously at so preposterous a suggestion.

Napoleon let his head sink on his breast in a long silence.

"At eight hundred leagues from France I am not going to have my Guard destroyed!" he said, and turning his horse, rode back to Shevardino. . . .

The fearful spectacle of the battlefield heaped with dead and wounded, together with the heaviness of his head and the news that some twenty generals he knew personally were among the killed or wounded, and the sense of impotence of his once mighty arm, made an unexpected impression on Napoleon, who usually liked to contemplate the killed and wounded, thereby, he thought, testing his strength of mind. On this day the awful spectacle of the battlefield was too much for that dauntless spirit of his, which he looked on as the source of his merit and the proof of his greatness. He hastened away from the scene of action and returned to the Shevardino knoll, where he sat on his camp stool, his sallow face bloated and downcast, his eyes dim, his nose red and his voice hoarse, looking down and involuntarily listening to the sounds of the firing. In sickly dejection he awaited the end of the business in which he considered himself the prime mover but which he was powerless to arrest. A natural, human sentiment for a brief moment gained the ascendant over the mirage that he had served so long. He felt in his own person the sufferings and death he had seen on the battlefield. The heavy feeling in his head and chest brought home the possibility for him too of agony and death. At that moment he did not desire Moscow, or victory, or glory.(What need had he of more glory?) The one thing he wanted now was rest, tranquillity and release. But while he was on the Semeonovsk heights, the officer in command of the artillery had proposed that several batteries be brought up onto that high ground to increase the fire on the Russian troops massed in front of Knyazkovo. Napoleon had agreed and given orders that he be kept informed of the effect those batteries produced.

An adjutant came up now to report that, by the Emperor's order, two hundred guns had been concentrated on the Russians but that they still held their ground.

"Our fire is mowing them down in rows, but they still hang on," said the adjutant.

"They want more!" . . . said Napoleon in a husky voice.

"Sire?" asked the adjutant, who had not caught the words.

"They want more!" Napoleon croaked hoarsely, frowning. "Well, give it to them!"

Already, without orders from him, the thing he did not really want and for which he gave the order only because he thought it was expected of him, was being done. And he fell back into his old artificial world, peopled by the phantoms of unreal grandeur, and again (as a horse walking a treadmill might imagine itself acting on its own behalf) he meekly resumed the cruel, mournful, irksome and inhuman role which was his destiny.

And not for that day and hour alone were the mind and conscience of this man darkened, on whom the burden of all that was happening weighed more heavily than on all the others who were taking part in it. Never to the end of his life had he the least comprehension of goodness, beauty or truth, or of the significance of his acts, which were too contrary to truth and goodness, too remote from everything human for him ever to be able to grasp their import. He could not disavow his deeds, lauded as they were by half the world, and so he was forced to disavow truth and goodness and everything human.

Not on that day alone, as he rode over the battlefield strewn with men killed and maimed (the work, he supposed, of his will), did he reckon as he looked at them how many Russians lay there for each Frenchman and, beguiling himself, find reason for rejoicing in the thought that there were five Russians for every Frenchman. This was not the only time he wrote to Paris that "the field of battle was a superb sight" because there were fifty thousand corpses lying on it. Even on the island of St. Helena, in the peaceful solitude where he said he intended to devote his leisure to an account of the great deeds he had done, he wrote:

"The Russian war ought to have been the most popular war of modern times: it was a war on the side of good sense and sound interests, to bring peace and security to all. It was purely pacific and conservative.

"It was a war for a great cause, the end of uncertainties and the beginning of security. A new horizon, new labors would have opened up, full of well-being and prosperity for all. The European system was established: all that remained was to organize it.

"Satisfied on these great points, and at peace with all the world, I too should have had my Congress and my Holy Alliance. These are ideas stolen from me. In that assembly of great sovereigns we could have discussed our interests like one family and have rendered account to the peoples as clerk to master.

"In this way Europe would soon have become in fact but a single people and every man traveling anywhere would have found himself in the common fatherland. I would have insisted that all navigable rivers be free to everyone, required that the seas be common to all and that the great standing armies be reduced henceforth to mere bodyguards for sovereigns.

"On my return to France, to the bosom of the great, strong, magnificent, serene and glorious fatherland, I would have proclaimed her frontiers immutable; all future wars purely defensive; all fresh aggrandizement antinational. I would have made my son my partner in the Empire; my dictatorship would have been over, and his constitutional reign begun. . . .

"Paris would have been the capital of the world, and the French the envy of the nations! . . .

"My time then and my old age would have been devoted, in company with the Empress and during the royal apprenticeship of my son, to visiting in leisurely fashion with our own horses, like a genuine country couple, every corner of the Empire, hearing complaints, redressing wrongs and scattering public buildings and benefactions wherever we went."

Yes, he, foreordained by Providence to the sad, slavish role of executioner of the peoples, persuaded himself that the motive of his actions had been the welfare of the peoples, and that he could control the destinies of millions and confer benefits by the exercise of his power!

"Of the four hundred thousand men who crossed the Vistula," he wrote further concerning the Russian war, "half were Austrians, Prussians, Saxons, Poles, Bavarians, Würtembergers, Mecklenburgers, Spaniards, Italians, Neapolitans. A third of the Imperial army, properly so-called, consisted of Dutch, Belgians, inhabitants of the Rhineland, Piedmontese, Swiss, Genevese, Tuscans, Romans, inhabitants of the Thirty-second Military Division, of Bremen, of Hamburg, and so on. It included scarcely a hundred and forty thousand who spoke French. The Russian expedition actually cost France itself less than fifty thousand men. The Russian army in the retreat from Vilna to Moscow lost in various battles four times as many men as the French army. The burning of Moscow cost the lives of a hundred thousand Russians who perished of cold and starvation in the forests. Finally, in its march from Moscow to the Oder, the Russian army also suffered from the inclemency of the season; so that by the time it reached Vilna it numbered only fifty thousand, and less than eighteen thousand at Kalisch."

He imagined that the war with Russia came about by his volition, and the horror of what was done made no impression on his soul. He boldly assumed full responsibility for it all, and his darkened mind found justification in the fact that among the hundreds of thousands who met their deaths there were fewer Frenchmen than Hessians and Bavarians. . . .

Anyone looking at the disorder in the Russian rear would have said that the French had only to make one slight effort and the Russian army would have been annihilated; and anyone seeing behind the French lines would have said that one last little effort on the part of the Russians would end the French. But neither the French nor the Russians put forth that last effort, and the flame of battle slowly burnt out.

The Russians did not make that effort because they were not attacking the French. At the beginning of the battle they merely stood on the road to Moscow, barring it to the enemy, and at the end of the engagement they still stood there exactly as they had at the beginning. But even had the aim of the Russians been to drive the French from their positions, they could not have made this final effort, because all the Russian forces had been routed: there was not a single section of the army that had not suffered in the battle, and the Russians, merely to hold their positions, lost *one half* of their men.

The French, with the memory of fifteen years of victories, with their confidence in Napoleon's invincibility, with the knowledge that they had taken part of the battlefield and had lost only a quarter of their men and still had their Guards intact—twenty thousand strong—might easily have made that effort. The French, who had attacked the Russian army with the object of driving it from its position, ought to have made that effort, for so long as the Russians continued to bar the way to Moscow, as before the battle, the aim of the French had not been attained, and all their exertions and losses had been in vain. But the French did not make that effort.

Some historians say that if Napoleon had only let his Old Guard advance, the battle would have been won. To speak of what would have happened had Napoleon used his Guards is like talking of what would happen if spring came in autumn. It could not be. Napoleon did not sacrifice his Guards, not because he did not want to, but because he could not. All the generals, officers and soldiers of the French army knew that this was out of the question, because the flagging morale of the troops did not permit it.

It was not Napoleon alone who had that nightmare feeling that his mighty arm had been struck powerless: all the generals and soldiers of his army, those who fought and those who did not, after all their experience of previous battle (when a tenth such effort had set the enemy fleeing) felt the same awe and dread before this foe who, after losing *one half* its men, still stood its ground as dauntless at the end as at the beginning of the battle. The moral force of the French, the attacking army, was exhausted. The Russians at Borodino won—not the sort of victory which is measured by the capture of scraps of material on the end of sticks, called banners, or of the ground on which the troops had stood and were standing—but a moral victory, the kind that forces the enemy to recognize the moral superiority of his opponent and his own impotence. The French invaders, like a ravening beast that on onslaught receives a mortal wound, felt its end near, but could not call a halt, any more than the Russian army, with half the strength, could help giving way. After that check the French army was still able to drag on to Moscow; but there, without further effort on the part of the Russians, it was to perish, bleeding to death from the wound received at Borodino. The direct consequence of the Battle of Borodino was Napoleon's causeless flight from Moscow, his return on the old Smolensk road by which he had come, the destruction of the invading army of five hundred thousand men, and the downfall of Napoleonic France, on which, at Borodino, the hand of an adversary of stronger spirit had for the first time been laid. ★

BENNY

SUMMER is Moscow's jazz and variety season, with most of the b halls reserved for these very popular concerts. Oleg Lundstrem's we known Soviet jazz ensemble opened the season this year and was follow by Armenian, Azerbaijanian and Uzbek variety groups. Other jazz evenin were offered by the Leonid Utesov, Eddie Rozner and Boris Rensky co binations—all of them name bands. The big jazz treat of the season, thoug was the "King of Swing" Benny Goodman, Moscow's guest.

Benny Goodman is a familiar name to Soviet jazz lovers. His rad programs and records have long been favorites and have frequently be tape-recorded. Muscovites eagerly looked forward to the first concert their city of this famous clarinetist.

Since composers Dmitri Shostakovich, Aram Khachaturyan and Dmi Kabalevsky had come back with plaudits for Goodman and his band aft a visit to the United States in 1960, it was quite natural that distinguish Soviet composers, musicians and artists were among the overflow cro of 4,500 at his first concert. Nikita Khrushchev and other high governme officials were also present. American Ambassador Llewellyn Thompson a his wife sat in the government box.

The concert was a great success, the level of musicianship high and t fine ensemble performance easily up to the most difficult numbers. T newspaper *Sovietskaya Kultura* wrote, "The work of such well-kno composers as Ellington, Gershwin and Goodman himself, as well as t samples of Negro folk music, were finely orchestrated and excitingly play The technical facility and spontaneity of our American guests proves th genuine masters of their art."

GOODMAN IN MOSCOW

BY YEFIM GALANTER
DIRECTOR OF THE GRAND HALL,
MOSCOW CONSERVATORY
PHOTOS BY ANATOLI SAIKOV

The most appealing numbers in the varied program were "Anthology Jazz" (arranged by Prince), "Bach Goes to Town," a humorous piece, ieral of Count Basie's "jumps" and a rather off-beat but effective arrange- nt of the popular song "Polyushko" by Soviet composer Lev Knipper.

Listeners were much taken with the sextet performances, particularly lh pianist Teddy Wilson and double-bass player Bill Crow. Joya Sherill, o sings in the traditional night-club style, was at her best with Gershwin mbers. But the orchestra's top performer, by far, was Goodman. He has virtuosity and sense of rhythm of the true jazz artist.

Everybody knows, of course, that Goodman is as fine a classical as a z musician, and the audience responded to his renditions of the Mozart H the Weber clarinet concertos with real warmth and feeling.

Tikhon Khrennikov, composer and head of the USSR Composers Union, d, "I was one of the people who asked that Benny Goodman be invited the Soviet Union. I am very pleased that the Soviet public will have opportunity of hearing his orchestra. Goodman is a towering talent."

Alexander Tsfasman, pioneer of Soviet jazz, and theater jazz orchestra der Leonid Utesov agree with Khrennikov's characterization, as do many er Soviet artists and musicologists.

Benny Goodman told a *Sovietskaya Kultura* reporter that he was very ased with his cordial reception and the way Soviet people had made n feel at home. The concerts had been wonderfully organized. The huge lls were always packed and the audiences attentive and responsive. It s evident, Goodman concluded, that the Soviet people love and appreciate z. ★

USSR

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TO READERS OF USSR MAGAZINE

ГОЛОВА ПРЕЗИДІЇ ВЕРХОВНОЇ РАДИ УКРАЇНСЬКОЇ РСР

ДО ЧИТАЧІВ ЖУРНАЛУ "СССР"

Хто виявляє інтерес до Радянської України і цікавиться її життям, той прочитає у цьому номері журналу про її людей, їх думи і прагнення, про бурхливий розвиток економіки і культури нашої Республіки, про все те, чим багата і славна наша рідна українська земля.

Український народ за свою багатовікову історію пройшов великий і тяжкий шлях. Його землю не раз топтали чужоземні орди. Загарбники шматували Україну, роз"єднували наш народ. Він до дна випив гірку чашу соціального і національного гніту, але ніколи не схиляв своєї голови перед поневолювачами, мужньо боровся за свою свободу і незалежність.

В революційні дні Жовтня 1917 року наш народ разом з народами колишньої царської Росії здобув історичну перемогу. Ставши господарем всіх багатств своєї землі, він сам вирішив свою долю – обрав Радянську владу, соціалістичний шлях свого розвитку. За соціалізм український народ проголосував творчою працею в період мирного життя, ратними подвигами у грізні дні воєнних бур. У труді і в боях ми завжди йшли і далі будемо йти пліч-о-пліч з російським та іншими братніми народами великого Радянського Союзу. В цьому запорука нашої свободи, нашого щастя.

Збулася заповітна мрія українського народу: всі його землі воєдинені в єдиній суверенній державі – Українській Радянській Соціалістичній Республіці. Наш народ пишається своїми успіхами, досягнутими за роки Радянської влади. Ми маємо першокласну індустрію, всі галузі сучасної промисловості, високорозвинене сільське господарство. Освіта, наука, мистецтво стали доступні всьому народові.

Чудовий сьогоднішній день Радянської України. Ще прекраснішe її майбутнє. В братній сім"ї 15 рівноправних республік ми будуємо суспільство високого гуманізму і повного достатку – комунізм, на прапорі якого сяють величні ідеали: Мир, Праця, Свобода, Рівність, Братерство і Щастя всіх народів.

Сподіваюсь, шановні читачі, що ближче ознайомлення з Радянською Україною допоможе нашим народам краще пізнати і зрозуміти один одного. А взаєморозуміння – шлях до дружби і миру.

"16" липня 1962 року
м. Київ

Д. Коротченко

In this issue you will be reading about the peoples of the Soviet Ukraine, their thoughts and strivings, about the fast-paced economic and cultural development of our republic and the richness of our Ukrainian land.

Our people have traversed a long and difficult path in their centuries-old history. Our land was more than once troden underfoot by foreign hordes, by invaders who tore the Ukraine asunder and divided our nation. Our people drained to the full the bitter cup of social oppression but never bowed their heads before the enslavers. They fought courageously for their freedom and independence.

The 1917 October Revolution made our people, as it did all the peoples of czarist Russia, the masters of their land. They themselves decided their destiny, choosing Soviet power, the socialist road of development. The Ukrainian people built socialism by their labors in times of peace and by their feats of arms in the stormy days of war.

In labor and in battle we have always marched and will continue to march shoulder to shoulder with the Russian and other fraternal peoples of the great Soviet Union. Herein lies the guarantee of our freedom and our happiness.

The age-old dream of the Ukrainian people has been realized. All their lands have been reunited in a single sovereign state, the Ukrainian Soviet Socialist Republic.

Our people are proud of the successes achieved during the years of Soviet power. We now have all the modern industries and a highly developed agriculture. Education, science and art have become accessible to everyone.

The present of the Ukraine is bright, its tomorrow will be even more radiant. In a fraternal family of 15 equal republics we are building communism--a society of lofty humanism and abundance on whose banner are inscribed our ideals--peace, labor, freedom, equality, fraternity and happiness for all peoples.

I believe that closer acquaintance with the Soviet Ukraine will help our peoples to know and to understand one another better. And mutual understanding is the road to friendship and peace!

Demyan Korotchenko
President of the Presidium
of the Supreme Soviet of the
Ukrainian Soviet Socialist Republic

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FRONT COVER: Monument to Taras Shevchenko in Kanev. —*See story* **on page 12.**

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THIS MAP is not the last word in geographical accuracy, nor does it come near reflecting everything that characterizes the Ukraine of our time—in population and economic significance the Ukraine is second among the 15 republics of the Soviet Union; the Russian Federation is first. Artist Victor Shchapov simply tried to provide through symbols a general idea of the republic's economic wealth. These drawings represent large industrial mills and vast collective farms, lively cities and quiet villages, the majestic Dnieper with its hydroelectric plants and the sunny Crimea with its famous resorts.

Few places in the world are so abundantly endowed with nature's gifts as the Ukraine. The proximity of coal and iron ore deposits provides exceptionally favorable conditions for the development of the iron and steel industry. Several new large-scale iron and steel enterprises have been built since the Revolution, and new blast furnaces, coke-chemical shops and open-hearth furnaces have been added to those already in existence. Two Ukrainian enterprises, the Dzerzhinsky and Zaporozhstal mills, turn out more metal than all the mills of Russia before the Revolution.

The symbols on the map show only a few of the hundreds of coal and iron ore mines and power plants in operation or under construction at present. This is also true of other fields of the economy. There was simply not enough space for many of them. The Donets coal basin, the Donbas, which covers the eastern part of the Ukraine up to the Dnieper, is a case in point.

The industrial development of that area is so great that no matter where you go, you will literally not find a single acre of unused land. Coal mines, with their characteristic cones of waste rock, stretch in a chain, one after the other. The towers of the blast furnaces jut up among them at almost every step and open-hearth furnaces are situated right next to them. Machine-building and chemical factories, rolling mills and other enterprises stand in a long row. This is an area of salt and mercury mines, limestone quarries and sand pits. Power transmission lines branch off in many directions from plants scattered all over the Ukraine.

This entire area is dotted with workers' residential sections that vary from small settlements to large cities. They are sometimes joined together, and you get the impression, traveling through them, that there is no end to this densely populated region.

Kharkov is an important industrial center with a diversified machine-building industry north of the Donbas. In the west the Donbas extends to a big industrial area uniting the cities situated along the Dnieper's banks. Industrial landscapes are evident in other parts of the Ukraine as well, and everywhere they are interspersed with large and small villages with their collective farms and state farms, fields of wheat, corn and sugar beet, and orchards. And how can we omit the herds of cattle, so basic a part of every agricultural landscape?

The Ukraine is mostly flat country. In the north, steppe intermingles with forest. But the farther south you get, the less forest you see, until in the extreme south, along the Black and Azov seas, there is nothing but vast open steppe. Ravines pass into densely forested mountains and alpine meadows in the southwest.

A chain of oil wells and gas wells is visible in the foothills of the Carpathians. Natural gas flows in a pipeline from there to Kiev, and farther on to Moscow. Another pipeline goes to Minsk, with branches extending to Vilnius and Riga.

The pictures cannot show all the wealth of the Ukrainian land and all the fruits of the labor of the industrious Ukrainian people working in fraternal cooperation with the other peoples of the Soviet Union. The map you see is nothing more than an introduction to the articles in this issue. ★

DRAWING BY VICTOR SHCHAPOV

THE UKRAINE TODAY

BOY

BY VSEVOLOD PRIVALSKY
PHOTOS BY ISAAC UZLYAN

HOW do young people in our countr choose a profession? Is the selectio determined by personal taste and desire Primarily personal taste and desire, I be lieve, plus his mother and dad. Youn people are always inclined to be romantic and these days many dream of becomin spacemen. But their mothers and dads ar more down to earth on such matters. Al they want is for their son or daughter t acquire a decent profession. That start the ball of arguments rolling.

That's how it was with Anatoli Tsikalo whom I got to know in the Ukrainian tow of Donetsk. Anatoli graduated from sec ondary school two years ago. His mother a teacher, wanted him to be a doctor. Hi father, a highly skilled electric welder wanted him to go to engineering school With due respect to both his parents, Ana toli had his own ideas on the subject.

FROM DONETSK

Anatoli Tsikalo (second from right) and a group of friends on their way to work at a machine-tool plant.

Although Anatoli does better at the lathe than at the chessboard, his father enjoys a game with him.

A job, a correspondence course in mechanical engineering, and a "steady" give him a full schedule.

While in secondary school he had done his practical work training—required of every student—at a Donetsk machine-building plant. There he learned to handle tools and work the new lathes. He watched trains loaded with parts for huge walking excavators pull out of the factory yard and made up his mind he wanted to have a hand in building these mechanical giants. When he graduated and announced that he was going to take a job at the factory, his mother deplored the fact, his father was pleased.

Anatoli met several of his former classmates at the factory who had come to the same decision. The boys soon learned the job they were assigned—turning rollers for earth-digging machines.

Anatoli liked the work and the atmosphere of the shop. He began to spend his evenings there or at the library leafing through technical handbooks. After a while he showed a drawing he had made to his shop manager, a design for an improved cutter. It was not a world-shaking invention, explains Anatoli, but it did speed up cutting and saved the factory several thousand rubles. The young turner's reward was a bonus, an article in the factory bulletin with his picture, and an invitation to join the innovators group at the plant. Since then he has added several more items to his growing list of inventions.

Two years after he started at the factory, his mother got after him to go back to school. His father said nothing. But Anatoli knew exactly what he wanted to do. He decided to study mechanical engineering but without dropping his job, and registered for a correspondence course.

But Anatoli's life isn't all work and study. He has a busy social and recreational schedule. He sings in the factory club chorus and manages to take in a fair quota of the many recitals given by visiting celebrities. Donetsk is a music-minded town, and Anatoli wasn't able to get tickets for the Van Cliburn concert—they were all sold out by the time he reached the box office after a long wait in line. When Japanese pianist Takeitiro Kazuaki Hirai played, he queued up earlier.

Sportswise, Anatoli is a long-distance runner. Not a Vladimir Kuts, but he is champ of the factory's track team.

He is an omnivorous reader, spends a regular slice of his pay check for books, and already has a very respectable home library.

Of course, our Donetsk boy has a Donetsk girl, and is inclined to wax as lyrical about her as any 19-year-old in Donetsk or anywhere else. ★

INDUSTRIAL UKRAINE

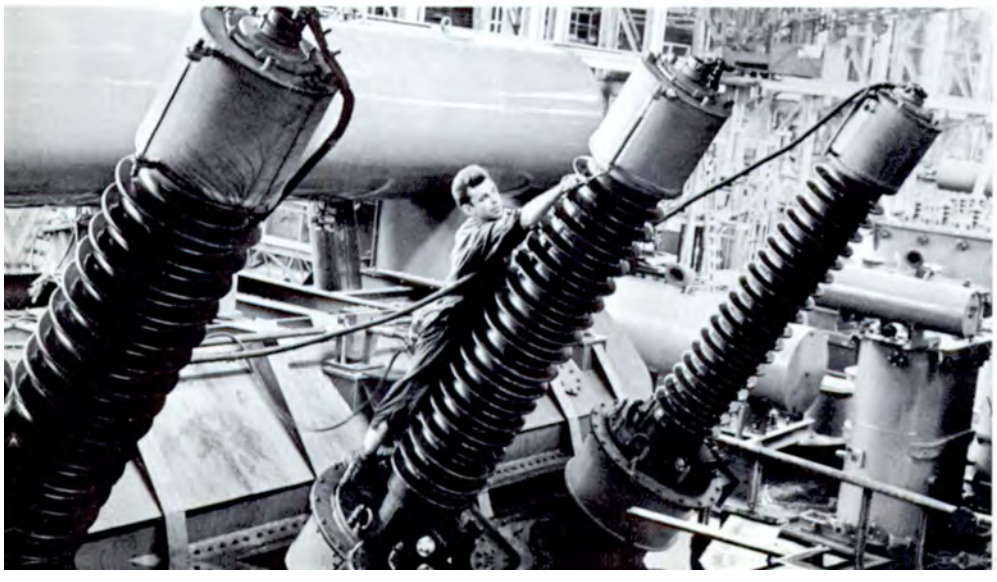
It was not so long ago that the Ukraine's heavy industry was limited primarily to coal mining and iron and steel production. Today machine building and metal working are listed among the republic's major industries, since together with the chemical and light and food industries they account for some two-thirds of all industrial output.

No branch of Ukrainian industry can match the tremendous growth of machine building in the years of Soviet power. Output ranges from cameras and industrial equipment to computers, tractors, planes and ocean-going vessels.

Both the scope of production and the variety of items continue to increase. The automobile industry, new for the Ukraine, is one example, the chemical industry another. The latter, a fast growing and promising field, has already made available a number of synthetic materials for industrial and consumer goods production that have proved superior to the natural product. For example, tools utilizing man-made diamonds are 40 per cent more durable than those with real diamonds, and the manufacture of synthetic diamonds requires a smaller capital investment than the mining of real ones.

The fact that the manufacture of some 500 new types of machines, instruments, equipment and materials has been mastered in the past year proves that the watchword in all Ukrainian industries, both old and new, is constant technical progress.

A 220,000-volt power transformer being assembled at a Zaporozhye machine-building plant.



The Soviet Russia, *a Ukrainian-built whaling flotilla base ship at the Nikolayev shipyard.*

At a Dnepropetrovsk mill. Welding frames by a process originated by Academician Boris Paton.

A combine in operation at a pit in the Donbas basin, one of the world's great coal deposits.

MADE IN THE UKRAINE

BY BORIS YAMPOLSKY

PHOTOS BY ALEXANDER MOKLETSOV

ASSUMING you are in the Ukraine for the first time, on a short visit, where should you go and what should you see in Kiev? You would want to stroll along the Kreshchatik, the main thoroughfare, climb Vladimir Hill, see Shevchenko Boulevard and other interesting spots.

But to get the feel and flavor not only of the capital but of all the Ukraine, take a trolleybus on the Kreshchatik for a very pleasant ride to the suburbs. In the middle of a thick forest and blue lakes, you will find tall, interesting-looking buildings, and then, after a few minutes' walk, the portico at the entrance to the Exhibition of Ukrainian Achievements.

This is a permanent show of work done and work in progress. New displays keep replacing old ones. The pavilions spread over 750 acres, and the working models, machines and photo exhibits provide the visitor with a dramatic up-to-the-minute commentary on the republic's resources and the achievements of its iron and steel workers, miners, farmers, builders and scientists.

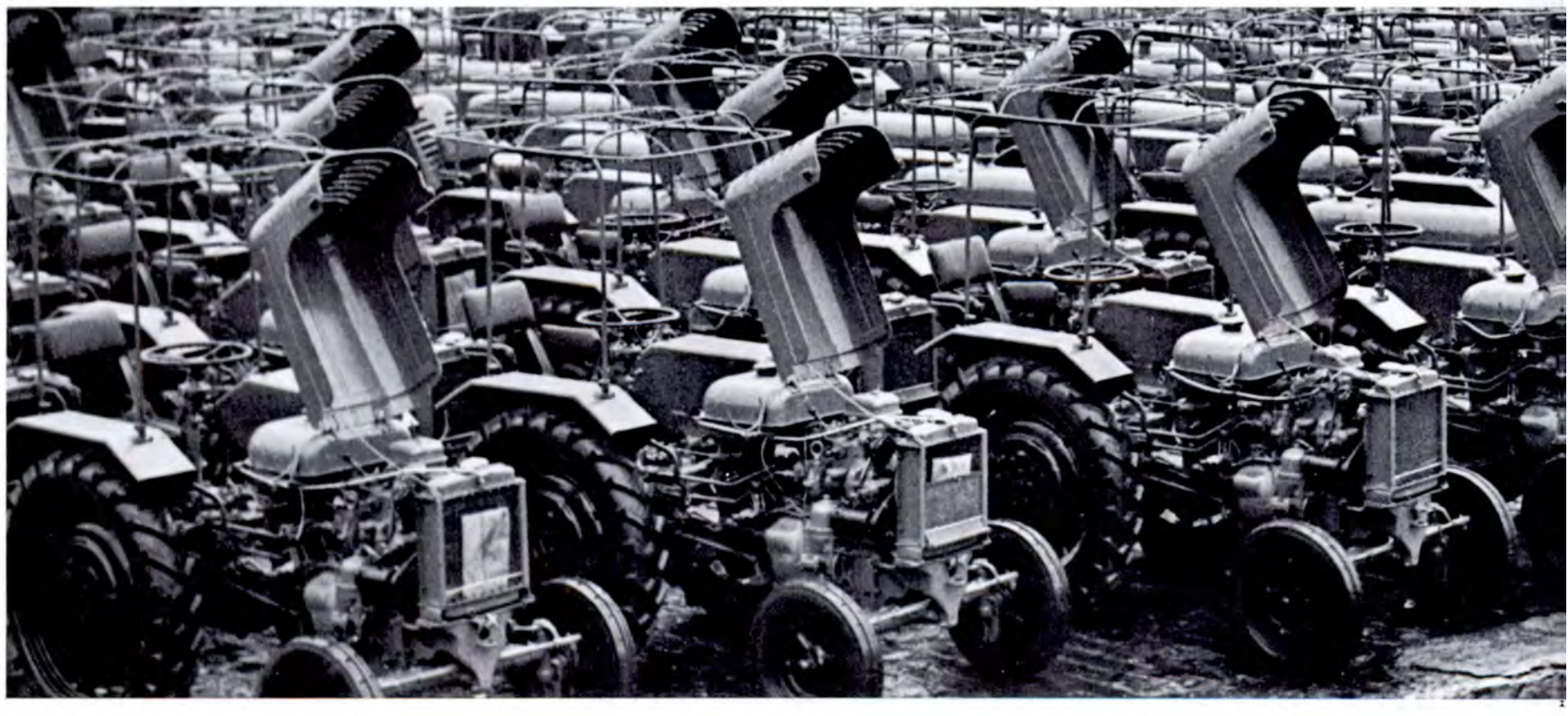
The large map in the main pavilion gives the vital statistics on the republic and its resources. In the other pavilions, these statistics are brought to life through a variety of items on display.

The map informs the visitor that every third ton of coal in the Soviet Union is produced in the Ukraine, and at a short distance from the main pavilion is a scale model of the Butovskaya-Glubokaya mine in the Donets coal basin, where men like Nikolai Mamai and Alexander Kolchik are setting records in coal-cutting. There are recordings made by these miners of countrywide fame in which they describe their methods of work. There are also displays of charts and blueprints.

Another interesting exhibit is the model of a blast furnace, the world's largest, located in the Ukraine's iron ore center. The metal it pours is shipped to twenty of the Soviet Union's largest mills as well as to Poland, Czechoslovakia, Hungary and other socialist countries. Similar giant blast furnaces are presently being built in Zhdanov on the Sea of Azov.

On display also are program-controlled lathes, the latest thing in engineering. Vladimir Gurgal, a turner from Lvov who demonstrates one of these machines, is a third-year evening student at a polytechnical institute. He is also a deputy to the Ukrainian Supreme Soviet.

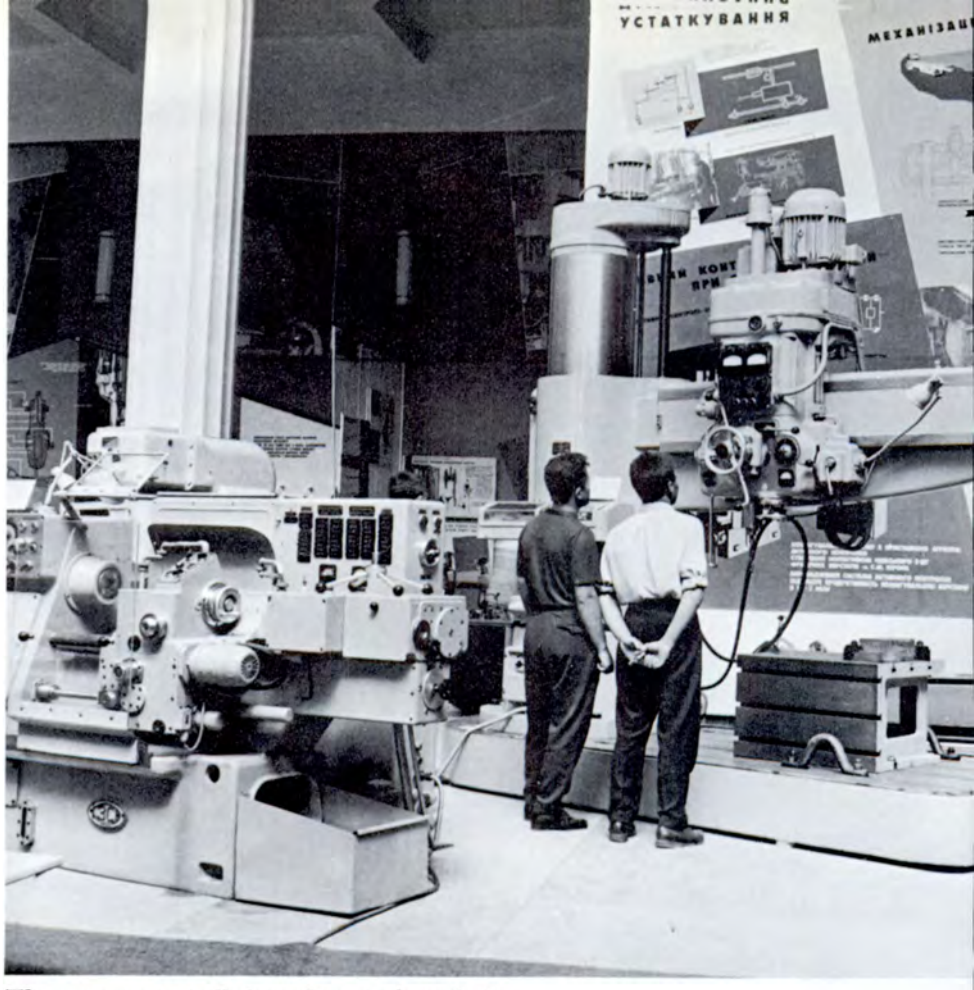
The more than 2,000 exhibits on the republic's economic progress include an electron microscope assembled in the town of Sumy, a turboprop plane, a diesel locomotive, footwear, fabrics in many colors and designs, and the skeleton of a whale caught by Odessa whalers.



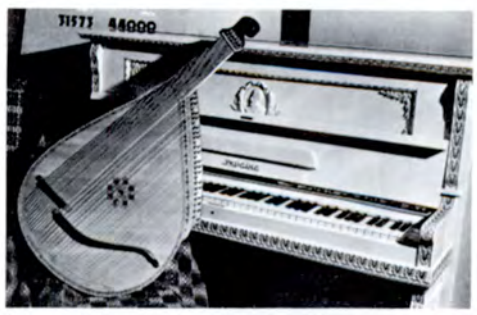
They are assembling a hydrogen-cooled turbo-generator, product of the industrial Ukraine.

DT-2 tractors ready for delivery at the Kharkov Tractor Plant, one of the oldest in the country.

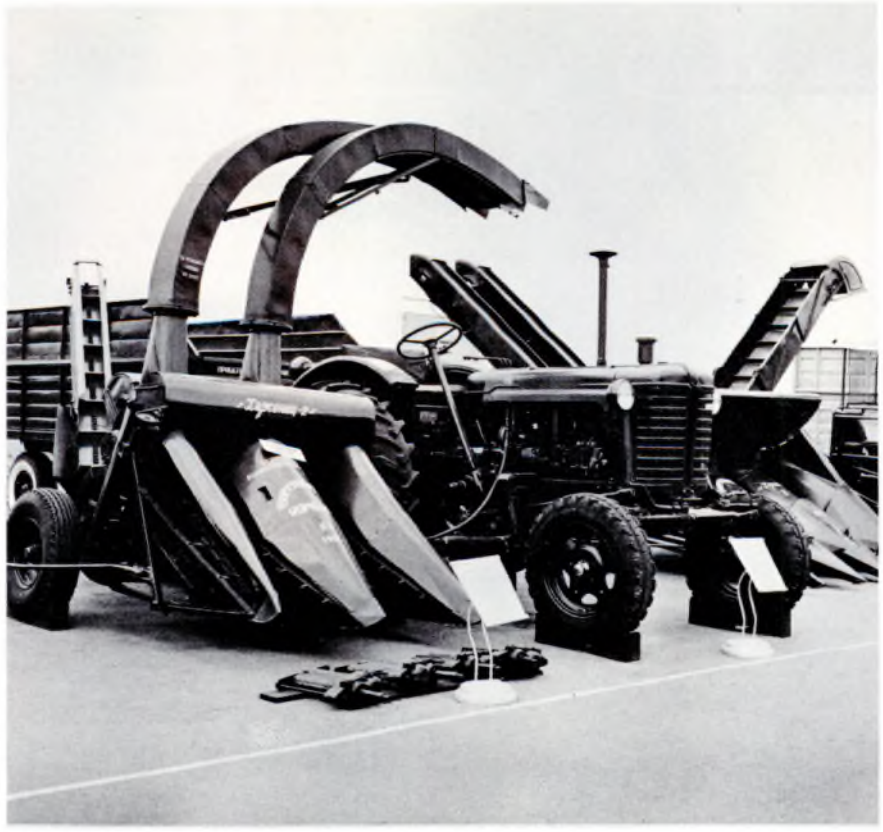
Annular metal supports used in mining on display at the Ukraine's industrial exhibition.



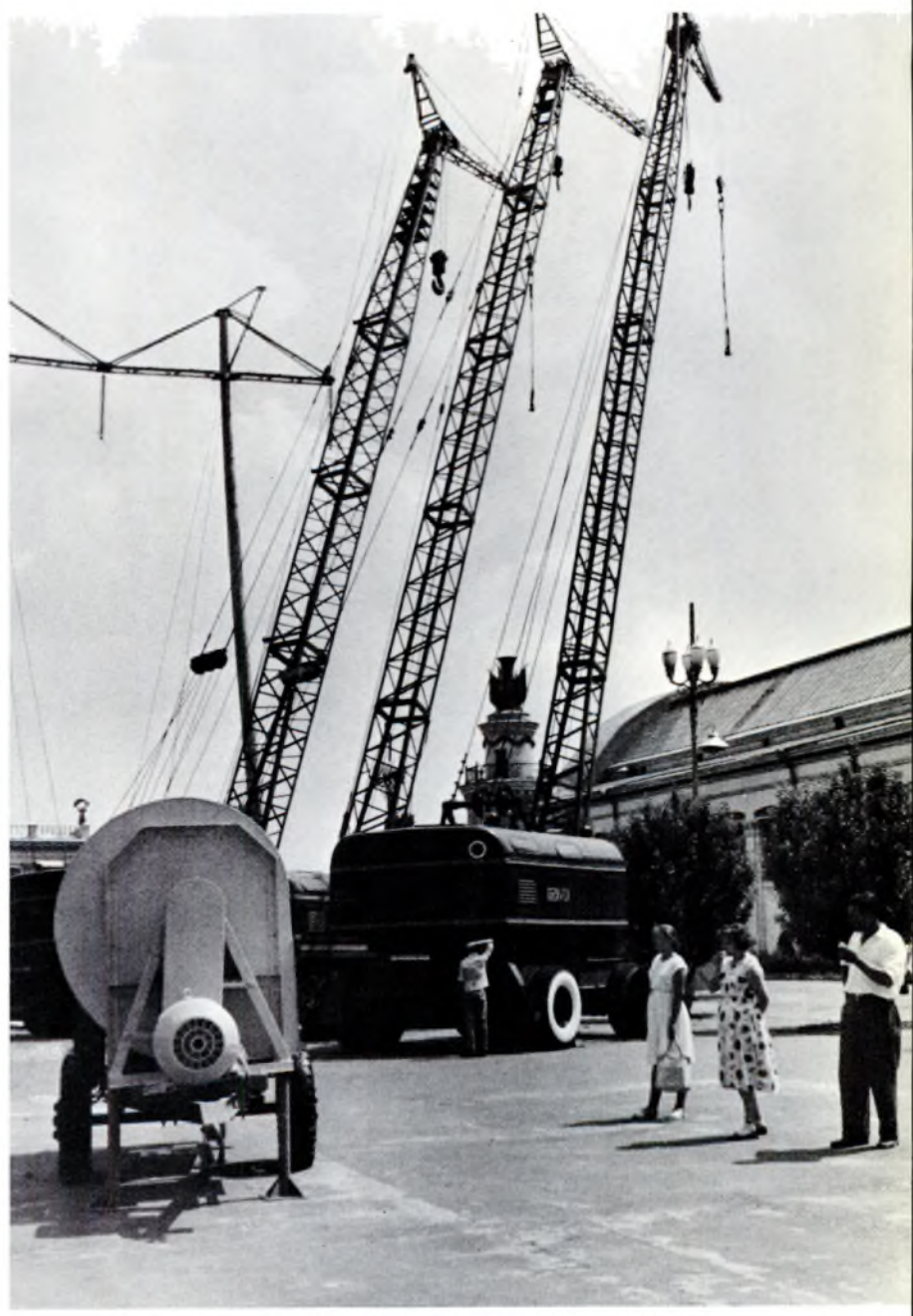
The program-controlled machine tool made in Kiev won a prize at the Brussels World's Fair.



Two of the products of the Chernigov Musical Instrument Factory, a bandura and piano.



A corn harvester manufactured by a plant in Kherson and a grain loader made in Odessa.



These self-propelled cranes, made in Odessa, are mounted on tracks or railway platforms.

This Ukrainian-designed AN-10 plane flew 15,000 miles (Moscow-Antarctic) in 42 hours.

Oh, These Thoughts of Mine *by Mikhail Bozhy. The title of this painting by the noted Ukrainian artist is from the opening line of a poem by Shevchenko.*

TARAS SHEVCHENKO

BY ANDREI MALYSHKO
UKRAINIAN POET
PAINTING BY MIKHAIL BOZHY

IT IS NOT OFTEN that the work of a poet marks an epoch in his country's history. If ever a country had such a poet, the Ukraine does in Taras Shevchenko. The hearts of all his people beat in his. The eyes of the humbled, the despised and the beaten stared out at the world through his own. The dreams and aspirations of his countrymen, smoldering in his breast, flared up with an explosive energy to shake the very foundations of czarism.

The life of Shevchenko was an epic poem—its theme, the eternal struggle of good and evil; its protagonist, fettered humanity weeping in helpess rage like a captive in a Turkish dungeon.

What he was, the Ukraine made him. She fashioned him into her sword and shield, the defender of her people, the symbol of her greatness brought low, the singer of her melancholy songs.

Taras Shevchenko died a hundred years ago, but his name still lives and his poetry still cries out its revolt.

His was a tragic life, with few parallels in literary history,

He was born a serf in 1814 and spent the first 24 years of his life in bondage. What pen can describe the suffering and humiliation of the young Shevchenko, or the compelling genius that inspired the verse he wrote in those very troubled years?

The Kobzar—the name his countrymen gave the poet—wrote his ballad "The Bewitched," with its poignant refrain, "Weep and moan, my Dnieper wide," in 1837. It is a familiar and much sung ballad still.

Shevchenko's long-dreamed-of freedom came the following year, when he was redeemed from his master by the poet Vasili Zhukovsky and the painter Karl Bryullov. (Shevchenko himself was a gifted painter.) But he was not destined to enjoy his freedom long. In 1847 he was exiled to the remote Asian steppes, a scorched wilderness where he spent ten incredibly hard years. The czar had given personal orders that he not be permitted to write or to draw. But in spite of incessant hounding he composed his moving lyrics, writing them in little notebooks he sewed together and hid in his boots.

Mother rocked her tots to sleep
Near her cottage—and dozed off,
And the stillness was complete
Save for the maidens singing soft
And a songster trilling sweet.

It is hard to believe that these simple, moving lines were written by a man in exile. It is for his moral strength, his inner sense of freedom the czar could not imprison, his head held high in spite of persecution that Shevchenko is so beloved today.

The Kobzar's verses do not only sing of birds and the rustle of the Dnieper's waters, they resound with the clash of avenging swords and the battle cries of Prometheus destroying tyranny. For his incendiary verses Shevchenko was lauded by Russian democrats and banished from St. Petersburg by czarist officialdom.

In 1841 he wrote his famous "Gaidamaki," dedicated to the struggle of the eighteenth century Ukrainians against the Polish gentry. These passionate lines wept for freedom lost, but a sensitive ear could hear something else too—the call to struggle for justice and against oppression. He was more outspoken four years later in his poem "Dig My Grave."

. . . arise and break
Your chains this very hour.
Let your foe's foul blood
Besprinkle freedom's flower!

Taras Shevchenko did not write poetry for poetry's sake. His was no art for art's sake. His verse is a measure of his love for his people, his sorrow for their suffering, his wrath against their oppressors.

If there is one thing I cannot bear
'Tis to see my dear Ukraine
Lulled to sleep by treacherous wiles
And then poisoned . . .

he wrote in captivity.

His poem "The Caucasus" (1845) portrays the whole of czarist Russia as a prison of nations where:

From Moldavian to Finn
They are silent in all tongues!

And thinking these bitter thoughts of nations enchained, he wrote of the titan Prometheus, who would again some day seize the sacred fire from heaven and light the people's way to freedom.

There is a deep-rooted folk quality in Shevchenko's poems—one of the reasons, among many, for their everlasting popularity. They ring with the sonorous voices of Ukrainian peasant girls, are bright with rich folk images and rhythms.

Although Shevchenko was a Ukrainian, he did a considerable amount of writing in Russian—his prose *Diary* and the poems "The Blind Woman" and "Trizna," for instance. The *Kobzar*, a collection of his Ukrainian and Russian poems, stands as symbol of two fraternal cultures united.

The poet reaches beyond his own nation, crosses the frontiers to other oppressed peoples. In "The Neophytes," written in his final creative period, 1857-1861, he speaks of ancient Rome. This poem, his longest, is a transparent allegory that fooled no one. His Rome was obviously the Russia of his time. Beneath the mask of the Emperor Nero and the Roman patricians one could easily discern the features of Nikolai I and the landowners, and in the persons of the Neophytes the Russian revolutionary Decembrists Ryleyev and Pestel.

It was clear, too, that Shevchenko was mourning not only the tragic lot of his own people, that it was not only the Ukrainians whom the Neophytes called to battle, but all the enslaved and oppressed nations. This insight into the minds and hearts of all the peoples of Russia gives his works the quality which marks great writing.

In your family so great,
In your family so free
Please remember my sad fate!
Don't forget to mention me!

was the behest of the Kobzar.

And remember him we shall. His verses are published in hundreds of thousands of copies in the languages of all the peoples of the Soviet Union so that future generations may continue to cherish the memory of the great revolutionary poet. ★

TRIBUTES TO A POET

BY VALENTIN RECHMEDIN

IF THE POPULARITY of a poet can be judged by statues and place names—not too bad a criterion after readers—then Taras Shevchenko is very popular indeed. Few poets anywhere else in the world are held in such high esteem by their countrymen.

There are 140 memorials to Shevchenko in the Ukraine. A magnificent monument in Kharkov is a sculptured history of the Ukraine the poet fought to free. Represented in bronze and marble are a serf being flogged, an enslaved man from Zaporozhye breaking his chains, a peasant revolting, a mutinous sailor, a Ukrainian worker of today. And towering over them, like a banner, is the figure of the indomitable rebel Taras Shevchenko.

There is a heroic monument to the poet in Kanev at the foot of Taras Hill and one at the entrance to Taras Shevchenko University in the capital. There are statues in Konotop, Stanislav, Sumy, Vinniki, Odessa, Slavyansk—few towns of any size in the Ukraine where you do not find a bronze, marble or granite memorial to the well-loved poet.

More than 160 institutes, libraries and theaters, 15 industrial plants and 340 collective farms are called Shevchenko. There are 190 towns and villages named after him—a Shevchenko village not far from the town of Cherkassy, one near the town of Sumy, others in Kherson Region and near legendary Bakhchisarai in the Crimea. There is a town called Korsun-Shevchenkovsky, and there are Shevchenko districts in Kiev and Lvov, and many, many more.

Data which is far from complete indicate that more than 775 streets and boulevards in the Ukraine and elsewhere in the Soviet Union are named for the poet. Kiev has a lovely Shevchenko Boulevard and Moscow, Leningrad, Gorky and Alma-Ata have Shevchenko streets.

Far-distant Orsk in the southern Urals, where he once lived in exile, has a monument to the poet at one end of the town, and at the other—a teachers training college, a school and a library named in his honor.

All the houses associated with the poet's life are preserved as memorials. The palace in the village of Budyshchy, which once belonged to Baron Engelhardt and where Taras Shevchenko was a servant as a boy, is now a state museum, visited, as are many of his memorials, by thousands of his countrymen in token of love and respect for their national bard. ★

Pavlo Tychina

Platon Maiboroda

Oles Gonchar

TARAS SHEVCHENKO PRIZES

BY VSEVOLOD VEDIN

The Ukrainian Republic recently instituted a Shevchenko Award—a prize and gold medal depicting the revolutionary poet of the Ukraine. Below, Vsevolod Vedin, Novosti Press Agency correspondent, reports a conversation with Alexander Korneichuk, prize committee chairman, on the winners and the celebration of Taras Shevchenko Day in the Ukraine. Korneichuk is a leading Soviet playwright and a Lenin Peace Prize winner.

LAST YEAR was the hundredth anniversary of the death of Taras Shevchenko, the Ukraine's great revolutionary poet and painter. The occasion was commemorated in Canada, the United States, Poland, Rumania, Hungary and Argentina, and, by the people of the Ukraine.

The Ukrainian Academy of Sciences held its Tenth Shevchenko Conference, with literary critics and translators invited from Czechoslovakia, Hungary, the German Democratic Republic, Canada, Italy, Great Britain and Greece.

Special commemorative sessions of the USSR Academy of Sciences, the Academy of Fine Arts and learned societies in Alma-Ata and Orsk were held in tribute. Streets in Moscow and Leningrad were named for the Ukraine's most celebrated nineteenth century poet.

The works of Shevchenko have been translated into the many languages spoken in the different republics of the Soviet Union and into most foreign tongues. During the anniversary year 46 books of his poems and several biographical and critical studies of the Kobzar (the Ukrainian title for folk bards) were issued. His paintings and black-and-white drawings were also reproduced in many copies.

One of the highlights of the commemoration was at Kanev, where Shevchenko is buried. Nikita Khrushchev visited the grave, placed a wreath at the foot of the monument to the poet and planted an oak on Taras Mountain.

Two years from now we shall be having a happier memorial for our poet; 1964 will be the 150th anniversary of his birth.

The first three Shevchenko Prizes were awarded to a poet, a novelist and a song writer.

Pavlo Tychina is a talented and very popular poet. His content is philosophical and his style polished. His verse has the impassioned tone of the best of our contemporary writings. But the timeliness of his themes does not detract from the lyricism of his poetry. And there, I believe, lies his special talent. The Shevchenko Prize was awarded to Tychina for his *Selected Works* in three volumes, a compilation of the best of a half-century of writing.

Oles Gonchar, novelist and short story writer, is known far beyond the borders of his native Ukraine. All his novels, from *Banner Bearers*, his first, to *Man and Guns*, his last, have been published abroad. *Man and Guns*, for which he was awarded the prize, is a stirring saga of our republic's younger generation and its heroic part in the war against fascism. The vigorous romanticism of Gonchar's style gives sweep and power to his novels.

Platon Maiboroda is the most popular song writer in the Ukraine. Many of his songs, like "The Collective Farm Waltz," "The Chestnuts Bloom Again," "The Song of the Hand-embroidered Towel," and "The School Mistress," are national radio and TV favorites. ★

After a year of preparatory study, they go on to professional school. Exchanging addresses.

Congolese student Albertina Mukulu is crying about the "4"—not the top "5"—she received in a geography exam.

FROM FORTY-TWO COUNTRIES

BY NIKOLAI VARVARTSEV
PHOTOS BY LEONID BERGOLTSEV

KIEV PEOPLE say, "There probably weren't nearly so many languages spoken by the builders of the tower of Babel as one hears on our streets nowadays."

The reason? There are students from 42 countries besides the Soviet Union in the 12 schools of higher education in the city.

Many of the foreign students traveled long distances and crossed mountains, deserts and oceans to come to this tree-lined city where they are learning nuclear physics, radioelectronics, semiconductor physics, the chemistry and physics of superpolymers, the physics of metals, biochemistry, microbiology, aerodynamics, geophysics and a dozen other specialties.

Kiev University, a time-worn brick-red building with columns, shaded by a row of poplars, has a large contingent of these young men and women from abroad. Founded in 1834, it is the oldest school of higher education in the country.

Professor Jean, rector of Brussels University, said on a visit to the university: "I am greatly impressed by the volume of creative work done in your laboratories. The level of scientific thinking is very high."

The influx of so many foreign students compelled Kiev University to open a special preparatory division. It offers Russian, mathematics, physics, chemistry, literature and other courses designed to give students facility in the language so that they can understand lectures in their specialty.

Hashim al-Hamli and Mohammed Hadri from Yemen have completed their preliminary studies and are now taking anatomy at the medical institute. Both young men want to be surgeons.

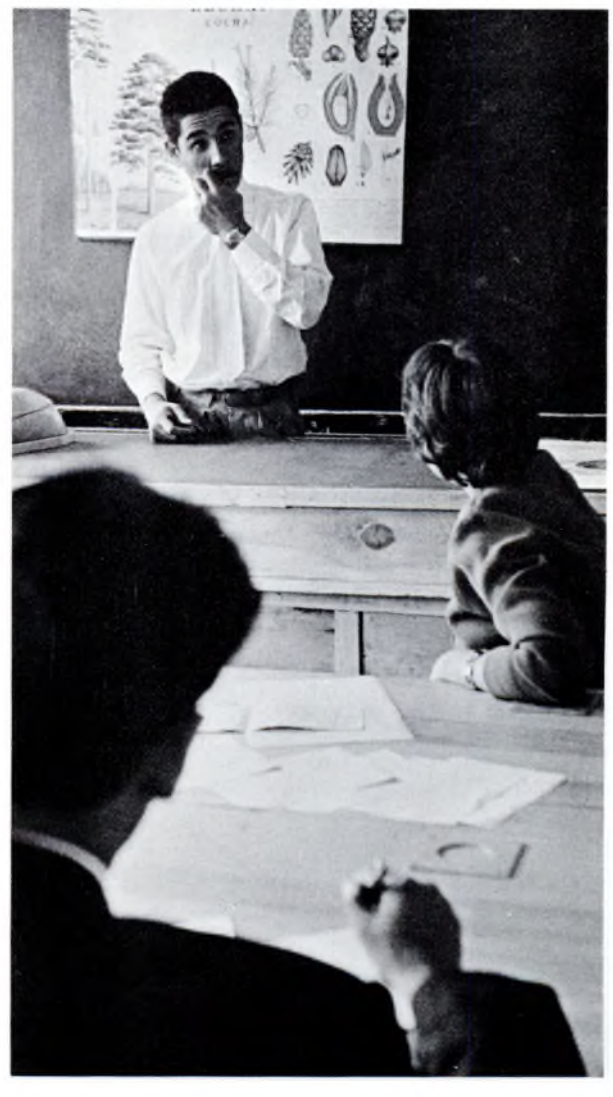
Their friend Haleb Shamsan intends to be an eye specialist. He will be moving to the Odessa Medical Institute where the world-famous Alexander Filatov, who gave the gift of sight back to hundreds of blind people, worked.

Jacqueline Lebrenne, a young French girl, has completed all her course requirements in the university's philology faculty and is doing manuscript research at the city's central library.

Seidzi Fukuoka, the son of an architect on the island of Hokkaido, is a talented Japanese philologist. He began to study Ukrainian at home and perfected his knowledge of the language at the university.

These students of many nations think of Kiev with its population of a million as their second home, so much so that they spent a Sunday beautifying the city. They planted poplars along one of the new streets. Each one of the trees, fairly good-sized by now, has a small sign inscribed: "Planted by students from the UAR" . . . or Afghanistan . . . or Nigeria . . . or Senegal . . . or Cameroon . . . or Indonesia . . . or one of the three dozen other countries. ★

Tolib Vasik al Kureishi of Iraq takes a biology oral. Preparatory study includes science, math and Russian.



THE UKRAINE'S ECONOMIC TIES

BY ANTON KOCHUBEY

VICE-CHAIRMAN, STATE PLANNING COMMISSION, UKRAINIAN REPUBLIC

IN ECONOMIC PRECEDENCE, the Ukraine follows the Russian Federation in the multinational family of Soviet republics. This fact suggests the rich variety of our economic ties. Our economy is not confined within narrow national limits but develops as an integral part of the economic complex of the whole of the Soviet Union. This economic unity is based on the ideal and aim common to all the people of our country—to build a communist society of abundance.

The Ukraine's economic ties are developing in conditions of close cooperation and fraternal assistance of all the Soviet nations and nationalities, their ever closer rapprochement in all spheres of activity. This relationship rules out national exclusiveness and competition.

We pool our efforts in exploiting the country's natural resources and allocating production on the most rational geographical basis. We strive for better cooperation and division of labor, more effectively coordinating and integrating the respective contributions of the union republics in their own interests and the interests of the country as a whole.

Like every other republic, the Ukraine plans for the maximum development of its own economic potentials. But this by no means implies a goal of economic self-sufficiency. Quite the contrary, the economic plans of the various union republics merge into a single plan for the country as a whole. The current seven-year plan (1959-65) and the longer-range plan of communist construction for the next two decades (1961-1980) provide for both the comprehensive development of the economy of each republic and its specialization, so that the present reciprocal exchanges in all areas of production and consumption can continue to expand.

Buttressed by this combined strength, the Ukrainian people have made unexampled progress in all branches of the economy. The Ukraine today has a highly developed and versatile industry and large-scale agriculture. Our republic's contribution to the country's aggregate production is particularly large in the following commodities (1961 figures):

	Per cent
Pig iron	52
Steel	40
Rolled metal goods	42
Iron ore	56
Coal	34
Coke	52
Gas	34
Electric power	19
Mineral fertilizer	28
Metallurgical equipment	41
Trunk-line diesel locomotives	91
Tractors	36
Grain	27
Meat	22
Butter	27
Vegetable oil	30
Sugar	61

ABUNDANT and diversified natural resources, fertile soil, mild climate, a favorable geographic position and a widespread transport network have always been conducive to the Ukraine's economic development. But prior to the Socialist Revolution of 1917 progress was only limited, the Ukraine reflecting the backwardness of Russia in general.

Although the Ukraine was one of the most developed industrial regions of prerevolutionary Russia, her economic position at home and abroad was determined chiefly by her exports of grain, sugar and other farm produce. Industrially, she was a large supplier of iron and manganese ore, metal, coal, salt and various other raw materials and semifinished articles.

In the Soviet years the industrial pattern changed markedly. Total industrial production grew 30 fold, and the output of engineering goods 150 fold. The republic now turns out approximately as many metalworking machine tools a day as old Ukraine did in all of 1913. To keep in step with modern development, we add new lines constantly while continuing to develop our traditional industries.

The Ukraine has traveled the long road from economic backwardness to a foremost place among the leading industrial countries of Europe. In a number of key items we have already left many of these countries behind. For instance, in output of engineering goods the Ukraine is well ahead of France and Italy, and in per capita production of pig iron and steel she has outpaced Britain, France and Italy.

In the next 20 years we plan to multiply industrial production approximately six times by expanding and modernizing present capacities and building new ones. The scale of industrial construction planned may be judged from the fact that in the past three years 500 new enterprises and other big industrial units have begun operation.

We can, with reason, call all of our country's more or less important construction developments people's friendship projects because they help

to promote the interests not only of the respective republic but the country in general, and because each republic has the whole country's support in its construction efforts.

The Ukraine's long-range plans envisage, among other things, the completion of a chain of hydroelectric projects on the Dnieper. The Kremenchug station, one of the links, was commissioned two years ago. It was built by workers of forty other nationalities of our country, working side by side with Ukrainians. The equipment was supplied by 820 enterprises from 12 union and autonomous republics.

Thus far the Kremenchug station generates power only for the Ukraine, but in the coming years all Ukrainian power stations, including the Dnieper cascade, will be tied into a single power system now being set up in the European part of the USSR.

Since the many different zones of our country vary widely in natural conditions and economic potentialities, it is economically feasible that there be specialization in the production of definite types of goods. With socialistic planning we avoid the consequences of anarchic and competitive production and thus make it possible for every republic to use its own resources to maximum advantage. Economic ties between individual republics are likewise developing according to plan.

An endless stream of raw materials, fuel, equipment, foodstuffs, industrial finished and semifinished goods flows to every part of the large and very complex Soviet organism. The Ukraine accounts for about 25 per cent of the total volume of the country's freight shipments. It is second only to the Russian Federation.

The pattern of our exports to other republics is set by the fact that we are one of the country's leading producers of engineering equipment of all kinds. The Ukraine is a major supplier of trunk-line diesel locomotives and carriages, tractors, several types of farm machines, electrical engineering equipment, special metalworking lathes, mining machines, and metallurgical, chemical, light and food industry equipment. Our passenger planes, seagoing vessels, busses, small cars, motorcycles, bicycles, refrigerators, washing machines, TV and radio sets, cameras and sundry other consumer goods are famous throughout the country.

Although new coal mining centers have been developed elsewhere in the country, the Ukraine is still a major supplier of coal for use by the metallurgical industry and other purposes. But Ukrainian coal is no longer shipped beyond the Urals. The European districts of the Russian Federation consume 80 per cent of our aggregate coal exports, with the remaining 20 per cent distributed among Byelorussia and the Baltic and Transcaucasian republics.

Much the same picture obtains in our metallurgical exports, with the European part of the Russian Federation taking 75 per cent of our metal. We supply the Asian part of the country mostly with various types of rolled stock. Here again, with the eastern regions developing their own metallurgy centers, our deliveries are being increasingly diminished.

In prerevolutionary times grain constituted more than 80 per cent of the Ukraine's exports. The ratio has shrunk to about two per cent (in weight). The difference is due not only to the vastly expanded range of our present-day exports and the increased grain production of other republics. Vast new wheat areas have been opened up in the eastern part of the Russian Federation and Kazakhstan by the virgin-land development program of the past few years. Principal consumers of Ukrainian grain today are the central and northwestern regions of the Russian Federation, Byelorussia and the Baltic republics.

The Ukraine's imports from other parts of the country are as large and diversified as her exports. We naturally import the goods we do not make at all or that we produce in insufficient quantities—for the most part, the commodities in which other republics specialize.

Our imports from the Russian Federation come to 85.3 per cent of the total. We import 5.2 per cent from Kazakhstan, 2.4 per cent from Georgia, 2.3 per cent from Byelorussia, and 2.1 per cent from Moldavia. More than 50 per cent of the weight total of our imports are in timber and oil products. Varied manufactured goods, however, constitute a more important part of our import schedule, even though their weight total is relatively smaller.

The central part of the Russian Federation is very important in our trade picture. Though it holds only fifth place in the aggregate tonnage of our total freight shipments, it is our leading supplier in terms of range of products and their value. That should hardly be surprising since the region includes Moscow, Gorky, Yaroslavl, Ivanovo and other large centers with extremely diversified industrial patterns. From these centers we get many of the items we do not produce ourselves, notably various machine tools and other industrial equipment, trucks, passenger cars, tires, precision instruments, woolen, cotton and linen fabrics, articles for household and cultural use.

From Kazakhstan we get polymetallic ores and nonferrous metals—very important to our economy; from the Transcaucasian republics—crude oil and oil products, special-type tubing, electric locomotives, citrus fruits and tea; from Byelorussia—tractors, heavy trucks, radio engineering equipment, farm produce, lumber and paper; from Moldavia—mostly farm produce; and from the Baltic republics—railroad cars, street cars, radio engineering equipment, fresh and canned fish.

The Ukraine plays an important part in the Soviet Union's economic ties with other countries by reason of the fact that her industrial products are shippped abroad and so many of the items produced by other republics pass through our seaports and inland waterways, and are carried by our railroads.

Last year, our part in the Soviet Union's foreign trade program involved the export of industrial equipment, manufactured goods and farm products to 61 countries and the import of a wide range of commodities from 37 countries. We also render technical assistance to various nations. In 1961 we delivered equipment to 259 of the 385 industrial enterprises and other projects built abroad with Soviet assistance, many of them projects in Afro-Asian and Latin American countries only recently independent.

The Bhilai steel mill in India, completed toward the end of 1960, is a graphic example of the Ukraine's participation in the Soviet Union's foreign aid program. The republic's factories provided more than 60,000 metric tons of structural parts and elements, nearly 10,0000 metric tons of metallurgical equipment, 70,000 metric tons of refractory materials, 32 diesel locomotives and diverse hoisting, power, chemical and other types of equipment. More than 700 Ukrainian specialists in metallurgy and other fields worked on the Bhilai project.

The Friendship Pipeline, which will link the oil fields of the Volga region and the Ukraine with Czechoslovakia, Hungary, Poland and the German Democratic Republic, is a landmark in the development of Soviet ties with other countries. The Ukrainian and Czechoslovak sectors of the pipeline were linked at the end of last year.

The integration of the power grids of the Soviet Union, Bulgaria, Rumania, Hungary, Czechoslovakia, Poland and the German Democratic Republic into a single power system will be another example of economic cooperation among the socialist countries. One of the links in this single power system is the high-voltage transmission line completed last summer that stretches from the Dobrotvor power station in the Ukraine all the way to Hungary.

The 20-year program of communist construction in the Soviet Union opens new prospects for the all-round development of our republic's economic ties. The exchange between the different republics will be determined, as it has been, by their various specializations, which is the most effective pattern of economic cooperation and division of labor for widely differing parts of the country. At the same time, each republic will continue to develop its entire economic complex, that is to say, make the widest use of its economic potentialities.

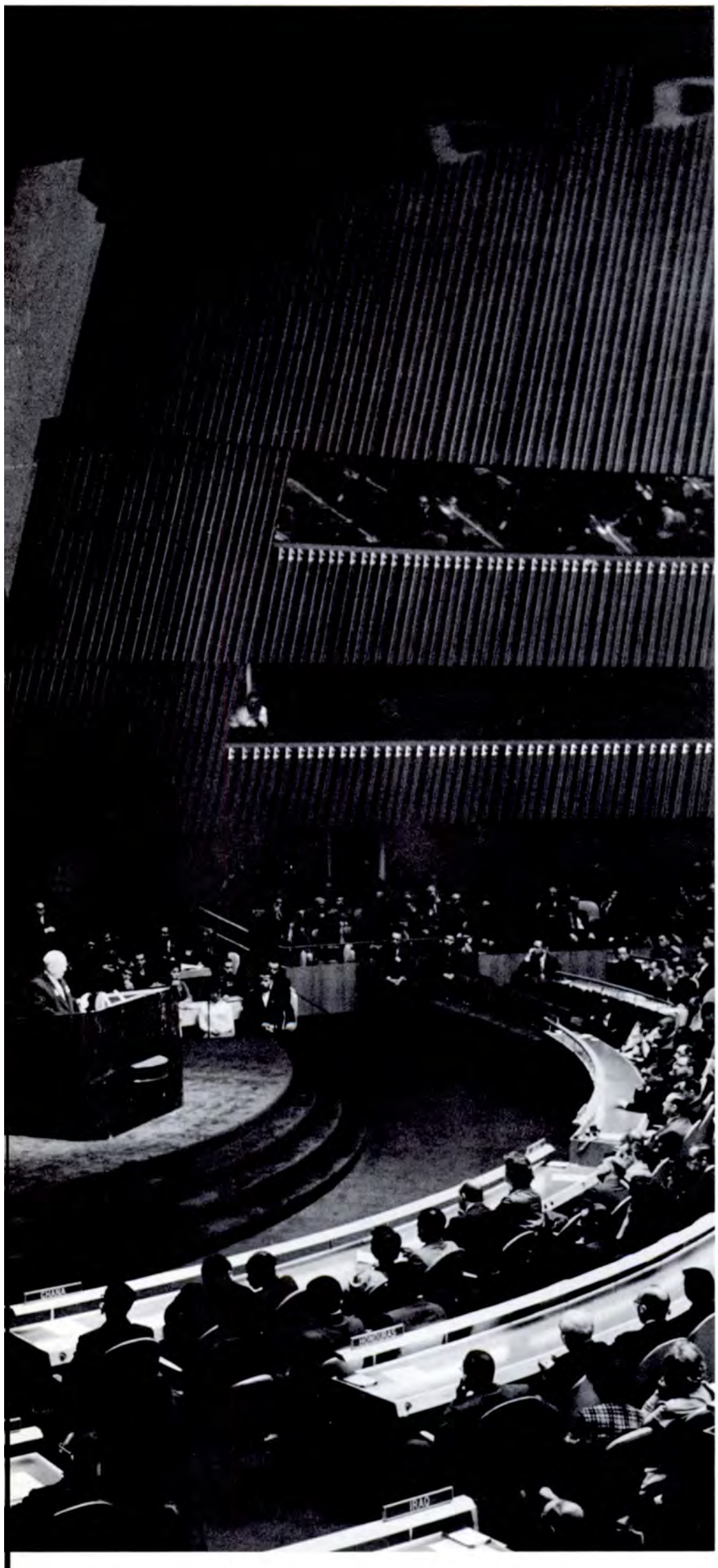
This will enable the major economic areas to improve the production and consumption balance in those goods that are difficult to transport, and build up the industries that produce construction materials and consumer goods. A more rational distribution of productive forces will also improve and expand economic contacts between the republics.

The radical changes scheduled for the Ukrainian oil industry are characteristic of other industries as well. Our republic now imports large quantities of crude oil and oil products from many parts of the country while its own extensive oil deposits remain unutilized. We plan to increase oil output from the 2.8 million metric tons of 1961 to 6.7 million in 1965 and bring the total to 45 million by 1980. In the near future pipelines will be laid from the Volga oil fields to the Ukraine, and oil as well as oil products now transported chiefly by rail will be carried much more cheaply by pipeline.

A considerable expansion of oil refining in the Ukraine is forecast also. Work is already under way to enlarge the Kherson refinery and build still another—one of the largest in the country—at Kremenchug. An important element in all this expansion is the Friendship Pipeline

Similar developments in other industries will contribute to a change in our present economic pattern. We plan to produce new items for the Ukraine such as trucks, medium-sized cars, radio-relay equipment and computing machines. We plan extensive development of various branches of the chemical industry. In the field of consumer goods, we foresee a great increase in the textile industry's output. However, the union republics will continue their extensive exchange of consumer goods so as to ensure both a reciprocal complement and broader variety of goods.

It is not a simple matter to give a more complete picture of the Ukraine's economic contacts with the other union republics. Also, it is difficult to describe the changes we have in mind for the years to come. Life does not stand still. All branches of the economy of the Soviet Union are making steady progress, and together with it economic ties between the union republics are strengthening. These ties are being developed on the basis of the principle of the combination of interests of each individual republic and those of the country as a whole for the sake of the general prosperity. ★



BY VALERIAN ZORIN

USSR DEPUTY MINISTER OF FOREIGN AFFAIRS
PERMANENT REPRESENTATIVE OF THE USSR IN THE UN

PHOTO BY ALEXANDER USTINOV

THE SOVIET UNION AND THE UNITED NATIONS

THE UNITED NATIONS was founded in the years of the Second World War as an organ for the international cooperation of nations and as a center for the coordination of their actions for the peace and security of all peoples. The basis for drafting its Charter was established by the military cooperation of the Soviet Union, the United States, Britain, France and China, which dealt a crushing defeat to Hitlerite fascism and Japanese militarism.

The primary task set by the powers of the anti-Hitler coalition, the founding members of the UN, in formulating the provisions of the Charter was "to save succeeding generations from the scourge of war." For this great goal they pledged "to practice tolerance and live together in peace with one another as good neighbors." The Charter declared that the purpose of the United Nations was: "To maintain international peace and security . . . ; To develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples . . . ; To achieve international cooperation in solving international problems of an economic, social, cultural or humanitarian nature."

The Charter laid down the basic principles of relations between states and the methods of solving international disputes, as well as the functions and powers of the main organs of the United Nations. The Charter makes it a duty of all members to "refrain in their international relations from the threat or use of force," and demands that international disputes be settled by peaceful means. It stresses that the members of the United Nations have equal rights and that the principle of the unanimity of the Great Powers, which are the permanent members of the Security Council, ensures the unity of action of the entire organization in guaranteeing the peace and security of the peoples.

Thus, the UN Charter actually contained the basic international-law norms of peaceful coexistence of states with different social systems and of their cooperation on an equal footing. It reflected the actual state of world affairs after the war and was determined first and foremost by the existence of the two social systems, the socialist and the capitalist.

The Soviet Union, as one of the founders of the UN, has, in its policy and all its activities, consistently abided by the standards of international relations elaborated with its active participation, working to make this international organ an effective instrument for equal international cooperation and the consolidation of world peace.

The Postwar World

In the period since the establishment of the UN the political map of the world has changed substantially. A large number of new independent states which have emerged from the ruins of the colonial empires have appeared in the political arena. These countries are keeping to positions of strict neutrality and are playing an ever greater part in world politics.

The Soviet Union, proceeding from the peaceful aims of its foreign policy, vigorously supports these countries and champions their admission into the United Nations.

It should be noted that the politico-geographical changes in the postwar world are reflected in the composition of the UN. In recent years the number of member-states of the United Nations has grown from 51 to 104, with 40 of the 53 new members being Asian and African countries that have recently freed themselves of colonial dependence, and five, socialist states.

It is apparent that this change in the composition of the UN reflects the new correlation of world forces. Today three groups of states exist in fact and are represented in the United Nations: capitalist states aligned in the Western military blocs, socialist countries that are signatories to the Warsaw Treaty, and countries, chiefly Asian and African, which refrain from any military alignments.

Valerian Alexandrovich Zorin (born 1902) holds the rank of Ambassador Extraordinary and Plenipotentiary. He has been in the diplomatic service since 1941.

In 1941-42 he was Assistant General Secretary of the People's Commissariat of Foreign Affairs of the USSR; 1942-43, Assistant Deputy People's Commissar of Foreign Affairs of the USSR; 1943-45, chief of the Fourth European Department of the People's Commissariat of Foreign Affairs of the USSR; 1945-47, Ambassador of the USSR to the Czechoslovak Republic; 1947-55, Deputy Minister of Foreign Affairs of the USSR and simultaneously, in 1952-53, permanent representative of the USSR on the UN Security Council; 1955-56, Ambassador of the USSR to the Federal Republic of Germany. Since 1956 he has been Deputy Minister of Foreign Affairs of the USSR.

Zorin has participated in many important international conferences as a member or head of the USSR delegation.

At the Twentieth Congress of the Communist Party of the Soviet Union he was elected an alternate member of the CPSU Central Committee. Currently he is the Soviet Union's permanent representative in the United Nations.

The positions of these groups of states and the relationship of their votes determine the general trend of UN activities.

It is generally known that decisions on important political matters in the General Assembly and other organs of the United Nations require a two-thirds majority of those voting. While in the first years of the UN the member-states of the Western military blocs could always count on a majority vote on important questions, today, in view of the new correlation of forces and votes, they have to reckon with this change. For this reason, the General Assembly has in recent years made many important political decisions that reflect the interests not of separate small groups of states but of the overwhelming majority, something which was often impossible previously.

Justice demands that we point out, however, that even now the general direction of the activities of the United Nations does not by far always reflect the genuine interests of all groups of countries represented. At the same time it is gratifying to note that it has been possible to pass unanimous decisions on a number of highly important problems pertaining to the relaxation of international tension, a fact which testifies to the growth in influence of the forces of peace in the United Nations.

The Main Problems

Disarmament is the paramount problem the UN has been faced with since its earliest days. Ever since 1946, on the Soviet Union's initiative, disarmament has been repeatedly included on the agenda of sessions of the General Assembly and various commissions, committees and subcommittees of the United Nations. Moreover, from the very beginning the Soviet Union has advanced proposals for the prohibition of nuclear weapons, discontinuation of their manufacture, and destruction of their stocks.

When, after numerous discussions in the course of which various proposals were made pertaining to partial disarmament measures, it became clear that the solution of the disarmament problem could hardly be achieved that way, the Soviet Union made a new proposal that guaranteed a fast and sweeping settlement. I have in mind the program of general and complete disarmament submitted by Chairman of the USSR Council of Ministers N. S. Khrushchev at the Fourteenth Session of the United Nations General Assembly in 1959. It foresees the complete liquidation of all means of warfare and of the entire military machinery of states in the course of four years. The program was received favorably throughout the world, while the idea of general and complete disarmament was unanimously approved by the General Assembly on November 20, 1959.

Indeed, the steadily growing arms race, the sky-rocketing military expenditures, the unending stockpiling of missile-nuclear weapons of colossal destructive power, the mounting threat of a catastrophic war—all this indicates that general and complete disarmament is the sole and fundamental way to secure lasting universal peace. "The problem of war and peace," underlines the CPSU Program adopted by the Twenty-second Party Congress, "has become a life-and-death matter for hundreds of millions of people."

War, under present-day conditions—and this is admitted by the majority of states and peoples , cannot and must not serve as a means of settling international disputes. Not war, but peaceful coexistence of socialist and capitalist states is an objective necessity of social development in our epoch.

That is why general and complete disarmament under strict international control is an imperative demand of the times, a task which must be carried out without delay.

The Soviet Union has persistently pursued a policy designed to expedite this task. As a result, in 1961, agreement was reached in the course of Soviet-American talks on the basic principles of general and complete disarmament, which later on were approved unanimously by the Sixteenth Session of the UN General Assembly. The same session, following a proposal of the Soviet Union and the United States, approved the establishment of an 18-nation disarmament committee which included, in addition to the ten member-states of the 10-nation committee that had functioned in 1960, eight nonaligned states representing the neutralist states of Asia, Africa, Latin America and Europe (India, Burma, the UAR, Nigeria, Ethiopia, Brazil, Mexico and Sweden).

In March 1962, as soon as the committe began its work, the Soviet Government submitted for consideration a draft treaty on general and complete disarmament under strict international control. This draft, and also the outline of basic provisions of a similar treaty submitted later on by the United States delegation, constituted the main subjects of discussion in the committee. The work of elaborating a treaty on general and complete disarmament is continuing.

Along with its efforts to solve this paramount problem, the Soviet Union has been constantly working for the solution of separate problems that would facilitate a relaxation of international tension, the consolidation of confidence among states and the achievement of general and complete disarmament.

Over a long period the Soviet Union, supported by other socialist states, insisted that nuclear weapons be banned and their use renounced. At its Sixteenth Session the UN General Assembly adopted, by 55 votes (the socialist countries and neutralist states of Asia and Africa) against 20 (mainly members of the Western military blocs), with 26 absentions, a resolution to prohibit the use of nuclear weapons for purposes of war. The same resolution instructed the UN Secretary General to make preparations for a conference to adopt a corresponding international convention.

For a long time now the United Nations has had the idea of setting up atom-free zones in various parts of the world. Today this idea is supported by an ever growing number of UN members. It is common knowledge that back in 1959 the government of the Polish People's Republic submitted to the General Assembly a concrete proposal for the establishment of a nonatomic zone in Central Europe to include Poland, Czechoslovakia, the German Democratic Republic and the Federal Republic of Germany. The governments of Bulgaria and Rumania repeatedly advanced proposals for a nonatomic zone in the Balkans and the Adriatic. The government of the People's Republic of China put forth the idea of an atom-free zone in the Far East and the Pacific. Ghana, Guinea and other African countries proposed that Africa be declared a nonatomic zone. The latter proposal was supported by many member-states of the UN, and the Sixteenth Session of the General Assembly adopted, by 55 votes, a special resolution to this effect. It is noteworthy that not a single country voted against this resolution.

The Soviet delegation to the 18-nation committee proposed that the committee make it a special point to discuss the setting up of atom-free zones in various parts of the world, while the representatives of Poland submitted a concrete proposal on this question for the consideration of the committee.

Last but not least, over a long period, and particularly during the past year, the Soviet Union has been making proposals that all nuclear weapons testing be terminated. The Soviet Union does so in the belief that this will be a major step toward ending the nuclear weapons race. When last April the eight neutralist members of the 18-nation committee submitted a compromise proposal on this question, the Soviet Government immediately declared its willingness to adopt the draft as the basis for talks on the conclusion of a test-ban agreement. However, no such agreement has thus far been reached.

Another most important problem which has faced the United Nations in recent years is the **abolition of colonialism.**

The disintegration of the old colonial empires, the liberation of the peoples of Asia, Africa and Latin America from colonial dependence, the establishment of new independent states on these continents and especially in Africa—all these are events of the past decade. They testify vividly to

historic changes in the development of the people's national-liberation movement. They have naturally had an enormous impact on international relations and on all the activities of the United Nations.

On the initiative of the Soviet Union, the Fifteenth Session of the UN General Assembly in 1960 discussed the question of the liquidation of colonialism. By an almost unanimous vote (with nine abstentions), it adopted the historic Declaration on Granting Independence to Colonial Countries and Peoples. This Declaration, which proclaimed the need for the earliest exercise by every people still under the colonial yoke of its inalienable right to self-determination and independence, and laid down important principles for the exercise of this right, is playing an outstanding part in the whole process of abolishing the infamous colonial regime.

In recent years the General Assembly, the Security Council and other UN organs have been confronted with a number of concrete questions relative to the liquidation of colonial rule. The most important was, of course, the struggle for the complete liberation of the peoples of the Congo, Angola, Algeria, Cuba, West Irian, British Guiana, Ruanda-Urundi, Southern Rhodesia. At the Sixteenth Session of the General Assembly the Soviet Union raised the question of implementing the Declaration on Granting Independence to Colonial Countries and Peoples, adopted at the previous session. It was found necessary to form a special committee of seventeen states to check on and supervise the fulfillment of this Declaration. This committee did a considerable amount of work over a year's time and reported its conclusions on the situation in Southern Rhodesia to the third part of the Sixteenth Session of the General Assembly (in June 1962). The General Assembly, by more than two-thirds majority, adopted an important decision condemning the racialist constitution imposed upon the people of Southern Rhodesia and demanded that it be annulled and that the native African population of that colony be granted real opportunities for realizing independence.

Regrettably, the question of the situation in the Republic of the Congo, which has repeatedly come up for discussion in the UN, has not yet been settled positively. In my opinion, this is explained by opposition on the part of those forces interested in dismembering the Congolese state and preserving their dominant positions there.

A pressing task which has faced the UN for many years is the **restoration of the legitimate rights of the People's Republic of China** in this international body. In recent years an increasingly larger number of UN members have come to realize the need for an earliest solution of this problem in the interest of justice and the enhancement of the prestige of the UN as a genuinely international organization. The question of restoring the lawful rights of the great 650-million-strong Chinese people in the UN must unquestionably be settled positively in the nearest future. The Soviet Union, all socialist states and all influential countries of Asia and Africa are waging an unremitting struggle for such a solution.

Also of cardinal importance in these times is the reorganization of the UN and its apparatus to conform with the changed state of world affairs and the growth of UN membership. The fact of a more than hundred per cent increase in the number of UN members and of the prevalence in the UN of Asian and African countries that have only recently freed themselves from colonial dependence imperatively demands that there be a revision of the composition of the main bodies of the UN and a reorganization of its administrative apparatus. Repeated attempts have been made over the past years to enlarge the Economic and Social Council and its functional commissions and also the Security Council, so as to ensure equal representation of the new states admitted to the UN in the recent period. The discussion has demonstrated that it is virtually impossible to solve this question positively without a radical reorganization of the UN and without the restoration of the legitimate rights of the People's Republic of China. However,it is quite possible now to revise the composition of the administrative apparatus of the UN and reorganize the UN Secretariat so as to make them conform to the changes that have taken place in the world and in the UN itself.

At the Fifteenth Session of the UN General Assembly the Soviet Union suggested that the Secretariat represent the three main groups of states, thereby ensuring their equal cooperation. This idea has not yet been realized, but there is no question that it is forcing its way and will triumph ultimately, for it expresses the vital interests of the peoples and states represented in the UN.

