

GENERAL INFORMATION

# USSR

FORTY YEARS  
OF  
SOVIET ARMENIA

See story page 10

JANUARY, 1961 — 20 Cents



ILLUSTRATED MONTHLY  
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January 1961 No. 1 (52)

<b>Photo Review</b>	Cover II
<b>Soviet Diary</b>	5
<b>The Soviets—Government by the Working People</b>	
by Arkadi Vassilyev	6
<b>Armenia</b>	9
<b>Armenia's Seven-Year Plan</b>	
Interview with Anton Kochinyan	10
<b>Armenian People at Work</b>	
by Yuri Maryan	13
<b>Armenians Speak</b>	17
<b>A Repatriate's Story</b>	
by Yuri Fantalov	18
<b>2,000 Years of Armenian Art</b>	
by Akop Khandzhyan	20
<b>Rockwell Kent Presents</b>	
His Work to the Soviet People	21
<b>Cartoons</b>	22
<b>Newlyweds</b>	
by Olga Kuchkina	24
<b>Water Comes to the Desert</b>	
by Vasili Kornilov	28
<b>Moscow Metro</b>	30
<b>The Soviet Ruble's New Rate of Exchange</b>	
by V. Garbuzov	35
<b>American Doctors Meet Their Soviet Colleagues</b>	36
<b>Soviet Public Health</b>	37
<b>When a Worker Needs an Operation</b>	
by Yakov Mikhailov	38
<b>Medical Engineering</b>	
by Mikhail Ananyev	42
<b>Radio Ham</b>	
by Daniil Leonidov	45
<b>Electric Power Development</b>	
by Ignati Novikov	46
<b>Isaac Levitan</b>	
by Sergei Gerasimov	52
<b>Teacher and Pupil</b>	
by Yakov Mostovoi	56
<b>The Librarian</b>	
by Leonid Dugan	60
<b>A New Lease on Life</b>	
by Nikolai Zakolupin	62
<b>Yuri Vlasov—Olympic Strongman</b>	
by Viktor Viktorov	64

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# PHOTO REVIEW 1960

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 The Soviet people paid tribute to many of the world's illustrious men during the year—their own and the scientific and cultural pioneers of other countries. Among those honored were the English writer Daniel Defoe on his 300th anniversary, the Viennese composer Johann Strauss on his 135th birthday and the Russian medieval painter and iconographer Andrei Rublev on his 600th anniversary. This Moscow gathering was one of many held in the Soviet Union to commemorate the hundredth birthday of Anton Chekhov.



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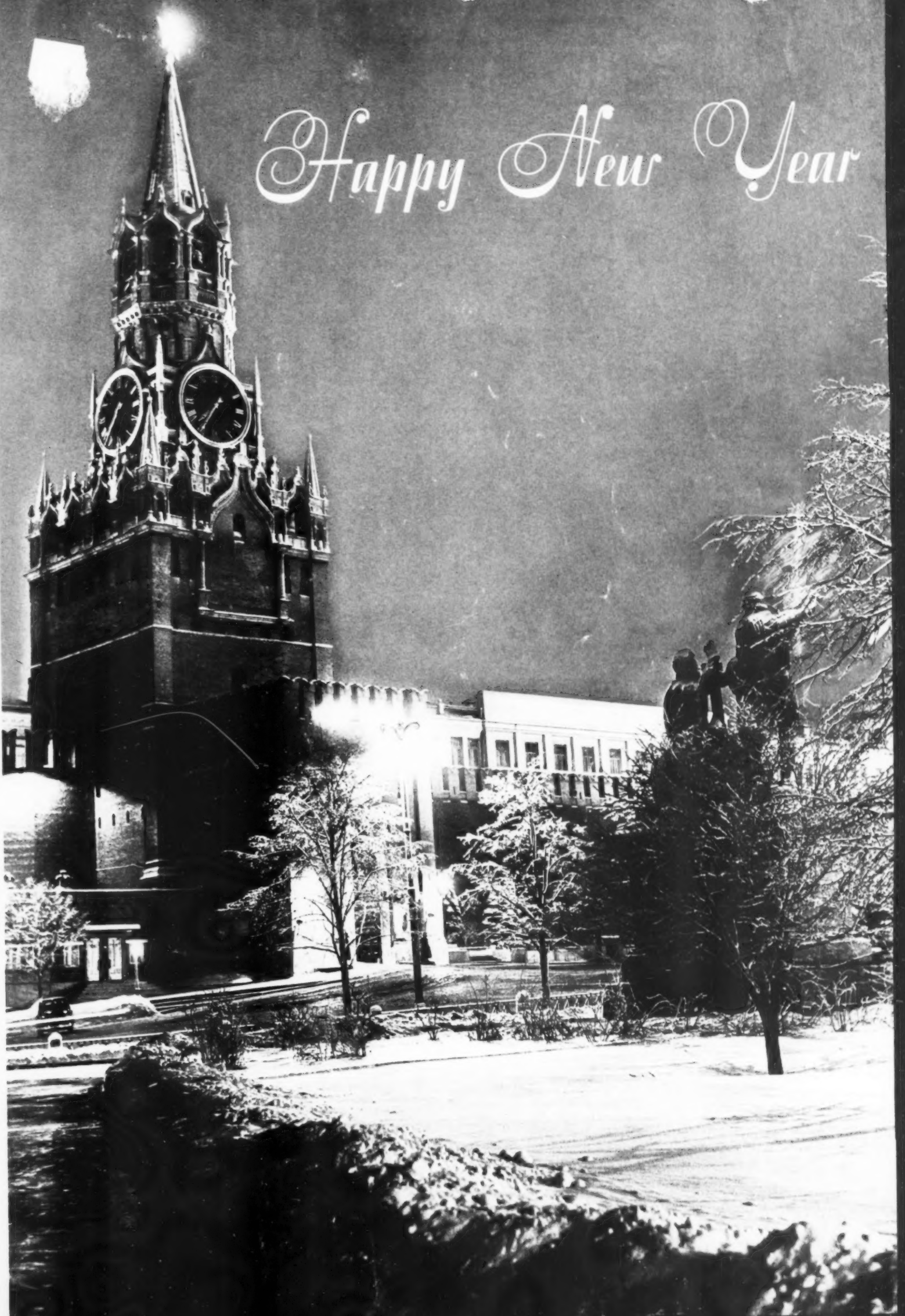
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*Happy New Year*





5 To widen democratic participation the government last year gave the 55 million members of the Soviet trade unions the job of managing the country's holiday resorts and rest homes. The 395 sanatoriums and 581 vacation resorts cater to 3,720,000 people every year. This is a bird's-eye view of the Riviera Sanatorium on the Caucasian Black Sea coast.



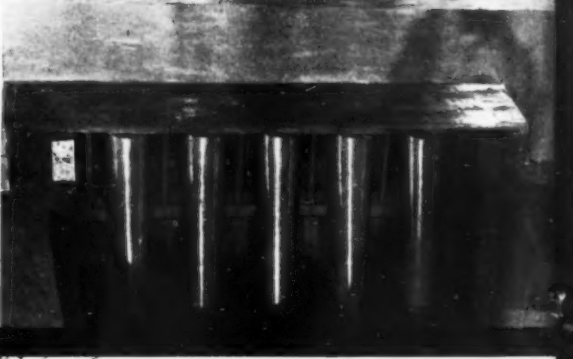
6 The 90th birthday of Vladimir Ilyich Lenin, the founder of the Soviet state and its Communist Party, was celebrated on April 22. Another noteworthy event was marked on this same day—the thirtieth year since the Order of Lenin was instituted. It is the country's highest award bestowed for outstanding service.

7 Construction of the Aswan Dam on the Nile got under way last year. Based on Soviet design, this giant project—it will be 120 times the size of the model shown here—is being built by the United Arab Republic with the help of Soviet technicians and Soviet long-term credits. It is part of the USSR's economic assistance program to 14 African and Asian nations involving loans of 9 billion rubles to build more than 300 large industrial enterprises.



8 Soviet women in many fields of endeavor—industry, culture, the sciences—were honored with government decorations on International Women's Day, celebrated for the fiftieth time this year. The decorations were presented by Kliment Voroshilov on behalf of the country.

9 International trade fairs make for better international understanding. The Soviet Union displayed its manufactured goods and its scientific, technical and cultural accomplishments in Norway, Czechoslovakia, Ethiopia, Indonesia, Cuba and Iraq in 1960. It also took part in 17 international fairs in Turkey, Syria, Austria, Italy, Sweden and elsewhere. This is a Soviet industrial fair in Baghdad.



10 These four young Soviet army men—Askhat Ziganshin, Philip Poplavsky, Anatoli Kruchkovsky and Ivan Fedotov—drifted for 49 days last spring in the Pacific, with little food and practically no fresh water. They set an example of courage and devoted companionship that won the hearts of people all over the world. They were rescued by American seamen. Back home they spoke with grateful emotion of the kindness of people during their stay in the United States. They are now students at the Naval College.



11 The "Soviet Russia" art show was a report of Soviet artists to the people and ran from April to July, drawing large crowds like this every day. Its 2,500 paintings, drawings and pieces of sculpture contributed by 1,250 artists of the Russian Federation filled the Manege, one of Moscow's largest exhibition galleries. There were works on such retrospective subjects as the October Socialist Revolution and the Civil War, but the salient theme was contemporary Soviet man, his present accomplishments and his hopes for the future.



12 The 1960 exchange program, the second such agreement concluded between the United States and the Soviet Union, covered a wide range of fields in science, education, technology, the arts and sports. The reciprocal visits gave people in both countries the welcome opportunity to become familiar with each other's achievements and, more important, with attitudes and ways of life. American composers Aaron Copland and Lucas Foss, who toured the USSR last summer, are shown here with members of the Leningrad Symphony Orchestra.





13

The past year was a year of growing governmental and parliamentary contacts for the Soviet Union. Many government heads and parliamentary groups visited the Soviet Union during the year—President Gronchi of Italy, President Prasad of India and President Sekou Toure of Guinea, among them. Here Chairman Khrushchev receives a delegation of Ghanaian members of parliament, headed by Speaker Kojo Botsio, who is also Economic Minister.



14

In November this new blast furnace—the world's largest—at the Krivoi Rog Iron and Steel works in the Ukraine, was ready for work. Mills are being built at an increasingly faster pace, and the country's pig iron output keeps rising.

15

Applauding audiences in the Soviet capital saw these whirlwind dancers at the Ukrainian Literature and Art Festival in November. The Ukraine's leading dramatic companies, orchestras and ballet groups, professional and amateur, displayed their artistry at the festival, the largest the republic has ever held. Some 5,000 paintings, sculpture and samples of art and craft work were exhibited.



16

The hydrofoil ship "Meteor," with a passenger capacity of 150, took to the water in 1960. The photo was taken on the Moscow Canal. The smaller "Raketa," a 70-passenger hydrofoil, had been cruising the rivers the year before. A "Sputnik" hydrofoil boat is now being designed to carry 300 passengers at speeds of 43 to 46 miles an hour.

17

Delegates to the National Conference of Communist Work Teams held in Moscow last May. Valentina Gaganova (second from the left) is one of the initiators of this new movement which has swept the country and now has some five million adherents, leading workers in farms and factories who live by these ideals: to work better today than yesterday and still better tomorrow than today; to learn more today than yesterday; and, in their relations with others, think in terms of "one for all and all for one."

18

Last June, to point up the significance of technological development for the economy as a whole, the Central Committee of the Communist Party of the Soviet Union called a special plenary meeting on mechanization, automation and allied problems to which leading industrial workers, factory directors and scientists were invited. Many of the decisions reached have already been put into practice. This automatic line at the Gorky Motor Plant is one of many started of late.



19

Soviet light industry has been expanding at a fast and furious pace to meet consumer requirements. This is a view of the weaving shop in one of the country's biggest synthetic fiber mills located in Barnaul, a town in the Altai. It began producing last July. By 1965, with mills being built in large numbers in the interim, the synthetic fiber industry will be producing at the annual rate of 56 yards of fabric per capita.

20

The atomic icebreaker "Lenin," flagship of the Soviet Arctic Fleet—shown here plowing its way through northern ice—opened a sea road for its first convoy in 1960. Dozens of ships following in its wake brought machinery, scientific instruments, consumer goods and foodstuffs to towns in the Arctic. With the "Lenin" in operation, the navigation season on the Northern Sea Route will open a month earlier than it used to.

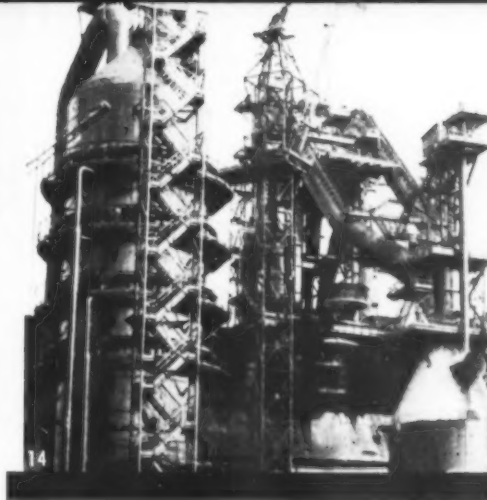


21

In August 1960 Soviet scientists and engineers orbited a four and a half ton spaceship and safely brought back to earth the dogs Belka and Strelka, 40 mice, 2 rats, insects, plants, seeds, living tissue and bacteria for study. In December another spaceship, this one weighing five and a half tons, again carrying canine astronauts, was launched.

22

The Kremlin was the setting for the convention of teachers of the Russian Federation. They met to consider the role the teacher must play in molding the new communist generation and ways of relating the school more closely to life and productive labor.