The Sixteenth Session of the General Assembly found it necessary, in connection with the election of the Acting Secretary General of the UN, to take measures for so organizing the work of the Secretariat that it would reflect the interests of all groups of member-states of the UN. That was why U Thant, who was elected Acting Secretary General of the UN, in his first statement to the General Assembly declared it his intention to appoint a limited number of his closest advisers from among the Secretary General's assistants and pledged to take counsel and cooperate with them on all important questions relating to his own activities.

At the beginning of 1962,U Thant appointed eight such advisers from among the representatives of socialist states (the USSR and Czechoslovakia), the capitalist countries of the West (the United States and France) and the countries of Asia, Africa and Latin America (India, the UAR, Nigeria and Brazil).

The organization of the work of this leading group of advisers, the readjustment of the apparatus of the Secretariat, and the addition to it of an appropriate number of representatives of the three main groups of states may prove important steps in transforming the UN Secretariat into a genuinely international apparatus having the equal cooperation of all UN members.

The Soviet Union has always attached great importance to the UN as an organization for strengthening peace, the security of all peoples and international cooperation on an equal basis.

It is precisely these great and responsible tasks that determine the entire policy of the Soviet Union. ★

THE UKRAINE

BY LUKA PALAMARCHUK
FOREIGN MINISTER, UKRAINIAN REPUBLIC

Luka Palamarchuk was born in 1906 of peasant parentage in Vinnitsa Region. From 1929 to 1937 he worked for the local press in the Vinnitsa and Kamenets-Podolsky regions, and from 1937 to 1943, for various newspapers with a republic-wide circulation. Between 1943 and 1952 he was editor in chief of Radyanska Ukraina, *a Kiev daily published in both Ukrainian and Russian.*

He has been in the diplomatic service since 1952, first as deputy foreign minister, and from 1954 to the present, as Foreign Minister of the Ukrainian Republic. He is a deputy to the Ukrainian Supreme Soviet, holds the rank of Ambassador Extraordinary and Plenipotentiary of the USSR, and has served his republic at many international conferences and all the UN General Assembly sessions during the past ten years.

THE UKRAINIAN Soviet Socialist Republic, like all the other republics that make up the USSR, is a sovereign state of workers and farmers having its own constitution, its own state emblem, its own flag that flies over every Ukrainian village and town, and its own anthem, with which Radio Kiev starts its daily broadcast.

Its sovereignty is guaranteed by Article 17 of the Constitution of the USSR, which grants every union republic the right to secede at will. That sovereignty is further guaranteed, strengthened and protected by the Ukraine's voluntary union with the Russian Federation, Byelorussia, Georgia, Armenia and the other republics, and by the fraternal support of all the peoples of the Soviet Union.

IN INTERNATIONAL AFFAIRS

In the past few decades the Ukraine was twice invaded by the German militarists, once in 1918 and then again in 1941-1942 when our republic was laid waste and its people enslaved. But with the help of the Russians and other peoples of the USSR, we drove out the invaders and regained our independence and sovereignty.

The republic has the right, as a sovereign state, to enter into direct relations with foreign states, conclude agreements with them, exchange diplomatic and consultative representatives, join international organizations and take part in their work.

One of the largest states in Europe, our republic plays an important part in international affairs. Its international activity takes various forms, but is always guided by the interests of the Ukrainian people, a people occupied with constructive labor and inspired by the most peaceful aims.

The United Nations is a major sphere of our international activity. With the other nations of the anti-Hitlerite coalition, the Ukraine contributed to the victory over fascism and was one of the founding members of the UN. The then American Secretary of State Edward Stettinius stressed the importance of the entry of the Ukraine and Byelorussia to the world organization. He paid high tribute to the heroism of their peoples for their resolute stand against the common enemy and their fortitude during the war years.

The Ukraine entered the family of the United Nations as a recognized partner and ally of the freedomloving nations that had smashed the aggressive Axis Powers. The Government of our republic was therefore justified in making the declaration to the 1945 San Francisco conference that the Ukraine was in a position to take a large part in preserving and maintaining world peace and security.

Ever since the UN was founded, the Ukraine has participated very actively in the work of its various agencies and that of other international organizations.

The Ukraine was one of the states participating in the 1946 Paris Peace Conference where peace treaties with Bulgaria, Italy, Rumania, Hungary and Finland were signed. A Danube state, it contributed to the work of the 1948 Danube Conference. It helped draft the 1949 Convention in Defense of War Victims, and participated in the conferences which considered how to protect cultural treasures in the event of armed conflict. It had a voice in the preparation and adoption of such documents as the Charter of the International Atomic Energy Agency, the conventions on diplomatic immunity, maritime law, etc. In all, the republic has ratified 54 international agreements.

The Ukraine follows a policy of peaceful coexistence and works for general and complete disarmament, as do all the countries of the socialist camp. In the UN we have given full support to the Soviet Union's proposals for peace. Our republic considers general and complete disarmament a realistic road to permanent world peace and the only way to eliminate war.

The Ukraine's UN representatives therefore do everything in their power to promote general disarmament. At the 1960 Regional Conference of the European Countries of UNESCO they proposed the resolution, which was adopted, that "the national committees of the UNESCO countries participate in the UN's efforts leading toward general and complete disarmament." The Ukrainian Republic also proposed the resolution, adopted the following year at the Sixteenth Conference of the European Economic Commission, that the commission participate in the study of the social and economic consequences of general and complete disarmament.

Time and time again our representatives have spoken out in the UN in defense of the freedom and independence of nations, against colonialism. Before the October 1917 Revolution the Ukrainians themselves drained the bitter cup of national oppression; it should come as no surprise when they extend a brotherly hand to all colonial and semicolonial peoples. In 1946, during what were trying days for the Indonesian people, the Ukraine, a nonpermanent member of the Security Council, demanded that the colonialists end their war against the Indonesians. We pride ourselves that our initiative at that time helped create a more favorable climate for the Indonesian people to win their national independence.

The Ukrainian Republic stands firmly and unreservedly behind the historic UN Declaration on the Granting of Independence to Colonial Countries and Peoples, and advocates the immediate implementation of all its provisions. It stands ready to fight against colonialism and its supporters, whether overt or otherwise.

The Ukraine actively champions social progress everywhere in the world. Its delegation to the Thirteenth Session of the General Assembly proposed that an International Health and Medical Research Year be observed. The proposal was approved unanimously. In 1961 the Assembly also approved the Ukrainian resolution on cooperation for eliminating illiteracy on a worldwide scale. Practical measures to implement this resolution have already been worked out. For fifteen uninterrupted years, the Ukraine has been a member of the UN Committee on the Rights of Man.

Our republic, with its highly productive industry and agriculture, naturally wants to see trade between countries expanded. Ours is a versatile economy. We outproduce most of the Western European countries, including France and Britain, in many types of industrial goods. In 1961 we exported mechanical equipment, manufactured goods and farm products to 61 countries. Our wares have been exhibited at scores of international exhibitions in recent years. We made an excellent showing at world fairs in Marseilles, France (1959-1960) and Zagreb, Yugoslavia (1961).

Our republic has been generous with its assistance both in quantity and quality to many countries which have recently become independent. Our skilled personnel have helped to build 259 industrial projects in Afghanistan, Burma, India, Yemen, the United Arab Republic, Cambodia and other countries. As a UN member the Ukraine also participates in financing technical aid to underdeveloped countries. Its annual contribution to the fund for an extended program of technical aid is 225,000 rubles; and to the special UN fund, 112,500 rubles.

Our republic's busy economic activity calls for favorable conditions for foreign trade and exchange. To that end we are presently sharing and will continue to share our experience with all who so desire. In 1961 the Ukraine submitted a resolution on the utilization of the present experience of economic planning for the benefit of the underdeveloped countries. In the Fifteenth and Sixteenth sessions of the General Assembly the Ukrainian delegates were active in drawing up recommendations on the expansion and unhindered development of world trade as the basis of equal economic cooperation.

As a member of the UN European Economic Commission the Ukraine participates in the work of its major technical committees and shares its scientific and technical experience with the other members. It is trying to get the commission to adopt proposals that would promote all-European trade without discrimination.

Our representatives are doing similarly constructive work in the International Labor Organization, UNESCO, the International Atomic Energy Agency and the Universal Postal Union. All in all, our republic's representatives work in 45 international agencies.

The Ukraine has cultural ties with many countries abroad. Our republic offers a hospitable welcome to representatives of the culture and arts of other lands. Many of our best performing artists have delighted foreign audiences with our music and dances.

The Ukrainian State Folk Dance Ensemble recently completed tours of the United States, Canada and other countries of the Western Hemisphere. Among the many visiting artists and ensembles that have played in the Ukrainian capital are the Philadelphia Orchestra, Van Cliburn, the Chilean Cuncumen Song and Dance Company, and the Guinean Dance Ensemble. Cultural exchanges between the Ukraine and other countries keep growing.

In the international arena our republic is active in a variety of ways, but the multifaceted activity has only the one purpose—to put into practice the Leninist foreign policy of peaceful coexistence, a policy of peace and friendly cooperation with all nations. ★

Cosmonaut Nikolayev: "This is Falcon calling Golden Eagle . . . Everything is all right with me . . . Feel fine . . . Slept well."

2,880,000 MILES

COMBINED MILEAGE OF THE TWO SOVIET COSMONAUTS II

EARTH-COSMOS TALK ON AUGUST 11

KHRUSHCHEV: I hear you, Comrade Nikolayev. I am very glad that you feel well. Do you hear me?

NIKOLAYEV: This is the commander of spaceship *Vostok III,* Soviet Cosmonaut Major Nikolayev, reporting. The flight is in its fifth hour. I feel fine. All the systems of the ship are working excellently.

KHRUSHCHEV: I am glad that you feel well. I am glad that all the equipment is operating faultlessly. I greet you and I am proud of

Cosmonaut Popovich: "This is Golden Eagle calling . . . I'm in very good spirits . . . I slept well . . . I'm feeling wonderful."

IN OUTER SPACE

GROUP FLIGHT EQUALS SIX ROUND TRIPS TO THE MOON

EARTH-COSMOS TALK ON AUGUST 12

KHRUSHCHEV: I greet you warmly, Pavel Romanovich, and congratulate you on your outstanding heroic exploit. The country is jubilant and is waiting for you on our Soviet soil to embrace you and rejoice in your success with you.

POPOVICH: I hear you well, Comrade Khrushchev. I feel perfectly fine. The flight is going successfully. I'll do my best to fulfill the assignment of the Party and the Government.

KHRUSHCHEV: I greet you once more, Comrade Popovich. I am happy that you are in good spirits, that the equipment is functioning well, that you sound so cheerful, that you have confidence in your spaceship.

EYEWITNESS REPORT OF HISTORIC EVENT

BY GEORGI OSTROUMOV AND
NIKOLAI DENISOV

TELEGRAM TO
NIKITA S. KHRUSHCHEV, CHAIRMAN
OF THE USSR COUNCIL OF MINISTERS

I send to you and to the Soviet people the heartiest congratulations of the people and government of the United States in the outstanding joint flights of Major Nikolayev and Lieutenant Colonel Popovich. This new accomplishment is an important forward step in the great human adventure of the peaceful exploration of space. America's astronauts join with me in sending our salute to Major Nikolayev and Lieutenant Colonel Popovich.

JOHN F. KENNEDY

WE WERE WITH A GROUP of Soviet newsmen at the cosmodrome before the take-off. There was no hustle and bustle—people walked about the streets calmly, the stores were doing business, cars darted to and fro, and window curtains fluttered free in the breeze. In the evening a film was shown at the hotel where the cosmonauts were staying.

The day before the take-off all the cosmonauts got up very early. Andrian Nikolayev seemed worried about something, he looked grave. But no, that wasn't so. He was ready for a talk and a laugh. It was his thick eyebrows, meeting over the eyes, that belied his feelings, made him look as though he were scowling. And perhaps his eyes also, screwed up and looking at you so directly.

He would soon be setting out for the launching pad. Everything was ready for his departure. From a distance someone came running toward him, waving a book.

"Thanks a lot!" Nikolayev said. It was a collection of Lermontov's verses. "I'm taking that along on the trip."

The highway leading to the concrete pad was as straight as a ruler—gray asphalt edged with greenery. As we came closer, we saw the giant steel-gray rocket through an intricate scaffolding. The launchers, young and smart looking, waited for him at the launching pad. Nikolayev thanked them for their labors that would soon be hurling him toward the starry heights.

The Chief Designer pushed the embarrassed cosmonaut ahead just a little past the applauding group. Then Nikolayev took the elevator to his ship, the Chairman of the State Commission and the cosmonaut-alternate right behind him.

This ceremony before take-off has now become a tradition at the cosmodrome. The Chief Designer, having satisfied himself that everything was proceeding as it should, was ready to answer the newsmen's questions. The first had to do with the scientific tasks set for *Vostok III*.

"They are many and varied," he explained. "The primary task is to continue our investigations of weightlessness. How much does it affect the cosmonaut's ability to work? This is extremely important because with every new cosmonaut we are dealing with a new and different individual. The second task is to make scientific observations under space flight conditions. And last, but not least, to study once again the operations of all the ship's systems in flight so that we may get additional data for designing new spaceships."

"Do you regard the flight of *Vostok III* as a step toward reaching the moon?"

"Yes, to a certain extent, but that's true of everything we do. Our research road extends from a study of nearby outer space to distant outer space. Our cosmonauts will, of course, be investigating the moon in due course."

Meanwhile, preparations for the take-off were moving along on schedule. Nikolayev and his alternate had a schedule of their own. Before lunch they moved over to the cottage where previously Gagarin and Titov had stayed before take-off. The room looked exactly as it had before the first space flight except for the fact that there now hung a picture of Gagarin over the bed he had slept in that April night last year, and over the other bed there was a picture of Titov.

Our talk with Nikolayev was necessarily brief; the schedule would not allow anything else. Yes, he

GREETINGS TO THE AMERICAN PEOPLE

We are glad to have this opportunity of greeting, through USSR magazine, the American people and particularly our colleagues, the American astronauts.

Piloting the spaceships *Vostok III* and *Vostok IV*, we orbited our planet dozens of times and had a good look at it. How wonderful, how marvelously beautiful is our planet, the home of mankind! Up there in space, admiring the blue expanses, we reflected that human genius and effort must unfailingly be directed at one goal—to ensure that all nations, all peoples, live a free and happy life.

One can't help shuddering at the thought that this not-too-distant happiness of mankind is menaced by the all-incinerating tornado of a nuclear war.

Peace on earth depends today, in the final analysis, on whether our two countries find a common language. We firmly believe this is possible. Why should we go in for a suicidal rocket duel? Let us better blaze the stellar trails together. As for those who cannot stomach peace and friendship among nations, we suggest sending them to Mars, let us say—minus return equipment.

Not merely coexistence, but friendship with the industrious and talented American people—that is what all Soviet people sincerely want.

ANDRIAN NIKOLAYEV PAVEL POPOVICH

felt fine, was in excellent spirits, ready to fly into outer space. He was grateful to be entrusted with the mission. He wanted the conquest of the cosmos to serve for peaceful progress only, and he also favored cooperation with the Americans.

Night again, a quiet calm night. The Chief Designer, they said, had made a midnight visit to the cottage and had left with his mind at ease—the cosmonauts were sound asleep.

The sun had barely gilded the rocket when the State Commission began its meeting in a building nearby. The heads of the various services reported briefly: ready . . . ready . . . ready . . . The cosmonaut was also ready.

The take-off was imminent. The bus carrying the cosmonaut drove into the square fronting the rocket. From the bus came the melody of "Moscow Suburb Nights." Titov and Gagarin stepped out first —they were seeing a friend off on a journey they had already made.

Cosmonaut No. 3, in an orange flying suit and a gray helmet, walked across the square somewhat awkwardly. The Chairman of the State Commission, the Chief Designer and the Cosmonautics Theoretician embraced him. Moments later, from the elevator landing, Nikolayev called out a final "See you soon, comrades!"

Vostok III keeps circling the globe. At the control post all of us hear Nikolayev's voice from outer space. The Chairman of the State Commission, the Chief Designer, the Cosmonautics Theoretician are there and everyone else who can possibly squeeze into the spacious room. We gather round the TV screen and look at Nikolayev reclining calmly in his cabin.

Meanwhile the flight of the next cosmonaut was being readied according to schedule. Pavel Popovich had already moved into the little house so recently vacated by Cosmonaut No. 3. And a new picture—of Nikolayev—was hanging with Gagarin's and Titov's. A regular portrait gallery was shaping up here at the cosmodrome.

Popovich is different in some ways from his friend already in orbit. He is a high-spirited fellow who likes jokes and figurative expressions. "My swallow," he called his spaceship when he thanked the crew preparing the rocket for take-off.

All the newsmen were invited to the launching control center, an underground concrete structure near the rocket. Corridors, doors leading to rooms—a veritable realm of electronics; each room responsible for one or another of the rocket systems. Perhaps the largest was where the command "Lift off!" would come from. Here, at the periscope, stood the head of the take-off crew. In the last moment before take-off the rocket would be seen only through this lens.

This time, too, the cosmonaut and friends who had come with him arrived at the launching ground singing. The strains of "To Wonderful Places It Calls!" came from the bus as it pulled up. The Chairman of the State Commission stepped forward to meet Popovich.

"Keep well!" he said in Ukrainian, smiling, and patted the Ukrainian cosmonaut on the shoulder.

"Until we meet again!" Popovich replied, also in Ukrainian, as cheerily as the Chairman.

Embraces. And these parting words from the cosmonaut, "My swallow will carry me to outer space. I'm perfectly confident that everything will go well. Until we meet again on our native soil, friends!" A little while later he was comfortably settled in his ship and was talking to earth by radio. "Earth" meant Yuri Gagarin, whose job it was to maintain contact with Cosmonaut No. 4.

"Your swallow is a real beauty," Gagarin radioed Popovich.

"Isn't it!" came the response.

Finally the command was given to lift off, and again, as on the day before, smoke, the rocket hovering for an instant above the launching pad, blinding flames and the mighty roar of the engines. Up, up! And *Vostok IV* rushed off to where *Vostok III* had already been orbiting for a day and a night.

Now there were two in outer space. Two Soviet people, two Communists! Shortly there was a radio announcement that *Vostok III* and *Vostok IV* had established contact. Andrian had spoken with Pavel! Popovich had replied to Nikolayev!

The newsmen rushed over to the Cosmonautics Theoretician, all with the same question, "What's your comment on the simultaneous flight of two ships?"

"The launching of two spaceships on successive days," said the Cosmonautics Theoretician, "shows that we've mastered the techniques such flights require."

Where the State Commission in charge of the flight was working it was quiet and businesslike. The orbits of the two spaceships were marked out on big global maps on the wall. One of the maps showed their actual position at any moment. The information was copied onto charts spread out on a big table. People came in to learn the exact bearings of one or the other ship from the men on duty.

Above the radio communication equipment was a large chart with the cosmonauts' call letters and those of the stations in various parts of the Soviet Union that were tracking *Vostok III* and *Vostok IV*. On a TV screen you could see the spaceship pilots themselves, and every now and again hear their confident, cheerful voices reporting scientific observations, the state of their health, or how the ships' equipment was operating.

Scientists, engineers and specialists of many different kinds were on duty round the clock. Yuri Gagarin, Gherman Titov and Cosmonaut-alternates No. 5 and No. 6 kept coming into the room. They did the jobs assigned them and stayed close by to advise Nikolayev and Popov if necessary.

The Chairman of the State Commission, the Chief Designer, the Cosmonautics Theoretician and many other noted scientists and specialists whose efforts had made the group flight possible were also on hand day and night. From time to time they talked to the men aloft, asked questions on some specific detail and received immediate and exhaustive answers from space.

Newsmen at the cosmodrome interviewed the Chairman of the State Commission. An eminent man in his field, he talked of that spirit of cooperation that actuates people in widely separated areas of science and engineering when a vitally important job needs to be done.

"The launching of spaceships *Vostok III* and *Vostok IV* is the culmination of tremendous labors in which whole industries participated," the Chairman of the Commission said. "In the final analysis, all the country's workers contributed in one way or another to the present victory."

He adverted more than once to the technical achievements of Soviet engineering and industry. "The precision and reliability of the carrier rockets, the ships and the various systems in flight and on earth—are characteristics of Soviet space engineering. The efficiency and consistency with which the Soviet Union is carrying through its program of space exploration are generally recognized. This is an additional example. *Vostok IV* was placed in orbit at a point that would ensure maximum closeness of the two ships. It was launched with a precision of up to a fraction of a second. That precision was necessary because its orbital velocity was some eight kilometers (five miles) a second."

We are flying toward the cosmonauts' anticipated landing site. Below us stretch the steppes with their patchwork of wild grassland, green woods and blue lakes edged with white salt deposits. The ships are expected to land somewhere in this neighborhood.

Arrived at the landing command post, we are invited into a white two-story building. Telegraph instruments are buzzing, people are talking over radio telephones, officers are following each orbit of the cosmonauts on a huge globe. The Chief Navigator says, "Everything is proceeding according to plan. It's gratifying to find that all our calculations coincide. We know exactly where they will be landing."

Planes and helicopters are on 24-hour duty, ready at any moment to take to the air. At the command post, the excitement of the night has given way to the tension of the morning. According to Gagarin and Titov, landing is no easier than taking off.

Everybody waits impatiently for the first of the cosmonauts to signal his return. Here it is at last! The commander of one of the helicopters is ordered to the spot where Nikolayev has landed. Another signal! Popovich is back too! The ships have landed almost simultaneously in a pre-set area south of the city of Karaganda, in Kazakhstan.

Soon we newsmen are throwing questions at the cosmonauts. They both look well and are in high spirits. They laugh, joke and answer all questions. It's hot in the room and Popovich says, "Honestly, it was much more comfortable out there—not nearly so hot." To which Nikolayev adds, "And much less commotion and fewer people."

About the flight, Popovich says: "You already know the most important thing—everything has ended well and we've carried through the program. We have done the first 'paired' cosmic flight in history, to use a pilot's expression. We were in contact with each other all the time. In short, everything has come off fine."

A local citizen decides that the cosmonauts deserve a treat and marches in with a huge watermelon. The cosmonauts eat with relish. It's some hours after the landing and a crowd is gathering around the house where the cosmonauts are staying. An ordinary table is converted into a speaker's stand and an impromptu meeting begins. A storm of applause shakes the air when the "space brothers" appear.

The first to speak is Andrian Nikolayev. "Thanks for this cordial meeting," he says. "All you have to do is look at us to see how well the flight came off. We feel fine, I'd even say wonderful."

And Pavel Popovich echoes, "Thanks again for the warm congratulations. I agree completely with everything my friend just said. The flight really did come off beautifully, and I want to thank our designers, scientists and workers who made the magnificent flying laboratories in which we are conquering space." ★

HERO'S WELCOME for COSMONAUTS in

MOSCOW

Glimpses of the cosmic weekend in Moscow. Natasha Popovich and everyone else waited impatiently to embrace the cosmonauts after their epoch-making flight.

THEY FOUGHT

FOR THE SOVIET UKRAINE

BY NAUM KHALEMSKY
WORLD WAR II CORRESPONDENT

MY FAMILY GATHERS on the fringe of Goloseyev Forest near Kiev on September 5 every year. This has become a tradition for us, no matter what the weather. For it is there beside a wind-worn tree stump that I can almost speak to my brother again, face to face, just as I did before he fell in the Battle of Kiev. Again and again I have re-created the picture of that September day in 1941. Boris was sitting on that tree stump before the battle, shaving. His fellow artillerymen had thrown back several German attacks, and were taking advantage of the lull to freshen up. Fyodor Dyachenko, the commander of the platoon, was impatiently waiting his turn at the razor.

By the time I finished telling them of the troubled news from the front, the commander too had finished shaving. Rolling a cigarette of incredible size, he lit up, drew the smoke deeply into his lungs and said:

"It's tough, tough as hell, but they'll never get us down! It's the last battle that counts, mark my words! You'll remember them if we pull through all this alive. It's not only that we're made of tougher stuff than they. What's more important is that we've had a taste of real living for ourselves and our children. Who could make us give all that up? They'll never get us down!"

I never saw Boris or Fyodor Dyachenko again. Boris fell right here, beside the walls of Kiev, and the old tree stump at the edge of Goloseyev Forest often seemed like an obelisk of black labradorite to me.

And this year, too, our whole family gathered round the old stump at the edge of the forest. My son, daughter, son-in-law and even my little grandchildren laid bouquets of roses round the stump. The sound of music drifted to us through Goloseyev Park, mixed with laughter and the talk of people, while the trees whispered all around.

As on so many previous occasions, I recalled my brother's last farewell on September 5, 1941. Afraid that my children and grandchildren might see my tears, I turned away and suddenly noticed a woman holding a little boy of eight or so by the hand. They had paused among the passers-by and were now coming toward me, their eyes fixed on me. The woman hesitated an instant, then threw her arms around me with a fervor never accorded me by any female even in the happy days of my youth. My sons and daughters gaped, and I too must have cut a confused figure.

"Don't you know me?" she asked disappointedly, letting her arms fall. "I'm Lyuba Goptsu. You wrote a story about me in a Kiev newspaper on August 29, 1941. It was called 'Eighteen Years Old.' I was just eighteen that day."

I strained my memory while Lyuba prompted me:

"Don't you remember? You laughed at me because I came to the front in high heels and silk stockings; the quartermaster couldn't find a proper army shirt for me. I came to the front straight from the knitgoods factory, wearing a batiste blouse and a pleated skirt. Yes, and you tried to kiss me!" she rambled on.

Lyuba Goptsu was evidently blind to the fact that these people around me were my children and grandchildren, for she went on with the same awkward frankness.

"Yes, and I was sorry later that I didn't let you. I don't suppose you'd care to now that I've grown old and faded?"

I laughed, of course, and she smiled sadly.

"They used to call me Lyubushka-Golubushka."

These words lit up my mind, illuminating memories of the August battles at the approaches to Kiev. Lyuba was a sunny mirage, a soldier of the volunteer youth, a little golden-haired, blue-eyed girl. How could two decades have changed that lovely face, dimmed the blue of her eyes and erased every grace? As though reading my mind, Lyuba said:

"I have three children and live on a collective farm with my husband. We're here in Kiev for only two days. I wanted to see the place where my old brigade fought. I'm so glad I met you! What you wrote about me in the newspaper was perfectly true, but reading it all in the hospital where I lay wounded,I thought it sounded like a legend."

I, too, could hardly believe what I had written about her, but I had seen this girl, as slender and graceful as a ballerina, drag an artillery sergeant to a first-aid station on his cape, a man weighing well over 200 pounds. Nor was he the only one! She had carried more than 200 wounded out of that hell on her frail shoulders in just a few days of the hard summer fighting near Goloseyev Forest.

"My eldest son often asks me to tell him about the war," she said. "But I'm afraid he won't believe the things I could tell him. I really don't know where I got my strength, the will power and courage then. I weighed only 121 pounds, but hauled one stocky fellow from the field under machine-gun fire for a mile and a half. That's when I was wounded. But I didn't desert him! I suppose a person who knows what he's fighting for is ten times stronger than anyone else."

The command in those days had recommended Lyuba Goptsu for the Order of Lenin.

"Did you get the Order?"

"What Order?" she asked, staring. "I got nothing. Who thought of awards then? These are our rewards!" she said pointing to her boy and my grandchildren. "My oldest boy is in music school, he plays the violin. You and I are lucky people. Think of all our friends who'll never see all this again!" She looked at the blue sky, the forest and the roses around the old stump.

Now I remembered all the details: the tent of the first-aid station in a cool dense grove, where the old doctor labored all night in his blood-stained gown, never closing his eyes, operating on patient after patient while enemy mines exploded all around. It was he who told me of the things Lyuba Goptsu had done, how she had brought the wounded in under fire; all of the male stretcher bearers had been sent into the fighting, leaving them shorthanded.

Without having to dig into my yellowed war correspondent's notes, I began to recall the soldiers and officers who fought alongside Lyuba at the approaches to Kiev. They stood up in my mind's eye one by one, the living and the dead, modest chaps all. What, I wondered, had become of Ivan Poida? I had never seen his eyes and could not say whether they had been blue, black or gray. When he was brought in in a big tank he was blind, and everybody knew that he would never see the sun again, nor the sky, nor the shining snow. Lieutenant Pushkarev's tank in which Ivan had been mechanic and driver had made an unprecedented raid in the enemy's rear, but had struck a mine on the way back. One of the tracks broke in three places and the big machine was brought to a standstill.

Headed by Pushkarev, the crew kept the enemy at bay for forty-three hours, refusing all conditions of surrender. While Pushkarev and his men kept the enemy under fire, Poida repaired the track behind the tank. Pushkarev wanted to send a relief several times, for he knew the man was wounded, but Poida refused to come back inside the tank and kept working on the broken caterpillar links. Those forty-three hours were more than a lifetime to the crew. Their chances of survival were small, but they would not give up. When a burst of smoke enveloped the tank, the Germans cheered, thinking that the machine was on fire. But their joy was short-lived,

Fragment of the painting Soldiers *by Adolf Konstantinopolsky*

for the commander had purposely ordered that smoke to screen him as he crawled toward Poida. The track was repaired, but Ivan lay beside it unconscious.

It was only when they got him back into the tank that the crew saw that their driver had lost his sight. The commander then took over the controls himself. He started the engine and the big machine hurtled forward, crushing everything in its way.

In the list of heroes I had often looked for Ivan Poida's name in vain. When heroic exploits run into the millions, it is hard to keep track of them all. Nor was Poida the only one I would have liked to have seen with the Gold Star of Hero on his breast. Leonid Morozov, an agronomist of Lugansk Region, deserved it no less. Though he was still young, all the reconnaissance men called him "Batya," the Ukrainian for "father." He came to the front immediately after graduating from the Kiev Agricultural Institute. An enormous man, awkward, with extraordinarily long arms and a clumsy walk, he was known for his special gift of kidnapping German officers and bringing them home in an ordinary flour sack. His choice, moreover, always fell on staff officers. By the time I became acquainted with him he had already bagged 16 such "tongues," as they were called. When I asked him how he managed it, he merely shrugged his shoulders: "Oh, it's nothing remarkable! A man can learn to do anything if he really has to! Why, even Venka dragged a corporal in only yesterday!"

Venka and Zhenka were young boys Morozov had found in a village after the Battle of the Kursk Bulge. He had taken them to his company, became a father to them. They quickly got used to calling him "Batya," and that got to be his nickname with all the scouts. The boys were proud of their teacher. He looked grim, but actually he was kind and gentle. Whenever there was time he made the boys study, for he hoped to adopt them legally when the war was over and give them an education.

I could never have imagined that huge Morozov, who had annihilated at least a company of Nazis during the war, weeping, but that is exactly what I did see on one occasion. Somewhere on the border of the Ukraine a group of guerrillas came out of the woods to meet our troops. One of those fierce-looking chaps, with a tommygun and a red-banded fur hat, turned out to be Morozov's brother. Leonid recognized him at once, and both of them, famous scout and guerrilla fighter, stood weeping quietly, their arms around each other. Their reunion was not for long, as Leonid had to be off on a night mission. The regimental commander poured each of them a drink from his flask and went out with them. The brothers embraced again and went their separate ways. I happened to be alongside Morozov that night and wanted to be the first to tell him some happy news.

"Leonid!" I said significantly. "The colonel has recommended you for a commission."

"What for?" he grumbled. "I don't want to be an officer. I'm a sergeant, that's enough."

"Every real soldier wants to be a general!" I retorted.

But he would not change his mind.

"It's anger that brought me into the war, and it's as an angry man that I'm fighting. I want to pull up the weeds myself, not just order others to do it."

The awkward giant appeared to me in a new light then. And in my mind's eye his image is as clear now, two decades later, as are the images of his guerrilla brother and the artillery man Fyodor Dyachenko. Nor have I forgotten Ivan Poida and many others of my beloved, ordinary countrymen. If they were not decorated with the Gold Star of Hero it was only because all of our people became heroes in those grim years. Standing beside the old stump and looking at the faded version of Lyuba Goptsu, it occurred to me that even without the gold in her hair she and people of her kind would always be the brilliant stars in the story of our lives and in the story of our Ukraine. ★

KIEV IS BUILDING

SAYS CHIEF ARCHITECT BORIS PRIMAK

PEOPLE say Kievites are fond of their city to the point of exaggeration. They have reason to be. You'll hear as many visitors as residents say, "One sight of Kiev and you'll never forget it."

The Ukrainian capital has an unusually picturesque setting amid green hills and is beautiful at any time of year. In summer crimson cannas grow waist high around the white houses, in spring the white petals of flowering trees cover the streets, and in the autumn falling leaves float gently to the sidewalks like orange butterflies.

The city's architects keep the esthetic very much in mind when they design. In the postwar years, whole new residential districts have been built, and thousands of families have moved into modern apartment buildings. Before the war Kiev had about 46 million square feet of housing, now it has more than 86 million, and by the end of 1962 it will be adding another 9 million.

Large area construction permits the use of machinery to speed up building jobs. Since the war this kind of construction has been done in the Pervomaisky and Darnitsa districts and in Syrets, Nivky and Otradnoye.

Housing projects are mostly built to standard design, complete with service facilities nearby. Each microdistrict has its own nursery, kindergarten, school, play areas, shops and movie theaters. This year 23,000 Kiev families will be moving into new apartments. Nivky has a group of 40 new houses going up; Voskresenskaya, 32 prefabricated houses. Others are ready for occupancy or will be soon in Otradnoye and in Vetryanye Gory, Lagernaya Gonta, Vyshgorodskaya, Radomyshlskaya and other streets. By using standard type foundations and prefabricated panels and blocks, the builders get the houses up fast. The sections are shipped from the factory to the site and assembled there in relatively short order.

Besides dwellings, Kiev is putting up schools, hospitals, theaters, restaurants and shops. The city is pushing out in every direction, downward as well. Kreshchatik, the main thoroughfare, gets a heavy volume of automobile traffic. For traffic speed and safety, pedestrian tunnels have been built at particularly busy intersections. New transport arteries in construction will connect all parts of the growing city.

Kiev has done twice as much building in the two decades since the war as in all its previous centuries-old history. ★

Eternal Flame at the Soldiers' Tomb for those who died in the war against fascism.

After the Nazis were driven out. (Right) Kreshchatik, Kiev's main street, today.

KIEV and Kievites

BY PAVEL POZDNYAK

Vladimir Hill, overlooking the Dnieper, is Kiev's most popular recreation area.

KIEVITES follow the old Soviet tradition of planting trees to mark memorable events. Trees are planted by children starting grade school, by graduates leaving home for jobs elsewhere in the country and by workers in token of their factory's production achievements. The occasions are infinite, and then, of course, there are also Kievites who plant trees without occasion.

In any event, the felicitous result is that in the spring and summer the Ukrainian capital is a mass of green trees and flowering plants—a veritable garden town, say residents and visitors alike. There are trees all along the banks of the Dnieper. Streets, wide and narrow, long and short, are lined on both sides with graceful chestnuts, maples and poplars. Even the Kreshchatik, Kiev's main thoroughfare, with its very heavy pedestrian and automobile traffic, looks like a green boulevard. Undaunted by the noise and bustle, birds feather their nests in the crowns of tall trees. Get there early enough and you may even hear nightingales overhead.

Kiev is a striking city with its ancient buildings. A walk down almost any street will bring you to a past long gone. Founded in the early centuries of the Christian Era, the city was invaded time and again by nomads, burned and laid waste by the Tatar-Mongolian hordes and Lithuanian and Polish conquerors. But such unique structures as the Cathedral of St. Sophia, the Golden Gate, Petcherskaya Lavra (the Monastery of Caves) and the church of St. Cyril survived as reminders of Kiev's long history and bear witness to the heroism of its citizenry in battle against marauders.

All these many invasions of the past do not begin to compare, in destruction and damage, with nazi vandalism in the last war. The Nazis turned the Kreshchatik into a mass of ruins. They did not leave a single building intact in the entire district on the Dnieper's left bank. Kiev's resistance won the city the title "Hero."

That was 20 years ago. Now handsome buildings, streets and whole districts have risen from the ashes. No matter from which direction you approach the city, you see cranes towering above the buildings. Builders have a special place in the hearts of Kievites. It is they who have healed the more obvious wounds of the war, made the city and its suburbs beautiful again. They give point to the maxim, "He who builds has no time for thoughts of war."

Kiev is an industrial and scientific center. Its machines and precision instruments, lathes and chemical products, drugs and medical equipment, clothes and footwear, furniture and children's toys have been displayed at dozens of international fairs and command a ready sale in many countries.

The Ukrainian Academy of Sciences, with its five departments—physics and mathematics, chemistry, biology, technology and the social sciences, is the focus for more than 50 research institutes. Ukrainian scientists are working on a multiplicity of projects, including longevity, new synthetic materials, new types of electronic computers, high-grade crops, new materials and elements for housing and industrial construction, to name only a few. The findings in these and many other fields they share with their colleagues in other countries.

Kiev's institutes and university enroll students from countries in Europe, Asia, Africa and Latin America. When they leave as graduate specialists, these young people of all races and nations take back home with them warm recollections of the hospitable Ukraine besides a thorough education.

After dark the city comes alive with music. Songs, joyful and pensive, rousing and tender, pour out of the windows of workers' clubs and Palaces of Culture, and resound from the stages of the city's many concert halls and theaters, amateur and professional. Another of the Ukrainian capital's many graces—Kiev is a singing city. ★

THE DNIEPER RIVER

BY MIKHAIL CHABANOVSKY
UKRAINIAN WRITER
PHOTO BY ALEXANDER MOKLETSOV

I AM NOT the only one who fell in love with the Dnieper as a child, long before seeing it. Born in a village on the Poltava Region steppes, I was brought up on stories and folk songs about the river. I garnered my first knowledge of the Dnieper's proud history from Taras Shevchenko's book of poems *Kobzar*. From other books I learned that it was 1,420 miles long, one of the longest in the world. The ancient Greeks named it Borithenus, "Flows from the North," and the Slavs called it Slavutich, "Son of Glory."

But no amount of reading satisfies a Dnieper lover. I wanted to see the river for myself, to find out whether those spellbinding backwaters and lakes, broad still waters and runlets, quiet pools and shoals, the many tributaries and reaches, measured up to the stories. And so, putting my work aside, I set out for a trip down the Dnieper.

Signs at the Kiev river station invited me to board one of its swift steamers or winged liners. But since I was in no hurry, I chose the slower, white double-decker *Alexander Dovzhenko,* so as to take in the sights leisurely.

We passed under several bridges and the Paton all-welded metal bridge, the only one of its kind on the European continent, and entered nature's lovely kingdom. Here were the hills of old Vyshgorod that once served as a Kiev defense outpost and the primeval forest preserves of the Ukrainian Academy of Sciences. Followed a grand vista of the construction site of the future Kiev Hydroelectric Station—the fourth on the Dnieper, after the Zaporozhye, Kakhovka and Kremenchug stations. It will be followed by the Kanev and Dneprodzerzhinsk projects, and the six stations will generate cheap power for the Ukraine's industry.

Next, the gilded cupolas of the venerable cathedrals of Pereyaslav-Khmelnitsky sparkled in the sun. The passengers crowded the top deck to see the famous town where the document pledging the union of the Ukraine with Russia was signed three centuries ago.

Leaving the steep left bank behind, we sailed on toward a broad expanse of water, with the shore line of the city of Kanev silhouetted in the distance. There, topping tall Mt. Chernochei—now Mt. Shevchenko—and above his grave, stands the sculptured figure of the Ukraine's great poet Taras Shev-

The Zaporozhye Dam of the Lenin Hydroelectric Station on the Dnieper River.

chenko. As we approached the revered spot, our boat saluted the poet's memory. We gazed at the picturesque shore until the statue vanished into the blue mist.

Meanwhile the dinner gong sounded, and we sat down to a "Kiev" meal. Then and at later feasts we were regaled with the celebrated Kremenchug bream soup, Zaporozhye pike, Melitopol cantaloupe, Kherson watermelon, Dnepropetrovsk crab, Golopristan carp and other such mouth-watering dishes.

After dinner I went back on deck. A panorama of the new Kremenchug spread out before us, white cottages that had sprung up with the power station. The town has a corn-harvesting combine plant and one that manufactures rail-laying machinery. Kremenchug is now washed by the man-made Kremenchug Sea, the largest body of water along the Dnieper.

The river is the Ukraine's principal waterway. It was famed in days of yore for its galleys—the "sea gulls" of legend and song—and rafts that carried cargoes of wax, furs, grains and wooden articles overseas in exchange for metalware, fine fabrics, perfumes and other goods. The way from Kiev to foreign ports on the Black Sea lay across the Dnieper rapids, past the so-called "fences," the treacherous cliffs that shipwrecked many a journeying trader. The songs and legends tell of the voyager's unequal battle against the elements, of the galleys and raft caravans splintered on the rocks of the Nenasytny and Budil rapids.

For centuries the ravaging Dnieper exacted this tribute. It was only in 1933, when the Dneproges Dam raised the level of the river and submerged the rapids, that regular passenger and cargo service was instituted. Now vessels ply their unobstructed way to the sea.

Soon our boat approached Zaporozhye. My first sight of the town was the great stone horseshoe that seemingly some giant had thrown across the river—the dam of the Zaporozhye power station. Back of it were some 15 square miles of factories—steel mills, aluminum, coke and chemical plants and innumerable other enterprises fed by the station's more than three billion kilowatt-hours annually. It also feeds the Donbas area as well as Nikopol, Dnepropetrovsk, Krivoi Rog, Dneprodzerzhinsk and other cities of the republic.

On our way out of the port of Zaporozhye we passed several sluices, now descending, now ascending with the water until we reached the dam and a clear waterway to Kherson. We made a short stop at Nikopol, a beautiful city which derives its name from the Greek, "City of Victory." Its Bogdan Khmelnitsky Square has a memorial plate bearing the inscription, "This was once Zaporozhye (Nikitin) Sech. On this spot in 1848 the Zaporozhye Cossacks elected Bogdan Khmelnitsky hetman of the Ukraine."

In Nikopol we ate our fill of sweet melon and left for Kakhovka, notorious in prerevolutionary days for its fair where destitute peasants hired themselves out to rich farmers for next to nothing. Old Kakhovka has had her face lifted. A modern town his risen near the power station. Its arrow-straight streets lead directly to the dam. Aboard a bus bound for the dam, I could hear the waterfall at a distance.

The Kakhovka station generated its first current in 1956 and now produces 1.3 billion kilowatt-hours annually. The Kakhovka Sea forms a huge reservoir—23 billion cubic yards of water—to irrigate the arid parts of the southern Ukraine, where wheat and fruit now grow on land that was previously barren wilderness. Kakhovka helps to irrigate about 250,000 acres in the Nikolayev and Kherson regions, and the Inguletsk irrigation system alone has made arable 150,000 acres of land.

Arrived at our destination, Kherson, we knew we were near the mouth of the Dnieper, for the river had spread so wide at times we almost thought ourselves at sea. The shore was lined with sturdy oaks and willows, with tall feathergrass growing between them. Kherson, a large port in the southern Ukraine, is linked by canal with the Black Sea. Its points of interest, besides the shipyards, are a teachers training college, an agricultural institute, a school of music and a naval training school.

We landed, and I went to the Kherson, a large hotel on the maritime boulevard. I wanted to spend a few days in this region I had treasured so long in memory. ★

THEY ARE WELL KNOWN IN THE UKRAINE

VASILI YAGOLA

During the Great Patriotic War devastation and ruin reigned in Kiev. Now its rebuilt streets are even more beautiful than ever. Splendid new bridges built by the inhabitants of Kiev after the war span the Dnieper River.

Hero of Socialist Labor Vasili Yagola is a leader of a team of assemblymen which has helped to build several bridges in the Ukrainian capital.

NADEZHDA ZAGLADA

Once upon a time the farmers of Polesye feared that the severe climate of the region would prevent corn from growing.

Nadezhda Zaglada was the first to prove that a businesslike approach to the problem would make it possible to raise this product in the severe climatic conditions of the northern Ukraine.

She is worthy of the title of Hero of Socialist Labor, given for her selfless work.

ALEXANDER KOLCHIK

If you enjoy books about Soviet miners, you must have read books written by Alexander Kolchik, who has devoted many of his novels to the life of the Ukrainian miners.

He is a famous miner himself, the initiator of an advanced movement for economy in production. All the miners of the country have responded to his appeal: to economize on every ton of extracted coal.

(Continued on page 46)

THE UKRAINE ON STAMPS

BY ILYA ZBARSKY

THE UKRAINE HAS AN OLD and celebrated history and a no less heroic present. Both are commemorated on Soviet stamps.

In 1654 the Ukraine was reunited with Russia. The tercentenary of that historic event was memorialized in a postage issue. One of the stamps in the series, the 60-kopeck (old currency), pictures the monument to Bogdan Khmelnitsky in Kiev. The 40-kopeck stamp shows Shevchenko University, also in the republic's capital.

To honor the fortieth anniversary of the founding of the Communist Party of the Ukraine, a 40-kopeck stamp was issued in 1958. It is dedicated to the Ukraine's revolutionary workers and pictures the uprising at Kiev's Arsenal Plant.

A series devoted to all the union republics appeared for the fortieth anniversary of the October Revolution in Russia. The 40-kopeck stamp depicts a steelworker and a collective farm woman against the flag of the Ukrainian Republic.

A Kiev monument to the Ukrainian Civil War hero Nikolai Shchors was reproduced on a two-kopeck (new currency) stamp in 1961.

In the Second World War the Ukraine was one of the first of the republics to suffer the blows of nazi invaders. An episode of the defense of Odessa is shown on a four-kopeck stamp of the "Great Patriotic War 1941-1945" series.

Kiev, destroyed by the enemy in retreat, has been fully restored. A pink stamp in the "Capitals of the Union Republics" series shows Kreshchatik, the city's main thoroughfare.

A 60-kopeck stamp (old currency) issued in 1946 pictures the rebuilt Lenin Dnieper Hydroelectric Station, also destroyed in the last war.

In 1961, for the hundredth anniversary of the death of the Ukrainian poet and artist Taras Shevchenko, a six-kopeck stamp was issued. It bears his portrait, a burning torch and an open copy of his *Kobzar*, written in 1841. Attached to the stamp is a coupon with lines from one of his poems and his signature.

The centenary of the birth of another eminent Ukrainian writer, Ivan Franko, was marked in 1956 by a commemorative series. The pinkish-red 20-kopeck stamp (old currency) shows the republic's coat of arms. The 40-kopeck, red-brown in color, bears a portrait of the writer and his prophetic words, "After us will come a new life, new happiness to the world."

SHLYAKHOVAYA COLLECTIVE FARM

Shlyakhovaya Collective Farm in Vinnitsa Region of the Ukraine is widely known throughout the country. Its chairman Vasili Kavun is a national figure. Kavun, who is in his twenties, is one of the youngest collective farm chairmen in the country. He holds the title Hero of Socialist Labor for his achievements in agriculture, is a deputy to the USSR Supreme Soviet and was a delegate to the Twenty-second Communist Party Congress. Nikita Khrushchev wrote him a personal letter of commendation for his services to the country's farm development program.

VASILI KAVUN was fresh from the Uman Agricultural Institute when he was elected chairman of the Veselovka Collective Farm in the Vinnitsa Region of the Ukraine. Some people eyed him with misgivings, not only because he had just turned 24 and was straight out of school but because their experience with Kavun's predecessor had been anything but happy. All he had done was give orders, and he showed no concern for the people. His idea of a chairman's job was to be able to report to the district that the farm had completed the sowing in time, had harvested according to schedule and would be selling so many tons of grain to the state. But how much the collective farm members were getting for their labor did not bother him.

The young chairman realized that the main thing is people. He talked things over with the farmers. Then, he scraped up all the money and grain he could get his hands on, borrowed from richer neighboring collective farms and the state, and settled accounts. Only then did he turn to the technical problems—crop turnover and work organization.

Even when he was still a student doing his required practical work at collective farms, Kavun had serious doubts about grassland crop rotation, the system in general use. He thought it was wasteful and unproductive to use large tracts of land for low-yield grass crops.

But it was an old and tried method, one the farmers were accustomed to, and it took a great deal of passionate hammering away before they let the new chairman try something new. The structure of the sown area was revised and the grasses replaced by more productive crops. With time and a great deal of work Veselovka caught up with the high-yield farms and was able to remunerate its members well for their labor and clear its debts.

By then even the most prejudiced of the farmers looked to Vasili Kavun for the answers, and the word was out that Veselovka had a young chairman who was doing wonders.

Kavun looked around for new lands to conquer. He wanted to try out his methods on a larger farm, say, Shlyakhovaya, where he had done his practical work while at school. People of the District Soviet thought the idea a good one and suggested his name to the farm board. The Shlyakhovaya people knew what he had done for Veselovka and were glad to have him. At the next election for chairman he was nominated and elected by acclamation.

Kavan was particularly interested in Shlyakhovaya because although it was a large and good farm, its yields were no better than average—a very good testing ground on a much larger scale, he thought, for the methods that had been so successful at Veselovka.

The crop rotation was planned carefully and scientifically so that no land would be left fallow. Most of the sown area was planted to high-yield crops

Farm chairman Vasili Kavun is also deputy to the USSR Supreme Soviet.

—20 per cent to peas, 25 per cent to winter wheat, 35 per cent to corn and 20 per cent to sugar beet.

The new method proved successful. The farmers found that wheat grown after peas gave them a yield of 1.3-1.5 tons per acre. After a pea crop the fields retained an average of 50 tons of nitrogen. Peas, they concluded, were the way to fertilize exhausted soil. Planting peas on fallow land makes it possible to profitably use hundreds of acres that would otherwise be left idle and at the same time to fertilize the land in the most efficient way. This means a great saving in funds—to buy an equivalent amount of commercial nitrogen fertilizer would have cost them 20,000 rubles.

Ukrainian farmers call corn the "queen of the fields." "If corn is queen, then peas are royalty too," Kavun says. "A noble and, what's more important, a very valuable crop."

Shlyakhovaya's experience shows that sugar beet is a good crop after wheat, and corn after sugar beet, and that corn is the best predecessor for peas. "It's like a machine bearing in a way," Kavun explains. "The crops are the rotating balls in the bearing, and peas are one of the important rotators." In 1961 alone, the farm made a profit of 440,000 rubles from its peas.

Shlyakhovaya's main crops are winter wheat, corn and, most recently, peas—a very versatile vegetable, Vasili calls them. He's been thinking about peas ever since his student days and is now working on a master's thesis that will develop his ideas.

Peas take nitrogen from the air and leave it in the soil, thereby performing three services simultaneously. The nitrogen makes the soil more fertile, helps to grow bigger grain crops and produces fodder with a high albumin content.

Shlyakhovaya makes large use of mineral and organic fertilizers besides. In 1961 the farm used 175 pounds of superphosphate, 40 pounds of ammonium nitrate and 18 pounds of potassium salt per acre of corn fields, with the result that the grain yield per acre was 2.7 tons as compared with a previous 1.5-1.7.

The farm has been doing some experimenting on its own—buckwheat is one instance. Scientists recommend that for buckwheat a beehive be set up per acre for better pollination. Kavun tried two or three beehives per acre with gratifying results—1.2 tons per acre instead of the previous .8.

Good harvests mean plenty of fodder, and that in turn means high animal yields. The farm raises 21 head of cattle and 43 pigs per 100 acres and expects, in view of the new possibilities, to increase the yield to 34 head of cattle and 72-80 pigs in the next few years.

Shlyakhovaya's experience has evoked national interest. Mail arrives in large quantities, so do callers from farms throughout the country wanting to know how Shlyakhovaya does it, and the collective farmers willingly share their trade secrets. "You can't build communism on an empty stomach" and "We'll never produce an abundance without a communist attitude toward work" are Kavun's favorite mottoes.

The farm is getting along fine now, incomes are high and the standard of living keeps rising; but it hasn't been an easy pull all the way. The difficulties of that first season are still fresh in Kavun's mind. Twice the fields had to be resown when bad weather killed the green shoots. That took round-the-clock work on everybody's part, but the farm came through all right.

Shlyakhovaya is not the typical old Ukrainian village of tiny straw-thatched cottages it once was. Cottages are built roomy today, with modern improvements and metal or slate roofing, In the past three years 400 farm families moved into new homes, and a new school for 500 pupils was built. Building is being done on this large scale to transform Shlyakhovaya into an urban-type community with well-appointed housing and all modern amenities before the year is up.

Vasili Kavun says: "We have things figured out not only for this year but for some years to come. By 1970 the collective farm's indivisible funds, its basic capital, will grow from 2.9 million to 8 million rubles. And this capital fund makes up only 15-20 per cent of our total income."

Kavun's idea that the human is the single most important factor in successful farming is not just a theory. He lives and works by it. He starts the day seeing people. One wants a truck, another a loan to build a house, a third something else. Nobody is turned away empty-handed.

Then he makes the rounds of the fields. And the Shlyakhovaya fields, especially at harvest time, are something to see, with 36 harvester combines working the big stretches of grain, sugar beet and corn. You hear the roar of their motors until nightfall. Then, when the sun sets, the farmers go home and the noise subsides. For the chairman it is the end of another busy day and the beginning of a long evening of work on his thesis. ★

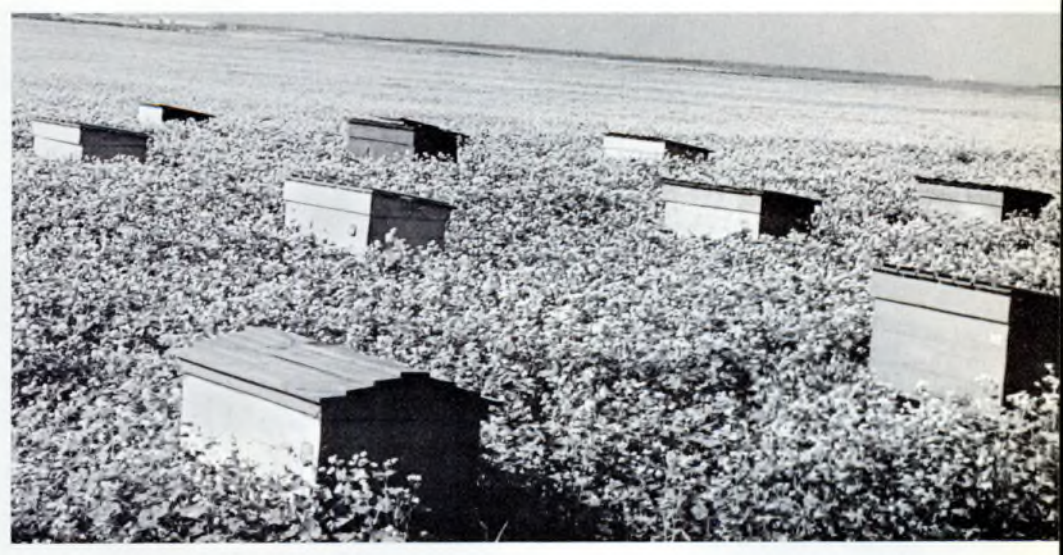
A fine crop of winter rye. The chairman attributes it to the farm's new crop rotation system.

The farm is well mechanized. It has 55 tractor 30 harvester combines and various other machine

One of the new barns. Funds were allocated this year for barns, a kindergarten, clubs, housing.

The pigsties. Shlyakhovaya has 4,000 head cattle, 1,700 sheep, and a big poultry sectio

These beehives, set out in the buckwheat fields to improve pollination, help give bigger yields.



Anna Begebko's record sugar beet and corn crops won her the Order of the Red Banner of Labor.

The future cosmonaut (on the left) and brother Ivan. They were students at a forestry school.

Andrian Nikolayev as a student pilot. He had won his sergeant's stripes before taking the course..

Although cooking is not part of cosmic preparation, Cosmonaut Nikolayev enjoys it very much..

Cosmonaut No. 3 Andrian Nikolayev (right) when he was Gherman Titov's alternate in August 1961..

cosmonaut ANDRIAN NIKOLAYEV

ANDRIAN Grigoryevich Nikolayev was born in the village of Shorshely, the Chuvash Autonomous Soviet Socialist Republic, in the middle reaches of the Volga, on September 5, 1929. By nationality he is a Chuvash.

The cosmonaut's parents, Grigori Nikolayevich and Anna Alexeyevna, were collective farmers, as are all his close relatives. Andrian, his brothers Ivan and Pyotr, and his sister Zinaida were brought up on the Pobeda Collective Farm. His father was a founding member of the farm.

When the Great Patriotic War thundered across the village like a hurricane, it swept off most of the able-bodied men to the front—first the younger ones, then the older. The women, the old men and the young teen-agers took over the entire burden of running the collective farm. Andrian helped his mother in the dairy and with other boys of his age plowed, tended the livestock, and drove the horses into the sheltering woods at night.

When Andrian was about 15, his father, who had been ill throughout the war, died.

He studied at a forestry school and took a job in Karelia, a region of tall pines and transparent lakes. When he reached military service age, Andrian was assigned to the Air Force, not to a pilot's school, as he had hoped, but to a special training course for gunners and radio operators. He completed the course with high grades, the three gold stripes of a sergeant—the rank achieved only by the superior students—and a recommendation for flying school. He joined the Young Communist League while at school.

Toward the end of 1954, Andrian completed the pilot's course with top grades and was assigned to the Moscow Regional Antiaircraft Defense. His squadron led the routine well-ordered existence of a military unit—daily practice flights, maneuvering in all kinds of weather, night flying, combat training, shooting at ground and air targets. In simulated combat flights, with planes and antiaircraft gunners cooperating, Andrian first saw a rocket cannon—a weapon he had heard a great deal about. The rocket men won his admiration.

Almost every man has his moment of decision. Andrian's came one June day in 1956. He was flying a jet fighter to the piloting zone according to schedule. It was a bright sunny day, perfect weather, the flight smooth and exhilarating. Suddenly the even howl of the jet snapped, like a broken violin string at a concert. He glanced at the altimeter—6,000 meters—not high enough for a safe glide in a plane that was losing altitude fast. Should he catapult himself out of the machine? He began to perspire, his nerves grew taut. But he kept his head and coolly calculated the odds. A fortune in labor and materials was invested in the plane. He made his decision and leveled off. The plane shot over a gully, then another, then over a wooded hill, along a little valley with a river snaking along the bottom, and finally dug into a field of rye where it shuddered to a stop like a living thing. He got out and looked the plane over. Except for some minor damage, it was as good as new. A burden was lifted from his heart: He had not run the risk in vain!

That same memorable year, Andrian joined the Communist Party.

One day Nikolayev was summoned by the squadron commander. "How would you like to fly some new equipment?" the commander asked with a mysterious smile.

"Show me the flyer who would say no to that," answered Nikolayev. "I certainly would!"

With that reply Andrian became a prospective cosmonaut. He applied himself to the new training and studies with his customary zeal and thoroughness—his whole life, on duty and off, regulated by the reports on the two previous manned flights. He heard the sound track of the conversations between the cosmonauts and the ground tracking stations, had long talks with Yuri Gagarin on his take-off and return to earth. With his fellow cosmonauts he had watched *Vostok I* launched into space and had embraced Gagarin on his return.

For the second manned flight, Andrian was chosen Gherman Titov's alternate. When his spaceship landed, Titov pushed his way through the crowd to give Andrian a warm hug. Titov knew what it meant to be an alternate for a cosmonaut in flight. He had gone through the strain himself as Yuri Gagarin's alternate on April 12.

When Nikolayev found out he was to be Cosmonaut No. 3, he literally besieged Gagarin and Titov to learn about the most minute details of their ventures into space. They jokingly complained that he showered them with more questions than all the thousands of newsmen they met at their many press conferences in foreign countries.

The nearer the day came for the third flight of a Soviet man into space, the more difficult and complex the training of the young cosmonaut became.

The spaceship guided by Andrian Nikolayev traveled through outer space for 1,625,000 miles and landed safely in a predetermined location, having brilliantly performed its mission. ★

The mother of Nikolayev, Anna Alexeyevna. A dairy worker on the Pobeda Collective Farm, she raised all her four children to be useful Soviet citizens.

Preparing for the big undertaking. Pavel Popovich is having his cosmic "underwear" adjusted—one of the instruments he wore to record his physiological functioning.

cosmonaut

PAVEL Romanovich Popovich was born on October 5, 1930, in Uzin, on the right bank of the Dnieper River south of Kiev. His father Roman Porfiryevich and mother Fyodosiya Kasyanovna were also born in that small and formerly little-known village now celebrated on their son's account. Roman has been working as a boiler man at the local sugar refinery for the past thirty years.

The Popoviches are Ukrainians, and Roman once said with pride that his ancestors were among the famous Zaporozhtsi (a free and independent military camp of Cossacks beyond the Dnieper Falls) and that their names figure in songs of the seventeenth century, the time of the famous rebel leader Bogdan Khmelnitsky.

Pavel had gone through the fourth year at the Uzin secondary school when the war broke out. His teacher Varvara Mikhailovna Voskoboinikova remembers that "he always made the highest marks.

There were fierce battles around Uzin early in that intensely cold January of 1944, and the boy watched tanks ram one another and planes battle in the sky. He remembers it all, as well as that unforgettable night when the advancing Soviet forces reached the village, and how at three o'clock in the morning he was awakened by men calling to one another in Russian. It was hard to believe the fascists had been ousted. School opened in a new building a few days later and Pavel resumed his studies.

In the fall of 1947 his friend Alyosha Kompanets returned to Uzin and they both decided to go to trade school and become joiners. Pavel was advanced enough to enter the second grade. He also took courses at the evening school for young workers.

"It was hard going," Popovich recalls, "but I was awfully eager to learn."

He completed his trade school course and the seventh grade of evening school in a year, with top marks in all subjects. Pavel joined the Young Communist League while at school.

He went on to an industrial secondary school in Magnitogorsk and maintained a high scholastic record in spite of language difficulties. Until then he had been taught in his native Ukrainian, but at Magnitogorsk classes were given in Russian.

The roar of planes flying over Magnitogorsk east to the Pacific Ocean stirred Pavel's imagination, and he joined the glider section of the local

Cosmonaut No. 4 as a fighter pilot. Popovich (extreme right) had formerly been a regular glider-club member.

The cosmonaut's parents, Roman Porfiryevich and Fyodosiya Kasyanovna. No doubt the letter's from son Pavel.

air club. He was thrilled by the sport. One of the projects he had had in mind at trade school was to build a glider himself. Soon afterward he qualified for flying instruction.

Popovich has an especially warm spot for his old air club and instructor Matyushin who introduced him to the aerial world. About his first flight, he says: "I didn't see a thing, I was so excited. I can hardly remember what it felt like." But after that first trip into the sky, he couldn't be satisfied any longer with solid ground under his feet. He finished his studies and training at the air club with honors.

In September 1951 Popovich was sent to an air school for his military service and there his training as a flyer began in earnest.

Some months later he was one of the singers at an amateur evening the trainees had organized at the Novosibirsk Air Club. A girl in the first row, one of the trainees, seemed to be applauding him especially. Her name, he found out, was Maria Vasilyeva, a designing engineer by profession. The two took to each other immediately and it was not long before their friendship ripened into love.

But his military service and her profession kept them apart—Pavel was sent to the Far East, and Maria to Saransk. For three years they corresponded and met again only in October 1955 when their vacations coincided.

Pavel, on the wings of love this time, flew to the village of Barsuki, near Velikiye Luki, to meet Maria's parents. Maria was already there, and they were wedded shortly thereafter.

From Barsuki, the newlyweds went to the North where Pavel had been assigned. His Arctic assignment was difficult but absorbing, and Popovich earned the reputation of being one of the most competent flyers in the squadron. In June 1957 he became a member of the Communist Party.

Maria, who had given up her job in Saransk to join her husband, was at loose ends. She liked flying, but there was no local air club where she could pursue her hobby. Time lay heavy on her hands, especially with Pavel so busy. The couple decided to write to the Air Force Commander in Chief, asking for permission to serve where they could both work. Their request was granted and they were transferred to another unit. Maria took part in several air parades and, together with other flyers who participated in the gala 1961 air show, won the Badge of Honor.

Chosen by a special selection committee as a prospective cosmonaut, Pavel trained with Yuri Gagarin, Gherman Titov and the others on the centrifuge, vibro-stand, "rotor" and other installations, and quickly earned his comrades' respect and admiration for his self-possession and cool judgment.

Popovich is the type of man who does not do things by halves. He threw himself into the taxing labors of a cosmonaut-in-training, mind and body. He worked fourteen hours a day. His task, he knew, would be not to duplicate what his predecessors had done but to find the answers to new questions their flights had posed.

With it all, he found time for reading. He was reared on Ukrainian literature and has a particular fondness for the poetry of Taras Shevchenko. Formative influences in his life, he says, were such Soviet writers as Maxim Gorky, Mikhail Sholokhov, Alexei Tolstoy and Vladimir Mayakovsky. He has a better than average background in Western literature, and among the American and English writers lists O. Henry, John Reed, George Bernard Shaw, John Galsworthy, and of course, Shakespeare as his favorites.

During his training period, Popovich was under close observation by physicians and scientists. The Chief Designer of spaceships, a man with a wealth of experience in judging character, admired the young officer for his strength, intelligence, sensitivity and unusual powers of observation. Popovich's compressed lips reveal something of his strength of will.

When *Vostok IV* was about to be launched, everyone present marveled at the cosmonaut's composure.

Before the take-off he wrote, in his native Ukrainian, this parting comment in a *Pravda* correspondent's notebook—the thought uppermost in his mind at that decisive moment. "I am a Communist! I belong to the Party of Lénin and I shall carry through the great task entrusted to me by my people and my country."

"I am a Communist!" These words tell the story. In orbit Pavel Popovich the Communist knew that his ship was carrying the message of communism round the earth—a message of peace, labor, freedom, equality, fraternity and happiness for all nations. Inspired by the greeting from Nikita Khrushchev that he received in his spaceship, he carried out his difficult assignment with honor and great distinction, as did the courageous men who had flown the same course before him. ★

PAVEL POPOVICH

Just like any other father, the cosmonaut hero is happiest and most relaxed when with his family. Daughter Natasha is six. His wife Maria is a distinguished flyer.

BY OLES GONCHAR
DRAWING BY VSEVOLOD OSVER

THE RAPIDS

THE BOAT WAS SAILING down the Dnieper. A gusty wind sprayed its decks with the fresh tang of the large waterway and the spicy aroma of the distant steppes.

Dawn broke rapidly and the passengers on deck began to stir. The first to wake were two old men who had snored all night long, sleeping back to back near the warm, smoky funnel. The sergeants, who had slept huddled together in the middle of the deck, folded their coats with practiced hands. The girls on the benches were powdering their noses, peering into their mirrors and chatting amiably with a robust elderly collective farm woman sitting on an upturned wicker basket. By her side, wedged in between similar baskets, slept several women from her village.

"Vacationing, are you?" she asked the girls in a mellow voice, looking at them with unconcealed interest.

"No, Auntie, we're on our way to the district to teach school."

"Oh, I see. So you're teachers. I thought you're students. Last week the boat was crowded with 'em. So many young folks studying nowadays! Warms your heart to see 'em."

The woman stood up, smoothed her dress unhurriedly, and straightened up to her full height. She was tall, strong, vigorous.

After a long and noisy yawn, she gazed at the flushing east. Then she stepped carefully over the legs of her sleeping companions and made her way to where the girls were sitting. Standing in front of them, like a mother among her daughters, she was cheerful and serene in a green padded jacket buttoned to the neck, and a snow-white kerchief handsomely framed her weather-beaten face crisscrossed with wrinkles.

"I'm on my way back from a conference in our regional center," she said, smiling a little. "It's almost three years that I've been managing our dairy. Before the war I was a milkmaid, now I'm manager. They said I knew all the tricks. But, believe it or not, though I only left home on Tuesday, I feel as if I'd been away a month. Terribly homesick, I am. I came across these girls from my village on the wharf." She indicated with her eyes the women sleeping among the baskets. "When I asked them how the calves were doing, they just laughed. They'd been to market to sell apricots. We want to buy a long boat with the money. Mind if I sit down with you here?" Ingenuously she pushed one of the girls' suitcases aside and sat down on the edge of the bench.

The east blazed, lighting up the whole sky. It looked as though it were rising to greet the boat. The clear air was perfumed with the morning's sweet freshness. Here and there along the middle of the river rocked the boats of the buoy keepers, who were turning off the waning, barely perceptible signal lights.

"How broad the Dnieper is here!" exclaimed one of the girls. "Last night the banks were close by, almost on top of us, and now they seem to have spread far apart."

"This is Lake Lenin," explained the collective farm woman. "We'll soon be over the rapids."

"The rapids?" The girls moved closer to the woman and regarded her with quickened interest. "How exciting! The famous rapids?"

"That they were. This is where they began."

The girls fell silent, touched by something long gone, romantic, extolled in song. The Dnieper Rapids! Here they were, submerged far below, drowned by the high waves.

"Did you ever see them, Auntie? I mean when they were here, long ago?"

"I saw enough of them to last me a lifetime," said the woman, her face suddenly darkening. "I hope I never see them again."

"Why, what makes you say that?"

The woman did not reply. Folding her arms over her breast, she settled back more comfortably and tucked her legs under the bench.

"You're not from hereabouts, I take it?"

The girls said they'd never been on the Dnieper before.

"That's what I thought. Me—I grew up here, among the stones, like a sea gull. I was 30 before I saw anything besides the rapids."

She paused, ruminating.

The sun had risen, and the green Dnieper rippled and sparkled as though covered with broadbladed grass, blinding bright. Olive shadows fell on the water from the distant steep bank.

"You're all studying, and everything is open to you," she began speaking again in an even quiet voice, "but when I was your age I never took more than a few steps beyond my hut. I lived as though under lock and key. And not I alone. We all lived like people blindfolded.

"Our village stood between the Loman and Zaonets rapids. Out on the bank, you saw the white foam of the rapids on the left, below the village, and heard the other one roaring on the right, above it. That one was bad enough, but the other was even worse. It wouldn't let anyone get past. Those two rapids shut us in from the whole world. We had no choice but to hire ourselves out to the kulaks or colonists.

"My husband was also Dnieper-born. He piloted rafts. Sailed other people's rafts down river across all nine rapids. They cut his life short—it was a very dangerous job. Many couldn't hold out. When they got to the rapids, they said good-by, made the sign of the cross, tied themselves together with ropes and plunged into the raging waters. Logs that hit those stones stood up like candles. We women stood on the bank watching and trembling with fear. We never knew whether our men would get across safely or float up to the bank with cracked skulls.

"And that's how I got my man back. One evening a wave cast my Sviridon up on the bank: 'Here's your breadwinner, woman! Take him and bury him.' My children returned home orphans, and I—a widow.

"After that I couldn't stand the sound of the rapids any longer. They tore the very vitals out of me. It was before bad weather and the rains that they began to roar. Like a barometer, they were. Silent in good weather, but as soon as they started roaring we knew we'd be in for a rainstorm or hail or some other misfortune. I used to thrash about like mad when I heard the rumble, but there was no getting away from it—tearing at my heart, reminding me of my man.

"When my boy grew up, he wanted to be a pilot like his father. I wouldn't let him. 'One was enough,' I told him. 'Better go to Osaulenko and ask him for a job on his farm. Pour grain into his sheds. The rapids up there are just as fierce.' Osaulenko was a rich peasant. His yard was full of yapping dogs, and his horses were no tamer. On Sundays he'd drive down the street, paying no attention to anyone, never saying 'hello.' You had to keep out of his way if you didn't want to get run over. He had the best land in these parts. If a hen strayed onto his property, he'd shoot it outright. He had no pity; no amount of tears or pleading moved him. All he'd say was: 'Everything here, including the sky above, is mine.'

"And so I sent my boy to work for him. The child slaved like a horse until the days of collectivization set in. That was when we began to breathe freely. Osaulenko was driven out of the village.

"My boy soon went off to the construction site of the Dnieper Hydroelectric Station. Lots of young people from our Dnieper villages went to work there. 'I'm going too!' said my Vasilko. 'We'll drown the rapids and light the village with the sun of electricity.'

"I had nothing against it, although I didn't believe that about the rapids and the light. 'How can anybody drown those hellish waters, that horror that has choked the Dnieper for ages?' I thought. I was pretty ignorant, you see." The woman suddenly smiled at her thoughts.

"Meanwhile construction went on, and whole villages began to move inland, away from the river. Since we were perched on a hill, we didn't have to move. Then one fine day, long after the spring rains, we suddenly saw the water rising in the river! As if spring had returned. The first to go under was Osaulenko's meadow that stretched all along the village edge, then the rapids grew smaller and smaller, and finally the Dragon—a huge rock sticking out of the water in the middle of the Dnieper right opposite my window—was submerged. The next morning everything was gone—the rapids, the Dragon and the old banks of the river! There was water as far as you could see. The great Lake of Lenin!

"My neighbors came rushing in all excited. 'See what a boy you have!' they cried. 'He's drowned the rapids and spread a blue sea right under his mother's window!'

"Soon our collective farms were lighted with electricity. Tall metal towers mushroomed on the steppe. A transmission tower was set up in the middle of my neighbor's potato patch. She was afraid lightning would strike her house because of it, but she got used to it soon enough. And why not, when she saw all the machines working by electricity. A light bulb shone in my house also. No longer was the ceiling smudged with soot from the kerosene lamp.

"My Vasilko came home for his vacation. By that time he was a Party member and a turbine mechanic. After spending two weeks at home, he said: 'Come back with me to the station. I'll show you the electric heart of the Ukraine.' I went with him, and he took me all over the station. Showed me the dam, the control board, the turbines and the sluices. When I got back home I told my fellow villagers about the things I'd seen. Aye, that was a regular kingdom of electricity!

"The Dnieper station became part of our life.

"Then the war began. The men went to the front and we women dug antitank ditches along the Dnieper. We were boiling mad those days—ready to strangle the Nazis with our kerchiefs!

"Every night the villages beyond the Dnieper burned.

"Then one evening the lights went off in our houses. They went off gradually and quietly, for good. We were left in the dark.

"We felt as though somebody very dear had passed away. My daughter Nadya cried miserably as she blacked out the windows. Fires were raging on the other side of the Dnieper. All night long we heard sounds of explosions coming from the direction of the Dnieper station.

"In the morning the whole farm flocked down to the bank. We stood there, high over the Dnieper, watching the water falling and falling. Suddenly the rapids appeared, and the Dragon stuck its ugly head out of the water. It was covered with moss, slime and rotten water plants. The rapids were just as black and moldy.

"Then they started their awful noise again. It made my flesh creep.

"'It's not the rapids but our cursed past that's returned!' I cried.

"The water kept falling, and soon there was a bog where the old Osaulenko estate had been. There were plenty of fish for the having, but nobody wanted them. They rotted and stank all over the village. We were choked by the stench.

"We moved east, driving our bellowing cows ahead of us. German planes streaked the sky overhead, and the ferries were one jumbled mass of carts, animals and men.

"Finally we reached the district beyond the Volga. The collective farmers there welcomed us like brothers. They made room for our cattle and shared their hay with us. We rolled up our sleeves and got to work to forge victory for our front. We toiled with a will, with all our heart, and won the banner of the regional Party and executive committees. Our dairy supplied the neighboring hospital with milk and butter. We did our bit as well as we could.

"When we returned to our village of Slobodka in '43, the noise of the rapids rushed back into our heads; they grinned at us with their evil stone teeth. 'You be damned!' I cried.

"Then representatives from the Dnieper Hydroelectric Station came to see us and brought a letter from Vasilko addressed to me and the whole village. We gathered at the Soviet to hear the news. The Party was asking us to help rebuild the Dnieper station!

"My Nadya came home from her YCL meeting all agog with excitement. I knew the reason. 'Go,' I told her. 'Go with the others and help your brother rebuild the station. You have all my blessings for so noble a cause. Drown those damned rapids and give people the shining light they had before the war.'

"'The lights'll shine even brighter,' she said. The next day she shouldered a spade and went off with the other girls. Have you heard about Nadya Belozer, famous concrete-layer of the Dnieper Hydroelectric Station? That's my daughter, the very devil of a girl!

"Now we've got our electricity back. We thresh, pump water and chop our feed with it. And as before, we are worried every time the control bulb blinks. When the tension starts falling, it means the Zaporozhstal Foundry is pouring steel. We're on the line linking the station with the foundry and feel its pulse every moment of the day.

"When I come home from work and switch on the lights, I feel as though my children had run into the house and filled it with sunlight. And each time I stand on the shore of Lake Lenin, I know I can get on a boat and go wherever I like. The stones of the rapids no longer hem me in! They are back where they belong, at the bottom of the river. For good.

"Their noise is gone. It'll never plague us again. Never!"

The woman fell silent. For a few moments the girls sat motionless, gazing at the broad waterway shining in the sun. Then they suddenly cried:

"So we're way above them!"

"Sailing over them at top speed, along a new waterway."

The sun's rays pierced the water around the boat.

"They're no worry to you," said the collective farm woman. "You're young and educated. You can look ahead unafraid. Rapids are no obstacle to you."

The girls ran over to the rail and drank in the lake's beauty. They felt wonderfully happy. ★

THEY ARE WELL KNOWN IN THE UKRAINE

IRINA VILDE

Irina Vilde is one of the oldest writers in the Ukraine.

Since the Great Patriotic War a new life is being built in the Galitskaya Volyn Region. Vilde has a unique way of describing the changes which have taken place in the Western Ukraine.

People, new relationships among them, their everyday life and their ideals are topics of undying interest to her.

VASILI KASIYAN

Professor Vasili Kasiyan, People's Artist of the USSR, member of the USSR Academy of Art, is renowned for his illustrations for the works of Ukrainian writers Shevchenko, Kotsyubinsky and Franko. He is the author of many research papers on national Ukrainian art.

Vasili Kasiyan was recently elected chairman of the Union of Ukrainian Artists.

YEVGENIA DOLINYUK

She is one of those people who are fortunate enough to be assured of immortality during their lifetime. A bronze statue has been erected in her honor at her birthplace.

Yevgenia Dolinyuk, a corngrower, has been twice awarded the coveted title Hero of Socialist Labor. She lives and works in Tarnapol Region. Her team is a veritable academy as regards bumper crops of corn. Farmers from many different parts of the country seek her advice in this branch of agriculture.

ANDREI MALYSHKO

He is fifty now and one of the most popular poets in the Ukraine. His readers admire his youthful passion and the sincerity of his poetry, the melodious harmony of his verses.

The poet is a frequent visitor of factory clubs and student get-togethers, where he recites his new poems.

His latest collection of poems is entitled "Transparency." The title underscores the clarity with which the bright future of his people is seen.

(Continued on page 60)

UKRAINIAN SCIENTISTS AT WORK

FROM AN INTERVIEW WITH BORIS PATON
PRESIDENT, UKRAINIAN ACADEMY OF SCIENCES

TO REVIEW ALL THE WORK in progress by Ukrainian scientists would fill a book. All I can hope to do is cite a few of the projects most immediately related to the country's tasks for the present and the near future.

Our republic has the assignment of providing the nation's growing industry with raw materials. We are very rich in useful minerals. If, however, our developed resources were to remain at the level of, say, a decade ago, we would be facing an actual shortage of raw materials by the end of the current 20-year period. The importance of the work carried on by our geologists and geophysicists should, therefore, be self-evident.

To establish conclusively our mineral resources it was vital to work up geological maps showing the location of iron ore deposits in the Ukraine, particularly in the Krivoi Rog and Kremenchug regions. This project has given us valuable data. Our geologists have found that Ukrainian iron ore deposits cover an area much greater than was supposed. They appear to stretch far to the north and to merge with the deposits of the Kursk Magnetic Anomaly in the Russian Federation.

Our scientists have been searching intensively for nonmetallic raw materials, particularly fuels, in the Ukraine. Investigations recently concluded traced the underground movement of oil and gas in the Carpathians, where rich gas deposits are being developed which will provide industry for a long time to come with liquid and gas fuels as well as valuable raw chemicals.

Our research institutes and factories have designed highly efficient aeromagnetic and seismic surveying instruments that make it possible to prospect the earth's crust to a great depth.

In the region between the rivers Dnieper and Southern Bug geologists have found 3.6 to 3.7 billion-year-old granite outcrops. This find is of great importance in view of the plans to drill holes in the earth's crust to a depth of 11-12 miles. Rocks of that age are thought to be close to the bottom of the crust, and the spots where they crop out would seem to be the best places for sinking these deep prospecting holes.

Until recently the granites of the Kola Peninsula were considered the oldest rock in the territory of the Soviet Union, and the first super-deep hole was to be drilled there. The find of Ukrainian geologists provides new opportunities for research of this kind.

Besides its mighty industry, the Ukraine has a developed agriculture, and the republic's scientists are looking for ways of raising field crop and animal yield. Plant pest control is one avenue of research. Among the diverse chemicals Ukrainian scientists have developed is the new Avenin insecticide. Its effect has already been tested in five of the republic's farm areas. On the experimental plots where Avenin was applied, it almost completely eliminated the beet pest *sitona*.

A dry brewing yeast created by our biochemists is also most promising. Even short-term additions of the yeast to cow feed raises the fat content of milk by four per cent and more.

Successful field tests were recently completed of a new sugar-beet hybrid whose roots contain 10 to 30 per cent more sugar than the best Soviet and foreign varieties. The seeds of this new variety give mostly single-shoot sprouts, which facilitates the all-round mechanization of beet-growing operations.

Moving on from agriculture, man's oldest applied science, to the youngest, cybernetics, I may mention the computing center of the Ukrainian Academy of Sciences, recently reorganized as the Institute of Cybernetics and busily occupied with elaborating theoretical problems and solving practical ones.

A freight-handling plan for one of our railroads, worked out by one computer, has cut shipping costs by 10 per cent and saved at least 10 million rubles. Even better results are expected from a new monitoring machine that not only chooses optimum conditions for process control but can maintain these optimum levels without additional adjustments. This machine is now in its final testing stage and will soon be put into serial production. One of the first of these machines will control the converter steel-smelting process at the Dnepropetrovsk Steel Plant. It will undoubtedly also find application in other industries.

The world-famous nuclear scientist Academician Igor Kurchatov has singled out the republic's scientists for the high level of their research in nuclear physics. Their studies of nuclear radiation effects on semiconductor materials are particularly interesting.

By bombarding a monocrystal with neutrons, they are able to create new molecular structures without introducing anything from the outside. The new substances appear entirely as a result of the intra-atomic changes from the effect of irradiation. Crystals with new characteristics and pre-fixed properties are thus obtained.

Present-day multistage methods of converting water or heat energy into electric power are far from perfect. One of the paramount problems of modern engineering and technology is to develop methods for generating electricity directly without the need for intermediate conversion from one energy state to another.

Ukrainian scientists are devising a plant, on a laboratory scale as yet, that operates on the principle of a magnetohydrodynamic generator. The fuel in the generator jet turns to plasma at a temperature in the order of thousands of degrees. In this plasma jet heat energy is converted into electric energy.

The construction of these generators is complicated by the fact that there are no materials yet available for the structural elements that would withstand the temperature of a plasma jet. Ukrainian scientists have created heat-resistant alloys and insulation materials. Their investigations are still far from complete, but we are confident that a magnetohydrodynamic generator will eventually be built to operate not only experimentally but on a commercial scale.

Very efficient contact materials have been fabricated from metalloceramics for high-tension power lines. Contacts of this type have very high stability, do not oxidize, and therefore do not build up additional resistance. They have another important virtue in that they are much cheaper than those presently used.

Among the latest technical creations in medicine is an ultrasonic instrument for diagnosing cardiac diseases, designed at the Institute of Radioengineering Problems. The same institute has worked up the basic elements of a television computing device for fast processing of X-ray photographs. An apparatus for disintegrating urinary calculi in the bladder has been produced and is being tested clinically. An intracavity gamma transducer for the diagnosis of malignant tumors was also turned over for clinical testing recently.

At the Paton Welding Institute, founded by my father, where I have spent all my research life, we have, in recent years worked out such new methods as welding with a fusible electrode in a carbon-dioxide gas medium and with exposed arc and powder wire. We recently completed our investigations on the welding and remelting of metals by an electronic beam in a highly rarefied medium.

The method of radio-frequency welding devised by the institute was used in re-equipping two rolling mills at the Nikopol Pipe-rolling Plant. The efficiency of these mills was thereby raised twenty fold. Another of the institute's new developments is a program-controlled machine for the surface fusion of metals. There are no such machines as yet anywhere else in the world.

To round out the research picture with a statistic—in the course of a year the various institutes under the Ukrainian Academy of Sciences investigate more than a thousand scientific problems, a hundred of these being major projects. It is difficult to draw a sharp dividing line between the theoretical and the practical in research these days, but I can say definitely that the work our scientists are doing is closely linked with practical life. Their major attention is directed to the solution of problems encountered in the many branches of our country's economy. ★

Rafting timber down the Tereblya River in Transcarpathia. The Ukraine has virtually unlimited natural resources.

My HOME

UNTIL 1939, when the Western Ukrainian lands were rejoined to the Ukrainian Republic, the people in the region stretching from Zbruch to the San and from the Pripet to the Carpathians led a hard and bitter life. The little land they owned was not enough to feed them, nor, at the time, were there any factories where they could work and make a living.

Ukrainian writers described their heart-rending plight. Even now, reading the books of Ivan Franko, Vasili Stefanik and Olga Kobylyanskaya, one is appalled by the desolation of those lives. Brother killed brother for a strip of land. The impoverished people died of hunger and the cold. They left their homeland and crossed seas and oceans in the hope of finding work. Fathers migrated, leaving children and wives; sons and daughters went off, parting from parents forever. Each family had its own tragedy.

When I was only 15, I had to leave the Western Ukraine. At the time, in 1910, it belonged to Austria-Hungary. I came back, years later, to a Soviet Ukraine—much had changed since those times.

Take my home village, Kotsyubintsy in the Tarnopol Region, for example. When the Western Ukraine was ruled by Austria-Hungary and the Poland of the *pans,* two Polish counts, the Gorodisskis, owned two-thirds of all the land around the village. The remaining third was owned by 1,200 peasant families. The forests, meadows and fishing grounds belonged to the *pans*. A peasant did not dare take a dip in the pond without the master's permission.

When I came back, I found that the two estates had been joined into a single collective farm that the villagers work together. They walk upright now, our villagers; they bow their heads to no one.

I remember the school in old Kotsyubintsy with its two teachers. The principal, a flunky of the *pan,* was churlish and brutal to the peasant children. He ridiculed them, pulled their hair and ears, called them "dog's blood."

The village school today is an airy structure with spacious, well-equipped classrooms and laboratories, and its own orchard. The village has a community center with an orchestra, where hobby groups meet, and where lectures, motion pictures, concerts and plays are presented.

To get a book in the old days you had to go to the teacher or the priest; libraries and reading rooms were nonexistent because they were forbidden. Today the young people of Kotsyubintsy,

Carpathian mountaineers stage a song and dance concert. Collective farming has ended the cultural isolation of the old village life.

LAND

BY NIKOLAI TARNOVSKY
UKRAINIAN POET AND WRITER

with their public library and their own home libraries, find that hard to believe.

Only the children of landowners or priests were permitted to go to college in the old days. Occasionally a well-to-do peasant would try to enroll his boy in college. In most cases the son would be thrown out and the father would lose part of his land as punishment.

It would take pages to list the schools in the Western Ukraine that workers' and farmers' children attend. There is a state university in Lvov that in the Austro-Hungarian and Polish days accepted only the children of the *pans*. There were bitter fights then, frequently ending in bloodshed and arrest, for the right of the ordinary people to study there. Our national writer Ivan Franko had to complete his education in Vienna, and when he came home the *pans* would not permit him to teach Ukrainian literature. Now the university bears his name.

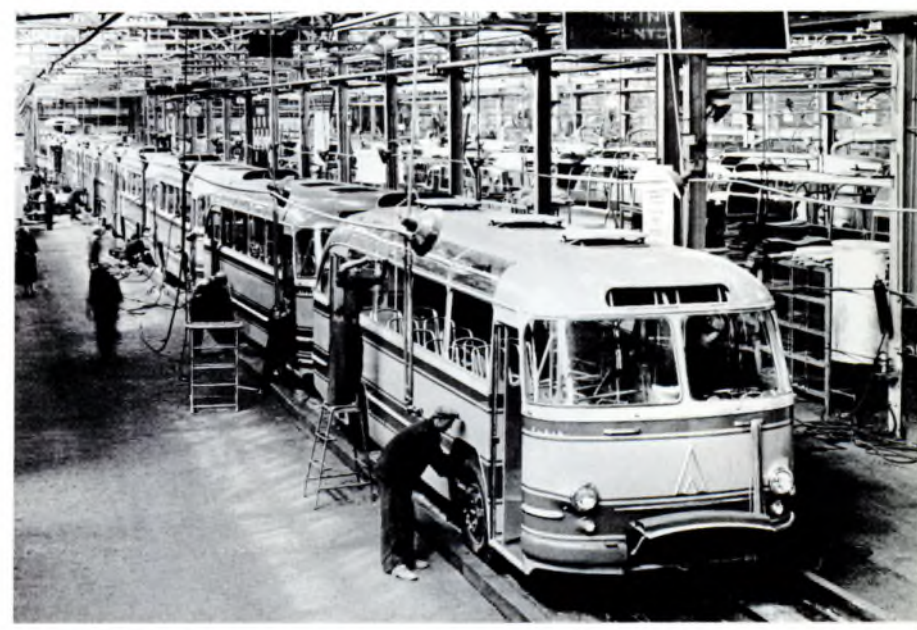
When I returned to my native land, I visited many of the Western Ukrainian cities. In Tarnopol I saw an electric equipment plant, a factory where coats and dresses are made, a sugar refinery. Lvov manufactures busses that are famous throughout the Soviet Union, also TV sets and gas appliances. I saw many new buildings, clubs, theaters and hospitals.

When I was a child there were only two doctors in all of Kopychin District. You paid for treatment, of course. Most people couldn't afford to. Now the district has hundreds of doctors, who make home visits at no cost to the patient; the well-equipped hospital treats all sorts of ailments; and there are first aid stations in all the villages—all of this free.

Literature, music and art were only for the wealthy in the old days, now they are for everyone. Lvov, Stanislav, Tarnopol, Chernovtsy, Uzhgorod, Lutsk and other cities have fine theaters and concert halls where not only city people but also farmers frequently go by bus or in their own cars.

I can't imagine the half-starved, poverty-stricken peasants of the old days having the leisure to attend a soccer or basketball game. Most of them did not even know about such things. Now tens of thousands of collective farmers gather from all parts of the Western Ukraine for contests between the sportsmen of various districts and regions.

These are things that come to mind when I think about my homeland and compare what it was with what it is now.



Busses made at the Lvov plant are found all over the country on city and suburban lines.

Mild climate and rich soil make the Ukraine one of the country's big livestock and field crop regions.

The republic turns out a large variety of consumer goods. Drying TV picture tubes in Lvov.

NEW TOWNS

BY YAKOV ZHUKOVSKY

MANY UKRAINIAN CITIES are hundreds of years old, and Kiev, the capital, is entering its second millenium. Despite their age these cities are everlastingly rebuilding and expanding, while new towns appear almost too fast for the map makers to keep up with.

Booming ***Komsomolsk-on-Dnieper***, barely a year old, is the namesake of another famous town that also mushroomed—Komsomolsk-on-Amur. A quarter of a century ago young people gathered from every part of the country to lay its foundation in the Far East's taiga.

The new Komsomolsk is rising on the sandy shores of the Dnieper, but it will be a garden city nevertheless, even though trees will have to be brought in from distant parts. It takes a stretch of the imagination to see the Komsomolsk that will be. Many of its streets are still unpaved and some are all but impassable when it rains. There is no hotel and no theater, but there will be before very long. They already exist on the drafting boards and their sites have been chosen, as have the sites for a college, a junior college, a vacation resort, a clubhouse and a stadium.

Komsomolsk is one of the many new Soviet towns growing up around big seven-year-plan industrial developments, in this case an ore-dressing mill that is being built to process iron ore from a huge deposit discovered not far from the old city of Kremenchug.

Mills like the one being built at Komsomolsk will be supplying ore to blast and open-hearth furnaces. The Ukraine needs more and more metal and the aim is to triple the output by 1980. Here and there in the town one comes across posters with a large "75"—the builders reminding themselves that the Ukraine's target for iron and steel production by 1980 is 75 million tons, almost one-third of the Soviet Union's total.

Novaya Kakhovka is the oldest of the new Ukrainian cities, 10 years old. Novaya means new, and Kakhovka is the name of a neighboring old steppeland town that became famous during Civil War days. It was there that the Red Army barred the way to the counterrevolutionary forces of General Wrangel. It was also there that Soviet troops in the last war defeated a large nazi force.

Novaya Kakhovka developed from a construction workers' community when the Kakhovka Hydroelectric Station, second of the Dnieper River series of power plants, was being built. When the station was finished, the population did not shrink, as might have been expected; it grew. Some of the more restless construction men did leave for new projects, but most found jobs in the town's fast-growing industries.

Since then Novaya Kakhovka has almost doubled in size, a fact corroborated by the many new apartment buildings and small homes. With its several large enterprises—a big electrical equipment plant and several building-material factories, including a huge concrete works that turns out prefabricated structural units—the town is the center of a new, growing industrial district.

Although in the middle of steppe country, Novaya Kakhovka is a virtual garden city, thanks to the fact that practically everyone of its 40,000 inhabitants, children included, have planted several trees apiece. The once arid land now has all the water it needs, for the Kakhovka Dam has impounded a reservoir some tens of miles wide and almost 125 miles long. This man-made sea, one of the largest in the Soviet Union, has changed the climate of the surrounding countryside. Irrigation canals now carry water

Ten-year-old Novaya Kakhovka grew up around a Dnieper River power project. It has a population of 400,000 and is the center of a new industrial region.

Hotel in Severodonetsk. This new Ukrainian town sprang up near a large chemical plant. It is rapidly becoming an educational and cultural center.

niles deep into the steppe. The Dnieper no longer grows shallow even in hot summers, and shipping conditions have improved. Freight and passenger hydrofoil craft now skim over its surface at 60 to 70 miles per hour. Novaya Kakhovka has become a major river port.

Severodonetsk, growing up around a large chemical plant, derives its name from the Severny Donets River. A chemical plant with its varied assortment of foul smells would hardly seem to be the most desirable neighbor. The dominant odors in Severodonetsk, however, are of acacia and lime. Some residents say that the heavy fragrance of the blossoming trees somehow "neutralizes the chemistry"; the main street has eight rows of them.

The average age of Severodonetsk's 50,000 inhabitants is 26, most of whom have at least a high school education. The town has four research establishments and several technical schools.

What strikes the newcomer immediately is the number of small children. There is a kindergarten and nursery on almost every street and a grade school every few blocks. A big four-story music school has more applicants than places, and a second one is now being built. A theater almost as large as the Moscow Bolshoi is going up, but with the town booming the way it is, there is serious question as to whether it should not have been planned larger. The town's stadium and indoor tennis courts hold national and international matches. All in all, Severodonetsk is flourishing.

Shakhtyorsk is one of the newest mining towns in the Donets basin, which, though no longer the country's biggest coal center, still keeps expanding. In spite of its high, wind-swept location, it is a green oasis on the Donets steppe. The biggest mine in the area, Postnikovskaya, is being automated, and very soon miners will not have to go below ground at all, operations will be controlled entirely from the surface. Fully automated mines will soon be quite common in the Ukraine.

Chervonograd and ***Novovolynsk***, in a newly developed coal-mining region in the Western Ukraine, bear no resemblance whatever to the dismal old-time mining communities. Their streets are wide and straight and their comfortable houses face the sun.

There was a time when people in the region crossed the ocean to search for a better life. Now many of them have come back, their skills and talents needed in their native land.

The Western Ukraine has become a gas and oil center. Its plants manufacture complex machinery, loaders, busses, precision instruments, light bulbs and vacuum tubes. New chemical, building-material and furniture plants have been set up. Coal mined at Chervonograd and Novovolynsk is used at the nearby Dobrotvorsk power plant and by factories in the surrounding area.

The Ukraine plans to expand its chemical industry 22 fold within 20 years, and its production of synthetic resins and plastics a hundred fold. The coal of Chervonograd and Novovolynsk, the oil of Dolina and the gas of Dashava serve not only for fuel but as raw materials for the expanding chemical industry.

The old cities of the Ukraine are growing and the new ones are burgeoning. And in all construction is ever present. Every day a thousand Ukrainian families move into new houses. In the next two decades more new housing will be built than presently exists. Many more new towns will be springing up, each succeeding one more modern, more attractive and more livable. ★

Novovolynsk has none of the drabness of an old mining community. It is one of several towns established near the region's newly developed coal fields.

Vossoyedineniya Street in Chervonograd, with its modern housing, is typical of residential sections in new mining communities of the Western Ukraine.

BY VASILI KASIYAN
PEOPLE'S ARTIST OF THE USSR
MEMBER OF THE ACADEMY OF ART

UKRAINIAN folk arts and crafts

UKRAINIAN arts and crafts have long been famous. People in many lands admire the embroideries, the colorful rugs and the fine geometrical figures in the national design. In recent years many of these articles have been exhibited in Poland, Bulgaria, Czechoslovakia, Belgium, China, Vietnam, France and Canada. Today in such far-flung cities as Jakarta, Marseilles, Kabul and Brussels, you find Klembovo embroideries, Guzul wood carvings, ceramics from Oposhnya, embroideries from Krolevets, rugs from Podolski, ornamented Chernigov skirts, Petrikovka painted ware and Lvov art glass.

All this bespeaks a truly indigenous, full-bodied folk art which produces articles that are a feast to the eye and a joy to the heart. Moreover, they are a credit to the fine esthetic sense of the Ukrainians, who deeply cherish the traditions of their folk art.

Under the Soviet system, with folk artists and craftsmen offered every opportunity to realize their gifts, the arts and crafts have blossomed as never before.

Sculptor Vasili Svida is an interesting and not untypical example of these folk artists. He was the son of poor parents and spent his youth job-hunting in Czechoslovakia. Then he settled in the Soviet Ukraine, where he was able to develop and employ his talents. Today he is chairman of the Transcarpathian section of the Soviet Artists Union and a deputy to the Ukrainian parliament.

Yekaterina Belokur is another example. An unlettered woman, she taught herself to paint and achieved such distinction as to merit the title People's Artist of the Ukraine.

Hundreds of folk artisans at present also hold teaching jobs, passing on their knowledge and skills to the new generation. Several of the famous Petrikovka artists—Vera and Galina Pavlenko, Vera Klimenko, Marfa Timchenko—work at the Kiev experimental ceramics factory. All are members of the decorative arts section of the Ukrainian Artists Union. Marfa Timchenko and Vera Pavlenko hold the title Honored Art Worker of the Ukraine.

There is a long tradition behind the Petrikovka artists. From time immemorial it has been customary for Ukrainian villagers in the spring, at cherry and apple blossom time, to paint flowers on their newly whitewashed cottage walls. Their stoves, too, are decorated with floral designs. A special technique has thus been evolved in which Petrikovka artists excel. They paint with brushes of cat's fur, and their light, gentle strokes leave designs of exquisitely delicate tracery. These designs, originated by the Free Peasant Woman cooperative of Petrikovka, are used in the textile and porcelain industries.

The paintings of Maria Primachenko, who lives in the village of Ivankovo near Kiev, are frequently described as "symphonies of color." She is inexhaustibly imaginative at weaving floral designs and fantastic animal figures into her pictures. One of her well-known paintings, *Wedding in the Woods*, is typical of the folk style and colors she employs. In it are a stork in bright red Ukrainian-style trousers and a duck in a gaily ornamented kerchief of national design.

Rug and yarn weaving are popular crafts. Each region has its characteristic designs—elaborately floral in the country round Poltava and Kiev, geometrical near Vinnitsa. Ukrainian rug designs are somewhat more lush than the Persian and show up more prominently against the flat background. In addition to chemical dyes, Ukrainian weavers still use such plant dyes as cochineal, chestnut bark and wild plum root. They give very soft, deep tones and, interesting to note, after fading slightly, they acquire a new beauty.

More recently Ukrainian rug makers have been weaving designs around a central theme. The Ukrainian Arts Museum has one such large rug devoted to the classic poet Taras Shevchenko, with his portrait in the central panel and the old and new Ukraine depicted on each side.

Vesselinovka village, near Kiev is noted for both its rugs and tapestries. Natalia Vovk, a member of the Artists Union, has won fame for her tapestry designs "Friendship of Peoples," "Sisters" and "Liberated Kiev."

The rug-weaving centers of Degtyari, Dikanka, Krolevets, Reshetilovka and Skoptzi also produce fabrics of various designs. One such patterned fabric of wool in a beautiful weave is always used for the traditional fancy skirt that is worn as the top piece of the national costume. The same fabric is now gaining popularity as drapery and upholstery material. Here too, every region has its own design. The Boguslavl, Krolevets, Sorochinsk and Degtyari fabrics are among the most popular.

The Ukrainian handcloth is very much part of the Ukrainian tradition. A newborn baby is wrapped in such a handcloth. A young girl embroiders one for her wedding. You bring out bread and salt on a handcloth to a guest as a token of hospitality. A mother gives one to her son when he leaves on a journey. The very popular "Song of the Handcloth," composed by Platon Maiboroda to words by Andrei Malyshko, tells of a mother embroidering into a handcloth her love for the scenes of her native land.

Anna Veres lives in the village of Obukhovichi, near Kiev, and the colors she uses in the handcloths she makes bespeak her feeling for the Ukrainian countryside. She learned the skill from her mother and is now passing it on to her school-age daughter. The Veres designs have delighted viewers at many exhibitions in the USSR and abroad, and have attracted the interest of art scholars and ethnologists.

"In my handcloths' color arrangements and designs," Anna says, "I try to convey the bounty of our collective farms, the gold of the fields and the deep green of the leaves, the glory of the autumn sun, the red of apples bright as the ribbons in the braids of our young girls."

In the Ukraine the men's shirts are in themselves an encyclopedia of the art of embroidering. In the country round Chernigov, embroidery is done in an all-over faint design; in Transcarpathia it is a solid color, black or red. Every region, even every village, has its own color scheme. You seldom find a Ukrainian girl who is not good at embroidering; many of the village lads are too.

Rich clay deposits have given a stimulus to the Ukrainian ceramics industry. The potters are famous not only for their household articles but for decorative ware, figurines and toys as well.

Ceramics made at Kosov are distinctive for their yellow and green ornamentation against a white background. The Oposhnya potters prefer a dark red background. The creations of Emelyan Zaliznyak, a resident of Kiev, are on display at the World Ceramics Exhibition in Prague.

Ukrainian glass blowers follow the vocation from generation to generation. Their products come in a large variety of shapes for a multitude of uses. Among the more popular items are decanters, carafes and kegs in animal shapes. The folk craftsmen's traditions are maintained and reflected widely in the glassware industry. The work of the Pavlovskys of Lvov, father and son, is particularly notable.

Ukrainian folk tales abound in heroes who travel through wild forest and do battle with incredible monsters. This world of fantasy is reproduced in the folk wood carvings. The creations of the Kosov and Lemkovo artisans are wonderfully rich in imagination and show great technical skill. In his wooden sculptures Vasili Svida, for example, almost catches the murmur of mountain streams and the rustle of leaves. Pyotr Verna's illustrations in wood of the works of Taras Shevchenko are uncommonly beautiful.

Beads and mother-of-pearl inlay are used by many wood carvers. Much less frequently do we come across straw inlaid in wood. Alexander Sayenko has devoted a lifetime to this very interesting and peculiarly regional craft. His creations bear such titles as *Harvest Festival, Queen of the Fields* and *The Cossack Mamai.*

The Kiev Arts Museum is a veritable treasure house of the finest examples of Ukrainian folk arts and crafts, and its Visitors Book contains comments from thousands of delighted visitors, many from foreign countries. One comment, signed by Vasili Melnichuk of Canada, reads: "Everything we have seen here speaks of the Ukrainians' love of beauty. It finds expression in everyday life too."

Another, by Indian poet Ali Sardar Jaffar, reads, "Beauty brings the Ukrainian and Indian people very much closer together."

Silver, copper and **shell inlay on wood.**

Character from a folk song. Porcelain.

Wooden jewelry **with inlay decoration.**

ceramic wine jug from Poltava Region.

A traditional colored glass wine bottle.

A wedding. The figurines are porcelain.

Old ceramic wine jug from Oposhnya.

UKRAINIAN *Dishes*

PHOTOS BY ALEXEI BUSHKIN

UKRAINIANS are very cheerful and hospitable people who like to visit and entertain. The milk and meat, fish and game, berry and vegetable dishes of this rich farm region tickle the eye and palate simultaneously.

Everybody has heard of the famous Ukrainian *borshch*, but not everybody has had the good fortune to taste it.

Here is the recipe for four: ¾ lb. meat, ¾ lb. beets, 1 lb. fresh cabbage, 1 lb. 3 oz. potatoes, ¼ lb. carrots, 1½ oz. parsley, 2½ oz. onions, ¼ clove garlic, 3 oz. tomato paste, 1 oz. butter, 1½ oz. pork fat, 4 oz. sour cream, 1 oz. sugar, pepper.

Shred carrots, onions, beets, celery and parsley very fine. Add butter and meat and simmer in covered pot. Add tomato paste, pepper, vinegar, bay leaf. Shred the cabbage, scald in hot water, drain in colander and put into second pot. Add potatoes, cut fine, pour strong broth over all and boil for 10-15 minutes. Add the stewed vegetables, bring to a boil, add salt and sugar to taste. Serve with sour cream.

***Ukrainian** roast meat.* Take a chunk of juicy roast meat, place on toast previously spread with a thin layer of liver pâté. Garnish with fried chicken liver, sweet red peppers, fresh cucumbers and tomatoes.

Salad. Take potatoes, cucumbers, carrots and green peas and cut fine, eggs, sturgeon (salmon may also be used) and mayonnaise. The salad is decorated with black caviar, olives, fresh tomatoes and parsley.

Photo shows a salad, roast meat and Ukrainian vodka "Gorilka with pepper" (90 proof), "Gorilka" (90 proof) and "Slivyanka" (plum brandy, 80 proof).

"Ukraina" ice cream. Take ice cream mixed with whipped cream and eggs, decorate with jam, almonds or canned fruit. Fill cones made of rich dough with strawberry or other jam and place around the ice cream.

Vareniki. Roll out unleavened dough, cut into small parts, and put on the filling. As a rule, cottage cheese or pitted cherries are used. Then boil for ten minutes and serve hot with sour cream. (Ingredients for one portion of dough: 1 cup water, ¼ cup flour, one egg. Salt to taste.)

Writer Alexander Korneichuk (left) and American professor Philip Mosely in the Crimea.

VISITORS TO THE UKRAINE

BY YEVGENI YURENKO

THE UKRAINE last year was host to nearly a thousand foreign delegations and a hundred thousand tourists from 83 countries, visitors of widely different political and religious beliefs and national origins but all interested in the life of our republic.

They asked questions about everything under the bright Ukrainian sun —how factories were run, how collective farmers were paid, what the interest was on savings bank deposits, what kind of pictures the Kiev Film Studios produced, how much it cost to rebuild Kiev after the war, etc. etc. —but their main interest was Ukrainians.

He liked the cordiality, good cheer and the rich humor of the Ukrainian people, said American tourist Abraham Foster after spending several days in the republic. His sentiments were echoed generally by visitors from the United States and all other countries.

The Ukraine spared no effort to make its guests feel at home, to show them around the republic. Professor Harold Plough, member of an American delegation of scientists, said in a radio talk broadcast from a Ukrainian station that his delegation was given every opportunity to see the progress the Ukraine had made in all fields, and particularly in science and higher education. His feeling was that the friendly welcome his delegation had received was an excellent argument for warmer relations between the United States and the Soviet Union.

Most visitors to the republic had a word to say about the building cranes that towered like permanent parts of the landscape over cities and villages, steppes and hills. Pierre Corroialler, an engineer from Annecy, France, made the comment over the Ukrainian TV, "Some countries have reason to envy the success achieved by the republic in all fields of activity. I saw whole blocks of new apartment houses first-class industrial plants, and big hydroelectric stations. I found that the Soviet Union was engaged in constructive effort, that its people were carrying out a grand program of peaceful construction."

Noel Sampson, chairman of the Teachers Union of Australia, shared the French engineer's opinion. "I had read a good deal about your progress, but when I arrived in your country I was astounded by the giant strides the Soviet Union has made in industry, building, education and cultural development."

Elin Hansen, editor of the Danish farm paper *Skive Folksblad*, and his wife visited the Terezino livestock research station near Kiev and left this remark in the Visitors' Book, "Denmark is famous for its animal husbandry. But our best cattle breeders could learn something from a visit to this fine station."

Among the visitors were people from underdeveloped countries and those that recently won their independence. They were perhaps the most interested guests, for they came not only to see but to adapt many of the things they saw to the needs of their own countries. Under czarist rule the Ukraine was a huge, backward province; 44 years of Soviet power made the transformation. Before leaving for home, Julio Castro Franco, member of the Peruvian Journalists Federation, who headed a delegation of cultural workers, said, "The Ukraine is a wonderful example for us."

Visiting American lawyer Frank Reston made a point that bears repeating because it is a conclusion so many tourists come to. "Everyone who comes here with an open mind," said Mr. Reston, "cannot help but be convinced that the Soviet people want peace more than anything else. Their economy is based on peaceful construction, and they are building for peace, creating a happy society of the future." ★

A song fest at the new Vinnitsa international youth camp. Louis Kondo of Ghana is playing.

American publisher William Benton chats with Young Pioneers on an excursion to Sevastopol.

French educator Nadel Rubakina and family camp near Kiev on a trip through the USSR.

Tillers of the Soil

Yefrosinya Demidenko

BY DMITRO PRILYUK
UKRAINIAN WRITER
DRAWINGS BY ANATOLI YAR-KRAVCHENKO

OLD SOL RISES every morning and shines down benevolently on the rippling wheat fields of the Ukraine until it's time for him to vanish behind the gray-capped Carpathians. He seems to feel wonderfully at home in the Polesye countryside and the Carpathian foothills, pleased to be giving his warmth and light to those who love this soil. Spring mornings he smiles his greeting to Ukrainian farmers busy with their plowing; fall mornings, as they sail their harvester combines through seas of wheat.

I met a tractor driver in the fields one bright day. His name was Nikolai Syabro.

"How's it going?" I asked.

"Fine, thanks," he smiled. "The land's good to you if you treat it right. You should have seen the crop we took in. Pure gold!" He brushed the straggling coal-black forelock out of his eye with the back of his hand. "Over there on the right is our corn. It's growing fast. I've been trying to figure out how many combines we'll need to get it all in before the rains. Five should do it. I'd better tell the team leader to get them ready."

This tractor driver's interest in the corn didn't surprise me. He feels it's his, just as his neighbor, his friend, the whole village does.

"What's your village called?" I asked him.

"Berestovenky. It's right over there, that valley behind the poplars."

"How far is it to Krasnograd?"—the town I was headed for.

"You can almost walk there from here," Nikolai pointed in the direction. "Why don't you stop off at our collective farm? It's on the way. We have an interesting evening planned at our House of Culture—concert artists from Poltava and our own singers and dancers to fill out the program."

I thanked him for the invitation and drove off.

Nikolai Syabro doesn't look like a hero: medium height, thin, even a little frail. But he is, a real one.

In the fall of '43 our troops were fighting desperately to hold the Dnieper. Sergeant Syabro commanded a platoon of scouts that was ordered to take a well-defended bridge. Death itself must have chosen that bridge to stage a bloody sabbath on. There were only seven left of the whole platoon when the bridge was taken, Syabro one of them. They were all recommended for decorations.

But by mistake, his very common Ukrainian name of Syabro Nikolai was teletyped as Syabronik Alai—and he did not get his award. The mistake might have been rectified had Syabro remained with his unit, but he was in a hospital for a time and the front line shifted rapidly to the west.

After the war there were other things to think about. He never talke about his exploit. So he'd taken a bridge. Others had taken Berlin, th Reichstag itself, and they didn't make a fuss about it. He went on drivin his tractor at Berestovenky. The collective farm grew and Saybro got bette and better tractors to drive.

But the people in charge of war decorations kept searching for Syabroni Alai for 17 years and finally found him. When he was presented with th Gold Star of a Hero last year, his fellow villagers asked him why he hadn' said or done anything about it all that time.

"What for?" he replied quietly. "The important thing was that we too the bridge and our men were able to get across the Dnieper and fight thei way to Berlin. The rest wasn't important."

That's what he's like, our unheroic-looking Nikolai Syabro, a Ukrainia from head to foot, as strong and unpretentious as all his people.

No sooner did the front line shift westward and the fire die down aroun Pologi-Yanenki village than life asserted itself once more—through th bleat of a calf. Kukla was the only cow that had survived and was clamorin for attention, her fears gone the moment she felt the pangs of hunger. Whe the people heard that unexpected peaceful call, they took heart and climbe out of cellars and other hiding places to begin life anew, together.

Could any farmer have gotten back on his feet by himself, without th help of his neighbors, in those terrible times? Never. He could prosper onl if his neighbors did, collectively. Together they could buy cows, plow th earth, sow grain, build houses. For the state, too, it was far easier to hel a collective farm than individual farmers.

There was Yefrosinya Demidenko, for example. What would she, soldier's wife, have done, alone, with a baby son on her hands? She wen to work as a milkmaid on the collective farm, a job she held before the wa

The dairy had only six skinny cows and the calf Kukla to start with, bu in three years they produced a fine herd. Kukla turned out to be a purebre Simmenthaler and started such a dynasty of record breakers that she becam famous all over the country, a reward for all the milkmaids' hard work The collective farm thrived, and the farmers with it.

For Yefrosinya, everything would have been fine had it not been for he husband. No worse off than any of the other men who found nothing but charred chimney to remind them of home when they got back from the fron Petro felt it was asking too much of him that he pitch in with the rest in th

Nikolai Syabro

Lyubov Lyubchenko

common job of rebuilding the farm. He left home to find a richer wife and an easier living.

Yefrosinya was desolate. She threw herself into her work and the care of the baby, Gritsko. She was determined to forget, but not to forgive. She worked endlessly, put everything else out of her mind.

Then, almost overnight it seemed, everybody was talking about Yefrosinya Demidenko. Her Kukla had broken the national milking record with a yield of 3,300 gallons a year. Besides bringing her fame, it brought her fortune as well in the way of high earnings.

When the news got back to Petro, he had several bad moments. The wife he had deserted turned out to be a gold mine. He returned to his native village and begged Yefrosinya to take him back.

"What's the matter? Left your other wife too because she isn't rich enough for you?" she asked him. "I can't stand the sight of you, let alone live with you." She opened the door wide to let him out. And that was that. Her neighbors and fellow villagers approved. "Good girl," they said, "Patient when she should be, proud when she has to be, like every good Ukrainian."

Polesye is a wooded part of the Ukraine, sprinkled with peaceful villages. Lyubov Lyubchenko grew up in one of these villages, in Zhitomir Region. It's hard to believe that parts so remote could produce members of the Soviet parliament. They do. Last year Lyubov was elected a deputy to the USSR Supreme Soviet.

In Andrushevo everybody knows her, of course. Ask for her and they'll tell you, "You'll have a hard time locating our collective farm chairman. She's a regular meteor in that car of hers."

Meteor was the word for it, I found out.

"She was in the office a moment ago, signing papers. But she's out in the fields now. She said she was heading for the third team."

The team members told me, "Sure, she was here. Had a look at our sowing. Lyubov knew these fields from end to end before, but now that she's gone through an institute and become an agronomist, she knows them inside out."

"Was she born in the village?"

"She certainly was. We remember her as a child driving the geese ahead of her with a stick. Never afraid of them. Never afraid of anything. And a woman with a mind of her own. When she decided to go to an institute, she did. And when she said she'd come back to work, she was as good as her word."

"Did she decide to become chairman too?"

"That we decided for her," with a smile, "because she's a worker herself and knows how to inspire others. She's always glad to share what she knows, and she respects people."

"Where's the best place to find her?"

"Home, in the evening."

I found Lyubov at home playing with her daughters Galina, Natasha and Svetlana.

"You even find time for your children."

"Well, I'm a mother also," she laughed.

One day in the fall of 1939 everything changed in Yaseniv village, near Lvov. The landowner fled the people's wrath, and the poor farmers elected their own government and divided the land. In the Ukraine we say, "Whoever has land has life."

Sowed anew by honest hands, the land yielded rich harvests despite the dire prophecies of those who wanted their land and power back. After long years of poverty and hunger, the farmers ate and dressed decently. They felt like men among men. They not only proved to be efficient owners of their lands but good administrators of their state.

Vladimir Belenky was one of those farmers. Life has done well by him, he says. The hardships are in the past, and as for the future—"the future will be better still, although I can't complain about the present."

Belenky is a tractor driver. His wife works in the farm's accounting office, keeping record of the field work. They have two children, and Belenky's mother also lives with them. That's the family. How do they manage?

"I totaled 556 workdays units last year," he explained. "It's about what I generally average. It works out to a ruble per workday unit, plus two pounds of grain. Besides that I got 400 pounds of corn and 175 pounds of sugar. Add to that my wife's 347 workday units and Mother's 152, and you get 3,450.7 rubles, the cash value of our combined earnings. That's 287.5 rubles a month."

"And what about our vegetable patch and garden," his wife adds, "and our cow, two pigs and poultry?"

And Granny closes with the traditional well-wishing phrase, "God bless us, our children and our grandchildren." ★

BOOK EXCHANGES WITH FOREIGN COUNTRIES

By KONSTANTIN BAKULIN

THE STATE PUBLIC LIBRARY of the Ukrainian Academy of Sciences, the largest in the republic, has a book exchange arrangement with universities, research laboratories, libraries and learned societies in 60 foreign countries on all five continents.

These exchanges have augmented the library's collection by 8,500 books and 12,000 copies of newspapers and journals. In turn, it has sent more than 9,500 books and 12,000 copies of journals and newspapers to institutions in Austria, Britain, Bulgaria, Czechoslovakia, the Federal Republic of Germany, France, Hungary, the Netherlands, Poland, Rumania, Sweden and other countries.

The Ukrainian state library exchanges printed material with 107 institutions in the United States, among them the Library of Congress, the New York Public Library, the National Medical Library in Washington, the Academy of Natural Sciences in Philadelphia, the New York Academy of Medicine and 26 universities. Last year it sent its American exchange partners about 700 monographs on various branches of science and technology and 269 complete one-year sets of journals and other publications of the Ukrainian Academy of Sciences, and received in exchange 1,100 books and 197 annual sets of American journals and other materials.

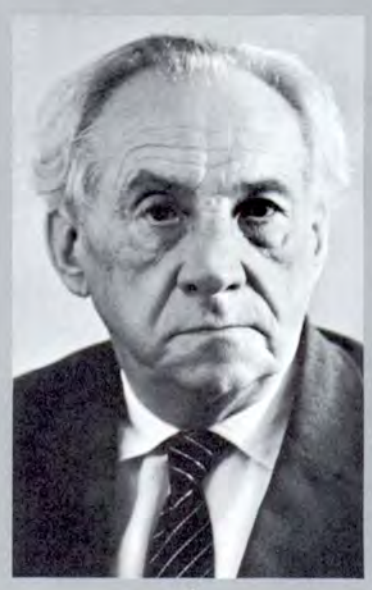
The library sends scientific and technical publications to many Asian, African and Latin American countries. The academy's publications—the *Proceedings of the Ukrainian Academy of Sciences*, the *Ukrainian Journal of Mathematics*, the *Ukrainian Journal of Botany*, *Automatic Welding*, *Archeology*, *Bulletin of the Astronomical Observatory*, *Transactions of the Institute of Zoology* and others—are widely read abroad. ★

THEY ARE WELL KNOWN IN THE UKRAINE

GALINA BURKATSKAYA

Galina Burkatskaya is chairman of the Sovietskaya Ukraina Collective Farm. She has risen from the status of plain farmer to that of statesman, and has become an experienced, highly qualified agricultural expert.

As a woman, mother, Communist Party member, and as a person of authority, Galina Burkatskaya considers the defense of peace the most important issue of the day. She represented the Ukraine at the World Congress for General Disarmament and Peace held in Moscow.



MAXIM RYLSKY

Maxim Rylsky is the author of many excellent translations of works by Alexander Pushkin and Adam Mickiewicz into Ukrainian.

Rylsky started his literary career in 1910 and has become one of the leading poets of the Ukraine.

He devoted many years to the study of Ukrainian folklore. Rylsky is a member of the Academy of Sciences of the Ukrainian SSR and often contributes articles on poetry and Ukrainian art to the press.

YEVGENIA MIROSHNICHENKO

Those who have heard her sing at the Kiev Opera House or at a concert will always remember her enchanting voice. She gives a particularly moving performance of "Solovei" by Alyabyev and Strauss' "Venetian Carnival."

Yevgenia Miroshnichenko came to the opera stage from a Kiev vocational school choir. Recently she toured Britain, France and other countries.

BORIS PATON

This year Boris Paton was elected President of the Ukrainian Academy of Sciences. He heads the famed Institute of Electric Welding named after his late father Yevgeni Paton, who was also a scientist and engineer.

Lenin Prize winner Boris Paton is a gifted scholar and an eminent public figure; he is a member of the Central Committee of the Communist Party of the Soviet Union and a deputy to the USSR Supreme Soviet.

national traditions in *Fashions*

BY EMILIA KOLOBKOVA
PHOTOS BY GEORGI UGRINOVICH

I HEARD this legend in the Carpathian highlands where the summer stars glitter like scattered beads. It happened long, long ago. A wounded Ukrainian was taken prisoner in unequal battle. While in Turkish captivity, he had only an embroidered shirt his mother had made to remind him of his homeland. The magical powers she had woven into the bright pattern enabled the Cossack to escape—mountains parted to let him pass, lakes dried up, and swords dropped from the hands of his enemies.

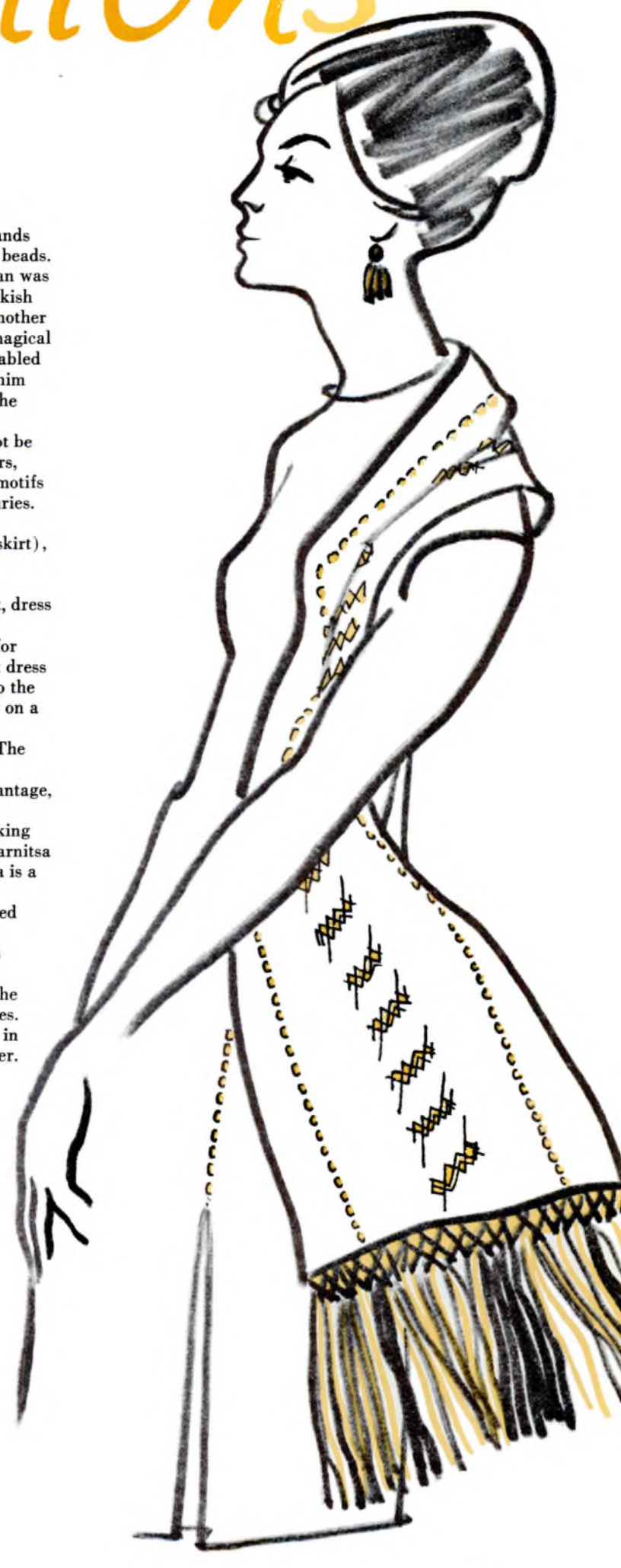
Present-day Ukrainian dress designers may not be able to endow their creations with magical powers, but they do work in the charming national folk motifs that unknown craftsmen created over the centuries. They make use of the loose line of the old *svitka* (man's long shirt) and the *plakhta* (woman's skirt), and of traditional embroidery designs and ornamentation.

Ensembles are now in fashion—dress and coat, dress and jacket. This gives the designer scope for imaginative use of folk patterns. Very popular, for instance, is Alla Gladkovskaya's model—a black dress embroidered at the hem and a short coat toned to the embroidery. The white and red wool embroidery on a dark evening dress is very effective. The same embroidery is used for the accompanying stole. The designer is Valentina Grigorieva.

Children's clothes also use folk themes to advantage, with decorations in braid and embroidery.

Kiev designers help to create new fabrics, making frequent trips for the purpose to the Kiev and Darnitsa silk and textile mills. Designer Taisia Zabannova is a well-known and always welcome guest in the Transcarpathian city of Kosovo, where she worked with folk craftsmen to originate fabrics using traditional patterns and ornamentation. One was named after the Ukrainian song "Marichka."

The present vogue of ceramics is reflected in the "pitcher" fabric design and in ceramic accessories. The Ukrainian traditional glass necklaces, worn in several strings, is again in style, smarter than ever.



THE SEA GATE OF THE UKRAINE

BY IOSIF PIKAREVICH

THE SEA GATE of the Ukraine is what they call Odessa. Thousands of ships with foreign goods bound for various parts of the Soviet Union tie up at its docks every year. And thousands of others, with holds full of Soviet export items, leave for foreign ports.

The port of Odessa has a long—some of it bitter—history. Maxim Gorky worked there as a stevedore at the turn of the century and describes it in vivid and depressing detail. The life of an Odessa docker was not enviable. He was a beast of burden who shouldered great loads from the wharves into the deep holds and back again. By the end of the 12- to 14-hour workday even the most hardened were more dead than alive.

They were homeless, many of them. They were weakened by the back-breaking toil and died of starvation. A local newspaper reported one winter that "dozens of frozen corpses are picked up on the streets and carried to the morgue every morning, stevedores in rags who hadn't the few kopecks to pay for a night's lodging at a waterfront doss house."

The stevedore in the old sense of the word has vanished from Odessa's port. The docker today does not stagger under the heavy loads. Machines do all the work—cranes and other mechanisms.

The cargo is different also. The traditional Russian export items—wheat, lard, lumber and hemp—are being replaced by automobiles, tractors, machine tools, precision instruments and durable goods.

Trade ties between the Soviet Union and various countries are widening, and Odessa plays an important role in their strengthening. Through Odessa go farm machinery to Bulgaria; electrical instruments to Rumania; petroleum and petroleum products to Yugoslavia; machine tools, tractors, precision instruments and excavators to India, the United Arab Republic, Guinea.

A number of new sea lanes were opened from Odessa a while ago, and now Soviet seamen frequently sail to Cuba, Ghana, Yemen, Nigeria, Cambodia, Morocco and other countries receiving economic aid from the Soviet Union.

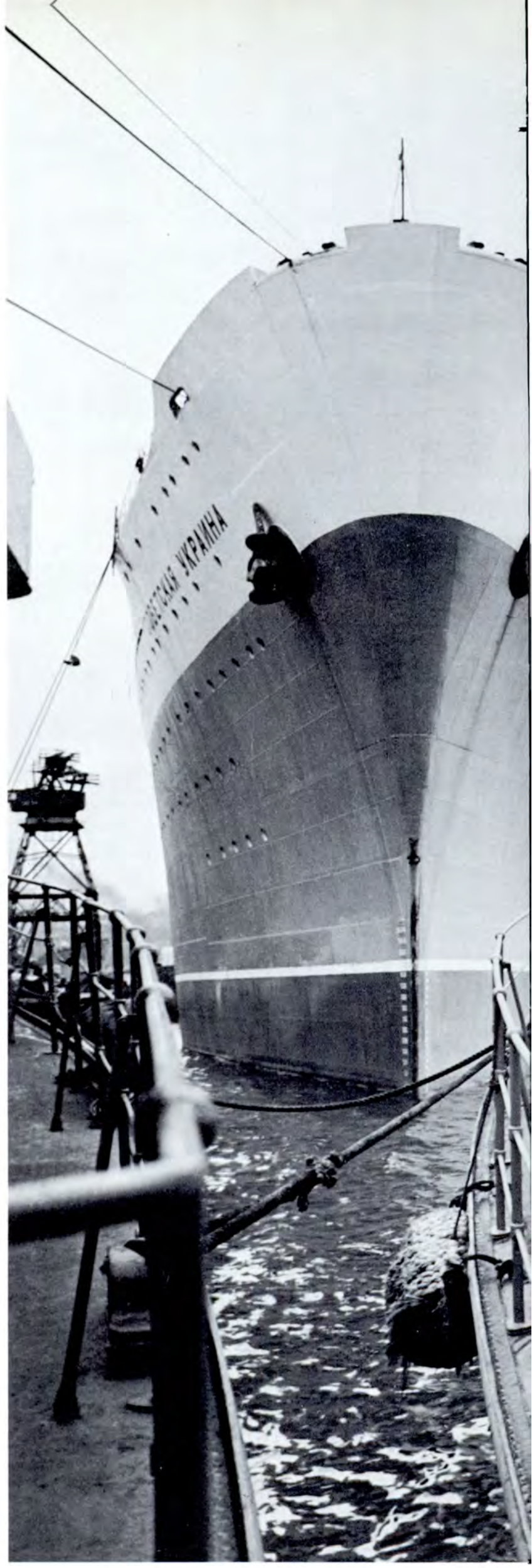
Odessa handles cargoes of zinc, petroleum, tin, chemical plant equipment, cotton fabric and fish for delivery to Italy, France, Greece and Japan, with whom the Soviet Union has trade agreements. Export goods for more than thirty countries pass through the port.

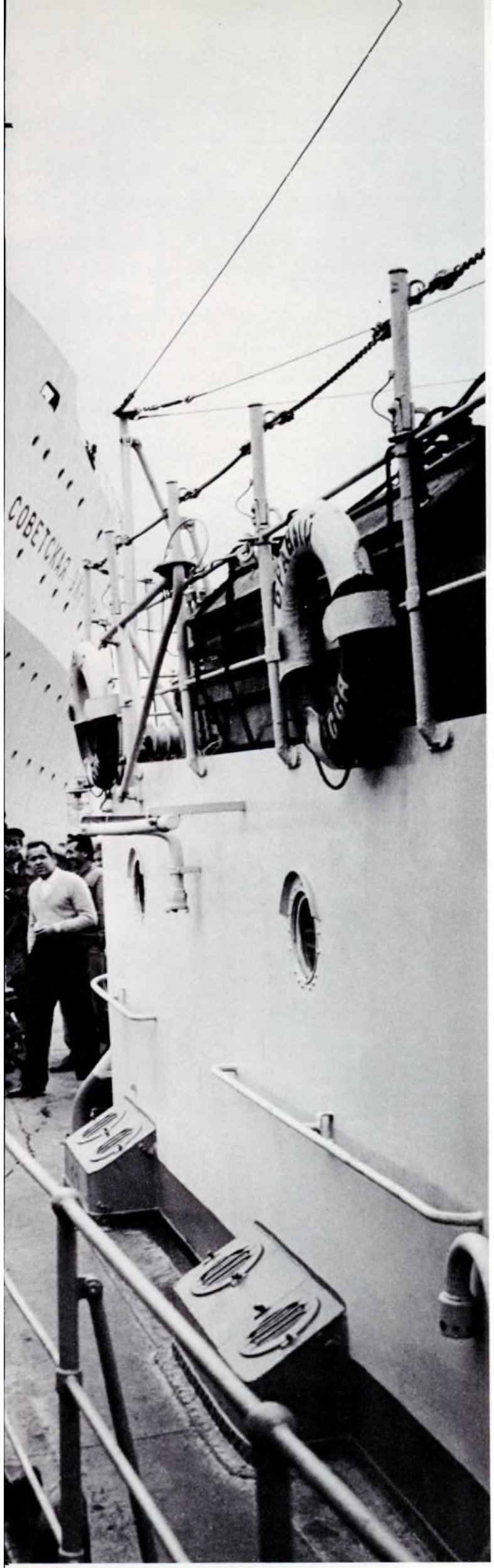
The USSR not only sells things but buys a lot too—Cuban sugar; Bulgarian canned goods; natural rubber from Indonesia; nuts, tea, wool, essential oils from India; staple fiber from Italy; furniture from Vietnam. A special fruit dock had to be set up recently for ships carrying lemons from Greece and Italy, bananas and pineapples from Guinea and other countries. All told, ships from 60 countries dock at the port.

Odessa lately has been getting a lively passenger traffic, with first-class liners from many countries tying up at her piers. This is where motor ships with Soviet and foreign tourists begin their cruises. The regular passenger liners link Odessa with coastal cities in Italy, France and many of the countries of the Middle and Near East. The travel season this year was opened by the British motor ship *Carania* when it brought 500 American tourists to Odessa.

The large bay has become crowded with vessels. More, and more often, steamers and motor ships have to wait in the roadstead until a pier is vacant. Not long ago the new port of Ilyichevsk was built near the old one. Last year it was used by more than 300 vessels and its cargo turnover exceeded that of the prerevolutionary port of Odessa by nearly a million tons.

Ilyichevsk is rapidly growing, new piers are being constructed, roads laid and cranes installed. The new port has a promising future. It already has a shipyard where repairs are made, and it will also be the base for the maintenance and fishing fleet. With Ilyichevsk, the sea gate of the Ukraine can now handle twice the number of vessels it used to, a need dictated by the ever expanding trade ties of the Soviet Union and the rapid growth of the Black Sea shipping lines. ★





A section of Odessa's large port. Part of a fleet of fishing vessels belonging to collectives on the Kerch peninsula.

One of the variety of ships that come to the Odessa port. The whaler base ship Soviet Ukraine, *ready to go to sea.*

Muscle power is no longer the prime requisite of the Odessa stevedore. These giant cranes do the lifting and carrying.

When the Kiev team plays Moscow for the USSR title 60,000 soccer fans pack the local stadium.

Popular Sports

BY ARKADI GALINSKY
UKRAINIAN SPORTS COMMENTATOR
PHOTOS BY MIKHAIL BOTASHOV

NOT TOO LONG ago, say two years or so, a sports writer in the Ukraine who wanted to hold on to his readers had to know three sports—track and field, gymnastics and soccer. If he were completely in the know, i.e., not only with the "what," "how" and "why" at his finger tips but with an eye open for budding talent in the junior ranks, he could be sure of a steady flow of requests for his articles.

But if he wanted to rate as a real master, he also had to find the time for a more than occasional look at wrestling, weightlifting, bike racing, basketball, volleyball and handball. All these follow in the wake of the three main Ukrainian sports—track and field, gymnastics (in which the republic holds the world crown) and soccer.

Two years ago, however, we had an essential change in our trade. I remember the first time it hit me. The editor of an important Kiev newspaper read a story I had submitted with no great show of enthusiasm and said, "Look here, friend, don't you think you've given me enough pieces on Brumel, Ter-Ovanesyan, Latynina and Shakhlin? Isn't their anything else you do? Can't you at least knock out one small article on the soccer league standings?"

I was sore, naturally, and told the editor that I knew what sports column readers liked as well as he did, maybe better. As a matter of fact, the piece I had just given him was to tell readers about two outstanding Ukrainian athletes, Valeri Brumel and Igor Ter-Ovanesyan, who looked to me like global-class jumpers. I compared their showing in training with that of Jesse Owens, Ralph Boston and John Thomas, the "Boston Grasshopper," who had just appeared on the world athletics scene, and drew conclusions that were later confirmed.

The editor, really not a bad chap, fingered my copy again. "Okay," he said, "I'll print it, but I want a soccer story from you tomorrow. Take a look at this," and he gave me a summary sheet totaling the number of requests from readers for information on different sports. The overwhelming majority wanted more soccer coverage.

As of this writing, the position of the Ukrainian sports writer has eased considerably. Soccer articles alone will bring in more than enough to feed and clothe him and his family and provide a luxurious seaside vacation for them all. My experience is telling evidence.

I had been contributing sports items to the writers' newspaper, *Literaturnaya Ukraina*, for many years, all the time under the impression that our younger men of letters, whose subscriptions keep the newspaper going, were interested in other sports besides soccer. Apparently I was wrong. What they wanted was an evaluation of the performance of this or that soccer team, an opinion on whether attacks should be made with four forwards or five, and the like.

Igor Ter-Ovanesyan's spectacular winning broad jump and new world record—27 feet 2¾ inches.

I recently discovered that I could no longer provide my friends with rack-and-field records with the same speed, ease and precision as I once ad. There is, I must admit, some compensation in the fact that even if ou woke me in the middle of a sound sleep, I'd be able to tell you xactly how many goals were headed in by the forwards of Kiev Dynamo nd Donetsk Miners last season, how many tallies were made or muffed rom the penalty spot, and whether the injured knee of the halfback of he team in the next-to-the-last place in Division Two of the Ukrainian occer League was mending.

In other words soccer enthusiasm in the Ukraine seems to be reaching ts peak, as explained chiefly by the fact that the republic's soccer players ast year brought home all the major national trophies. Kiev Dynamo took eague honors; the Miners, the USSR Football Cup; and the Ukrainian uniors, the national title in their respective division. Add the fact that Kiev Dynamo is making a very strong bid to retain league honors for nother year, and you can easily understand why the males of the Ukrainian apital all strut about as proud and smiling as that player who netted the ll-important goal in last year's crucial game with Moscow Torpedo.

We—my wife and I—live on a quiet, shady, side street in the heart of Kiev. Luckily, drivers don't favor our street and we have a pleasant habit f strolling in the road before bedtime. But everything's changed now. Cars still keep out of our street as they used to, but the neighborhood kids ave it chalked up for soccer and they chase that leather sphere from norn till dark. What amazes me is how they manage to control their shots o as not to smash all the windows on the block. Speaking as an expert on he game, I consider this a hopeful sign that our rising generation of Ukrainian soccer players are approaching World Cup-winning standards.

Enough about soccer, the "king of Ukrainian sports," and time for a ord about the "queen"—track and field.

At the 1960 Rome Olympics four Ukrainian members of the Soviet team took top honors in track-and-field events. That speaks well for our thletes, especially if we add Valeri Brumel who cleared the same 7 feet inch in the high jump as Olympic champion Robert Shavlakadze, but ecause he needed one more try than the Georgian, won only a silver medal.

The Ukrainian Olympic champs were Lyudmila Lysenko (800-meter un), Vera Krepkina (broad jump), Vladimir Golubnichy (20,000-meter walk) and Victor Tsibulenko (javelin). Although each of them specializes n a different sport, they are all products of a type of training that has ecome increasingly characteristic of Ukrainian athletics.

Earlier, the stop watch and measuring tape were very important elements n the training program. Progress was slow because coaches set goals of o many meters—or seconds—by the end of this season, so many by the ext, and so on.

The coaches were serious about their work and so were their charges. They met the goals, but the Ukraine still hadn't produced an Olympic champ. The republic's leading trainers finally discarded this meter-second gauge. Now they tell the athlete, "There's a meet with Moscow, or Leningrad, n June or July or whenever, and you've got to beat X and Y. They're as good as you, but you're going to go out and win. Don't think about time nd distance, just about winning."

The idea was to develop the athlete's will. After a while the coaches egan to train their boys like good psychologists or teachers would. If, or instance, it was generally known that you were weaker than, say, X or Y, you were expected to be third at the finish, right behind X and Y. Third, mind you, not fourth!

I like this change in training methods and think it can be applied to more things than sports. It builds up an athlete's morale and calls for more awareness and self-analysis on his part. A Ukrainian star hurdler, a ast European champ, called it using "tactics of nerves." A good many eople argued the point when he made it and not everyone agrees with im even now, but this viewpoint is gaining favor.

Ukrainian gymnastics secrets? They probably do exist, otherwise how can the surprisingly long world supremacy of Ukrainian gymnasts be xplained. They have been over-all champions since the Soviet Union's ebut in the 1952 Olympic Games. The titles were won twice by Larissa atynina (in Melbourne and Rome) and Victor Chukarin (Helsinki and Melbourne) and once each by Maria Gorokhovskaya (Helsinki) and Boris hakhlin (Rome).

I figure it this way. Thirty years ago, when I was a boy, our back yard was about half-full of apple trees, and what we did was set up horizontal ars between the trees. For a while in the 20's, most of the kids in the eighborhood were crazy about the circus and acrobats. This interest wore off after a while, but some of the kids kept working on the horizontal bars and turned into first-class gymnasts. A few of them later became gym teachers.

The forte of the circus acrobat is the stunt, the more breath-taking the better. Performers under the big top do not work for the calisthenic ideal of body building; what they aim at is to keep the spectator agape with a cascade of tricky and beautiful exercises. Nevertheless, circus art has influenced Ukrainian calisthenics greatly and still does.

"The show goes on regardless" is probably about the oldest circus tradition here is. A stunt may be done with a bit more finesse today or a bit less tomorrow, but it will unfailingly be done today and tomorrow. Ukrainian gymnastics has adopted the motto and perhaps that explains the consistently good showing by its champions. The fact that four Rome winners (besides Larissa Latynina and Boris Shakhlin, Olympic titles were won for separate gymnastics exercises by Polina Astakhova and Marguerite Nikolayeva) are presently living in the Ukraine is further proof—to my mind, at least—of the successful union of the circus and athletics. I'd say that if you want o know the secrets of Ukrainian gymnastics success, begin by studying the secrets of circus art. ★

Ukrainian gymnasts have been over-all champs since the Soviet debut at the 1952 Olympics. Larissa Latynina won the title twice, at Melbourne and Rome.

Preparing the manipulator at the Kiev atomic reactor. *See story on page 47.*
—Photo by Irina Pap

USSR

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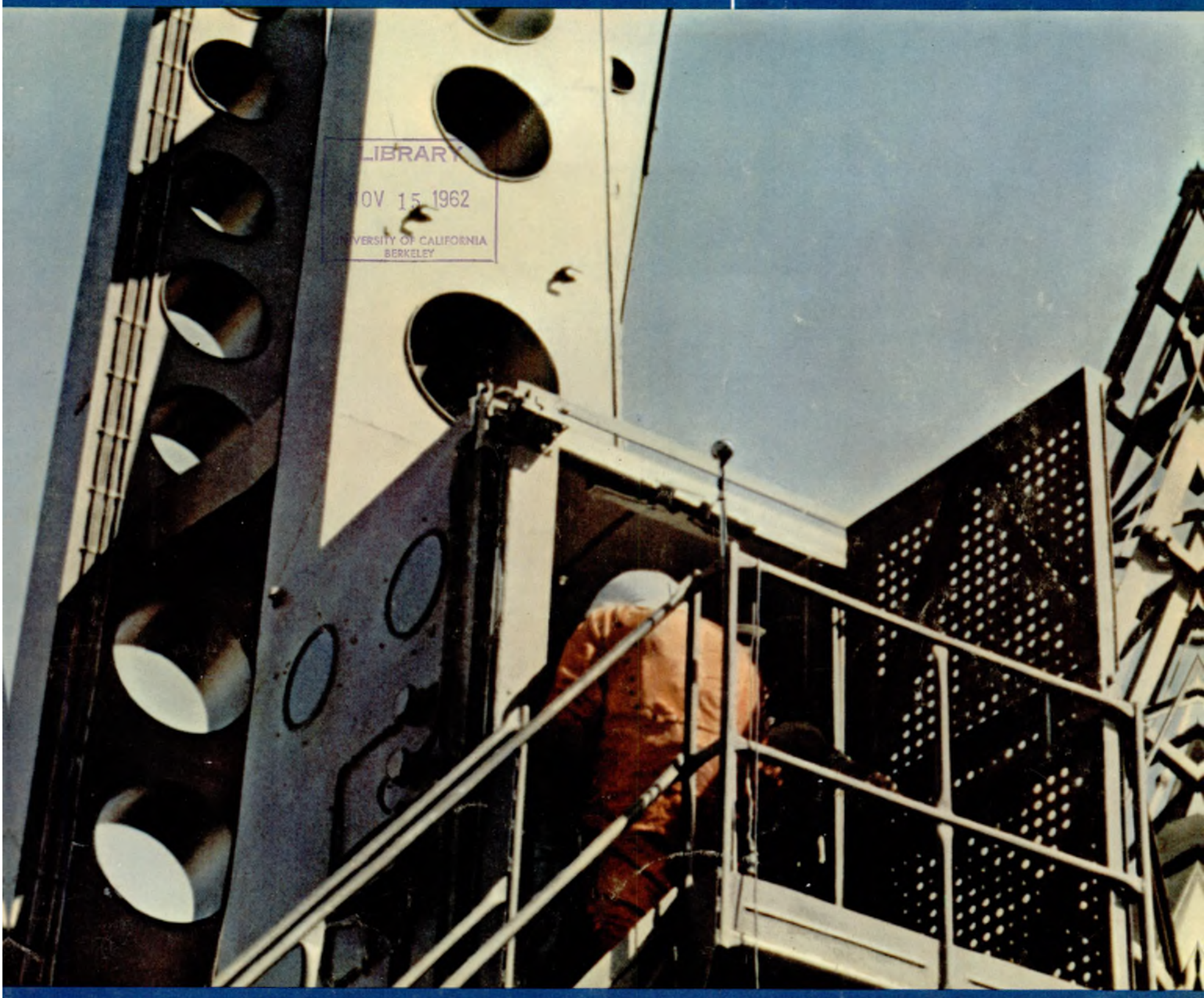

IN THE STARRY OCEAN

By Andrian Nikolayev and
Pavel Popovich

See page 4

THE DREAMS

BY FYODOR PETROV
VETERAN OF THE RUSSIAN REVOLUTION

WHEN A MAN is past eighty he tends to look back on the road his life has taken. In his declining years he feels the need to judge himself before the impartial bar of history.

My road as a revolutionary stretches back to ten years before the end of the past century, running through three revolutions and two world wars. It was not strewn with roses; it was a road marked by prison and exile, civil war and economic devastation. There was reason enough for despair, but we Communists did not lose heart. We knew that the road we had taken was the right one. We believed in the future we were fighting for.

I remember a conversation I had with Vladimir Lenin, the leader of our Revolution, during one of the most trying moments of his life. It was at the end of the century. The first Marxist groups in Russia had been suppressed and new ones had not yet been formed. The revolution was at the crossroads. There was no telling whether it was going uphill or downhill. In those dark and uncertain days when the perspective of the struggle was lost, Lenin said, "We must dream. We must believe in our dream."

And we did dream. We dreamed in the damp cells of the Schlisselburg fortress, in the isolation of Siberian exile and during the long years of underground work.

But we not only dreamed. We fought for our dream, fought stubbornly

Storming the Winter Palace. *Diorama. Leningrad Museum of the Revolution.*

WE FOUGHT FOR

ıd devotedly, until we won and saw our dream take shape in the world's 'st socialist state, the Union of Soviet Socialist Republics.

In those stifling years of underground work we dreamed of the people masters of their destiny. We have realized that dream. Today in the ›viets of Working People's Deputies more than two million Soviet people ›vern their country. Our most respected citizens are those whose labor factories, farms and research laboratories multiplies the country's wealth.

In the dreary cells of czarist prisons we had visions of freedom for the ›ople of Russia's colonial outposts. We saw them extending brotherly ınds to each other to build a new life together. That vision is embodied day in our union of fraternal republics, with every republic an equal ıong equals. The remote provincial regions of old Russia have become eat industrial centers.

In a country laid waste, we Communists dreamed of building new mines, ants and cities; of lighting up Russia's great expanses with electricity; giving the peasants a hundred thousand tractors. These dreams have also me true. We are now the second industrial power in the world. Machines ade in our plants are used in dozens of foreign countries. Not a hundred ousand, but millions of tractors and combines now work our collective rm fields. In the uninhabited Siberian forests to which czarism once exiled revolutionaries, we have built great hydroelectric stations whose one turbine generates more current than did all the power stations of old Russia.

When we began to teach an illiterate, half-starved country to read and write, we dreamed of a golden age of science and culture. We have brought that to pass. Spaceships piloted by Soviet men range the universe. A globe engraved with the USSR coat of arms now lies on the moon, the first earth-made object to touch another planet. The atomic icebreaker *Lenin* cuts its way through the thick Arctic ice.

New York, Paris and London applaud the Moiseyev dancers, the Bolshoi Ballet, the film *The Cranes Are Flying,* the pianist Svyatoslav Rikhter.

Soviet colleges are educating students from 70 foreign countries.

We hoarded kopecks and rubles to build factories, power plants, cities, all the while dreaming of a prosperous life for our people. We have realized this dream too. We delivered Russia from the humiliating grip of poverty, built block upon block of housing in the cities, covered the country with a network of television stations, steadily raised living standards.

In my declining years I look with pride and happiness at the reality of the dreams for which we revolutionaries fought and suffered penal servitude and exile. I am happy to see the present day of my country, a country building communism. ★

FALL OF THE PROVISIONAL

Excerpt from John Reed's *Ten Days That Shook the World*

WHEN we came into the chill night, all the front of Smolny was one huge park of arriving and departing automobiles, above the sound of which could be heard the far-off slow beat of the cannon. A great motor-truck stood there, shaking to the roar of its engine. Men were tossing bundles into it, and others receiving them, with guns beside them.

"Where are you going?" I shouted.

"Downtown—all over—everywhere!" answered a little workman, grinning, with a large exultant gesture.

We showed our passes. "Come along!" they invited. "But there'll probably be shooting . . ." We climbed in; the clutch slid home with a raking jar, the great car jerked forward, we all toppled backward on top of those who were climbing in; past the huge fire by the gate, and then the fire by the outer gate, glowing red on the faces of the workmen with rifles who squatted around it, and went bumping at top speed down the Suvorovsky Prospect, swaying from side to side. . . . One man tore the wrapping from a bundle and began to hurl handfuls of papers into the air. We imitated him, plunging down through the dark street with a tail of white papers floating and eddying out behind. The late passerby stooped to pick them up; the patrols around bonfires on the corners ran out with uplifted arms to catch them. Sometimes armed men loomed up ahead, crying "*Shtoi!*" and raising their guns, but our chauffeur only yelled something unintelligible and we hurtled on. . . .

I picked up a copy of the paper, and under a fleeting street light read:

TO THE CITIZENS OF RUSSIA!

The Provisional Government is deposed. The State Power has passed into the hands of the organ of the Petrograd Soviet of Workers' and Soldiers' Deputies, the Military Revolutionary Committee, which stands at the head of the Petrograd proletariat and garrison.

The cause for which the people were fighting: immediate proposal of a democratic peace, abolition of landlord property-rights over the land, labor control over production, creation of a Soviet Government—that cause is securely achieved.

LONG LIVE THE REVOLUTION OF WORKMEN, SOLDIERS AND PEASANTS!

Military Revolutionary Committee
Petrograd Soviet of Workers' and Soldiers' Deputies.

A slant-eyed, Mongolian-faced man who sat beside me, dressed in a goat-skin Caucasian cape, snapped, "Look out! Here the provocators always shoot from the windows!" We turned into Znamensky Square, dark and almost deserted, careened around Trubetskoy's brutal statue and swung down the wide Nevsky, three men standing up with rifles ready, peering at the windows. Behind us the street was alive with people running and stooping. We could no longer hear the cannon, and the nearer we drew to the Winter Palace end of the city the quieter and more deserted were the streets. The City Duma was all brightly lighted. Beyond that we made out a dark mass of people, and a line of sailors, who yelled furiously at us to stop. The machine slowed down, and we climbed out.

It was an astonishing scene. Just at the corner of the Ekaterina Canal, under an arc light, a cordon of armed sailors was drawn across the Nevsky, blocking the way to a crowd of people in column of fours. There were about three or four hundred of them—men in frock coats, well-dressed women, officers—all sorts and conditions of people. Among them we recognized many of the delegates from the Congress, leaders of the Mensheviki and Socialist Revolutionaries; Avksentiev, the lean, red-bearded president of the Peasants' Soviets, Sarokin, Kerensky's spokesman, Khintchuk, Abramovitch; and at the head white-bearded old Schreider, Mayor of Petrograd, and Prokopovitch, Minister of Supplies in the Provisional Government, arrested that morning and released. I caught sight of Malkin, reporter for the *Russian Daily News*. "Going to die in the Winter Palace," he shouted cheerfully. The procession stood still, but from the front of it came loud argument. Schreider and Prokopovitch were bellowing at the big sailor who seemed in command.

"We demand to pass!" they cried. "See, these comrades come from the Congress of Soviets! Look at their tickets! We are going to the Winter Palace!"

The sailor was plainly puzzled. He scratched his head with an enormous hand, frowning. "I have orders from the Committee not to let anybody go to the Winter Palace," he grumbled. "But I will send a comrade to telephone to Smolny. . . ."

"We insist upon passing! We are unarmed! We will march on whether you permit us or not!" cried old Schreider, very much excited.

"I have orders——" repeated the sailor sullenly.

"Shoot us if you want to! We will pass! Forward!" came from all sides. "We are ready to die, if you have the heart to fire on Russians and comrades! We bare our breasts to your guns!"

"No," said the sailor, looking stubborn, "I can't allow you to pass."

"What will you do if we go forward? Will you shoot?"

"No, I'm not going to shoot people who haven't any guns. We won't shoot unarmed Russian people. . . ."

"We will go forward! What can you do?"

"We will do something," replied the sailor, evidently at a loss. "We can't let you pass. We will do something."

"What will you do? What will you do?"

Another sailor came up, very much irritated. "We will spank you!" he cried, energetically. "And if necessary we will shoot you too. Go home now, and leave us in peace!"

At this there was a great clamor of anger and resentment, Prokopovitch had mounted some sort of box, and, waving his umbrella, he made a speech:

"Comrades and citizens!" he said. "Force is being used against us! We cannot have our innocent blood upon the hands of these ignorant men! It is beneath our dignity to be shot down here in the street by switchmen—(What he meant by "switchmen" I never discovered.) "Let us return to th Duma and discuss the best means of saving the country and the Revolution!

Whereupon, in dignified silence, the procession marched around and bac up the Nevsky, always in column of fours. And taking advantage of th diversion, we slipped past the guards and set off in the direction of th Winter Palace.

Here it was absolutely dark, and nothing moved but pickets of soldie and Red Guards grimly intent. In front of the Kazan Cathedral a three-inc field gun lay in the middle of the street, slewed sideways from the reco of its last shot over the roofs. Soldiers were standing in every doorwa talking in low tones and peering down toward the Police Bridge. I hea one voice saying: "It is possible that we have done wrong. . . ." At th corners patrols stopped all passersby—and the composition of these patro was interesting, for in command of the regular troops was invariably a Re Guard. . . . The shooting had ceased.

Just as we came to the Morskaya somebody was shouting: "The *yunke* have sent word they want us to go and get them out!" Voices began to giv commands, and in the thick gloom we made out a dark mass moving fo ward, silent but for the shuffle of feet and the clinking of arms. We fell with the first ranks.

Like a black river, filling all the street, without song or cheer we poure through the Red Arch, where the man just ahead of me said in a low voic "Look out, comrades! Don't trust them. They will fire, surely!" In the ope we began to run, stooping low and bunching together, and jammed up su denly behind the pedestal of the Alexander Column.

"How many of you did they kill?" I asked.

"I don't know. About ten. . . ."

After a few minutes huddling there, some hundreds of men, the arm seemed reassured and without any orders suddenly began again to flo forward. By this time, in the light that streamed out of all the Winter Palac windows, I could see that the first two or three hundred men were Re Guards, with only a few scattered soldiers. Over the barricade of firewoo we clambered, and leaping down inside gave a triumphant shout as w stumbled on a heap of rifles thrown down by the *yunkers* who had stoo there. On both sides of the main gateway the doors stood wide open, ligh streamed out, and from the huge pile came not the slightest sound.

Carried along by the eager wave of men we were swept into the righ hand entrance, opening into a great bare vaulted room, the cellar of th East wing, from which issued a maze of corridors and staircases. A numbe of huge packing cases stood about, and upon these the Red Guards an soldiers fell furiously, battering them open with the butts of their rifle and pulling out carpets, curtains, linen, porcelain plates, glassware. . . . One man went strutting around with a bronze clock perched on his shoulder another found a plume of ostrich feathers, which he stuck in his hat. Th looting was just beginning when somebody cried, "Comrades! Don't touc anything! Don't take anything! This is the property of the People!" Imm diately twenty voices were crying, "Stop! Put everything back! Don't tak anything! Property of the People!" Many hands dragged the spoilers dow Damask and tapestry were snatched from the arms of those who had them two men took away the bronze clock. Roughly and hastily the things wer crammed back in their cases, and self-appointed sentinels stood guard. was all utterly spontaneous. Through corridors and up staircases the cr could be heard growing fainter and fainter in the distance, "Revolutiona discipline! Property of the People. . . ."

We crossed back over to the left entrance, in the West wing. There ord was also being established. "Clear the Palace!" bawled a Red Guard, stic ing his head through an inner door. "Come, comrades, let's show that we' not thieves and bandits. Everybody out of the Palace except the Commissar until we get sentries posted."

Two Red Guards, a soldier and an officer, stood with revolvers in the hands. Another soldier sat at a table behind them, with pen and pape Shouts of "All out! All out!" were heard far and near within, and the Arm began to pour through the door, jostling, expostulating, arguing. . . .

We asked if we might go inside. The committee was doubtful, but the bi Red Guard answered firmly that it was forbidden. "Who are you anyway? he asked. "How do I know that you are not all Kerenskys?" (There wer five of us, two women.)

"*Pazhal'st,' tovarishtchi!* Way, Comrades!" A soldier and a Red Guar appeared in the door, waving the crowd aside, and other guards with fixe bayonets. After them followed single file half a dozen men in civilian dress— the members of the Provisional Government. First came Kishkin, his fac drawn and pale, then Rutenberg, looking sullenly at the floor; Terestchenk was next, glancing sharply around; he stared at us with cold fixity. . . They passed in silence; the victorious insurrectionists crowded to see, bu there were only a few angry mutterings. It was only later that we learne how the people in the street wanted to lynch them, and shots were fired— but the sailors brought them safely to Peter-Paul. . .

All this time, it must be remembered, although the Winter Palace wa surrounded, the Government was in constant communication with the Fron and with provincial Russia. The Bolsheviki had captured the Ministry o War early in the morning, but they did not know of the military telegrap office in the attic, nor of the private telephone line connecting it with th Winter Palace. In that attic a young officer sat all day, pouring out over th country a flood of appeals and proclamations; and when he heard that th Palace had fallen, put on his hat and walked calmly out of the building. . .

Interested as we were, for a considerable time we didn't notice a chang in the attitude of the soldiers and Red Guards around us. As we strolle from room to room a small group followed us, until by the time we reache the great picture-gallery where we had spent the afternoon with the *yunker* about a hundred men surged after us. One giant of a soldier stood in ou path, his face dark with sullen suspicion.

GOVERNMENT

"Who are you?" he growled. "What are you doing here?" The others passed slowly around, staring and beginning to mutter. "*Provocatori!*" I heard somebody say. "Looters!" I produced our passes from the Military Revolutionary Committee. The soldier took them gingerly, turned them upside down and looked at them without comprehension. Evidently he could not read. He handed them back and spat on the floor. "*Bumagi!* Papers!" said he with contempt. The mass slowly began to close in, like wild cattle around a cowpuncher on foot. Over their heads I caught sight of an officer, looking helpless, and shouted to him. He made for us, shouldering his way through.

"I'm the Commissar," he said to me. "Who are you? What is it?" The others held back, waiting. I produced the papers.

"You are foreigners?" he rapidly asked in French. "It is very dangerous. . . ." Then he turned to the mob, holding up our documents. "Comrades!" he cried. "These people are foreign comrades—from America. They have come here to be able to tell their countrymen about the bravery and the revolutionary discipline of the proletarian army!"

"How do you know that?" replied the big soldier. "I tell you they are provocators! They say they came here to observe the revolutionary discipline of the proletarian army, but they have been wandering freely through the Palace, and how do we know they haven't got their pockets full of loot?"

"*Pravilno!*" snarled the others, pressing forward.

"Comrades! Comrades!" appealed the officer, sweat standing out on his forehead. "I am Commissar of the Military Revolutionary Committee. Do you trust me? Well, I tell you that these passes are signed with the same names that are signed to my pass!"

He led us down through the Palace and out through a door opening onto the Neva quay, before which stood the usual committee going through pockets. . . . "You have narrowly escaped," he kept muttering, wiping his face. . . .

We hailed a cab. "Where to?" But when we said "Smolny," the *izvoshthik* shook his head. "*Niet!*" said he, "there are devils. . . ." It was only after weary wandering that we found a driver willing to take us—and he wanted thirty rubles, and stopped two blocks away.

The windows of Smolny were still ablaze, motors came and went, and around the still-leaping fires the sentries huddled close, eagerly asking everybody the latest news. The corridors were full of hurrying men, hollow-eyed and dirty. In some of the committee rooms people lay sleeping on the floor, their guns beside them. In spite of the seceding delegates, the hall of meetings was crowded with people, roaring like the sea. . . .

The assembly decided to ignore the withdrawal of the factions, and proceed to the appeal to the workers, soldiers and peasants of all Russia:

TO WORKERS, SOLDIERS AND PEASANTS

The Second All-Russian Congress of Soviets of Workers' and Soldiers' Deputies has opened. It represents the great majority of the Soviets. There are also a number of Peasant deputies. Based upon the will of the great majority of the workers, soldiers and peasants, based upon the triumphant uprising of the Petrograd workmen and soldiers, the Congress assumes the Power.

The Provisional Government is deposed. Most of the members of the Provisional Government are already arrested.

The Soviet authority will at once propose an immediate democratic peace to all nations, and an immediate truce on all fronts. It will assure the free transfer of landlord, crown and monastery lands to the Land Committees, defend the soldiers' rights, enforcing a complete democratization of the Army, establish workers' control over production, ensure the convocation of the Constituent Assembly at the proper date, take means to supply bread to the cities and articles of first necessity to the villages, and secure to all nationalities living in Russia a real right to independent existence.

The Congress resolves: that all local power shall be transferred to the Soviets of Workers', Soldiers' and Peasants' Deputies, which must enforce revolutionary order.

The Congress calls upon the soldiers in the trenches to be watchful and steadfast. The Congress of Soviets is sure that the revolutionary Army will know how to defend the Revolution against all attacks of Imperialism, until the new Government shall have brought about the conclusion of the democratic peace which it will directly propose to all nations. The new Government will take all necessary steps to secure everything needful to the revolutionary Army, by means of a determined policy of requisition and taxation of the propertied classes, and also to improve the situation of soldiers' families.

The Kornilovitz—Kerensky, Kaledin and others, are endeavoring to lead troops against Petrograd. Several regiments, deceived by Kerensky, have sided with the insurgent People.

Soldiers! Make active resistance to the Kornilovitz—Kerensky! Be on guard!

Railway men! Stop all troop trains being sent by Kerensky against Petrograd!

Soldiers, Workers, Clerical employees! The destiny of the Revolution and democratic peace is in your hands!

Long live the Revolution!

The All-Russian Congress of Soviets of Workers' and Soldiers' Deputies. Delegates from the Peasants' Soviets.

It was exactly 5:17 A.M. when Krylenko, staggering with fatigue, climbed to the tribune with a telegram in his hand.

"Comrades! From the Northern Front. The Twelfth Army sends greetings to the Congress of Soviets, announcing the formation of a Military Revolutionary Committee which has taken over the command of the Northern Front!" Pandemonium, men weeping, embracing each other. "General Tchernissov has recognized the Committee—Commissar of the Provisional Government Voitinsky has resigned!"

So. Lenin and the Petrograd workers had decided on insurrection. . . .

Although it was six in the morning, night was yet heavy and chill. There was only a faint unearthly pallor stealing over the silent streets, dimming the watch fires, the shadow of a terrible dawn gray-rising over Russia. . . .★

(For story on John Reed, see page 62.)

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Front Cover: Pavel Popovich enters the elevator that will take him to his spaceship.
—*See story on page 4.*

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IN THE STAR

Stills from a film shot inside the cabin during Andrian Nikolayev's outer space flight. 1. Did I oversleep this morning? 2. A cosmonaut's setting-up exercises. 3. A look at the earth through the porthole. 4. The pencil and logbook float about the cabin in a state of weightlessness. 5. Drinking an earthly beverage in space. 6. The raised thumb means that everything is fine.

THE STORY of the Soviet spaceships is one of continuous precipitate motion.

Every cosmonaut who had been so elated by the achievement of Yuri Gagarin and then of Gherman Titov knew that when his turn came, if he were entrusted with the next mission to the cosmos, he would be expected to multiply their mileage and time showings and complement their scientific research program.

When the time came, we learned that the next flight was to be made by two spaceships instead of one, as before, and that they would be staying up a long time, keeping each other company in their orbit under the stars.

Every cosmonaut would have liked to be part of this daring scientific venture, but the choice fell on us.

Then came the period of intensive and, we might say, creative preparation for the flight.

Time passed so quickly that we hardly noticed the year that had slid by since the historic flight of *Vostok II*. The hour suddenly came when we had to start for the now familiar cosmodrome.

We knew every detail of our flying tasks by heart, and we were, of course, fascinated by the novelty and complexity of the problems we had to solve. Our tasks included investigation of the effects of weightlessness in prolonged space flight, guiding our ships into the same orbit, group flying for three days, maintaining continuous bilateral communication between the two ships and between the ships and the earth, group landing in a specified area, and study of many diverse medical and biological problems.

RY OCEAN

BY ANDRIAN NIKOLAYEV AND PAVEL POPOVICH

PILOT COSMONAUTS OF THE USSR,
HEROES OF THE SOVIET UNION

Time raced ahead the moment we reached the cosmodrome. We talked to many scientists and specialists, watched the assembly and joining of the stages of our rocket carriers and the assembly of the spaceships proper. In a way it was like watching a great bridge being thrown across a wide, swift river, a blast furnace being assembled, a skyscraper being erected.

Then came the day for launching *Vostok III*. After a light breakfast under "earthly" conditions, my alternate and I (Andrian Nikolayev) climbed into our space suits and made for the launching area in a special bus. The bus usually carries only two cosmonauts—the commander of the ship and his alternate, ready to take the pilot's place in the cabin of the spaceship at any moment. But this time there were three of us, for we were accompanied by the commander of *Vostok IV* which was to take off a day later.

The cloudless sky was devoid of everything but the glaring light, and the big rocket seemed to be aimed at the heart of the sun.

Time was no longer in a hurry; it dragged heavily now. Waiting is the dreariest thing in the life of a cosmonaut, and there is always waiting to be done. While I got used to my snug cabin, I talked by radio with the Chief Designer and Yuri Gagarin, purely technical talk, this was.

"Lift-off!" came the command at exactly 11:30, Moscow time.