23

The three Baltic Republics this summer celebrated the twentieth anniversary of their renaissance as Soviet states. During the period they have moved ahead with seven league strides in their economic and cultural development. They have today 30 drama theaters and opera houses, and amateur art groups that number in the tens of thousands. The books they publish yearly run to 20.5 million copies. A cherished tradition of the Baltic peoples is their annual song and dance festivals, in which young and old take part. The photo was taken at the festival in Latvia.



24

A new type of school for higher learning—the factory college—was opened last September in several large Soviet plants. They combine work and study, class days alternating with work days. The six-year course of study takes the worker-student through all production levels, from foreman to engineer and designer. Since the students get their practical experience on the job, they devote more time to theoretical study than the usual college student. A class at the factory college of the Moscow Auto Plant.



25

By November all 50 million factory and office workers had changed over from an eight- to a seven- and six-hour workday. These are Minsk auto workers streaming out of the plant. By the close of 1962 their work week will be cut to 40 hours, and in 1964 the transfer to a 6- and 5-hour day will begin. When that is completed the USSR will have the shortest workday in the world.

In October, Soviet workers had another occasion to cheer. The law for the gradual abolition of taxes went into effect. Lower paid workers were no longer required to pay a tax on income and were able to pocket an additional 3,600,000 rubles. By 1965 all income will be tax free, and workers' earnings will thereby increase by about 74 billion rubles yearly.

26

In September 1960 Chairman Khrushchev led the Soviet delegation to the United Nations and from the rostrum of the XV Session of the General Assembly presented his country's proposals for total disarmament, independence for all colonial peoples and modification of the organizational structure of the UN.



27

Friendship University—the inauguration is pictured here—opened in Moscow this fall for its first academic year. The students are young men and women from Asian, African and Latin American countries. Tuition is free, as in every Soviet college, and students receive maintenance scholarships and dormitory rooms. The university can accommodate 4,000 students.



28

At the 17th Olympic Games in Rome this summer the Soviet team competed for world honors with athletes from 83 other countries and captured first place with 43 gold, 29 silver and 31 bronze medals. Here are the champions back home getting the plaudits of a great crowd at the Moscow Lenin Stadium.



29

Celebrated this year was the 40th anniversary of the Civil War's end and the beginning of peaceful reconstruction. The memory of those who fought for socialism is revered by all Soviet people. Despite overwhelming odds, they preserved the independence of the world's first workers' and farmers' republic and began the building of today's Soviet Union. The Museum of the Revolution displays mementoes of the time.



30

The third municipal subway in the country was opened in Kiev last November. Thanks to the experience gathered in constructing the famous Moscow Metro and the one in Leningrad, the first section with five spacious stations was completed far ahead of schedule. Pictured here is University Station.

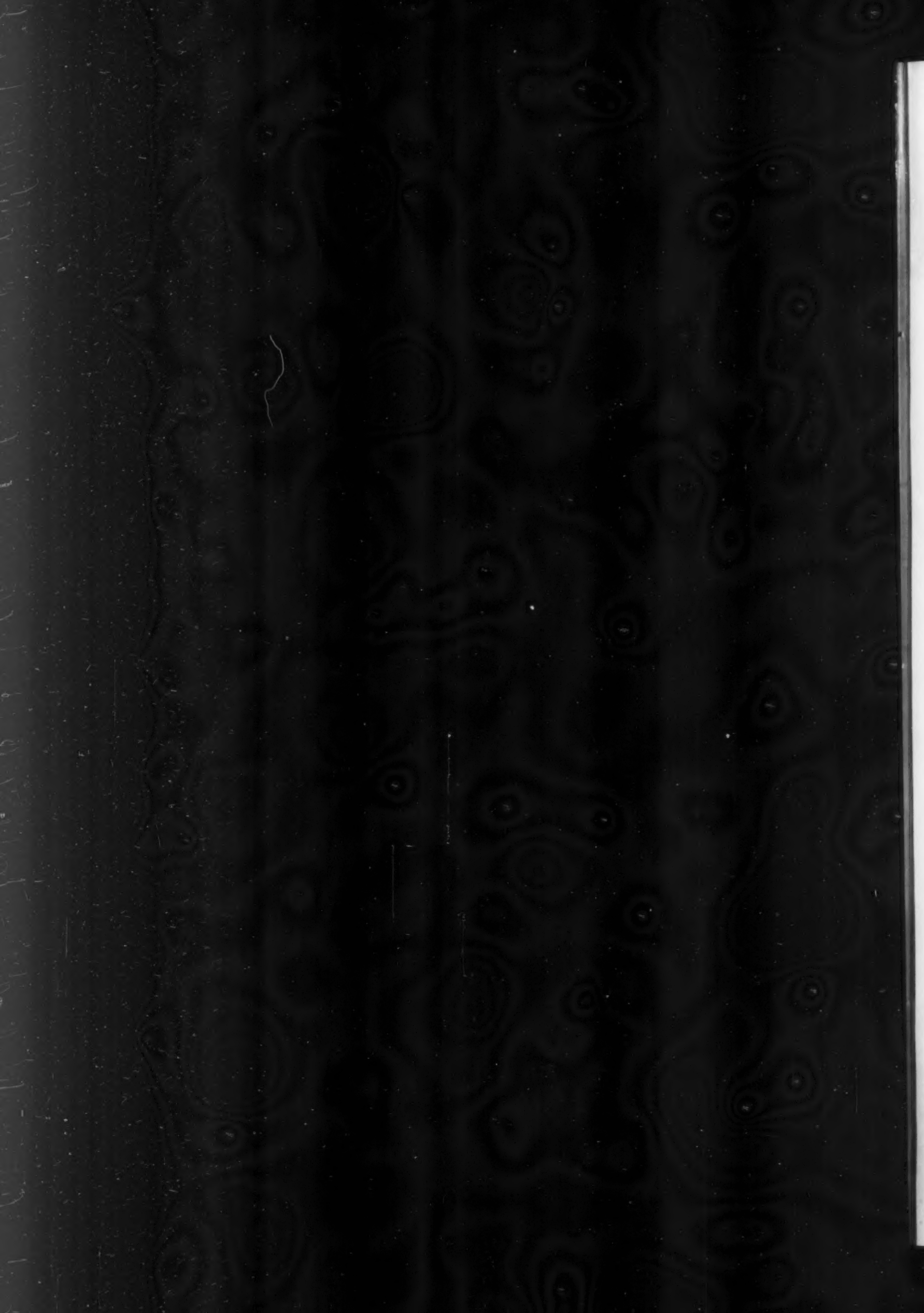


31

The 43rd anniversary of the October Socialist Revolution, birthday of the first socialist state, was commemorated on November 7. Progress in every field of effort gave added reason for celebration on this national holiday. This is a view of the giant gathering in Moscow at which Frol Kozlov, secretary of the Central Committee of the Communist Party, reviewed the milestones the country had passed this year on the road to communism.







# SOVIET DIARY

## THE FUTURE SHAPES ITSELF

**T**HIS YEAR'S developments in Soviet democracy make the future shape of communist self-government increasingly more visible. Larger numbers of people than ever before have become active and creative participants in administering their country.

This was the movement envisioned by Lenin when he wrote, soon after the Soviet Republic was formed, that all the people without exception must be encouraged and urged to manage the affairs of state. This is the direction Soviet democracy has taken over the years.

Millions of citizens have been involved directly in public affairs through such civic organizations as trade unions and cooperative societies; through Comrades' Courts and voluntary citizens' squads; through scientific, technical and educational societies of all kinds; through a variety of committees, assemblies and councils.

Last year the Soviet trade unions with their membership of more than 55 million took over the management of the thousand or more re-

sorts and rest homes that provide health and recreation facilities for some four million workers every year. Now the people themselves, through their trade unions, organize and supervise their own vacation resorts.

The maintenance of public order is similarly no longer the exclusive prerogative of the state through its courts and police. Many of the functions exercised by these agencies are being delegated to the Comrades' Courts and to voluntary citizens groups. This transfer has more than proved its merit. Moral persuasion and public pressure have exerted a very real educative value in changing attitudes of offenders.

Crime is on the wane, sufficiently so that the government has found it possible to cut the militia—the police force—very substantially. For example, there is no police force at all in Krasnozatsky, a town in the north of the European part of the Soviet Union. In spite of that, not a single serious offense was committed there this past year—a most significant fact. The Comrades' Court in the town

sees that order is maintained and, when necessary, resorts to public censure. In 1960 there were informal courts of this kind at all factories, large offices and collective farms.

A characteristic feature of the period is the growing volunteer participation by citizens in the work of various government bodies. Aside from the two million citizens who are elected deputies to the local, republic and national legislative bodies, there are two million others who do volunteer work in the various committees of these Soviets.

The Ukrainian town of Dneprodzerzhinsk is an instance. There volunteers work on municipal committees for trade, public health, civic improvement, parks, public catering and the construction and distribution of new housing. There is so much volunteer participation that the town has been able to reduce its paid staff very considerably. All this bears witness to a widening democracy and the emergence of new forms of communist self-government in the villages, towns and cities of the Soviet Union.

## ECONOMIC PROSPECTS BRIGHT

**S**OVIET economic prospects for the new year are bright. Farm and industrial progress is even faster than was envisioned by the seven-year plan. The target figures call for an average annual increase in industrial output of 8.6 per cent, or 17 per cent in two years; the actual output for the two years is almost 23 per cent.

These figures translate into material values. They mean that about 120 billion more rubles of goods were produced than had been expected in the last two years. Another thousand large industrial plants were opened in 1960, and three thousand new models of machines, lathes and other types of equipment were designed in the first 18 months of the seven-year plan period.

The speed with which new plants move into production reflects this accelerated growth rate. Large open-hearth furnaces pour their first steel only six months after construction begins. Blast furnaces are built in eight or nine months. Powerful rotary cement baking kilns are set to work in six to eight months. The Kremenchug Power Station on the Dnieper began generating electricity at its full capacity of 625,000 kilowatts two years ahead of schedule.

It stands to reason that strong legs are needed to make such great strides. The legs are the new technologies that have been introduced in Soviet plants, the hundreds of automatic lines and thousands of program-control machines.

Only a few years ago the 115,000-kilowatt turbines with adjustable vanes at the Lenin Station on the Volga were the pride of the

Soviet power industry. Now our machine builders have made radial turbines of 225,000-kilowatt capacity and are designing a turbine for a half-million-kilowatt capacity. These units are for the Bratsk and Krasnoyarsk hydropower stations on the Angara River in Siberia.

It is Soviet scientific and engineering skill that has made machines of this magnitude possible. For the past year Soviet physicists record good progress in their work to harness the atom for peaceful uses. Important advances have been made in super-conductivity, acoustics, physics, strength of solids and super-high pressures. Soviet chemists have been making headway in creating new substances. And, last but hardly least, there was the grand scientific achievement of the year—the launching of the third space ship. For the first time in history, a capsule holding living creatures was returned to earth from outer space, with manned flight to cosmic space not far behind. These findings and scientific explorations all give evidence to the peaceful aims toward which the economy is geared.

The Armed Forces of the Soviet Union were cut once again this year. This time 1,200,000 men and officers were demobilized. Billions of rubles that were previously channeled for military purposes have been released to serve industry and agriculture, and especially to increase the production of consumer goods.

The Supreme Soviet has allocated an additional 25-30 billion rubles over and above the original total of 80-85 billions budgeted by the seven-year plan to expand consumer goods

production. Government expenditure for education, medical care, social security and other public services is growing and will grow even more as time goes on.

By 1965, the concluding year of the seven-year plan, the Soviet Union will be giving every one of its citizens an annual 3,800 rubles in social services of various kinds. It will be spending more than 800 rubles a year per worker to build new schools, clubs, hospitals and, most important, more housing. Between 1957 and 1960, 8.5 million families moved into newly built apartments. The number will be growing progressively.

A higher national income has provided a higher real income for workers and farmers. Between 1953 and 1960 the real income of Soviet citizens rose 50 per cent. The recent law to abolish taxes will be putting more money in the worker's pocket. As of October 1, 1960, a large group of lower income people were no longer required to pay income tax. Within a matter of years this will hold true for all workers, whatever their earnings.

Further proof of the Soviet Union's economic progress is the increased purchasing power of the ruble and the recent currency change. The gold content of the ruble has been increased and thereby its rate of exchange in relation to foreign currencies. As of January 1 of this year, the gold content was raised from the 1950 ratio of 0.222168 grams of pure gold to 0.987412 grams. A dollar is now worth 90 kopecks instead of 4 rubles.

The USSR is moving ahead, with confidence and certainty, to its nearing goal—the highest standard of living in the world.

1905, Members of the Ivanovo-Voznesensk Soviet of Workers' Deputies, the first in history.



1960, Members of today's Soviet of Working People's Deputies for Ivanovo Region. They carry on the work of their forebears.

## THE SOVIETS—G

WHEN THE SUPREME SOVIET of the USSR last May passed the Law on the Complete Transfer of All Workers to the Seven- and Six-Hour Workday, I was present at the sessions in the Kremlin Palace as guest.

During a recess I met Deputy Alexander Gurychev who comes from my part of the country.

"How do you like the meeting?" he asked me.

I told him I had been most impressed by the speedy and businesslike way the deputies had discussed and adopted this bill which was so important to every working man and woman in the country.

Alexander Gurychev is an older man. He remembers the very different way in which matters of national moment were handled in bygone days.

There was the State Duma before the Revolution, made up of representatives from the privileged classes. Even such a detail as the trifling sum to be spent to build a small orphanage took fourteen meetings to settle. "There was no real interest in the welfare of the people," said Deputy Gurychev, "Everything was done for the sake of appearances. That's why the discussion was dragged out. It was nothing more than an excuse for speechifying."

This remark from a former worker shows the essential difference between the old society and the new. The old government ruled "in the name of the czar," and those who governed were not concerned with the people's interest. The new government was set up by and for the people. Representatives are elected directly and they have the willing assistance and cooperation of millions of volunteers who work on the committees of the Soviets.