"Full speed ahead!" I sang out, encouraging myself.

A moment later there was nothing but a faint streak in the sky, the last signature of the vanishing rocket. The flight of *Vostok III* had begun.

The spaceships *Vostok III* and *Vostok IV* were better and more comfortable than their predecessors. To prepare these ships for longer flights the designers had seen to the conveniences. Both were equipped with highly improved communication apparatus, the very latest TV installations and special auxiliary automatic equipment for direct bilateral contact between the ships.

Comfort under these circumstances means more than a convenient armchair to help the pilot endure overload and to serve as both work place and bed. Even more essential is that the atmosphere needed for the preservation of life, the proper temperature, pressure and humidity be controlled not only automatically but by the pilot himself, if need be. The ships obeyed the builders and pilots. With the convenient system of controls we could at any moment orientate the ship in space or change the speed of flight and thus shift it from orbit into the trajectory that would land it safely in a predetermined spot on our planet.

I was always aware that I was under continual observation on earth, that the people who were tracking my flight knew as well as I how I felt. The earth seemed able to decipher my very thoughts. No sooner did I think of the coordinating and computing center than the earth radioed the parameters of the orbit, data that I could use to correct the navigation system and pinpoint my bearings. I made the first entries in my log. I had brought my ship through the boost phase, had gone into orbit, and felt fine. These brief entries were promptly transmitted to earth, word for word:

"I feel fine! All's well aboard! Can see the earth clearly through the porthole! Cosmonaut Nikolayev."

On the third circuit, when I was certain of the faultless operation of all the ship's systems and of my own fitness, I reported by radio to the Central Committee of the Communist Party of the Soviet Union, the Soviet Government and Nikita Khrushchev that the flight of the *Vostok III* was proceeding normally. That report was heard by the entire country. Listening, too, was Pavel Popovich, preparing for take-off.

The first part of the research program had been successfully completed: I had flown my ship by manual control, and the craft had obeyed me implicitly. Now it was time for dinner in outer space. The food was earthly, nutritious and tasty. We had thought out the cosmic meals we were to have aboard *Vostok III* and *Vostok IV* carefully and well ahead of time. Our favorite dishes were included in the breakfast, dinner and supper menus. We unfortunately could not have the national Chuvash dish called *khuran-kukly*, onion patties, and flat Ukrainian pumpkin pies.

Vostok III began its TV transmission at the beginning of the fourth orbit. Nikita Khrushchev talked to me by radiotelephone during the broadcast. This conversation between the head of the Soviet Government and a cosmonaut in orbit

An operator at one of the ground stations in the network that tracked the two cosmic ships on their history-making dual flight listens in for data they are relaying from outer space.

these stills from a film shot in the cabin Vostok IV *in flight, Cosmonaut Pavel opovich demonstrates the way his pencil hangs spended in air in a weightless condition.*

was the first of its kind, as were so many other things on this flight.

And then I carried out one of the most important assignments—leaving the pilot's armchair for the first time, something neither Yuri Gagarin nor Gherman Titov had done. No one knew what would happen to me when I released myself from my belt in a weightless state and was in free suspension. Would I be able to return to my seat without help? What if I found myself bumping about under the ceiling, unable to return to my work place? The result would be an emergency with unpredictable and perhaps very grave consequences. The whole flight program might be disrupted. This called for caution, above all!

But it turned out that a man in a weightless state could nevertheless move about freely in the air. There were no difficulties. If I touched the cabin wall with my finger, I drifted off in the opposite direction. From the ceiling I could shove myself gently back into my armchair. The devil, it seemed, was not as black as he had been painted.

The first free "float" continued for about an hour and was accompanied by a surprisingly pleasant, incomparable state of body and mind. I weighed nothing, could lean against nothing, but was able to do anything I liked. My brain worked clearly, faultlessly. All my movements were coordinated. My hearing and sight were unimpaired, I could see and hear everything transmitted from earth.

(Continued on page 45)

Tallinn
Riga
Vilnius
Minsk
Moscow
Kishinev
Kiev
Tbilisi
Yerevan
Baku
Ashkhabad
Tashkent
Frunze
Alma-Ata
Dushanbe

THE SOVIET UNION TODAY

its people, territory, economy

DRAWING BY SERGEI MUKHIN

THE RUSSIAN PEOPLE have a saying, "Russia is more than a country, it's a whole world." In the West the Soviet Union is often, and incorrectly, called Russia. Although Russia is the largest of the 15 republics that make up the Union of Soviet Socialist Republics, it is only one of them. A hundred peoples and nationalities, large and small, live in the Soviet Union. Each people has its history, its national culture, its traditions and customs. Each people is autonomous.

Besides the union republics there are autonomous republics and regions, and national areas. More than 40 of the nationalities that inhabit the territory of the Soviet Union acquired a written language only in the Soviet period.

Population. The USSR yields only to China and India in population, which is now 221,500,000. This means that approximately every thirteenth person on earth lives in the Soviet Union. The population of the USSR is growing rapidly, and has increased by 11 million in the past three years. "We welcome this," said Nikita Khrushchev. "The USSR is an extensive country where everybody will, as the saying goes, find a place under the sun and be provided with work."

On two continents. The Soviet Union is the largest country in the world, occupying a sixth of all inhabited territory and covering a half of Europe and a third of Asia. There is room for three countries the size of the United States within its frontiers. The extreme points of the Soviet Union are so far away from each other that when it is dawn at one end, it is getting dark at the other. When it is 5 A.M. on the Chukotsk Peninsula, it is midnight on Lake Baikal in Siberia and 7 P.M. the evening before in Moscow. Soviet people celebrate the New Year 11 times, since the country spreads across 11 time zones.

Not climate, climates! What is the climate like in the Soviet Union? You can't answer that in one word, unless it's the word "varied." More than 3,000 miles separate the north from the south. The polar winter in the Far North lasts nine months, while the eastern coast of the Black Sea gets practically no winter at all. In general, however, with the exception of the polar region and the subtropical areas of the south, the USSR lies in the temperate zone.

The country's riches. Geologists have found every variety of mineral in the Soviet Union. For a long time they were unable to find large diamond deposits, but five years ago they discovered those too in Yakutia (Siberia). The Soviet Union occupies one of the leading places in the world in reserves of iron ore, petroleum, coal, hydropower, copper, lead, wolfram, nickel, bauxite, manganese, potassium salts, phosphorite and apatite.

One of every three trees on earth grows in the Soviet Union, as do nearly half of the world's coniferous trees and almost half of the world's plant species.

The Soviet Union has top listing for the quantity, variety and value of its furs.

Sea routes. The Soviet Union trades with 80 countries. The chief seaports are Murmansk and Arkhangelsk in the north, Leningrad and Riga in the west, Odessa in the south and Vladivostok on the Pacific Ocean. Twelve seas wash the country's shores. Soviet sailors have realized an old dream by navigating the 2,800-mile Northern Sea Route through Arctic Ocean waters—the shortest route from the European part of the country to the Far East. In 1932 the steamer *Sibiryakov* made the first through journey in one trip. The Northern Sea Route, of vital importance for developing the economy of the Far North and raising the cultural level of the northern peoples, is serviced by planes, polar stations and powerful icebreakers, the biggest of them the atomic-powered 44,000-horsepower icebreaker *Lenin*. In three trips it broke a passage for hundreds of ships.

Three big projects per day. Each day in the past six years three large new industrial projects have been put into operation in the Soviet Union, including such gigantic ones as the Lenin Hydroelectric Station on the Volga near Kuibyshev, the world's biggest, the metallurgical plant in Kazakhstan and the ore mines of the Kursk Magnetic Anomaly. Thousands of medium and small enterprises have been built during these same years.

Five more Soviet Unions. The next 20 years will see a sixfold increase in the industrial output of the Soviet Union and a 3.5-fold increase in its farm output. This is the equivalent of five more industrial and more than two agricultural countries like the USSR today.

Soil upturned. In 1954 the Communist Party of the Soviet Union issued a call to young people to "pioneer the virgin lands." That spring 350,000 young men and women came to the uninhabited steppes of North Kazakhstan, Siberia and the Urals. In the years since, they have cultivated almost 104 million acres of land, set up big state farms and grain elevators and built automobile highways. The Tselinny Territory, with its capital Tselinograd, was established in North Kazakhstan. The cultivated virgin lands have yielded rich harvests. They now fill more than 40 per cent of all the USSR's grain procurements.

Two Grand Coulees in Siberia. U. S. Secretary of the Interior Stewart Udall, who led a delegation of American power experts on a trip to the Soviet Union, said that "the Russians are doing a very impressive job." The delegation visited the 4.5-million-kilowatt Bratsk Hydroelectric Station on the great Siberian river Angara, the equal of more than two Grand Coulees. The first of its 20 turbines generated electricity last year. Cascades of power stations have been and are being built on the Volga, Dnieper and other rivers. Nine big hydroelectric stations; ten thermoelectric stations, each with a capacity of up to three million kilowatts; and 13 big heat and power stations will begin operating each of the next 20 years.

New dwellings. The building crane has become a national symbol. Every year as many housewarmings are celebrated by Soviet people as are celebrated in the USA and 17 other West European countries put together. In the past five years a quarter of the country's entire population has been rehoused. Last year 119,000 flats were built in Moscow alone. Seventy-six thousand were tenanted by workers' families, and the remaining 43,000 by families of doctors, schoolteachers, and office employees.

In the 45 years of Soviet power more than 600 new towns have appeared on the map. These include the Arctic town of Norilsk (see the photo on the map); Angarsk, Bratsk, Divnogorsk (Siberia); Rudny (Kazakhstan); Sumgait (the Caucasus); and Yangi-Yar (Uzbekistan).

Health resorts. The Crimea and the Caucasus are the Soviet Union's major health-resort areas. Sanatoriums and rest homes have also been built in other parts of the country—in Siberia, Central Asia and the Carpathians. More than five million people spend their vacations annually in these sanatoriums and rest homes, all of them owned by the trade unions.

All the people. Everything the country has done in these past 45 years had this one aim—to make the lives of its citizens fuller and richer. The Soviet Union has grown into a first-rank industrial power, leading Europe and holding second place in the world in output of the basic types of goods. In the 45 Soviet years real incomes of workers and peasants have increased by six to seven times. In the next 20 years, by 1980, they will increase 3.5 times more. The high level of economic development has already made it possible to provide free education, free medical service, very low house rents (from 3 to 5 per cent of wages), old age pensions and guaranteed full employment. ★

SOARING LAND

BY MARK VISTINETSKY

WHEN a Soviet citizen of my generation, his hair already touched with gray, looks back over the years and compares his country's present with its yesterday and day before, the impression he gets is of headlong flight. The world has never seen transformations so great nor metamorphoses so swift as those Russia has gone through since the Great October Socialist Revolution.

This has made for a curious paradox. Many people nowadays cannot even conceive of the backwardness from which the Soviet Union emerged, just as once many thought it would take a thousand years to make the climb.

Some observers, inclined to follow their own impressions rather than the dictates of history, tend to measure Soviet realities by the yardstick of the country's present position and world stature. As a result they are surprised and even disturbed to find shadings in the general stream of Soviet life that, viewed in the abstract, seem inconsistent with its high industrial level, its outer space victories and its peaks of cultural progress.

On the other hand, we have those pragmatists of mature age, also led by their subjective impressions, who keep looking stubbornly at the USSR through the dark glasses of a distant past. They are unwilling to admit that this is an old stereoscope that they are staring through at scenes from the past, at ancient troubles, deprivations and hardships that are gone forever.

Those who see life in all its complexities, with its many and inevitable problems, look at the Soviet Union from a third point of view. They try to see things as they are, soberly to weigh the circumstances that gave rise to them, to look for trends of development that may be visible.

The motley fabric of today is woven of the yarn of the past, the present, and the first threads of the future. The pattern must be viewed as a whole for a proper understanding of any country.

The more clearly one sees the Soviet Union in the light of historic fact, in all its three dimensions, the more one is impressed with the epic speed of development of the first socialist country.

When Russia's working people, led by the Communists, stormed the Bastilles of the old regime on those somber autumn days of 1917, they were motivated by their determination to rid themselves of social and national oppression, ignorance, poverty and the bloody horrors of war. The first decree adopted by the new Soviet state was the Decree on Peace.

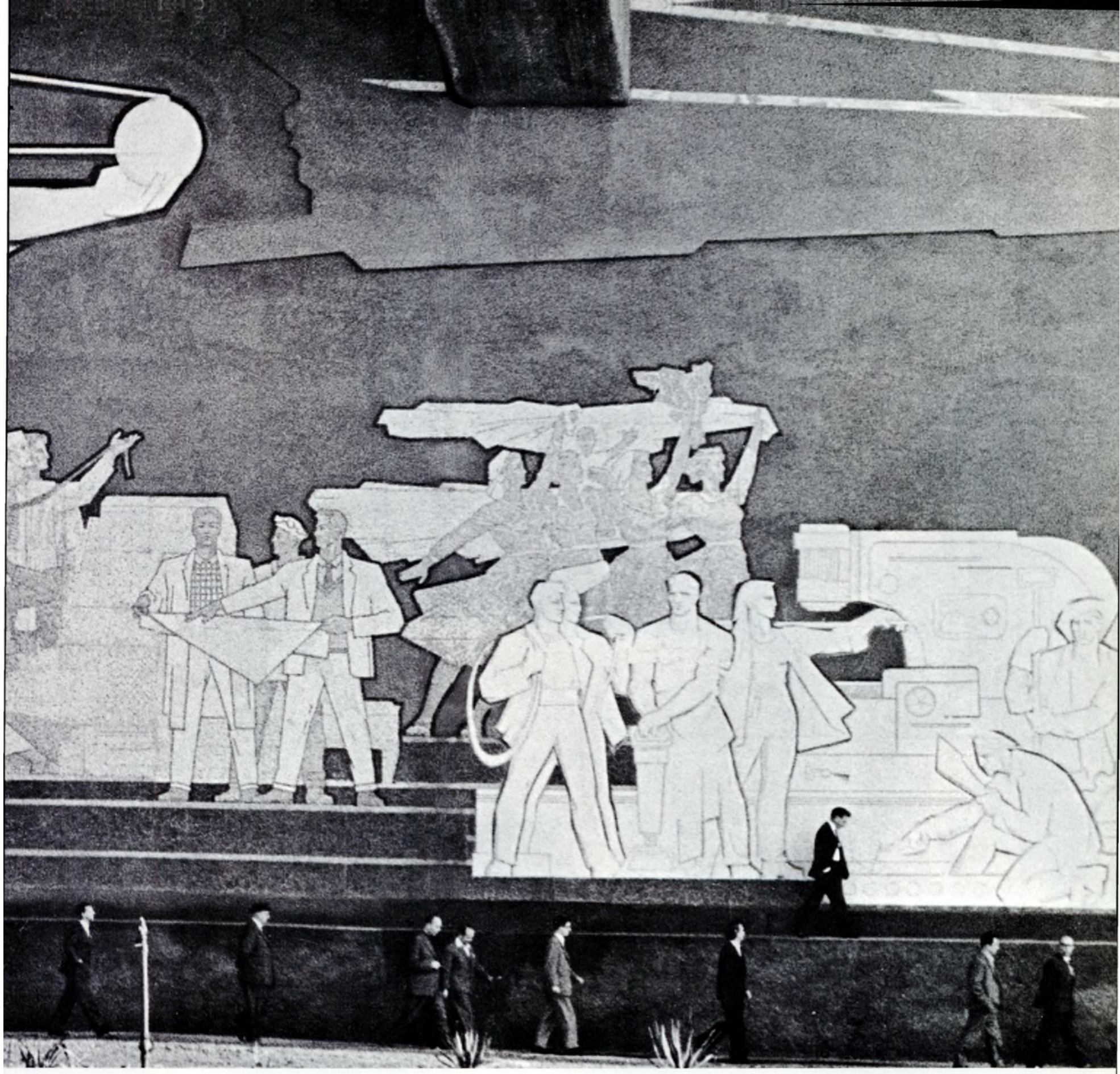
Before anybody abroad had any sensible understanding of what was happening in Russia, before the windows of the Winter Palace, broken in the final battle, had been replaced, the factories, with the workers in control, were already drawing up plans to raise production; the peasants, who had taken the land from the landlords, were already thinking of what to sow in the spring; and the publishing houses, finally owned by the people, had begun to publish the Russian and world classics in unprecedentedly large editions.

It was neither personal riches, glory nor power these fighters of the October Revolution sought. Contemptuous of death, they had faced showers of bullets for the happiness of millions, of the generations to come. They had fought, as one poet said, "for bread and roses in plenty for everyone."

The roses, for a long time, showed our people only their thorny side. As for the bread. . . .

Imagine bread like putty, baked of more chaff, potatoes and flour dust than flour. Well, an ounce and a half of that clayey bread, issued on food cards, was the basic daily ration in the Soviet capital during the long months of intervention and Civil War that followed on the Revolution. Twenty years later that same pitiful ration sustained Leningrad's defenders under fascist siege.

The Soviet republic at its birth offered the hand of peace and friendship to all nations. The reply was an invasion by the armies of 14 states. Hemmed in by a barrage of fire on fronts that were sometimes perilously near the capital,



blockaded, vilified in official circles of the Western Powers, bleeding, destitute and starved, the working people's republic still directed all its thought and effort to building a better society, materially and spiritually.

No sooner had the country's many enemies been thrust back than Lenin announced a program for the electrification of Russia, for the basic re-equipment of industry and agriculture, for the construction of the economic foundation of a socialist society.

That winter of 1920-21 Soviet industry produced a bare 14 per cent of old Russia's peak output in 1913—a sad showing by comparison with American output. The picture hardly looked promising.

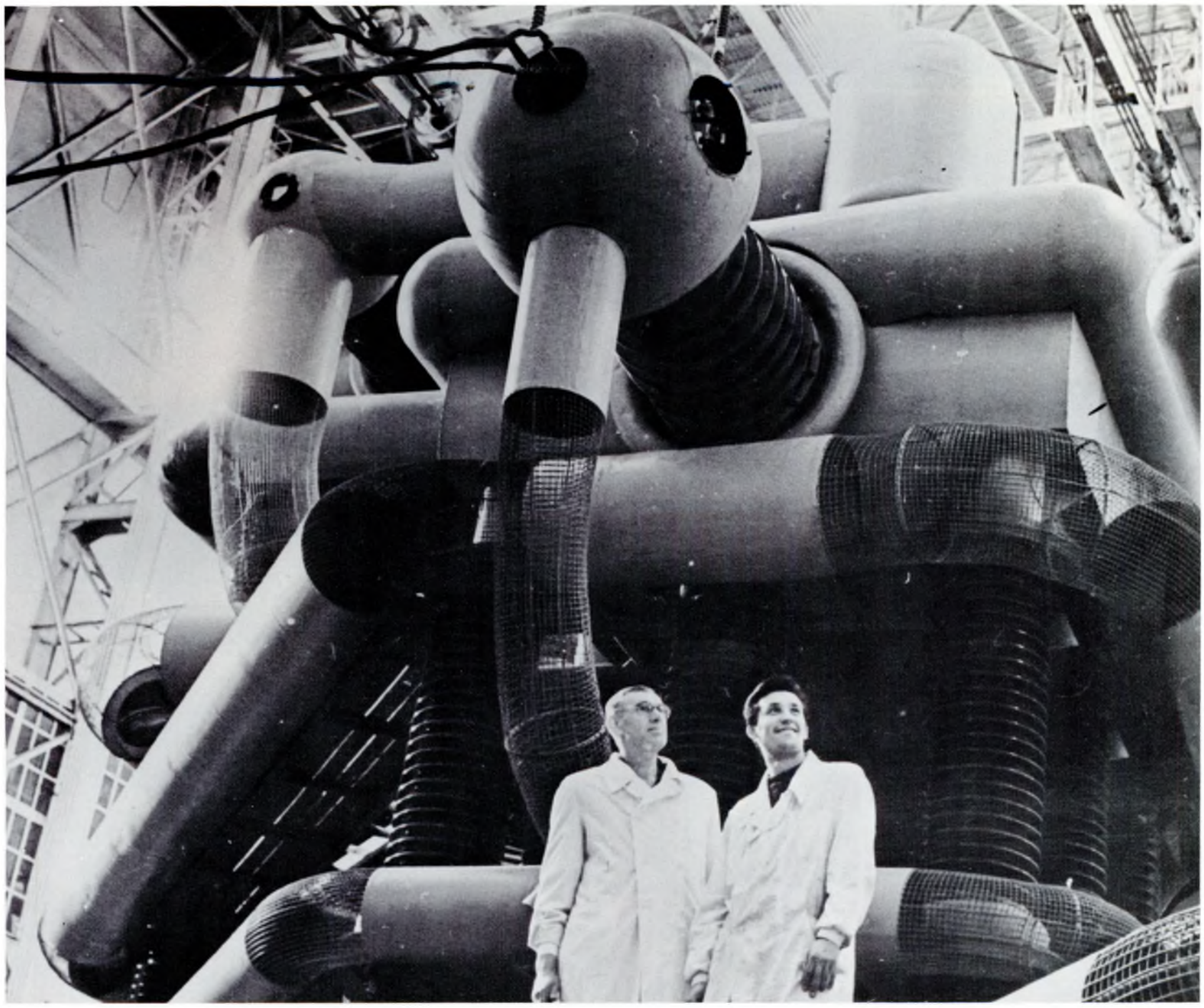
Whatever else may be in question, one cannot argue the fact that no other industrial power had to face a thousandth part of the difficulties Russia did in building its economy. That is axiomatic.

No other power had to build and develop its industry entirely on its own, without investments from abroad and without loans or credits to fall back on. With rare exceptions, foreign equipment was not available to the Russian Republic, nor were the services of foreign specialists, to any significant degree.

Moreover, there was not a day in those two decades between the end of the intervention and the nazi invasion that the clouds of war did not hang over the Soviet Union. Its enemies resorted to endless machinations—attacks on Soviet diplomats, border incidents, economic and cultural barriers, and all varieties of aggressive provocation.

The need to be always on guard, prepared to fight off attack at any moment—that cruel necessity that haunted the Soviet state throughout its history—left its material and spiritual marks. It was this living in a besieged fortress, this regimen forced on Soviet society for decades, that made for the Stalin cult of personality, for the abuse of power and the injustices that were later publicly exposed to all the world and condemned.

The war unleashed by fascism showed how justified these fears had been. It is common enough knowledge that the Soviet Union carried



the major burden of the conflict. Material losses, at a minimum, came to 550 billion dollars. More than 25 million people were left homeless. As for the personal tragedies, we have no gauge by which to measure the irretrievable losses suffered by nearly every Soviet family, the sorrow of the orphaned and widowed, and the loneliness of a generation of young women robbed of their future husbands. In 1959 the country had 21 million more women than men—a grievous legacy of the war.

For all that, no storm or stress, despite its fury and monstrous force, could halt our country's flight toward a bright future, a future many of whose promises we have already realized.

Someone once said that a revolution won was an illusion lost. And certainly many pages of history would bear out the aphorism. The October Socialist Revolution, however, was a living denial of this bitter piece of cynicism. A people's revolution in the full meaning of the phrase, it justified the people's most ardent hopes, bringing them priceless benefits in the present and laying the foundation for an even richer life in the future.

The most important and, to my mind, all-embracing result of the social transformation is the will for betterment our people have acquired and the conviction that betterment is possible, or put another way, the faith in oneself and in the future that has become a national trait. This feeling of self-worth that makes a man a man, not a straw tossed about on the waves of history, not a helpless victim in the struggle for existence, is shared by the great majority of Soviet people.

"Are you ever worried about your security, afraid for tomorrow?" I asked building worker Sergei Kovalenko, a man of 40 or thereabouts, young-looking for his age.

"I expect a lot from tomorrow, sure enough, and I have great hopes for tomorrow, but why should I be afraid of it?" Here he smiled, "The only tomorrow I'm afraid of is facing my better half the morning after I come home from a little too convivial an evening with my friends."

Among my 220 million compatriots we can expect to find people who do not see any future for themselves. Barring the hopelessly ill or those whose love affairs have gone awry—and this is something for which no remedy is ever likely to be discovered—there are the people with troubled consciences, those guilty of crimes and fearful of retribution.

As for the average Soviet man, you can recognize him by the confidence he has in himself and his future, a confidence that expresses itself in his driving energy and his optimism. That optimism, so often the subject of surprised comment by visitors from abroad, is not smugness or anything even distantly related. We are not likely to become self-satisfied; there are still too many things we lack for the high living standard for every man and women in the country that we are working toward.

Nor are we always pleased with the conduct of our public and personal affairs. Every one of us, all the way down the line from Nikita Khrushchev, speaks up in our public forums and in the press about the things we do not like. We speak loudly enough for everyone to hear, and we are not at all dismayed by the fact that the sound of our many voices is heard overseas. The very character of public criticism in the Soviet Union reflects the belief of our people that the shortcomings and flaws are not inherent in the system, that they are products of particular combinations of circumstances and that the circumstances can be changed.

This confidence that the Soviet people have in themselves and their future colors their whole approach to life, notwithstanding the fact that they sometimes lack the modern comforts. It springs from the social system born of the October Socialist Revolution. The telling factors are the real equality of people that obtains in

the country regardless of nationality, sex, or social origin; education that is free and open to all; free medical care; a pension system bolstered by social insurance that rules out penury in old age; the real guarantee of every man and woman's right to a job that has made such concepts as crises, recessions and unemployment academic. Our people's conviction that the Soviet state is guided entirely by their interests comes not from indoctrination but from their own lives, from 45 years of direct and living experience.

Statistics bear this our. From the Revolution to 1961 the real earnings of workers multiplied by 5.8 times and the real earnings of farmers by seven times. The average life span doubled in Soviet times and is now 67 years.

We are pleased, naturally, by these comparisons, and by this other, that for many years now the Soviet Union has led the world in college-trained people, this in a country where half the population could not read and write in 1926. We have more engineers and scientists than any other country, and most of our intellectuals come from working class and farm families.

Dramatic as these figures may be, there is this single most significant point they do not make—that ours was the first country in the world to free the enormous creative potential of a people working out its own future, the first to demonstrate the illimitable possibilities of socialist economic planning.

Material values, after all, are cumulative—short today, abundant tomorrow. Potential resources are what really matter. And Soviet society has the resources to keep raising living standards from year to year in a geometric, not an arithmetical, progression.

When millions of Soviet people march in a colorful stream through the streets of their cities and villages on November 7, they carry banners and placards announcing new achievements in industry and agriculture, in science and culture, in housing construction. The achievements are to be seen in the store windows, with their larger and more varied assortment of goods; in the new blocks of handsome apartment buildings, schools and clubs; in the massive outlines of new industrial complexes; in the endless flow of new commodities and services to make living easier, better and richer.

The achievements are many. The great steppes of Kazakhstan and Siberia, unproductive because of the fearful heat of the short summers and the no less fearful cold of the long winters, have been turned into the country's new breadbaskets. Power sources, the economic core of a communist society, are being built at almost electric current speed; the gigantic Kremenchug hydropower plant on the Dnieper was erected in two years by new methods, at a tempo never before approached. To give every child with scientific promise the best possible educational opportunity Soviet scientists organized an All-Siberian Physics and Mathematics Olympiad in which thousands of children in 20 Siberian towns and cities participated. The best of them were admitted to special schools with enriched courses of study. There is no end to the progressive initiative in all spheres of Soviet life.

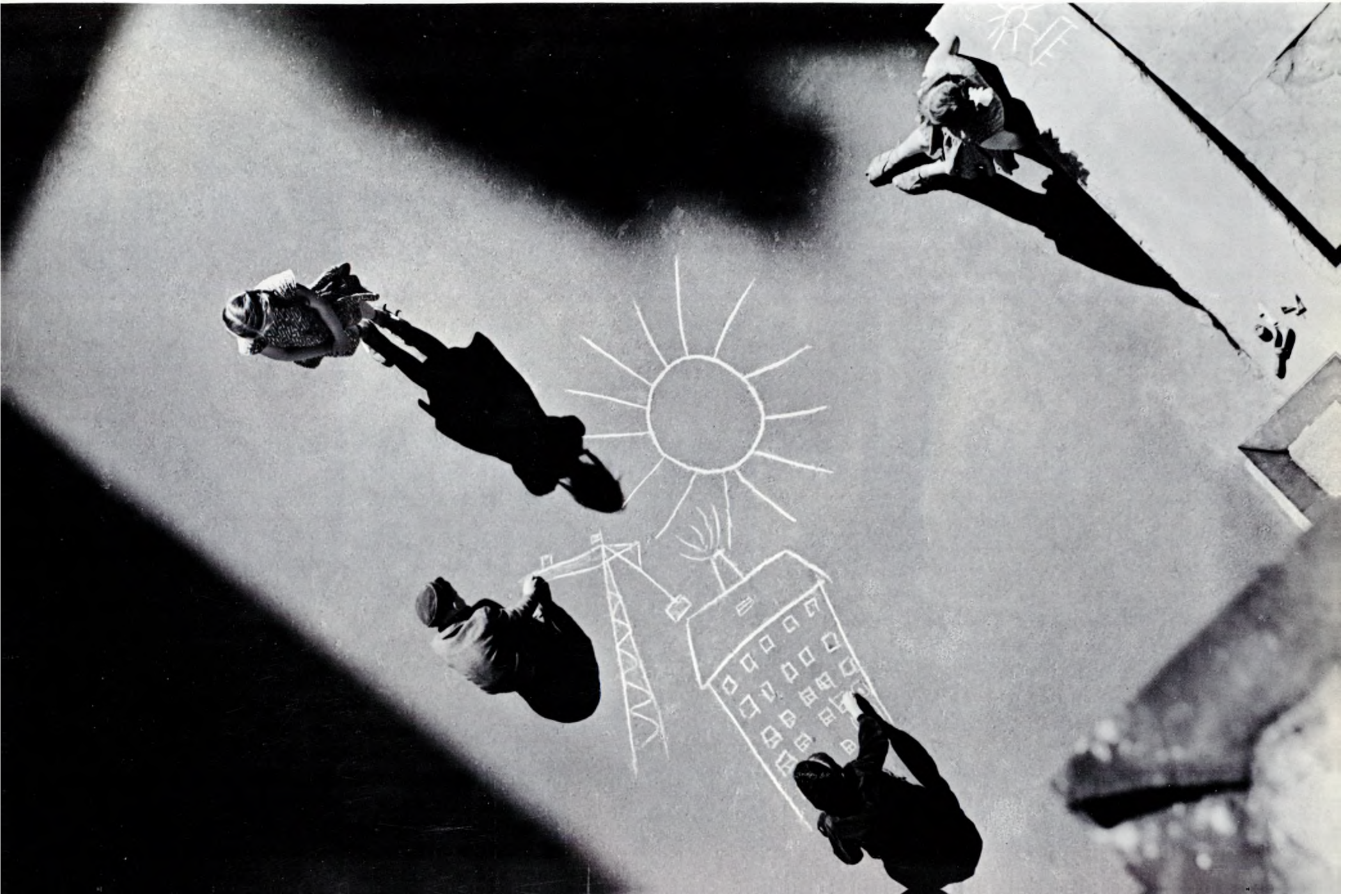
This year, as in previous years, the country has made great economic strides forward. During the first six months industrial production was higher by 10 per cent than during the first half of last year. Moreover, the output of pig iron, steel and rolled metal nearly equaled the total output for 1953. Ten billion more kilowatt-hours of electric power were generated than in 1955. Compared with last year, 27 million more acres of land were sown, the weather was not too bad, and the harvest was good. And in these first six months of the year, a half million families moved into new apartments.

Alongside this growing material wealth we have a simultaneous cultural growth. Hundreds of clubs of factory and farm workers are devoting their leisure to group dancing, dramatics, music and painting. There is wide and general interest in the findings of modern science and technology. Hundreds of design bureaus and laboratories have been set up by groups of people who are doing research in all sorts of fields out of sheer interest and without expectation of profit. The demand for popular science lectures, even in remote parts of the country, has grown out of all proportion.

The very real interest in problems of ethics and moral improvement is a characteristic of this spiritual growth. Subjects so far removed from the press of everyday activity as "Communism and Ethical Development" by Doctor of Philosophy A. Shishkin, published in the newspaper *Pravda*, bring numerous responses from workers and intellectuals all over the country.

In the living design of the present we can already see the outlines of our country's communist future—the era of abundance of material and spiritual riches, the era of the harmonious development of the people.

Our country shall continue to soar—its wings stronger, their spread wider—speeding our people to the heights of human happiness. ★



IT WAS an interesting meeting with the past, present and future of the village of Yamnoye. Mikhail Valikov, Mikhail Morozov and Natalia Parfenova, veteran collective farmers, told me about the old days; Mikhail Batukhtin, the farm chairman, spoke about the present; Victor Zyuzyukov, a young engineer, and Alexei Valikov, a tractor operator, represented the future.

We were sitting in the House of Culture of the Path to Communism Collective Farm, located on a bend of the Don River, not far from the city of Voronezh in Central Russia. It is not especially rich as Soviet farms go—we have many that are much better—but it does fairly well, as do thousands like it throughout the country.

Batukhtin said, "We have 5,000 acres, about 3,700 arable. Ours is a grain, vegetable and dairy farm that takes in two villages—Yamnoye and Novo-Podkletnoye."

Although it was getting dark, no one felt like turning on the lights. It was pleasant sitting there talking quietly and leisurely.

"I still remember when most of this land belonged to a single landowner, Kotlyarenko," 68-year-old Mikhail Valikov began. He sat erect, hands on knees, a slim man with a wiry brush of gray hair.

"Peasants who didn't have their own land had to rent from Kotlyarenko. They paid him off with a large share of their crop or by working his fields."

Valikov took a sip of his drink, wiped his lips with the palm of his hand. "That's the way we lived—if you can call it living—until the October 1917 Revolution. The first decree of the Soviet government gave the land to those who tilled it. We paid nothing for it. In our village we divided up the land according to the number of people in the family. Our share was about 20 acres, I don't remember exactly, besides the pasture and hayfields that everybody used. And so we thought that we would really begin to live now. But then the Civil War broke out. Landlord Kotlyarenko and others like him got together and started a war against the Soviet power. They were supported by the officers, who owned land and the factories.

"But we peasants figured this way. Under whom didn't we own a thing? Under Kotlyarenko. Who gave us the land? The Soviet power. Fighting for the Soviet power was like fighting for our own land, we decided. My three brothers and I joined the Red Army. We were in the cavalry all through the Civil War and fought the way Don Cossacks should."

"That's where he got his military bearing," was the thought that flashed through my mind.

"I remember when we came back from the front," Valikov went on. "We rode through the village, and it was all broken walls and burned roofs. I had seen a lot of that kind of thing during the war and as I looked around I thought how terribly poor we were. Nothing but poverty all around. We were still living separately, just as before, everyone in his own kennel. It wasn't right; it didn't make sense. In the city people worked together and relaxed together. They had brick houses, good roads, electricity, running water. All we had was poverty and ignorance. If there was some way we could get together and work like one big family, we'd be able to build a decent life for ourselves. There had to be a way.

"There was—collectivization," he said after a pause. "I'll never forget that spring of 1929. It was March, the snow in the fields was melting, and everyone was getting ready for the sowing—his own land, of course.

"Stepan Malyugin, a worker from Voronezh, came to our village. He was a strong, good-looking young fellow. He got us all together in the biggest house in the village and said, 'Comrade peasants, we Voronezh Communists think you should join forces and organize a collective farm.'

"Nobody said a word.

" 'You ought to put all your horses, plows and other tools in a common pool and work the land together.'

"Still dead silence. At the time the small peasant households were barely scratching a living out of the soil. There were only a few collective farms then but the advantages were already evident. It didn't take a sage to see that you could do more with a tractor on a single large field than on a lot of small plots. And, of course, the collective farms were taking in bigger harvests. And so the Party sent thousands of workers like Malyugin to the villages to explain to the peasants what a kolkhoz was and to help them get on their feet.

" 'Nothing to say?' Malyugin asked. 'Why don't you do what we workers did? Follow our example. Unite. Use your tools to fight your real enemies—need and ignorance. Together, all together. Only that way can you beat these enemies down and build a real life for yourselves.

" 'Unite,' he repeated. 'Begin to work together and you'll manage the farm yourselves. You'll get together at meetings and decide what needs to be done and then go ahead and do it.'

"What he said made a deep impression on us. My brothers and I knew what working together meant. There were times when we went to the fields together, and we were not afraid of hard work then. All night long we discussed the question—should we join the kolkhoz or not? In the morning we brought our horses, harness, carts, tools and a few odds and ends to the common farm. From that moment we were collective farmers."

"Were there any people who wouldn't join?"

"Yes," he answered, "the richer peasants, the kulaks, didn't want a collective farm. When everyone joined, they lost their hired hands. Those who saw that the collective path was the right one came over themselves. But there were some malicious enemies of the collective farm system. They were driven out of the village."

"We ourselves turned out to be the best propagandists for the collective farm," added Natalia Parfenova, a woman of 50 or thereabouts with strong

THE REWARDS

The Path to Communism Collective Farm, set up in 1929, has developed into a mechanized, large-scale producer of grain, vegetables and dairy products.

OF COMMON EFFORT

BY YURI GRAFSKY
PHOTOS BY ALEXANDER MOKLETSOV

The farmers built themselves 360 of these one-family houses in the past seven years.

hands and a sunburnt face. "I was a young girl then, but I remember that the peasants in the neighboring village wouldn't join. They didn't believe Malyugin, I guess, because he was an outsider. We harnessed up our farm sleigh, decked the horses out with bells and ribbons—it felt like a real holiday—and drove over to Podkletnoye. We spent the day talking, and by evening almost everyone had signed up."

"Who was your chairman?" asked Mikhail Batukhtin.

"Someone from our village—Yarin or Yarovoi—I don't remember his name. A real whirlwind of a man, a Red partisan. He knew how to get people fired up, how to organize them. I was a deputy chairman.

"We turned up the ground, using the collective farm horses and our own plows. For harvesting, they sent us two harvesters and a thresher from the city, as Malyugin had promised. The following spring they sent us three tractors. Things picked up after that. A state machine and tractor station was set up not far from us, and for a fixed payment it did all the necessary work in our fields.

"We began to get yields half again as large. We turned part of our produce over to the state and paid for the work of the machine and tractor station; the rest we divided up among the collective farm members according to the number of workday units they had earned. The members kept what they needed for their own use and sold the rest at the market.

"We also set up an indivisible fund, our basic capital, that grew from year to year. We used it to expand the farm, to put up new barns and stables. Then we decided to build a clubhouse, a school and brick cottages. We managed to get the school built, but the rest had to be postponed when the war broke out."

"We certainly had our fill of suffering," Natalia Parfenova said, and the shadow of the war seemed to pass across her face. "The Germans were on the other bank of the Don. The Soviet front ran right through here. You can still see the trenches outside the village even though they're overgrown with grass now.

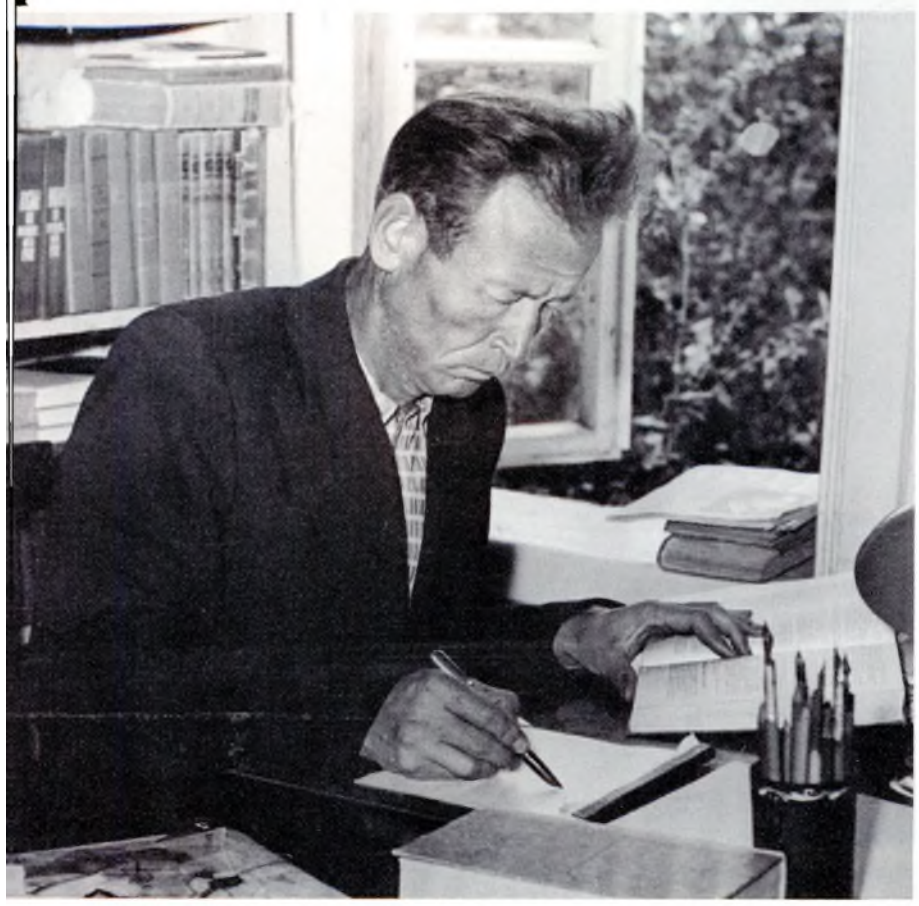
"When we returned home—we had been evacuated to a neighboring area—we couldn't recognize our village. It was all in ruins and ashes. Not a single house had been spared, caved-in walls and broken chimneys were the only things left.

"What to do? Where to begin? There were no men around, only the women and old folk. We elected our soundest old man farm chairman."

Natalia Parfenova smiled at Mikhail Morozov. He smiled back, very dignified.

"We had a real bad time of it," he said, "only one horse for the whole farm. We got hold of some plows and managed to do the spring work somehow or other. The neighboring collective farm had spare seed, and we sent several women over for it. With sacks slung across their shoulders they set out for home. It was already dark when they reached the Don. They began to wade across the river. One of the women slipped and fell into a shell hole. They managed to pull her out before she went under. The sack is still there."

Farm machine operators planning the day's work with chief engineer Victor Zyuzyukov (center).



Mikhail Batukhtin headed the local machine and tractor station before he became farm chairman.

As I listened to the story of how the farm had been rebuilt, I couldn't help thinking that they might have returned to their old way of life, when each one had his own piece of ground. But they hadn't—they stayed together, stuck to the collective farm. Why? They were changed people. The collective farm had changed their thinking, freed them from poverty. And so when they came back to that terribly scarred land of theirs, they immediately set about rebuilding their collective farm.

"The state helped us very much," said Mikhail Morozov, "gave us a building loan for an unspecified time, sold us livestock on credit sent from the parts of the country which had not suffered from the occupation. The state did that for all farms that had been ruined by the war. The machine and tractor station was also set up again.

"Gradually we rebuilt the farm. We put up new barns. The dugouts we lived in right after the army left were replaced by temporary clay houses with thatched roofs. The school building was one of the earliest to be restored. The children had to study, a general meeting of the members decided.

"As for our yield, we took in more grain in 1948 and 1949 than before the war. About that time we started to cultivate the Don floodlands. That had been all pasture before but we sowed it to cucumbers, potatoes and tomatoes. What helped a lot, too, were the forest belts planted on the steppe to block the dry winds and protect the soil from drought. And then came Mikhail Batukhtin," he said with a smile. "He was to play a special role in the life of our collective farm."

"I got to know the farm when I took a job in Semiluki District, not far from Yamnoye, after graduating from the Forestry Technical Institute in Voronezh," Batukhtin said. "Later I was appointed to head the local machine and tractor station and some time afterward was elected farm chairman.

"The farm in Yamnoye wasn't a bad one, its shortcomings were common to many of our farms at the time. Take the matter of material incentive, for example. The state bought potatoes from collective farms at about two kopecks a pound—in the old currency this was. The price didn't even cover production costs. The farmer could get a better price on the market. And that was true not only for potatoes.

"This disproportion was wiped out in 1953, after the September Plenary Meeting of the Central Committee of the Communist Party. Government purchasing prices were set that covered the farmer's costs and gave him a profit. The price for potatoes was hiked to 20 kopecks, also in the old currency. Now it made sense to farmers to grow more, especially since they didn't have to market the produce themselves.

"That took care of one of the big obstacles that stood in the way of farm development. But there were others that only the farmers themselves could correct. I used to visit the farm fairly often before I became chairman. I'd tell the managing board, 'You're making poor use of the floodlands. You ought to use them for vegetables. Your farm isn't far from town—a ready market for vegetables almost the year round. The Don floodlands can be a real gold mine,' I'd keep telling them.

"They agreed but did nothing about it. They didn't see that we were at a new stage in farm development. With multibranch farming you had to have special knowledge, you had to farm scientifically. Slogans and appeals wouldn't do the job. What you needed was concrete and precise calculation. The farm had to know what was profitable, how profitable, and why."

Natalia Parfenova interrupted to say, "I remember Batukhtin telling us at collective farm meetings how he figured things out. We all thought this machine and tractor station director was a very clever man."

"That's why we elected him chairman in 1955," Mikhail Morozov added with a smile. "We wanted him to be one of us, not only a helpful visitor."

"The first thing we did was plow up the floodlands," Batukhtin said. "We wanted the most profitable crops on that fertile soil. So we planted cabbage, tomatoes, cucumbers, onions, carrots, several kinds of melons, corn and sugar beet.

"That first fall we knew we had done the right thing. After we added up our sales to the state, the cooperatives and the market, we found that the farm's income had increased by 50 per cent. And a good half of this income came from the sale of vegetables and sugar beet.

"The structure of the sown areas improved from year to year. We expanded our corn area especially, not only for its grain crop but for green fodder, as our livestock section was growing and becoming increasingly profitable.

"Our profits last year totaled more than 565,000 rubles in new currency, and 208,000 of it came from our vegetables.

"Peas are a valuable and versatile crop. They enrich the soil with nitrogen and serve as a good preparatory crop for wheat. We now have more than 320 acres sown to peas. We expanded our pea area after the March Plenary Meeting of the Central Committee suggested that farms shift from low-yield grass crops. We now grow peas, corn and sugar beet on 865 acres previously sown to grass.

"We expect this year's income to exceed 750,000 rubles. About 300,000 will go to the farm members for their work. This is three times the amount they earned in 1955.

"In the past seven years we invested large sums in construction. We built five cow barns, two of reinforced concrete; a barn for the calves; a pigsty; and a poultry section.

"Our village has become completely transformed during the period. We put up a House of Culture, a school—we're building a second one now—and a general store. The collective farmers built themselves more than 360 brick cottages. The farm board helped out by providing the transportation and building materials.

"By then," Batukhtin went on to say, "our farm was getting along so well and had such well-trained personnel it could manage without the machine and tractor station. So we were pleased when the government, recognizing that these conditions applied to most of the collective farms, decided to abolish the machine and tractor stations and sell their equipment to the farms.

"We bought 15 tractors, 20 trucks, 2 harvester combines and a good many of the smaller units—reapers, sowers and winnowing machines. Our latest buy is a self-propelled sorting machine for the threshing floor—a clever device and a great labor saver.

"In short, we have so many machines that the farm decided it needed a third specialist, a chief engineer, in addition to the chief agronomist and zootechnician."

Everyone turned toward a quiet young man who had been sitting there listening—the new chief engineer, 23-year-old Victor Zyuzyukov.

"I'm new here. I've been at the farm only a short while," he said with a certain challenging firmness, "but I don't share the chairman's optimism about the machine situation. We don't have nearly enough machinery. I have a list here. We need at least five more tractors, a silage harvester combine, a number of trucks and several smaller units. The whole business will cost about 26,000 rubles. Besides that, we have to finish installing mechanical milkers and do a good deal more than we have to mechanize the livestock section."

Mikhail Batukhtin looked at the young engineer admiringly. "That's how it is," he said with a touch of resignation. "We thought we were moving along fast, and here this young fellow comes along, slaps us politely on the back, as if to say, 'Get moving, friends, or you'll be left behind.'

"Not that I'm complaining," Batukhtin hastened to add. "On the contrary. Our children should be better and smarter than we, otherwise living wouldn't make much sense."

"Well said," Morozov put in.

"That's a fact," Batukhtin added. "My feeling is that we would move along a lot faster if all the farmers followed Alexei Valikov's lead. He's studying in his free time. The farm gave him a paid vacation a while ago to prepare for his exams."

"I'm not the only one," Alexei, a man of 23, said. "There are about 30 of us studying at the correspondence school."

"What do you do?" I asked him.

"I'm a tractor operator."

"Live in Yamnoye?"

"Yes. I got married not long ago and built a home here. We have a baby, Natasha." And like any first father the world over, he gave us a detailed description of his wonderfully unique offspring.

Batukhtin sat for a while, lost in thought. "Worth living, thinking and working for—all this. Isn't that so, Aunt Natasha?" He turned to Natalia Parfenova.

She nodded her agreement. "You know whom I met recently?" she said. "I was coming back from town, waiting at the bus stop, when an old man with a cane approached me.

"He peered at me, 'You're from Yamnoye, aren't you?'

" 'Yes,' I said, 'how did you know?'

" 'You look familiar. I know the farm. I helped collectivize it!'

"It was Stepan Malyugin. He has retired on pension and now lives in Voronezh. I thanked him for all of us for putting us on the right road." ★

MAN TO MAN

PHOTOS BY ANATOLI GARANIN

Valentina Poluyanova, who leads a Moscow Electric Bulb Factory team, tells us about the people she works with and what the word comrade means to them.

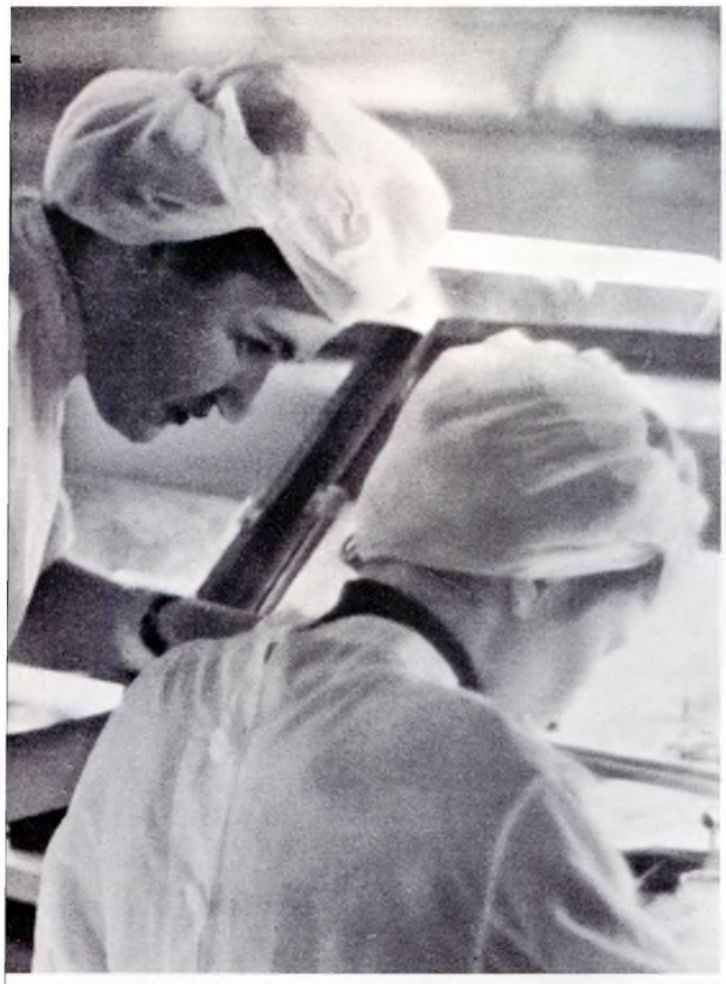
COMRADE is the customary form of address in the Soviet Union. But it has far deeper connotations than the conventional salutation. Implied is the very essence of human relationships in our country. If man's character is shaped by circumstances, said Marx, we must make the circumstances human. Socialism, with its affirmation of the principle "all for one and one for all," did just that—it humanized circumstances.

Common ownership and joint labor for the general good binds men together. But collective living does not trim people to a standard pattern. On the contrary, it allows for the freest individual expression. The individual is not alone—all of society helps him develop his talents. He, in turn, shares his knowledge, skill, experience with others, in a mutually enriching interchange.

As it closes the gap between general and personal interests, the socialist system evolves new moral values. A man's life can have little meaning, to others or to himself, if it reduces itself to the satisfaction of his own petty wants. A man must have something larger than himself to live for, a social ideal, a goal to reach for that transcends the small daily routines.

A person concerned only with his own welfare is incapable of the efforts and achievements demanded of people building a communist society. In our country "I" is part of "we," the individual takes pride in the fact that his work contributes to a great common cause. "Man is a friend, comrade and brother to man"—that is the moral code of the builder of communism.

Valentina Poluyanova, a worker at the Moscow Electric Bulb Factory, put all this in a plainer, less ornamented nutshell when she told the writer in an interview: "I've been working at the factory for eleven years, so I know the comrades I work with. We're about the same as any other shopful of workers—no better or worse, I guess. But maybe that's the reason we can serve as an example of how the principles of communist ethics unite people into a friendly family living for a common aim. This feeling of a collective is so much a part of our lives that we're hardly even conscious of it."



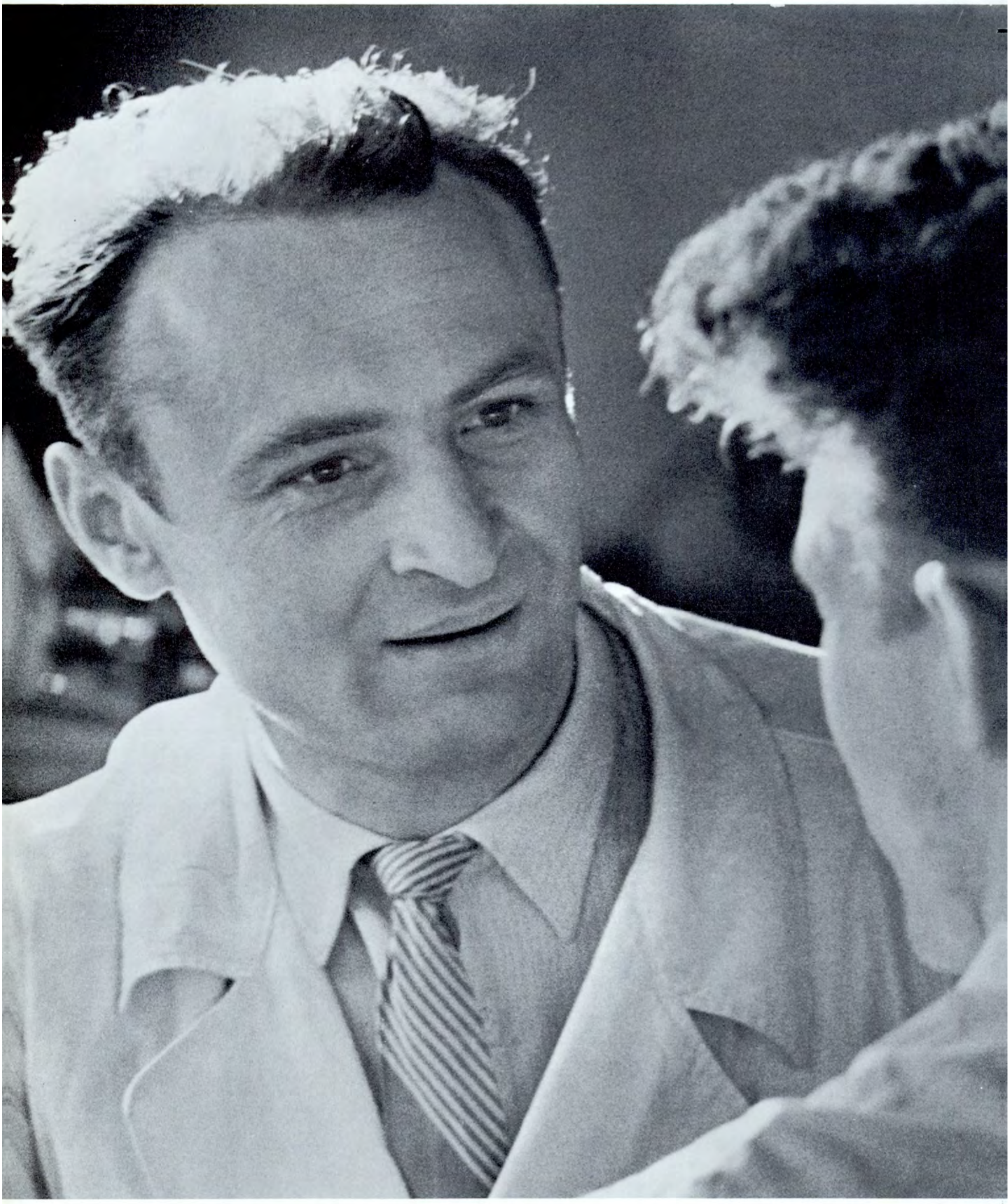
(Left) To Anastasia Volkonskaya comradeship means sharing her 15 years of experience with newcomers like Tanya Morozova.

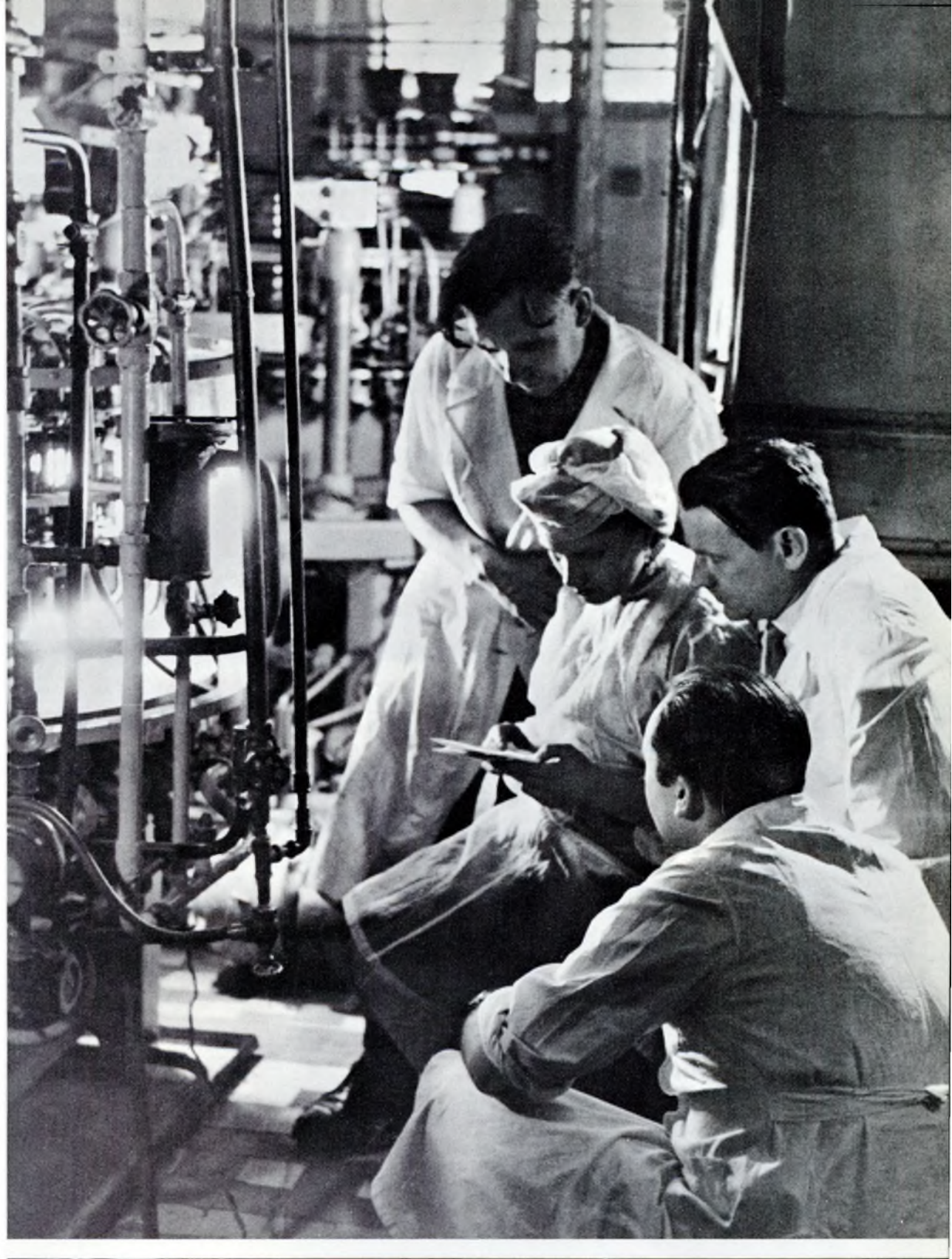
(Lower left) In her free time engineer Lina Lipilina coaches those of us who are taking institute correspondence courses.

(Lower center) Anna Ostapenko has transferred from high-earning teams eleven times to help weak teams do a better job.

(Lower right) Smiling Anya Paranina makes it her voluntary duty to see that her coworkers get the books they'd enjoy most.

(Bottom) Foreman Ilya Shekhmeister's versatile team operates on the communist principle: You're responsible for your comrade.

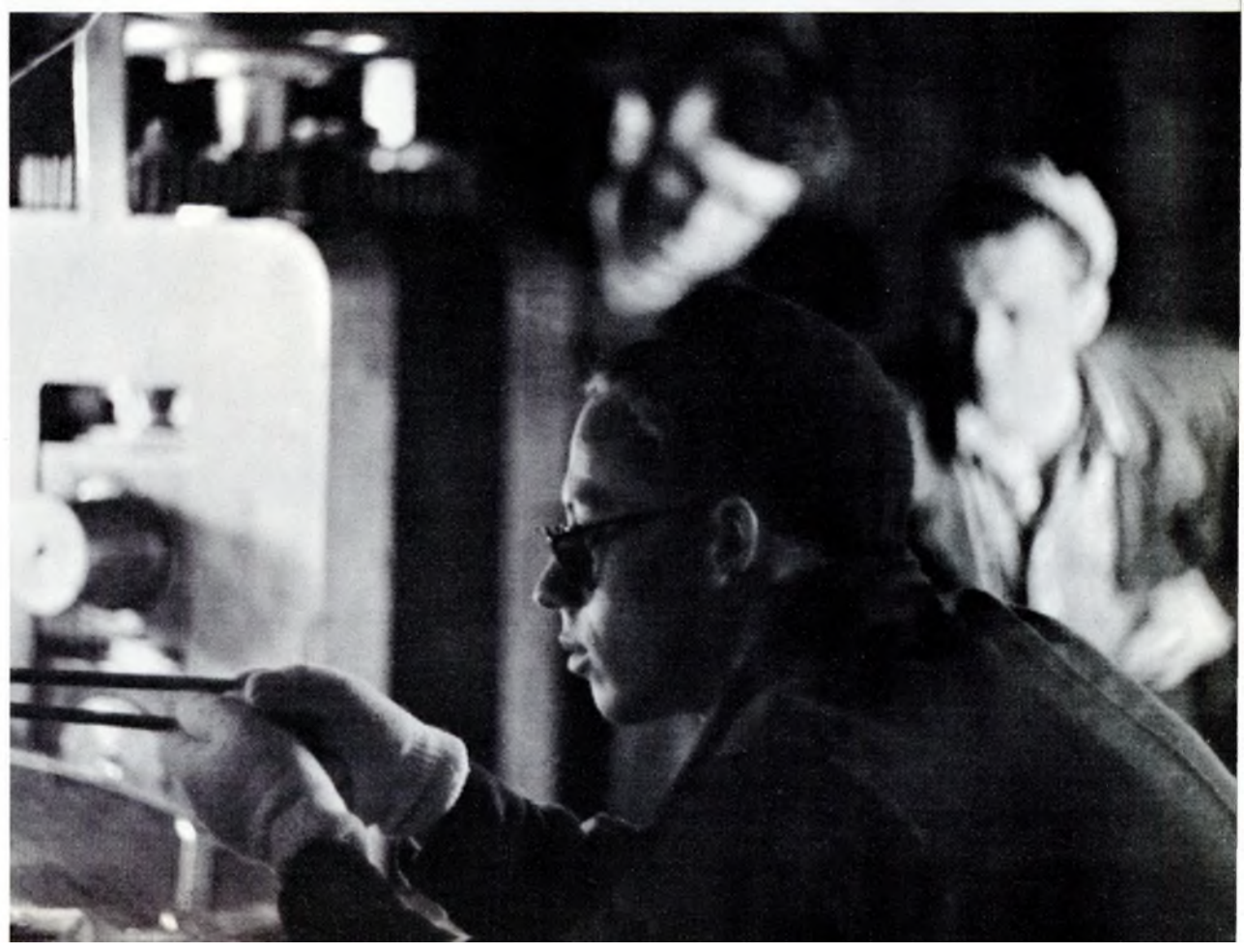




(Left) Communist Ivan Pilchenko, a glass blower, is the kind of man people turn to for advice or a word of encouragement.

(Right) Assembler Alexandra Vlasina reads a letter to her team mates from a pen pal who works in a Rochlitz (GDR) radio plant.

(Lower right) Roller operator Zefer Yusupov improved a process and boosted not only his but the whole team's earnings.



(Upper left) New conveyor in the picture-tube shop. We're all interested in automation; it eases work and raises output.

(Lower left) When one of the men came to work drunk and insulted a girl, he was taken over the coals by his own comrades.

(Upper right) We're friends inside the factory and out, in times of trouble and at happy occasions like this get-together.

(Right) At a show in our Palace of Culture where many of us study painting, writing, dramatics, dancing and music.

WHAT IS YOUR

What purpose does a man's life serve? What goal does he have? How can he reach it?

These are the big and important questions people have always asked and probably always will. Each generation

NIKOLAI MARATOV

ARCHITECT

MOSCOW, RUSSIAN FEDERATION

The long road architecture has traveled stretches from the paleolithic cave to the Brussels Atomium, a Le Corbusier design and the Kremlin Palace of Congresses.

In my field, the creative process itself is exciting. I get carried away when I design a hotel or some ministry building, but I am doubly moved when I design an ordinary block of apartments. I keep thinking that in these apartments people will live and fall in love, laugh and quarrel. I want these people to live well, as well as I can help them to, and I spend sleepless nights thinking up endless variants for floor, hallway and apartment designs.

I am glad to be working in one of the world's most essential professions. I should like to keep building without stop, until not a single person is without the roof of a fine modern home over his head.

VLADIMIR KHARKO

LIEUTENANT COMMANDER

SUBMARINE OFFICER

Nature made man so he could walk on land, but he won command of the air above and the sea below by the power of his own brain. While a considerable part of our air fleet carries peaceful passenger and freight cargo, the submarine fleet is built solely for armed encounter. An unhappy fact but true.

We who serve in the Armed Forces are too conscious of the destructive power of modern weapons not to hope for peace. Peace is dear to us; it means the lives of our mothers, wives and children.

My greatest wish is to see the submarine fleet at the service of peace and science. Let us build boats with huge portholes, like Captain Nemo's *Nautilus*, and display the mysteries of the sea to curious tourists. I would be performing my same duties, no less efficiently, but with far greater peace of mind.

ANTONINA GAVRILOVA

HOUSEWIFE

TBILISI, GEORGIA

I can't conceive of any meaningful goal in life which does not involve either mental or physical labor.

A housewife's work is not easy, and it is rather dull. It is necessary, of course, but to my way of thinking it lacks any creative spark. For this reason, perhaps, I find painting a pleasant diversion in my leisure time. I began by painting still lifes, but I've been going in for portraits lately. I paint only as a hobby, and so I never bothered to show my work to anybody. Some time ago, however, an artist friend came to see me and had a look at some of my new pictures. A few days later five of them were accepted for a Georgian amateur artists exhibition.

My goal in life? I should like to paint a picture which would be remembered long after I'm gone. And I'd like to devote the remainder of my life to that goal.

ENN GREYEM

UNIVERSITY STUDENT

TARTU, ESTONIA

In my childhood I thought there was nothing more important than the sea. My father and all my forebears were fishermen. The sea was our livelihood, and that is why it was rarely absent from my childhood dreams of the future.

Today, however, the sky has taken on as great a significance for me. I am now a student at Tartu University, enrolled in the astrophysics section of the department of physics and mathematics. I want to study the atmosphere at high altitudes and investigate the structure of stellar bodies. To clear the road to outer space, we have to solve the mysteries of the sky.

We students often talk about happiness. My dream is to see the day when astronomers will unravel for mankind the mysteries of the sky and to know that I, too, have contributed to the solution.

GOAL IN LIFE?

answers them in its own way and the answers reflect the times—the ideals, thinking and social attitudes current.

We asked Soviet citizens from various walks of life to reply to these questions. Here are their answers.

Objectively speaking, the fruits of my labor, far from benefiting man, do his body slow but sure harm. The point is that I grow tobacco.

People have become such addicts of that suicidal habit that it is practically impossible to break them of it. I've therefore set myself a humbler task—if people can't stop smoking, let us at least try to make tobacco as harmless as possible. It was with this thought that I entered the university, graduated and became an agronomist. I have read practically everything that has been written about tobacco. On my collective farm I have my own laboratory and experimental plot. I must confess that I am still a long way from a complete solution, but solve this problem I eventually will. And when I do, let the most inveterate smoker smoke for all he's worth.

ASHOT OVSEPYAN

AGRONOMIST

SUKHUMI, ABKHAZIAN ASSR

Like everyone else, I have all sorts of aspirations. I want my productions to be successful, my home to be comfortable, my children to grow up honest, good, and clear thinking.

The larger part of my life belongs to the theater. My abiding wish is to make each play I produce not only an important landmark in my own career, but an event in the lives of those who see it. I want each play I produce to be more thought-provoking than the one before.

This wish can be realized only through a never-ending quest and probing of contemporary values, not only in the plays of the present day but in Shakespeare, Chekhov and Hauptmann as well. It can be realized only by constant experimentation through trial and error, with failure serving merely to heighten that sense of dissatisfaction which gives impetus to creativity.

PYOTR MONASTYRSKY

DRAMA THEATER DIRECTOR

KUIBYSHEV, RUSSIAN FEDERATION

The essence of any religion is the fight against evil. And the most terrible evil on earth is the extermination of human beings by war.

The village where I was born is near the western border of the Lithuanian Republic. Many times during World War II the front line cut through it. In the course of a single summer the village kept changing hands until it was reduced to a heap of smoldering ruins. I saw seas of human suffering—the barbarous bombing of peaceful towns, wells contaminated in Kaunas, distraught mothers searching for their children. This must not happen again. Hence it is my life's goal to fight against the madness which can plunge humanity into the shambles of another war. This is the subject of my sermons, the books and articles I write and my radio broadcasts.

IOZANAS STANKEVICHUS

CANON, DOCTOR OF THEOLOGY

KAUNAS, LITHUANIA

Among the collections at the Minsk Botany Institute, of which I am the director, there is one that is particularly dear to me—the herbarium of dried plants my brother and I collected when we were schoolboys. I had already decided to be a botanist then. I have a long road behind me now—college days, expeditions, laboratory research and work at my desk.

There were plenty of hard times on the way. In the twenties the country was so poor that we had to get along without machines on our experimental plot. But what a joy it is to see this same country now, with tea plantations and beautiful citrus groves spreading far and wide.

As a research botanist investigating the resources of nature, I look forward to the day when all wild and cultivated plants will be serving man's needs.

ALEXANDER FYODOROV

DOCTOR OF BIOLOGY

MINSK, BYELORUSSIA

VLADIMIR BARBASH

MODELLER, BOLSHEVIK PLANT

KIEV, THE UKRAINE

My goal in life is to build. My father was killed in the last war, and I lived in nazi-occupied territory. I saw so many fires, ruins and ashes that to be a builder seemed to me the most important and noblest vocation on earth.

I knew I had to finish secondary school before entering an institute, and so I spent my evenings studying. After graduation I registered for courses at the correspondence division of the Institute of Construction Engineers.

The main difficulties in reaching my goal are now behind me. I have done my graduation project—a design for a compact automobile plant. So far my dream is only a crisscrossing of white lines on blue paper. But soon it will be rising in steel and concrete. I can hardly wait for that day. A dream realized—what could be more wonderful?

GENNADI NUDELMAN

GEOLOGIST

YAKUTIAN AUTONOMOUS REPUBLIC

When I entered the Moscow Geological Prospecting Institute, this is what I used to daydream: I'm marching through the taiga with a prospecting party. We keep searching for a long time. Finally our efforts are rewarded! We discover a valuable mineral. The news that a very big deposit has been discovered sweeps the country.

All this is still in the dream stage. I completed my studies at the institute this year and left for South Yakutia, real taiga country.

Why do I dream of a discovery? The thirst for glory? Perhaps, but that's only part of the answer. There's something else to it—I want to get to know this earth under our feet, to make all the geological wealth accessible to the people. I am still young, but I am old enough to know that the joy of life is in being useful to people.

VALENTINA DOBRYAKOVA

SENIOR ENGINEER

LENINGRAD, RUSSIAN FEDERATION

I have long dreamed of becoming a mathematician and had planned to enroll in the mechanicomathematical department of the university, but the war ruled that out. My father died of hunger in besieged Leningrad, and one of my elder brothers fell at the front. Mother was left with five of us, and although she was getting a pension, it wasn't enough to support our big family. I became a fitter's apprentice at the Krasnogvardeyetz Plant, which produced the first model of the world-famous surgical instrument for suturing blood vessels.

Much as I like my present job, I have not given up my old dream. I enrolled in the extramural division of the Polytechnic Institute and am now up to my ears in mathematics. I am much more interested in scientific research, in solving technical problems with mathematics.

LUDMILA SERDYUKOVA

CONSTRUCTION WORKER

BRATSK, SIBERIA

When I told my mother that I intended to leave for a construction job in Bratsk, she wept but finally gave in.

We arrived in Bratsk in the spring, and I accepted a job in a geodetic party. We were the very first people there, the first to lay out streets in the taiga and stake out the places where plants were to be built.

My first really serious wish was to help build a new city in the wilderness. And it is exactly what I am doing, with my work mates, of course. For there are very many of us here, young men and women from all parts of our big country. In the evenings we dream aloud about how in a couple of years we will be strolling down the broad avenues of our big city. But all that is for the future. Right now I plan to enroll in an institute and become a construction engineer.

ALEXANDER LETUNOVSKY

LATHE OPERATOR,
USSR MASTER OF SPORTS

VOLGOGRAD, RUSSIAN FEDERATION

Athletics is my hobby. At a plant where I worked as a lathe operator we got together a fine team of athletes, and I was chosen captain. But holding the title of captain is not enough; one must live up to it, and not only by carrying off prizes, but by drawing others into sports. A good grounding is necessary for this, and I enrolled at the Institute of Physical Culture to qualify as a coach.

Just like every other sportsman, I dream of making the Tokyo Olympics. The man I look up to most in sports is the miner Rudolph Plukfelder, the Soviet heavyweight champion. Plukfelder not only broke world records but trained several other national champions in the pit where he worked. I, too, hope to go to the Olympic Games in the company of other sportsmen in my plant whom I helped train.

DORA VASILYEVA

SCHOOLTEACHER

ULAN-UDE,
BURYAT AUTONOMOUS REPUBLIC

I shall never forget May 9, 1945, V-Day. Along with joy it brought grief to our home, for on that last day of the war my father was killed in Berlin. I was only a child then, but I remember my father well. He was a strong, kind man with an inner beauty.

I sometimes think that to build the happy society we call communism we need more people like my father.

We need millions of such people, and scores of thousands of others to educate them. I wanted to have a part in this great work and decided to become a teacher, knowing that the human character begins to take shape in childhood.

I teach the elementary grades—little girls and boys of ten. I like my work. For me, it is the embodiment of a goal—to help children grow into rounded, happy adults.

STATE SYSTEM OF THE USSR

(Comments on Diagrams)

SOVIET STATEHOOD is based on the Soviets of Working People's Deputies. They were created in 1905 by the people themselves as the guiding bodies of the strike movement that was sweeping the country and subsequently developed into organs of state power. It was the Second All-Russian Congress of Soviets that took power from the Provisional Government in 1917, after the October Socialist Revolution.

The Soviets won nationwide support by drawing the millions into the administration of the state, by fostering the creative initiative of the people and by reason of their vitality and thoroughgoing democracy.

Today the Soviets of Working People's Deputies are the only organs of state power in the USSR, functioning on all levels of government, from national to local. The executive branch is responsible to the Soviets, which elect all executive bodies.

The USSR Supreme Soviet

The Supreme Soviet of the USSR is the country's highest organ of state power. It is elected by all the citizens of the country who have reached the age of 18. Suffrage is universal, equal and direct. Voting is by secret ballot. The Supreme Soviet is elected for a four-year term.

The composition of the USSR Supreme Soviet mirrors the country's social structure. Many of the deputies are industrial workers and farmers directly employed in production. As working people, they know the needs and interests of their constituents. Among the legislators are scientists, teachers, writers—the best representatives of the country's intelligentsia. There are members of all the 63 nationalities inhabiting the USSR in the Supreme Soviet.

Election to the Supreme Soviet does not depend upon social position, national origin, property status or past merits. There is only one criterion, the nominee's record of civic and productive work for the welfare of the society, for the good of his constituents.

The Supreme Soviet consists of two chambers—the Soviet of the Union and the Soviet of Nationalities.

The Soviet of the Union represents the interests of the working people of the whole country. The basis of representation is one deputy for every 300,000 citizens.

The Soviet of Nationalities reflects the interests of the individual nations that comprise the USSR. Deputies to this chamber are elected by their fellow citizens in the various union republics, autonomous republics, autonomous regions and national areas. The following is the basis of representation—25 deputies from each union republic, regardless of the size of its population, 11 deputies from each autonomous republic, five deputies from each autonomous region, one deputy from each national area.

Both chambers have equal rights and equal powers to initiate legislation. A bill must be passed by both chambers to become law. In the event of disagreement, the bill is referred to a conciliation commission formed by the chambers on a parity basis.

The Supreme Soviet is the only legislative authority of the USSR, the only body empowered to approve the budget and the national economic plan.

The Supreme Soviet meets periodically to discharge its duties. The deputies are not professional politicians; they have their various jobs in industry, agriculture and the professions. This direct link with their constituents helps them to carry through and check on decisions made by the Supreme Soviet.

How are laws passed?

A bill may be introduced for the consideration of the Supreme Soviet by the deputies themselves, their committees, by either of the chambers, the Presidium of the USSR Supreme Soviet, the Council of Ministers of the USSR, or the Supreme Court. Very often a bill is submitted to the entire population for discussion. (Forty million citizens, for example, participated in the national discussion on the law for the reorganization of the management of industry and construction.) The bill is redrafted with the changes suggested by the public discussion. Only then does the Supreme Soviet consider it. A bill becomes law when passed by both chambers by a simple majority vote in each.

The several committees of both chambers—legislative proposals, budget, foreign affairs, credentials—function all through the term of a given Supreme Soviet. The Credentials Committee, as its name indicates, verifies the credentials of the deputies. The Soviet of Nationalities also has an Economic Committee as additional assurance that the economic needs of each of the republics will not be neglected.

Each chamber elects a chairman and four vice chairmen.

Presidium of the USSR Supreme Soviet

The USSR Supreme Soviet elects a presidium to function on its behalf between sessions and to maintain a continuous check on the implementation of Soviet laws. The presidium is accountable only to the Supreme Soviet. Its rights and obligations are defined by the Constitution of the USSR.

The presidium consists of a president, 15 vice presidents (one for each of the union republics), a secretary and 16 additional members. As a rule the vice presidents are the presidents of the presidiums of the Supreme Soviets of the union republics to guarantee the equal status of all the union republics and their participation in the work of the presidium.

The presidium has the right of convening sessions of the Supreme Soviet and, if necessary, of dissolving the body and ordering new elections. It issues decrees and interprets the law of the land. It initiates national referendums. It may annul decisions and orders of the Council of Ministers of the USSR and the Councils of Ministers of the union republics if they do not conform to the law.

Between sessions of the USSR Supreme Soviet the presidium appoints and releases ministers of the USSR on the recommendation of the Chairman of the Council of Ministers of the USSR, subject to confirmation by the Supreme Soviet.

The presidium has the right of instituting orders, medals and titles of honor, and of conferring these various awards. It may create military, diplomatic and other special titles.

The presidium appoints and removes the high command of the USSR Armed Forces. Between sessions the presidium has the right to declare a state of war in the event of a military attack on the USSR or, if necessary, to fulfill international treaty obligations relating to mutual defense against aggression. It can also order a general or partial mobilization, ratify and denounce international treaties, appoint and recall its plenipotentiary representatives to foreign states, receive letters of credence and recall of diplomatic representatives of foreign states. It should be noted that the presidium is a collegiate body, responsible to the Supreme Soviet for all its activities.

The Council of Ministers of the USSR

The Council of Ministers of the USSR, the highest executive and administrative organ in the country, is appointed by the USSR Supreme Soviet. It coordinates and directs the work of all-union and union republican ministries and other government bodies under its jurisdiction, and directs the work of economic councils of the republics and the economic councils of the economic administration areas of the USSR through the Council of Ministers of the union republics.

The Council of Ministers adopts measures for carrying out the state budget and the national economic plan and for strengthening the country's credit and monetary system. The maintenance of public order, the protection of the interests of the state and of the rights of the individual citizen also fall within its jurisdiction.

It exercises general guidance in the sphere of international relations. It fixes the annual number of citizens to be called up for military service and directs the general organization of the Armed Forces. The decisions and orders of the Council of Ministers can be overruled only by the USSR Supreme Soviet or its presidium.

Particularly important decisions of national scope are made by the Council of Ministers jointly with the Central Committee of the Communist Party of the Soviet Union.

The Council of Ministers is responsible to the USSR Supreme Soviet or, between sessions, to its presidium.

The Supreme Soviet may change the membership of the Council of Ministers either partially or wholly.

Deputies have the right to interpellate the government or any individual minister at a Supreme Soviet session. The answer must be returned at the same session no later than three days after the question is raised.

Between sessions the government is responsible to the Presidium of the USSR Supreme Soviet.

Ministries are either all-union or union republican. The all-union ministries supervise those branches of the economy that are countrywide in scope and fall wholly within the competence of the national government. The union republican ministries supervise those branches that fall within the competence of both the national government and the individual republics.

Each of the ministries has a minister at the head who works with a collegium of leading officials. Soviet ministries operate on the principle of collegiate management, the final decision and personal responsibility resting with the minister.

The Highest Organs of State Power in the Union and Autonomous Republics

The union republics are equal, fraternal nations voluntarily joined in the Union of Soviet Socialist Republics. The state structure of the USSR reflects the principle of equality and sovereignty of the republics.

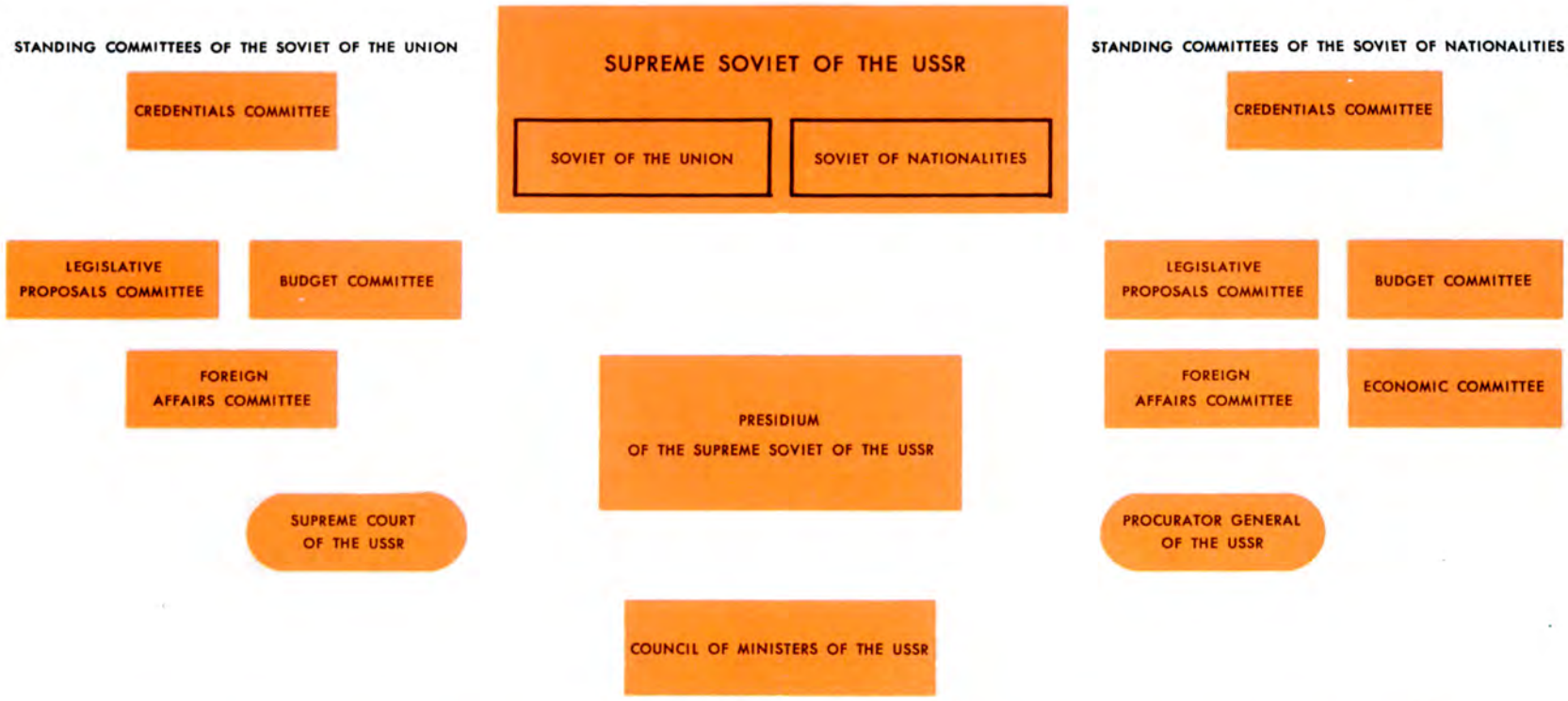
The Supreme Soviet of the republic is its highest organ of state power. Like the Supreme Soviet of the USSR, it serves a four-year term. The basis of representation is established by the republic's constitution. The Russian Federation, for example, elects one deputy for every 150,000 citizens; the Turkmen Republic, with its much smaller population, one for every 5,000. The numerical composition of the Supreme Soviets varies, but each republic, regardless of the size of its population, has the same right to elect its supreme organ of power.

Unlike the USSR Supreme Soviet, the Supreme Soviets of the union republics have only one chamber.

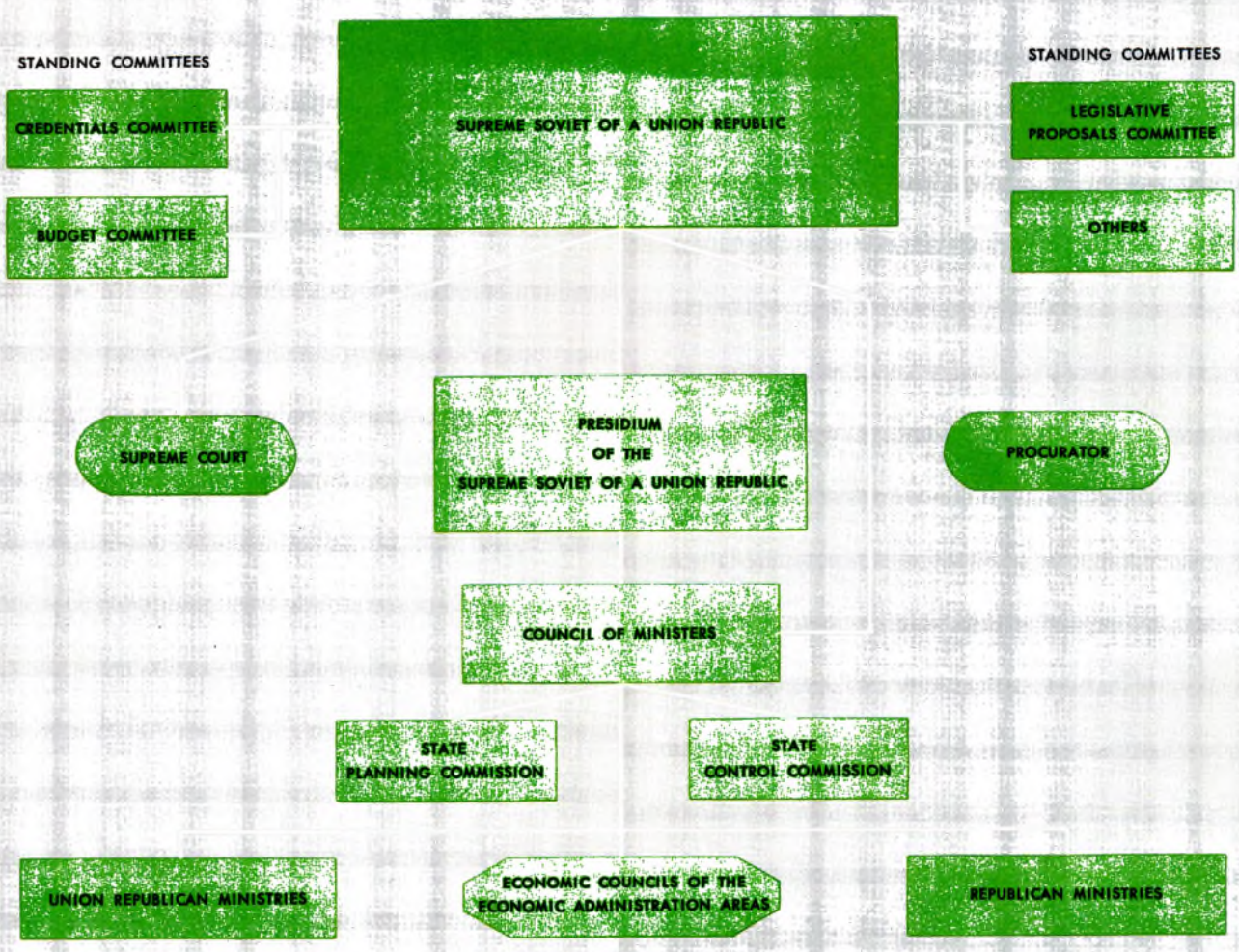
As the highest state organ within a republic, the Supreme Soviet has the right of adopting the republic's constitution or amending it, of promulgating the republic's laws, approving its economic plan and budget, confirming the constitutions of the autonomous republics forming a part of the union republic and of deciding major questions of foreign relations and defense.

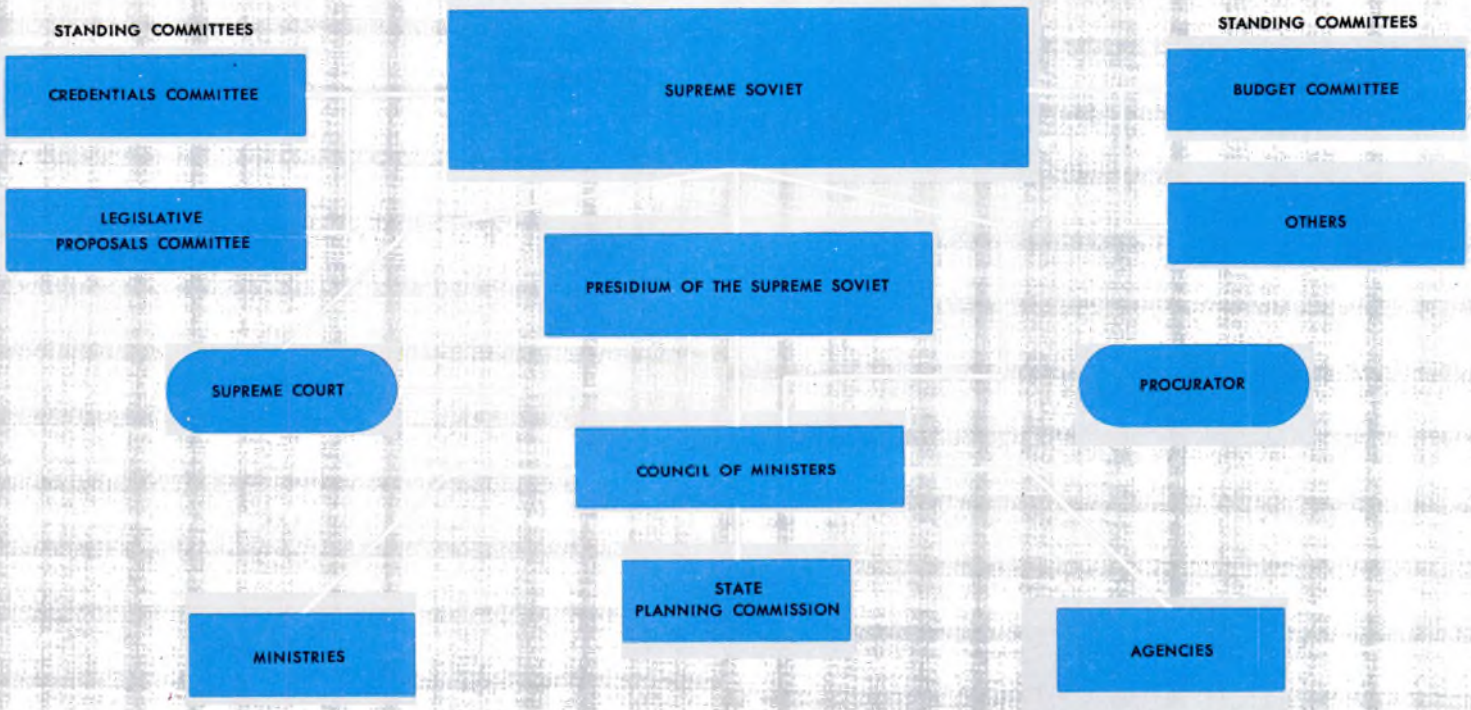
The Supreme Soviet elects its presidium, forms the government of the republic and elects the republic's Supreme Court. All these bodies are responsible to the Supreme Soviet.

The Supreme Soviet elects its standing committees from among its members—legislative proposals, budget, credentials, foreign affairs (in some republics), in-



***State Planning Committee of the Council of Ministers of the USSR; State Committee for Labor and Wages of the Council of Ministers of the USSR; State Research Coordination Committee of the Council of Ministers of the USSR; State Committee on Professional-Technical Education of the Council of Ministers of the USSR; State Committee for Radio and Television Broadcasting of the Council of Ministers of the USSR; State Committee for Automation and Machine Building of the Council of Ministers of the USSR; State Committee for Aviation Technology of the Council of Ministers of the USSR; State Committee for Defense Technology of the Council of Ministers of the USSR; State Committee for Radioelectronics of the Council of Ministers of the USSR; State Committee for Electronic Technology of the Council of Ministers of the USSR; State Committee for Shipbuilding of the Council of Ministers of the USSR; State Committee for Chemistry of the Council of Ministers of the USSR; State Committee for Ferrous and Nonferrous Metals Industry of the Council of Ministers of the USSR; State Committee for Fuel Industry of the Council of Ministers of the USSR; State Committee for Timber, Paper and Pulp, Woodworking Industry and Forestry of the Council of Ministers of the USSR; State Committee for Use of Atomic Energy of the Council of Ministers of the USSR; State Committee for Construction of the Council of Ministers of the USSR; State Committee for Farm Produce Purchases of the Council of Ministers of the USSR; State Committee for Foreign Economic Relations of the Council of Ministers of the USSR; State Committee for Cultural Relations with Foreign Countries of the Council of Ministers of the USSR; Committee of State Security under the Council of Ministers of the USSR; All-Union Board for Sale of Agricultural Machinery, Spare Parts, Mineral Fertilizer and Other Production and Technical Supplies, and the Organization of Machinery Maintenance and Service on State and Collective Farms; Board of State Bank of the USSR; Central Statistical Board under the Council of Ministers of the USSR; State Council on Economic Research of the Council of Ministers of the USSR.**


STANDING COMMITTEES
CREDENTIALS COMMITTEE
BUDGET COMMITTEE
SUPREME SOVIET OF A UNION REPUBLIC
STANDING COMMITTEES
LEGISLATIVE PROPOSALS COMMITTEE
OTHERS
SUPREME COURT
PRESIDIUM OF THE SUPREME SOVIET OF A UNION REPUBLIC
PROCURATOR
COUNCIL OF MINISTERS
STATE PLANNING COMMISSION
STATE CONTROL COMMISSION
UNION REPUBLICAN MINISTRIES
ECONOMIC COUNCILS OF THE ECONOMIC ADMINISTRATION AREAS
REPUBLICAN MINISTRIES


STANDING COMMITTEES
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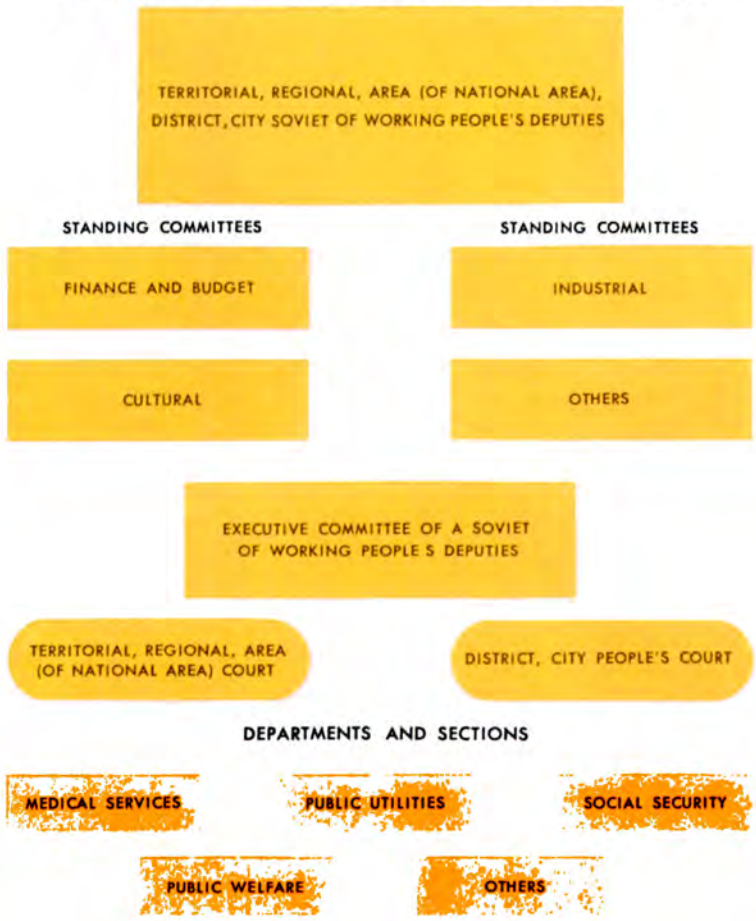
PRESIDIUM OF THE SUPREME SOVIET
STANDING COMMITTEES
BUDGET COMMITTEE
OTHERS
SUPREME COURT
COUNCIL OF MINISTERS
PROCURATOR
STATE PLANNING COMMISSION
MINISTRIES
AGENCIES

STRUCTURE OF A TERRITORIAL, REGIONAL, AREA (OF NATIONAL AREA), DISTRICT, CITY SOVIET OF WORKING PEOPLE'S DEPUTIES



STRUCTURE OF A RURAL SOVIET OF WORKING PEOPLE'S DEPUTIES

dustry and transport, agriculture, public health and social insurance, public education, etc.

The constitution of the republic defines the rights and duties of the presidium of its Supreme Soviet and its Council of Ministers.

Besides the union republican ministries, the union republics also have purely republican ministries—for economy, trade, social insurance, etc. They administer the areas not subject to the union republican ministries.

The various republics set up ministries and departments required by their local needs and conditions of life. Thus, some Central Asian republics that do irrigation farming have ministries of water conservation.

The highest organ of state power in an autonomous republic is its Supreme Soviet, also elected for a four-year term on the basis of representation defined by its constitution. The Supreme Soviet of an autonomous republic is its sole legislative body. It elects a presidium and appoints a Council of Ministers for the republic in conformity with its constitution.

Local Organs of State Power (Territorial, Regional, District, City and Rural Soviets)

The organs of state power in territories, regions, autonomous regions, areas, districts, cities and rural localities are the Soviets of the Working People's Deputies. The deputies, who serve two-year terms, are industrial workers, farmers and people in the professions who live and work in the given region or district and are therefore aware of the needs of their constituents. Their prime function is to see that these needs are met.

Through these local Soviets millions of working people are drawn into state administration. The Soviets administer community economic and cultural affairs, draft the local budgets, supervise the local industries and construction agencies, the retail stores, restaurants, laundries, barbershops, schools, hospitals, theaters and moving picture houses. They are responsible for housing, local transport, communications and road building. They see that the laws are observed and the rights of the citizen protected.

The local Soviets may, and do, discuss problems on the republic and national level and submit their proposals to higher organs of power. All the people, thereby, participate in the administration of their republic and the country through the local Soviets.

The local Soviets meet at periodic intervals—district, village and hamlet Soviets at least six times a year, regional Soviets at least four times a year.

The questions to appear on the agenda are discussed publicly before these meetings. The decisions made by a local Soviet at its sessions express the collective view of the deputies. Two-thirds of the total number of deputies constitutes a quorum; voting is by a simple majority. Besides the deputies, representatives of public, state and cooperative associations may speak at local Soviet sessions.

The work of the Soviets is always in full public view. Decisions taken are given wide publicity. The electorate is thus informed and in a position to control the activities of the local organs of power.

The local Soviets are assisted by standing committees made up of elected deputies and citizens who volunteer their services. Committees cover such areas as budget and finance, industry, agriculture, commerce, culture, education, etc. They check on the work of industrial and commercial enterprises, organizations and institutions in the locality or region, and report their findings and recommendations to the Soviets. The committees take part in the preparation of the sessions.

The local deputies are the grass-roots legislators. Their mandates reflect most directly and most immediately the will of their constituents. The constitution requires that all deputies report at regular intervals to their electors.

The executive committee of the local Soviet, elected from among the deputies, includes a chairman, one or more vice chairmen, a secretary, and several members. Its function is to administer the district and to carry out the decisions of the local Soviet between sessions.

All local Soviets, except those at the village and hamlet level, form departments subordinate to the executive committee for directing various local affairs: education, public order, industry, etc.

Millions of citizens do volunteer work in these departments directly and through such organizations as street and neighborhood committees, committees in villages and towns, parents' committees in schools, women's councils, club councils, pensioners' councils. Through these and other organizations increasingly greater numbers of working people are drawn into the direct management of their village, town, republic and nation.

The Courts

The judicial system takes in the USSR courts, union republic courts and autonomous republic courts.

The USSR courts include the USSR Supreme Court, elected by the USSR Supreme Soviet, and the high tribunals. The union republics have district and city people's courts, regional (or territorial) courts, as well as a Supreme Court. The autonomous republics, incorporated in the union republics, have their own Supreme Courts.

The district (or city) people's court is the key link in the Soviet judicial system. Set up in every administrative district or city, it handles most of the criminal and civil cases.

Regional (territorial) courts, the courts of autonomous regions and national areas, and the Supreme Courts of the autonomous republics try various categories of criminal and civil offenses and hear appeals from the ruling district and city courts.

The Supreme Court of a union republic is the highest judicial organ of the given republic and is charged with the supervision of all its lower courts. It tries important criminal and civil cases that the law places within its competence and has the right to overrule decisions and sentences of courts of lower instance.

The military tribunal tries the cases of servicemen as well as all cases of espionage.

The Supreme Court of the USSR is the highest judicial organ in the country. It supervises the military tribunals and sees to it that the Supreme Courts of the union republics properly interpret the law. It may override a decision or sentence of a republic Supreme Court that violates the interests of another republic.

The judges of people's courts are elected by the citizens of a city or district on the basis of universal, direct and equal suffrage by secret ballot for a five-year term. People's assessors (each court has a judge and two people's assessors) are elected for two-year terms by general meetings of workers or farmers at their place of work or domicile. Servicemen are elected by their military units. ★

SOCIALIST REVOLUTION ON FOREIGN STAMPS

BY ILYA ZBARSKY

THE OCTOBER SOCIALIST REVOLUTION in Russia is commemorated in the postal issues of the other socialist countries as well. Hungary issued two large stamps—of 60 filler and 1 forint denominations—for the fortieth anniversary of the world's first Soviet state. They bear the dates "1917-1957." One shows a dove, the symbol of peace, framed by the flags of the socialist countries; the other a portrait of Lenin.

The Rumanian People's Republic marked the anniversary with a series of three stamps all inscribed "1917-1957" but with different themes—an allegorical representation of Rumanian youth building socialism, a portrait of Lenin with the flags of the socialist countries flying above it, and a monument to Lenin in Bucharest.

The German Democratic Republic issued a two-stamp series inscribed "40 Years of the Great October Socialist Revolution." Against a background scene of the storming of the Winter Palace is a worker's hand gripping a rifle with a red flag fastened to it.

A blue stamp with Picasso's dove of peace set off against a map was issued by the People's Republic of Bulgaria for the anniversary.

Poland commemorated the event with two stamps—60-grosz and 2.50-zloty. One symbolizes the victory of the October Revolution with broken chains of tyranny and a bayonet with a red flag. The other pictures a monument to Lenin in the Polish town of Poronino, where he lived a half century ago.

A Czechoslovak 60-heller commemorative with "1917-1957" inscribed in the corners shows the worker against a background of the country's factories, which he now owns. The hammer and sickle, emblem of labor, is inscribed on the right side of the stamp.

The People's Republic of China commemorative issued for the occasion depicts a holiday salute against a background of the Kremlin Spassky Tower and the Peking Ch'ien Men Gate. ★

Jerome Kilty's DEAR LIAR Staged

BY BORIS VOLGIN

DEAR LIAR by the American actor-director Jerome Kilty is an uncommon play for several reasons. For one thing, it brings George Bernard Shaw on stage; for another, it has only two characters—GBS and Mrs. Patrick Campbell, the celebrated English actress. The form of this fascinating and deeply moving play is unusual too, it is a comedy of letters.

Late last year eye-catching posters with a picture of Shaw announced a production of *Dear Liar* by the Leningrad Comedy Theater. The poster was done by Nikolai Akimov, one of the Soviet Union's most eminent directors and a scene designer besides. Akimov, who heads the Leningrad Comedy Theater, does many of its playbills and sets.

Dear Liar, imaginatively staged by Alexandra Remizova, a leading Moscow theater director and a People's Artist of the Russian Federation, captivated Leningrad theatergoers. Its appeal derives in part from a striking originality of form, but even more from the humanistic note so passionately struck by the 40-year correspondence (1899-1939) between Shaw and Mrs. Campbell around which the play is built.

Akimov's setting, as usual, is ingenious and dramatically effective. The two levels, connected by a steep staircase and a wide balcony, make a wide variety of *mise en scènes* possible. Mounted at the back of the stage, barely visible, is a large screen projecting colored drawings of miniature backdrops.

The play opens with a brief prologue by Lev Kolesov, Honored Art Worker of the Russian Federation, that tells the audience of the long-standing and romantic friendship between Shaw and Mrs. Campbell, and their four decades of correspondence. Jerome Kilty explains in a program note that his play tries to preserve the spirit of the letters, to give the audience an insight into the many-faceted lives of these two extraordinary people.

After the prologue Kolesov comes on stage again as Shaw. He wears the same frock coat and make-up as in the prologue. He is not at all like Shaw in appearance, but with every word and gesture the essential resemblance becomes more apparent.

At the opposite end of the stage Mrs. Patrick Campbell, lovingly called Pat by her British audiences, makes her long succession of entrances and exits. She is played by Yelena Yunger, People's Artist of the Russian Federation, one of Leningrad's finest actresses.

Kilty's play will open soon in Moscow. Its staging and acting difficulties set the creative talent of the Soviet theater a challenge.

Four Moscow playhouses are working on three different productions. People's Artist of the USSR Grigori Alexandrov, one of the country's well-known film producers, is directing a joint production of the Mossoviet and the Soviet Army Theater, with each of the houses using different settings. A production of the Art Theater is being staged by Honored Art Worker Josif Rayevsky, and People's Artist of the Russian Federation Vladimir Dudin is directing a third at the Mayakovsky Theater.

Three stage and screen stars, all People's Artists of the USSR—Lyubov Orlova, Angelina Stepanova and Maria Babanova—are playing Mrs. Campbell.

Shaw will be done by Andrei Popov of the Soviet Army Theater and Anatoli Ktorov of the Art Theater, both People's Artists of the Russian Federation. Lev Sverdlin, People's Artist of the USSR, will play the role opposite Maria Babanova in the Mayakovsky Theater production.

This unusual theater competition has already stimulated interest, curiosity and much speculation in the Soviet capital. Regardless of the individual triumphs scored in the rivalry, success will almost certainly be enjoyed by all, for the play has already won the hearts of Leningrad audiences, and even larger numbers of Soviet theatergoers are eagerly awaiting the Moscow productions. ★

Sormovo Vignettes

BY ANATOLI RUSSOV

THE SEA of multicolored lights was visible a long way off as my plane neared the city —an illuminated greeting from Gorky on the Volga and its industrial Sormovo district. I was headed there on assignment—to do an article on the century-old Krasnoye Sormovo Works. In the old days the works set the pace in Russia for both technical progress and the revolutionary labor movement.

Prior to 1917 Sormovo workers put in exactly twice as many hours—twelve to fourteen a day—and earned less, in comparable prices, than they do now. There was only a single two-class parish school in the whole settlement. And the living quarters! A rash of log shacks with porches and wings knocked together from scraps, for shelter only "till fall, till cold, sets in."

Fall would come, the cold would set in, but

The century-old Krasnoye Sormovo Works turns out marine engines and the ships they propel.

Sormovo, which had a mere two doctors and two aides for its 30,000 people in 1915, is now served by 120 doctors and 340 assistants and nurses.

nobody would leave these hovels. Listing as the years went by until they fell apart, they outlived more than one generation of tenants. There was no electric light, no gas, no steam heat, no running water in the settlement.

The first Sormovo-built vessels—the *Astrakhan*, the steamers *Strela* and *Zarya*, the tug *Volga* and the self-propelled barge *Vandal*—were light but strong, drew very little water and were exceptionally fast for those days.

Sormovo had its well-known engineers. One of them, Mikhail Okunev, wrote *The Theory and Practice of Shipbuilding*, still used as a textbook.

Long before the works were founded in 1849, Sormovo was famous for its skilled shipwrights and expert handicraftsmen in metals who passed on their trade secrets from generation to generation. Sormovo workers also earned themselves a reputation as militants. They called the first political strikes in Russia, fought the first barricade battles with czarist troops and set up one of the first big workers' Marxist organizations.

Lenin followed developments in Sormovo closely and paid several visits to Gorky, then called Nizhni-Novgorod. He used the "Sormovo material" in articles he wrote for the illegal newspaper *Iskra*.

Maxim Gorky's world-famous novel *Mother* recapitulates the events that followed the Sormovo May Day demonstration of 1902. The prototype of Gorky's hero Pavel Vlasov was the Sormovo worker Pyotr Zalomov, who came out on the streets with a red banner to lead a column of demonstrators. He held on to the banner, although the Cossacks beat him unmercifully.

Zalomov and his comrades were tried. Witnesses for the prosecution were policemen, gendarmes and agents provocateurs. Zalomov made a fiery speech calling on the workers to continue their struggle. *Iskra* reported the trial and publicized his speech and those of the others.

On the eve of the First World War the Sormovo organization of the Leninist party was the third biggest and most influential in Russia.

When Maxim Gorky, who knew prerevolutionary Sormovo very well, visited in 1928 he found it hard to believe his eyes, the changes were so sweeping.

After the Revolution Krasnoye Sormovo began to manufacture oil tankers and freighters, towboats and tugs, self-propelled barges, ferries, locomotives, freight cars, streetcars, cranes, pumps for water towers, railroad bridge parts, boilers, cast iron, rolled metal and other items.

When the country embarked on its industrialization program, the works became a practical school for training expert steelmen, shipbuilders, designers and production engineers. There are very few heavy-machine or engineering plants in the Soviet Union without their complement of ex-Sormovo men. In the postwar years alone the Krasnoye Sormovo Works gave other factories more than 2,700 of its best workers.

Former Sormovo workers and technicians by the hundreds have gone through college and professional schools and now work as chief engineers and plant managers, head research institutes and university departments, and teach at technical colleges and industrial academies in Moscow, Leningrad and the capitals of the union republics. A knowledgeable observer can almost always spot a Sormovo-trained man. He has a certain style, especially in team work.

The war was a formidable challenge to the Soviet people, their state, their industry, their very way of life, and the second year was the hardest. Great areas of the country were temporarily occupied by the enemy. When the Nazis' blitzkrieg, so successful elsewhere, failed, they turned to a war of attrition, under the illusion that the Soviet Union had no resources to withstand a long siege and that its people, particularly the youth without revolutionary experience, would crack under the strain and hardship.

The young Krasnoye Sormovo workers answered the challenge by organizing "front-line teams," pledged not to leave their benches until finishing an assignment, and sometimes worked for two or three days without relief.

By May 1942 the works had 546 such "front-line teams," and the average annual output of their members was 427 per cent higher than the already high wartime quota.

Many of the items Krasnoye Sormovo had been putting out became obsolete after the war. As for people—the old type of Sormovo steel wizards who could tell whether metal was properly smelted with one look was being superannuated, their jobs replaced by electronic and cybernetic devices.

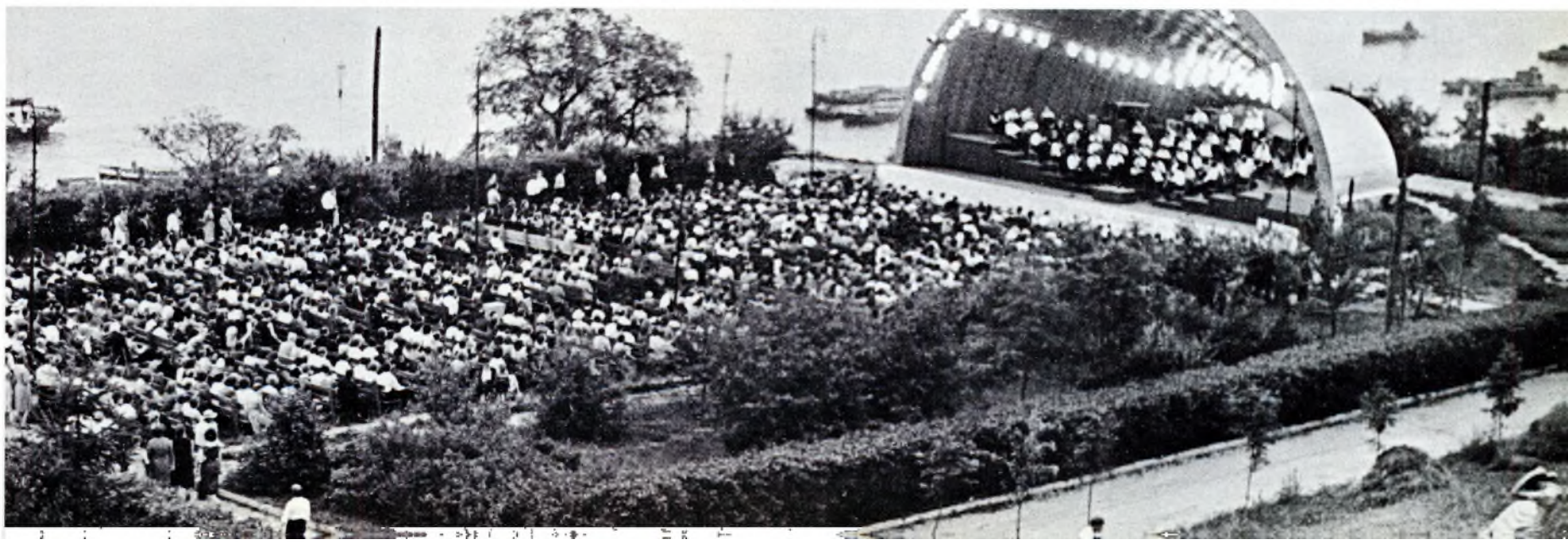
To the younger specialists at the new giant plants, many of them set up with Sormovo help, the old works was an unwieldly museum piece. Konstantin Loganov, director of a research institute and an ex-Sormovo worker, put it bluntly, if picturesquely: "Krasnoye Sormovo is an extinct volcano. High time we planted grapes and laid out gardens on its slopes."

His statement made the papers. People in Sormovo thought Loganov's figure of speech was apt but needed qualification. A volcano—yes! Extinct—no!

Krasnoye Sormovo is no longer leading the country, but it is certainly not headed for the scrap heap. The old works has had a new and surprising lease on life and is beginning to outpace some of the most promising of the new plants, not only in one but in several technical fields simultaneously. It is manufacturing new items and speeding up output.

How long is it that man has been building ships? For millenia. He has learned to build sea giants of astonishing tonnage and engine power. But till now—freighter, tanker, liner, or even

Music lovers heard composers Khachaturyan and Kabalevsky and cellist Rostropovich in a recent festival held in Gorky at a stadium on the Volga.



One of several dance floors at the works' Palace of Culture. For less athletic folk there are movies, lectures and chess.

glider—it was the same old boat or a variant.

Over the centuries countless marine engineers must have racked their brains for something really new in the way of boats. All to no purpose until very recently.

Now the world-famous hydrofoil vessel, designed and built at the Krasnoye Sormovo Works, breaks through the ancient barriers. Retaining the capaciousness and carrying power of the older ships, it can run at a speed of 45 miles an hour. With more powerful engines, it can do still better, but greater speeds are hardly necessary; on the busy, crowded Volga they would even be dangerous.

Sormovo has also been turning out a different type of person. He's built to a different pattern than his prerevolutionary predecessor, who kept his trade secrets from his own work mates and certainly from those in other factories. For the Soviet workers, engineers and technicians at Krasnoye Sormovo, know-how is something you share with every other man who can use it.

Another trait that used to mark the old Sormovo hand—his "caste" exclusiveness—has, happily, vanished. People are taken on their merits, and "outsiders" with talent and initiative are as readily promoted to key posts as "insiders."

Donat Smolin was not born in Sormovo, nor even in Gorky, but somewhere in the neighborhood of Orel. His father and grandfather were peasants. So far as Sormovo was concerned, he was an "outsider." He came to the settlement at the age of 14, lived with a distant relative of his grandfather's, an old spinster whom he called Grandma, and sold sunflower seeds at the works gate. One day the stream of workers swept Donat inside, and his peddling days were over. He became an apprentice in the shipbuilding shop.

"What trade?" you ask him.

"Every trade," he replies with a smile.

And it's so. This stocky, vigorous assistant manager of the big shop knows just about every-

The first hydrofoil was built at the Krasnoye Sormovo Works. These ships of ultraradical design do 45 miles an hour.

thing there is to know about building ships. All these nineteen years at Sormovo he has been studying evenings. First he went through secondary school, then a shipbuilding school and finally he completed a correspondence course at a marine engineering institute.

When Krasnoye Sormovo was being renovated, the works trade union committee decided to set up a permanent committee to organize training courses in the new specialties for several thousand workers. The question was, who was qualified to head such a committee?

"Donat Smolin," proposed Alexander Zhidkov, union committeeman and foreman of the machine shop. "He's a natural for the post. He's been combining work and study for close to twenty years, and he has a dozen or more trades at his finger tips. He'd certainly be the best man to help the trade school and branch institute instructors plan training courses."

"Outsider" Smolin was unanimously elected to the key post.

Medical care is one of the many social services Sormovo workers do not pay for. This is as it should be in a society geared to serving the people. The trouble is, says medical aide Fyodor Frolov, people neglect their opportunities.

Frolov was born in 1914, the only son of a Sormovo molder. His mother died in childbirth for lack of medical attention. The 1914 figure for the number of doctors in Sormovo is not available, but we do have the 1915 figure—a grand total of two doctors and two assistants for the population of 30,000 in the settlement, 15,868 of whom were employed at the works.

Now there are 120 doctors and 340 assistants and nurses looking after the health of Krasnoye Sormovo personnel. But the reception room at the works' polyclinic is usually half-empty, the reason for Frolov's displeasure. A hangover from the past, he thinks, when people didn't go to see a doctor until they were practically at death's door. "Many of the young workers," he complains, "don't even take the elementary precautions to prevent industrial diseases."

"Have you had any?"

"None last year and the year before," Frolov says with righteous indignation, "but we've had some this year. And they hold me responsible, not the ones who get sick. The union says it's my job to pound prevention into their heads."

A man I once met on a train, an elderly agronomist from Stavropol, thought that the most gifted people in the Soviet Union were to be found not in literature or the arts but in industry.

Perhaps it's not so for the whole country, but it's probably true for Sormovo. People at the works are, without exaggeration, artists at their trades and professions—completely dedicated. Work to them is a synonym for creativity.

"We worked out this process. . . . We designed this. . . . Something we made," they keep saying as they show you round the works.

"My first job," Ludmila Krinina, a very young worker in the No. 5 shipbuilding shop, says, as she points to the *Vikhr*. "What do you think of it?"

The *Vikhr* (Whirl) is a 300-seat hydrofoil that can navigate both inland and coastal waters. In the bright lights hanging from the high shop ceiling, the ship, all finished but still surrounded by scaffolding, looks like a gigantic silvery fish hiding behind water plants.

Ludmila is the daughter of Alexei Krinin, chief designer in the metallurgy shops. She graduated from secondary school and has been at work about two years. A first-year student in the evening division of the shipbuilding school, she is specializing in preset controls. The course will qualify her as a technician and operator at about double her present wages.

"If you had to choose between work and study, which would you give up?" I asked Ludmila.

"Work," she answered. "But what in the world would ever force me to have to make such a choice?" she added with surprise.

Ludmila's father is a fairly typical example of the present-day Krasnoye Sormovo worker. He started as an unskilled hand in the open-hearth shop, graduated from a technical college just before the war, volunteered for the front, and returned to the works after V-Day as section manager of the packing department. While working, he took an advanced correspondence course at the Moscow Bauman Technical Institute.

This 59-year-old designer, who loves his job and has the skill and talent it requires, has more than twenty inventions to his credit. Krinin is proud of Krasnoye Sormovo's century-old reputation for technical perfection and has done his bit to perpetuate that tradition. To engineers in many countries, not only the Soviet Union, the works' trade-mark stands for superlative quality.

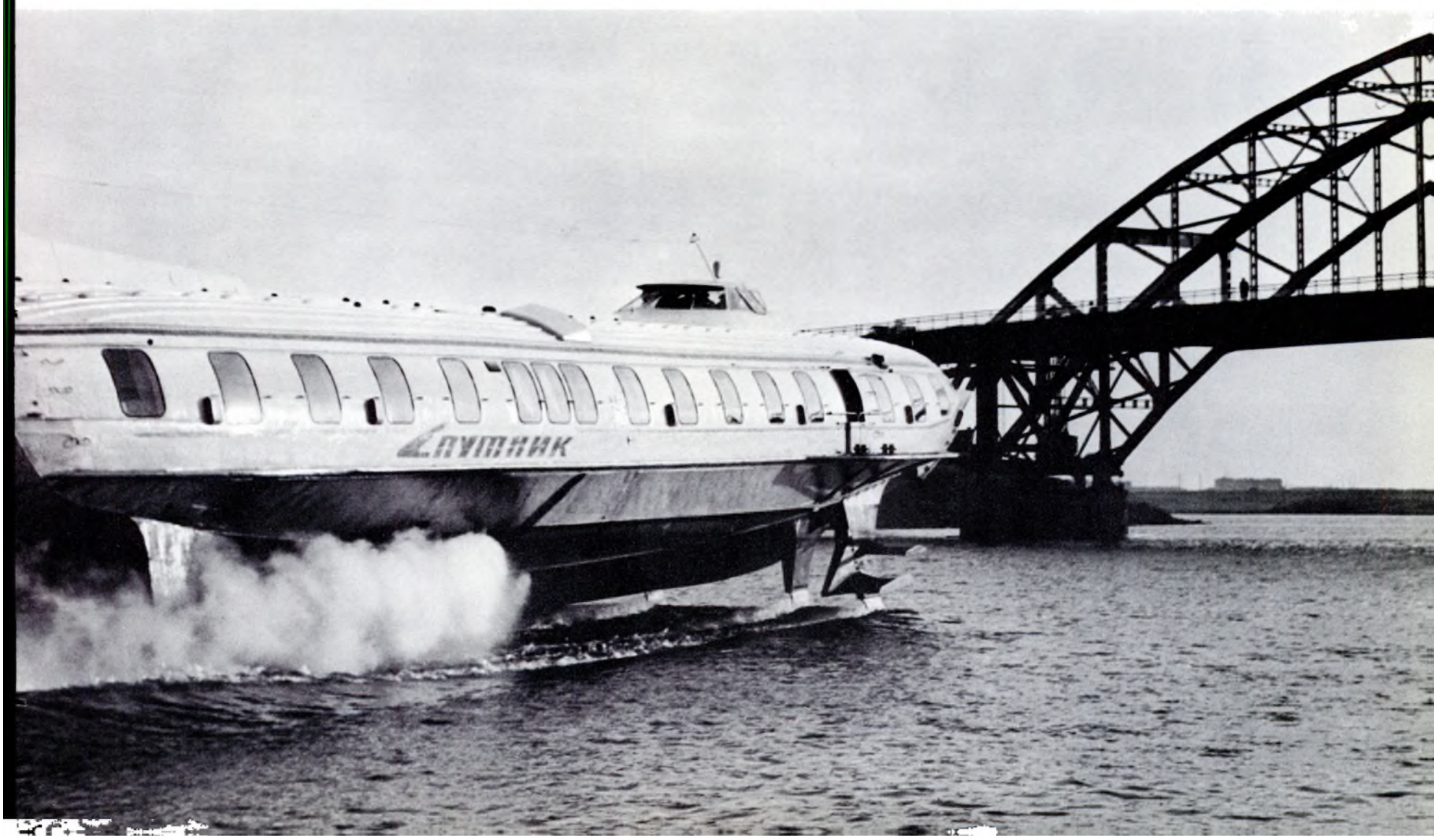
Sormovites like to work together and have fun together. Summer Sundays there is usually a mass bus migration to the country for a day's picnic or a leisurely excursion on a river boat.

For those who prefer their recreation in town there are tennis, basketball and volleyball courts, an aquatic station, a yacht club, an aviation club, an amateur film-makers' club, chess, floating dance halls, youth cafés, movies and open-air concerts on the Volga shores.

Saturday is youth ball night at the works' Palace of Culture. You warm up for the dancing with literary and music quizzes.

For hunters and anglers the Volga offers its wooded shores and its dozens of miles of islands up and down the river. Amateur gardeners and horticulturists have the use of some 100 acres of land and hothouses.

Krasnoye Sormovo has had its ups and down in its century of existence, but one thing is certain—in spite of difficulties, its 45 postrevolutionary years have been 45 years of achievement. ★



SOVIET TRADE UNIONS

Many of our readers write in to ask what role the trade unions play in Soviet life, what authority they have for defending the interests of working people and how effective they are in this respect. Vsevolod Retivy, Chairman of the Central Committee of the Engineering Workers Union, answers some of the most frequently asked questions below. In our next issue we shall reply to questions that center on various internal aspects of union organization.

QUESTION: People unfamiliar with Soviet life are often puzzled when they hear that Soviet trade unions handle matters outside the competence of trade unions in Western countries. For example, Soviet trade unions are derided for cooperating with the state and management. Is not this kind of collaboration incompatible with the interests of workers?

ANSWER: In trade union work you cannot lay down hard and fast rules for all situations and all countries. Even in the same country the form and content of union work will vary with the requirements of a particular period in history. And they will certainly change as a country changes its economic and political system.

Our first trade unions were organized almost 60 years ago. Right up to the October 1917 Revolution the unions fought for the class interests of the workers and so contributed to the general struggle for a better life. But the Revolution put the working people at the helm of the state and the economy. In this changed situation the trade unions assumed a role quite different from the one they had when the state was ruled by a wealthy minority and the economy operated on the private ownership principle with all its class contradictions.

The Soviet state administers all the country's affairs, not as an agency above and separate from the people, but as their authorized executive. At all levels, from top to bottom, the state is administered as the people decide, with the people taking part, under the people's supervision and in the people's behalf. There are no private businesses, factories or farms in the Soviet Union. They are all publicly owned, and everything they produce is used for the benefit of the whole society, of each and every family, not for the enrichment of a select few.

It should be clear then why people in Soviet factories, farms, retail stores and research laboratories consider themselves workers and owners at the same time. The common laborer and the prime minister both regard themselves as equal members of one big collective, working together and utilizing the fruits of their labor to achieve prosperity and raise everyone's living standard. It is understandable, therefore, why the trade unions, the biggest workers' organization, would be vitally interested in plans and projects to develop the country's economy.

After the Revolution, when work got under way to build the new society, the trade unions became, in Lenin's words, "a school of administration, a school of management, a school of communism." More and more the unions are taking over these functions, actively cooperating with the state in all areas of the country's life—political, economic and cultural.

No one in a Western country thinks it unreasonable for an owner to want his factory to work better. Why the surprise when the worker-owners of the Soviet Union want the same thing?

QUESTION: In what specific ways do trade unions cooperate with the state and management?

ANSWER: The cooperation takes so many forms that we can, with reason, call it participation in making decisions on literally every problem of any significance, whether it involves a single factory or the entire country. Perhaps the best illustration, because this is so basic an area, is participation in economic management.

Throughout its history the Soviet Union has worked to boost industrial and farm output so that living standards could keep rising from year to year, as they have. The trade unions have the same goal, which is why they have so large a say in current and long-range economic planning. No Soviet enterprise draws up a plan without the local trade union committee participating. Industry-wide and national planning is done with the appropriate trade union bodies. In addition, the trade unions, naturally, pay particular attention to the specific interests of the working people.

When the plans are adopted, the trade unions, at all levels, cooperate with management in carrying them out. The trade union, in effect, adopts very much the managerial attitude and, with management, sees to it that the enterprise functions efficiently, produces more for the country, that its output is of higher quality and that it is turned out more economically. The union draws support from the initiative the workers themselves show in trying to improve the work.

Trade union influence in government is evident in every legislative and administrative body, all the way from the local Soviets in urban and rural communities to the USSR Supreme Soviet. The trade unions, together with other public organizations, nominate their candidates at every election. The very great majority of elected deputies, Communist and non-Party, are members of one or another union.

The trade unions always participate in the nationwide discussions that develop around major legislative proposals of the Communist Party and the Soviet Government. Quite recently, for example, they actively participated in the discussion of the 20-year program for communist construction that took in virtually every aspect of the life of the country and its people. Many of the suggestions incorporated in the final draft of the program and proposals for carrying it through were made by rank-and-file trade unionists.

Soviet trade unions have the right to initiate legislation. They exercise the right in local ordinances and in bills of nationwide importance. A few illustrations: In 1956 the unions helped to draft the new pension law that today pays more than 20 million people a state retirement pension. In 1957 the USSR Central Council of Trade Unions initiated a law on a new procedure for examining labor disputes that gives the union locals much wider power. Last January the government adopted a stricter labor safety code drafted by the trade unions. Currently before the USSR Supreme Soviet Committee on Legislative Proposals is the draft of a new Funda-

mental Law of General Labor Legislation, also prepared with trade union participation, that will replace the presently operative but largely outworn fundamental law.

Participation in factory and government decision-making is very much part of the union's day-to-day activity.

At every enterprise the union local committee annually negotiates a collective agreement with the management, which lists their reciprocal obligations with regard to production and working conditions. That agreement sets the pattern for union-management relations.

QUESTION: With the trade unions now discharging many of the functions that were the prerogative of the state before, isn't there danger that they will become state organizations?

ANSWER: The transfer of state functions to the trade unions did not start yesterday. The process has been going on since the Soviet state was born. This direct participation in civic affairs teaches millions of working people the complex art of *governing*, gives them administrative experience and trains them to think and work like statesmen—qualities the citizen must acquire to make the future transition to communist public self-government.

These are the more important duties that our state has turned over to the trade unions:

— they administer the social security system and have at their disposal the state social insurance fund, to which, incidentally, the workers contribute nothing. The fund is comprised wholly of money specially assigned by the enterprises themselves;

—they exercise state control over the observance of labor legislation and the maintenance of proper working conditions, including industrial safety and hygiene;

—they have the final word in labor-management disputes, and their rulings can be appealed only to the courts;

—they supervise the fulfillment of state and factory housing programs and help to assign housing;

—they run the mass physical culture and sports movement, using factory and state resources at their disposal;

—they supervise the functioning of state-run health and cultural service establishments;

—they organize amateur art and other recreational activities for the working people and their families at union cultural and sports facilities built for them at the expense of the factory or state;

—they assign places in nurseries and kindergartens and cooperate with management in setting up Young Pioneer summer camps;

—they supervise, along with government inspectors, the work of retail trade, public catering and public service establishments as well as municipal transport;

—as of last year they have been in charge of the sanatoriums and vacation resorts previously operated by the state, thus administering practically the entire resort setup.

It is obvious from this list that the threat of turning unions into state organizations is nonexistent. The point of the matter is that the unions keep being invested with broader powers and therefore are in a better position to safeguard the interests of working people and to involve greater numbers of working people in government administration.

As time goes on, the trade unions and other public organizations will be taking over more and more of the functions now exercised by various state agencies. This also is part of the transition process from the present state setup to communist public self-government. But since the withering away of the state will be an extended historic process, consummated only when society is sufficiently mature for communist self-government, we shall, in the interim, have elements of government by state power alongside public self-government.

QUESTION: What authority do the trade unions have in wage and hour matters?

ANSWER: All wage and hour schedules are regulated by laws which the government drafts with direct trade union participation. These rulings are obligatory for management and can be amended only with the consent of the trade unions.

In 1959 and 1960 wide-ranging measures were adopted to adjust and regulate wages. The legislation was drafted jointly by the USSR State Committee on Labor and Wages and the USSR Central Council of Trade Unions.

The unions themselves often present wage proposals to the government which are given close study.

At the factory level, every union local has its wage committee that keeps a sharp eye out for violations of the relevant laws and rulings and checks the management's books when necessary. Management has no authority to change rates or quotas for piece work without the consent of the union local committee. The management must show that the change is called for by technical improvements, otherwise the union will not sanction the change.

Management and union local both play a great deal of attention to training in skills. For the purpose, the factory offers various types of courses without charge. Graduates are moved to jobs that demand the higher skill and, of course, pay higher wages.

Hours are regulated the same way. In recent years the workday was cut by law to seven hours, and in some industries to six. There were no accompanying wage cuts anywhere. As a matter of fact many categories of workers received pay increases. Thanks to wider mechanization and automation, better organization of work processes and other such measures, there was no reduction in labor productivity in spite of the shorter workday, nor was there any speedup.

An instance from the practice in my own industry. In 1959 the country's three-million-odd engineering workers switched to a seven-hour day. At the same time technical improvements were introduced and wages adjusted throughout. The changes were made after the Central Committee of my trade union, the USSR Central Council of Trade Unions and the USSR State Committee on Labor and Wages had made a close study of the whole situation on the basis of the accumulated experience of management and union locals at 14 plants.

This same approach was followed in reducing hours and adjusting wages in all other industries. As a result wages throughout the country were raised by a 2.6 per cent average, and in the engineering industries the average increase was 5.1 per cent.

QUESTION: Why don't Soviet unions ever call strikes as unions in Western countries do?

ANSWER: I said earlier that unions in different countries do not shape their activities to the same pattern, and this goes for strike action also. What experience dictates as the only answer for a country with one political system does not necessarily hold for a country with another political and economic system, where the same aims—desirable living and working conditions—may be achieved through different means.

Workers in old Russia resorted to strikes as the only way out in spite of persecution by czarist officials, who did everything they could to protect the interests of the employers. The situation changed fundamentally in October 1917 when the workers took over the country and began to build a new society conforming to the motto "everything in the name of man, everything for the benefit of man."

In the process, the Soviet people adopted new laws to protect the interests of the workingman. But even more than laws, the very nature of the socialist system guarantees the primacy of the working people's interests. In these conditions the trade unions do not have to apply the old methods to uphold the workers' interests since they have an active voice in how everything that affects the life of the working people is to be carried out.

Incidentally, working people in the Soviet Union have never been denied the right to strike. But the heart of the matter is that under the system in the Soviet Union there are not, nor can there be, the class contradictions that make for strikes. Ours is a society of worker-owners, as I indicated previously, and for workers to strike against themselves would make no sense.

QUESTION: Then how do your trade unions protect the worker's interests in a disagreement with management?

ANSWER: Let me say again that labor-management relations in the Soviet Union are based on entirely different principles than in capitalist countries. Management in Soviet factories represents the interests of the people as a whole and not those of a private owner. There is no conflict of interest; on the contrary, there is a community of purpose. All Soviet people are equally interested in seeing the country's wealth grow since that wealth guarantees a better life for every family.

Although there is no conflict of interest, this does not mean that there are no grievances or that disagreements do not arise. In relations between people, mistakes and misunderstandings are inevitable. Nor are we spared the occasional manager who turns bureaucrat. But the trade unions have the power and the authority to call such a manager to account and, if necessary, to have him fired.

As for workers' grievances, the trade unions have all the necessary powers—and the machinery — to get these grievances heard and arbitrated.

Every factory and office has its grievance committee made up of an equal number of representatives of management and the union. The committee must examine a complaint within five days with the worker present. Moreover, the worker may take exception to any member of the committee before his case is heard.

If the committee fails to agree or the worker objects to the decision, the case is referred to the plant Trade Union Committee whose decision is obligatory for the management and can be appealed only in the courts. The management must comply with the decision within ten days, otherwise the union will issue a certificate that has the power of a court action. In effect, the trade union has the final say in any labor-management dispute. ★

BY NIKOLAI TROITSKY

trade union TECHNICAL INSPECTOR

Engineer Nikolai Troitsky is a graduate of the Ivanovo Polytechnic Institute. For the past 30 years he has been working as a trade union technical inspector in Ivanovo, a large textile center, and in Moscow. Presently Troitsky is one of 65 technical inspectors of the Moscow Regional Trade Union Council, which embraces different trade unions of a single region. A specialist in textile production, his duties take him to the big Orekhovo-Zuyevo and Glukhovo textile mills and to the spinning and silk mills near Moscow.

He describes his work in this article.

MY JOB is to enforce safety rules, cut the incidence of industrial accidents, and help improve working conditions in every way. Actually, I also look into such matters as workers' grievances, check on hiring and firing, and keep an eye on the children's summer camps run by the mills.

My duties cover a large area, and I have a correspondingly broad range of powers. Plant managers are responsible to me for safety norms and sanitary conditions. In the event that I find the safety or health of workers threatened by the violation of accident prevention rules or substandard working conditions, I can order the section of the plant or the machines involved shut down, and if I consider it necessary, the Trade Union Council will order work in the whole plant stopped.

I am authorized to call to account any factory head who violates the labor laws or who does not promptly carry out management's part of the collective agreement negotiated annually with the union. I can fine a factory management or have it hailed into court, although this has rarely happened in the many years I have been on the job. Factory managers are fully aware of the power the trade unions and their technical inspectors wield and do not usually permit matters to get as far as the courts.

My job is made very much easier by volunteer technical inspectors from the workers in the factory. On the average, there is one volunteer for every 25 workers, elected by his trade union shop committee. The trade union organization in each plant has a labor protection committee, and every so often one of these committees will appeal to me to settle a disagreement with the management. With the day-to-day help of the volunteer inspectors and the labor protection committees, I manage to catch most potential health and safety hazards.

Early this year a volunteer inspector at the Glukhovo mills called me about large and dangerous-looking cracks in the walls and ceilings of the spinning factory. I went there immediately. The building was an old one, and I had spoken to the director more than once about getting a committee of experts to check it over. The director hadn't followed my suggestion.

I took one look and immediately had the work stopped and the people sent out of the building. I then got in touch with the Regional Trade Union Council and asked that experts from the Moscow Designing Institute inspect the building in order to establish the cause and make their recommendations on how to correct the condition.

A thorough examination showed that the cracks and a slight warping of the supporting columns were due to sinking foundation piles. The piles had been driven into soft earth and topped by a cement pad with an iron plate over it. The columns rested on the plate, and the seven-story building on the columns. As time passed the ground water receded, stripping the earth away from the piles, which then began to rust.

The building had to be shored up at once, but that involved a long period of repairs. And if the spinning factory was temporarily closed down, there would be no yarn for the weavers. In effect it meant a shutdown for the whole mill.

Nevertheless the decision was to close down the spinning factory and make the necessary repairs. The team of experts added the proviso that the building, even after the shoring, was to be used no longer than two or three years. They recommended that a new building be put up.

One section of the building, where the sorting and scutching shop was located, had been added later, and I thought work could go on there, but the experts said no, and so I asked the mill director to close down that shop too. He did not comply with the order. I took the case to court, and the shop was shut down.

Most of the underpinning is done now and the factory is in operation again, although not yet at full capacity. The Moscow Economic Council has approved a new building and work on that will be getting under way soon.

The temporary stoppage gave the factory management, the trade union committee and me many headaches. One of the biggest, obviously, was what to do with the workers in the interim. Lydia Mamykina, chairman of the factory committee, had her hands full for a while, but we solved the problem. Part of the workers took their paid vacations during that period. The factory committee obtained an additional number of resort and sanatorium accommodations for them. Others were employed in various capacities on the job of shoring up the building. The rest were temporarily transferred to other jobs. In one way or another we worked it out so that not one of them lost a single day's pay during the entire period.

Factory management spends considerable sums yearly on what we call labor protection—accident prevention, health and hygiene, and such related items. The Orekhovo-Zuyevo mills, for instance, allocated 182,500 rubles for this purpose in 1961, 10,000 rubles more than in the preceding year. Add to this the additional expenditures entailed in carrying out the measures recommended by the workers and the trade union, and it turns out that the Orekhovo-Zuyevo mills actually spent 290,000 rubles for labor protection in 1961.

With both trade unions and management sensitive to the need for safe and healthful working conditions, the incidence of industrial accidents is diminished. In this same Orekhovo-Zuyevo mill the number of accidents dropped by 12.5 per cent from 1959 to 1960, and by another 4.2 per cent from 1960 to 1961.

When an accident does happen, whether due to a worker's carelessness or the factory management's negligence, the union makes an investigation. Regardless of who is at fault, the worker draws disability benefits from the social insurance fund of his union. If the accident was due to the fault of the management, the factory is required to reimburse the union for the benefits the worker draws. The union may even go so far as submitting pertinent documents to the court and demanding the punishment of the persons responsible.

We had one such case at the Gorodkovo Weaving and Finishing Factory near Moscow. Its dyeing and bleaching shop had an inclined ceiling made of ferroconcrete slabs that gave the premises more height and air. After a time the ceiling began to crumble because of the large amount of moisture in the air. I kept an eye on it and after one inspection decided it was not safe. I told the mill director the shop would have to shut down until a new ceiling was installed. But since the installation would take a considerable amount of time, I said that if the management put up a protective wooden covering, the shop could continue operating in the interim. But the management resumed work in the shop before the protective covering was finished, with the result that a woman worker was hurt by a piece of broken ceiling. The trade union paid her temporary disability benefits and collected from the management. I got in touch with the procurator's office and asked that the shop be ordered to shut down immediately and remain shut until a completely new ceiling was installed.

This got fast results. Now the shop has not only a new ceiling but a second story and a new ventilating system.

Nikolai Troitsky inspects a new department of the Glukhovo mills with director Pyotr Krylov.

The plants I am responsible for are too far apart for frequent visits. At each plant I have a phone and the use of an office where I keep a permanent register. I enter all violations in the register and on my next visit check to see whether they have been corrected.

The Orekhovo mills installed new looms in its torsion-thread shop and started them up before they were inspected. This was a violation since every piece of new equipment must be checked to see whether it meets safety standards. In this case I knew the looms were to be installed and had asked that I be informed when the work was completed. The management neglected to do this.

When I inspected the looms, I found that the distance between them was less than safety regulations permitted and that the loom drive motors were so close to the wall, they impeded free movement of the monorail car—besides the fact that the shop in general was too crowded.

I insisted that it be enlarged, and it was. But then I found that even in larger quarters the looms could not be operated with complete safety. They were thereupon dismantled and reinstalled in a new building. I examined them once again, and only then were they put into operation.

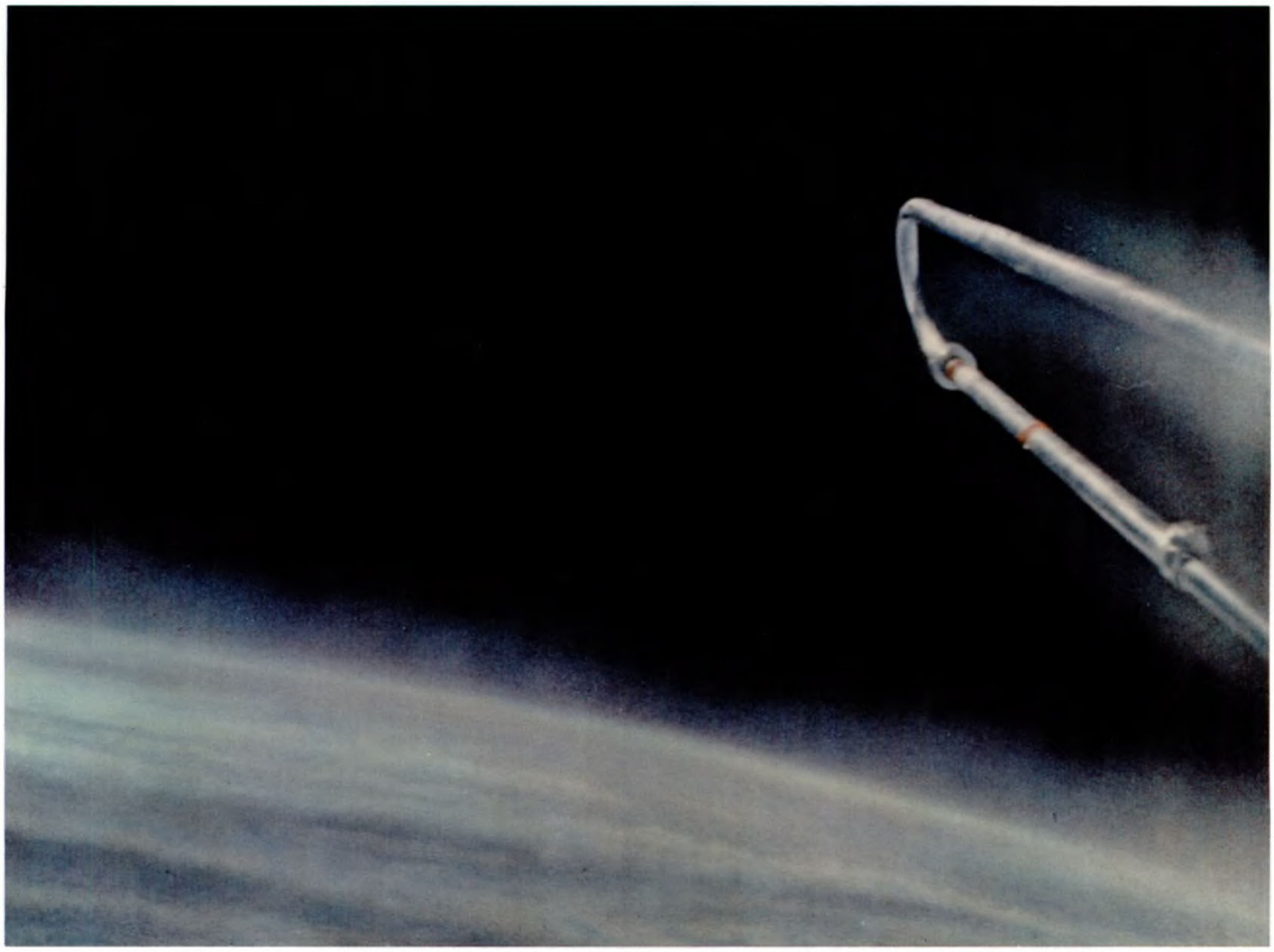
I work closely with the volunteer technical inspectors and also teach the principles of labor protection to workers and trade union committee members. We have periodic safety reviews in the plants, with all the personnel participating. At one such review, in the Orekhovo mills in 1960, workers submitted 1,600 suggestions for safer and more healthful working conditions, of which 1,400 were put into effect.

That's how the workers, the factory committees and trade unions work together to guarantee the safest and most sanitary working conditions at factories. ★

The inspector gives Orekhovo-Zuyevo mill superintendent Konstantin Rudnev his safety report.

Trade union committee chairman Lydia Mamykina and inspector Troitsky check a complaint.

(Continued from page 7)



A view of our planet from outer space. Pavel Popovich took this shot with a Konvas, an ordinary 35-millimeter movie camera favored by newspaper reporters.

in the STARRY OCEAN

I detected no vestibular disturbances in this state. Nor were there any physiological deviations.

I returned to my armchair, strapped myself in, made a brief entry in the log and then cheerfully reported to earth. One of the major problems had been solved! Experience aboard *Vostok IV* would confirm the results as unvarying fact.

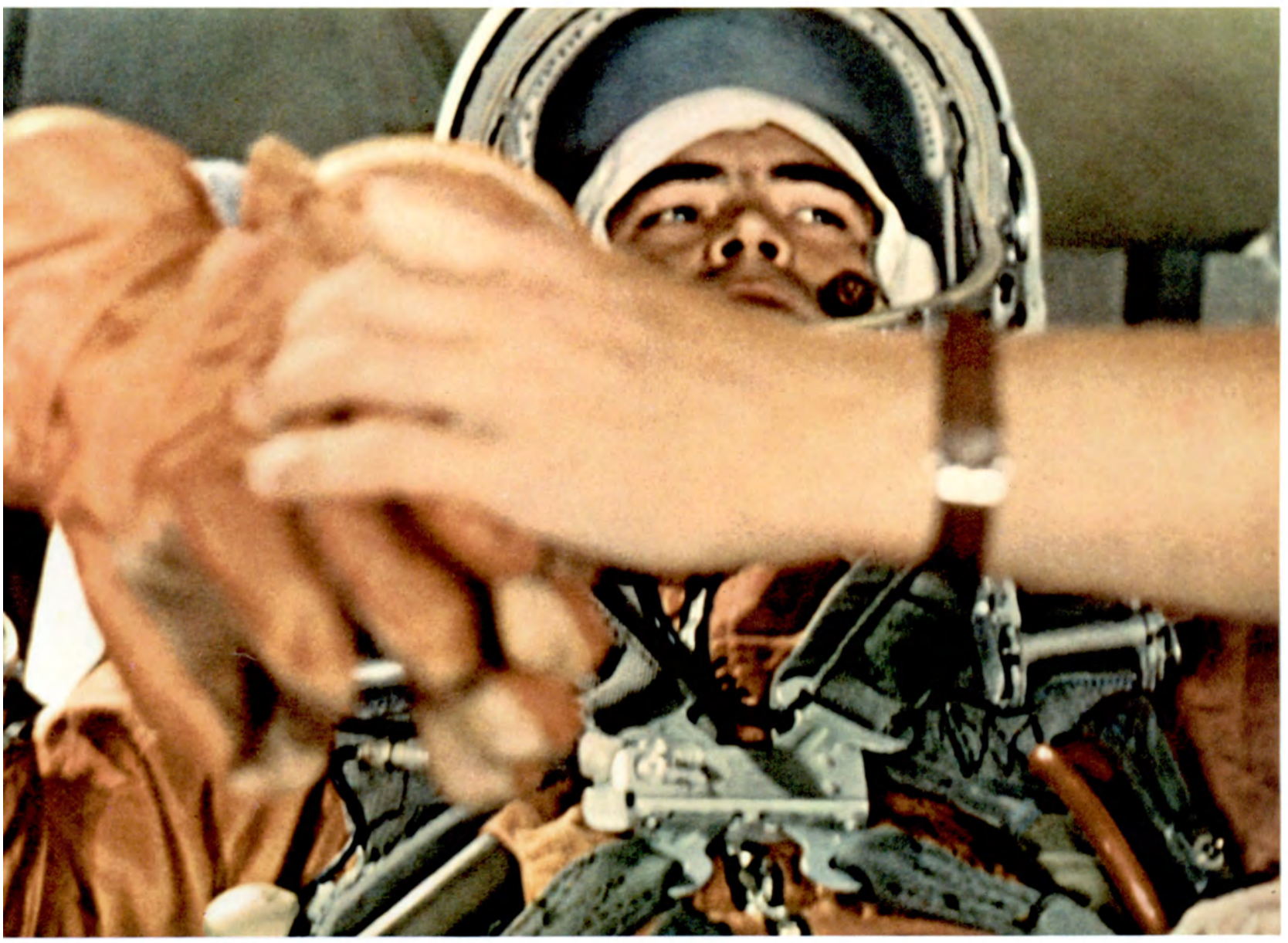
Analyzing last year's flight of *Vostok II*, the doctors had warned that the cosmonaut might experience something like seasickness in the sixth or seventh orbit due to changes in the vestibular apparatus after several hours of flight. Would the phenomenon repeat itself? The sixth and seventh orbits lay behind, and the eighth had begun, but I still felt fine. There were no unpleasant sensations. The telling factors here were evidently the training I had been put through on earth, besides some precautionary measures that had been taken—fewer abrupt motions, and smoother, more gradual handling of the ship's equipment.

For me (Popovich) the first flight days of the *Vostok III* passed in alternate work and rest. Meanwhile I was preparing to take off. When my hour came, I too set off in the bus with my alternate. We were both in space suits as scarlet as ripe ashberries and were both singing happily as we trundled toward our great spaceship, hot in the sun.

Everything repeated itself as at the *Vostok III* launching. There were the same silver rockets, the same people, the same advisers, and the same wishes for good luck. Everything was the same, and yet not quite the same. As I took leave of the scientists—the Chief Designer and the Cosmonautics Theoretician who had calculated the orbits for both ships—I said:

"I'm going off into space with an easy mind. Andryusha is waiting for me out there. It'll be more fun together, and our strength will be doubled!"

We had really splendid call names: They

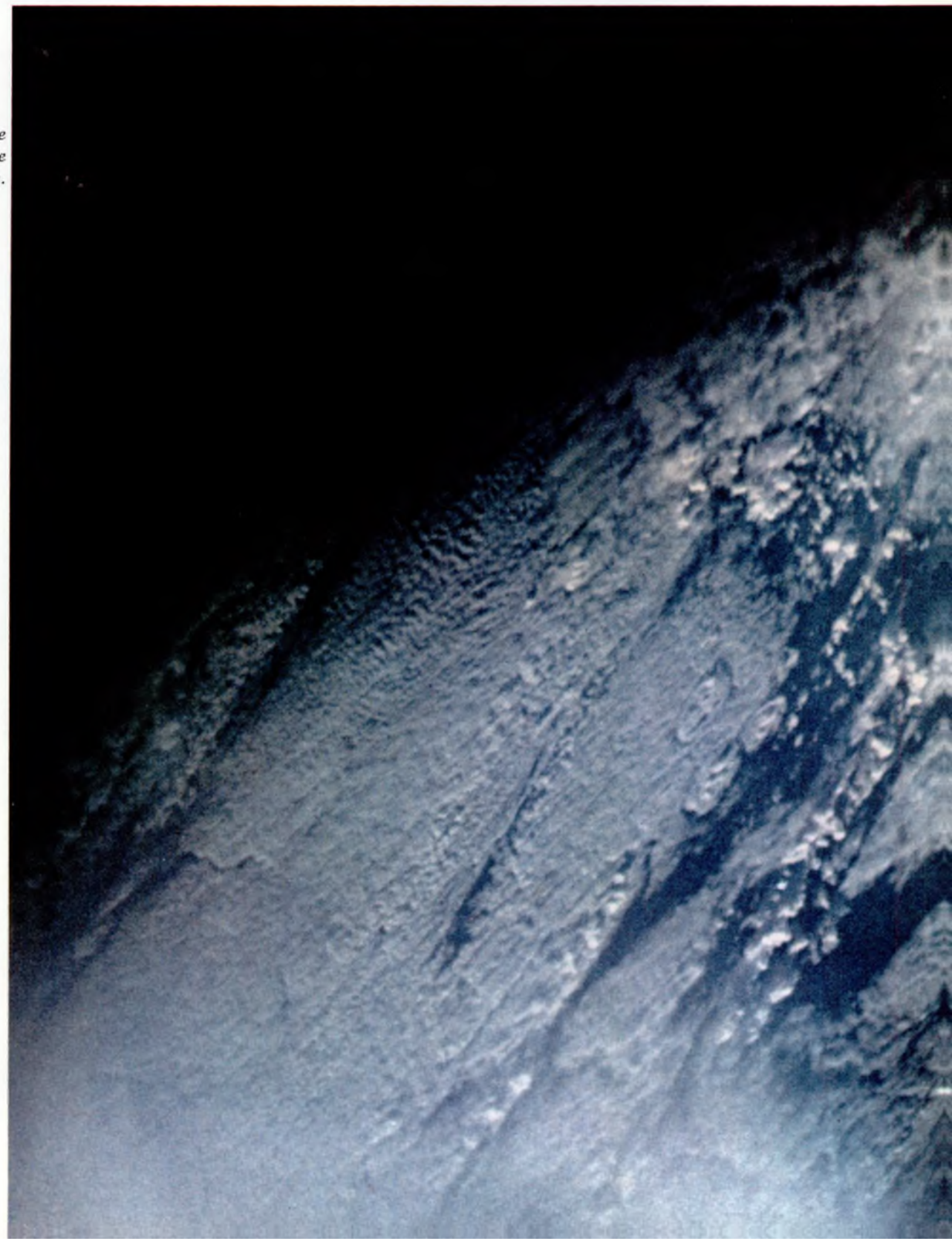


Expert hands checking everything out before launching. The atmosphere of the cabin made it possible for the cosmonaut to work with open helmet and without gloves on his cosmic spin.

With a beaming smile that bespeaks his confidence the flight will be safe and successful, Andrian Nikolayev says good-by to his alternate, who stands by for any last-minute substitution.

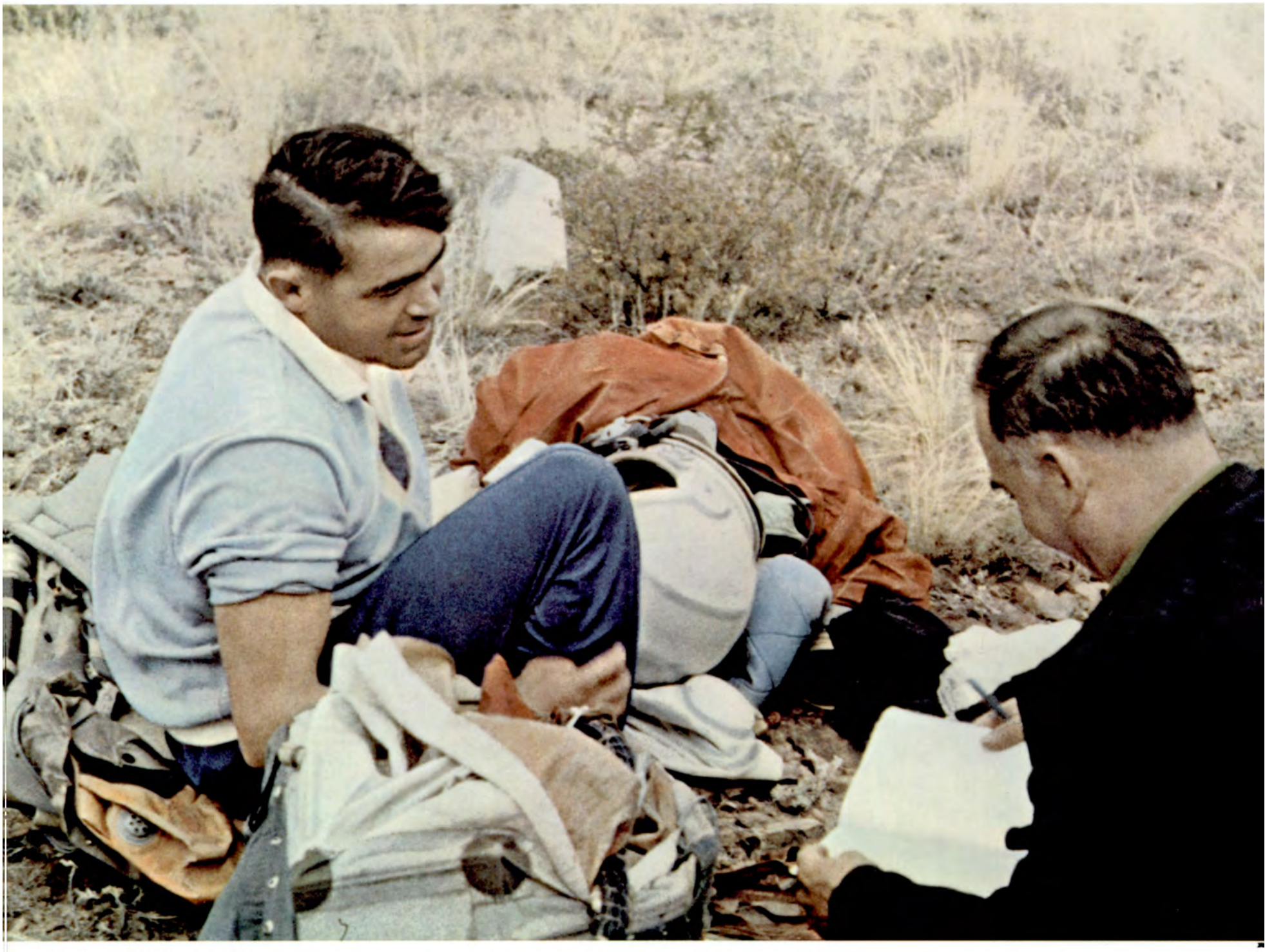
Pavel Popovich's attempt to photograph the sun with his moving-picture camera through the ship's Vzor (Sight) optical device.

This photograph of the earth from the ship at space flight altitude testifies to the fact that our home planet is a sphere.



A helicopter at Nikolayev's landing spot. He and Popovich landed by parachute. Their ships, also safe and sound, came down in the immediate vicinity of their landing spots.

Andrian Nikolayev has just landed and taken off his space suit. Both cosmonauts came down in predetermined areas—in steppe country near the city of Karaganda in Kazakhstan.



were *Sokol* (Falcon) and *Berkut* (Golden Eagle).

Accustoming myself to the strange state of weightlessness in orbit and still wonder-struck by the beauty of the widespread earth and outer space, I suddenly heard a familiar voice:

"*Berkut! Berkut!* This is *Sokol!* Hear me?"

Though I had anticipated the call from the very first minutes of the flight, it certainly was exciting to hear it. Radio communication was possible in outer space without assistance from earth. This was a major scientific finding and solved one of the chief problems of group spaceship travel. Forgetting the conventional routine of radio communication, *Berkut* shouted to *Sokol.*

"Andryusha! I'm out here alongside you! You're coming in fine!"

We forgot the all-seeing and all-hearing earth for a while as we talked, sharing our impressions and experiences, understanding every nuance in the other's speech. Then Gagarin was cut into our conversation by the operative control station. As though summarizing our conversation, he gave us his hearty greetings:

"All's going very well, friends! I congratulate you! We'll soon meet again on earth!"

These were the first earth words received simultaneously by two spaceships flying within some three miles of each other

Carrying out our program of scientific research, we flew over all the continents, recognizing them by their coast lines. Every continent and ocean had its own color. Africa was predominantly yellow, South America, green. The Atlantic Ocean was darker than the Pacific. At night we could clearly spot the lights of cities, their contours identifying them as the largest in the world.

We were astonished by the speed with which our spaceships crossed the frontiers of many countries, passing from one hemisphere to the other. The two of us speculated on the same things—future space flights and the time, probably not very distant, when planes would be replaced by ships carrying passengers and cargo. No spaceship need fear the weather, for it can swing round the earth in an hour and a half. Outer space closest to earth would be streaked with the routes of cosmic ships as densely as the air lanes are now crisscrossed by plane routes. The flight from Moscow to New York would take about a half hour, to London or Paris even less time.

We also reflected that the crews of spaceships would be handling more and more complex tasks, that they would be flying to the moon and the nearest planets. The very thought of this made us catch our breath. We realized that our flight was only space reconnaissance, like those of Yuri Gagarin and Gherman Titov. But good reconnaissance was a guarantee for the success of larger operations. That was why we could not afford to miss anything. We had to see everything, understand everything!

Dinnertime came. Not only our schedules but our stomachs reminded us. We were both very hungry so we wished each other a good appetite by radio and fell to. This was the first time two people had ever dined together in the cosmos. Such an unusual occasion called for appropriate toasts. And propose a couple of toasts we did—each in his own cabin, taking a few swallows not of firewater, but of cold fresh water.

On its fourth circle round the earth, the voice of Nikita Khrushchev was carried into the cabin of *Vostok IV*. The conversation was brief, as was to be expected, for every moment carried the ship hundreds of miles away from the communication point.

I had to repeat Nikolayev's experiment and leave my armchair.

"Don't be afraid, Pavel!" came the encouraging voice from the neighboring ship. "I've done it already and tried everything. It's not bad, really!"

I got out of my straps too quickly, perhaps, and was immediately punished for my haste—I shot straight up and banged my head against the ceiling. An object lesson: Caution was imperative in outer space.

Having accustomed ourselves to free "floating," we did various exercises in this state then and on subsequent days. A light twist of the body set one spinning like a top. Floating out of our chairs, we continued to work, eat, drink, talk to the earth and to each other, besides making observations at our portholes and taking pictures with our movie cameras. Both of us reached the same conclusion about weightlessness: It was perfectly possible to live and work in that state.

We knew that weightlessness and its accompanying phenomena interested not only the scientists but all people on earth, and in the TV broadcasts we tried to show spectators what was happening to the objects in our cabins. Viewers in the Soviet Union and other countries saw our logbooks, pencils, and larger objects—some weighing several pounds—floating in the air. We, too, found this funny at first, but as we got used to this aspect of weightlessness, we became bolder and bolder. And not only with objects! While floating about, we would make sudden movements, shake our heads with our eyes closed. We felt no unpleasant symptoms, much to the joy of the medics and biologists watching us from earth.

We often stood at our portholes marvelling at the geometric perfection of the distribution of the stars. The moon, too, caught our imagination, prompting a lot of thought. We were lucky where the moon was concerned, for we had the chance to see this lovely luminary in all its poetic brilliance time and again. It seemed much nearer than the stars and looked more like a sphere than a disc. Its glittering convex surface showed the pattern of lunar contours, reminiscent of frost pattern, far more clearly up here than on earth. We filmed the moon several times.

The lunar light was very bright and illuminated all the objects and instruments in our ships. We often switched off our electric lights and tried to work by the soft half-light of the moon. The results were good; it was like working by the light of a Leningrad white night.

Staring at that bright ball suspended in the blackness, we pictured the lifeless lunar deserts where there was not a single tree, flower or blade of grass; no sky, no splashing waves, no wide fields; not the slightest sound, not a gust of air. And we could not help wondering which of our comrades would be the first to fly closely round the moon, to see its craters and seas near at hand. And who, finally, would be the first to set foot on its surface?