### A Regional Soviet in Operation

I had occasion to recall the conversation some time later when I revisited Ivanovo where I spent my youth. I stopped in at the Regional Soviet. Every office was busy and full. Some older deputies I knew were there, but most of the deputies were young people. An energetic debate was going on in every department and committee in preparation for the coming session.

Most of the discussion had to do with civic improvements and with budgets for education and health services. I looked in at one committee meeting where industry representatives were applying to the Soviet for building sites for new factories. The region has its own seven-year plan and, like the rest of the country, is far ahead of schedule. In another office I heard the housing committee discuss the recommendations made by trade unions for distribution of new apartments. All this was normal procedure.

What struck me, however, was not so much the great number of questions, large and small, dealt with by the committees, but the widely different kinds of people who took part in the work of the Soviets, all the way from plant directors and heads of youth organizations to factory workers and housewives. Every opinion and suggestion was given a careful hearing. The responsibility and authority of each member of a department or committee was clearly defined. So too for the volunteer workers; each one had his concrete job to do and did it in his free time as his contribution to the general welfare.

Looking on, I found myself thinking of the way things used to be. Would the czarist authorities have permitted the fathers and grand-

fathers of these people to make even the slightest suggestion, to express even the smallest wish with regard to the way they were to be governed? They were not even allowed to set foot in the governor's palace or in the city council building. That council, incidentally, composed of merchants and noblemen, spent nine years talking about whether or not to build water mains in the city and never did reach a decision. The mains were laid only after the Revolution.

### The First Soviet

The Ivanovo Soviet is especially interesting historically because it was in this region that the prototype of the present legislative bodies was born and evolved as a result of the revolutionary initiative of the people. It happened this way.

In May 1905 a strike broke out in the Russian textile center of Ivanovo-Voznesensk, as Ivanovo was called then. The workers would no longer tolerate the unbearable working and living conditions, the drudgery of a ten-hour day, the miserable wages and the complete lack of medical care. On May 12 more than 30,000 workers employed in all the Ivanovo mills downed tools.

The second day of the strike the workers in each textile mill elected representatives empowered to negotiate with the mill owners. The delegates met to draw up a common set of demands. They called the meeting the Soviet of Delegates.

At first the Soviet of Delegates, or Soviet, as it was called for short, did nothing more than negotiate, but as the strike went on, it had to expand its activities. The long strike brought starvation and the Soviet took on



By Arkadi Vassilyev

*Arkadi Vassilyev has a large reading public in the Soviet Union. The 1917 Revolution and the creation of a workers' and farmers' state are the key themes of his many novels and stories. They include March Boldly in Step, Comrades, The Velvet Path, Personal Pronoun, Comrade Arseny and the trilogy There Is such a Party.*

*The 53-year-old novelist, son of a textile worker, grew up in Ivanovo Region, where the first Soviet of Workers' Deputies, the prototype of the present Soviets of Working People's Deputies, was formed during the 1905 Revolution.*

*As industrial worker and, later, as journalist and author, Vassilyev himself figured in many of the scenes that attended the birth and consolidation of the new government and made the acquaintance of others who helped shape the people's state from its founding days to our time.*

*In this article, written for USSR, the novelist comments on the nature of the Soviet system and the source of its strength.*

## S-GOVERNMENT BY THE WORKING PEOPLE

the job of distributing the money sent in by workers from all parts of Russia to the strikers' relief fund.

The police and Cossacks tried to smash the Soviet and so the delegates formed an armed squad for protection. Grasping traders took advantage of the situation to sell food on credit at exorbitant prices, and the Soviet posted pickets in front of the profiteering stores. The Soviet found it necessary to stop the sale of alcohol and forced the liquor stores to close down. Gradually its activities became so broad that it controlled the city's life. It then began to be called Soviet of Workers' Deputies.

The strike lasted for more than two months, long enough for the workers to see that they themselves could govern a big city and do it well. The discipline was voluntary and conscious; throughout the strike the city was perfectly orderly. It was only after the police and Cossacks had charged a peaceful meeting of workers that the militant self-defense group fought to beat back the attack.

### The Soviets in 1917

I knew many of the deputies to that first Soviet. I had occasion to meet most frequently with Fyodor Samoylov, a highly respected worker and veteran of that revolutionary 1905 period. I remember him saying, "We realized at the time that we could manage things well for ourselves, for all the working people." During the Soviet period Samoylov rose to a high executive position. The Ivanovo mill where he worked in 1905 and from which he was elected deputy to that first Soviet now carries his name.

The Ivanovo workers set the example for

other regions. During the first Russian Revolution of 1905 Soviets were also formed at Krasnoyarsk, Gorlovka, St. Petersburg, Moscow and other cities.

In many respects the Ivanovo Soviet differed from those formed later, in 1917, but it was a new governmental structure set up by the working people themselves. The 1905 Revolution was put down, but the workers hopefully cherished the memory of "their own government." They firmly believed in the great future of this expression of the people's creative activity. Twelve years later, in February 1917, as soon as the hated czarist government had been overthrown, Soviets sprang up everywhere, in cities, villages and army units.

The October 1917 Socialist Revolution gave power to the working class led by its vanguard, the Communist Party. The Communists were called "Bolsheviks" at the time, a derivative from the word *bolshinstvo*—majority. "All Power to the Soviets" was the slogan raised by the Communist Party.

The Congress of Soviets assembled in Petrograd, then the country's capital, on the day the old government was overthrown in order to approve the decrees of the new government. It was made up of delegates from all parts of Russia. The new government already had strong popular support in the local Soviets led by Communists—workers, peasants and soldiers.

"Had not the popular creative spirit of the Russian Revolution, which had gone through the great experience of the year 1905, given rise to the Soviets as early as February 1917," said Lenin, "they could not under any circumstances have assumed power in October, because success depended entirely upon the

existence of already available organizational forms of a movement that embraced millions. These available forms were the Soviets."

### Workers Into Bank Presidents

The first few months after the October Revolution were enough to show the people's government triumphant. Everywhere ordinary workers were entrusted with administration of the country, and everywhere Communist revolutionaries were chosen to positions of leadership. They were the heart of the new government.

For example, in the city of Shuya, where my family lived at the time, Mikhail Frunze was elected chairman of the Soviet. This revolutionary leader had twice been sentenced to death by the czarist courts. Workers organized a great strike in protest and forced the czarist government to commute the death sentence to exile. After the Revolution Frunze returned to Shuya and later became a famous army commander in the Civil War.

Volkov, an ordinary worker, was elected vice chairman of the Shuya Soviet. Dr. Tikhomirov was chosen to head the Department of Health, and Vedernikov, a teacher, to head the Department of Education.

When industry was nationalized, Ivan Latyshev was appointed director of Shuya's biggest factory, where he had been a worker. Mikhail Kadykov, another worker, was put in charge of a group of plants. And everywhere else, plain working people, farmers and intellectuals became directors of factories and railroads and presidents of banks. They had to learn fast to become executives.

What it meant was rebuilding life on altogether new and untried lines. At the same time

the workaday jobs had to get done—trains had to run, food had to be raised, goods manufactured, children taught. This was a staggering task all by itself, to get some semblance of order out of economic chaos. The First World War was still on. Industry was dislocated. Agriculture was in a state of complete collapse because of a shortage of farm workers in the villages. It was in the face of these odds that the Soviets of Workers', Peasants' and Soldiers' Deputies took over the management of the country.

### Widest Popular Participation

What accounts for the deep roots the Soviets have struck in our country? What qualities make the Soviets the most suitable governmental structure for the new society?

We have noted that the Soviets were molded in revolutionary battle, they were shaped by the working people themselves. Revolutionary practice has demonstrated that the Soviets are the most effective vehicle for involving the greatest number of workers, farmers and intellectuals in administering their own state. Since the Soviets are uniform and homogeneous, they make up an integrated political structure on both the local and national level, one which is simple for the citizen to comprehend. Since all deputies are elected, the voters can exercise maximum control over their representatives. And most vital, by entrusting the administration of the country to working people, those actually engaged in producing goods and services, the Soviets have eliminated the canker that corrupted all earlier political systems—political jobholding, political careerism.

The Soviet deputy is not a professional politician. He is a factory or office worker, a farmer, a teacher or doctor who works and lives with the people he represents. He knows their needs and interests because they are the same as his own. Some of the elected deputies are full-time officials in various government bodies. But the overwhelming majority continue their regular occupations and live among their constituents just as they did before they were elected to office. "The Soviets have been created by the working people themselves," Lenin wrote, "by their revolutionary energy and initiative. . . . All their labors are designed to satisfy the interests of the people." The leader of the socialist revolution repeatedly stressed the principle that "Soviet government is government directly by the working people, that under it an assembly of working people's delegates makes laws which are carried out directly."

### Criterion for a Deputy

Election to the Soviets is based on universal suffrage. All citizens who have reached the age of 18 have the right to vote, and all those who have reached the age of 23 have the right to run for office. Deputies of the Supreme Soviet of the USSR and of the Supreme Soviets of the union republics are elected for a term of four years, and deputies to the regional, territorial, district and rural Soviets are elected for two-year terms.

In our country the criterion by which a deputy is judged is not his mastery of the questionable art of "parliamentary fencing," but his awareness of the real interests of his constituents, his ability to uphold these interests, his experience in working among people, and his competence at his own job.

The deputy will usually have schooled himself by participation and leadership in a trade union, a youth organization or the Communist Party. He will have acquired a background of experience in civic activity. The job at which he works both before and after he is elected keeps him in touch with people, and helps him to decide which legislative area to concentrate on. Every deputy may choose the area he prefers, the one he thinks himself best suited for and therefore the one where he is likely to make the greatest contribution.

It is natural for the deputy who is a teacher by vocation to choose the education committee as his province, and a doctor the public health committee. These are among the several standing committees in every Soviet. They are staffed by deputies with volunteer workers assisting. This is one of the many ways in which citizens are drawn into civic administration.

Let me use the Ivanovo Region, with which I am most familiar, for illustration. The authoritative government body there is the Regional Soviet of Working People's Deputies. Its chairman is Pavel Korchagin who began his working life as a fitter. The Executive Committee has a staff of thirty, with five of the posts elective—chairman, three vice chairmen and a secretary. Through its departments of local industry, public education, social welfare, health, culture and some others, the Soviet governs the life of the region.

There are ten standing committees, each headed by a deputy. A teacher, B. Malov, heads the education committee; N. Romanov, Chairman of the Rodina Collective Farm, the agriculture committee; actor E. May of the musical comedy theater, the cultural committee; and so on.

The Regional Soviet has a regularly scheduled session every quarter at which various problems—budget, road construction, schools and such other pertinent matters—are discussed. One of the most recent meetings, for example, considered ways of improving public health facilities. The decisions of the Regional Soviet have the force of law and are carried out by the Executive Committee.

### Who Are the Deputies?

The deputies to the Ivanovo Soviet are factory workers, collective farmers, engineers, doctors, writers, journalists and scientists. This same vocational picture is true of Soviets elsewhere.

There are about 60,000 Soviets on various levels throughout the country, with deputies who have been elected by more than 137 million voters. More than 1,800,000 deputies serve in the local Soviets and several hundred in the Supreme Soviets of the republics and the Soviet Union.

An idea of the widely representative nature of the Soviets may be gathered from the oc-

cupational composition of the present USSR Supreme Soviet. Of the 1,378 members of the two houses of the Soviet parliament, about 50 per cent—614 deputies—work in factories or on farms. Legislators who come from working class or farm backgrounds number 840. The occupation of 113 of the members is engineering, and 13 of the members bear the honored title of academician.

Deputies are strictly accountable to their constituents—this is a basic principle. They are required to report at regular intervals throughout their term of office. Should the voters find that their representative has not met his responsibilities to their satisfaction, they may recall him at any time and elect someone to replace him. This right of recall is provided by the Constitution of the USSR as a guarantee that the representatives will carry out their duties ably and honorably.

The people choose the best of their fellow citizens as deputies regardless of whether they are Communist Party members or not. At election meetings attended by both Communist and non-Party people, candidates are nominated by various public organizations.