That time was none too remote, we thought, and our flight had brought it considerably closer. Staring into the future, our minds raced ahead of our fast ships. We thought of all sorts of things. In the near future, for instance, space flights were sure to yield reliable long-range weather forecasts. And having learned to foretell the weather, people would soon be controlling it as well, sending rain to the drought areas, dispelling fogs, and warding off storms and hurricanes.

Before going to sleep, each of us had a look into black infinity and saw explosive flashes of light far away on earth. What was happening down there? The hammers of lightning were furiously pounding an anvil of cloud concentrations. For all we knew, everything was in a turmoil, the winds roaring and seamen desperately fighting the elements. But all was serene up there, 125 miles away; nothing hampered the smooth, swift drive of our ships round the earth.

When we were ready for sleep, we would switch off the light and close our portholes—and the impression then was that our ships stood stock still, for we could feel no motion whatever. The earth stopped talking to us then. Complete silence in both cabins, not a ripple, not a whisper of noise. The quiet was as complete as in the soundproof chamber where we had undergone prolonged training. How grateful we were then to the men who had devised those refined training methods. If not for them, we would have been depressed, perhaps terrified, by the utter stillness of the cosmos. But we had spent many days in that chamber and were used to the ordeal of silence.

Refreshed by sleep, we did our morning exercises. There was no room to run about, of course, or to do a trick or two on the horizontal bars, or to work with dumbbells and weights. But we had been through the whole set of exercises specially worked out for us on earth. In one of them we planted our heads and feet against some immobile objects for leverage and bent and straightened our bodies. This put a strain on every muscle, particularly on the stomach muscles. Our exercises were invigorating, getting us wide-awake and ready for a new day of work.

We then exchanged the first radio greeting of the day.. We informed each other that we could hear each other clearly, and reported: "Cabin temperature of *Vostok IV*—18 degrees (65 F.), humidity, 65 per cent." "Cabin temperature of *Vostok III*—15 degrees (59 F.), humidity—65 per cent."

After breakfast, consumed with great appetite, we got down to our navigational calculations. Each of us found his position on a special globe, a cunning and accurate instrument. It turned out that our bearings almost tallied, which meant that we were still very close to each other. Our paired flight was accurate, keeping exactly to schedule in time and space.

After our usual physiological and vestibular tests in these morning hours we got down to some psychological tests as well—quickly mak-

ing various simple calculations, identifying geometrical figures in chaotic disorder on a special chart, drawing spirals and stars, writing with the right hand and then with the left, with our eyes open and then closed. These tests checked our concentration, control and fatigue. The same sort of check was made on the subsequent days of our flight.

After several hours of work we spent five or six minutes on a medical self-checkup. We took our pulse, listened to our heartbeat and breathing, felt our foreheads for a rise in temperature, and checked our eyes. Most of the time we kept our helmets open and our gloves off because it was easier to work that way.

The second day of our joint flight passed as successfully as the first. The not unpleasant weariness from our work was beginning to tell, and we said good night and prepared for sleep.

"What did you have for supper?" asked *Sokol*.

"The same as you," answered *Berkut*. "And a slice of dried fish besides."

"Dried fish?" exclaimed *Sokol* surprised. "Couldn't you spare one little slice for me?"

"Well, come a bit closer, and we'll share what I've got."

But joining the two ships was not our task, and the dried fish stayed with the man who had been foresighted enough to bring some with him.

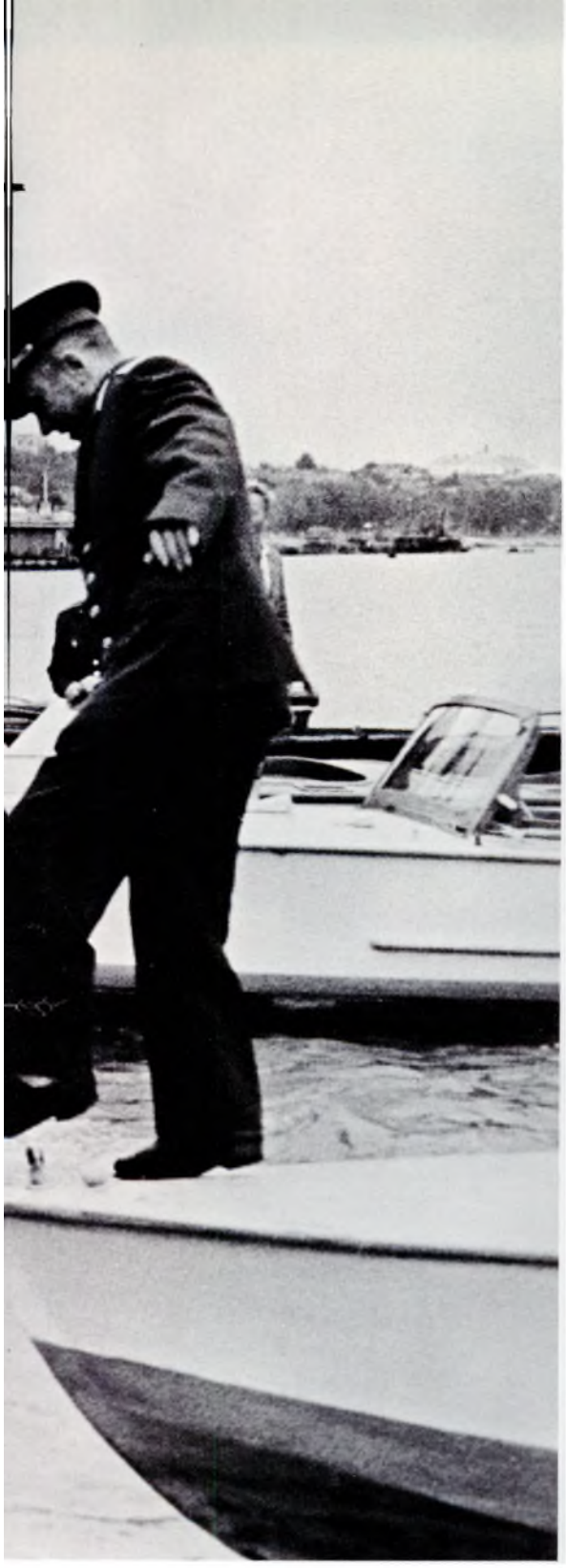
On the morning of August 14 we continued our work on the program. There was a lot to do that day, but everything went well, without the slightest hitch. The conditions inside our cabins was a telling factor here. The air was still sweet and fresh despite our long flight. It reminded us a little of the air in a field saturated with the pungent odor of the ozone left by a lightning storm.

We were in the third day of our group flight. Our program of scientific observation and research was drawing to a close. We were so elated now that we began to sing, each by himself, and both together in a duet. We sang various Soviet songs, among them our favorite: "We shall leave our trail on the dusty paths of the distant planets. . . ."

The dawn of August 15 broke on earth, an we began to get ready for landing. First cam the exercises that toned our muscles and set ou blood racing. We had to prepare for the chang from prolonged weightlessness to the conside able overloads to be expected when our ship came down. No one knew how such overload would affect a man who had been in flight fo such a long time. This was one of the riddle yet to be solved.

We were greatly heartened by the calm voic of the Chief Designer who had kept his finge on the pulse of our space flight from the outse He advised us to choose our own method landing—inside our ships or by parachute. Sinc both of us were fond of sport parachuting, w promptly replied that we would prefer to lan that way. The Chief Designer agreed and to us to go ahead.

The first landing order now reached us fro earth; and so we wished each other good luc and said we would soon meet again on dear ol Mother Earth. *Vostok III* was to go out of orb



Returned from their epic flights, Andrian Nikolayev and Pavel Popovich left for a short rest on the Volga. They were recognized and welcomed wherever they went.

This photo was taken through the porthole of the airliner that brought the two space heroes from their Volga retreat to Moscow, where a gala reception awaited them.

first, to be followed within six minutes by *Vostok IV*. In the tense silence, each of us heard the roar of the brake rockets that slowed the ships down very effectively.

Descending from orbit, the ships began to approach the dangerous dense layers of the earth's atmosphere. We felt the proximity of the earth at once: Our weightlessness vanished, and we felt the stress of small overloads. It was pleasant to feel the pull of our bodies again. Some effort was needed now to raise a hand or turn the head. We had to get used to normal earth conditions.

Fresh commands followed. Our ships cut into the dense layers of the atmosphere; their fireproof skins began to heat up with a dazzling glare. Our antennae were burning, and we lost contact with the earth. We did not close the hatches over our portholes and watched fascinated as flames of many colors raged outside the fireproof glass. Now the red, now the blue flames predominated. Although we had expected all this, we felt a bit creepy at the thought that each of us was right in the heart of his own fireball of thousands of degrees. That was probably the most trying experience either of us had ever had.

The overload turned out to be greater during landing than when we had gone into orbit. We were squeezed back into our armchairs by enormous weights. The air currents set the envelopes of our ships vibrating. We felt as though we were bouncing crazily down one of the bumpy roads of our native Shorshely or Uzin districts in a pair of springless carts. Now we knew why they had kept shaking us up so much on the vibrostands. Things would have been much harder during the landing if not for that preliminary training.

The hair-raising heat glare outside the yellowed glass of our portholes was gone, and the overload with it. We were close to the earth, and the catapults went into action. A wide, motley parachute broke open like a great flower over each of our heads. We could not see each other, of course, for the interval of six minutes had carried us scores of miles apart. While we were still in the air, however, the color of the ground and the nature of the terrain told us that we were coming down in the right district—to the south of the mining town of Karaganda in Kazakhstan.

After we landed and were checked by the doctors, we joined the specialists and sports commissars who had flown to the landing grounds and looked over our spaceships. They were in good shape, good enough to be used for another space flight. We recovered our logbooks, stenciled with the seal of the Soviet Union and filled from cover to cover with notes about the things we had seen and experienced in outer space, and hurried off to the nearest communication point, very eager to report the successful completion of the group flight of our spaceships, to let everyone know that *Vostok III* had spent 95 hours in outer space, circling the earth 64 times, and that *Vostok IV* had been up for 71 hours and had circled the earth 48 times.

—Abridged, from the newspaper Pravda

WILDLIFE SANCTUARY

BY VADIM BUKHAROV
PHOTOS BY NIKOLAI BOKHONOV AND VADIM KOVRIGIN

THE FLORA of the Soviet Union is luxuriant and richly varied. In the South we have the Mexican agave, the camphor tree, liana, bamboo; in the North, great stretches of taiga country—forests of centuries-old cedar and pine.

Animal life is no less diversified. We have the tiger, sable and a rare breed of ducks. Lake Baikal teems with omul, the fish of gourmets the world over, and the Volga with mouth-watering sturgeon. All this living wealth is protected from extermination by special laws.

Some species of wild animals not native to the Soviet Union but economically desirable have been brought in from other countries. Having become acclimated, they are multiplying rapidly. You now find large numbers of nutria and muskrat in the floodlands of Kazakhstan and Turkmenia as well as in the Ukraine, although the native habitat of these valuable little fur-bearing animals is America.

The Soviet Union has 65 natural preserves. Those in the Russian Federation alone cover an area of close to 20,000 square miles. By comparison, the total area of the Netherlands is 12,850 square miles. The sanctuary we shall be describing here—at Astrakhan, in the Volga delta—takes in an area of 290 square miles.

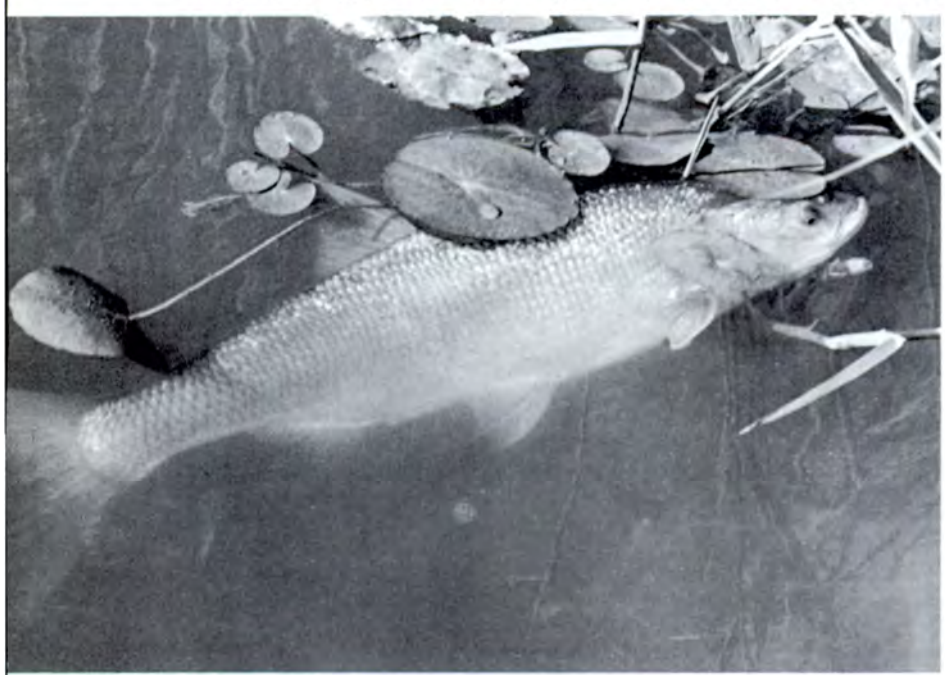
The Volga flows into the Caspian Sea. Every Russian schoolchild knows that simple but only half-true fact.

The great Russian river has been rolling along for eons. Over the centuries its waters have carried tons upon tons of silt from the upper reaches

This 41-year-old sanctuary in the Volga delta is a nature lover's paradise. Hunting and fishing are permitted in parts of the 290-square-mile preserve.

The pink lotus, native to India, was brought here by merchants long ago.

Sturgeon, beluga, bream—60 fish species—live in the sanctuary waters.



to the delta, forming many large islands and sandbanks. Many miles from the spot where the Volga meets the Caspian, it begins to divide into branches. The waters of the Volga reach the sea through these dozens of branches, each with its own name.

All the islands of the delta are covered with impenetrable thicket. The willows branch out enormously, and the reeds grow as high as 13 feet. The surface of the tranquil streams is covered by a veritable rug of water-nut bushes and yellow water lilies. Here the pink lotus, which merchants once brought back from India, has found a second home.

The dense growth provides fine nesting places. About 60 species of birds can be found there, including the rather rare glossy ibis and white spoonbill, the white heron, the pelican and black swan. They are the permanent residents, so to speak. But in the spring and fall the islands, which lie across the route of feathered migrants who winter in Bulgaria, Egypt and Italy, acquire transients as well.

This used to be a hunter's paradise. Tired by their long migration, these birds from the southern countries let a man come so close that it was a very poor shot indeed who missed. As a consequence the birds were killed without mercy or any thought of conservation. At the time the Soviet state was established, some bird species—the green plover, glossy ibis, white spoonbill and pheasant—were almost extinct.

The year 1919 was a hard one, with interventionist armies and White Guard bands tearing the country apart. Not many people those days believed the new republic could hold out. It was at this time of famine and economic ruin that agronomist Podiapolsky, a delegate of the Astrakhan Gubernia Executive Committee, came to see Lenin. Despite his innumerable problems, the leader of the Soviet state found time to talk with him about setting up a wildlife preserve in the lower reaches of the Volga.

"After asking me some questions about the military and political situation in Astrakhan," Podiapolsky wrote, "Vladimir Ilyich commended us for taking the initiative and approved our project for setting up a sanctuary.

These pelicans feel so safe here that they practically pose.

He said that wildlife protection was needed not only for the Astrakhan Territory but for the whole republic and that he thought it urgently important."

Podiapolsky went back to Astrakhan much heartened and started on the sanctuary project enthusiastically. He had the help of many volunteers—nature lovers who were concerned about preserving the delta's decimated wildlife.

The sanctuary has been much enlarged in the 41 years since its founding. A scientific town with meteorological stations, biological laboratories and museums has risen on the shores of the Bystry tributary, where biology students from the country's colleges come for field work. The reservation is also visited by thousands of tourists yearly. Areas have been set aside for anglers and hunters.

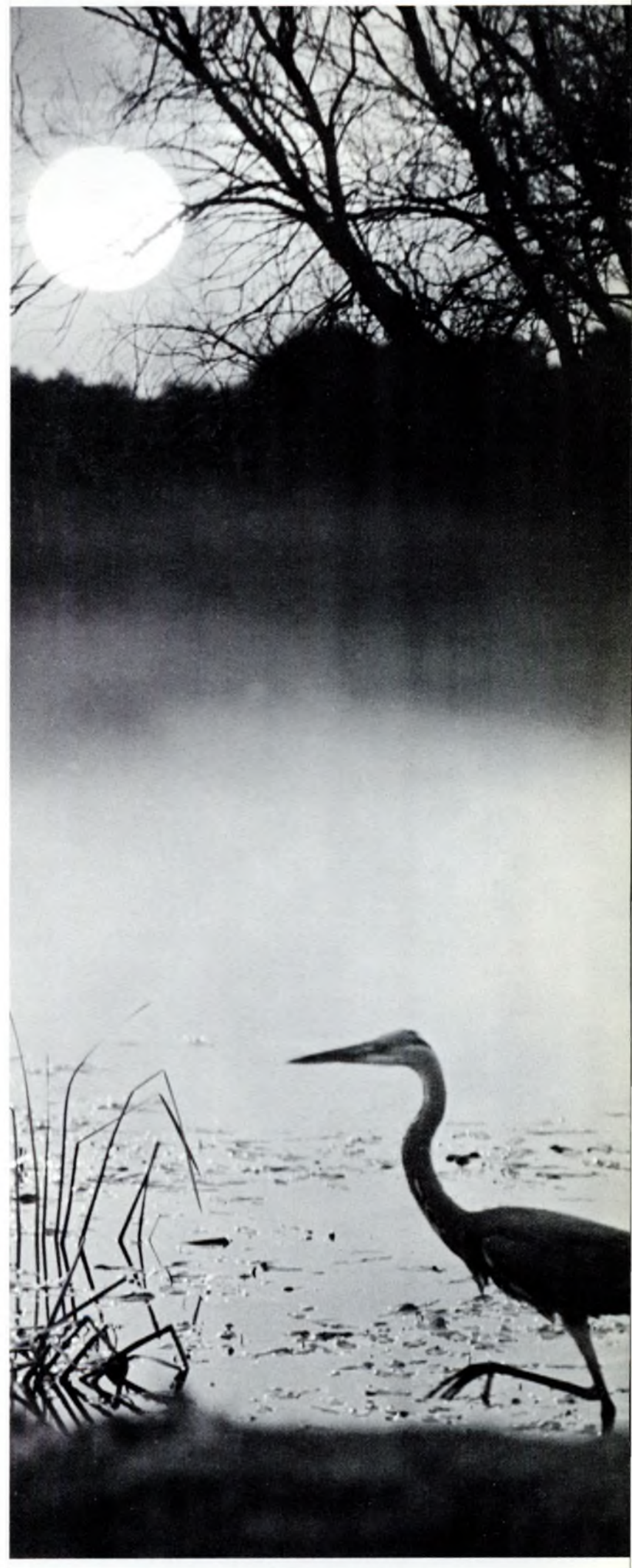
Staff members of the sanctuary carry on research in collaboration with the various related institutes of the USSR Academy of Sciences. They band some 6,000 to 10,000 birds yearly to determine the routes the winged nomads take on their spring and fall migrations. Some of the birds banded in the lower reaches of the Volga have been observed in Central Africa and India. The naturalists at the sanctuary also determine the longevity of various species, their feeding habits, and whether they are beneficial or harmful to man.

The staff also works on more immediate practical problems, helping poultrymen raise plumper ducks, for example. The water nut, researchers have found, is an excellent concentrated feed for water fowl. The nut grows quickly in water and needs no special care. On the recommendation of the sanctuary's scientists, many of the collective and state farms have planted the nut in their ponds.

Another example. The dams of hydroelectric stations on the Volga bar fish migrating from the Caspian to the upper reaches of the river to spawn. The sanctuary staff has worked out recommendations not only to conserve but to increase the stocks of sturgeon.

In these many ways the Astrakhan Sanctuary helps the country preserve and increase its wildlife. Conservation today is a matter of state importance.★

The white heron, one of the 260 bird species in the preserve.



AN ENGLISH LANGUAGE SCHOOL

BY NIKOLAI ANASTASIEV

PHOTOS BY GEORGI PETRUSOV

Sokolniki school follows the standard course of study except for the English language emphasis.

After a year of study these second-graders will have a basic vocabulary of 300-400 English words.

THE USUAL sights and sounds in this school during recess are those found in any one of a hundred schools in Moscow—the high-pitched chatter of seven- and eight-year-olds and the deeper voices of their 17-year-old fellows; shy first-graders, self-confident upperclassmen and bustling teachers.

Algebra is taught here as in any other school, and the youngsters do the same exercises in the gym. And yet this school is different.

What first strikes the eye are the many wall newspapers written in English and the somewhat unexpected portraits of Hemingway, Dickens and Oscar Wilde on the walls. Listen to the chatter more closely and you can hear English mixed with Russian.

This is English School No. 1 in Sokolniki, an old section of Moscow. The first of the foreign language schools, it was opened in 1949. Since then a hundred others like it, in which the teaching is done in English, French or German, have been set up in the capital and other cities. The experimental project has been so successful that in the next three years the number of foreign language schools in the Soviet Union will be increased to 700.

When the Sokolniki school first opened, only those with at least a minimal knowledge of English were accepted. But that entrance requirement has since been dropped, and now dozens of seven-year-olds, ordinary Soviet school children, begin an intensive study of English in the second grade. In the conventional school English is taught beginning with either the third or the fifth grade for two hours a week as against the four hours devoted to it in the second grade of the special school.

The lesson is beginning. We somehow manage to get our knees under the school desk and look around the room. The class is small—eight or nine instead of the customary 30. The reason is obvious. The teacher is able to call on each of the children several times during the hour, they are kept busy and their interest does not lag.

Teacher Alexandra Lapushkina uses an ABC chart, attractively illustrated children's books and the pictures hanging on the wall to teach the new words for the day. She leads the class in a recitation of a simple English rhyme. For phonetics drill she improvises contests for the best pronunciation of difficult sounds like "th" and "w." These and a variety of other teaching devices give the children a vocabulary of 300 to 400 words by the end of the school year.

In the lower grades learning is motivated by games, as it should be for young children; later on the method of teaching is more direct. Beginning with the sixth grade, English is given daily. The material is more difficult and more diversified, of course, and includes grammar, reading and translation from original literary texts and oral reports on articles taken from British and American newspapers.

Upper-grade teacher Lyubov Shaverneva tells us that she frequently opens the lesson with a ten-minute conversational exercise. The students speak extemporaneously on anything that comes to mind—from home chores to cosmic flights. This creates a relaxed atmosphere in the classroom.

By this time the youngsters have acquired a vocabularly of from 3,500 to 4,000 words and can speak without pondering every word and even with some degree of fluency. For more drill in pronunciation and intonation the teachers this year added special material in phonetics. The school has a large linguaphone room in which there is a microphone on every desk and a good library of tape recordings in English. Also this year the course of study was rearranged to give two hours a week to technical translations, helpful for the many graduates who go on to the sciences or technical fields.

The practical skills are not neglected. The girls spend two hours a week on home economics.

Making up the class wall newspaper—in English, of course. This one is published fortnightly.

Sokolniki students get the required work training in the school workshops and nearby factories.

The linguaphone room. The Sokolniki school has 674 students and 15 English language teachers.

Home reading from Mark Twain, Somerset Maugham and other British and American writers, classic and contemporary, gets heavy emphasis. This is the bridge between the language lessons and the classes in English and American literature, taught in English, in the eighth through eleventh grades. The senior has a large enough vocabulary by then—some 5,000 words—to manage the reading, which ranges from the stories of Beowulf to the "angry young men," from Benjamin Franklin to Arthur Miller and Jack Kerouac. Leafing through the course assignments you find excerpts from Chaucer, Shakespeare, Dickens, O. Henry, Galsworthy and Hemingway.

This is how the study chain is linked: The children progress from the language to the literature to an understanding of the country and its people. Where else but in its literature is the talent, strength, weakness of a people—its very soul—more intimately revealed?

And here is another link in the chain. The classes in the economic geography of foreign countries, a required course in all schools, are given in English. Thus a knowledge of the spiritual life of a people is enriched by a knowledge of their economy.

The chain has many more links. The Sokolniki school works closely with the USSR-Great Britain Society, of which it is a collective member. The students and teachers are frequent guests at the get-togethers with foreign delegations that the society arranges. They speak at Friendship House forums and take part in radio broadcasts to England and the United States. Some of them make trips abroad as representatives of the society.

Sokolniki students have regular transoceanic contact—via the postman—with students of the George School in Pennsylvania. They exchange not only news but confidences. Film director Mark Donskoy must have been aware that the Sokolniki students acquire real insight into the thoughts and feelings of their English and American pen pals; he chose a Sokolniki girl to play the English heroine in his *Hello Children.*

You hear English spoken not only in the classrooms but in the auditorium, where the seniors put on such plays as Shaw's *Pygmalion* and Shakespeare's *Much Ado About Nothing* in very creditable English and with dramatic verve. Dreiser's *The Trap,* recently staged by the indefatigable Alexandra Lapushkina , made a big hit.

When the Sokolniki school bell rings for the last time for the seniors and they leave with school diplomas, some enter the Foreign Languages Institute, others enroll in the philology faculty of Moscow University or teacher training schools, and still others move along into the sciences. Most of them specialize in teaching English or English literature.

But no matter what field a Sokolniki graduate enters—law or mathematics, philology or chemistry—he finds his language training useful. After all, communication between peoples without recourse to interpreters makes it infinitely easier for them to learn about each other's way of life. The USSR Council of Ministers had just that in mind when it called for improvement in foreign language teaching in its decision last year. And Richard H. McFeely, principal of the George School, must have had much the same thing in mind when he wrote in the Sokolniki Visitors Book: "I am glad George School is affiliating with this school. I hope that the bonds of friendship, trust and understanding will grow stronger through this affiliation." ★

At the week-long meeting in the Kremlin Palace of Congresses 5,000 scientists of 70 countries discussed 800 papers on the cause and cure of cancer.

CANCER WILL BE CONQUERED!

BY PROFESSOR ROSTISLAV KAVETSKY

DIRECTOR, UKRAINE INSTITUTE OF CANCER RESEARCH

Three presidents of the International Union Against Cancer (left to right): Alexander Haddow of Great Britain, Vensan Khanolkar of India and Nikolai Blokhin of the Soviet Union.

USA scientist John Kennedy reads a paper to the "Tumor-Host Relationship" panel.

THE WORD CANCER has a terrible inevitability for most people—and with reason. The number of deaths from cancer is second only to that of cardiovascular disease, and its incidence keeps rising. The proceedings of the Eighth International Cancer Congress that met in Moscow this summer had the world's attention.

Present at the congress were 5,000 delegates from 70 countries. For a week 800 papers on the causes, prevention, diagnosis and treatment of the disease were discussed. A hundred popular science films were shown. The delegates had the opportunity to acquaint themselves with the work Soviet cancer researchers were doing.

What did this very representative congress of world oncologists accomplish?

Medical researchers have accumulated a great amount of experimental and observational data on the disease. The interchange of opinions at the congress shed light on many obscure points and crystallized judgments on a number of vexing questions. This was especially evident in the discussions on the origins of neoplasms. The congress participants unanimously accepted the view that different tumors arise from the action of a wide spectrum of factors—most notably chemical agents, ionizing radiation, hormonal disturbances and viruses.

The majority of researchers apparently hold that cancer has multiplex causes, although they do not dismiss the possibility that it may be caused by viruses.

The several section meetings and special discussions helped illuminate the role of viruses. Soviet scientist Lev Zilber's lecture emphasizing the role of viruses in disturbances of nucleic metabolism attracted general interest.

British scientist Alexander Haddow lectured on findings to date on the mechanism of action of carcinogenic factors in the transformation of the normal cell into a tumor cell.

It was pointed out at the congress that tumors are not autonomous formations and that there is a constant interaction between the tumor and the organism. This concept, originally presented by Soviet oncologists, is now generally accepted. Six section meetings and a special discussion with world-famous scientists Antoine Lacassagne (France), Alexander Lipshitz (Chile) and William Gardner (USA) participating were devoted to that point.

There was considerable discussion of methods of treatment, especially radiotherapy. High energy from the cobalt bomb, the betatron, the linear accelerator and other such powerful sources is being used on an ever wider scale in treatment. The high quality of the technical equipment, it was noted, promises a new era in radiotherapy development.

Oncologists from various countries presented their experiences with chemotherapeutic preparations in the laboratory and the clinic. The general opinion was that no single preparation could serve in the treatment of all forms of neoplasms since each type of tumor develops from a different organ with its particular functions and metabolism.

Preparations for the treatment of certain types of tumors have proved effective—ThioTEPA and BenzoTEP for cancer of the ovary and the mammary gland, sarcolysin for seminomas, etc. Unfortunately, as yet no preparation has been found for treating such widespread tumors as cancer of the stomach and the lung.

The simultaneous application of preparations belonging to different groups is very promising. The congress concluded that chemotherapy is not only serviceable as an independent method but as required treatment to supplement surgery. The latest data indicates that chemotherapeutic preparations must be applied even during the course of the operation to prevent the transmission of tumor cells through the blood stream.

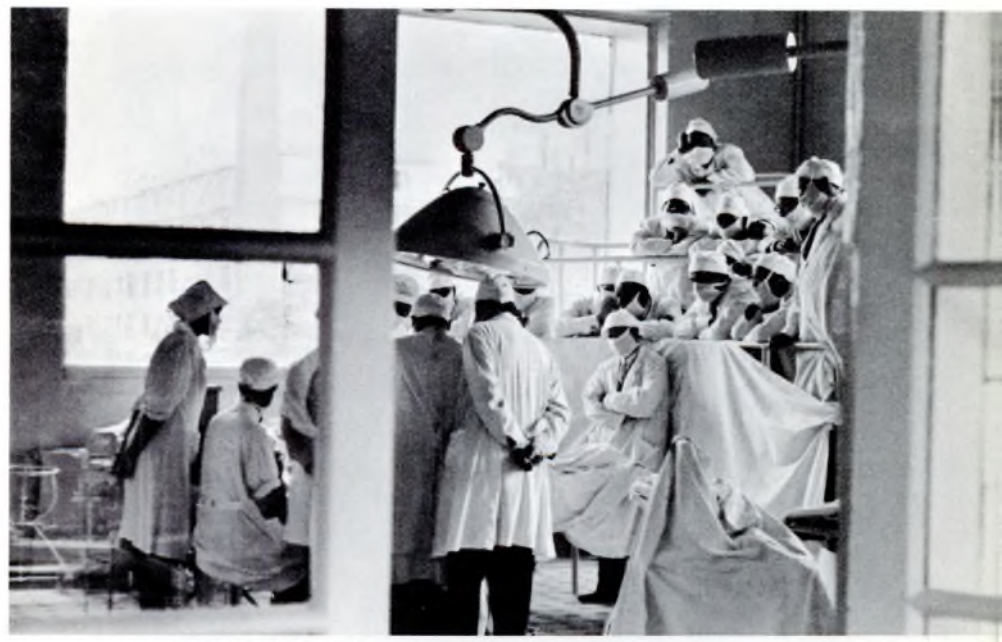
Methods of treatment differ. Some clinicians use the shock-dose method. Before giving the patient a shock dose of the chemical preparation, a portion of his bone marrow is removed to protect it from the action of the chemical; after treatment the marrow is replaced. A second method is to cut off the diseased organ from the circulatory system and use an artificial circulation apparatus. It is, however, difficult to isolate an organ completely in the clinic. Additional research needs to be done in this field.

The prospect of immunizing the human organism against malignant tumors is opening for oncologists. This promises to become a leading trend in cancer research.

The considerable achievements in biochemistry, especially in the synthesis of proteins and in the role of nucleic acids, were demonstrated at the congress. There is reason to believe that this research road will lead to important discoveries.

The congress, which graphically demonstrated the values of cooperative work among the oncologists of different countries, will serve as an important landmark in the development of world cancer research and help to create a sound basis for a decisive attack on malignant tumors. Cooperation among the scientists of the world in the fight against cancer will guarantee that our era will be marked as the one in which this most dangerous killer was conquered. ★

The USA's delegation of 600 at the congress was the next largest after the Soviet Union's.



Oncologists from the USA, Brazil, Canada and Japan watch Soviet surgeon Pavel Androsov.

Section of the Anti-Cancer Exhibition with displays from 56 manufacturers in 17 countries.

JOHN REED

On the Occasion of the 75th Anniversary of His Birth

BY YELIZAVETA DRABKINA

Yelizaveta Drabkina was only 16 years old when she took part in the October 1917 Revolution. She met and spoke to Lenin on many occasions. Her book* Black Crusts, *which is widely read in the Soviet Union, centers on the period. In 1961 she published* The Story of an Unwritten Book, *in which she describes John Reed's part in the Russian Revolution. She was a close friend of the American journalist.

REVOLUTIONARY PETROGRAD met a new personality toward the end of the summer of 1917, an unusual-looking man who invariably attracted attention. Tall, with big bright eyes, he wore a soft shirt and khaki trousers, his collar always unbuttoned and his somewhat wavy hair disobediently rumpled. He moved effortlessly, with long steps. Always in a rush, he would suddenly stop short to look and listen to what was going on round him, his face showing his complete interest and attention.

Asked who he was, he would reply first in English. If the questioner did not understand, he would try French and German, and then, as a last resort, explain in broken Russian that he was John Reed, a correspondent of the American socialist press.

Reed arrived in revolutionary Russia half a year after the czar was overthrown. The Provisional Government of the bourgeoisie and landlords, with its widely unpopular policy of continuing the imperialist war, was in power at the time.

John Reed would show up in the corridors of Smolny Institute, packed with workers, soldiers and sailors; or at the seat of the Provisional Government; or at meetings of the "Council of the Republic" when it was arguing how best to fight the revolution; or at meetings of workers of the Obukhovo Plant, where stronger revolutionary measures were being demanded.

He was listening in on both the revolution and the counterrevolution.

A week after arriving, Reed wrote to his friend, the artist Robinson, with whom he had made his first trip to Russia the year before, "The old town has changed! Joy where there was gloom, and gloom where there was joy. We are in the middle of things, and believe me, it's thrilling. There is so much dramatic to write about that I don't know where to begin. . . ."

Reed was not only looking on, he was weighing, assessing, analyzing. He saw the treachery of the old social democracy and the plots of the generals to suppress the revolution with fire and sword.

He had no doubt at all which of the contending sides was his. He awoke every morning with the hope that the rising day would bring with it the proletarian revolution.

Finally it came. He was in Smolny at the Second Congress of Soviets when Lenin appeared after his last stay underground. Reed heard the leader of the revolution calmly pronounce the electrifying words, "We shall now proceed to construct the socialist order!" He jumped to his feet, as did all present, and shouted his loud and joyful approval.

"Suddenly, by common impulse," he recalled later "we found ourselves on our feet, mumbling together into the smooth lifting unison of the *Internationale*. A grizzled old soldier was sobbing like a child. . . . The immense sound rolled through the hall, burst windows and doors and seared into the quiet sky. . . ."

John Reed told what he had seen. heard and learned in *Ten Days That Shook the World* because, he explained in the Preface, "Just as historians search the records for the minutest details of the story of the Paris Commune, so they will want to know what happened in Petrograd in November 1917, the spirit which animated the people, and how the leaders looked, talked and acted."

It was a masterful piece of writing. After reading Reed's account, Lenin said: "Here is a book which I should like to see published in millions of copies and translated into all languages. It gives a truthful and most vivid exposition of the events so significant to the comprehension of the real meaning of the proletarian revolution and the dictatorship of the proletariat."

The book carries the author through the first ten days of the October Revolution, but it does not go with him to the eleventh, twelfth . . . the ninetieth day, when he left Soviet Russia to go back to the United States.

During the two and a half months he worked in the International Propaganda Department of the People's Commissariat of Foreign Affairs. He spent many nights in the print shop putting out leaflets on peace and an appeal to the soldiers of all nations. With Williams and other comrades he published a magazine with photos of Petrograd and Moscow during the October Revolution. And when a counterrevolutionary armed uprising was expected the day the Constituent Assembly met in Petrograd, he guarded the building of the People's Commissariat of Foreign Affairs with rifle in hand.

In January 1918 he spoke at the Third Congress of Soviets of Workers', Soldiers' and Peasants' Deputies. He told of his great hopes for the world now that the victory of the proletariat in Russia was a reality, no longer a dream. October, he said, showed the Revolution invincible. It would not be smashed no matter the repressions or cruelty of its enemies.

On his return to the United States Reed toured the country, from ocean to ocean, to give American audiences a true picture of the world's first workers' and farmers' republic.

John Reed was an American by long ancestry. His forefathers came to the New World in 1607. One of them signed the Declaration of Independence, another served in George Washington's army, a third was a colonel in the Northern forces during the Civil War. But Reed was an American by more than birth. Devoted to America's ideals of democracy, he sympathized with the strivings of other people for freedom. He spoke out loud and clear for friendship between the United States and Soviet Russia.

In 1918-19 Reed played an active role in the workers' movement in his own country. He was one of the founders of the Communist Party of the United States.

Toward the close of 1919 he took a job as stoker on a foreign ship and left for Soviet Russia again. This time he wanted to write a book about the republic after the Revolution. He moved in with a Petrograd worker's family, visited factories, kindergartens, theaters, spoke to hundreds of people on his travels through the country and filled many notebooks with his observations and comments.

He frequently called on Lenin in the Kremlin, and they talked about the new book. Lenin knew how poorly Reed was living and would always ask solicitously whether it was not too difficult for him to work under such conditions.

These are Reed's notebook comments on Lenin.

"Very changeable, and at the same time always very much himself."

"Quick movements, but without bustle. His precise economical gestures give the feeling of quickness."

"Lunacharsky's story—the French sculptor Aronson, when he first saw Lenin, was astonished by his resemblance to Socrates—the same fine head, deep-set eyes, and a forehead that seems to radiate concentrated thought."

"Devoting his whole self to all! All! All!

"Remarkable eyes, penetrating, kindly, shrewed and, above all, wise. Seem to be golden in sunlight.'

"Scotch wish: 'May the chimney of your house smoke long.' Yes, may it smoke long, as long as possible. Millions of people are ready to give their lives so that the chimney of your house may smoke forever!"

Again and again Reed peered at the world that was being born before his eyes. In dispatches he sent to American revolutionary magazines he described Soviet Russia at the end of its third year of heroic struggle, how she had gone through "the great trials of the Revolution."

He concluded his story of the devastation and famine of the Civil War, the cold, typhus, the fierce battles, and of the springtime awakening of the country that was taking a deep breath after smashing the White Guard bands of Kolchak and Denikin, with these words, "And in spite of all that has happened, the Revolution lives, burns with a steady flame. . . ."

In the fall of 1920 Reed went to Baku for the First Congress of the Peoples of the East. At the congress were representatives of the oppressed colonial countries and revolutionists from many lands.

On the way back from Baku the train on which Reed was traveling was attacked by a counterrevolutionary band. He took part in the defense. It was hot and he drank from a stream near the railroad. Arriving in Moscow, he fell ill with typhus and died.

With other devoted fighters for the proletarian revolution, John Reed's ashes were buried in the Kremlin Wall near the Lenin Mausoleum.

The following is an excerpt from *Ten Days That Shook the World*, the book about which Lenin's wife and helpmate, Nadezhda Krupskaya, said in a conversation with Reed's widow, Louise Bryant, "It seems almost a miracle that a foreigner could have written a book that conveyed the very spirit of the Revolution with such magic power." ★

Asserting Man's Right to Happiness

SOVIET CINEMA REVIEW

BY VERA SHATOVA
FILM CRITIC

THREE FILMS released this year, completely unlike in theme and treatment, have a significant common denominator: *What If It's Love?* by Yuli Raizman, a director of long standing, and *Ivan's Childhood* and *Following the Sun* by young directors Andrei Tarkovsky and Mikhail Kalik. *Ivan's Childhood* recently shared the main award, the Golden Lion of St. Mark, at the Venice Film Festival with Valerio Zurlini's *Family Chronicle*.

Soviet cinema has traveled a long and hard road since 1925 when Sergei Eisenstein's *Battleship Potemkin* started its triumphal round of world screens. There were other triumphs—Vsevolod Pudovkin's *Mother*, the Vasiliev brothers' *Chapayev*, the documentaries by Dzigi Vertov, Yakov Protazanov's pictures—but there were setbacks too, the products of a period when the fine traditions of the twenties and thirties were shelved. We substituted eulogies and slogans for the depiction of the true conflicts of living and replaced the complex and contradictory characters of real life with heroes who made child's play of every difficulty. That period, if not forgotten, is dead and buried, with no tears shed for its passing.

Infusing the older film tradition with contemporary vigor, such outstanding directors as Mikhail Romm, Grigori Chukhrai and others have turned the camera on the living man, complex and conflicted. Today's Soviet film heroes have no easy time of it. They wrestle with cant, demagogy and complacency. They are not always the winners, but they have an unrelenting faith in their ultimate victory.

The Young Pioneer in *My Friend Kolka*, directed by the youthful Nikolai Mitte and Alexander Saltykov, has this unwavering certainty. So has the young hero of *A Hectic Day*, the screen version of Victor Rozov's stage play *In Search of Joy*, who fights against smugness. The same faith, even in his most despairing moments, lives on in the heart of Alexander Astakhov, the hero of Grigori Chukhrai's *Clear Skies*. This hard-won, militant optimism distinguishes the work of the best of today's Soviet film-makers.

"An artist must have a combination of three qualities," Chukhrai once said, "talent, individuality and social consciousness. Through the medium of his talent, he gives dramatic expression to the other two qualities. Lacking any one of them, he is no artist." It is this socially conscious and individual approach to their themes that makes these recent films of Raizman, Tarkovsky and Kalik so notable.

This is the war as seen through the eyes of a 12-year-old.

IVAN'S CHILDHOOD

The Nazis have killed his parents, robbed him of childhood.

Driven to avenge his parents' death, he goes off to the front.

Sixteen-year-old Xenia (right) and Boris (far left) are the leading characters in a film about adolescent love destroyed by the crassness of adults.

WHAT IF IT'S LOVE?

YULI RAIZMAN has won his way to the hearts of Soviet moviegoers with such memorable films as *Mashenka* and *The Communist*. His current release *What If It's Love?* and Mikhail Romm's *Nine Days of One Year*, represent a current and highly successful trend toward what film people call "screened prose" — pictures that are essentially introspective, with the narrative a vehicle for psychological probing in depth.

Raizman has chosen a theme with universal appeal—adolescent love. His simple story dramatizes the first vague and tender stirrings of that troubling passion. Xenia, a bright-eyed serious girl, and Boris, a stocky boy with a mind of his own, have been writing to each other. They think themselves in love. But the budding emotion of these 16-year-olds frightens their parents and teachers, who raise such a fuss that the affair almost becomes a court case. The narrow-minded adult prudes make a project of separating the youngsters. Xenia, shamed by the backbiting and the whole sordid business, tries to poison herself. Her life is saved, but her feeling for Boris has been muddied beyond redemption.

Raizman does not prettify the situation; he speaks out sharply against self-righteousness and hypocrisy. But for all the heartbreak, the picture does not leave the audience depressed. Raizman does not merely tell the story, he declares war on ugly-minded people who destroy what they cannot understand. Trust young people, he says, try to understand what they feel and experience. The tragic ending is thereby transformed into a call to battle against stupidity, a defense of the right to happiness.

This dominant note in the film determines its straightforward and understated artistic pattern—no startling angles, no tricky close-ups, no incidental nature scenes. It is worth noting that the director deliberately chose newly built residential districts for his locale, perhaps to show that new housing and better living do not necessarily make for more intelligent or kindlier attitudes, that new, communist relations between people do not just happen, they must be fought for.

A few months ago the veteran film director Mikhail Romm spoke out with youthful vigor in praise of *Ivan's Childhood* and *Following the Sun*, the first films made by the young directors Andrei Tarkovsky and Mikhail Kalik. Romm, true to his reputation for objective and broad-minded film judgments, was enthusiastic about these pictures that seem to clash so

violently with his own subdued narrative approach in *Nine Days of One Year*. Romm applauded his young colleagues not only for the glowing talent manifest in their films but because he thought it important to lend his authority to the growing number of young film directors who are following the poetic tradition of Sergei Eisenstein and Alexander Dovzhenko.

The pictures of Tarkovsky and Kalik, while in that tradition, strike a new and refreshing note. Most important for this type of film is the choice of hero—his perception of people and things must be fresh, uncluttered by habit. Perhaps it was for this reason that Tarkovsky and Kalik both chose children as their principal characters. Iosif Olshansky, whom many non-Soviet viewers will remember for his screen play *The House I Live In*, once made this comment on the world a child's eye sees: "It is man's nature to want to know the world that surrounds him. But all too often that wish to know is dulled by the years. As we grow old, the world begins to lose its glamour and romance. Our once keen vision is often given back to us by the child, who looks at the world with curious, wide-open eyes."

This vision—a happy one—is returned to us by six-year-old Sandu, off on his marvelous journey in *Following the Sun*. In the film *Ivan's Childhood*, we look through the tragic eyes of twelve-year-old Ivan, who lost his parents in the war.

Sandu and Ivan are both discovering the world. But while it is a peaceful, happy world Sandu sees, Ivan sees only death and devastation. He looks at the world with eyes blurred by hate, pain and anger. War has deprived him of every childhood joy, has seared his very soul. Only in dreams does he catch fleeting glimpses of happiness—his mother's smile, the soft patter of summer rain, a branch of a tree bending under its weight of apples, himself lying on soft, green grass. But the war is in his dreams, too—night after night the terrible sight of his mother falling dead, the screams of people dying. He awakes, consumed by unchildlike hate, and dry-eyed, seeks revenge for his blighted childhood.

Tarkovsky's generation was too young to fight in the war, but it was old enough to suffer its terrible hardships. And Tarkovsky looks back on the war with the remembered eyes of childhood and curses fascism for its monstrous intent to exterminate life, blot out happiness, destroy the future, desolate not only the land but men's souls. With almost insupportable impact we see into the war-ravaged, grief-stricken, hate-filled heart of this child.

Ivan's Childhood is a film that stands by itself. It is a screen poem, with every detail a tragic fact and a symbol of the clash of light and darkness, life and death, the humane and the brutal.

And yet, despite its tragedy, the picture strikes a note of deep hope and faith. Ivan, grown to manhood before his years, goes off to the front to fight for the childhood of the generation to come.

Sandu, the little hero of *Following the Sun*, belongs to that next generation. Mikhail Kalik has the same poetic vision of the world as Tarkovsky. But while *Ivan's Childhood* is the work of a director drawn to a tragic theme, Kalik sees the world through the radiant eyes of a six-year-old who is "following the sun."

Kalik's film has the sunny brightness and freshness of a child's miraculous discoveries, his wonder at the world's beauty and mystery. Little Sandu spends a whole day wandering about the streets of a bustling southern town, a day as full of discoveries for him as a voyage to a new world would be to an adult. The boy meets many people, each one a new and exciting revelation. He learns about birth, death, love, work and the other mysteries of life.

Never for a moment does Kalik forget his hero's tender age. We know that the boy does not understand everything he sees, but we know also that he can intuitively distinguish the bad from the good, long for justice and detest evil. That is what gives significance to his encounter with the callous, stupid head of the city park who orders a sunflower uprooted becaues he thinks it mars the beauty of his cultivated garden beds. That is why the child is so grieved when he realizes the chatty, joy-loving shoemaker he meets lost his legs in the war. As Sandu wanders through the town, he drinks in the life around him with fascinated eyes. Like the sunflower, he turns his face to the sun and to sunny people.

Mikhail Kalik's direction and Vadim Derbenev's photography mark them both as bold venturers in filmcraft. The wealth of color and festive beauty in the film makes the screen come more scintillatingly alive than it has been for a long time. This is a picture that fairly radiates warmth and sunshine.

Man's right to happiness is what Raizman, Tarkovsky and Kalik have filmed. Their artistic approach is different but their statement is essentially the same—man's responsibility for man. In that sense their films are representative of today's Soviet cinema. ★

In Mikhail Kalik's poetic film a young child discovers the world.

FOLLOWING THE SUN

To six-year-old Sandu every person he meets is a new revelation.

CRIMEA

USSR

SOVIET LIFE TODAY

20 Cents
DECEMBER 1962

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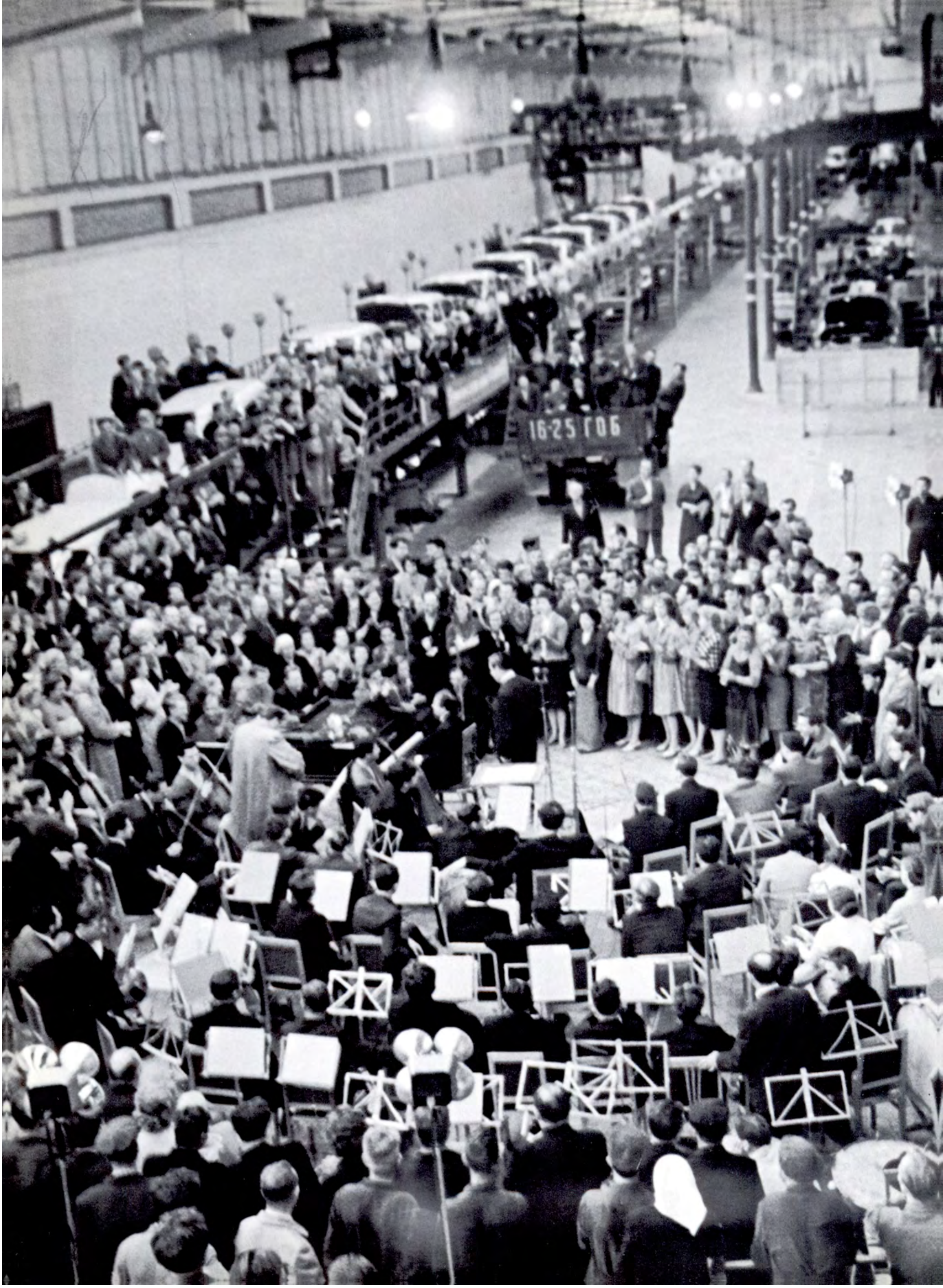
16-25 ГОБ

PHILHARMONIA CONCERT AT THE GORKY AUTOMOBILE PLANT.

MUSIC FESTIVAL ON THE VOLGA

BY ALEXANDER MEDVEDEV

GORKY, the old Volga city of Nizhni Novgorod renamed for Maxim Gorky, was the setting this summer of an immensely successful first Festival of Modern Music that was the talk of the whole country. Highlights of this musical holiday were broadcast nationally over radio and television.

Those taking part included composers Dmitri Shostakovich, Aram Khachaturyan, Dmitri Kabalevsky and Tikhon Khrennikov; cellist Mstislav Rostropovich; singer Galina Vishnevskaya; pianist Yakov Flier; and Second Tchaikovsky Competition prize winners Natalia Shakhovskaya and Boris Gutnikov. The Moscow Symphony Orchestra was conducted by Kirill Kondrashin, and the favorite of Soviet music lovers, Van

Dmitri Kabalevsky is more generally known as a composer. Here at the Gorky Festival he conducts the Volga city's Philharmonia.

Composer Aram Khachaturyan, anc of the famous festival participants, vis school for musically gifted chil

Cliburn, was a most welcome guest artist.

The intent of the festival sponsors was to offer the best of our century's music. The programs ranged from Ravel's *Daphnis and Chloë* and Stravinsky's *Firebird* to compositions by Britten, Hindemith, Bartok and Shostakovich. The works of America's Samuel Barber, East Germany's Ottomar Gerster, Brazil's Villa-Lobos, and the Soviet Union's Khachaturyan, Kabalevsky, Khrennikov and Kara Karayev were performed. Arkadi Nesterov wrote a "Solemn Prelude" for the festival; the small orchestral composition proved a charming opening number.

The concerts were held in the small, intimate hall of the Gorky Philharmonia. Originally five programs were scheduled, one a day, but the demand for tickets was so heavy that the Philharmonia arranged additional programs, supplementing some of the works already performed with new music.

People who had had occasion to attend many music festivals said they had never encountered such enthusiastic and appreciative audiences as in Gorky.

This was cellist Mstislav Rostropovich's comment:

"The atmosphere of the festival was remarkable, as though there were no footlights between the musicians and the audience. We were all gripped by a rare excitement. It seemed to me that art had bent down from its haloed Olympian heights to become intimate with the people, completely accessible to them. For Dmitri Shostakovich to sit in the hall during the performance of his own symphony, for Aram Khachaturyan to conduct his own work and then talk with his listeners for hours on end, for Tikhon Khrennikov to visit a factory and discuss the development of modern music with the workers was all very much in the natural order of things.

"It was gratifying that the festival was not confined to Philharmonia Hall. The concerts were held in clubs and Palaces of Culture, and broadcast over radio and television to enormous audiences.

"One of the concerts was held at the Gorky Automobile Plant's Palace of Culture. It was there that Van Cliburn played first. The world-famous pianist was obviously touched by the reception given him.

"Another memorable concert was given in the auto plant's assembly shop. The machines, the lathes and the cranes all came to a stop, and the workers crowded into the galleries and around the orchestra, some even moving in between the musicians. You had the feeling that music was smiling down at the people, telling them important things to help them live and work better."

The choice of Gorky for the festival was not made at random. Gorky is a music-loving city with a very active musical life. The city has an opera, the Philharmonia, a conservatory, a college of music and several music schools, besides its own branch of the Composers Union.

The Philharmonia issues subscriptions for the 150 symphony and chamber music concerts given every year. The Gorky Music Lecture Bureau has 20 branches in different parts of the city. In summer symphony concerts are given in the famous open-air stadium on the Volga bank to audiences of 10,000 and more. ★

Gorky reserved its heartiest greeting for Van Cliburn, who was a guest performer. The lady on the left is his mother.

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Covers: Titov, Gagarin, Nikolayev and Popovich are interviewed by *USSR* staff writers. *See story on page 32.*

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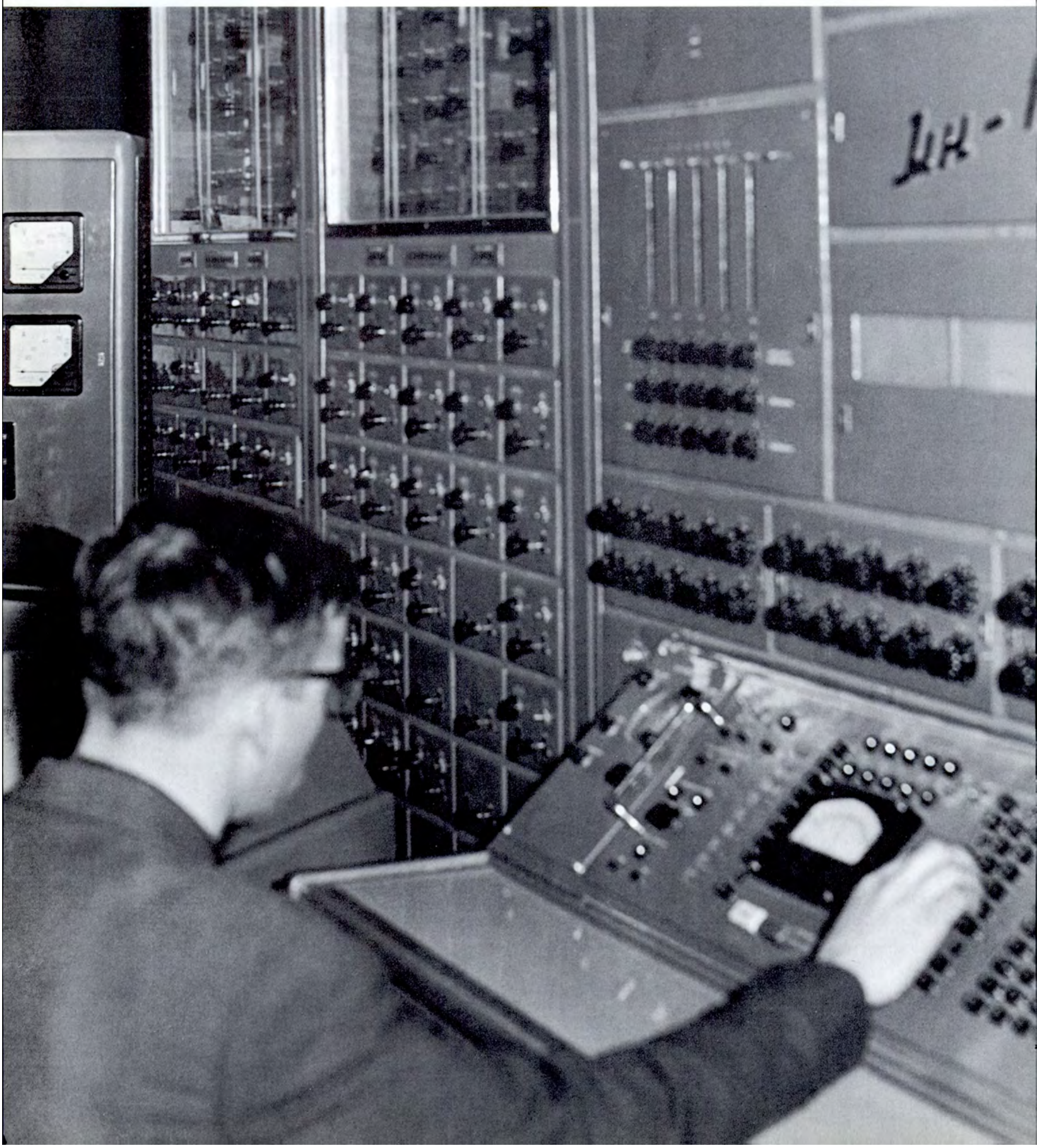
SPACE TO EARTH

BY AMIR TRIFONOV
PHOTO BY ALEXANDER MOKLETSOV



The perfect teamwork of a great many ground services, including the Coordinating and Computing Center, contributed in no small measure to the success of the* Vostok III *and* Vostok IV *group flight.

***This is an abridged version of an article that appeared in the newspaper* Pravda.**

WHEN the loudspeakers boomed out "Attention!" the subdued hum of conversation died down. Over the radio came the familiar voice of the Chief Designer in charge of the technological aspects of the flights of *Vostok III* and *Vostok IV*. The Chief Designer was in the cosmodrome, just as he had been when *Vostok I* and *Vostok II* were launched. Present also was the Space Theoretician. And working full blast was a large team of scientists, designers, testers and technicians, all involved in the flight preparations.

This was the brain trust monitoring the many services, centers and agencies concerned with the launching and flight of the spaceships. The Coordinating and Computing Center was one of these many agencies. I went there first and watched the team and section heads respond to the directions of the Chief Designer. Tension grew as the launching hour approached.

I went into the Operation Room. One of its walls was a huge screen showing the movement of the various satellites and spaceships against a fluorescent map background. Installed in the room were several TV screens on which the most important of the computations were being flashed.

A special globe installation mounted not far from the large screen would be giving an "almost life-size view" of the flights of the two ships. The model was connected with an electronic computer, and all data on the ships' movements would be converted, after processing, into signals monitoring the satellite model, which would leave a red trace behind as it glided in its orbit.

The globe would reproduce the orbits of the ships graphically and accurately. The smallest deviations from the pre-set trajectory and all variations in flight would be shown on the model with graphic accuracy. An illuminated chart was to show variations in the circuit period, apogee and perigee, and a special device was to indicate whether the ship was in the sun's light or the earth's shade at any given moment.

The many desks and stands were piled with maps and drawings over which the team and sector heads were poring. The Control Section was one of the most crucial links in the Coordinating and Computing Center. The section's engineers on duty were studying the flight program.

This program was the product of months of work by scientists, designers, physicians and the cosmonauts themselves. It specified at which circuit, at what time and in which sequence the systems aboard the ships were to operate. The program also defined the problems that had to be solved by the cosmonauts themselves. Each item of the program was coordinated with the programs of all the services of the ground monitoring-measuring complex.

The Control Section had to digest all information on the specifications and variations of the orbit, the proper functioning of all instruments, program changes, and possible deviations or breakdowns in the operation of the equipment. All had to be taken into account so that stand-by equipment could be rushed in or adjustments made at the technical head's instruction.

"Coordinating Team" was printed on the door of the room we entered. With data processed by electronic computers, this team would determine at what moment, at what distance, on what side and at what angles to the horizon, with respect to a specific monitoring-measuring point, the ship would appear and hence when it could be communicated with.

It is impossible to control a ship with the necessary accuracy without coordinates based on a known orbit. Hence the job of this team was to determine the actual orbit of the flight as accurately as possible by evaluating the orbital measurements taken during the flight against the experience gathered in all the previous launchings.

We stopped at a door bearing the terse inscription "T-2," which meant that this was one of the operational telemetric teams.

Scores of transducers were to track the ships. They would report their data over a multichannel telemetric system to the ground monitoring-measuring stations. This radio-telemetric data would describe the cosmonaut's condition objectively and indicate the need for terminating the flight even though the cosmonaut might feel fine and radio to say as much. Specialists on the different systems aboard the ships sat at their scanning desks. They were to evaluate the data transmitted from the ship to the launching site and the T-2 team, and report on the operation of the spaceship systems.

We entered another room which housed telemetric team T-3 in radio communication with measuring ships far out at sea. The telemetric stations aboard the ocean-going vessels would be reporting especially important data on the operation of the equipment aboard the spaceships whenever the ground telemetric stations of the monitoring-measuring complex on the territory of the Soviet Union were not receiving the desired teleinformation.

We were introduced to another important service: the team charged with landing the ships. Once again we saw a multitude of maps with landing areas indicated. The area in which the ships and cosmonauts were to land under normal conditions of flight and descent was marked by a rectangle that took in the city of Karaganda in Kazakhstan. Everyone was confident the ships would land exactly in the pre-set area, but the maps also showed "reserve landing areas" in case the ships should have to land at unscheduled circuits. Provided also were alternate routes for emergency landings. Nothing had been left to chance.

I went over to the desks where the landing team was working. Here again I saw maps of the areas where the cosmonauts were expected to land. The team had ingenious devices for high-speed detection of the landing point. These were connected by special communication lines with the services which were to intersect by radio and radar the spot where the ships came out of orbit and transmit the data on the actual trajectory of the descent and the landing point. The specialists of this team would be the first to spot—only by map, it is true—where the cosmonauts had landed and would alert search planes and helicopters.

When the 30-minute alert signal transmitted to all services of the center sounded, I hurried back to the Operation Room. I met many of the people who had handled last year's *Vostok II* launching. There was something different about them, something I had not noticed last year. The several space satellites launched in the year past had given them more experience and confidence. They were calmer, more deliberate.

11:30. Start!

Now it was a matter of seconds.

"Ten seconds of flight."

"Everything OK," announced the operator on duty.

Twenty seconds . . . thirty seconds . . . forty seconds . . .

"Everything OK!"

The first crucial stage was over.

"First stage separated on time. By telemetrics all parameters were normal."

Those on duty marked time by stop watches, the rest of us by the second hands of our watches. Finally the spell was broken.

"Last stage engine switched off exactly on time."

And then—almost instantly:

"Ship and carrier rocket separated! All parameters normal."

Now the Signal radio transmitters aboard the ship should be announcing, "Everything OK; ship orbited." But Andrian Nikolayev's clear and confident voice anticipated the signals.

"Everything in order. Everything fine; the ship is in orbit!"

As though in confirmation, many of the stations and observation points joined in. "Receiving the Signal transmitter of *Vostok III*. Reception good." "Receiving and taking bearings of *Vostok III*. Here are the bearings." The bearings received were instantly processed and confirmed the fact that the ship was in orbit.

The trajectory had been measured radiotechnically since the take-off of the rocket and the data transmitted by special lines to the computer centers and fed automatically into computers that were to answer these questions. Was the ship in orbit? What were the orbit parameters? Did the orbit differ essentially from the one calculated?

Finally came the report that the ship's velocity was sufficient and that she was moving in the designated orbit. In a few minutes, on the strength of data furnished by several computers, a reliable report was drawn up at the Coordinating and Computing Center. Comparison with the calculated data showed that the orbit was astonishingly accurate; deviations were insignificant. The computations which the designers and launchers had made were brilliantly confirmed.

The Technical Director ordered that the data be quickly checked against the large number of measurements now available so that the orbit parameters could be determined with the greatest possible accuracy.

"Everything in apple-pie order. Everything OK. All systems of the ship operating well," the cosmonaut reported meanwhile.

The Signal transmitter was full on. The telemetric systems kept working. Trajectory measurements continued. Physicians checked the cosmonaut's heart and pulse. Television cameras showed the cosmonaut at various angles. Life aboard the *Falcon*—code name for *Vostok III*—

moved into a rhythmic pattern as the spaceship made circuit after circuit. Meanwhile the work tempo at the maps and instruments inscribed *Vostok IV* quickened visibly.

The illuminated charts that showed the time for the launching were all ablaze.

"One minute alert!"

In the dead silence the loudspeaker brought the Chief Designer's wishes for a happy journey to the *Golden Eagle* and the brisk reply from Pavel Popovich:

"Everything all right, feel fine, ready to start."

It was 11:02. Start!

Vostok IV started off on the split second. Once again each tense second of the flight was counted off and compared with the calculated program and trajectory. The long-awaited report finally came: "*Vostok IV* in orbit! Two men in space!"

A group flight of two spaceships was a reality. *Vostok IV* had been orbited so accurately that the distance between the *Falcon* and the *Golden Eagle* was about three miles.

The work of all the ground services, and especially of the Coordinating and Computing Center, now became much more complex. In accordance with the schedule, the services that were measuring the orbit, receiving telemetric information and communicating with the Signal transmitter, and the tracking stations and computers as well, had to divide their activity between the two ships. At designated moments some of them were to switch from one ship to the other.

The work of the communications men had also become more complicated. The ships were transmitting on the ultrashort-wave and short-wave bands. The quality (audibility and clarity) of ultrashort-wave communication is better; there is not so much interference and less need to depend on the state of the ionosphere. However, ultrashort waves do not follow the curvature of the earth and communication is reliable only in a straight line. Since the velocity of the ships' flight was about 300 miles a minute, the period of operation of each ultrashort-wave station was comparatively limited.

The center directing the communications network that extended from the western border of the Soviet Union to the Far East had an intricate problem: to communicate with both ships without losing a single moment and to be able to switch from one station to another more favorably situated in relation to the ship.

In such situations short-wave communication was a stand-by medium. When the ships left the confines of the Soviet Union and were out of the reach of ultrashort-wave stations, powerful short-wave centers took over as the principal medium of communication.

More complicated though it was, the work of the Coordinating and Computing Center and the allied ground services became even more rhythmic. "Everything as planned." "Everything normal." "Everything strictly by schedule." "All according to flight mission," were the replies given by the operator on duty and his assistants to questions over the public address system and to control calls.

Activity on the launching site, the Command Post in charge of the flight, and the Coordinating and Computing Center then entered what was probably the most crucial phase after the orbiting—preparations for landing.

The utmost accuracy in determining the orbit was necessary to rule out every complication that might arise from landing in an unsuitable area. All changes in the period of rotation, the perigee and apogee were carefully calculated. All descent trajectory sections were calculated in different variants, plotted and analyzed. Additional monitoring estimates were made.

The information on the operation of the ships' systems telemetered to the ground was gone over once again from every angle and stage by stage. The cosmonauts, in turn, checked the ships' landing systems and reported: "Everything in order aboard."

The Chief Designer radioed both cosmonauts, asked how they felt and whether the ships were prepared to land, and after talking it over with them, decided on a catapulting descent. Then he personally checked the readiness of all ground landing services.

The calculations for monitoring the descent of the ships were completed at the Coordinating and Computing Center. Everything was also prepared for an emergency descent after additional circuits. Now the Coordinating and Computing Center concentrated on the descent, landing, and search teams.

The problem was much more complicated than the landing of the Gherman Titov's *Vostok II*. Both ships had to be landed not far from each other with a time interval of about six minutes.

Once again it was a matter of seconds. *Vostok III* and *Vostok IV* were signaled to descend.

Reports came pouring into the Command Post and Coordinating and Computing Center; retrorockets were switched on and off on schedule. The descent began. Leaving their "celestial homes," the two ships, one after another, approached the territory of the Soviet Union. Their course was followed by direction finders and descent tracking stations, and the information was immediately transmitted through special channels to the launching site and Coordinating and Computing Center.

"Everything is proceeding exactly by coordinates received," said the direction finders and tracking stations.

And then Nikolayev was catapulted! Observation stations, direction finders and special reception centers tracked him throughout the descent.

The cosmonaut was still in the air, but the landing team had already processed the data received by the Coordinating and Computing Center and had confidently marked the landing point, right in the center of the landing area on the map. Communication with the now pilotless *Vostok III* was maintained. Signals announcing its successful arrival were transmitted by the stations tracking the ships. The ship's landing point was immediately marked on the maps.

Another large group of stations and direction finders was tracking the descent of *Vostok IV*. Nikolayev's parachute had not yet deflated when word came that Popovich had been catapulted successfully and his descent was proceeding normally. New points—the expected landing spots of the cosmonaut and his ship—were marked on the maps.

Both cosmonauts were still on their way down when the data received from the Coordinating and Computing Center brought planes, helicopters, parachutists, physicians and engineers to the expected landing points. One after another, planes and helicopters reported: "I see the *Falcon*," "I see the *Golden Eagle* descending."

And finally the ultimate triumph: both heroes back on their native land, both in good health, both hale and cheerful! ★

STEPS TO OUTER SPACE

1957. *October 4—orbital velocity is achieved. The Soviet Union puts the world's first man-made satellite, weighing 184 pounds, in an orbit around the earth. On November 3 a living organism makes the first orbital flight—the dog Laika carried by a sputnik weighing 1,120 pounds.*

1959. *Assault on escape velocity. January 2—the space rocket* Mechta *is launched. On September 14 the Soviet pennant is carried to the surface of the moon. On October 4 an automatic interplanetary station takes off for a flight around the moon; it photographs the dark side of the earth's lunar satellite.*

1960. *Direct preparation for manned space flight begins—a series of orbital ships weighing many tons are launched. On August 20 an orbital ship weighing 10,140 pounds lands exactly in the pre-set area.*

1961. *Man in space! On April 12 Yuri Gagarin, the planet's first cosmonaut, circles the world in 108 minutes aboard an orbital ship. On August 6* Vostok II, *piloted by cosmonaut Gherman Titov, starts its 25-hour, 435,000-mile flight.*

1962. *On March 16 the first of the* Cosmos *series of research satellites is launched, to be followed, as of this date, by nine others. In August Andrian Nikolayev and Pavel Popovich make a marathon group space flight.*

WHAT SOVIET ECONOMISTS DISCUSS AND WHY

BY ALEXANDER BIRMAN
Doctor of Science (ECONOMICS)

THE SOVIET PRESS devotes a great deal of space to economics. Newspapers and magazines constantly publish long articles and letters to their editors under such intriguing titles as "Obstacles or Jumping-Off Ground?" "Pros and Cons," "The State Plan and Tires," etc. Why all the discussion? After all, the country is doing well, and the seven-year plan is being fulfilled and overfulfilled.

What has happened is that *the Soviet Union's economy has entered a qualitatively new phase.* Having accumulated vast reserves and resources, our people have set out to create the material and technical basis of communism. There is even a period set for getting this colossal task done—twenty years. The country is carefully checking to see if everything is all right, if anything needs adjustment.

The Twenty-second Congress of the Communist Party of the Soviet Union, held last year, called for radical improvements in planning, for planning on a twenty-year scale. To meet this injunction that life itself dictates, Soviet economists are making a critical analysis of accumulated experience and methods in present use. This is what all the discussion is about.

As usual, "Russian experts" abroad lost no time clamoring about the "crisis" in Soviet planning. Alas, we must disappoint those who enjoy anti-Soviet sensationalism. In the course of the discussion no one had any misgivings about the Soviet economy or about the validity of economic planning. The principles of socialist planning have been tested in practice and sufficiently proved by the Soviet Union's achievements.

The single national economic plan opens and continues to open new economic horizons for us. Firstly, it guarantees a rational distribution of the national income and concentrates effort in the most critical cultural and economic areas. Our country, one of the most backward in Europe before the Revolution, has developed to the point where it can use more than one-fifth of the national income—several times as much as the United States—for accumulation purposes. The national economic plan has eliminated crises and made for an unprecented rate of economic growth.

Then there is the territorial distribution of productive forces. Could the economy have put the wealth of Siberia, the Far North, Central Asia and the Far East at the service of the country without a plan? And what about the unparalleled development of culture and science in a land where only four decades ago eight out of every ten people were illiterate? And the rapid and steady rise in living standards?

We witnessed many of the great achievements of human genius in this century; planned economy is certainly one of them. We have reason to be proud that the Soviet Union is the home of scientific planning.

The present discussion is about new ways and methods of planning, ways and methods appropriate to the new, higher level of national economic development.

Just as it is necessary to adjust certain details and parts of a newly created machine, so it is necessary, after the adoption of the control figures of the Soviet twenty-year plan, to find the best methods of planning and the best ways of implementing the plans. And for that the problems created by the unusually rapid development of our economy must be thoroughly analyzed. These are some of the problems.

Talking with drivers who were hurriedly and carelessly trucking prefabricated parts to a construction site, Oleg Antonov, well-known aircraft designer (one of the first to speak in the press on the need for better planning), discovered that their work quota was figured in ton-kilometers. Under the circumstances it is only natural that drivers (and transport companies too) are most interested in long-distance hauls. But what about short distances—just as important for the national economy—in housing construction, for example? Nevertheless the automobile and other transport companies have made it a practice to figure in ton-kilometers. Proceeding from this, Antonov moved on to a much more important question: Wasn't it about time to make plan indices that took into consideration the interests of the country as a whole and not only the interests of individual enterprises?

What is involved is much more than the problem of assessing the work done by truckers and transport companies. As a matter of fact, our methods of and criteria for planning date to the thirties and forties, when the country was going through the stormy process of industrialization, to a time when most branches of industry had to be built practically from scratch. Under those conditions it was sufficient to work out plan indices that would make it possible to determine, roughly and especially in quantitative terms, how well a given enterprise was doing and on this basis to define its future tasks.

The problem can be solved quite simply in mines and other enterprises where production is homogeneous: the job there is to mine so much and so much coal. But transport is not coal, and the problem is much more complicated. It is even more complicated in the chemical and textile industries that manufacture dozens and even hundreds of different items at the same time, or in an engineering plant with a huge and variegated production program. To reduce these commodities to one denominator, one must perforce resort to a conventional gauge. Lathes and metal goods are usually assessed in tons; other types of goods, in rubles.

And that is where we have, or at any rate can have, a contradiction between what is "profitable" for an enterprise and what is really essential for the socialist economy, whose ultimate goal, let us keep in mind, is to satisfy as completely as possible the needs of all the members of society.

If the plan is figured in tons, then the heavier the lathe, the easier it is to fulfill the plan. And yet the consumer, and consequently society as a whole, has no use for extra-heavy lathes. If the plan for a furniture factory is figured in rubles, an unscrupulous manager may be tempted to manufacture 10 sets at 100 rubles each instead of 100 sets at 10 rubles.

These problems have long worried our economists and managers of enterprises. What is the best way out? It is clear that the plan should be based on indices that would best satisfy the interests of the consumer and stimulate production along the lines required by society. But how are the efforts of each enterprise to be directed at the same time?

Dozens of proposals have been submitted in the course of the discussion: how to stimulate enterprises to fulfill their plans, how to combine planning with material incentives to workers, etc. Unfortunately space prevents us from dealing with each proposal in detail. The majority agree that it would be impossible to find an index that would fit the many branches of industry. It seems necessary to work out improved, specific methods of planning and calculation for the different branches, areas and, perhaps, even types of production.

At the same time another problem arises: How are all these specific methods suitable for planning the manufacture of each given item to be united into the sort of whole without which the State Planning Committee cannot work, without which nationwide registration and control are impossible.

It would be desirable to have only a few basic indices, perhaps only one. Is it possible for profit to be a generalized criterion of the activity of an enterprise?

Professor E. Lieberman, well-known Kharkov economist, raised this question in an article in *Pravda*. Using mathematical methods and computing machines, he spent several years analyzing the work of dozens of engineering plants in Kharkov, one of the country's biggest industrial centers. He draws this conclusion: Although the production program of each enterprise is different and changeable, although technological progress affects each enterprise differently, it is possible to establish a more or less constant and stable correlation of production indices.

The optimal index is profit, Professor Lieberman says. On the one hand, it is organically linked with the entire activity of the enterprise, for each success and each failure is reflected in the profits. On the other hand, profits depend very little on changes in the production list.

Professor Lieberman's proposal, published simultaneously in *Pravda* and the magazine *Problems of Economics*, gave rise to a lively debate. But before I discuss the proposal, I should like to say a few words about the reaction it has evoked abroad.

Western economists regard Professor Lieberman's proposal as nothing short of "renunciation" of socialist principles, "renunciation" of the planned economy, as a return to the "old" and "natural" stimulus of the capitalist economy. This is obviously wishful thinking, for profit categories in socialist conditions have nothing in common with those under capitalism.

Firstly, the means of production in the USSR belong to the people, to society, and consequently the fruits of production do not go to individuals or private companies but to the whole society. Therefore the aim of production is not profit but the satisfaction of the needs of all the people, of society as a whole. Secondly, prices in the USSR do not shift spontaneously with the market but are fixed by the state; profit is not a consequence of profiteering, temporary boom or of buyers being deluded by high-pressure advertising.

When Soviet people talk of profit, they mean that part of the national product (national income) which remains at the disposal of society and is spent in three ways: to raise living standards, expand the economy and build new enterprises; to pay for free medical treatment, social insurance, etc.; and to meet administrative and defense expenses.

Professor Lieberman and his many followers do not suggest profit as the main index because they regard it as an end in itself. They do not at all propose that the branches that make the most profit be developed first.

Soviet economists look at the problem from an entirely different point of view. They think of profit as a convenient, generalized index which makes it possible to assess the work of an enterprise from every angle. There is general agreement that with the rise of labor productivity and reduction of production costs the government must periodically cut prices (which would correspondingly decrease the profits of the enterprise). A socialist society, since it is both producer and consumer, does not have to "enrich" itself at its own expense.

Professor Lieberman's opponents claim that profit cannot be the *only* criterion for assessing the work of each enterprise because there are other factors beside efficiency that determine how much profit an enterprise makes. In fixing prices and, consequently, predetermining the level of profit, the government cannot ignore such economic factors as correlation of supply and demand, significance of a given type of goods, necessity of stimulating or limiting its consumption (alcoholic beverages, for instance), etc.

For instance, with the price policy followed in the Soviet Union, factories that make children's footwear or clothes will always be less profitable than the regular footwear or garment factories, not because they are less efficient but because prices of children's footwear and clothes are deliberately fixed low. Likewise in the interests of the consumers, low prices are fixed for mineral fertilizers, many raw and finished materials, textbooks and other items.

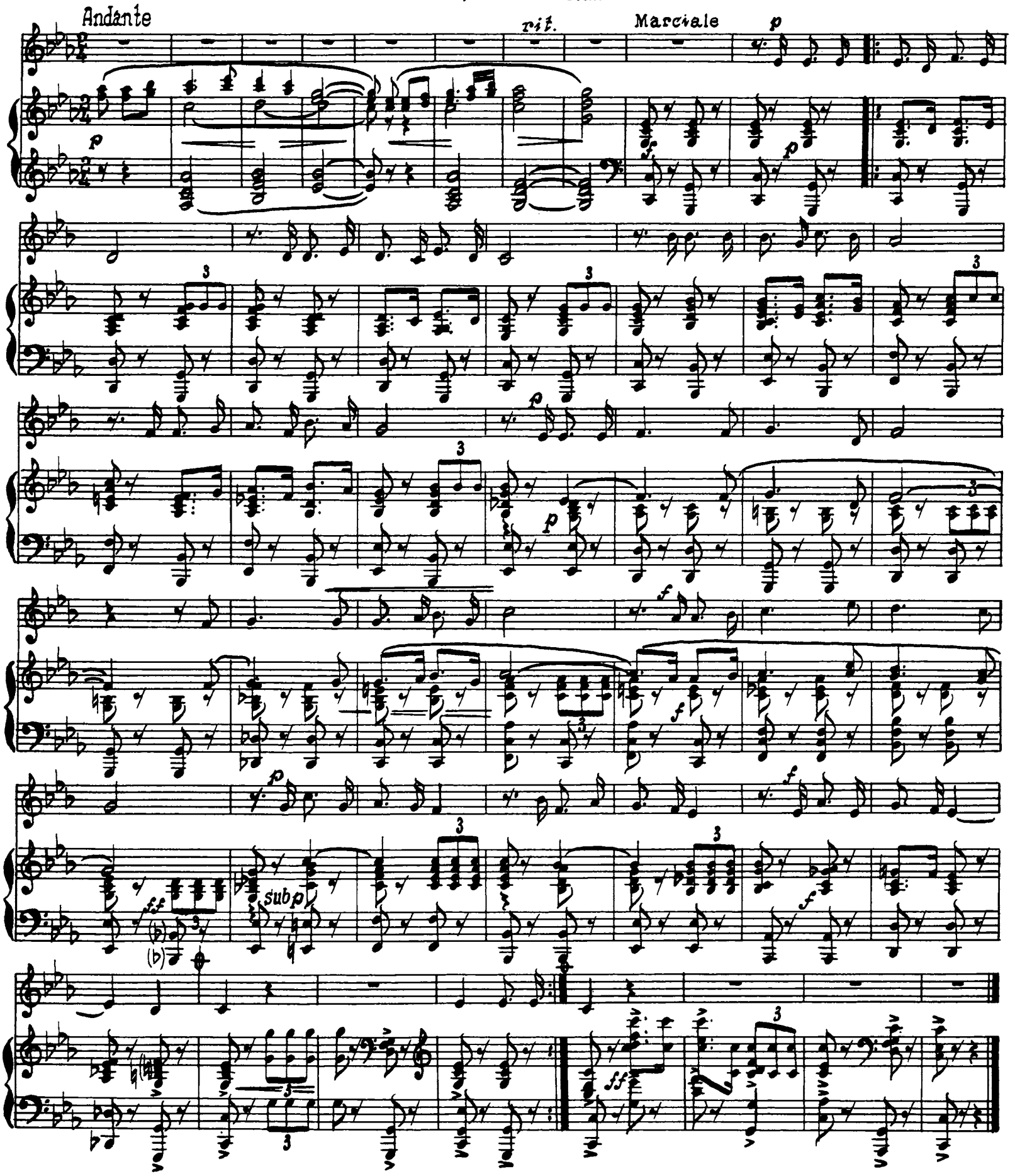
Everyone agrees that whatever proposal is ultimately adopted, it will have to be tested. Economic experiments take time. But there is no reason for undue haste—the Soviet economy, I repeat, is advancing steadily and at a very high rate.

We can say now, even without predicting the decision that will finally be made, that the shortcomings and obstacles in planning and economic management revealed in the course of the discussion will be eliminated.

This will permit our enterprises and our whole socialist economy to make fuller use of available resources, to move along at an even faster rate, to satisfy the needs of the people even more fully. We shall thus fulfill one of the most important tasks set us by the new Party program: to achieve the best results at the least possible cost to our society and all its members. ★

Do the Russian People Stand for War?

Words by YEVGENI YEVTUSHENKO
Translated by OLGA MOISSEYENKO
Music by EFIM KOLMANOVSKY



Do the Russian people stand for war?
Go, ask the calm on plain and shore,
The wide expanse of field and lea,
The birches and the poplar tree,
The soldiers who once fought abreast,
And near the birches lie at rest,
Their sons will answer by the score,

Ask them if the Russians are,
Ask them if the Russians are,
Ask them if the Russians are
for war.

Not only for their country's life
Did soldiers perish in the strife—
But that all human creatures might
Sleep always peacefully at night.
Ask those who fearful battles knew,
Who on the Elbe rejoiced with you,
We keep these memories evermore—

And ask if the Russians are,
And ask if the Russians are,
And ask if the Russians are
for war.

Yes, we indeed know how to fight,
But we do not want the same sad
plight—
That soldiers should be killed again
And lie upon the blood-drenched plain.
Ask mothers if we are for strife,
Go, ask this question of my wife,
And you will need to ask no more

If the Russian people are,
If the Russian people are,
If the Russian people are for war.

(Piano performs first four lines of third stanza, after which the soloist concludes with these words):

The working people of each land
Will come, for sure, to understand
Throughout the world on sea and
shore—
If the Russian people are,
If the Russian people are,
If the Russian people are for
war.

THE UZBEK REPUBLIC

Interview with Rakhmankul Kurbanov

Chairman of the Uzbek Council of Ministers

Rakhmankul Kurbanov was born in 1912 to a poor Uzbek peasant family. He entered a teachers' training school at 16, completed the course and taught in a village school after graduation. From 1933 to 1937 he studied at the Bukhara State Pedagogical Institute and after graduation was appointed regional public education inspector. In 1939 the Uzbek Government awarded him the title Honored Teacher of the Republic. In 1943 he was elected Secretary of the District Committee of the Communist Party of the Soviet Union and subsequently First Secretary of the Andizhan Regional Party Committee.

The Uzbek Supreme Soviet appointed Rakhmankul Kurbanov chairman of the republic's Council of Ministers in 1961.

QUESTION: The Constitution of the USSR declares that each union republic, including Uzbekistan, is a sovereign state. Nevertheless such matters as concluding international treaties, questions of war and peace, the organization of the republic's defense, foreign trade, the administration of transport, the currency, contracting for and granting foreign loans all fall within the jurisdiction of the government of the Union of Soviet Socialist Republics. How then does the Uzbek Soviet Socialist Republic exercise its sovereignty?

ANSWER: Uzbekistan has its own territory, which may not be altered without the consent of the Supreme Soviet of the republic. Under the Constitution of the USSR, the right freely to secede from the USSR is reserved to every union republic. It is no accident that each union republic has a common frontier with some foreign state, otherwise this right would be nothing more than a fiction.

Uzbekistan has its own state institutions that have absolute authority over the territory of the whole republic, barring matters that are decided by the USSR Government with our consent. Because it is to our interest that the USSR Government handle these matters, we were willing to waive our jurisdiction.

But that does not mean that we have no say in decisions relating to them. Like every other union republic, we send 25 deputies to the Soviet of Nationalities, one of the two chambers of the USSR Supreme Soviet. Eleven of these deputies are elected in Kara-Kalpakia, an autonomous republic contained within Uzbekistan. Our President, Yadgar Nasriddinova, also serves as a vice president of the Presidium of the USSR Supreme Soviet. Uzbek deputies work on the standing committees elected by the Supreme Soviet—on the legislative proposals, budget, foreign affairs, and all the others. As head of the government of Uzbekistan, I am also a member of the USSR Council of Ministers, as are the heads of government of the other 14 union republics.

The economic and cultural life of our republic is regulated by laws adopted by our Supreme Soviet. Uzbekistan has the right to enter into direct relations with foreign states. It has its own constitution, its own code of laws, which takes the special national characteristics into account and differs in some ways from the corresponding codes of the other republics. We also have our own judicial system, our own flag, arms and anthem.

We have a flowering national culture. Uzbek is the official language of our republic. It is used in books and newspapers, over the radio and TV, and on the stages of our theaters. Grade and high school teaching is done in Uzbek.

But the best proof of our sovereignty is our flourishing economy. Before the 1917 Revolution, Uzbekistan was a colonial appendage of Russia, supplying the raw material for her textile mills. Even had there been the possibility of an independent existence then, we would still have been dependent upon the owners of these mills. Things are different now. With the help of the other Soviet peoples, Uzbekistan has established its own industrial base. We have built our own textile mills and even the plants to manufacture the machines for those mills. We produce our own steel, coal, oil, chemicals. Dozens of our research institutes are working on problems that bear on the republic's economic development.

QUESTION: If Uzbekistan has the possibility and the right of existing independently outside the framework of the USSR, why has the question of secession never come up?

ANSWER: Because life inside the Union suits us. The Soviet republics joined forces 40 years ago with a common aim—to build socialism. Alone, each one was too weak to embark on the road of socialist development. Take Uzbekistan. The Revolution gave power to the people. But czarism had left the Uzbeks a miserable legacy. There was no industry, and agriculture was primitive. Ninety-eight per cent of the population could neither read nor write. The other peoples of Russia—the Russians, Ukrainians, Byelorussians—gave us a helping hand. In 1920 a group of Russian scientists came to Tashkent and helped us set up the first Central Asian university. When we began to industrialize our republic at the beginning of the thirties, the industrial equipment we needed was sent to us from all parts of the Soviet Union. Our young people went to the universities in Moscow, Leningrad and Kiev and learned new trades at factories in the Urals and Ivanovo. As a result, Uzbekistan now produces as much in one two-week period as it did in all of 1913. Uzbekistan became an economically strong and sovereign state, not through its isolation, but through its close contact with other Soviet peoples. Think what would have happened in 1941 when Hitler invaded the country if instead of a strong Union of Soviet Socialist Republics there had existed separate, disunited republics. They would most certainly have been wiped out, one by one. Only the existence of the USSR, as a united sovereign state, saved the Union as a whole and each republic singly from enslavement, as it did the other nations of Europe.

There would be reason to secede from the

Union if our political or economic independence were suppressed, if our national interests or our culture were ignored. But our economy is growing, our national culture is flourishing, our national traditions are respected. And the growing political stature of the Soviet Union means growing political stature for Uzbekistan.

QUESTION: You said that Uzbekistan is an industrially developed country. Does that mean that it produces everything its people need?

ANSWER: Few countries in the world, I imagine, produce everything required by their people. That does not depend on the level of economic development alone, many other factors are involved—geographical conditions, for instance. We need timber, but what do we do if we have no trees? We need blubber, but we have no exit to the sea, and, therefore, no whaling fleet. Economic independence hinges not so much on a country's ability to produce every kind of goods as on the possibility of getting them for the country.

QUESTION: We know, of course, that a republic can export its excess goods to other republics or abroad in exchange for goods it needs. What does Uzbekistan supply to other parts of the Soviet Union or foreign countries?

ANSWER: The republic has more than 70 branches of modern industry, with machine building and metalworking the most important. Our machinery plants manufacture machine tools and conveyor lines for the textile industry, equipment for chemical plants, all types of cotton-cultivating machinery, transformers, etc.—altogether 250 different types of machine tools and units. All this is not only for home consumption. We send agricultural and textile machines, radioengineering goods, cinematography equipment, excavators, compressors, etc., to other union republics. We also supply them with silk, astrakhan, mineral fertilizer and fruit.

Formerly raw cotton was the traditional item Uzbekistan exported. It was processed at factories in Central Russia, and the finished goods were sent back to us. The situation is quite different now: We grow a lot of cotton, approximately three million metric tons a year, which is practically equal to the joint production of Brazil, Pakistan and Turkey, although the aggregate population of these three countries is 20 times that of our republic. But the basic item of our exports nowadays is not raw cotton but cotton fabrics and other textiles woven by our own mills.

Our industrial goods and agricultural produce go to 52 countries. We supply the Eastern countries with farm machines and excavators; our astrakhan is highly prized in the USA, and Britain and the Federal Republic of Germany (FRG) buy our cotton fiber.

Gas is assuming increasing importance for our economy. Gas mains have been laid in Bukhara, Samarkand, Tashkent, and we are now building a pipeline from Gazli to the Urals that will bring cheap fuel and raw material to the Urals industry.

We also have a number of industries working exclusively for home consumption—iron and steel, oil, coal, building materials, leather, and some others. Uzbekistan now has 1,300 big enterprises as compared with neighboring Iran, which has more than double our population and only 400 factories and plants, and these of smaller capacity.

QUESTION: You said that in the years of Soviet power Uzbekistan developed from an agrarian appendage of Russia into an industrially developed state. What is your industry-agriculture ratio?

ANSWER: Approximately two to one—two-thirds industry, one-third farming.

QUESTION: Will this ratio stay unchanged during the next few years?

ANSWER: No, I think the proportion of industry will probably grow. Our seven-year plan forecasts the construction of a number of new enterprises. Uzbekistan's great mineral wealth is being developed. Nonferrous metallurgy is slated to expand—by 1965 the production of copper, zinc, lead and tin is to multiply several fold. A nonferrous ore mining and concentration works will shortly begin to operate at Altyn-Topkan. More and more oil is being drilled, and the largest oil refinery in the East is being built in Fergana. This will be the second of its kind in Uzbekistan, and the two will refine all the oil drilled in Uzbekistan and neighboring Kirghizia. A chemical plant for the production of synthetic wool is under construction in the city of Navoi, and a nitrogen fertilizer plant is going up in Fergana.

But the most rapid progress of all is being made by our power engineering industry. And this makes an accelerated rate of development possible for other branches of industry and for agriculture. The gross output of industry is expected to show a 2.2-fold increase in the seven-year period, while the output of electric energy is scheduled for a 2.7-fold growth. The Angren thermoelectric power station with a capacity of 600,000 kilowatts is nearing completion, and a similar station with double the capacity is going up rapidly in Tashkent. Cement-mixing plants, electric transmission lines, textile and knit goods factories, light and food industry enterprises are being opened.

QUESTION: Although agriculture will comprise a smaller part of the republic's output, it is still scheduled to increase. How and by what means?

ANSWER: Cotton is our basic crop. We are third in the world, after the USA and China, in gross harvest, and are in the lead so far as crop yield is concerned. I would say that our good harvests are a result of mechanization and irrigation. In mechanization we have far outstripped neighboring countries. We now have one tractor to every 123 acres of crop area, while in Pakistan the ratio is one to 19,770 acres, and in Iran one to 42,000. Uzbek engineers have designed general-purpose machines for all the cotton-growing processes: sowing, cultivating, and the most laborious process—harvesting. Our aim is to increase mechanization even more. That is one way of guaranteeing still bigger cotton crops. The other way is to enlarge crop areas by reclaiming desert and semidesert land. Cotton needs a warm climate and plenty of water. We therefore wage a constant battle to overcome drought in the steppes. The blue ribbons of our canals keep winding farther and farther into the once barren Hungry Steppe, reclaiming fertile land. We have forced the arid Karshi Steppe in the southwest of our republic into man's service. This new area will yield two million metric tons of cotton annually. The extension of the irrigation network and the construction of new canals and big water reservoirs will protect our harvests from the caprices of weather.

In three years' time our cotton crop will increase by another million metric tons.

QUESTION: You talked about the progress made by industry and agriculture. How has this affected living standards?

ANSWER: In the past five years alone the income of factory and office workers in the republic rose by 27 per cent, and that of collective farmers by 33 per cent. It is worth noting that in the same period savings bank deposits grew 1.5-fold.

Under socialism, however, prosperity is not measured by income alone. We are constantly improving living conditions. In the course of a year our republic of nine million people builds more than 50,000 apartments. In Tashkent, Samarkand, Fergana, Bukhara, Pamongan and Nukus we have large construction enterprises that turn out prefabricated house sections that need only to be assembled at the building sites.

The government of the republic does a great deal of work to improve the free medical services available to the people. Uzbekistan has outstripped Britain and many other European countries in number of doctors per 10,000 inhabitants. Such diseases as Guinea worm, smallpox, malaria, cholera, which scourged Central Asia before the Revolution, have now disappeared. In the past three years the population of Uzbekistan has grown by almost 900,000 people, or 11 per cent.

QUESTION: An old Russian journal,* Vestnik Vospitaniya, *in an analysis of the all-Russian census of 1908, wrote that it would take 4,600 years to end the total illiteracy of the Central Asian peoples. How accurate was this prediction, would you say?

ANSWER: Accurate enough for czarist Russia. The Revolution ended illiteracy 4,000-odd years sooner. Eight-year schooling is compulsory in the republic; its 6,400 schools are attended by 1,600,000 children.

QUESTION: Your growing industry, agriculture and construction need thousands of specialists of all kinds. How is this demand met?

ANSWER: For the most part, Uzbekistan trains its own specialists. At two universities and 21 colleges 115,000 students are learning 133 different specialties. We have four times as many students for every 10,000 inhabitants as does the Federal Republic of Germany. The Tashkent Polytechnic Institute alone has more students than all the higher schools of Iran combined. But this does not mean that Uzbek students are not studying at universities and colleges in the fraternal republics. At present one out of every four persons in the country is attending a secondary school, college, university, technical or vocational school. A quarter of a million Uzbeks with a higher or specialized secondary education are employed in our factories, farms and institutions.

Uzbek scientists, whose number is steadily growing, are doing research in all the basic branches of modern science. The work of our scientific bodies is coordinated by the Uzbek Academy of Sciences, founded in 1943 at the height of the war. Altogether, we have 123 research establishments. In recent years we have set up institutes for nuclear physics, the chemistry of polymers, mechanics, water-conservation problems and hydraulic engineering, philosophy and law, etc. In 1958 the first atomic reactor in the East began operations as a nuclear physics experimental base in Central Asia.

The names of many of our scientists are well

nown beyond the borders of the Soviet Union. cademician Sadyk Azimov read a paper at the enth International Conference on the Physics of igh Energy Particles in the United States. cademician Ubai Arifov took part in the Inter- ational Conference on the Peaceful Uses of tomic Energy in Geneva. Hodicha Sulaimanova, n Uzbek lawyer, has spoken many times in ondon and Tokyo, Vienna and Delhi on various spects of international law.

Many of our scientists have been elected to onorary membership in the scientific societies f other countries. Tisha Zakhidov is a member f the International Society of Zoologists.

UESTION: What, in your judgment, is he most dramatic evidence of Uzbek cul- ural progress?

NSWER: I could tell you that we have 20 ate theaters, 220 writers, 65 composers, that e publish hundreds of books and dozens of ewspapers and magazines in the Uzbek lan- uage, in editions running into the hundreds of housands. But in the East the best criterion of ocial and cultural progress is the position of omen. Everybody knows how oppressed and umiliated women were in old Uzbekistan, how ney were deprived of all rights. Forced mar- ages, polygamy, the horsehair veil which shut omen off from the rest of the world—all these ere the usual and accepted facts of life.

Today thousands of Uzbek women are teachers, ngineers and agronomists, 7,000 women are octors, and 700 are scientists. One-third of the eputies of the Uzbek Supreme Soviet are omen. And the President of our republic is a oman—Yadgar Nasriddinova, an engineer by rofession. She visited the United States in 1959 s a member of the delegation to the opening eremonies of the Soviet Exhibition in New York.

UESTION: What trends in the republic's evelopment do you foresee?

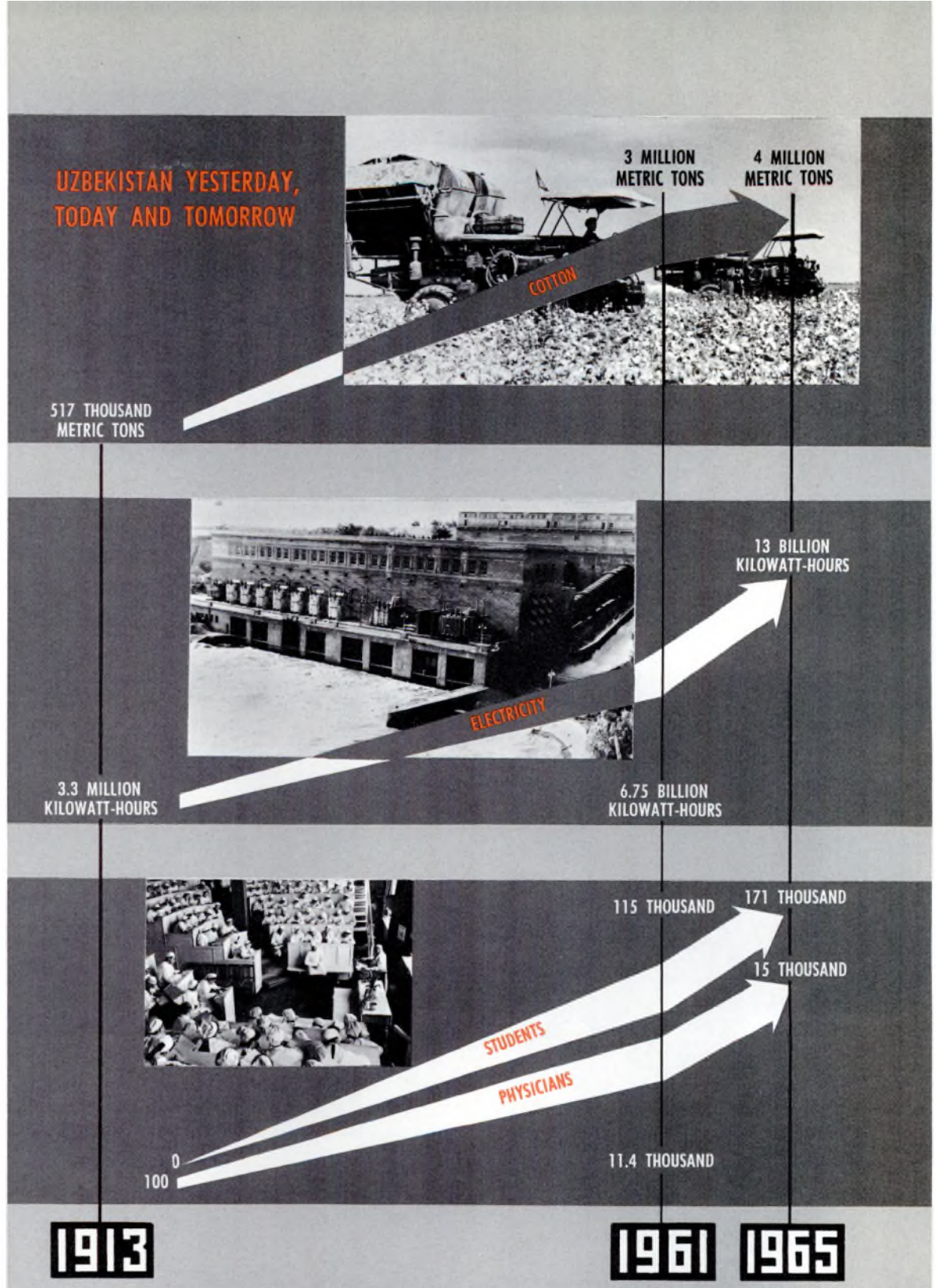
NSWER: Uzbekistan has enormous natural re- ources, a vigorous national culture. However, olation within our own borders would hardly elp us progress.

The history of the past 40 years is sufficient vidence that the mutual cooperation of the peo- les of our country promotes the development nd stability of each republic separately and of ne Union as a whole. I believe that the closer e come to communism, the closer our ties will e.

Should every branch of industry and agricul- ure be developed in each republic, or should we pecialize and cooperate, keeping the needs of ne whole country in mind? The experience of ur republic demonstrates that the second way is ne more profitable and efficient. We think, herefore, that the present division of labor mong the union republics should be further re- ned, their individual contributions to the de- elopment of the economy of the whole country nited and coordinated, so as to link the inter- sts of the Soviet Union with the interests of ach union republic.

Nor do I think that isolation would benefit our ational culture. On the contrary, it has been nriched greatly by communion with the cultures f the fraternal Soviet republics while influenc- g theirs in turn.

In union with the other Soviet republics we re building a new society—a society of abun- ance and the harmonious development of the dividual. ★



FACTS AND FIGURES ON UZBEKISTAN

Capital investments. *The total capital investments in the republic's economy (including social and cultural measures) in the past six years came to approximately five billion rubles (in new currency): 564 million rubles in 1956, 638 million in 1957, 802 million in 1958, 860 million in 1959, 972 million in 1960 and 1,063 million rubles in 1961—as much as in the preceding 40 years. Such leading industries as power production, mining, chemical, machine building, fuel and building materials developed at a particularly high rate in the past years.*

*

Mechanized agriculture. *The republic's agriculture has been greatly expanded and mechanized. Working in the fields of the collective farms and state farms are 70,000 tractors, about 9,000 cotton pickers, irrigation equipment and many excavators.*

*

White gold. *Soviet Uzbekistan will produce four million tons of cotton in the last year of the seven-year plan (1965), and in the next 20 years production will reach seven million metric tons a year. This grand goal will be reached by making better use of the irrigated lands, by further mechanization and by expanding the areas planted to cotton. The republic's cotton harvest in the current seven-year period will average 2,200 pounds per acre. On the irrigated land it will come to 2,400 to 2,500 pounds per acre.*

Irrigation. *Uzbekistan is investing large sums in irrigation projects. There was an almost eightfold increase in the volume of irrigation work in the seven years from 1953 to 1960. As a result, more than 494,500 acres of virgin land have been irrigated and brought under cultivation, and land improvements have been carried out on 990,000 acres.*

*

30,000 specialists a year. *Science and culture are developing in the republic. Uzbekistan has 120 scientific institutions, including a nuclear physics institute and a large computing center equipped with up-to-date electronic machines. Nearly 30,000 Uzbek specialists with a higher or specialized secondary education are trained every year.*

*

New housing. *Extensive housing construction is going on in the republic. Some 1,630,000 people of town and countryside, nearly a fifth of the republic's population, have moved into new houses in the past five years alone.*

*

Road to self-government. *Fifty-nine of the 1,378 deputies in the USSR Supreme Soviet are Uzbeks. The 444 deputies in the Supreme Soviet of the Uzbek Republic are workers, peasants, scientists, cultural workers and artists, representatives of public organizations and Party functionaries. There are 62,777 deputies, mostly workers and collective farmers, in the regional city, district and rural Soviets of Working People's Deputies of the Uzbek Republic.* ★

In 1939 some 160,000 Uzbek citizens began building the Fergana Canal. The tremendous job was done in just 45 days. The waterway and its network of branches now irrigate millions of acres of land in the republic that were once scorched and barren.

WATER IS LIFE

BY RAKHMAT FAIZI
UZBEK WRITER

WATER! How many songs, legends and proverbs about water have come down from generation to generation of Uzbeks. "Water is the jewel of the desert," "Where water ends, the earth ends." And that short but very pithy aphorism, "Water is life."

Historians say that the Syr-Darya River, which flows through the center of Uzbekistan, once followed a different course. After a long search, archeologists finally discovered the old river bed under the ruins of ancient cities that had once stood on its shores. The water disappeared and life with it, and the desert sands eventually covered the green oases.

The history of the peoples of Central Asia is one long chronicle of irrigation systems patiently built and resolutely defended against foreign enemies. The conquerors who invaded the ancient Uzbek land tried first to seize the water distribution points of the irrigation systems. Once in control of the water, they were masters of the land and the people.

Water, like gold, gave power. The *bais*, the landowners, could give a man water for his fields or doom him to slow death from starvation. For the water they gave the peasant, they took three-quarters of his crop in payment.

The spring of 1918 opened a new era in Central Asian farming, Lenin signed a decree allocating 50 million rubles for irrigation work in the region. The Uzbeks are not likely ever to forget the helping hand extended them by their Russian brothers. It came at a time when the young Soviet republic was fighting off the attacks of the counterrevolution, when every penny counted, at a time when the workers of Moscow and Leningrad were limited to a daily ration of less than two ounces of bread.

Russian scientists came to Uzbekistan and drew up a plan for the irrigation of the first 1.5 million acres of land. Land and water reform gave both the water and the land to the *dekhkans*, the farm laborers.

In the thirties thousands of peasants merged their small holdings into collective farms, thereby making it possible to use machinery on a large scale and to put more land under cultivation. But the old irrigation systems were too small for the vast collective farm fields. New canals and powerful pumps were needed.

In the autumn of 1939 some 160,000 Uzbeks undertook to build the Fergana Canal that begins at the Syr-Darya River. Everybody participated in the big project. Ministers and Communist Party Central Committee members supervise construction sections, deputies to the republic Supreme Soviet headed building teams. And h the forty-fifth day the 200-mile-long canal, th world's longest at the time, was dug. Thousand of powerful pumps channeled the water to th once arid fields. An additional 1.25 millio acres of land were irrigated by the canal.

That same year 46 large irrigation structure were built and 450 small canals dug in Uzbek stan, thus solving the problem of watering th major land area of the republic.

Uzbek irrigation experts are now tackling ne problems. There are years when the level o the rivers and canals drops sharply. The job no is to build great reservoirs and to divert rive and canals with plenty of water to those that a shallow. And just as the country is creating single power system to bring electricity to thos places where it is needed most at any given tim so the plan is to create a single irrigation ne work for the whole republic to guard against a possible shortage.

The plan is already in the works. The ve erratic Angren River is an instance. Summers, is reduced to a bare trickle; in the spring

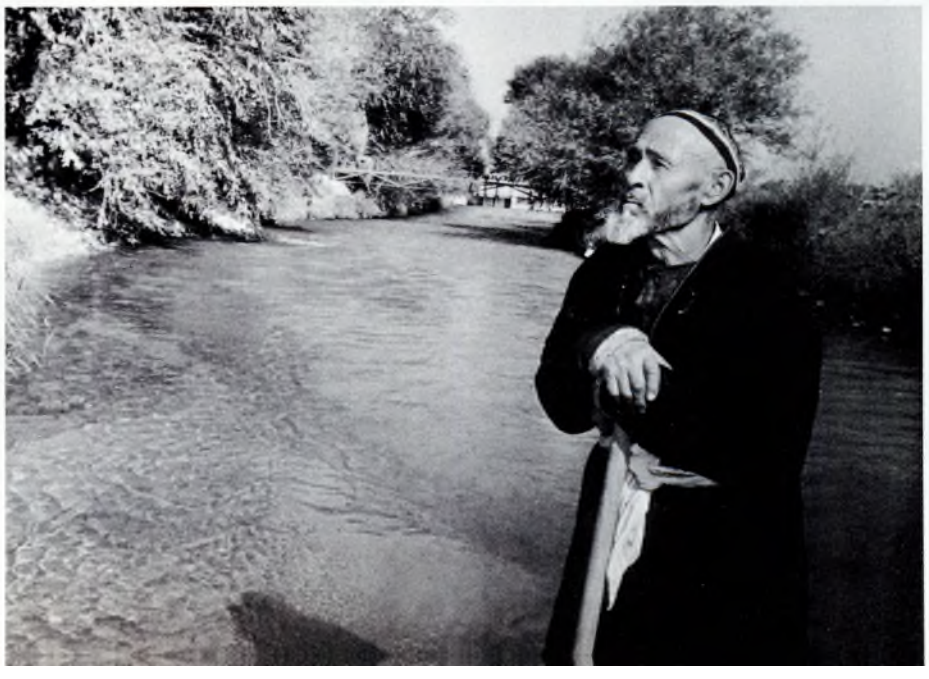
ırrent washes the banks away and floods the [elds. Millions of cubic yards of water annually o to waste. This year a dam one and a half iiles long and 115 feet high barred the river's ow, and the spring floods went to fill the new ashkent Sea, a man-made reservoir and Uzbeki- ıan's first fresh-water sea. It will hold 654 illion cubic yards of water for the height of the y season. The system will guarantee 250,000 res of fertile land against drought.

[Every year more water areas show up on the public's map. A reservoir is now under con- ruction on the Chirchik River. It will be a orage basin for almost two billion cubic yards water. Uzbekistan's Irrigation and Water upply Research Institute is working on five ther projects like it.

Stretched out in one continuous line, the re- ublic's irrigation network would circle the earth ree times. Running the system is a complex siness. This is done by a special Ministry of ater Economy, found only in the Central Asian publics. The Irrigation Institute graduates nually 400 engineers. By 1980 these specialists ill be irrigating about 7.5 million acres of eppe and desert land, as much as has been wa- red during Uzbekistan's entire age-old history.

The green fields and blossoming orchards that stretch for mile upon mile in the Uzbekistan countryside were reclaimed from the desert only 25 years ago.

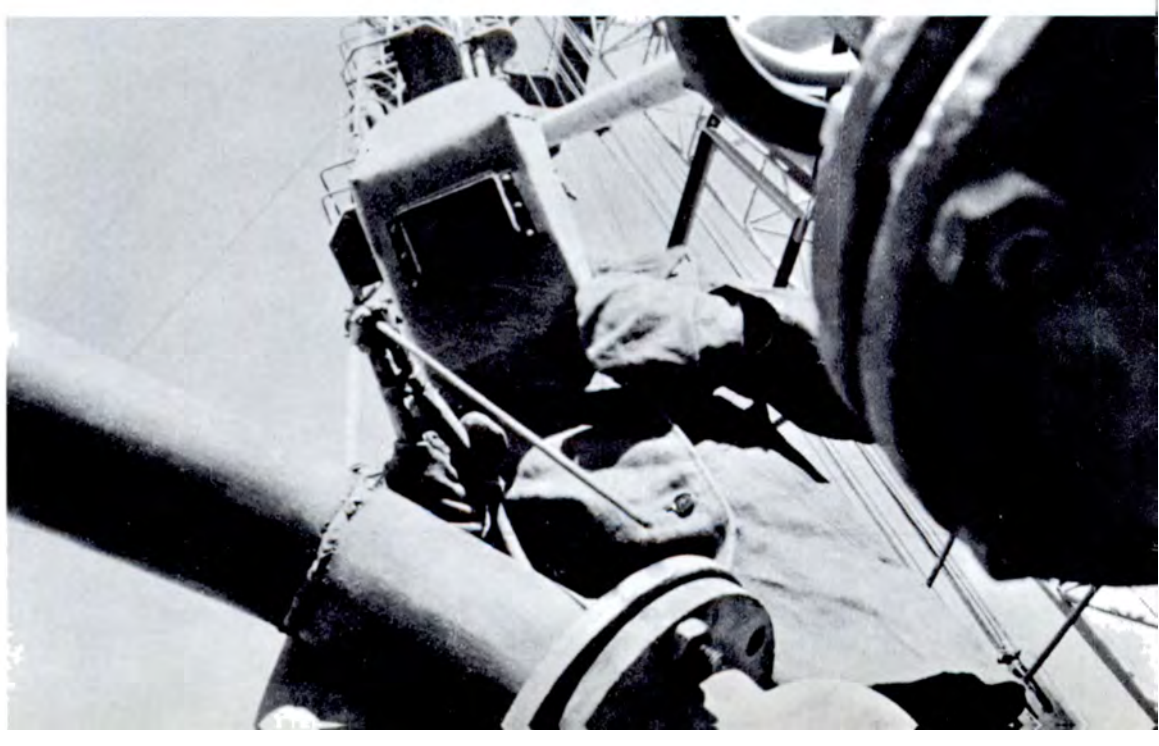
In the past, Central Asian peasants used rigs like this to irrigate their land. Today this water wheel in a village in Khorezm Region is a museum piece.



Umarali Abdalimov is mirab *of the Fergana Collective Farm. A* mirab *is a very experienced irrigation man who can judge precisely how much water a field needs.*

An inclined shaft had to be dug under the well to put out this raging holocaust of natural gas.

Iskander Daniyar-Khojayev got his engineering training at Tashkent, capital of his republic.



Yevgeni Istratov welds with such precision that his coworkers have nicknamed him Jeweler.

People of the Blue Flame

By IBRAGHIM RAKHIM

I LEFT BUKHARA at dawn for the Kyzyl-Kum, where friends of mine were working. I was collecting material for the script of a documentary film.

Dawn comes early in that desert. There are no mountains to block the sun, and it comes breaking through the veil of heaven abruptly. Its early rays, weak at first, scatter high in the air, an unforgettable sight! I stopped and looked around. The ancient sands stretch far and wide, hiding riches we know so little about yet.

It used to be that the sands would ignite mysteriously. Desert travelers boiled their water for tea over the flames and kept warm by them. The fire came from pockets of underground gas and burned even over water. For a good many years geologists could not locate the main source. They blasted deep into the earth in many places and found that the Kyzyl-Kum Desert was the lid of a huge gas tank. There, right in the heart of the desert, builders put up the first houses of Gazli, the future capital of this natural gas region.

An underground 477-mile pipeline was being laid from the Dzharkakh field to Tashkent, the Uzbek capital, via Bukhara and Samarkand. That was the documentary story I was doing, and the construction men were my characters. I visited them often and got to know them well. They were all such wonderful people that I was hard put to pick my heroes.

The men on the project were of 30 nationalities. Uzbek engineer Iskander Daniyar-Khojayev, Russian Vasili Bevzyuk, Tatar Zihir Gumar, Byelorussian Pavel Kurak, Turkmen Khasan Urayev —all worked together, young people on their first jobs and experienced hands who shared their know-how.

The script—I was writing it with Russian film director Roman Grigoryev—was for a film called *People of the Blue Flame*. It was being produced by the Uzbekfilm Studio jointly with the Central Studio of Documentaries.

We centered our story on the two building teams led by Vasili Bevzyuk and Iskander Daniyar-Khojayev. Vasili was a man with a backlog of experience who had worked on big projects in Ufa, Novosibirsk and Magnitogorsk before coming to Uzbekistan to help lay the line from Bukhara to the Urals.

Iskander was a young Uzbek engineer taking graduate courses in Tashkent who worked as a mechanic himself and headed a team of men of different trades. The welders had a particularly rough time of it in this fitful desert country, with its sweltering heat and sudden sandstorms. But it takes more than that to discourage men of the stamp of Yevgeni Istratov. He earned himself the nickname Jeweler because he worked with such precision. Not a single grain of sand ever got into a seam he welded.

There were a group of bulldozer operators who had done quite a job—pushed around more than three million cubic yards of sand to make it possible for trucks to get to the Amu-Darya.

The desert was not kind to the builders. When there was no sandstorm raging for days on end, there was the mercilessly broiling sun to contend with. The construction men and their wives and children were accustomed to living on wheels and knew how to make themselves comfortable, but there wasn't much comfort to be had in this desert country, with its drastic temperature changes, insufficient drinking water—it had to be brought by plane—and absence of roads. The water in the truck radiators boiled over and the engines had to be cooled by pouring water over them. But in spite of it all, work went on.

Nature fought back at every step. Her surprises were manifold and seldom welcome. Near Gazli, for example, workers drilled a well several hundred feet deep and erected a derrick over it. The gas spurted up with such force, it spewed up the pipe and the drilling equipment with it. Part of the equipment was saved, but where the derrick had been there was a flaming water-filled crater. The crater kept growing, the air all round the great torch so hot it registered more than 2700 degrees F.

Burning gas is usually put out by blasting; it tears the flames away from the gas or oil. But that method would not do here, the burning area was too big. Tashkent geologists worked out a different method. They drilled several inclined wells, and at a depth of three-tenths of a mile cut the wells into the burning shafts and smothered the flames with clay and water.

One of the toughest sections of line was at the Gates of Tamerlane. Legend has it that iron gates once hung there, barring the entrance to the valley of the Zaravshan River, the heart of Tamerlane's domain. To dig there, the excavator had to be braked with metal cable so it would not roll down the slope. The pipelayers had to work with great caution; one careless move and the pipe was gone. They laid it painstakingly, inch by inch, so it would be absolutely straight.

It took four days and nights for these stubborn men to get by the gates, one obstacle in an endless series, but they stretched the pipeline across Bukhara and Samarkand to bring the blue fire to Tashkent.

What does gas mean to Uzbekistan? It will smelt steel, fuel cement factory furnaces, clear city air of soot and smoke. Gas will bake bread and warm hothouses. It will change the economic face of the republic.

Our film has already reached the screen, but the builders are still on the job. They are presently laying the 1,350-mile steel pipe from Bukhara to the Urals, working from both ends. ★

KABA-KALBAKIA

KARA-KALPAKIA is an Autonomous Soviet Socialist Republic with a population of about half a million and an area of 62,000 square miles of desert country stretching southeast from the shores of the Aral Sea.

Although Kara-Kalpakia is part of the Uzbek Republic, its territory cannot be altered without the consent of the Kara-Kalpak Supreme Soviet. It has no common frontier with any foreign country and, unlike a union republic, therefore has no right to leave either Uzbekistan or the USSR.

The republic has its own constitution, budget and its own parliament. In the Uzbek Supreme Soviet Kara-Kalpakia is represented by 33 deputies, and in the USSR Supreme Soviet by 11. Official documents, newspapers and books are published in three languages—Kara-Kalpak, Uzbek and Russian—and school is taught in the native tongue.

NIGHTINGALES STAY IN THE DESERT

BY VLADIMIR KRUPIN

PHOTOS BY DMITRI BALTERMANTS

IT IS A WONDERFUL experience to revisit a town that was born and grew up right before your eyes, and to meet people you knew at the time. Or to trace the life story of a comrade who has pioneered new land. Or better yet, to follow in the tracks of geologists and builders still blazing new trails. . . .

Desert Land Revived

For almost three hours I had seen nothing but sand under the wing of my plane, the gray-yellow dunes of the desert frozen like waves on a dead sea.

Then suddenly the land was crisscrossed with lines that might have been drawn by a giant hand. They were like the lines of the canals on Mars—the same weird geometrical patterns against a rust-red desert. What hand had drawn the squares, ellipses and triangles on the arrow-straight strip?

Our archeologists have the answer to that question. A thousand years ago this fringe of the Kyzyl-Kum Desert had pulsed with life. Wheat and grapes had ripened on the irrigated land, peach trees had blossomed, and nightingales had sung in the gardens of the local rulers.

Then foreign invasions and internecine battles swept across the flowering oasis, destroyed the dams, castles and fortresses, and trampled down the wheat fields and vineyards. The land remained fallow and desolate until 20 years ago. In the grimmest period of the Second World War people came here again and built new canals near the ruins of the Kirk-Kiz Fortress. The sun-baked and wind-pitted soil was revived by the waters of the canals they laid along the beds of the ancient irrigation system.

Matyakub Yergulanov came here 20 years ago. His idea was to plant a forest in the desert. He was the first man to settle in Kirk-Kiz.

By the time a correspondent friend of mine visited the place, Matyakub had planted 16,000 trees along the roads and canals. Fish flicked about in the water now cooled by the shade of trees, resplendent pheasants darted in and out of the bushes on the shore, and hungry hares came to the orchards on winter nights to chew the sweet bark of the fruit trees. Yergulanov was past 70 then.

That's why, hurrying on to Kirk-Kiz, I did not know what I'd find there—the old man himself or just a legend.

"Yergulanov? Sure, the old man's alive and kicking! He supplies half the district with lumber," a traveling companion told me in reply to a question.

"I don't know a lumberjack by that name," said our driver. "But I do know a Yergulanov who has grown the biggest crop of cotton yet."

"A mile-long lane of poplars? The one Matyakub planted?" put in another man in our car, who seemed to be the manager of a poultry farm. "It isn't there any longer. The trees were chopped down five years ago." Reading the disappointment on my face, he added quickly:

"See the farm over there? We built it with those trees. And the bridge over the canal, too. Where do you think we got the wood for those house roofs? You'll find Yergulanov's trees in every one of our buildings. And he plants new ones every year."

As we crossed the reinforced-concrete bridge spanning the canal, we saw an old man in a tall fur hat. Short, thin and frail-looking, he was standing at the rail with his face lifted to the warm sun.

"Can you tell us where Yergulanov lives?" I asked him.

The old man peered at me with his rheumy eyes and took a few steps toward us, leaning heavily on his stick.

Pioneering in Ustyurt is a constant battle with sand gales that make breathing and walking hard.

"What do you want him for?"

"I wanted to see his trees, father."

"There they are!" He raised his stick and pointed all around with it.

There, before us, stretched a road lined on both sides by auburn-tipped poplars. Sturdy little shoots grew by the stumps of freshly hewn trees, and tall saplings rustled their leaves near the older stumps.

"There they are, my charges," said the old man.

It was Matyakub himself. I wanted to ply him with a lot of questions, but I felt funny about pulling out my notebook.

He needed no prompting, however. Addressing no one in particular, he went on:

"Yes, I managed to grow a forest here, after all. A real forest—in the desert. Too bad a man's life is so short, not time enough for everything he wants to do. Take cotton, for instance. I've planted eight acres of it and worked hard at it all these years. And though I've been putting the same amount of labor into the cotton each year, the yields keep getting bigger all the time. Why? Because there are trees all around. The trees give the cotton their strength.

"The nightingales love trees too, and so do flowers. When our garden blooms, the birds come flying. They didn't come right away, though. It took them seven years to make up their minds. But now they've come to stay. The desert no longer frightens them off. There's a forest to protect them."

I looked at the old man who had planted 50,000 trees—a whole forest—in the desert.

"It's a pity a man's life is so short," the thought flashed through my mind as we drove off.

A Million-Bird Farm

Umar Khudaibergenov, manager of the intercollective poultry farm, decided to raise a million chicks.

He didn't come to that decision overnight, of course. When he took over the farm, it was a miserable affair—every egg laid was just about worth its weight in gold—until seven collective farms pooled their efforts to put poultry raising, generally considered a losing proposition in Kara-Kalpakia and Kyzyl-Kum, in the black. They set up an electric station, an incubator and a poultry yard, sowed five acres of land to corn, alfalfa and wheat for feed and rice for the chicks' bedding, and planted a 37-acre orchard besides—all in a single year.

The rest of it reads like a fairy tale. The hens laid a fabulous number of eggs, 70,000 all told.

"I'd say we're doing fine," Umar boasted to City Party Committee Secretary Kasim Nurembetov, who had dropped in. Nurembetov inevitably came back with the old chestnut, appropriate enough in the situation, "Better not count your chickens before they're hatched!"

But they were hatched, every one of them. The farm sold 50,000 chicks and 7,500 ducks to local cooperatives at a considerable profit.

That was when Khudaibergenov began to think in big numbers. Why

shouldn't his become a million-bird farm—2,000 birds yesterday, 25,000 today, tomorrow 250,000, maybe. And the day after tomorrow?

Even Nurembetov counts the farm's chickens before they are hatched now. "How about ducks?" he asked the farm manager a while ago. "If you use the lake nearby, you should become a duck millionaire too."

Minister's Dreams

What does a Minister of Agriculture dream about? Good grain and cotton harvests? High milk yields? Fine autumn weather and plenty of spring rain?

Naturally. It's his business to dream such dreams.

That was what Yuldash Kurbanov, Minister of Agriculture of the Kara-Kalpak ASSR and a Master of Science, told me. But I learned that he dreamed of many more things.

He dreamed of dams and hydroelectric stations that would harness the wild Amu-Darya and divert its waters to the cotton fields, thus bringing spring to Kara-Kalpakia a month earlier. The earlier you plant cotton there, the bigger the harvest.

He dreamed of the new breed of sheep that he and his assistants were raising. This new breed would amply provide the republic's carpet industry with wool.

He dreamed of large-scale, republic-wide experimentation in the production of colored karakul.

And, of course, he dreamed of prosperity for all the country's people.

What would the republic's farmers be contributing to the nation's prosperity? Rice, turkeys and camels—those were the three best prospects. They would be planting one of the largest rice paddies in the Soviet Union in the delta of the Amu-Darya. They were setting up their first three state farms, with thousands of acres of land each, to begin with. Once started, they would eventually cultivate all the lowlands. With 1.25 million acres sown to 3,600 pounds, they could expect more than two million tons of rice.

As for turkeys, the Kyzyl-Kum sands were first-rate breeding grounds, since turkeys are allergic to dampness. The sand and dry lands held plenty of insects for feeding, and turkeys can vie with ducks when it comes to gaining weight—13 pounds in six months, 15 pounds in seven months, and close to 18 pounds in eight months!

Camel breeding was something else, though. The camel is not picky about its food. Everybody knows that. What everybody does not know is that camels give the finest wool for blankets and for Cheviot and covert cloth. Nor does the average consumer appreciate camel's milk, that rival of fermented mare's milk and cream. The place to raise camels was Ustyurt Plateau, with its 15 million acres of fine pasture. There, near the well of Kos-Bulak, a large stock farm would be set up for 100,000 karakul sheep and 6,000 camels.

Dreams and figures. . . . I listened to the Kara-Kalpak minister, a pleasant young man with keen far-seeing eyes, and found nothing strange in his combination of visions and statistics. Beyond the figures was the living future. It was impossible not to believe in it.

Hunting for muskrat at the estuary of the Amu-Darya River. This native of North America, which is highly prized for its fur, was brought to Kara-Kalpakia from Canada in the thirties.

The Devil's Fortress

I had read and heard a great deal about the legends of Ustyurt, especially about the salt marsh at Barsa-Kelmes, which means "go there and you'll never come back." They said that there was an island called Shaitan-Kala, or Devil's Fortress, in the middle of the salt marsh. Many brave men, said the legends, had tried to reach it and perished, poisoned by the fumes. The one point all the legends agreed on was that the Devil's Fortress was crammed with treasures.

It was a tempting idea to investigate the island, and the public's interest was whetted by a map of Kara-Kalpakia a certain scientific institution had drawn up. The map showed the orchards and vineyards the republic would be planting during the current seven-year plan. Amid the green, yellow and orange spots marking off vegetation was a white space that signified land unfit for use—Ustyurt, in the western part of Kara-Kalpakia.

Why unfit? Apparently the layer of soil on the plateau was only 20-40 inches deep. There was no water anywhere, and vegetation was very sparse. What sort of farming could be done where there was hardly enough grass for sheep and camels to graze on?

That was what the Kara-Kalpaks thought until prospectors for gas, oil and water showed up in Ustyurt. Strange as it sounds, they turned out to be the pioneer farmers in those parts. Chief geologist Tom Aliev of the Kara-Kalpakian Oil-Prospecting Offices, showed me a curious radiogram he received from Ustyurt where a well was being drilled. Signed by Konstantin Kucherovsky, it listed the quantities of beet, corn, potatoes and watermelons growing at Teren-Kuduk.

Kucherovsky, an old Kuban Cossack, had gone to the site of the new oil derrick to visit his daughter and had remained there. Hearing that the chief of the prospecting crew wanted vegetables planted in the neighborhood, he became interested in the idea. Everything, from bores to potatoes, had to be brought in by helicopter from Kungrad, some 150 miles away, since there were no roads over the plateau and the old caravan route was impassable one-third of the year.

The hydrogeologists soon found water nearby. The well they drilled yielded up to 200 tons of water a day—brackish, but good enough for vegetables. It was carried to the 37-acre patch through some old oil pipes, and the first seeds were sown. Old Kucherovsky grew the vegetables.

. . . From Teren-Kuduk, our helicopter headed for Barsa-Kelmes. Soon a dazzling white strip appeared on the horizon. It looked just like snow. Then the gray shadow of our aircraft crept over the smooth, glazed surface, and we saw that it was salt! For dozens of miles in every direction and dozens of yards deep there was nothing here but salt.

Devil's Fortress, we found, was a brown piece of limestone sticking up out of this area of white salt. We looked all over the fortress for treasure. There wasn't any, nor any trace of man, for that matter. Discouraged, we flew on and at the island's fringe discovered the tracks of a car. The scene that came into view was one that surprised even Aliev. There, right in the salt, stood a mobile drill. And it was operating! A straight trail led from it all the way to the coast.

"They risked it, the devils!" exclaimed Aliev. "There hasn't been any rain for a long time so they traveled over the salt."

"What are they looking for?"

"Studying the salt. They say it contains a lot of mirabilite and sulphates. This place may prove to be a second Kara-Bogaz."

Traces of the Future on Earth

On our way back to Kungrad we talked gas. It had not yet been found in Ustyurt, but there was gas in the vicinity. Ustyurt stood on a belt of oil and gas deposits—the Gazli, Nebit-Dag and Emba—and the ring of oil derricks was growing denser and denser.

"We'll find gas, don't you worry!" said Aliev. "It would be wonderful if we found it close to the sea—near our second well, for instance. Then everything could be delivered by barge. We could build a new port on the Aral Sea and lay a road from it to the oil fields."

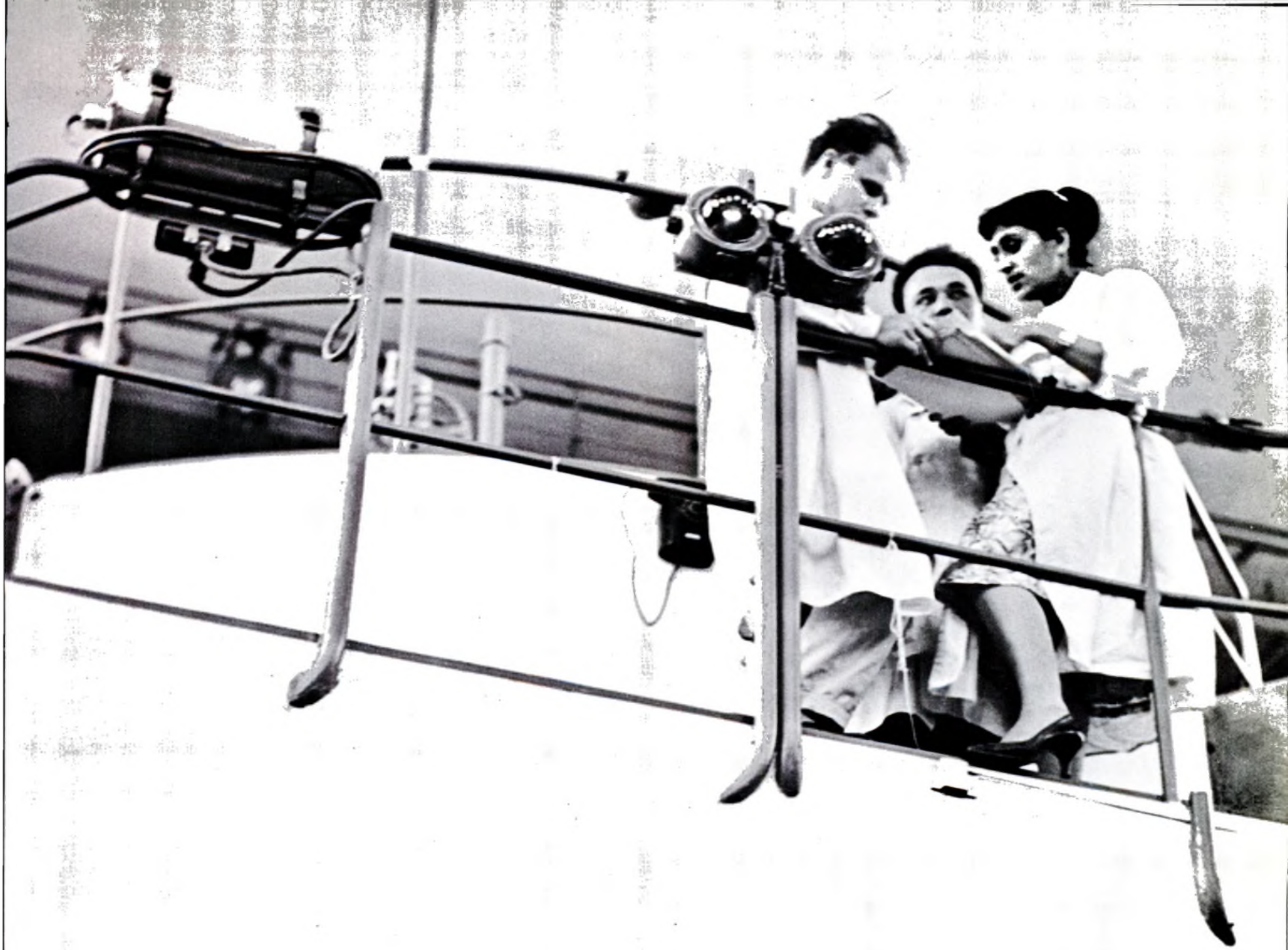
Kungrad . . . It was becoming a real industry base. That was where oil, gas, mineral and other prospecting teams started out from. It was the site of a cellulose and cardboard factory that will produce 30,000 metric tons of cellulose, 20,000 metric tons of paper and cardboard containers made of rushes. The factory will probably use the sulphates and natrium of the large Koshkanatau deposits. A new power center will rise on the route of the Bukhara-Chelyabinsk oil pipeline.

Kungrad . . . Aliev smiled to himself while I kept looking down at the desolate rusty ground lined with car tracks. There were milk wagons delivering fresh water to the oil drillers, a tractor pulling parts of a wind turbine to the site of the future meteorological station, and a loaded cross-country car rushing along somewhere. Dozens and hundreds of tracks, tracks made by expeditions of geophysicists, chemists, botanists, hydro- and nonhydrogeologists and land exploitation specialists—tracks of the future.

I should like to return to Kara-Kalpakia five or seven years from now and follow those tracks. By that time a gas pipeline will be running across Ustyurt toward the Urals. The lights of the Takhyatash and Kungrad electric stations will be on, and new ports will line the coast of the Aral Sea. Trainloads of Kara-Kalpakian paper, rice, oil, wool, fertilizer and metal will be rolling along the Kungrad-Moscow railway.

But my imagination is hardly inventive enough to predict the many wonderful things I shall be seeing there next time.

—*By courtesy of* Ogonyok *magazine*



OZOD NIYAZOVA

BY YURI DAVYDOV

TO DECIDE what one wants to do and be sure enough of the choice so there won't be regrets later on is a hard thing to do when one is 18 and there are so many beckoning yet uncertain roads. That was Ozod's problem.

Ozod is an only daughter. Her mother was one of the first Uzbek women to throw off her *yashmak*, the heavy black veil that cut the wearer off from the world, and burn it in public. Her father, a peasant's son, is a well-known engineer who builds power stations on the republic's rivers. Mother and father both had given their daughter's future serious thought.

When Ozod brought home her final grades, her mother said, "I'd like you to go to the Irrigation Institute. Ours is canal-and-irrigation country. Those who bring water to the people will always have their respect and gratitude. I'd be proud if you were one of them."

Her father had a different idea. He had come, as usual "just for a minute,"

The first Uzbek woman researcher in nuclear physics, s
is studying the effects of radioactivity on conducto

She makes sure that her busy schedule leaves her time for her six-year-old daughter Dilshod.

from the construction site of a power station on the Chirchik River, his face burned by the hot sun, his clothes dusty, the traditional Uzbek skull cap on his head. He seemed pleased as he looked over Ozod's grades and said with a smile: "Water is no problem any more. Uzbekistan is now a country of industry, power engineering and chemistry. I think you ought to enroll in the university's chemistry department."

Ozod means "freedom, independence" in Uzbek. The girl lived up to her name and decided on her own future. She had always been drawn to the unexplored, the undiscovered.

Chemistry and irrigation? There were hundreds of women chemists in the country and even more irrigation specialists. Like thousands of other young people, she was attracted to space research, to neutrons and the reactors with which that most intricate process, the splitting of the atom, was controlled.

Ozod applied, passed her entrance exams, and enrolled in the physics department of Tashkent State University. Within two years she was doing original work and writing a brilliant term paper on artificial radioactivity.

She has reason to remember a very special day, when she was summoned to the dean's office. The dean, a heavy, graying Uzbek, had a long talk with her. He told her an experimental center for nuclear research was being organized in Central Asia and that it would be needing a staff. Was she sufficiently interested in nuclear physics to specialize in the field? Ozod thought the matter over and decided she was.

Three years more of college life followed—lectures, experiments, exams. But that was her working life. The day's work over, the telephone kept ringing for Ozod—friends suggesting a game of tennis, a concert at the conservatory, a gathering with students of the Teachers Training College.

Ozod had many friends. One of them was Usman, a student at the Teachers Training College, a thoughtful young man, quiet. But Ozod liked what he said when he did speak. And so when Usman asked her to marry him, she said yes.

Time passed and she gave birth to a daughter. They called her Dilshod, "joy of our heart" in Uzbek.

Ozod was graduated at the same time that the Institute of Nuclear Physics, with an atomic reactor, was set up in Uzbekistan. She was offered a post under the well-known Soviet nuclear scientist Professor Sergei Starodubtsev. He had come to Tashkent from Leningrad to head a laboratory.

There was no time for recreation, what with seminars, reactor experiments and long, wearying calculations. She squeezed in time to call for her daughter at the kindergarten and to spend an occasional hour with Usman. He wasn't happy about the way she was working, wanted her to slow down.

But Ozod loved her work too much to slacken off. She felt as though she were searching through an underground cave lighted up only by the dim and flickering torch of her knowledge, a torch that represented thousands of pages of reading, thousands of formulas evolved, hundreds of sleepless nights.

Finally came the day when she defended her dissertation. There, at a long table, sat the certifying commission. And on the dais were her diagrams, drawings and two examiners from Leningrad and Moscow. She gave a brief synopsis of her paper. The examiners showered her with questions. She made her defense. The certifying commission unanimously awarded her the degree of Master of Physicomathematical Science.

Ozod's friends and teachers congratulated her heartily. So did others she knew and some she did not. The one person who did not seem happy with her success was Usman.

He and her family, Usman told her later, seemed to have become secondary considerations in Ozod's life; her work, primary. A hypersensitive and very proud man, he laid down the law, told her they were moving to Fergana. She would have to give up the institute. If she insisted on working, she could teach physics in a Fergana school.

Ozod very quietly, but very directly, told him she had no intention of leaving the work she loved in order to lock herself up in a kitchen like a woman of the old East. The time was long past when women were kitchen slaves. Neither he nor anybody else could turn the clock back as though there had been no Revolution, no education, no Young Communist League. Her dark eyes, naturally large, seemed to swallow her whole face as she spoke. If that's what he wanted, she said, they would manage without him, she and the child. He left.

The people at the institute, in a hundred small ways, helped her make the difficult emotional adjustment—her graduate students worked harder, the chief engineer let her use the reactor out of turn, her teacher Sergei Starodubtsev every so often left a bouquet of tea roses on her table. In the evening her friends would drop in at her cottage. They talked about the Steinbeck novel that was running in *Inostrannaya Literatura* (Foreign Literature) at the time or listened to some of Ozod's tape recordings of the Beethoven sonatas she was especially fond of.

Music helped her over the period, helped her distinguish between the real and the superficial, the important and inconsequential. So did the familiar and absorbing sights and sounds of her laboratory—the green flashes on the mat screens of oscillographs, the clicking of Geiger counters.

But mostly it was working with people, helping the 30 researchers and graduate students she supervised, that brought her peace. Each had his own problems, professional and personal. One had uncovered an error in a piece of research that represented additional months of work. Others were depressed about illness, a death in the family, an unhappy love affair. They sought her advice, they needed her. This was her team searching the unknown, an unknown that eventually would be serving mankind. ★

CONVERSA

BY YURI KRUGLOV

Each of the 70 Uzbek mosques hold regular Friday services. Mufti Ziyautdin Babakhanov, Moslem spiritual leader, preaching to his congregation at the mosque in Tashkent, the republic's capital. (Below) Five times a day the muezzin calls the faithful to prayer in the square fronting the mosque. Those unable to attend say their prayers at home or at their place of work.

TION WITH THE MUFTI

TASHKENT is not only the capital of the Uzbek Republic, it is one of the centers of the Moslem world. There are three other such Moslem centers in the Soviet Union—Ufa, Baku and Buinaksk in Daghestan. Tashkent, however, is the most important. It is where such sacred relics as the Koran of Osman are preserved. The only copy that contains the first seven suras, this Koran is more than 1,200 years old. It was confiscated by czarist generals, taken from Bukhara to St. Petersburg where it was kept until 1923, then by decision of the Soviet Government returned to the Moslem community.

The Religious Board, Islam's directing body in Central Asia and Kazakhstan, has its quarters in Tashkent, in the former Barak-khan Seminary. Here, too, resides the Mufti, the religious head of the Moslems.

Ziyautdin Babakhanov is the present Mufti. He received me, as he does all visitors, in a small vaulted cell. The five-foot-thick walls once shielded seminarians from the noise and bustle of the world; now they shield Moslem elders from the oppressive Tashkent heat. There were no ornaments of any kind in the cell, except for a gold-colored Bukhara rug that served as a tablecloth. On the table were several telephones and electric fans. Overhead, beneath the cell vaulting, was the Moslem profession of faith, "There is no God but Allah, and Mohammed is his prophet."

The Mufti is 52 years old, a strong-looking man with tranquil, dark eyes and the traditional Moslem beard. His father had been the Mufti before him. Not that the office is hereditary. Like the Pope in Rome, the Mufti is chosen by a representative congress of the faithful. Ziyautdin Babakhanov was elected five years ago on the death of his father solely by reason of merit.

Article 123 of the Constitution of Uzbekistan guarantees freedom of religion. Relations between the Moslem organizations and the state are governed by the principle of mutual noninterference.

In my conversation with the Mufti I asked, "We have complete separation of religion and state. Doesn't this mean that the Islamic organizations constitute a sort of state within the state, with its own laws, rights and duties?"

"No, Moslem believers are citizens of the Uzbek Republic with full rights. The laws and privileges granted all citizens also apply to the faithful. On election day we go to the polls with all other citizens. Our goal is the same, to build a world of justice and happiness. That is why we can live and work together amicably."

I asked how relations between the religious organizations and the state work out in actual practice.

"The same way they do between state agencies and any other public organization," the Mufti replied. "If we want to open a new mosque, we apply to the local Soviet of Working People's Deputies for a building plot. The land is state property and we pay nothing for it. The State Planning Committee of the republic lets us have bricks, cement and the necessary machinery. We have our own means of transportation, our own shops and auxiliary buildings.

"The state also supplies us with paper and a print shop for our publications. During the past three years we put out two new editions of the Koran. We sent copies to President Sukarno and President Nasser, and they complimented us on the quality of the editions. We also print Moslem calendars, albums, posters, announcements and tracts. We tried publishing a monthly journal but it was not sufficiently popular, so we gave it up."

"Building new mosques, repairing old ones and maintaining a staff takes money," I remarked. "I know that Moslem publications are distributed free. What is the Religious Board's source of income?"

"Our only source of income is the voluntary contributions of believers," the Mufti answered. "Our total collections in the Uzbek Republic come to two million rubles. But this income tends to drop as the number of believers decreases."

I asked how much of this income was taxable and whether the funds of the mosques and the Religious Board were taxed.

"It is tax-free, as are the incomes of the mosques and the Religious Board. Those of our clergy whose fixed salary, paid by the Religious Board, is less than 60 rubles pay no taxes. This holds for all working people in the country at that income level. Those who get more than 60 rubles pay the customary income tax, which varies from one to 13 per cent, depending on the salary. The imam, the religious head of a mosque, receives, besides a fixed salary, a certain percentage of the funds donated by believers. He therefore pays a higher tax."

Our talk turned to the structure of the religious community. Each congregation is grouped around a mosque. In Uzbekistan there are 70 congregations of 70 functioning mosques. Each congregation elects an administrative council to oversee its economic and financial affairs. The council chooses the imam, who conducts the services and performs the rites. He does not interfere in nonreligious matters.

Every fifth year the congregations elect delegates to the *kurultai*, a congress of the Moslems of Central Asia and Kazakhstan where the Mufti reports on the work of the Religious Board for the five-year period. The congress also confirms the appointments of the Mufti's representatives in the republics and discusses important current problems. A recent congress decision to grant pensions to the clergy was influenced by the pension law adopted by the USSR Supreme Soviet in 1956.

The Mufti decides the day-to-day religious activities of the faithful. He sends messages to the Moslem communities that explain his position on one or another problem or event. Five times a day he leads prayers in the Tashkent mosque, and on Fridays he reads a sermon to the believers gathered in the square that fronts the mosque. Women are not permitted inside the mosque by tradition and by a tenet of the Koran.

I asked the Mufti what his sermons touched on.

"I call on Moslems to perfect themselves," he replied, "for there lies the path to eternal bliss. All men are brothers in the eyes of God, and that means they must be brothers here on earth. By fulfilling these behests of Allah, man arrives at real happiness."

The Koran, and the commentaries on it by the pillars of Islamic theology, are written in Arabic. I asked whether the sacred book was translated into the Uzbek language, and learned it was not. The entire mosque service is conducted in Arabic, with the imam translating some of the Koran precepts into Uzbek.

The Moslem clergy are trained in seminaries like the one in Bukhara, which has been performing that function for more than four and a half centuries. Today it has a student body of 90. Required for admission is a public secondary school education. The course of study takes nine years.

"What are the major subjects studied?" I asked the Mufti.

"The Koran is the most important," he said. "For his examinations, a student must recite portions of the sacred book from memory, beginning with any given line. If he makes an error, he begins again. If he makes three errors, he is considered unfit and is dismissed from the seminary. Some students memorize the sacred book, which has more than a thousand pages, in three or four years, others only by the time they graduate. I began studying the Koran when I was six years old and knew it by heart two years later.

"The history of Islam, rhetoric, Arabic literature and the Arabic language are studied besides the Koran and its commentaries. The more general courses include the history and geography of the Soviet Union and other countries, Uzbek literature, the Constitutions of the USSR and Uzbekistan, and physical culture. We have no objection to our students' enrolling in secular schools. Many of them, while studying in the seminary, also take correspondence courses in specialized secondary schools and institutes.

"Graduates of the seminary become imams of mosques or serve on the Religious Board. We send the most gifted for advanced study to the Islamic faculties of Damascus University and El-Azhar University in Cairo. This year three of our students will study the history of Islam in Morocco."

Soviet Moslems keep strengthening their international ties. The Religious Board exchanges delegations with Moslems of 12 countries. This year Ziyautdin Babakhanov made a two-week visit to Libya at the invitation of Islam University, and this summer several Libyan Moslems made a return trip to Uzbekistan.

Each year groups of Soviet Moslems make the *hajj*, a pilgrimage to the holy places in Mecca. The republic helps organize such trips.

Moslems, like all other Soviet people, champion the cause of universal peace.

"As the father of seven children and as a member of the World Peace Council," declares the Mufti, "I use all my powers to rule out the possibility of nuclear war. I believe that our common efforts will preserve the peace."

Our interview was almost ended, but I had one more question. The spiritual leader of the Moslems has four sons and three daughters. I was interested in the careers they were following.

The Mufti was glad to tell me about them. His eldest son Shamsutdin is a historian and is presently working on his dissertation at the Institute of the Peoples of Asia and Africa in Moscow under the guidance of Academician Gafurov. His eldest daughter, Nariza, is a surgeon in one of the Tashkent clinics. The Mufti said with understandable pride that she was considered a fine physician. His second daughter, Aniza, is a student in the Eastern languages department at Tashkent University. The other children, three boys—Mukhamed, Rashid and Fatkhutdin—and his third daughter, Mukhisa, are still in school.

"None of your children are following in their father's footsteps?"

"None so far," said the Mufti, and then added with a smile, "but I still have four in reserve. Perhaps one of them will dedicate himself to Islam."★

BY SERGEI BORODIN

UZBEK ARCH

MANY UZBEK TOWNS can lay claim to as venerable an ancestry as Rome. They were on the "silk route"—from the Pacific coast to the Mediterranean—that merchants traveled with silks, spices, paper and glass. Down their streets journeyed caravans from China to the Eternal City.

These ancient towns developed a distinctive architectural style, little of which remains today. Many of the structures, built of the less durable materials, cracked and crumbled under the hammer blows of earthquake, war and weather. Others, of baked brick, still stand, to the delight of lovers and connoisseurs of architecture.

The thousand-year-old mausoleum of the Samanids, a dynasty that once ruled Bukhara and Samarkand, still stands in Bukhara. Like all works of genius, it is simple in form, the bricks in the walls laid with such skill and ingenuity that they form intricate and beautiful patterns. Its arches reflect a remarkable mastery of building techniques.

The Death Tower, also called the Great Minaret, around which all sorts of legends have been woven, has stood guard over Bukhara for eight centuries, a lookout against invaders. A narrow, winding staircase inside the 165-foot tower leads to the top. In times long past wives who broke their vows were hurled from the tower to the ground below. The long climb up the staircase was meant to give them time to reflect on their frailty. Traitors met the same death and were given the same opportunity to meditate on their heinous crime while climbing the staircase.

The Mari-Arab madrasah, built in the sixteenth century, stands near the Great Minaret. The structure, faced with brightly colored tile, has a high, stately portico and massive towers at its corners. The flagstone court inside the madrasah is surrounded on all four sides by double-tiered rows of vaulted cells, one for each student of this Mohammedan theological school where the Koran, the Arabic language and literature, and the works of ancient writers and philosophers are still studied.

In bygone days bustling and colorful bazaars surrounded these structures, and their walls reverberated with the cries of vendors praising their wares. The rustle of silks and the clang of the jeweler's hammer filled the air, and gold and silver coins minted in all the countries of the world gleamed in the sun. Of all this maze of bazaar rows and streets only a few stone cupolas still stand as a reminder of the vanity of a past age. Under these cupolas were once scores of narrow workshops where artisans made and sold rings, bracelets and earrings.

Bukhara abounds in ancient structures, some grand and imposing, with tile ornamentation and domes of lapis lazuli, others more modest in size but no less impressive architecturally. They are all cared for by the state, and year in and year out the work of restoring and preserving these monuments goes on.

The structures of Samarkand are no less memorable. Alexander the Great walked the streets of Samarkand when it was the political and cultural center of Sogdiana, a slave-holding Central Asian state founded in the sixth century B.C. All that remains of that past glory are a few house foundations. The city was razed by Genghis Khan, and it was not until the fourteenth century that its rebuilding was begun.

The street of the Shah-i-Zinda tombs dates from that century. These imposing sepulchers line the slope of Mt. Afrosiab.

A folding wooden door with beautiful incrustations of ivory opens into the tombs. Tamerlane, one of the world's great conquerors, came through this door five hundred years ago to pray.

A young girl who died in 1360 lies buried near the door. Her tomb is ornamented with glazed light blue and white cloud-colored tiles—somehow appropriate for this child who, six centuries ago, sang and dreamed and then died before her dreams could come true There is no inscription with her name or the names of those who built her beautiful resting place.

Near this tomb, enhancing the grace of the neighboring structures, is a small mosque and mausoleum. The mosque is faced with dark blue, gold and white tiles. Queen Tuman-Aka, Tamerlane's first wife, built it for herself. In fine weather the courtyard enclosed by the tombs sparkles with azure glory.

Even more exquisite in form and more lavishly decorated with tile of lapis lazuli and pure gold are the tombs Tamerlane had built for his wives and sister. They have either ribbed or ledged domes that rest upon stately walls inscribed with phrases from the Koran and laments for the dead. The tomb of Queen Turkan-Aka, Tamerlane's second wife, bears the inscription, "This is the garden of Paradise, where the star of happiness lies." The ornamentation forms such a luxuriant and chromatic tracery of lines that it does indeed resemble a spring garden.

Some of the tomb interiors resemble the luxurious tents the queens and other illustrious personages lived in when they accompanied Tamerlane on his campaigns. The wall designs create the effect of tapestries with wide bands crisscrossing at the arches, very much like the woolen bands that held together the felt tops of the ancient regal field tents. These, however, are made of enduring tile, perpetuating, as it were, the last campaign of the great warrior.

At the far end of the narrow passage between the tombs loom the huge ruins of the Bibi-Khanum Mosque built on Tamerlane's order. Elephants were brought from India to haul the great stones, and the most expert builders from many lands labored for five years to erect this mosque, one of the largest structures in the Moslem world. Today it lies in grandiose ruins, but even they testify to the genius of Uzbek architects who were determined to surpass everything that had been created before them.

Happily, time has spared medieval Samarkand's Registan Square. Mirza Ulugh-Beg, the grandson of Tamerlane and a famed astronomer, had a madrasah built on the west side of this square, where astronomy, mathematics and medicine were taught together with theology.

Ulugh-Beg ruled Samarkand for 40 years until he was assassinated in a *coup d'etat* led by his own son. The body of the astronomer-king was buried in a cell of the madrasah.

From Ulugh-Beg's time we have the remains of the foundation of the round three-tiered observatory where his astronomers studied the heavens, and part of a big marble sextant preserved in a rock crevice. It is worth noting that the tables compiled by Ulugh-Beg have not lost their importance to this day.

The tomb of a fifteenth century Samarkand astronomer. (Below) Overlooking Bukhara is the eight-century-old Death Tower.

TECTURE

One of the best preserved of Samarkand's medieval structures is the Gur Emir, the tomb where the remains of Tamerlane lie. Gur Emir means "the sovereign's grave" in Uzbek. The tomb's stately dome tapers to a ribbed spire with intricate tile designs that, from a distance, give the effect of the draped folds of a rich silk canopy. Inside the tomb the headstone of solid nephrite is covered with ornate inscriptions glorifying the monarch's ancestry and exploits.

Originally the tomb was lavishly decorated. The stone panels were ornamented with gold leaf, the walls sparkled with mosaics, and the cornices and arches gleamed with gold. A heavy gold emerald-studded chandelier hung over the graves. Craftsmen are at work restoring the tomb to its magnificence of five centuries ago.

Samarkand, like Bukhara, has many structures that speak for the genius of Uzbek builders. Today's young architects, brought up in this environment of ancient beauty, are designing structures that combine the traditional Uzbek styles with modern building techniques.

The central square of Tashkent, capital of the republic, has a theater of opera and ballet named after Alisher Navoi, the great teacher of his people. The theater has the most modern type of stage but is built in the traditional Uzbek style. This is particularly true of the interior decorations and of the numerous foyers, each of them ornamented with plaster sculptured in classic Uzbek forms. Artists from different parts of the republic were asked to do a hall, each in the decorative style of his native city. Thus the foyers bear such names as Bukhara, Khiva, Tashkent and Samarkand.

The Musical Drama and Comedy Theater, erected during the war and named after the famous Uzbek poet Mukimi, was built of brick in the old Uzbek fashion and without the use of a single nail.

Building materials of every kind, including those used centuries ago, are employed today in large-scale construction in Uzbekistan. The designs are varied too, many of them dating far back into the past. Their ancient heritage continues to inspire today's Uzbek architects and interior designers.

Under the cupola of the Gur Emir mausoleum in Samarkand lie the remains of Tamerlane, the great fourteenth century Mongol conqueror.

The Char Minor madrasah, a Moslem school of theology, dates back to the fall of the Bukhara emirate in 1807.

This structure was intended as a support for the Koran. From here the imam read to the Moslem congregation.

Eleven Questions to the Valorous

Four

BY PAVEL BARASHEV AND OLEG BENYUKH

PHOTOS BY ALEXANDER MOKLETSOV

WE'D GUESS that it will be far easier for the Chief Spaceship Designer to launch four cosmonauts into the same orbit and round them up in the stellar ocean than it was for us to catch Yuri Gagarin, Gherman Titov, Andrian Nikolayev and Pavel Popovich together. Their perpetual engagements, speeches, reports and trips inside and outside the Soviet Union give them no respite at all. But one early rainy morning we finally managed to bag the four in their "space town."

Gagarin and Titov had had breakfast at home, Nikolayev had just returned from his solitary bachelor's repast at the canteen and we tracked Popovich right to the door of his house seeing his wife off to work. Our questions were all prepared, and we were not going to budge until we had all the answers. So we attacked them immediately.

"What quality do you prize most in men?"

"Modesty," said Nikolayev. "Modesty and efficiency." Then, to make it clearer, he added: "Do more and talk less."

We glanced inquiringly at the other cosmonauts. They winked at one another and raised their hands in a "for" vote.

"Andrian is always reading our thoughts," said Titov.

"All right. And what do you dislike most in people?"

"Dishonesty," snapped Pavel Popovich. The others raised their hands "for" again.

We asked no more questions on that topic. Nikolayev's and Popovich's replies were altogether exhaustive.

Our third question evoked an expansive reply from Titov.

"What's our ideal of happiness?" he repeated. "Happiness is a relative concept. It all depends on the person. For one, it's his bank account; for another, a fancy apartment; for a third, a quiet and comfortable live-and-let-live kind of life. For me happiness is to feel and know that people need me and that I need people."

"Gherman couches his speech in elegant terms," said Nikolayev, "but he's right. I feel the same. What's your next question?"

Our fourth question was just as far removed from space as the previous three. We wanted to know their favorite dishes.

"Ukrainian *borshch* and *galushki!*" boomed Popovich.

"Well, while you're on the subject of Ukrainian food, don't leave out cutlets a la Kiev," laughed Titov. Nikolayev whispered in a dramatic aside, "We know he always orders Caucasian *shashlik* when he eats out."

We did not want them to get into an argument over culinary matters, so we switched to another subject.

"What are your favorite sports?"

"Gymnastics," said Titov without hestitation.

Popovich, after a moment of heavy thinking, said uncertainly, "You think I know which I like best? I go in for everything—skiing, weightlifting, soccer and hockey—everything that peps me up."

We didn't ask Gagarin because we knew he was a confirmed basketball player from his trade school days.

Nikolayev said he preferred gymnastics.

Our sixth question got four identical replies. Their favorite hobby was:

"Books."

"Books."

"Books."

"Books."

"And machines," added Gagarin.

"Especially his car," murmured Nikolayev with a wink.

About his favorite dances, Titov said simply, "I don't dance."

"Did you take any charms aloft with you?" our interviewer asks Pavel Popovich. "Yes, a miniature of Lenin painted on silk."

BY PAVEL BARASHEV

ORBIT ROUND THE EARTH

AFTER Gagarin's name had flashed round the earth during that first heroic flight into space, people waited and wondered when the next step into the cosmos would be made. Who was this cosmonaut No. 2 who had been standing by to substitute for cosmonaut No. 1 in case of emergency? What was his name? What did he look like?

There were very few people who had seen and talked to him, and they had put their notes away until the second flight was announced.

Gagarin, of course, knew cosmonaut No. 2. He also knew the day the flight would be made.

At 5 o'clock on the morning of August 6, 1961, Cyrus Eaton—host to a group of distinguished scientists and peace advocates—knocked excitedly on the door of Gagarin's room in the Canadian village of Pugwash with the good news. He expected to find the cosmonaut sound asleep after having just arrived from Brazil, where he had toured extensively. Eaton found him wide awake, already dressed and shaved.

"*Vostok II* has been launched," Eaton said.

"I know," Gagarin replied calmly, "with Gherman Titov on board. We'll probably be reaching Moscow by plane by the time he returns to earth."

As soon as the Soviet IL-18 airliner took off from Halifax and headed east, Gagarin asked the stewardess to open a bottle of champagne. When glasses were filled, he raised his high in Russian fashion and said, "Here's to Gherman Titov, for his space flight and his terrestrial orbits!"

In slightly more than 24 hours, Titov made 17 orbits of our planet. He followed that with a series of terrestrial plane trips to countries and peoples all over the globe who wanted to honor the Hero Cosmonaut.

The first to give him a gala welcome was the German Democratic Republic. Then he traveled east to Mongolia, and later far south to that equatorial gem Indonesia.

When I think of Indonesia now, I do not see the exotic palm groves and the beautiful lagoons on the coasts of large and small islands that stretch west to east for 3,100 miles, a distance longer than that from New York to San Francisco. Nor do I picture the Bali villages with their handsome, quiet and versatile inhabitants and their ancient way of life.

What comes to mind are the great squares in Jakarta and the halls in Surabaya where hundreds of thousands of Indonesians gathered to hail the Soviet cosmonaut. There must have been millions who came to see him during his two-week visit.

In Jogjakarta I asked Salim Djadat, a local college student, what he thought was the reason for such an outpouring of people and so cordial a welcome for Titov.

Djadat said, "I can't answer for them all, but for myself, I think of him not so much as a personal hero but as a heroic representative of that new society which your country has already created and which many countries still have to build. Heroes have always won the hearts of men, and in Titov's country they are not a rare phenomenon by any means. Otherwise, you could never have built so great a nation in 40 years."

It is true enough that heroes win men's hearts because they symbolize the strength and courage to which all men aspire. But I think there are also other reasons for the heartfelt welcome given Gherman Titov.

"I saw our planet from afar. From those great [illegible] cosmonaut spoke. "It [illegible] for dange[illegible] preserve [illegible] the peace[illegible]

It was [illegible] friendship [illegible] applauded [illegible] nam, in [illegible] tries he [illegible]

His fr[illegible] of [illegible] and frie[illegible] and sig[illegible] first vi[illegible] Postok 6, 196[illegible] space. New Y[illegible] cisco [illegible] that t[illegible] broke[illegible] gangw[illegible] from[illegible] Ti[illegible]

the work of COSPAR and spent two weeks in the United States. Everyone must have seen and heard him, since the almost daily press conferences and interviews were all televised. To judge by the fondness with which they spoke of him, Americans must have liked his matter-of-fact reports, his friendly but businesslike talks with John Glenn, and his replies to questions from reporters.

The day after he arrived in the United States the Soviet Embassy in Washington received scores of letters addressed to Major Titov. Basil Pallier, a movie cameraman from New York, said: "Your visit does honor to the United States." And a Mr. and Mrs. Yost wrote from their farm in Michigan, "We could meet you only on the radio and television, but this meeting made a great impression on us. We understand now why your country and your people are so proud of you. We are very sorry not to be able to shake hands with you."

But many Americans did manage to shake hands with the hero. There was this touching incident in one of the lounges at the Seattle airport, filled, as usual, with newsmen, police and passengers patiently waiting for a glimpse of Titov. As he appeared in the covered passageway that leads from the field to the lounge, a girl made her way through the crowd. She made her way through the crowd. She [illegible] that everyone, even the [illegible] and the [illegible] carrying [illegible] garden in [illegible] identifying [illegible] was afraid [illegible] yet and [illegible] flowers and [illegible] very happy [illegible] in Russian. [illegible] excitement, [illegible] welcome." [illegible] was shown [illegible] addressed to [illegible] dsen of Kan- [illegible] May you re- [illegible] this trip and [illegible] understanding [illegible] between our [illegible] countries of [illegible]

[illegible] translation and [illegible] cisely why we [illegible] ntinue to push [illegible] ★

Popovich autographs page 1 of the August 1962 USSR *magazine. The greeting, signed by the four, reads, "To our American friends. We wish you peace and happiness."*

Popovich and Gagarin preferred slow waltzes, and Nikolayev liked tangos as well.

They proved far more communicative about which American authors they liked most. Titov and Popovich listed Dreiser, Faulkner and Kerouac, and Nikolayev said Jack London—a perfectly logical first preference, we thought, for that modest, courageous and strong-willed spaceman.