### The Communist Party Leads

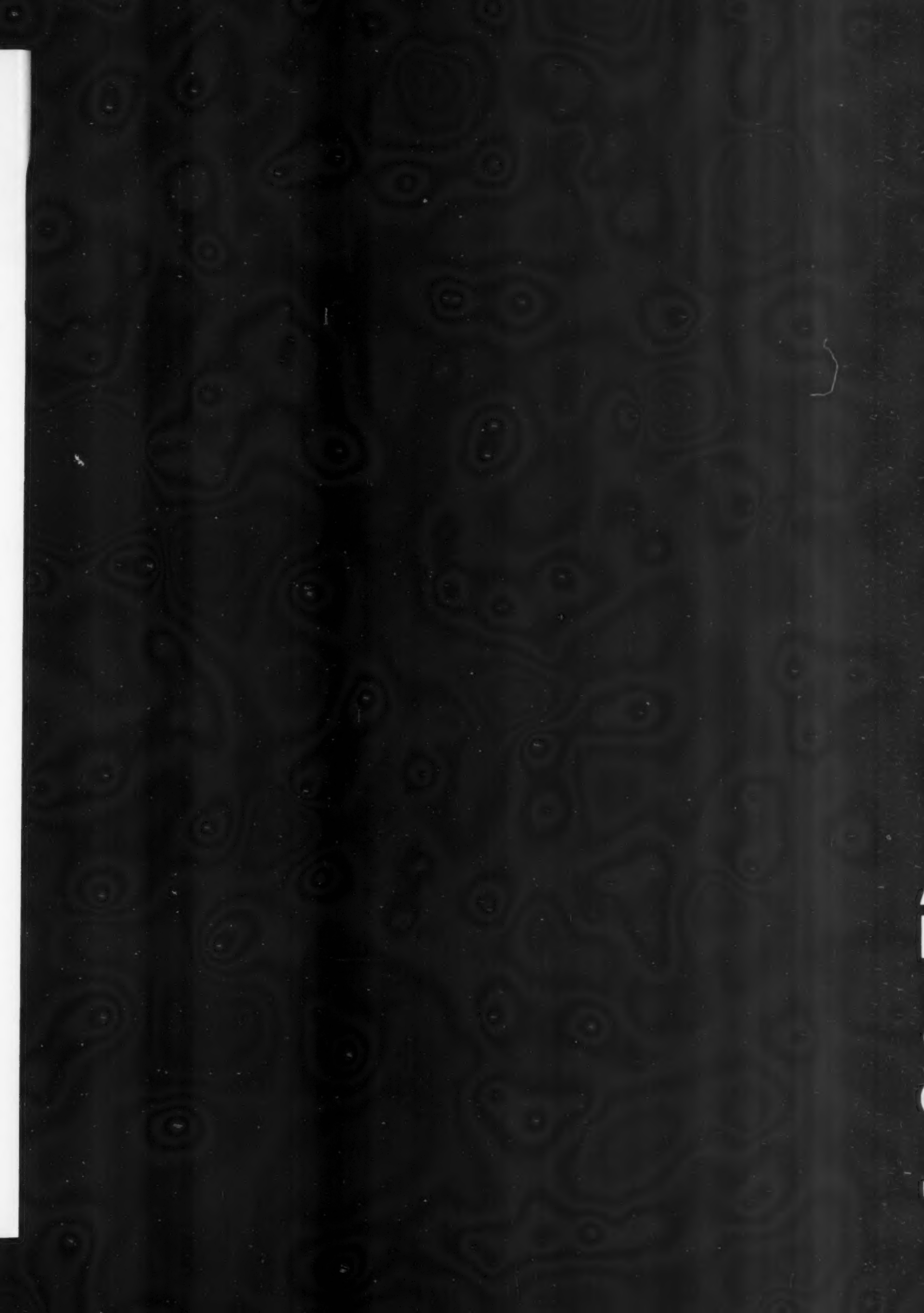
In election campaigns, as in every other sphere of Soviet life, the Communist Party plays a leading and guiding part. It has earned the right of leadership. The Communist Party mobilized and led the people in the revolutionary struggle to establish a workers' state. Communists were among the prime movers of the first Soviets. Under the Party leadership, the people defended the hard-won gains of the Revolution and laid the foundation for a new life. The Party congresses have programmed the country's extraordinary achievements in peaceful construction.

The Communist Party is now leading our society toward the further development of the people's power. The ultimate aim of this process is the achievement of communist self-government.

It is not only a question of greater numbers of citizens taking part in administering the nation's affairs. The very scope of public administration is being broadened. Voluntary public organizations are being involved in this work. They have been taking over functions normally exercised by government agencies. Social insurance, for example, is administered entirely by our trade unions. All the health and vacation resorts are now run by the trade unions. Sports activity is directed by public organizations. The powers of the informal Comrades' Courts, where offenders are tried by their neighbors and workmates, keep being expanded. In an increasing measure, voluntary squads of citizens have been taking over responsibility for maintaining public order.

The development of communist self-government takes on a variety of forms. Greater and greater numbers of people are being involved in making decisions in state and local matters, and the Communist Party, as the organizer and leader, continues to display its inexhaustible initiative in improving our Soviet democracy.







Territory—11,500 square miles  
 Population (1959)—1,768,000

# ARMENIA



**T**HE ARMENIAN Soviet Socialist Republic lies in high upland country in the southwestern part of the USSR. This is ancient Hayastan with a history and culture dating back 2500 years and more.

Armenia's economic development came late. At the turn of the century this was still primitive farm country with no industry to speak of. Alaverdi and Kafan had a copper industry, in its infant stage, owned by foreign concessionaires, and Yerevan had some small wine and cognac distilleries, leather-tanning and metal-working shops. That was all.

The Socialist Revolution of 1917 brought independence and equal rights to all the peoples that had suffered discrimination under the czar and opened new cultural and economic horizons for them. In November 1920 the Armenians, following the example of other peoples of Russia, declared Soviet power in their land.

Armenia today is one of the fifteen sovereign republics of the Soviet Union, with its own constitution, its own legislature and its own Council of Ministers. Its large-scale industry, developed during the Soviet period, is centered largely on mining and processing of agricultural produce. The republic is a major copper producer.

Under the seven-year plan Armenia is scheduled for even greater economic development by 1965. The map pictures the new industrial targets.







## ARMENIA'S SEVEN-YEAR PLAN

*Anton Kochinyan was born in 1913, the son of a poor peasant in the village of Shagli, Kirovakan District, Armenia. He is a graduate of two schools of higher education—an agricultural and a liberal arts college. He worked on a newspaper and in the youth and Communist Party organizations of his native republic. He served as deputy to the Supreme Soviet of Armenia for 13 years and as deputy to the USSR Supreme Soviet for six years. Since 1952 Kochinyan has been Chairman of Armenia's Council of Ministers. Here is an interview with Anton Kochinyan.*



**Question:** Soviet Armenia is now celebrating its fortieth birthday. What would you say is the distinguishing characteristic of these four decades?

**Answer:** The rapid and coordinated development in every sphere of activity, particularly industry. Armenia's gross industrial output in 1960 was almost 70 times greater than in 1913. Besides modernizing and expanding the old industries—mining and food processing—we set up completely new ones—chemical, machine-building, nonferrous metallurgy, building materials and light industry.

**Question:** What are the republic's major industries at present?

**Answer:** In heavy industry the emphasis is on machine building, chemicals, nonferrous metals and building materials; in the consumer industries, on food processing, textiles—cottons, woolens and silks—knitted garments and footwear.

**Question:** Are these all manufactured for domestic use?

**Answer:** Not entirely. Not only do we ship our goods to other parts of the Soviet Union but we sell them abroad. In exchange we get equipment for the new plants we are building, consumer goods that we do not manufacture ourselves and raw materials which we do not have.

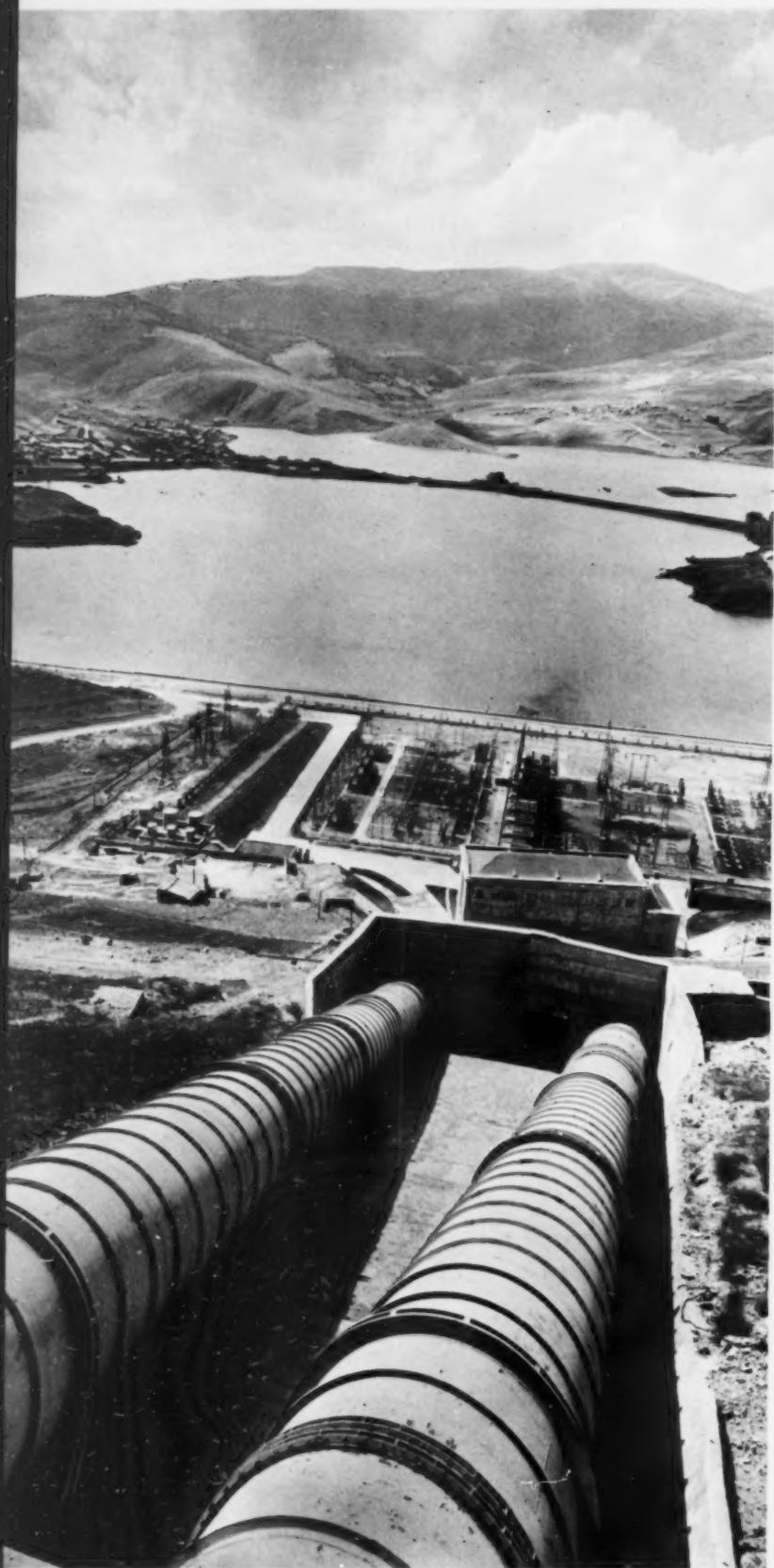
**Question:** What does Armenia export, and to which countries?

**Answer:** We export more than a hundred different items to all the socialist countries and twenty other countries, including Afghanistan, Argentina, Ceylon, India, Iraq, Mexico, Turkey and the United Arab Republic. Leading our export list are metal-cutting machine tools, measuring instruments, generators, transformers, mobile power stations, textiles, wines and brandy, and various industrial raw materials—aluminum, molybdenum concentrate, synthetic rubber, calcium carbide and copper sulphate.



**Above:** Mt. Ararat with its crest of eternal snow is backdrop for the rich vineyards and orchards of Armenia. In the alpine meadows livestock is raised.

**Left:** This plant for the manufacture of synthetic rubber in Yerevan is one of 200 major industrial plants that have been built in the postwar period.



The Artabekyan Hydroelectric Station is part of a cascade of hydropower projects that tap the waters of Lake Sevan, high in the mountains. By 1965 power output will double. The total expected is 3.44 million kw-h.

**Question:** *What are the largest industrial plants built in Armenia since the Second World War?*

**Answer:** We built about 200 major plants in the postwar period. Some of the biggest were for aluminum, polyvinylacetate, cables, computers, electric fittings and electrical equipment. We also built factories for high-precision machine tools, bicycles, gloves and knitwear; silk and worsted mills; meat canneries and milk processing plants; and brandy and beer distilleries.

Presently, in line with the republic's seven-year economic development plan, we are constructing another 150 enterprises. The largest will be for mining and chemical processing at Razdan, machine-building at Lusovan, rayon acetate at Kirovakan, artificial fiber at Razdan, heat and power stations at Yerevan, Kirovakan and Razdan, and an electrical engineering plant.

**Question:** *About the republic's seven-year plan, will you tell us how it was drawn up, what years it takes in and what relation it has to the national plan?*

**Answer:** We started to draw up our plan as far back as 1958. When I say we, I mean the whole republic. Our seven-year plan is the product of collective thinking. At each enterprise the management and staff, together with the local Communist Party, trade union and youth organizations, worked out its own seven-year program. Factory workers, engineers and scientists all submitted efficiency proposals. With these individual factory plans and the many thousands of suggestions and ideas submitted to speed production as a foundation, the State Planning Committee of Armenia drafted its plan for the whole republic. And that was integrated into the national plan. It covers the period from 1959 through 1965.

**Question:** *What is the rate of industrial growth scheduled by the plan?*

**Answer:** The average annual growth of Armenia's industrial output foreseen by the plan is a high 12.3 per cent. For the first year of the plan, 1959, we scheduled a 6.3 per cent growth and did much better—11.2 per cent. The rate of growth we scheduled for 1960 was 10.5 per cent, and again we did much better—the latest figures point to 13.3 per cent. There isn't much question, in the light of these averages for the first two years, that we will fulfill our plan ahead of schedule.

**Question:** *How do you explain these high growth rates?*

**Answer:** By a number of factors. For one, we keep increasing our capital investments. They will be 2.4 times that of the preceding seven-year period and will total 12 billion rubles. During the 1959-1965 period, Armenia will be investing a billion more rubles, in comparable prices, for capital improvement than it did in the preceding 38 years.

The growth rate is also affected by the very considerable industrial modernization and technical reconditioning we are doing, as well as by the mechanization and automation of production processes. The general enthusiasm of our working people to outdo even their own very good production records is another factor. All this taken together accounts for the high growth rate.

**Question:** *The 150 big plants you said were being built added to those now operating will require a very solid electric power base. What is being done to meet that problem?*

**Answer:** In 1960 the republic will produce 2.7 billion kilowatt-hours of electric power. In per capita power output we have already surpassed the leading European countries, and in the seven-year period we expect to almost double our output to a total of 3.44 million kilowatt-hours. We will reach that figure once we complete the construction of a cascade of hydropower stations using the water resources of alpine Lake Sevan, put into operation the Tatevskaya Station on the Vortan River with the country's biggest water head, and build a series of thermal electric power stations to work on cheap natural gas supplied us by Azerbaijan.

**Question:** *What is the farm picture in Armenia?*

**Answer:** Our farming is varied because of our mountainous terrain and the great variation in soil and climate. In the valleys, where we get plenty of hot sun, we raise grapes, berries and vegetables. In the foothills we grow tobacco, one of our most profitable crops. In 1959 our collective farms sold 140 million rubles' worth of tobacco. Our alpine meadows are vast grazing areas and so we do a great deal of livestock breeding in the foothill and mountain districts.



**Question:** *What are the seven-year plan target figures for farming?*

**Answer:** The plan calls for an increase in grape growing by 2.8 times—to 231,000 tons—and a 2.7 increase in fruit and berry crops—to 93,000 tons. The scheduled increase for meat, milk, eggs, grain and vegetables is 50-60 per cent; for wool it is 78.4 per cent; and for tobacco 25 per cent. But these figures are nowhere near the maximum production possibilities of our farms. The rate of growth of our best farms turned out to be much higher than the plan figure. Sugar beet farmers, for example, reached the 1965 output figure in 1960. The 1965 figures for tobacco and vegetables, farmers say, can be reached by 1961, for grapes in 1964, for wool and meat in 1963, and for milk and eggs in 1962. This is the way life changes our plan figures.

**Question:** *Will there be any problem of overproduction with so much more farm produce raised?*

**Answer:** Not at all. We do not have such problems because ours is a planned economy. Along with greater production comes greater purchasing power and higher living standards, so that our domestic market is constantly expanding. The real wages of urban workers and the incomes of collective farmers in cash and kind doubled by 1958 as compared with 1940. And in 1961 the wages of factory and office workers will rise by another 24 per cent as compared with 1959.

**Question:** *By how much will the real wages of factory and office workers rise in the seven-year period?*

**Answer:** By 40 per cent. There will be the same rise in the incomes of farm people.

**Question:** *What is planned for housing?*

**Answer:** We expect to have 77,000 new apartments built by 1965. In addition, about 62,000 housing units will be built by private individuals with government loans and their own savings. Three times more housing will be going up under the plan than in the seven years before.

**Question:** *According to the last census figures Armenia stands second among the Soviet republics in its ratio of college graduates to each 10,000 of the population. Does that mean you have been able to train your own body of specialists?*

**Answer:** It does mean that. Before Armenia declared itself a Soviet republic in 1920, there was not a single college on its territory. The colleges and universities of the Russian Federation helped us to train the first groups of our own specialists. Now we have 11 colleges and 37 specialized secondary schools where 30,000 students are studying. The average number of people with a higher education in Armenia per 10,000 of the population is three times larger than in France and thirty times larger than in Iran, a neighboring country.

In the past 40 years we have graduated about 50,000 specialists from our schools of higher education. But as the republic keeps growing, there is an even greater call for skilled people. That is why the number of students in our colleges and professional schools keeps increasing every year.

**Question:** *To what degree has the growth in the number of people with a higher education influenced scientific and engineering progress?*

**Answer:** It has made it possible for us to set up our own Academy of Sciences. More than 150 Doctors of Science and 1,400 Masters of Science work in its 69 research institutes. We are planning to set up 12 more research institutes and laboratories. That will double the number of academy researchers. We have budgeted 200 million rubles for our science research program.

Many of our Armenian scientists are world famous. Astronomer Victor Ambartsumyan, President of our Academy of Sciences and the discoverer of "stellar associations," has been honored with membership by the academies of sciences of many countries, including that of the United States. The brilliant work of young mathematician Sergei Mergel'yan is universally acknowledged. Major contributions have been made to geology by Magakyan; to agrotechnics by Rector of the University of Yerevan Davtyan; and to chemistry by Mndzhoyan, vice president of the Armenian Academy of Sciences.

Science research is closely integrated with the needs of the people. Our scientists and people have common goals and the republic spares no effort or funds to increase our store of knowledge and thereby help to build a better life for everyone.



*Yuri Maryan was born in 1924 in Yerevan. He began writing for Armenian newspaper when he was only fourteen. During the war he served as front-line correspondent, and since then he has traveled throughout his native republic and the Soviet Union and has written numerous and widely read short stories, among them "I am a Young Pioneer" and "Meetings in the Air." Soon to be published is a collection of his profiles of Armenian people.*

# ARMENIAN PEOPLE AT WORK

By Yuri Maryan

Photos by Alexander Mokletsov

ARMENIA is the smallest of the Soviet republics but perhaps the most striking for its contrasts—vineyards in the Ararat Valley, forbidding cliffs and subtropical orchards along the Iranian border, rich alpine meadows and Lake Sevan high in the mountains. But the people are even more diverse than the geography—in character and in vocation. Here are my notebook comments on Armenians I met last year.

## Tunneler

What do you do when you are in a bad mood? Some people solve the problem by going out with friends for a good time. Others prefer to be alone with their thoughts. Then there are those who take themselves off to the circus on the theory that a clown, even if his jokes aren't too good, is still a professional bad-mood dispeller. And, of course, there are those who swear that there's nothing like a glass of cognac to do the job.

I have my own method. It's a bit unusual, but it serves the purpose. I pick myself up and go on over to Komitas Street, one of the new thoroughfares in our fast growing Yerevan. There, smack in the middle of big apartment houses, stands a wooden tower. It isn't everyone in the city who knows that under the tower is a mine and in the mine there's an elevator that takes you down 300 feet.

In a matter of seconds you are in a completely different world, a world without sunshine, clang of streetcar bells, screech of automobile brakes, and without pedestrians, either slow moving or rushing. It's cool down there, and all you hear is the buzz of a drilling machine and the rumble of a rockloader as it grabs up blocks of basalt in its steel teeth and dumps them into trucks.

But if you listen for a bit, you'll hear a burst of infectious laughter break into this noisy symphony of work. Then you know Josef Grigoryan is around, as big as life.

I first came across his name—this was a good many years ago—in a book by Alexei Fyodorov called *The Underground R. C.* (Regional Party Committee) *Carries On*, about partisans who operated in German-occupied territory. This paragraph in the early part of the book, where the author talks about his own youth, caught my attention.

"I remember that I liked two of the foremen especially, the Grigoryan brothers Artyom and Josef. They were friendly men who helped everyone, young and old, with advice, and even with money when it was needed. They were fine men to work with, always ready to share what they knew, and fine men to be friends with, always in high spirits, fond of dancing. They didn't object to a drink now and then, but they always knew when to stop. I liked the way they dressed, in good taste but without being foppish."

When I finally met Josef Grigoryan in the flesh, I remember being struck by how closely he fitted the description. He was the same tireless worker, always laughing, joking, full of pranks. Only, of course, much older and more experienced. He told me that years ago he had worked with Alexei Fyodorov on the construction of a railroad tunnel on the Merefah-Kherson line. Then later, when he heard there was tunneling to be done closer to home on hydropower projects Armenia was building, he came back to his native republic.

He has worked on Armenian soil ever since. Or, perhaps I should say, under it. His tunneling crew cuts through rock and earth slowly, sometimes only a foot and a half a day, sometimes as much as six feet, but the concrete corridors they leave behind will be there centuries hence. They leave other traces too, high voltage lines that cover almost all of Armenia like spiderwebs.

Grigoryan moves from tunnel to tunnel, from one power station to the next. There is no big power project in Armenia that he hasn't worked on. He helped build the first underground station and the first completely automatic and remote-controlled station in the Soviet Union. He has tunneled through the whole stretch from Lake Sevan to Yerevan. It is only 37 miles, to be sure, but it slopes to a height of more than 3,000 feet.

This is the route that the Razdan River used to take, from Lake Sevan down the mountain through a deep ravine, boiling and foaming, polishing the rocks and throwing up spray that sparkled in the sun, all its power going to waste. Now the river is imprisoned between concrete walls, in canals and tunnels, and great turbines have been set up along the way. Not a single inch of waterfall is wasted. The river's power is now tapped by the Sevan-Razdan cascade of hydropower stations.

There were plenty of difficulties that had to be met before the cascade was built. But now Josef Grigoryan and his fellow workers have something to be proud of. He leafs through a recently published book of statistics and finds that Armenia today generates more electric power per head of its population than England, Australia, Holland, the Federal Republic of Germany or Belgium; twice as much as Japan or France; three times as much as Italy; four times as much as Spain; and one hundred and six times as much as Iran. Neighboring Turkey, he finds, which is twenty-five times bigger than Armenia, generates only half as much electricity.

"That's the kind of people we are," Grigoryan says with his infectious laugh.

#### A Woman of Grace

Nowadays, when there is plenty of everything, it is no great problem to run a farm, even a large one. But Nazani Galstyan had to run one that grim winter of 1941 when the fascists were driving on Moscow, when there were practically no men left in her village, and when the little food there was had to be divided into microscopic portions.

The war had taken away men and machinery, but it kept calling for farmers to grow more and more food. The people in the village got together and decided that Nazani should take her husband Ashot's place as the chairman of their collective farm after he went into the army. Nazani had been his right hand, his chief assistant, so the proposal seemed reasonable—to everyone except Nazani.

She spent a sleepless and worried night prowling about her house, studying the papers she had brought home from the collective farm office, looking at her husband's picture, going in every few minutes to



*Josef Grigoryan and his crew of sandhogs have built tunnels and dug dams for power projects all over their native Armenia.*

see that the children hadn't thrown off their covers, alternating between tears and irritation with herself for being so frightened of the job.

When morning came the new chairman kissed her sleeping children and set off for work. She walked down the street briskly, head high, a smile on her lips, conscious that dozens of eyes were appraising her. She knew that she had to set the example for courage and confidence.

It was hard going. She lacked experience, made mistakes and was criticized for them. The criticism hurt, of course, but she learned from every mistake—how to plan, delegate jobs, check on performance. She worked at a terrific pace and got everyone working the same way. The farm progressed and soon began to grow enough for both the front and the city with so much left over that a good many of the collective farmers who had taken jobs in city factories, where they got regular wages and food coupons, came back home.

After the war things kept getting better. The farm's yearly income began to run into millions of rubles. People were able to buy better clothes, build themselves homes and afford television sets and cars. There was more leisure time, too.

The farm grew famous for its fruit and grape harvests and its sheep. Its completely mechanized dairy was the best in the republic. It had rich pasture lands, carefully selected breeds of cattle, large hothouses. Farmers from other parts of the republic came to find out how it had all been done. The secret, they discovered, lay in the discipline, teamwork, comradeship that had been inspired by the farm's chairman.

When I met Nazani Galstyan she had just been invited to Moscow for the fiftieth anniversary of International Women's Day. I saw her again when she returned, happy and excited. At a banquet in the capital, Anastas Mikoyan, First Vice Chairman of the USSR Council of Ministers, had shaken her hand warmly, congratulated her for having been decorated by a grateful nation with the honored title Heroine of Socialist Labor and asked her about affairs on the farm.

I glanced at her hands while she was talking. They were rough, calloused, hardworking hands, but they could be tender too, I knew. I had



Heroine of Socialist Labor Nazani Galstyan built a poor collective farm into a rich one. She represents her people in the Supreme Soviet of the republic.

seen her caress her grandchildren. Her face was grave, almost somber, but I had seen it light up in a wide, embracing smile. There is a great strength in this woman, I thought, a great dignity. And a grace, I added, even to her name, reminding myself that in Armenian *nazani* means graceful.

#### A Wintering Party

There are thousands of hydrometeorological stations scattered through the world. Armenia has seventy of them, on rivers and lakes, in mountains and valleys, near towns and in isolated valleys. The highest is on the top of Mt. Aragats, 10,500 feet above sea level.

In a 24-hour day a weatherman will make eighteen detailed observation reports and send out a dozen radiograms. This is normal routine for hydrometeorological stations, not only round the clock, day and night, but round the seasons, summer and winter. Even when fog blankets everything, when storms rage and snow piles higher than the roof, weathermen have to plow their way through to the psychrometer boxes a quarter of a mile from the station, take readings from a large number of instruments, translate them into compact code groups and transmit them by radio to the Hydrometeorological Service.

The particular wintering party I spent time with was made up of five people—four men and one woman—four of them the same age, twenty. Albert Yeremyan and Vladimir Zagumennyi were weather observers, Grisha Kemalyan was the radio operator and his wife Lily did the cooking and housekeeping. They were a close-knit group, practically a family unit, devoted to each other.

I wanted to know why they had chosen work that meant living under such hard and often dangerous conditions. Albert Yeremyan explained. His father, he told me, was one of the oldest weathermen in Armenia. He had wintered at the station we were at for several years but was now chief of a different one. Albert had always lived with weathermen, it was a natural kind of life for him. As for hardships and dangers, that



Vladimir Zagumenny (upper photo) and Albert Yeremyan take weather observations atop Mt. Aragats. Their meteorological station is 10,500 feet above sea level.

was what made life interesting, he said. And besides, it felt good to know that your work was helping hundreds of thousands of people—fliers, construction workers, farmers, railroaders, irrigation workers—who had to know what the weather was going to be.

I talked with the others. Their fathers weren't meteorologists, but as for the rest of the questions you might have thought they had gotten together on the same answers. They all thought the work interesting and had the same feeling that it was also useful.

So much for the four young people. The fifth, Smbat Khachatryan, station chief, was fifteen years older. He had spent many winters at the station. It's been there a long time—a pioneering station you might call it. When it was first set up, eleven miles from the nearest inhabited point, the only people to pass by occasionally were sheepmen. They would stop in out of curiosity, to see how the wintering party lived and what it was up to. Predict weather? Well, that was fine. The sheepmen could certainly use the information. Many were the times that a sudden temperature drop had finished off a whole flock. So they worked up a signal system which is still operating. If the weathermen shoot off a white rocket it means snow is on the way, and the sheepherders drive their flocks to sheltered spots. A red rocket spells danger—frost coming—a signal that the sheep must be herded down the mountain to warmer levels.