"I like Hemingway very much," said Gagarin. "I was very upset when I heard about his tragic death."

"Are any of you superstitious? Did you take any charms along into space with you?"

An unnecessary question, perhaps, because we knew perfectly well that none of the four were either religious or given to superstitious fears. But Popovich said: "I took a charm along with me, a miniature portrait of Lenin painted on a piece of silk."

"You can tell your American readers," said Gagarin, "that my space suit was numbered 13. The 'unlucky' number brought me no bad luck, as you can see."

"What did you want to be when you were a boy?" we asked each in turn.

"A flyer," said Gagarin.

"I don't remember," was Titov's reply.

"I really wanted to be an engineer," sighed Popovich.

"You'll be one when you get through the academy," said Nikolayev consolingly.

His own answer was brief and to the point. "Grown-up."

The last question on our list was what the spacemen wished Americans for the New Year. If, dear readers, this page of our magazine could turn into a tape recorder, you would hear the four chorus in unison:

"PEACE AND HAPPINESS." ★

UZBEKISTAN ON STAMPS

BY ILYA ZBARSKY

UZBEK life and customs are pictured on stamps dedicated to the various Soviet republics. The first Uzbek commemorative, a 15-kopeck in the 1933 ethnographic series, has a farmer in national costume driving a tractor, illustrating the mechanization of the republic's agriculture.

A yellow 20-kopeck stamp, issued in 1937 to celebrate the twentieth anniversary of the October 1917 Socialist Revolution, bears the coat of arms of Uzbekistan—a hammer and sickle crowned by a five-pointed star against a background of the rays of the rising sun, the whole surrounded by sheaves of wheat and cotton plant twigs. A 45-kopeck dark green stamp showing a cotton harvest pays tribute to Uzbekistan as the country's largest grower.

Tashkent, the Uzbek capital, with its beautiful architectural ensembles, is the subject of two stamps. A 40-kopeck orange shows a monument to Lenin against a background of Government House. The other stamp, an oblong gray, shows a corner of Lenin Square in the center of the city. The stamp carries the name of the republic in both Russian and Uzbek and an ornament with national motifs.

The Afro-Asian Writers Conference was held in Tashkent in 1958. An olive green, black-brown and orange 40-kopeck stamp was issued to commemorate the occasion. On it is an open book with the name of the conference inscribed against a flaming torch, a lyre and a lotus. The city's Pedagogical Institute, where the conference took place, is seen in the left background.

The most recent Uzbek issue, which appeared in 1960, is a square 60-kopeck with figures in national costume.

All the denominations given here are in the old currency. ★

Ambassador Foy Kohler is introduced to Deputy Foreign Minister Vasili Kuznetsov by Nikolai Organov.

NEW AMERICAN AMBASSADOR

FOY D. KOHLER was recently appointed Ambassador of the United States to the Soviet Union. In a ceremony at the Grand Kremlin Palace he presented his credentials to Nikolai Organov, Vice President of the Presidium of the USSR Supreme Soviet. President of the Presidium Leonid Brezhnev was away at the time on an official visit to Yugoslavia.

The new Ambassador declared at the ceremony that in this era of great technical discoveries, with man soaring into space, it was more essential than ever that the two governments seek solutions for the large and small problems that beset the world. He recalled that in his time President Franklin Delano Roosevelt expressed hope for cooperation between the United States and the Soviet Union to their mutual benefit and for the preservation of world peace. President Roosevelt stated that cooperation in this great cause was the cornerstone of lasting friendship.

In the years following, the Ambassador went on to say, there had been periods when progress was made toward this goal which still remains the major aim of American policy. It would be his duty, he said, to help achieve that understanding and cooperation for peace.

Nikolai Organov, in reply, said that the foreign policy of the Soviet Union is invariably guided by the principles of peaceful coexistence and businesslike cooperation between states and that he attached "great importance to improved relations with the United States."

He was gratified, declared Organov, with the Ambassador's assurance that President Roosevelt's hope for cooperation between the two countries still remains the major aim of American foreign policy. This cooperation has now become "even more imperative and essential."

He assured the Ambassador that his efforts to achieve mutual understanding and cooperation would always have the sympathy and support of the Soviet Government. ★

FOREIGN VISITORS IN UZBEKISTAN

OFFICIAL delegations and scores of tourists from Europe, Asia, Africa and America visit Uzbekistan every day. The republic has played host to Indonesian President Sukarno, President Nasser of the United Arab Republic, Indian Prime Minister Nehru, dozens of parliamentary and special delegations from Britain, Belgium, France, Brazil, Chile and other countries. This spring diplomats from 33 countries accredited to Moscow visited Uzbekistan, and during the summer a group of American editors toured the republic. Every delegation to the Soviet Union from the underdeveloped countries, it is worth noting, made a point of visiting Uzbekistan. The government leaders and public figures of those states that have more recently won their freedom and have embarked on a course of independent economic development were particularly interested in seeing for themselves what had made possible the Uzbek people's great leap from feudalism to industrial development in only 40 years.

The photo shows Yadgar Nasriddinova, President of the Presidium of the Uzbek Supreme Soviet, at the airport in Tashkent, capital of the republic, with Modibo Keita, President of the Mali Republic, who had just arrived on an official visit. ★

MY FELLOW VILLAGERS

BY KHAMID NURIDDINOV

I WAS BORN and bred in the village where I live. This whole generous and fruitful republic of ours is dear to me—its great expanses of field, its blue canopy of sky, the life-generating water flowing in its irrigation ditches, its people with their skilled hands. To see how much these hands have accomplished, one must look back on the past.

This anecdote tells the story. In 1916 a man who had moved away from the village sent his parents a letter. Since there was no one who could read or write, they had to take it to a scribe in the city. He read the letter and wrote an answer—for a remuneration, of course.

A far cry from today. Our collective farm village now has a boarding school, three 11-year schools on the junior college level, seven eight-year schools on the junior high school level, with a total student body of 2,300 and 106 teachers.

Many of my fellow villagers hold graduate degrees, several are university instructors. My former classmate, engineer Khamid Saliyev, is now working in Moscow on his thesis for a master's degree in science. His wife Mavlyuda Khalilova, who was also in our class, is a school principal and teaches the Uzbek language and literature. Nurridin Babakhojayev, the noted Uzbek poet, hails from this village.

Our farm, named after the Twentieth Congress of the Communist Party, is situated in the sunny Fergana Valley. It has 6,400 acres of irrigated plowland, most of it planted to cotton, the rest to corn, alfalfa, vegetables, melon and rice.

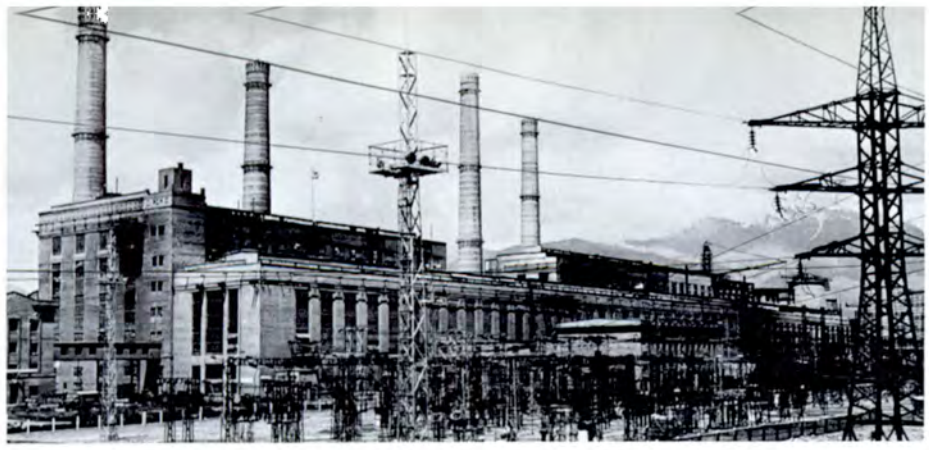
Cotton is our big crop. In 1929, when the farm was set up, we harvested only a little more than half a ton of raw cotton per acre. Now, with an improved irrigation system and scientific farming, we raise as much as two tons per acre. Last year we sold 2.1 million rubles' worth of cotton to the state. Our total income for the year was 2.7 million rubles, and we expect that next year it will be three million.

Each of the collective farm members has a kitchen garden and small orchard plot for his personal use, a green oasis to protect his house from dust and the heat. He will generally have 20 to 30 grapevines, and pomegranate, fig, quince and apricot trees in his orchard plot, and watermelons, muskmelons, carrots, onions and other vegetables in his kitchen garden. What the farmer does not use himself, he sells at the collective farm market in town.

The average villager's annual income runs to about 3,000 rubles, a fifth of it from produce raised in his kitchen garden and on his orchard plot,the rest of it payment for work done on the collective farm.

These are my fellow villagers, building a better present for themselves and a still better future for their children. ★

Scene in the collective farm village. These are teachers on the way home from school. Behind the young shade trees is one of the two village clubs.



THE YOUTH OF THE ANCIENT

AN OLD valley, an old river and a young city—all called Angren. On the river banks you can still find traces of smelteries that go back to the eleventh century. The city celebrated its twentieth birthday a while back and most of its citizens are not much older—young men and women who came here to build the 600,000-kilowatt Angren Thermoelectric Station, the largest in Central Asia.

The Angren project changes as it grows. Every new unit poses a new problem. The first turbine had a very modest capacity of 30,000 kilowatts. Industrial growth and the extension of Uzbekistan's irrigation network call for more and more electric power. The problem was to increase the capacity of the turbogenerators without changing their size since they were to be installed in a building already completed.

Angren's young Uzbek engineers got in touch with the Teploenergoproyekt Institute of Moscow, which had designed the station, and with the Elektrosila Plant of Leningrad, which had made the turbines, and asked them to step up the capacity of the steam boilers without increasing their volume. The idea was to switch the station over to a high caloric fuel.

Coal for the Angren station's furnaces is mined by the cheap, open-cast method. Nevertheless power generated by thermoelectric stations costs more than power generated by hydroelectric stations. But there is a way of raising the capacity of thermal stations, discovered by the Russian chemist Mendeleyev in the early years of the century. He suggested that instead of burning coal in furnaces it be burned underground, and that the high caloric gas formed in the gigantic stokeholes be piped to the station.

Despite the fact that half a century has passed since Mendeleyev's suggestion was made, there are very few underground gasification installations in the world. The Uzbek engineers applied the method and solved two problems thereby. They reduced the cost of electricity generated and increased the capacity of their steam boilers without increasing their volume.

Next to the last turbine, the seventh, has been installed. Its capacity is already 100,000 kilowatts. The eighth one will be even more powerful. And in the very near future, the Angren station will fuel all its units with gas piped from the underground stokehole. ★

Makhira Akhmedova is a control-panel operator at the Angren Power Station (above), the newest and biggest in Central Asia.

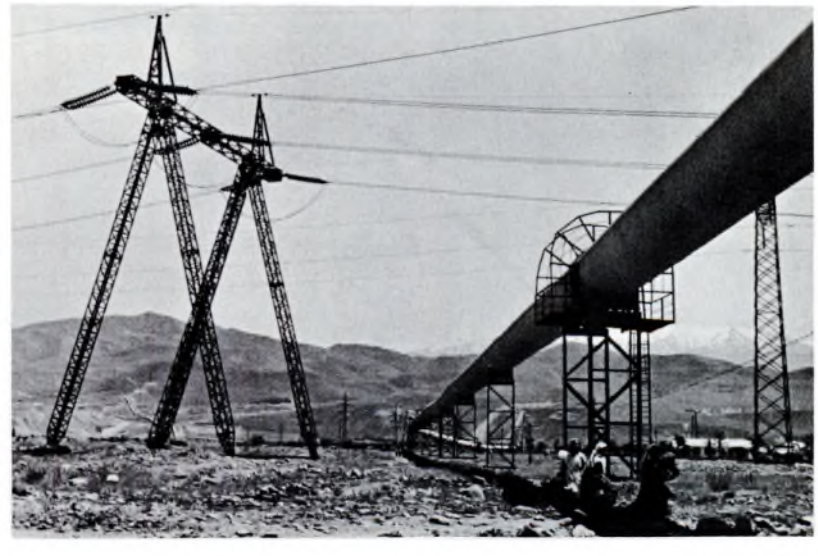
VALLEY

BY ABDULLA ABDUKADYROV

Coal for the Angren station's boilers is mined by the open-cut method. Hydraulic pressure is used in the stripping.

Engineer Adkham Mansurov is a gifted poet. His verses on the young people of this old valley appear in the Uzbek newspapers.

This installation, one of several under construction, pipes gasified coal from deep underground to the Angren furnaces.



The Fedchenko Glacier in the Pamirs, more than three miles above sea level, is the longest in the world, stretching more than 48 miles north to south.

VISIT THE PAMIRS once and it's not likely you will ever forget their majestic grandeur and wild beauty. The rivers in these mountains have their source in glaciers and eternal snow. In high water they sometimes flood the fertile fields and orchards; in summer they dry up, letting the hot sun scorch the surrounding land.

In this district of great glaciers scientists can best establish the freezing tendency peculiar to the present time. The Fedchenko Glacier, one of the biggest, was included for study in the International Geophysical Year program. The research was entrusted to the Uzbek Academy of Sciences.

Ours was the first attempt to establish the laws that govern the region's climatic changes. They affect not only this piece of Soviet territory but areas of Afghanistan, India, Pakistan and China. It was also the first research done to determine the influence of the glacier on the water level of the Central Asian rivers which play an important role in the national economy.

To do this glacier research a permanent station had to be built at an altitude of 16,400 feet in the region of eternal snow. In the summer of 1957 a group of scientists headed by Victor Bugayev and including two members of the Uzbek Academy of Sciences—Tashmukhamed Sarymsakov and Sagdy Siradzhinov—Professor Oleg Drosdov and scientific workers Ikram Nazarov, Vladimir Smeyanov and Ilkham Arifkhanov started up the Tanymas River Valley.

The going was dangerous. We lost 26 of the horses in our caravan when they fell into the bottomless crevasses. We reached the final stage of our journey and set up camp in the very center of the glacier, at an altitude of three miles.

Unexpected difficulties plagued us from the start. The caravan carrying our food and fuel could not reach us—the way was blocked by snow—and it had to settle down in the Tanymas Valley, six miles from our wintering base. This was no great problem, it was only a two-hour ski run. But on one of the runs we could not find the store; an avalanche had buried it under many feet of snow. Supplies had to be flown in.

In this unexplored country, there is danger at every turn. One night, when everyone was asleep, a terrific blow shook the metal shack, almost deafening everybody in it. The walls sagged and the floor cracked. We rushed to the door, but it would not open. Ikram nearly fell through a hole in the floor. Then another jolt . . . Earthquake! The shack was completely buried by snow, a trapdoor in the roof was the only way out.

But we managed somehow and started on our observations. Every two hours we sent weather bulletins to Tashkent. Our experts set up the automatic equipment that measured the rate of movement of ice in the center of the glacier and at its edges. And as soon as we became more familiar with the region, we began making long trips to explore other glaciers.

In the spring the population of the glacier grew. Parties of seismologists, geomorphologists, climatologists and photogrammetrists arrived and tents sprouted in the farthest parts of the glacier basin.

We found, with difficulty—the ice did not give up its secrets easily—that the Fedchenko Glacier, which is now 48 miles long, had been 118 miles long and 3 miles wide in the glacial epoch. Seismic soundings established the depth of the ice at 3,280 feet in the central part of the glacier, instead of the 1,640 feet we had supposed. We also explored one hundred smaller glaciers

All of the comforts of home—plus a sun bath—with guitar accompaniment.

We mapped a hundred of the glacier's branches and measured its thickness.

From our Pamir perch we radioed the weather to Tashkent every two hours.

A frequent occurrence. Loose-piled snow hid these treacherous crevasses.

Expedition head Victor Bugayev finds an interesting-looking crevasse.

TEXT AND PHOTO BY VLADIMIR SUSLOV
MEMBER OF THE IGY EXPEDITION

ON THE FEDCHENKO GLACIER

that branched off the giant Fedchenko Glacier and the upper regions of snow that fed it.

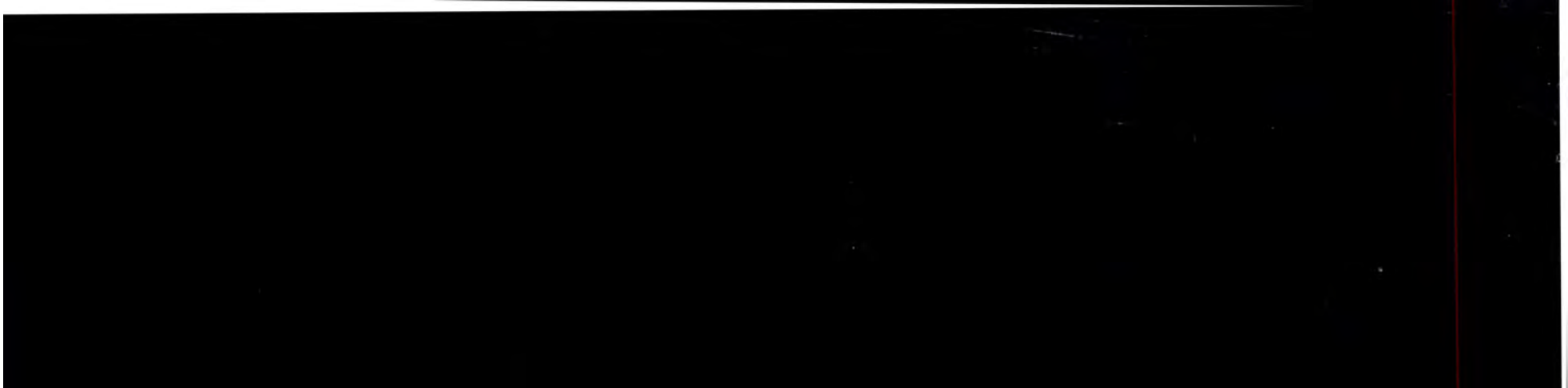
From complex observations made the year round, scientists determined the effect of the ice on Central Asian rivers and obtained precise information on the movement of the glaciers in this region. Some of them slide down at a rate of almost a thousand feet a year. The movement is uneven, as in rivers, slower near the edges than in the center. Observations the expedition made showed that the freezing area in the vast mountain region tended to diminish.

The climatologic observations proved very interesting. They substantiated the laws that determine the weather of this great territory.

Our work in the International Geophysical Year program completed, we were replaced by another party of Uzbek scientists who came to check, from a 16,400-foot altitude, the work of meteorologists, climatologists and irrigation specialists in Central Asia.

This highest alpine research station is still functioning, but it has moved from the glacier to the firm slope of the valley and serves as a base for the annual observations made by the Uzbek Academy of Sciences. ★

ON THE UZBEK STAGE



BY FRUNZE DZHURAYEV

The Uzbeks have a rich theater history but previous to 1917 this art was confined to folk plays performed outdoors. It was only in 1918 that the first professional theater was set up, the regional touring music and drama company of Fergana, organized on the initiative of a leading Uzbek writer, Khamza Niyazi. The same year the Karl Marx Drama Theater of Tashkent was opened. Thereafter a number of companies were formed—in Kokand (1918), Andizhan (1919) and Khiva (1922). At present there are 20 professional Uzbek and Russian companies in various towns. The actors are trained at the State Institute of Theater Arts and the Conservatory, both in Tashkent, the Uzbek capital. These schools have produced several actors of stature who, along with master actors of the older generation, perform in the theaters of Uzbekistan and foreign countries, where these companies often go on tour.

A Soviet scientist of Uzbek extraction visiting London, asked what sort of people the Uzbeks were, replied that they were a people who staged *Hamlet* brilliantly.

The remark, made 17 years ago, still has point. The *Hamlet* staged by the talented Uzbek director, actor and playwright Manon Uigur is indeed a brilliant production, one of many in the repertory of the Khamza Academic Drama Theater.

It was no easy matter for Uigur to embark on his theatrical career. Of Moslem faith, his parents forbade him to appear on the stage. When they learned that their 20-year-old son had organized an amateur company, they drove him out of the house. But he stayed with the theater and made his company one of the best in the Soviet Union.

Uigur has done many Khamza productions, notably *Hamlet*, *Othello* and, with Izzat Sul-

The Uzbek theater is noted for its superb staging of Shakespeare. Abrar Khidoyatov as Othello.

anov, *Alisher Navoi,* a drama based on the life of the famous Central Asian poet, statesman and philosopher who lived in the second half of the ifteenth century.

Such gifted actors as People's Artist of the USSR Abrar Khidoyatov are indebted to Uigur or their training. Khidoyatov is an unforgettable Othello. His Moor of Venice is reminiscent of the famous Tommaso Salvini's—bold, passionate, brooding. Like Salvini, Khidoyatov arrives at the theater three or four hours before a performance to "live into" his part.

A British parliamentary delegation that visited Uzbekistan in February 1945 and saw him perform left this entry in the theater's Visitors Book. "Nowhere, not even in London, have we been a finer production of the play. We were stirred by the skillful handling of the roles of Othello and Desdemona and want to say how much we admire the actors."

The Desdemona in that production was played by Sara Eshanturayeva. People call her "the pearl of the Uzbek stage." She was 12 at the time of her first performance in 1924. A year later she was sent to an acting school in Moscow. She returned home three years later to play Laurencia in Lope de Vega's *Fuente Ovejuna,* Ophelia in *Hamlet,* Desdemona in *Othello,* Katerina in Alexander Ostrovsky's *Storm,* and the lead in many Uzbek dramas. Besides following a busy acting career, Sara Eshanturayeva is a member of the Soviet Peace Committee.

Alim Khadzhayev, another gifted Shakespearean interpreter, started with an amateur group and, like Uigur, was disowned by his father, who would not tolerate an actor in the family. His finest roles are Fabritio in Carlo Goldoni's *Mistress of the Hotel,* Mikhail Yarovoi in Konstantin Trenev's *Lyubov Yarovaya,* and Hamlet, Caesar and Iago in Shakespeare's tragedies. He is especially famous for his portrayal of Iago.

The Khamza Theater is the largest playhouse in Uzbekistan. Its repertory of Uzbek, Russian and Western classic and modern plays, and its fine staging and acting are a tribute to the cultural interchange among the peoples of the Soviet Union.

The play with music, perhaps the most popular theater form in Uzbekistan, combines singing, dancing and acting. Its hero is the man in the street, and its theme his daily concerns, thoughts and emotions, his dreams and aspirations, treated not in any banal or flippant style but with integrity and dramatic dignity.

The acting companies in most Uzbek towns do musical plays in the main. The largest of these theaters is the Mukimi Musical Drama and Comedy Theater in Tashkent named after the nineteenth century democratic poet. Its reper-

tory of musicals dramatize Uzbekistan's past and present and satirize those tendencies that stand in the way of its progress.

The artistry of Makhmudzhan Gafurov is responsible for Uzbekistan's high development of this type of theater. He showed an early penchant for singing and acting, performed in school plays and in 1939 joined the newly opened Mukimi Theater. His first big role was Takhir in the popular Uzbek musical *Takhir and Zukhra*, based on an old romantic legend, with music arranged from folk songs. Gafurov's fine lyric tenor and acting talent made him an immediate favorite.

The Uzbek composer Khamid Guliam wrote the comedy *Tashbalta in Love* for the well-known comedian Sakhib Khadzhayev. A self-taught actor, Khadzhayev's talent for mimicry, keen sense of humor and dramatic flair have won him a high place in the Uzbek theater. Off stage, he is the last person you would take for a comedian, but no sooner does he appear before the footlights than he has the audience in gales of laughter.

The Mukimi Theater has several foreign musicals in its repertory, among them Imre Kalman's *Bayadere*, Goldoni's *Mistress of the Hotel*, and *The Sorochintsy Fair* based on Nikolai Gogol's story of the same name.

Uzbekistan's Alisher Navoi Opera and Ballet Theater opened in 1939. The leading women's roles in most of its productions are sung by Khalima Nasyrova. Her gifts are heightened by a skillful blend of the traditionally national style of singing with the operatic. Hence her voice is equally lovely in *Takhir and Zukhra* and in *Carmen*. Nasyrova's strong lyric soprano has captivated opera lovers at home and abroad—in India, Egypt, Iran, Afghanistan, Burma and Lebanon.

Karim Zakirov, who sings opposite Nasyrova, has a career biography similar to hers. Both began as dramatic actors, went over to musicals and finally moved into opera. Nasyrova graduated from a theater school in Azerbaijan, however, and Zakirov studied in a Moscow school for voice.

The Alisher Navoi's repertory includes both the Uzbek and the classical operas and ballets. It's productions include Tchaikovsky's *Eugene Onegin*, *The Queen of Spades* and *Swan Lake*, Verdi's *Traviata* and Puccini's *La Bohème*.

The major roles are sung by such young graduates of the Moscow and Tashkent conservatories as Asad Azimov. He studied music in the national capital, made his debut as Lensky in *Eugene Onegin*, and has since sung Romeo in *Romeo and Juliet*, Nadir in Bizet's *The Pearl Fishers*, and Rudolfo in *La Bohème*.

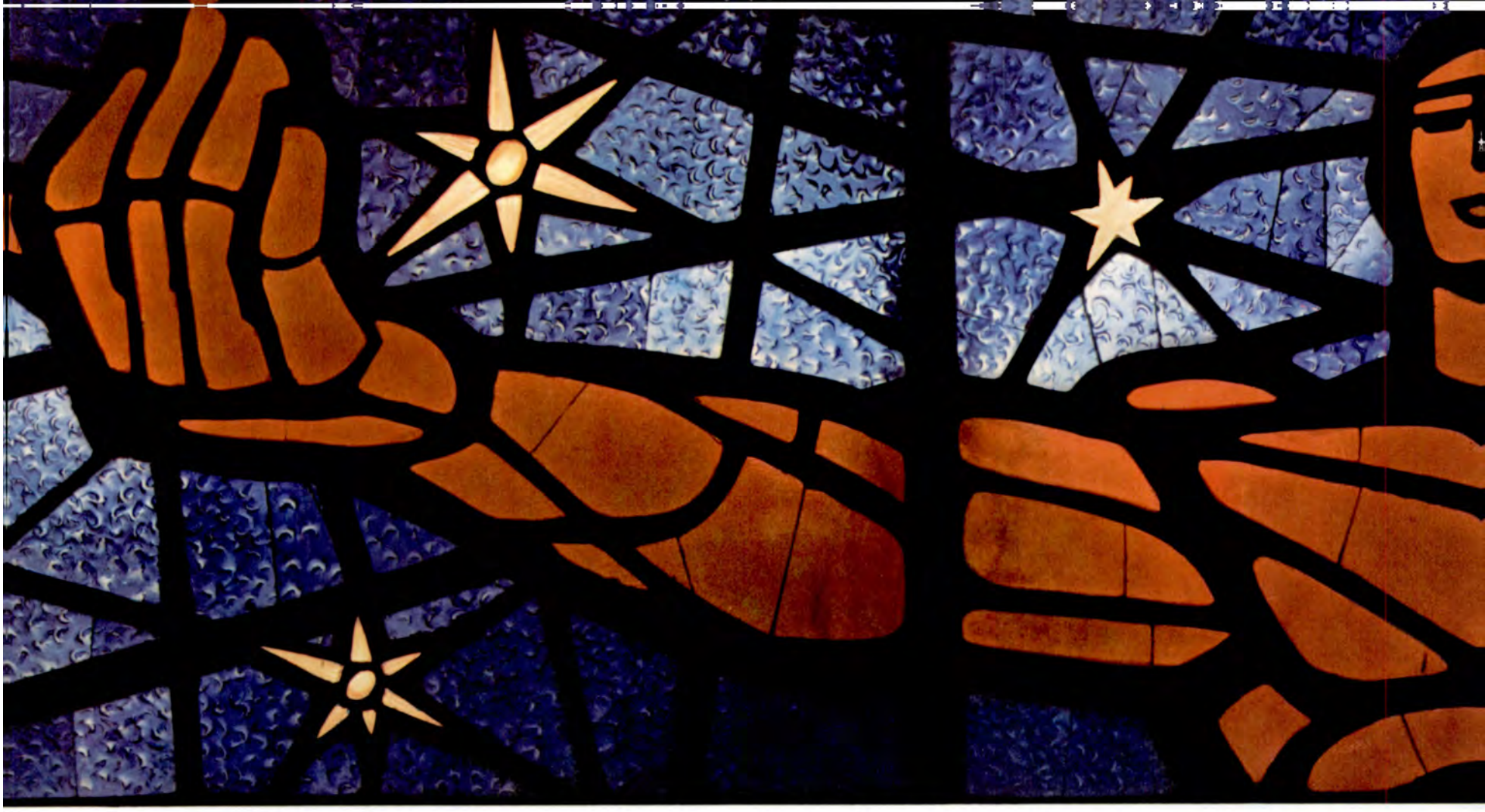
The popular Bakhor Dance Company is looked on as the younger Uzbek sister of the famous Russian Beryozka ensemble. *Bakhor* is Uzbek for spring and fittingly describes the folk dance company's unique and highly diverse choreographic translation of Uzbek life. The members of the company were trained at the Tashkent Dance School by Mukarram Turgunbayeva, their choreographer.

The republic's theater art is a seasoned blend of the Uzbek, the Russian and the West European cultures, the reason Britishers visiting Tashkent and theatergoers in Moscow, Teheran and Delhi all find Uzbek plays, musicals and ballet easy to appreciate and delightful to see. ★

The Bakhor Dance Company has become famous for its witty choreographic interpretations of Uzbek life.

Musical plays are exceedingly popular in Uzbekistan. Sakhib Khadzhayev as the lead in Tashbalta in Love.

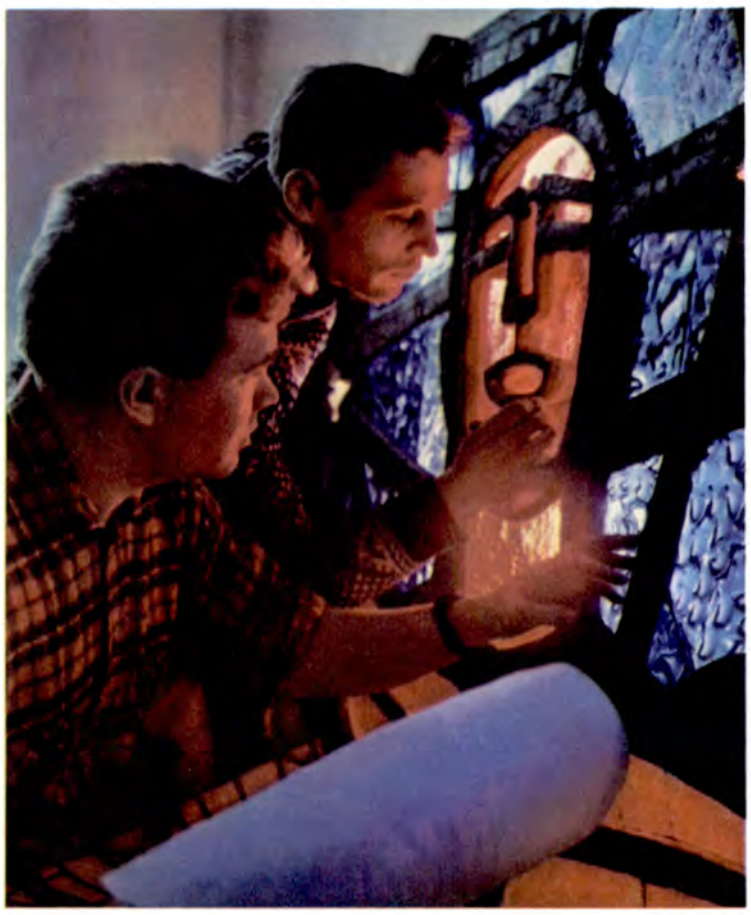
Ballerina Tursun Umarova in Kashmir Legend, *a production of Tashkent's Navoi Opera and Ballet Theater.*



This large stained-glass panel, "Son of Earth," was crafted by two young artists who work at the Gus Khrustalny glassware factory 125 miles from Moscow.

TO THE SONS

Vladimir Filatov (left) and Gennadi Chernoskutov putting the finishing touches on the panel designed in honor of the Soviet cosmonauts.



HALF AN HOUR after the world learned that Yuri Gagarin had circled the earth, designer Vladimir Filatov was cudgeling his brains for cosmic glassware ideas. The factory in Gus Khrustalny where he works turns out an endless array of tumblers, wine glasses, plates, dinner sets and other such items.

"What do you think of this idea for a 'Sputnik' ash tray?" Filatov asked his fellow designer Gennadi Chernoskutov.

"Looks promising," Gennadi replied noncommittally.

Three days later the new model was ready. Made of crystal, it had an unusually interesting quality. The object suggested a spaceship without being obvious. It was massive and graceful at the same time, generally pleasing and original.

"You've got something there," said Chernoskutov as he looked at the ash tray from a half-dozen different angles.

"If everybody here likes it, I'm going to send the first one turned out to Yuri Gagarin," said Vladimir.

Everybody in the place did, and this Sputnik ash tray now graces the desk of the world's first spaceman.

The director of the glassware factory asked Vladimir for more designs in the same vein, with a "cosmic feeling."

Gennadi, in the meantime, had been working on a cut-glass vase that was giving him a great deal of trouble. He showed his efforts to Vladimir from time to time but without great enthusiasm. It missed out somewhere. One day he came into the studio with a broad smile. "I've got it!" he said.

"What? The right shade for your vase?"

"No. I wanted to try a cosmic theme. What do you think of it?"

Gennadi showed his friend a striking sketch for a stained-glass panel. From that moment on, the vase was forgotten and the two young designers spent long hours working on the panel.

OF THE EARTH

BY GRIGORI ALEXEYEV

It turned out to be a much larger panel—5x20 feet—than the glassworks had ever turned out. It was built in three sections, the glass fortified by plaster of Paris, and weighed 660 pounds.

They searched for an appropriate name for the panel, discarded "Conquest of the Cosmos," "Glory to the Cosmonauts" and "To the Stars" as too explicit and finally chose "Son of Earth," which put them in mind of the Bible. The Biblical terseness, they felt, gave a sense of man's limitless possibilities.

Made of cobalt blue glass, the sky on the panel is almost black, the sky that Gagarin, Glenn and the other cosmonauts saw through the portholes of their spaceships. The human figure—the head, torso and arms are shown—was made of ruby colored glass.

The choice of ruby was made primarily for artistic considerations. "Red has always been a dominant color in stained-glass panels," Vladimir explains. And Gennadi adds, "We wanted our panel to emphasize man's power, not the sky. The red does that." The panel is an imposing work, in theme, proportions and workmanship, a fitting tribute to man's beginning conquest of outer space.

Our space age marks not only a revolution in science and technology but in artistic thinking as well. Space exploration will be developing its own creative symbols to represent the vastly expanded horizons of a multiplanet universe. Indeed, we have the early beginnings of that cosmic art. Young artists and craftsmen like Vladimir Filatov and Gennadi Chernoskutov are thinking in these larger terms.

They were both graduated from the Industrial Arts and Crafts School in Leningrad only three years ago and took jobs as glass and crystal designers in Gus Khrustalny, a town northeast of Moscow. There are hundreds of young designers like them at glassware works throughout the country, searching out new artistic ideas to portray these new times. ★

Vladimir Filatov's Sputnik ash tray of yellow-tinted crystal. The artist presented the original to Yuri Gagarin, first man in space.

NEW TOWNS ON

TRAVEL NORTH, south or east in the Soviet Union and you will see new industrial plants in operation or under construction. Some of them are huge by any standards, employing tens of thousands of workers.

Around these new giants of Soviet industry—factories, coal mines and hydroelectric power stations—new towns spring up. Between 1926 and 1957, three brief decades, 618 towns and 1,175 urban settlements were built.

Two-thirds of the towns in the Urals, Siberia and the Far East, and half of those in the Central Asian republics are new. The ratio is even more striking in Kirghizia—75 per cent of the towns in that republic were built in the Soviet years.

Mingechaur, in Azerbaijan, grew up around the site of a power project on the Kura River, and Karaganda around coal deposits in the heart of Kazakhstan. In the far northwest, in the Khibin Mountains of the Kola Peninsula, Kirovsk and Monchegorsk sprang up in rich apatite country.

The Arctic seaport of Igarka, one of the biggest lumber milling centers in Siberia, was built at the mouth of the Yenisei. Norilsk, a mining and metallurgy city, lies beyond the Arctic Circle. The Altai Tractor Works transformed the Rubtsovka settlement into the town of Rubtsovsk. Magnitogorsk, the Urals' iron and steel center, Komsomolsk-on-Amur, etc., etc., ... the list is a long one.

But new is a flexible word. A 20-year-old town—some of those we mentioned have long passed their twentieth birthday—is middle-aged, considering that the Soviet Union is only 45 years old. Call them "old new cities"—we need some such semantic distinction since much newer towns are already springing up.

Sumgait, an iron and steel workers' town, was built after the war on the Apsheron Peninsula, near Baku. It makes pipe for the Baku oil fields. Very young Bratsk is where the builders of the mammoth power station on the Angara, in Siberia, live. You would not have found Divnogorsk and Zheleznogorsk in reference books published before 1959. The same is true for Temir-Tau, a town near the Karaganda coal fields.

Some of the youngest towns are too new to be listed on the maps. Our builders are several jumps ahead of the cartographers.

People used to say that every Russian town had its own peculiarities, and they did not always mean it as a compliment. The fact is that towns just happened to grow, without any design or sense of style. There was no city planning, let alone planning on a countrywide scale.

These new towns are born as industry expands. They are planned for living.

Here are some typical town biographies.

THE SOVIET MAP

SVETLY

Before May 1960, the Orenburg steppe along the shores of Burkutala was uninhabited, the quiet punctuated only by the hubbub of wild geese in flight.

The first people came in June. Their leader climbed out of a car, spread a map on the hood, took a good look round, made a sweeping gesture and said, "Well, we're here at last. Home. . . ."

They unpacked, put up the first tent, and the town of Svetly was founded.

Twelve years ago geologists discovered nickel-cobalt ore in the area and work was begun on mines, an iron and steel mill and a town for 60,000.

Svetly is being built by young people—recent high school graduates, office workers, demobilized soldiers. The tents were folded and put away some time ago, and every day families move into modern new apartments. The town has a high school, one of the first buildings to go up, with a heavy enrollment of young workers in its evening session. There is also a newly opened junior music college.

Pretty soon this new center of Soviet heavy industry will be going full blast, providing the country with valuable metal for its industries.

VOLZHSKY

Shortly after the government decided to build the Volzhskaya Hydroelectric Power Station, a tent town of builders materialized in the uninhabited steppe on the left bank of the Akhtuba, near the mouth of the Volga. The going was hard, not everybody could take it. Some packed up and left without a backward glance, but others took their places and the work went on.

The town grew with the power project. From the very start permanent stone houses were put up to avoid the unsightly fringe of jerry-built barracks characteristic of the old towns.

In less than ten years Volzhsky was a modern city. Now it has a population of more than 70,000, some 70 retail stores, 15 schools with more than 10,000 children in attendance, an industrial secondary school, a medical school, an institute branch, 12 libraries, seven movie houses, a stadium that seats 12,000 with a two-story gym and an indoor swimming pool, and a full complement of medical facilities.

The first medical facility to be built, by the by, was a maternity hospital. It has been doing a land-office business; in four years Volzhsky acquired 5,000 newborn citizens. They will live in comfortable apartments and attend spacious, modern schools. The beautiful green city in which they will grow up will leave a wonderful imprint on their lives.

ANGARSK

Like Leningrad, Angarsk in Siberia has none of the dreary outskirts one used to take for granted in industrial towns. Entering Leningrad via the Moscow Highway, you immediately come on a modern city with tall houses, wide streets and attractive gardens. The same with Angarsk.

Everything in Angarsk pleases the eye—the way the streets are laid out, the bright colors of the houses, the well-tended pine, poplar and apple trees. The clear, fresh air has a forest and river fragrance. Although built to standard design, there is, interestingly enough, no feeling at all of architectural monotony about the town.

Long ago, in czarist days, the road to Moscow, along which the fighters for freedom were marched to Siberian prisons, passed through here. The only reminder now is Moscow Street; it runs along the old road.

Ten-year-old Angarsk is a full-fledged city with a population of more than 150,000. It has 25 schools, 80 kindergartens and nurseries, an oil workers' palace of culture and three stadiums, including one which seats 10,000 spectators.

Freight trains carry Angarsk gasoline, cement, gypsum, pottery, ceramic tile and boiler equipment to all parts of the country.

The town is proud of the level of education of its citizens. Percentage-wise, Angarsk has three times as many college graduates as the university town of Irkutsk. It boasts a light industry school, a building trades secondary school, technical schools, a branch of the Polytechnic Correspondence Institute, a branch of the Irkutsk Mining Institute, the Research Institute of Occupational Diseases and Labor Safety and other scientific centers.

ALMETYEVSK

Tataria now pumps more oil than did all of prerevolutionary Russia, yet its first oil well was tapped only ten years ago.

Almetyevsk, like Leninogorsk, another oil city, is being built over a sea of liquid fuel—the Romashkinskoye deposit. You do not see the usual pumping units in these fields, the oil fountains "by itself." The pressure in the oil layer is kept at a constant level by pumping water into it.

The reason for Almetyevsk's being is the Romashkinskoye oil. The town, not even on the map a few years ago, is now Tataria's second largest, surpassed only by Kazan, the capital.

Tatar oil flows to Siberia through the Almetyevsk-Subkhankulovo oil pipeline that is linked to the gigantic Tuimazy-Omsk-Novosibirsk trunkline.

The town is growing apace and has become another of the country's industrial centers.

Almetyevsk is much like the other new cities except that its houses are built of light stone from nearby quarries.

RUDNY

From the air you see the white ribbon of road winding across the steppe, then suddenly chimneys, cranes, yellow ore dumps and the quarry beyond them. This is the Sokolovsko-Sarbai ore-dressing plant. Close by, on the bank of the Tobol River, is the five-year-old town of Rudny. Its streets are lined with multistory apartment houses, stores, schools, kindergartens and nurseries surrounded by gardens and parks. One of the streets is named after Marite Bizhike, one of the founding builders, a Lithuanian girl who gave her life to save two children.

The population of the town is well past the 60,000 mark. Builders are having a time of it keeping up with this minor population explosion. Besides housing, they are working furiously on more schools, stores, clubs, movie houses and all the other structural amenities of a modern town.

Industrially, Rudny has a big future. Under construction are a heat and power station and the country's largest ore-dressing plant.

TEMIR-TAU

Karaganda is a big, lively city in Kazakhstan with residential districts, gardens, parks, mines, factories, palaces of culture and schools. And adjacent to it are its equally lively new satellite towns. One of them, Temir-Tau, is already a modern industrial center.

Five years ago 12,000 young men and women came here from all over the Soviet Union to build Kazahkstan's metallurgical giant. It was hard sledding, nature was not magnanimous. But the town grew, house by house and district by district, and the people grew with it.

With only the foundation of the first blast furnace laid, they began to think about training skilled metal workers. About 160 of the Kazakh young men and women who had helped build the town were sent to Magnitogorsk, in the Urals, where they were taught metallurgy skills by the country's leading experts.

When they came back, the blast furnace was built and waiting. But it was only the first of many industrial installations. Now there are other blast furnaces, open-hearth furnaces, converters, a coke and chemical shop, a giant rolling mill and coal-dressing and agglomeration plants. The complex, spread over a 40-square-mile area, is still pushing out.

So is the city. Its present population is better than 130,000. And its public buildings include a new metallurgists' palace of culture with a 1,200-seat auditorium, a stadium and a music school.

Yevgeni Tchannikov (left) is Chairman of the Council of Pensioners, retired employees of the Ministry of River Transport of the Russian Federation.

About 150 of the minist pensioners do volunt work. Boris Lychevko (sitti and Vladimir Spirido help instruct student traine

RETIREMENT AGE

BY VICTOR ANANYIN

PHOTOS BY GEORGI PETRUSOV

AN OLD SAILOR I met at the Ministry of River Transport of the Russian Federation, Yevgeni Tchannikov, had this unexpected comment on the traditional retirement party—with speeches, gifts and all the other trimmings—given to celebrate that occasion. "Everybody," he said, "has a good time but the guest of honor." And he went on to enlarge on what obviously was a favorite theme.

"What do all the compliments and fancy speeches amount to—that you're joining the has-beens. The more you listen to the verbs in the past tense—he was . . . he worked . . . he devoted himself to . . . the more depressed you get. Your younger friends wish you good luck and bid you farewell and you ask yourself: Where are they farewelling me off to? To the next world to join my forefathers? The Constitution says every man has a right to retire, but it doesn't at the same time deprive people of the right to work," he concluded with some heat, self-generated. I listened sympathetically; I had heard the same complaint from other hale and hearty men in their sixties.

What usually happens is that people retire when they reach the retirement age and can live out the rest of their lives on a pension, not because they are worn out.

The pension, based on a man's work record and the salary on his last job, is usually enough to keep him comfortably. Tchannikov, for example, gets a fairly good pension, 140 rubles a month. The pensioner continues to get his medical care free, his accommodations at sanatoriums without charge, and a rent reduction. Additional help, where it's needed, comes from children who are usually self-supporting by the time their parents reach retirement age.

"Do you have a family?" I asked Tchannikov.

He gave me all the details. "We're four in the family. My wife is a housewife and doesn't bring in any money. But with my pension and the 100 rubles a month that my daughters Galya and Klara each contribute we do fine, very well. We have a modern apartment in Sokolniki and we also have a summer cottage with a flower garden. I have a real passion for gardening."

"You seem to spend a good deal of your time here in the ministry. Why?" I'd seen him there before.

He perked up, as though he'd been waiting for the question. "That's what I've been getting at. Gardening is fine but not as a full-time diet. We older people, thousands of us, just don't feel happy sitting home. We miss the busy life we've been used to, working as part of a collective. A good many of us, it's true, aren't strong enough for full-time work, but we'd like to make some social contribution, as much as we're able to."

Tchannikov told me something of the full life he's led. He was born in a peasant home and at 14 started working as a buoy tender on the Sukhona River, not far from his native village in Vologda Region. Then he became a stoker, sailor, helmsman, boatswain, and finally first mate of a cargo boat. He navigated the Sukhona, Northern Dvina, Vychegda and other rivers. He did his military service, went through a river navigation school and then an institute. For a period he was a trade union official and then head of the steamship lines on the Volga and Irtysh. When he reached retirement age, he was chief of the economic administration of the Ministry of River Transport of the Russian Federation.

"In my early youth," Tchannikov told me, "when the Revolution shook the country, I was taught to follow the example of those workers who were giving all their strength, skill and talent to the new socialist society. I took part in the *subbotniks* (volunteer work for the community on days off), and I helped in the drive to end illiteracy. I would come home tired but happy to be able to tell my folks that I was doing something for those who were doing something for me and my family. It was then I learned what reciprocity really meant. I've never forgotten."

I hinted that there was something to be said for gardening, a game of chess or dominoes, or a chat with friends.

"True enough," said Yevgeni, "if you don't make a career of it, like some of the pensioners I see on the same Moscow park bench day after day. More power to them if they like it; I don't. And there are hundreds of thousands of elderly people who feel the same way I do. We don't want to spend our days playing dominoes, we want to use our strength for some-

The Deputy Minister of Transport listens to Chairman Tchannikov present the council's recommendations for expediting unloading work in the port.

thing constructive. Isn't the country building communism? How can I stand by looking on? Many pensioners I know organized tree-planting groups to beautify the Moscow streets, and many others teach at children's hobby clubs."

He told me that more than half of the more than 300 pensioners of the Ministry of River Transport have organized to do volunteer work in the ministry's various departments.

The organization has an elected executive committee, a Council of Pensioners, of 27—a chairman (Tchannikov was recently elected to the office), two vice chairmen, a secretary and 23 members at large.

The organization has no rules or offices. All it has is a membership list, brief reports on work accomplished, and notes on shortcomings that need the attention of administration heads and sometimes even the minister himself. The council has, of course, the ready ear and the grateful thanks of all the administration heads, including the minister.

The council does not substitute for any of the official bodies; it helps them make Moscow a better port for ships that dock daily from many parts of the country.

The pensioners with their long backlog of experience make valuable teachers of the marine skills. Many of them lecture on current events. Each chooses the subject he feels best qualified to handle. The council has, therefore, set up several divisions—38 of the pensioners work in communications, 14 in technical areas, 63 in fields that have to do with housing and problems of everyday life, 7 help out in the polyclinic.

I asked Tchannikov to introduce me to some of the other council members. Fyodor Doronchenkov, the secretary, a tall, slender man with massive features, told me: "Our people keep themselves very busy. Ships from Leningrad, Perm, Rostov-on-Don, Astrakhan, Volgograd, Saratov, Kuibyshev and other cities berth at the northern and southern ports of the Moscow Canal. We visit the ships, make friends with the crews, look around for new ideas that we can pass on to other ships, sometimes help to solve a problem —things of that sort."

Doronchenkov gave me some examples. Awhile ago pensioners Mikhail Besdenezhnykh and Nikolai Maikov went aboard the motor ship *Pozhva*, and the captain and chief engineer threw this puzzler at them: "Everyone else in the crew works the standard seven-hour day except us. We put in all kinds of hours. Any ideas on how to work it out so we have a normal day?"

The pensioners checked around and found that other boats had solved the same problem by having the boatswain and third mate relieve the captain and chief engineer. A new schedule was worked out that gave everybody a seven-hour day.

Another example. When crews complained to Tchannikov that the food supply base of Chistopol-on-Kama was open only during the day so that a ship sailing at night could not restock, he reported the fact to the minister. No earth-shaking achievement, but men had the council to thank when the supply base started operating round the clock.

The pensioners are particularly helpful as educators. Boris Lychevko and Vladimir Spiridonov have been working with student probationers from river navigation schools and institutes aboard the *Vologda*. Of the thirteen-man crew, nine are students. The pensioners supplement the instruction given by the experienced men on the crew.

Ivan Bystrikov, a veteran of the river fleet who has seen a good deal of action at sea, is often asked to give messroom and deck talks on the Second World War engagements he fought in.

Tchannikov, in a talk with the chief engineer of the motor ship *Kadnitsy*, found that although the chief did teach his younger men, the instruction was unplanned and haphazard. The old sailor helped work out a systematic course of instruction that other ships have been using as a model.

The council chairman likes these ship visits. "The air smells different on deck than it does on land," he insists, "even when a ship is in dock, fresher somehow. When I come home from one of these visits my wife tells me I look years younger. If you ask me, the doctors are right when they say longevity is tied up with socially useful activity. The good thing about this setup is that nobody forces us to do anything. When we don't feel up to it, we can stay at home and read, do a million and one chores around the house or just rest."

Fyodor Doronchenkov, Nikolai Tyukavin, Nikolai Frolischev and other pensioners listening nodded agreement.

"What do the women pensioners do?" I asked.

"They have their own pet projects. They help out in kindergartens and Young Pioneer camps, where many of them have grandchildren. No scarcity of work for the senior citizens of this growing country." ★

Yevgeni Yevtushenko, one of the Soviet Union's leading young poets, with American delegates at last summer's Eighth World Youth Festival in Helsinki.

WORLD YOUTH FESTIVAL

BY STANISLAV PSHENNIKOV

PHOTO BY VALERI SHUSTOV

THE EIGHTH WORLD Youth and Student Festival held last summer in Helsinki made one fact self-evident—that American and Soviet young people want to be friends.

There were large delegations from both countries—700 from the Soviet Union and 500 from the United States. When the U. S. delegation leaders circulated a questionnaire "Who Wants to Meet Whom," the Americans, the students especially, answered that they wanted to talk and exchange ideas with Soviet young people. These meetings were held at festival clubs, exhibitions, cafés, stadiums and right in the streets.

The biggest of the get-togethers, reported in the youth press of many countries, were held on the morning of August 1, in two places simultaneously—the school where the American delegation was staying, and aboard the gaily decorated ship *Gruzia* that brought the Soviet delegation to Finland.

"Welcome!" a huge streamer stretched along the white side of the *Gruzia* greeted the Americans. And "Welcome!" said Pyotr Reshetov, chairman of the Committee of the USSR Youth Organizations.

He went on to say: "We have been looking forward to meeting you. Every time our young people get together on American and Soviet soil, we find that we have interests and aims in common, that we both want peace and friendship. Relations between our countries depend on the relations we have, on our mutual understanding. These relations, in turn, play a decisive role in international politics. Let's be good friends."

Those present applauded his proposal that Soviet and American youth hold friendship festivals in both their countries and exchange "friendship ships."

When these boys and girls, with hands clasped, shouted "Peace and Friendship!" the big ship fairly shook.

"We can and must live in peace and friendship," declared Bob Ross, speaking for the American delegation. "We must think hard of ways to win the peace. Russians and Americans want to build, not destroy; to live peacefully, not die on the battlefields of a terrible war. We must get together more often, for, as Franklin Delano Roosevelt said, 'Where hands meet, thoughts meet.'" ★

SOVIET TRADE UNIONS

In the November issue Vsevolod Retivoy, Chairman of the Central Committee of the Engineering Workers Union, answered questions submitted by our readers on Soviet trade unions, their place in the country's life and their effectiveness in defending the interests of working people. Here he answers several additional questions received from American readers.

QUESTION: Are Soviet trade unions organized on a craft or industrial basis?

ANSWER: On an industrial basis. We have 22 unions with about 65 million members. Each of the unions has complete jurisdiction in one industry or in several of its allied branches. Each factory or office, consequently, has only the one local union organization for all its workers, regardless of their particular trade or skill.

QUESTION: Are the various unions affiliated, as ours are in the AFL-CIO?

ANSWER: Each of our trade unions is autonomous, but it conforms to the general goals and requirements outlined in the Rules and Regulations adopted at the national congress of all the unions in the country. These Rules and Regulations also stipulate the organizational character of this affiliation. The national congress, convened every four years, elects the USSR Central Council of Trade Unions. Likewise, in the constituent republics, regions and big industrial centers similar local congresses are held every two years to elect republican, regional and city trade union councils which, each at its own level, give general guidance to the unions and coordinate their work.

QUESTION: Is trade union membership compulsory?

ANSWER: No, it is entirely voluntary. Let me emphasize here that getting a job does not depend on union membership or seniority. Union and nonunion members are hired on an absolutely equal footing. Nor does membership make any difference so far as wages, hours or working conditions are concerned.

Union members do have certain other privileges. All factory and office workers without exception get state social security benefits, but a union member's benefits are larger. He also has priority for accommodations at health and vacation resorts and at nurseries, kindergartens and Young Pioneer summer camps for his children.

Aside from these material advantages, there is a less tangible factor that draws new workers into the trade unions in increasing numbers. With 95 per cent of all factory and office workers in unions, they form the largest mass organization in the country. Our trade unions are so big because they have earned the public's confidence by their vigorous work in every area of effort involving the interests of the working people.

QUESTION: At what point on the job ladder does the union draw the line between worker and management?

ANSWER: Strictly speaking, a foreman coul be considered part of management. We draw n such formal line in our unions because worker and management have the same goals. All in dustrial and business enterprises are the collec tive property of the people. As a result, whethe a person is a worker or manager, he is equall interested in seeing his factory do the best pos sible production job. In these circumstances trade union has quite a different approach tha one in a privately owned enterprise. That is wh our Rules and Regulations open the union t everyone, from cleaning woman to factory direc tor, from office clerk to government head.

QUESTION: What do membership dues come to? Have the dues any relationship t the wages a worker gets or the number o years he has worked? Does the amoun vary from region to region in the sam trade?

ANSWER: The dues in all Soviet trade union are set in the same way and vary only with th wage earned. The range is from 0.5 per cent o monthly earnings in the lower brackets to a to limit of 1 per cent. Neither the trade, professio or industry, number of years employed, nor th region are factors. The initiation fee, 1 per cen of the monthly wage, is also the same for al unions.

QUESTION: Do you use the check-off system, where management withholds th dues from a worker's pay envelope an turns it over to the union?

ANSWER: We do not. Membership dues are co lected by the shop stewards, and they turn ther over to the local union treasurer.

QUESTION: In case a worker is expelle from his trade union, how does that affec his job, his earnings or his right to join an other union?

ANSWER: Let me say first that expulsion fro a trade union is an extreme step and is take only when a worker does something reprehens ble. The more common violations of the Rule and Regulations—sizable arrears in dues, lac of work discipline or improper personal be havior—are usually met with a public warnin or reprimand, with the culprit present, at th trade union meeting where the case is discusse

The effect expulsion may have on a man's jo and earnings depends on the reason he is ex pelled. The management's decision is determine by the misdemeanor, not the expulsion. Shoul management decide to fire a worker or give hi a lower paid job, he can still ask the union t intervene. How far the union supports him de pends on the gravity of the misdemeanor fo which he was expelled.

Let me repeat that trade union expulsion is ery rare. But even when it does happen, the an is by no means abandoned as incorrigible. e is given every opportunity to make amends nd to rejoin the union.

UESTION: Do retired workers stay on s members of their unions, pay dues and eceive benefits?

NSWER: A worker retired for reasons of ealth or age may remain a trade union member he wishes. His monthly dues then are five opecks. Pensions are paid by the state, and both nion and nonunion members are entitled to em by law. Medical care is also paid for by the ate. Nonworking pensioners apply for health nd resort accommodations and such other trade nion services either at the appropriate state social aintenance agency where they reside or through e management or the union organization at eir last place of employment.

UESTION: How are trade union officials lected and for how long? Can they be re-oved before their term of office expires? re union elections held by secret ballot?

NSWER: All Soviet trade union officials and dministrative bodies, from top to bottom, are lected by secret ballot at the various general eetings, conferences and congresses, as are the elegates to these meetings, conferences and ongresses. All trade union members are entitled elect, and be elected to, any administrative ody, and to serve as delegates to conferences nd congresses. They are also entitled to make ominations and to speak in favor of or against ny nominee. Election is by a simple majority.

The general meetings, conferences and con-resses are the authoritative bodies, all decisions est with them. They all have their own execu-ve bodies. At the local level factory and office ade union bodies are elected for one-year terms. t the city, region or republic level, union com-ittees and interunion councils are elected for wo-year terms. At the national level each union lects its own central committee, also for a two-ear term. Finally, the national congress of all nions elects a USSR Central Council of Trade nions for a four-year term.

Union officials who, for whatever reason, do ot justify the trust of the membership may, t any time, be removed from office, no matter ow high. The vote to remove is taken by the embership of the body that elected the official r by a higher union body. In the latter case, e decision must be endorsed by the member-hip that elected the official.

Our Rules and Regulations provide for the lection of a complete new union executive if ne-third of the membership so demands or if a igher trade union body so decides.

UESTION: Do Soviet trade unions have aid full-time organizers? What percentage of the union membership is on the full-time staff?

ANSWER: Our Rules and Regulations require that half the membership of every executive body, at whatever level, be renewed at each election. Furthermore, union officials, as a rule, are elected for no more than two successive terms. As illustration, in the last union election the membership of committees at the factory and office level was renewed by more than 60 per cent and at the national level by nearly 70 per cent.

More than half the chairmen of local union committees are people in office for the first time. Through this systematic renewal of all our elected bodies we are able to draw millions of people with initiative and a fresh point of view into the administration of union affairs.

The Soviet trade unions are all working hard to broaden the leadership base through membership participation and have been cutting their full-time paid staffs steadily. There are full-time officials now in only four out of every one hundred local union organizations and in one out of every ten city union committees. The growing practice in regional, republican and central committees and in trade union councils is union administration by public membership committees. In the country as a whole more than 21 million union members are actively at work on such union committees.

QUESTION: How does collective bargaining operate in the Soviet Union?

ANSWER: Our collective agreements are roughly equivalent to union contracts in the United States. They are negotiated on the individual factory level for a one-year period after management and the union committee review the provisions of the previous year's agreement to see whether the two parties have carried out their mutual commitments.

The various standing committees of the union local all help to draft the new agreement by canvassing membership reactions. The management also informs the workers well ahead of time what it proposes to write into the new agreement. By the time the union committee and management get together to negotiate the agreement, most of the major issues have been ironed out and they have a fairly well-defined draft which generally reflects the wishes of both workers and management. Usually, what bargaining there is will be over details.

The draft is then submitted to the general membership for final action. At big plants this is done first at shop meetings and then at a general membership meeting. The agreement voted by the membership is then signed by the chairman of the union local committee and the factory director. The last step is to record the agreement at the Regional Council of Trade Unions and at the Economic Council of the region.

QUESTION: What happens if management and the union cannot agree on the contract? Does the government act as arbitrator?

ANSWER: Management will usually go along with the union's demands. There are no basic differences between the worker and management, nor can there be in a Soviet society where there are no class contradictions. Relations between union and management are founded on a community of interests.

Under the social system of the USSR the state itself guards the rights of working people and expresses their interest in its laws. There is no need, therefore, to fight management in defense of those rights in the way workers in Western countries have to. Soviet laws are specific with regard to working hours, wages, quotas, safety measures, medical care, social security pensions, and everything else that bears on working and living conditions.

When a collective agreement is negotiated, all that needs to be done is to apply these laws to the particular office or factory. As a result, the likelihood of a major disagreement is remote.

Differences between management and union do crop up from time to time. When they do, it is generally because management does not feel able to comply with a particular union demand at the time rather than because it is not willing to. Here is a concrete illustration:

When the most recent collective agreement was being negotiated at the Second Moscow Clock and Watch Factory, management would not commit itself to a new kindergarten. It wanted the project postponed for a year so that work on a big apartment house would not be held up. The union insisted both be done simultaneously. The factory management thereupon asked the city Economic Council for permission to earmark more of its profits for building. With the union supporting the request, permission was granted. Both projects were incorporated into the collective agreement and within the year the apartment house and the kindergarten were completed.

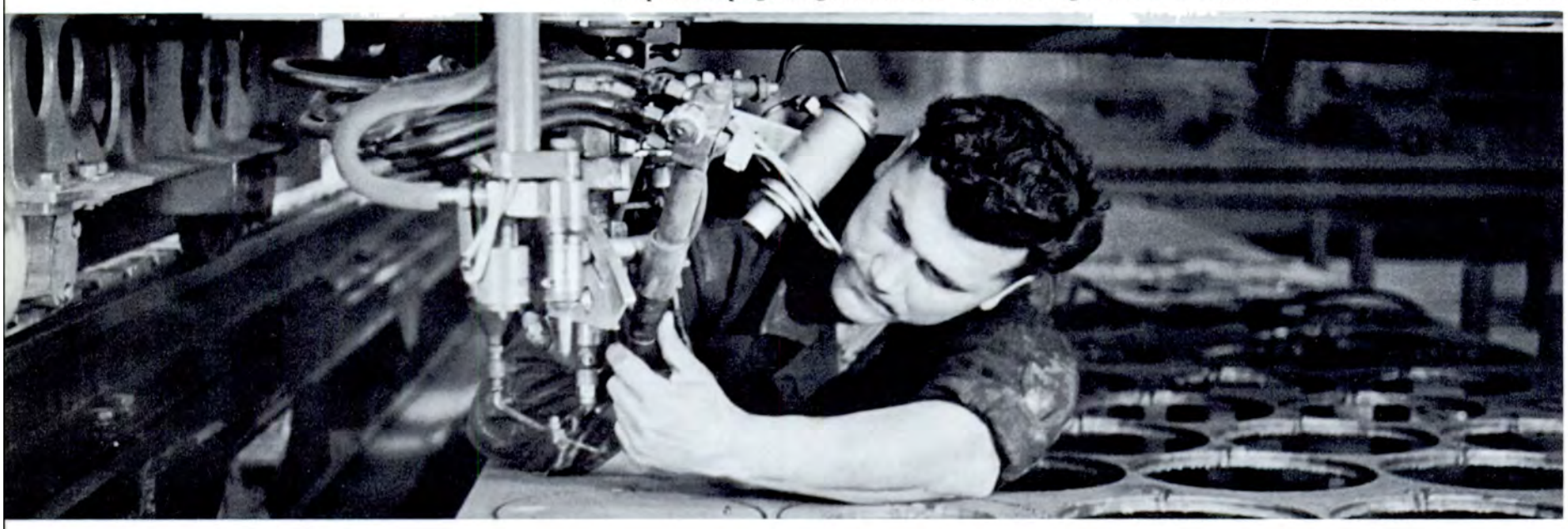
This is indicative of the authority of trade unions in the USSR.

But suppose there is an impasse, what then? The case is then referred to the next higher trade union body or state economic agency. In most cases it is adjusted right there. If necessary, however, it could be carried to the highest union body, the USSR Central Council of Trade Unions, as a court of last appeal.

Generally speaking, the trade union itself carries sufficient weight to settle the differences that crop up in "bargaining." As for government mediation boards—and we do have them in the Soviet Union—their duties are confined to adjusting disputes between economic agencies. They have no jurisdiction in union-management disputes. ★

Georgi Yevshin (foreground) at the opening of a new stadium constructed by his plant for its workers.

He operates a programing machine tool. After working hours he's a student at the Machine-building Institute.



WHY I'M A TRADE UNION MEMBER

TEXT AND PHOTOS BY ANATOLI MIRANSKY

"I GET MORE from my trade union than it gets from me," says Georgi Yevshin. He works at the Kherson Shipbuilding Plant.

So far as money is concerned, he gives very little to his union, his monthly membership dues coming to only one per cent of his wages. Other obligations? Well, in the past few months he took on several assignments from his shop and factory Trade Union Committee—worked on a union committee that checked on the food and service in the plant cafeteria, organized Sunday outings for workers and their families, and things of that sort. Had he been so minded, he could have turned down these assignments without anyone pointing a finger at him.

What does he get from his trade union? He enumerated a whole list of things, his job among them. Yevshin was not entirely accurate about some of the items. Strictly speaking, he was wrong when he said the union had given him his job; it was the plant management, of course. But the union had helped considerably.

In the fall of 1951, after his tour of navy duty with the Far Eastern Fleet, he came home to Kherson. He had no trade or profession, and the war had interfered with his education so that he had not even graduated from secondary school. Two years before demobilization he had married and now had a child.

Home in Kherson he did some hard thinking. He wanted a job, but where and what kind? The military committee that checked out the demobilized men included a representative of the city's Trade Union Council, and he advised Yevshin to take a training course at the shipbuilding plant. This he did. The tuition was free and he was paid as an unskilled worker while learning. After some time, he qualified as a riveter and got a job.

"Shortly after that," Yevshin continued, "I joined the machine-builders' union. The initiation fee was insignificant; hardly enough, I should think, to print my union card. But that card gave me all the privileges that older members, with long service records, have."

Every Soviet worker can join or stay out of a trade union, as he likes. Neither the union nor management insists that anyone join and offers no special inducements to those who do. If a worker transfers from one trade union to another, his membership record moves right along with him. Membership rights are also retained when for some reason or other the worker takes an indefinite leave, as in the case of a working mother who decides to give up her job until her children are a bit older.

As in all other Soviet places of employment, the Kherson Shipbuilding Plant has a single trade union for workers in all the various trades. Practically everybody in the plant is a union member, with the exception of newcomers starting on their first jobs. And they, like Georgi Yevshin, join up very soon.

From the first day at work, new union members, including apprentices, are entitled to all the cultural and social services available to Soviet workers generally. With regard to certain social services, sick benefits, for example, a man's service record will make a difference in the amount he gets. During his first working year, Yevshin was sick twice and received 50 per cent of his regular wages from the state social insurance fund; now he would get 90 per cent.

The state social insurance fund comes from management contributions, the worker contributes nothing. The fund is administered entirely by the unions. All workers are entitled to sick benefits, but nonunion members get only half pay when incapacitated. Trade union membership offers certain other advantages—cut-rate or free accommodations at resorts and vacations for children at Young Pioneer summer camps.

The trade union's concern for its members is not limited to money matters. Its influence is felt in one way or another in practically every aspect of the worker's life—education, for example. About this Yevshin says, "Even after I was through with the training course and started working, I kept on at evening secondary school until I graduated. Then I enrolled in the evening division of the Machine-building Institute, where I am now a third-year student."

The state and the plant management are responsible for all types of schooling and defray the costs. But the trade unions have a finger in the pie, too. They check on the effectiveness of the training courses and see to it that the management provides its workers with optimum study conditions.

Kherson Plant workers study at the Kharkov Machine-building Institute, which Yevshin attends, and at the evening and correspondence divisions of the Odessa Water Transport Institute. Both these institutes have branches right at the plant. On the plant grounds also is an advanced school for

Another job done. Georgi Yevshin watches a ship he worked on leave dry dock for its home port of Odessa.

engineers and technical personnel to keep them abreast of new technological developments.

On the initiative of the trade union at the shipbuilding plant, the city last year set up a technical progress university with 22 departments, 160 teachers selected from among the working engineers and scientists, and 2,640 students. The university also has its own branch of the All-Union Scientific-Technical Shipbuilding Society.

Would Georgi Yevshin have had the opportunity to take training courses and attend evening school if he were not a union member? The answer is yes, since all education is free, the cost being borne by the state. But preference would have been given to the union member if enrollment had to be limited due to lack of space.

Since coming to work at the plant, Yevshin has had several promotions. Now he operates an Alamaz-12A machine tool that automatically cuts, marks and sorts steel parts for ships. His earnings have doubled in the period. He could, of course, have picked up the skills by himself, without anyone's help, but there's no denying that the trade union courses saved him a lot of time and energy.

Last spring the Yevshins moved into their own apartment. They had been living with his mother-in-law before then. The rent for the new apartment, including utilities and telephone, is only five per cent of Georgi's wages. "I got my apartment from the trade union," he says. That's not quite accurate. Actually, the apartment house was built by the state for employees of the plant. The trade union had merely helped the plant management assign the apartments to those who needed them most.

There are many services, however, that Yevshin does get directly from his union. The money to pay for them comes from three separate sources —trade union initiation fees and membership dues, the state social insurance fund and the special fund of the plant itself.

Initiation fees and membership dues, as we noted, constitute a very small percentage of the sums received by the trade union for workers' needs. Thirty per cent of the dues go to the national executive to finance countrywide trade union activities. The plant's Trade Union Committee uses the remaining 70 per cent for expenditures voted at the general membership meetings—for the plant's sports club, the cultural clubs at the plant's Palace of Culture, and for lectures, books, outings, and so on.

A very much larger source is the social insurance fund. Most of it goes for sick benefits, maternity leaves and resort accommodations. (Workers get a 70 per cent discount on resort accommodations, some get them free.)

The amount of money derived from the third source, the plant's special fund, depends upon how well the plant is doing. The fund is made up of deductions from profits after the plant reaches its planned production quota and from savings in production costs. Expenditures from this fund are approved jointly by the plant director and the Trade Union Committee. The following is a fairly typical distribution of the fund—20 per cent for production needs, 40 per cent for housing construction, cultural and other facilities, 40 per cent for incentive bonuses and other awards to workers in cash and resort accommodations.

What did the Yevshins get from these three sources during the past year? These were the most important items, says Georgi: a bonus amounting to an extra month's pay for the work he did in building the freighter *Cosmonaut Gagarin* and another bonus—this one an extra one and a half month's pay—for overfulfilling the annual plan. During the year he spent 12 days at the plant's overnight sanatorium free of charge. He and his wife Valentina got their vacation accommodations at a resort near Odessa at the usual 70 per cent trade union discount. Their son Sasha spent the summer in a Young Pioneer camp in the Crimea. Their daughter Lyda's kindergarten moved for the summer to the country on the banks of the Dnieper, the management and trade union bearing most of the expenses.

Besides all this, the Yevshins took part in many recreational activities —outings and such—arranged by the trade union for the workers in the plant.

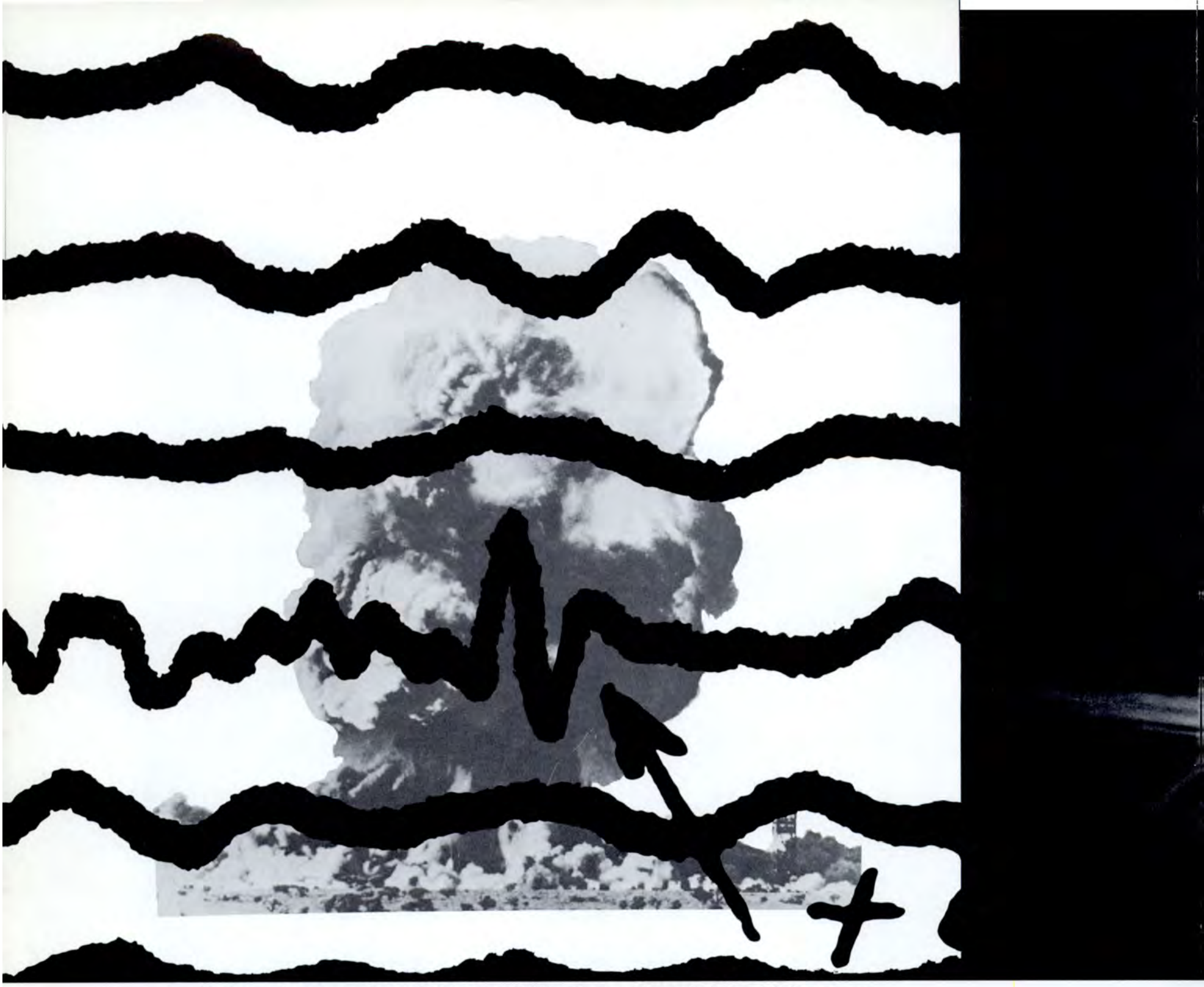
These are some of the reasons Yevshin finds it worth while being a trade union member. ★

At the Kherson Observatory, his son hopefully scans the sky for a sputnik.

The Yevshins entertain often since they have moved into their new apartment.

An active trade unionist, he forcefully gets his point across at the meetings.

For his daughter Saturday afternoon means a date for a walk with papa.



This is how the seismograph recorded the May 1962 French atomic blast in the Sahara, 2,800 miles away.

EARTHQUAKE or

THE SEISMOLOGICAL STATION of the Institute of Terrestrial Physics of the USSR Academy of Sciences consists of a small laboratory building surrounded by an orchard, several auxiliary structures, and cottages for the staff. Earthquakes and nuclear blasts that occur anywhere on the globe are recorded here.

Grigori Dashkov, the station chief, gave us the principles behind the equipment used to spot nuclear blasts.

"Modern measuring instruments," he explained, "are so sensitive that they register nuclear tests at enormous distances from the explosion site, no matter where they take place—in the atmosphere at heights of more than 300 miles, under water, or in underground pits.

"The human ear is not sensitive enough to hear the infrasound waves generated by nuclear tests in the atmosphere. But the instruments detect them perfectly even at great distances. Thus a blast of some thousands of tons of TNT can be detected from a spot thousands of miles off, a blast of tens and hundreds of thousands of tons can be detected anywhere in the world, and a blast of millions of tons will send infrasound waves around our planet several times.

"In most cases observation of the air waves alone is sufficient to spot a nuclear test in the atmosphere several hours after it has taken place. The time and site of the blast can be determined and its force estimated. Another method is by the accumulation of radioactive products.

"Knowing the paths of movement of the air masses and the compositio of the radioactive products through analysis of the air, we can make a approximate determination of the coordinates of the blast and the time occurrence.

"Moreover, air, underwater or underground blasts generate resilient sei mic waves that spread in the earth's crust and in deeper parts of the eart in both its envelope and nucleus.

"The shift in the soil caused by these waves may be no greater tha several hundred thousandths or even millionths of a millimeter, but t seismographs will register it. Stations in various countries, including th one, have such sensitive seismographs."

The chief showed us round the station. A path winding through age-o pines led to a hill overgrown with wild raspberries. A lock clicked. W were at the edge of a deep pit fenced off by high banisters. It took us long time to descend, our steps echoing loudly in the pit. Ladders followe one another almost interminably. Finally, they ended in a hall with a cyli drical cupola. Seismic receiving sets under transparent hoods were mounte on a concrete slab. Oriented toward the various countries of the world, th seemed to be bending their ears to the ground, listening to its breathing.

"This hall," the chief explained, "has been cut in limestone. For great accuracy, the instruments are mounted on hard rock—granite, basalt

The seismological station's "ears" detect atomic explosions or earthquakes anywhere on our planet.

EXPLOSION?

BY ALEXEI GOLIKOV

PHOTOS BY GENNADI KOPOSOV

mestone. The instruments go deep into the earth. They are extremely ensitive and need a constant temperature."

Here, several dozen feet underground, we felt this constant temperature—ery cool.

"When an explosion or earthquake takes place anywhere, the seismic re-eiver sends electric impulses by cable to the surface to apprise our experts f the earth's vibration."

n the laboratory the seismograph signals transmitted from the pit are re-corded graphically. Senior laboratory worker Yuri Agayev showed us to the room where the seismograms are registered photographically.

The darkness was relieved only by the bulbs in the collimators. Their ght fell on the mirror of a galvanometer, then deflected to a lens that athered the light rays into a thin needle. On command of the instruments, ese light rays trace intricate curves on photo paper.

Agayev showed us a yard-long ribbon of seismograph paper. In one place e lines were broken up into little dots that looked like commas.

"That was when you came down the stairs and walked through the under-round hall," he told us.

After that we were hardly surprised to learn that Soviet scientists had corded 5-kiloton underground blasts set off by the United States 6,200 iles away and a 20-kiloton explosion 10,000 miles away.

"Ocean storms, pressure changes in the atmosphere and other phenomena," Dashkov said, "are responsible for the continuous vibration of the earth's surface—what we call microseisms. The amplitude of these vibrations is not constant in time. They create a sort of seismographic background. The vibrations that follow a blast, however, differ in form and frequency from this background of microseismic vibrations."

"How are earthquakes distinguished from nuclear blasts?" we asked.

"By putting together quite a number of distinguishing signs. First, the form of registration of seismic vibrations in an explosion is different from that in many earthquakes. For instance, the direction of the so-called first movement of seismic vibrations caused by an explosion always corresponds to a compressure wave. In other words, the soil movement at the point of observation is from the epicenter.

"There are other distinctive signs, much finer, that require the collecting of data from many stations and an analysis of their recordings by electronic computers. One such distinct feature is the depth of the source from which the seismic waves originate. About half of all earthquakes occur below 40-mile depths and, for the most part, in known seismic areas that take in only a small percentage of the surface of our planet."

These infinitely sensitive artificial ears tuned to long distances are on round-the-clock duty, listening for nuclear blasts in the air, under water or deep in the earth. ★

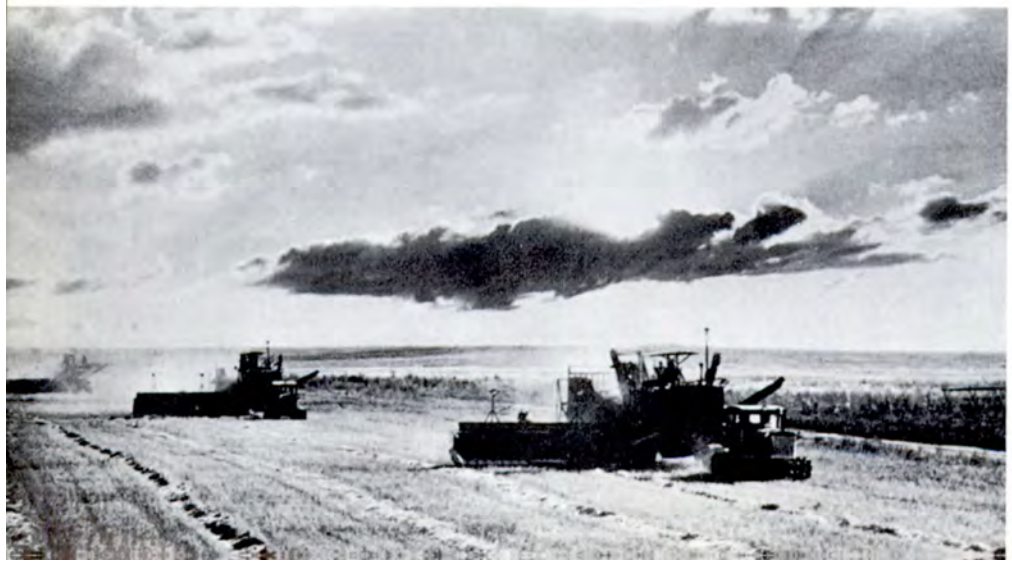
WANT TO TOUR THE SOVIET UNION WITHOU

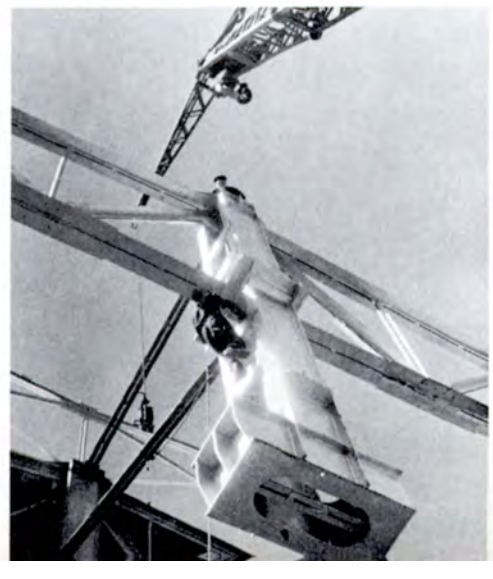
. . . see outer space with the Soviet cosmonauts.
. . . read the poems of Yevtushenko, the prose of Nagibin, the works of other young Soviet avant-gardists.
. . . know more about the Bolshoi Ballet, pianist Svyatoslav Rikhter and other world-famous artists and performing groups you have seen and heard on tour in the United States.

The magazine this year will carry articles and photo stories on the work, study and recreation, the goals and aspirations of the Soviet people;

. . . debates and forums;
. . . articles on Russian painting and architecture;
. . . on the family, education and communist morality;
. . . on sports on ice, the cinder track, the stadium;
. . . on new developments in the fight against cancer and polio;
. . . on the traditions, customs and festivals of the country's hundred nationalities.

New features for the new year—"Our Hobbies," "Calendar of Events," "Vocabulary of Our Terms," "First Showings," "Prize Photos," and many others.





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