Life at the station isn't easy by a long way. It takes a snow plow to get through in the winter, and for months the weathermen are cut off from the world. Living together so closely, these five people have become real friends. They have more than enough work to keep them busy, and for relaxation they go hunting, watch TV, listen to records, read.

#### Physicist in the Mountains

Karlen Matevosyan was born and brought up on the shores of Lake Sevan. Generations of Armenian poets have sung the beauties of Sevan in lines that compare it to a crystal glass raised in a toast to the moun-



Grisha Kemelyan is the wireless operator at the Aragats Station. No easy life for these weathermen. It takes a snow plow to get through to them in the winter.

tain peaks. Sevan is three times the size of Lake Geneva, it is the largest of the world's mountain lakes and the highest above sea level.

From childhood Karlen loved this lake and mountain country but he also developed a love for physics. And what worried him was that if he became a scientist he would have to leave Sevan and the mountains and shut himself in a city laboratory. That was when he still thought of physics in terms of school textbooks—mechanics, heat, electricity, optics. But it worked itself out. He moved into a branch of physics that required him to live and work high in the mountains.

There are physicists who don't have Karlen's passion for the mountains and nevertheless exchange the comforts of city life for a hermit's existence up above the clouds, amidst snow and bare rock. Why do they? Because that is where they can best measure super-energy cosmic radiation, those strange invisible rays about which so little is known. The flux is heavier in these high places and there scientists set up their great magnets weighing as much as 200 tons. In the same way that a wild animal is turned from its path by the smell of a baited trap, so do these magnets deflect the rays from outer space. Physicists sometimes have no more than a hundred-millionth of a second to catch them—that is time enough to make a photographic record that will be studied for months afterward.

Karlen Matevosyan showed me a new device that was being installed, made up of an electromagnet, an ionization chamber, a cloud chamber and spark counters. Each one of these instruments has been used by cosmic ray scientists in many countries, but this is the first time they will have been combined so that they can check and control one another.

I told Matevosyan that I wanted to write a piece about my meeting with him for the American readers of *USSR Illustrated Monthly*. He was pleased and asked me if I thought author Mitchell Wilson read the magazine.

"He probably does," I said.

"Then will you send him my regards through the magazine?" He told me how much he had enjoyed reading Wilson's *Live with Lightning* and *My Brother, My Enemy*, and that he had been very much interested to learn that the novelist was a physicist by training. They had met when Wilson visited Armenia and was going through the laboratories of the Physics Institute.

It is a good and hopeful omen for a peaceful future that a young Soviet scientist can now meet and talk with an American author and physicist besides reading his books.

#### An Uncommon Calling

I wanted to know why healthy, young, energetic Albert Kazaryan had chosen his unusual calling. His wife didn't seem to be bothered by this occupation of his that is so notorious for breaking up families and causing all kinds of assorted troubles.



Physicist Karlen Matevosyan is a physicist who exchanged the comforts of city life for a hermit's existence in the mountains where he could best study cosmic rays.

Albert said, "Instead of telling you, I'll show you. Let's go on a short tour."

Our tour began at a spot near Yerevan called "Karmir Blur"—Armenian for Red Knoll—where archeologists were doing some excavating. The grass there had a kind of strange brownish-red color, and so did the soil. Actually, I found out, this wasn't soil at all but powdered brick, the remains of walls and roofs that collapsed three thousand years ago. On this site once stood the town of Teishebaini, one of the fortresses of Urartu, a state that flourished when Assyria and Babylonia did.

Besides pieces of clay pottery, weapons and stone mortars for pounding grain, with the blackened grain still there, archeologists have unearthed wine jugs with grape seeds in them. Thirty centuries old, these are.

Albert said, "See how our ancestors knew how to make wine," just as proudly as if he had done the pressing himself. He sat down on a rock, pulled a notebook out of his pocket and proceeded to give me some fascinating facts and figures and dates.

As to the quality of Armenian wines, he cited a legend dating back to the ninth century B.C., the time of King Ara the Handsome, that speaks lyrically of their wonderful flavor. Xenophon, the Greek historian, described Armenia and Armenian wine-making in his *Anabasis* in the fifth century B.C. The Arabic historian Al Mukaddasi in his *Best System for Studying Climates*, written in the second half of the tenth century A.D. when Armenia was under the yoke of the Arab caliphs, gave the country the name of al-Rikhab, which means grape-bearing, and spoke enthusiastically of its wines. Marco Polo visited Armenia at the end of the thirteenth century and in his notes writes in flattering terms of the products of its wine makers.

"In 1885," Albert continues reading his dates and figures, "the merchant Nerses Tairov opened a distillery in Yerevan to make wine, spirits and cognac. And today . . ." But now Albert puts away his notebook and leads me to the ravine through which the Razdan River flows and into a huge building of basalt—the Ararat Winery. It almost looks like a palace with walls adorned with Armenian decorative designs and bas reliefs of grapes and wine jugs.



Albert Kazaryan has chosen an unusual calling—wine making. He works at the famed Ararat Winery. Armenia has a century-old reputation for its "bottled sunshine."

The winery has four stories underground and two above. Everywhere there are casks, large ones and small ones, in the cellars and on the roof, inside the building and in the courtyard. A spicy sweet odor permeates the air. Through the glass pipes that run along the ceilings the wine bubbles and foams day and night.

We glance through the Visitors' Book. Here's an entry by Maxim Gorky. "Wine is made up mostly of sunshine," wrote the great Russian novelist. "Long live those who know how to make wine and, through it, to bring the sun's strength to the soul of man." They say, too, that Gorky quipped that it was easier to climb Mt. Ararat than to climb out of the cellars of the Ararat Winery.

Albert and I cross the river to the building where the cognac is made. Here, too, there are casks everywhere, some of them dating back to the early years of the century.

"If Armenia were suddenly to lose all her other sources of income," says Albert, back again to his notebook, "our whole population would be able to live for almost five years off the sale of its present stocks of wine and cognac."

Our tour comes to an end in a room where the champions are stacked. They sport medals, these champions, won in unusual competitions. The judges sit in armchairs, sip, sniff, hold their glasses to the light and choose the winners.

Take this Armenian White Muscat, winner of three gold medals at international contests. Or the Dvin cognac, also a three-time champion. The Aigeshat and Arevshat wines and the Prazdnichny and Armenia cognacs have captured two medals apiece. All told, Armenian wines and cognacs have won an enviable 30-odd medals in international contests these past few years.

Our tour completed, I can see why Albert Kazaryan chose wine making as his vocation. He is one of those, to quote Maxim Gorky, who brings the strength of the sun to men's souls.

I remember what occurred to me earlier about wine makers and home breakers and I ask Albert what his wife has to say on the subject.

"Oh," he answers with a smile, "her father was a wine maker. He was my first teacher. And she's a wine maker herself."



## TREMENDOUS PROGRESS

William Saroyan

Author

I FIRST visited Armenia back in the mid-thirties. Although my latest visit to that place was brief, I was surprised by the tremendous progress made by the Armenian people. I've been to many cities in this world and have seen the changes that have taken place in them, but I've never seen such a rapidly growing city as Yerevan.

The amount of work done in all fields—economy, agriculture, culture, the arts, science—is amazing. It gave me great pleasure to become acquainted with many outstanding men in science and the arts. I must say that with such people as Victor Ambartsumyan living in it, little Armenia assumes the nature of a Universe.

I was astonished by the energy of the people and their faith in the future. And the best augury of this future are the Armenian children, a wonderful, healthy generation.

## THEIR FUTURE IS BRIGHT

Edward H. Aberlin

Dentist

I HAVE spoken to many Armenians who lived in the United States for years and who came back to visit their native city and relatives.

They saw the transformation of Yerevan from a backward village to a modern industrial city. They can judge better than I what has been done since the Revolution.

For myself, I found Armenians very friendly and hospitable. They all told me that life in Armenia was improving from year to year and that the future looked very bright for them.



## GREETINGS FROM ARMENIA

Belsabe Grigoryan

Chairman, Armenian Society for Friendship and Cultural Relations with Foreign Countries

A FORTY-YEAR PERIOD takes in only a fragment of the venerable history of the Armenian people, but in these past four decades centuries have been compressed. Dreams for which our best sons and daughters fought and suffered and often gave their lives have come true—dreams of independence and a good life. It should therefore be no surprise that the fortieth anniversary of the founding of Soviet Armenia is a memorable holiday for our people in the Soviet Union and for Armenians everywhere in the world.

Our Society for Friendship and Cultural Relations with Foreign Countries received hundreds of congratulatory letters and telegrams. They were sent by individuals and by groups of Armenians scattered throughout the globe by the will of history. Armenians from many countries, including the United States, came as tourists to see the land of their forefathers.

We know that many Armenian organizations in the United States are celebrating the forty-year birthday with us. To the National Council of Detroit, the Armenian Cultural Union of Los Angeles, the fraternal societies of Arabkir, Marash, Sebastia, Adjna, Kharbert, Malatia and many others, and to all Armenians in the United States, I wish, on behalf of our society, to extend heartfelt greetings and wishes for happiness, good health and prosperity. We thank you for your friendly sentiments. We are all, I am sure, united by the same pride in the achievements of our native Armenia.





*The two Keshishchyan brothers were among the hundred thousand Armenians repatriated from the countries of the Middle East, Europe and America fifteen years ago. They raised families and prospered in their native land.*



*Yerevan, the capital, where they live, has been built up in the years since. (Above) One of the modern thoroughfares. (Below) Brother Arutyun now supervises a Yerevan watch factory department. He started as apprentice.*



# A Repatriate's Story

By Yuri Fantalov

**T**HE STORY of Arutyun Keshishchyan's life, except for changes in place names, could be that of any one of a hundred thousand or more Armenians who went back to their native land fifteen years ago. He told it to me as we sat in his office at the Yerevan Watch Factory where he is superintendent of the assembly shop.

"October 19, 1946, is a day I'll never forget. I was on the liner *Russia* docking at Batumi on the Black Sea. Everyone was up on deck. The pier was jammed, thousands of people, it looked like, had come to welcome us home. We yelled back in answer to the greetings, all of us together: 'Hayastan' 'Hayastan.' It means Armenia in our native tongue. An old man standing on deck next to me said with a catch in his voice '*Russia* is bringing Armenia's prodigal sons to their homeland.'

"The old man was putting into words what all 7,000 of us on the boat were feeling. That year Soviet ships made eight such cruises, repatriating more than 100,000 Armenians from the countries of the Near and Middle East, Europe and America. Ours was the seventh of the trips, and on the ship with me were my father Migran, my mother Aigon and my brother Garnik.

"My father was more excited than any of us. He had long dreamed of this homecoming. When he stepped on shore—a strong, courageous man—he fell on his knees and cried like a child.

"My father had led a hard life. He was born to a poor Armenian family in Turkey and had to work for a living from early childhood. When he married my mother in 1920, they were living in the Turkish town of Marash, and when I was born the following year we moved to Homs in Syria. But life wasn't any better there. Poverty followed us wherever we went. There was never enough to eat.

"Then my brother Garnik was born, and when he began to grow up the family had to decide which one of us would get an education. My father didn't make enough to keep both of us in school. My education ended at the fourth grade. My father took me to work with him as an apprentice. He was a baker then. He used to say, 'At least one of the boys will get an education.'

"At first everything seemed to be going all right. Garnik graduated from secondary school and then got into college. Father was happy about that. He thought that if anything happened to him, there would be someone to take care of the family. But then the war came, and with it privation again. Garnik had to leave college and come to work with us in the bakery.

### Welcome Home

"The years followed each other, each worse than the one before, and my father talked more and more about his native land. We kept hearing about how prosperous Soviet Armenia had become, that there was no unemployment there, that education and health services were free. There were many people who didn't believe that was true, but my father did. When the war ended and we learned that the doors of our homeland were open for those who wanted to come back, he went to the Soviet Consulate for an application to repatriate the family.

"That was the first postwar year. Thousands of Soviet towns and villages were still in ruins and there was a shortage of housing, food and clothes. And yet the tens of thousands who wanted to return to their homeland from other countries were welcomed with open arms. Not only that, but they were given jobs, housing, the chance to learn new trades and professions and to become full-fledged citizens of the country.

"As soon as we arrived in Yerevan, my father, Garnik and I were offered jobs at the watchmaking factory. My father went back to his joiner's trade, I was hired as an apprentice in the assembly shop and Garnik began to work in the repair shop.

"The first time the shop superintendent and the trade union chairman talked to me, I waited for them to tell me the same thing the owner of the bakery in Homs had said when I came there to work. 'You watch and learn how to knead the dough. In three days I'll see how good you are, and if you're not, out you go.'

"How different this talk was. It took place in this very office we're sitting in now. I had no trade at the time and no education, but these people didn't look down on me as if I were dirt, the way the boss in Homs had. They talked to me like an equal, with respect. They asked about the family—whether we were settled, whether there was anything they could do for us. Then they wanted me to tell them what kind of work I had done, what schooling I had, whether I wanted to go on with my education, what trade I would like to learn.

"When they learned that I had only gone through the fourth grade, they arranged for me to study at the factory school for young workers and told me that after graduating I'd be able to go to college if I wanted to.

"After the talk I felt as though I'd been born again—a new man. That was fifteen years ago. Since then I have graduated from the ten-year secondary school and a trade institute. Garnik has also gone through secondary school and a machine-tool building school.

"When I first began to study, I thought it would be too much for me, getting down to books after a day's work. But the factory made it easier. All of us who studied at night were allowed to leave two hours earlier on the days we had classes. And when we had exams to prepare for, we had additional time off, all with full pay. That helped get us started. I'm now assistant superintendent of the assembly shop and Garnik is an expert on cold working of metals and one of the plant's best men on machine repairs. He earns very good wages, as much as two thousand rubles a month. Garnik is well liked in the shop. He has been elected chairman of the shop trade union committee three times running."

### A Blessed Day

The bell reminded us that we had talked our way through the lunch hour. Arutyun took me through the shop, showed me the three 325-foot conveyors carrying clock parts. "We turn out 8,000 alarm clocks a day," he said. "We wake up everybody in Armenia."

He introduced me to his wife Eliza. She also was repatriated to Armenia, but from Lebanon, not from Syria. They live in an apartment near the factory with their three children—nine-year-old Lyusya, eight-year-old Migran and four-year-old Meleene—and grandmother Aigon, who looks after the youngest while the parents are at work. The other two children go to school.

Garnik is a family man too, with a four-year-old son, Sarkis, and a five-month-old daughter. His wife Shaake stays home to look after the children. They have named the little girl Zepyuv, Armenian for "soft breeze."

"The only thing we're sorry about," Arutyun told me, "is that we didn't come back sooner. So much of our youth was wasted. Our children are luckier than we were. My Lyusya is already talking of becoming a doctor and Migran wants to be an engineer. And there's nothing to stop them, not a thing to stand in their way.

"Sometimes when Garnik and I get together, we talk about our father. He wanted us and our children to live the way people ought to live. Our father's dream came true, more for us than for him. He fell seriously ill twelve years ago and died.

"When he was alive and the family got together on a holiday or birthday, this was the toast he always made, 'To October 19, 1946, the blessed day we came back to our homeland.'"



Armenian singer Vagram Grigoryan singing the leading role in the frequently performed native opera *Czar Arshak II* by composer Chukhadzhan.



Scene from the ballet *Khandut* by Spendaryan, staged in the republic's first professional opera house, the State Theater of Opera and Ballet.

Dance of the Riders, one of the numbers that won national acclaim for the Armenian Dance Ensemble.



## 2,000 Years of Armenian Art

By Akop Khandzhan

**T**HE FIRST ARMENIAN THEATER, so history tells us, was built 2,000 years ago in the reign of King Artavasdes. This open-air playhouse no longer exists, but tourists may still see two other equally venerable monuments—Zvartnotz and Karmir-Blur—built by Armenian architects.

All the skill of their ancient forbears has been inherited by the republic's present-day builders. It is evident in the structures that grace the capital city Yerevan—the Opera and Ballet Theater, the Grand Concert Hall of the Philharmonic Society, the Academy of Sciences, the Matenadaran Library which has in its rare book collection the first Armenian printed book.

In the center of Yerevan is a striking building of black tufa, a volcanic rock, that houses a history museum, an art gallery and a theater exhibit with displays that range back through the centuries. Some of the rarer items were brought to Moscow in 1958 for an exhibition of *2,000 Years of the Armenian Professional Theater*.

In Artashat, perhaps on the very spot where King Artavasdes' open-air playhouse once stood, a collective farm theater has been built. Its actors play to audiences quite different from the King's nobles and warriors—the grape growers of the Ararat Valley.

The great Komitas dreamed of a music school for his talented countrymen. Today the Komitas Yerevan State Conservatory trains professional musicians and music teachers. Its graduates teach piano, violin, cello, as well as the national instruments, in thirty district music schools. Works by composers educated at the conservatory—Arno Babadjanyan, Alexander Arutyunyan, Sarayan, Mirzoyan, Oganessian and Ter-Tatevosyan—are played in concert halls throughout the Soviet Union.

Armenian pianist Yuri Airapetyan, violinist Ter-Margaryan, cellists Medeya Abramyan and Yuri Edigaryan, composers Orbelyan and Oganessian have won medals and prizes at international music contests.

The first Armenian opera, Tigranyan's immortal *Anush*, was staged, appropriately enough, at Armenia's first professional opera house—the Spendaryan State Theater of Opera and Ballet—and now, after 500 performances, is still a public favorite.

Other native operas performed today include Spendaryan's superb *Almast*, Chukhadzhan's *Arshak II*, Babayev's *Artsvaberd*, Khachatryan's ballet *Gayane*, Spendaryan's *Khandut*, Egiazaryan's *Sevan*, Oganessian's *Marmar* and Stepanyan's *At Dawn*, the first Armenian opera composed in the Soviet period.

Singers Danelyan, Talyan, Savandaryan, Gasparyan, Oganessian and Petrosyan have won fame far beyond the borders of their native republic.

The Armenian drama theaters are doing no less noteworthy work. The republic's leading theater is the Sundukyan in the capital, but the Stanislavsky Theater, also in Yerevan, the Mravyan in Leninakan, the Abelyan in Kirovakan, the Kharzayan in Artashat, the Vagarshyan in Goris, the Youth Theater, the Musical Comedy Playhouse and the Puppet Theater have all won public esteem.

In the pictorial arts the work of such original painters as Martiros Saryan has breathed a new spirit into an old art. Armenian paintings evoked general interest at the 1959 Brussels World's Fair.

Armenia has a history of twenty centuries of the arts, but they flourish today with a new strength and a youthful vigor.







# ROCKWELL KENT

## PRESENTS HIS WORK TO THE SOVIET PEOPLE



Minister of Culture Yekaterina Furtseva with Rockwell Kent at the exhibition of the artist's work in the Academy of Fine Arts in Moscow.



In reply to the gratitude expressed by Boris Ioganson on behalf of the whole country, the artist replied that the love and understanding with which his work had been received in the Soviet Union was the most gracious compliment an artist could receive.

**R**OCKWELL KENT, the noted American artist, has presented the work of a creative lifetime to the Soviet people. The gift comprises 80 oil paintings, some 800 drawings and engravings and several books that he wrote and illustrated. The collection is on exhibit at the USSR Academy of Fine Arts in Moscow.

Soviet art lovers first saw the work of this gifted artist two years ago when it was displayed in Moscow, Leningrad, Kiev, Odessa and Riga. The half-million people who came to the shows became admirers of the American artist's talent.

Boris Ioganson, President of the USSR Academy of Fine Arts, spoke for the entire country at the presentation ceremony when he said, "Rockwell Kent's gift symbolizes the friendship of the American and the Soviet people."

Kent replied that the love and understanding with which his work had been received in the Soviet Union was the most gracious compliment an artist could get. His gift, he said, was a small enough token of gratitude for the Soviet people's exploit—the defense at Stalingrad—that eighteen years ago saved the world from nazi barbarism.

The exhibition has evoked admiring public interest. At a press conference arranged by the USSR Ministry of Culture, Kent commented that it was a gift pure and simple and that he looked for no remuneration. The respect and admiration that so many Soviet people had shown for his pictures was a far more important return than money.

The press reports the many expressions of thanks from Soviet artists and art lovers. Typical is this tribute from O. Vereisky who wrote in this vein to the newspaper *Soviet-skaya Kultura* (*Soviet Culture*):

"A distinguished artist, Rockwell Kent understands how important a force art can be in bringing people together. His collection is not only a priceless gift which has enriched our country's art treasury, it is a bridge of friendship between the people of the Soviet Union and the United States. Our grateful thanks, dear Rockwell."

For the opening of the exhibit, Chairman Khrushchev sent the artist this telegram:

"With a feeling of deep gratitude I have learned of your noble intent to present the Soviet people with a collection of your work, the product of many years of creative effort. The motives which guided you have our earnest and deepest respect. They are understandable and close to the hearts of the Soviet people, who deeply appreciate every step taken in the struggle for peace throughout the world.

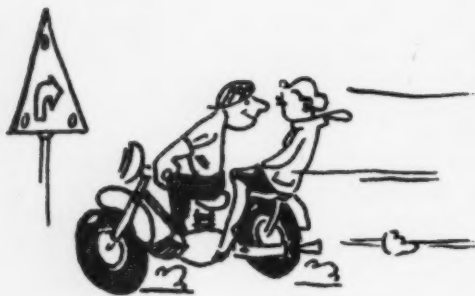
"I am firmly convinced that these motives will be correctly understood by the American people, too, for your gift is a step on the way to greater understanding and friendship between the people of the USSR and the USA.

"From the bottom of my heart I wish you many years of good health and new creative achievement in your noble work for happiness and justice on our planet."

# HUMOR



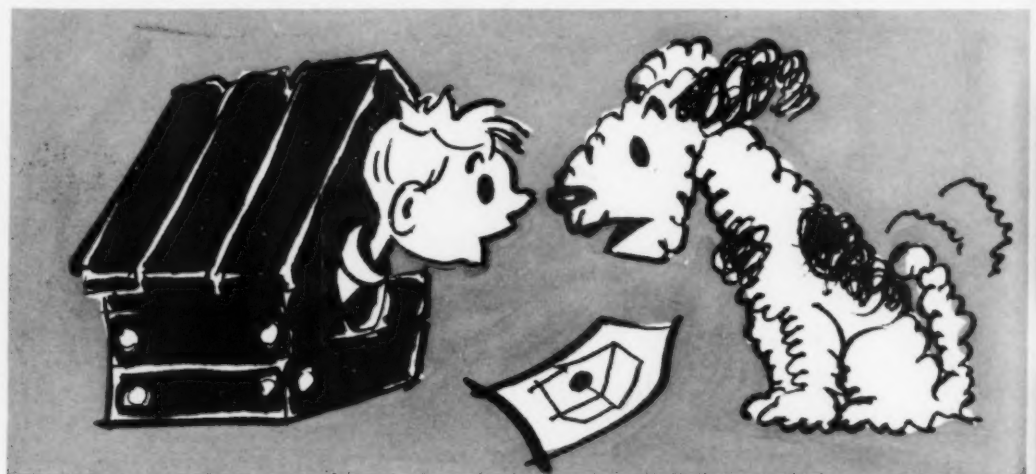
*Here are our seats.*



*Dangerous curves ahead.*



*It's raining.*



*Please stop shaking while I aim and shoot.*



*But I'm scared of the wolf behind that tree.*



# HIDE AND SEEK

These little creatures are as close to Soviet children as Donald Duck, Porky Pig and Mickey Mouse are to American children. They are the main characters of many animated cartoons, TV and puppet shows, and frequent occupants of the pages in the children's magazine *Vesyolye Kartinki* (Funny Pictures).

The wooden boy, whose name is Buratino, originally came from an Italian fairy tale but now he is perhaps better known in our country than in his native land. Petrushka, the boy with the dark peaked cap, is one of the most popular figures from the traditional Russian folk puppet shows.

The boy made of metal parts is Samodelkin (Do-It-Yourself-Man). Then there is Karandash (Pencil), famous for his cartoons. The others are visiting guests from children's books of foreign lands—Cippolino from Italy, and Gurvinek from Czechoslovakia.

Once upon a time this merry crowd decided to play hide-and-seek, and this is what happened.



*This nice young couple, Valya and Igor Kamishkirtsev, were married in June. They both work at the Likhachev Automobile Plant in Moscow.*



## NEWLYWEDS

By Olga Kuchkina

This is the story of a young couple, factory worker Igor Kamishkirtsev and engineer Valentina Matevosyan. Both work at the Likhachev Automobile Plant in Moscow. These newlyweds say, "We had no idea we'd be faced with so many problems all at once when we got married, but we're taking them in stride and doing fine."

WHAT they talked about before they got married was what people in love usually talk about—love. Valentina—the more practical of the two, being a woman—got down to earth first and asked herself and Igor the question, "Where are we going to find an apartment?"

Valentina—Valya for short—came to Moscow five years ago from Stalingrad to study at the Institute of Nonferrous Metals. Her days were full of classes, discussions with friends, parties and concerts. She visited picture galleries, saw plays, went swimming in the pool at the institute. All in all, she was pleased with her life and couldn't imagine it very much different. Then Igor stepped into the picture and everything changed. All these exciting and interesting things she had been doing suddenly lost all their appeal unless Igor was there to do them with her.

She met this tall nice-looking young man at the Likhachev Auto Plant where a job was waiting for her as soon as she finished her engineering course. Igor Kamishkirtsev had been working in one of the shops ever since he graduated from secondary school.

He, too, was leading an interesting life, what with work he liked, gym and volleyball one evening, the theater the next, a get-together the following, and so on. On week-ends he'd take himself off to various parts of the country to snap pictures—he's a passionate amateur photographer. Igor, too, saw no reason to change his way of life until he met Valya.

### Housing Problem

They decided to get married in early summer, and set the date, June first. Problem number one—an apartment. Valya lived in the factory



*The prize gift at their wedding party was a key to a newly built apartment. It is customary for Soviet factories to give newlyweds priority in housing.*



*Valya is an engineer in the plant's experimental laboratory. Her field is metal ceramics. Igor has been doing shop work since he left high school.*

*Valya likes swimming, Igor doesn't—the reason for their first quarrel. It taught them that both partners have to work at making a happy marriage.*



dormitory and Igor in his parents' home. But that problem was solved very quickly, in spite of the fact that housing in Moscow is still very tight although buildings are going up all over. Many Soviet factories have this custom—when a couple gets married, the management and trade union give them priority for housing. Consequently, the wedding gift was a key to a newly built apartment.

Igor has been studying for the past few years at the evening division of the Moscow Automobile Institute. Asked whether he was going to continue his studies now that he was married, he says with a smile, "I should say so, and I have to study harder than before. I can't let myself fall behind my engineer wife." And it is true that at most Soviet factories, including Igor's, the good benchworker must know almost as much as an engineer.

Valya works in the factory's experimental laboratory. Her field is metal ceramics. She also lectures to groups of workers in the factory on art and literature in her spare time.

Matrimony hasn't put a damper on their individual interests. On the contrary, they feel that married people find each other more interesting if their interests are complementary. That way you don't stew in your own juice, they say.

Together they earn 2,000 rubles a month. It's not a great deal by comparison with what other families make, but they manage to make ends meet. They spent most of their savings for a honeymoon trip to the South, to the Black Sea, and furnishings for the new apartment. But they're not worried about financial security. They both have good jobs and promotions will be coming along. Besides, both Valya's and Igor's

parents are always lending a hand in one way or another—advice, little gifts for the house, the warm feeling that comes of knowing somebody is standing behind them, ready to help when they need it.

### First Quarrel

So far, so good. Except for the occasional storm in the proverbial teacup that inevitably blows up out of nowhere when two people live together. This one, for example.

Valya used to go in for swimming, you remember, when she was single. Now that she's married, she spends almost all her evenings with Igor who doesn't care too much for swimming.

Valya sees a swimming meet announced one day and says to herself, "Why not have a try at it? I was pretty good at the institute." And she enters her name for the meet.

The grandstand around the floodlighted factory swimming pool is packed for the contest and Valya loves the excitement of the race, especially since she comes out ahead in the preliminaries.

But on the second evening of the contest—no Valya. Igor had issued an ultimatum—"me or the pool!" He didn't, he declared with considerable heat, get married to spend his evenings alone. And that was that.

It was then Valya suddenly realized that married life wasn't simple. They still hadn't made up by Monday morning when she arrived at work looking very unhappy. An older man, a foreman, got the story out of her. By the time she finished the recital, she had worked herself up to a state of virtuous indignation. The foreman sat her down, told her about his own problems when he was a young married man, reminded her that it took two people to make a quarrel and that you sometimes had to give in on small things to hold on to the big ones.

"All right," he said, "he wouldn't let you go to the meet. But suppose he took himself off alone for two evenings running, how would you feel? Why don't you talk it over and try to make him see how much you miss swimming? Maybe he'll even come along and watch you."

Valya did a lot of thinking after the talk. It didn't seem to be so important any more who was right. The important thing was that Igor was there working only a few feet away from her and he looked as unhappy as she felt.

### Marriage Has To Be Worked At

They made up, of course, as soon as they got home. And Valya did resume her swimming. But they both had learned that a good marriage doesn't just happen; it has to be worked at. They also realized, perhaps even more than they had before, how much they loved each other.

Valya gets up first in the morning. Before she was married, her breakfast was sketchy. Most often she would run down to the cafe for coffee and a sandwich. But now there's Igor to think of, so breakfast is a full-sized meal. When he was single, Igor never did any household chores. But now he helps make breakfast, do the shopping, clean the house. It's not that he likes doing chores especially, it's that he likes doing them with Valya.

They usually have dinner at the factory cafeteria. It's cheap and it leaves their evenings free. They get home at five, but don't usually stay long. Igor has his classes at the Institute and Valya her swimming, or Institute friends to visit, or reading to catch up on at the factory library.

Saturday night they go to the movies or theater or the factory club if there is anything especially interesting on. They do their big shopping over the week-end at a store for newlyweds that opened recently on Prospekt Mura. And ever since the new swimming pool *Moscow* was built, Valya goes there with Igor. And in exchange, she keeps him company on his Sunday photo excursions.

Their plans for the immediate and distant future are many and varied. They plan to go South next summer or take a trip abroad. They plan to buy more furniture. They plan—eventually—says Valya, to raise a family. Igor has been "shooting" a film of their home life with a movie camera that was given them by friends as a wedding present. So far the film has only two characters—Igor and Valya. Chances are it will have a third one before too long.



*Igor helps with the dishwashing and cleaning. It's not that he likes chores, he likes doing things with Valya.*

*Saturdays they'll go to an art show or drop in at the club where there is usually something interesting on.*





*Igor says he has to work hard to keep up with his wife. He studies evenings at the Automechanical Institute.*



*They are both glad that Igor's parents live close by for advice, understanding and help when it's needed.*



# WATER

## comes to the desert

By Vasili Kornilov

**W**ATER IS LIFE—this is not only a proverb in Turkmenia but the literal truth. As far back as history records and memory goes, the people in this sun-baked country have been trying to push back the shifting desert sands. But more often than not, they stood by helplessly while their meager crops were scorched. What little water Turkmenia had before the Revolution was owned by the big landholders. There was feuding, and even murder, because of the precious fluid.

Large-scale work to bring water to the desert was started only after the Revolution. In the ten years from 1925 to 1935 the irrigation system was thoroughly reconstructed. Small networks were joined into large ones, parallel and wasteful canals were eliminated, sluices were built to regulate the supply from the head canals to the field networks, new canals and reservoirs were dug.

The fruit of all this labor is that by 1959 the irrigated area in Turkmenia increased by 346,000 acres—new farm lands won from the desert.

The Kara-Kum (Black Sands) Desert takes in nine-tenths of Turkmenia's territory. In spring it looks like a green carpet dotted with bright flowers, but a month or two and all this blossoming life is withered by the burning sun.

As far back as the prewar years, the drive for water was well under way in the Kara-Kum Desert. New pasture lands were made available, and several large sheep-breeding farms were set up. Even during the difficult years of the war the fight for water did not stop—more than 5,000 wells were sunk to extend the sheep-breeding area to the central and western Kara-Kum.

In 1954 work was started on a gigantic project, the Kara-Kum Canal. Its purpose is much broader than irrigation—the canal will also provide access to the natural wealth of this vast Central Asian desert—its oil, gas, sulphur and other minerals.

The first 250-mile section of the canal was ready early in 1958. From the Amu-Darya River, which runs along the eastern edge of the Kara-Kum, the water flows for thirty

miles along a two-branch canal. Then it follows the path of the dried-up bed of the Kelif Uzboi and forms a chain of lakes. The canal then crosses the desert, where the sand dunes tower for 60 feet and more, and finally reaches the Murgab River with its ancient oasis.

When the first section was built, Turkmenia's irrigated area increased by 250,000 acres. To bring water to the fields of the new farm land, all sorts of hydrotechnical structures were built.

Early in 1960 work was started on the second section of the canal, and by mid-November it was completed. The Kara-Kum Canal is now 335 miles long, and the water of the Amu-Darya reaches the Tejen River with its oasis. A road lined with young trees runs parallel to the canal, and barges loaded with cotton, building materials and manufactured goods sail along the man-made waterway.

Both the Murgab and the Tejen Rivers used to dry out in summer. Now the canal brings water in plenty to the valleys of these rivers. Within the period of the current seven-year plan, irrigation will add 320,000 acres of new farm land, and will bring water to millions of acres of pasture land. Cotton, orchards, vineyards and sheep are now thriving on this land.

In the future the Kara-Kum Canal will extend to the foothills of the Kopet Dag range and then to Krasnovodsk where it will reach the Caspian Sea. Its total length after all construction is completed will be 600 miles.

Meanwhile geologists are prospecting for water in the desert itself. They have discovered an underground lake under the sand—the Yashkhan—that they estimate has reserves of billions of cubic feet. In another place they found an even larger subterranean lake. In southern Turkmenia an underground river flowing under the Kopet Dag range is used to irrigate fields, orchards and vineyards. More than 2,000 new wells will be built before 1965 to provide water for several million acres of grazing land.

Wherever the water flows, it transforms the desert sands and, in its wake, leaves a green and flowering land.





*"Water is life" is more than a proverb for Turkmenia; it is a fact. Nine-tenths of the land is arid desert.*

*The first 540-mile stretch of canal now winds across the Kara-Kum Desert to bring water from the Amu-Darya.*

*Wherever the water flows, it leaves in its wake fruitful farms and orchards and thriving cotton plantations.*





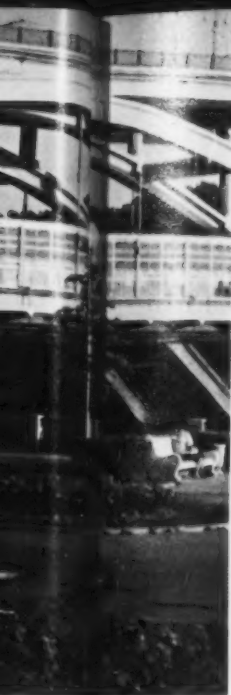
*The signature of the Moscow Metro is this big M atop the station. Its trains cross the city, from one end to the other, in half an hour.*



*Lenin Hills Station is built on a bridge across the Moscow River with exits on both banks. The upper tier is used for auto traffic.*

# MOSCOW





All recreation areas are within easy reach by Metro. Sports Station near Lenin Stadium, Moscow's largest amphitheater.



Breaking ground in 1932 for the first line of the Metro. It opened for passengers on May Day, 1935, with 5.6 miles of track and ten stations. The Metro is now 60 miles long, and new lines are being built continually. By 1965 it will be 85 miles long, and by 1975 it will extend for 155 miles. The fare is 5 kopecks (4½¢ at the new rate of exchange), and transfers are free.

# METRO



**A** METRO ride is one of the sightseeing musts for a tourist in Moscow. Its stations are not the dismal underground waiting rooms one associates with a subway. They are more akin to palace halls with their wealth of marble, granite, ceramics, stained glass and their display of paintings and sculptured figures. Distinguished artists and craftsmen were recruited to make riders forget they are deep underground.

Every station has its own unmistakable signature. Sculptured figures of athletes advise the passenger that this is Sports Station with exits to the huge Lenin Stadium in Luzhniki. Kiev Station is decorated with mosaic panels illustrating the fraternity of the Ukrainian and Russian peoples. Passing through the Byelorussia Station, the rider feels as though he were making a tour of that republic. Riga Station is a panoramic display of the progress of Latvia.

The Moscow Metro was opened in 1935, and construction has not halted since. New lines have been added continually to link more and more sections of the city with each other. The 5.6 miles of the first line has stretched to 60 miles now. By 1965 the Metro will be 85 miles long, and by 1975 it will extend for 155 miles.




Moscow is a very old city that grew up around the Kremlin. Its major thoroughfares—at one time they were roads leading to other cities—radiate in all directions from the center. As the city grew, it was circled first by the Boulevard Ring and then by the Park Ring. The Metro follows this radial arrangement and also has one circle line.

Both the old and the new city districts, the railroad terminals, big stadiums, parks and exhibition grounds are all served by the Metro. You can cross from one end of Moscow to the other in half an hour, very much faster than by any other means of transportation. The Metro, say statisticians, saves every rider at least 240 hours a year that used to be spent in streetcars or buses.

Trains run, on the average, at 90-second intervals. The automatic block system and other such technical improvements make travel absolutely safe. The air in the stations is renewed at least four times an hour. Most of the lines are built quite deep, with escalators from street to station as long as 200 feet and more. Other lines, built near the surface, are reached by short flights of stairs. Some of the more recent lines are at street level. The Metro lines go under the Moscow River at several points, but there are also two specially built Metro bridges.

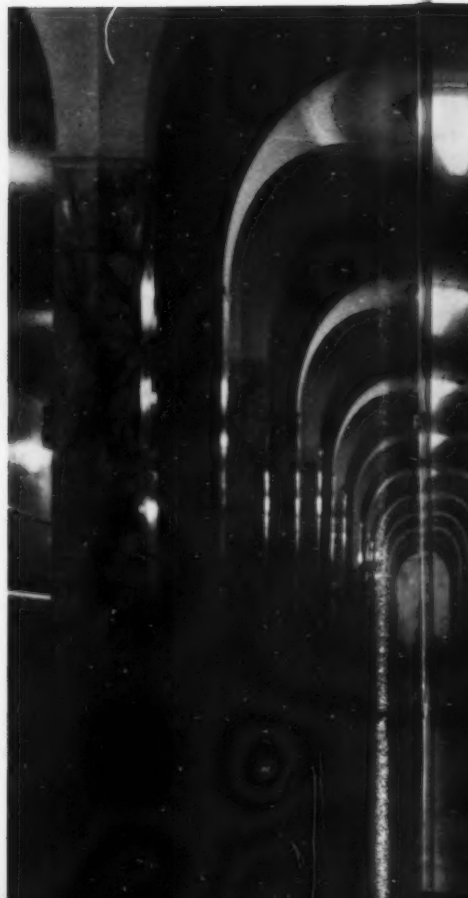
During its first year of operation the Metro carried an average of 170,000 passengers daily; now it carries more than 3 million. Besides having the greatest passenger handling capacity and being the speediest form of transport in the city, it is also quite cheap. The fare is five kopecks (four and a half cents at the new rate of exchange), and transfers from one line to another are free.



-  Lines in operation
-  Lines under construction
-  Projected lines



*Created for use and for beauty—Izmailovo Station.*





*Most of the Metro lines are built quite deep, with escalators from street to station as long as 200 feet and more.*



*In a Metro station—sculpture in bronze.*

*This Metro station could be a marble corridor in a palace.*



*This one could be a sculpture hall in an art gallery.*





*A routine checkup for safe travel.*



*A Metro bookshop to browse in between trains . . .*



*and a counter for cosmetics or toothpaste . . .*

*Computing train traffic schedule.*



*Trains run at intervals of 90 seconds on the average, and only 30 seconds during rush hours.*



*and another for a quick tasty snack en route.*









# THE SOVIET RUBLE'S NEW RATE OF EXCHANGE

By V. Garbuzov  
USSR Minister of Finance

**A** NEW SOVIET RUBLE with an increased gold content and a higher foreign exchange rate became standard January 1 of this year. The ruble now contains 0.987412 grams of pure gold as compared with the old ratio of 0.222168 grams, fixed in 1950. In relation to American currency, the dollar is now 90 kopecks instead of the 1950 equivalent of four rubles (400 kopecks). This corresponds to the current factual ratio in the purchasing power of the two currencies.

The higher gold content of the ruble similarly alters the exchange rate with other non-socialist countries. It will no longer be necessary for the USSR State Bank to balance currency exchanges and commercial accounts with added premiums.

The higher gold standard of the ruble is a reflection, in currency terms, of the successes of the Soviet Union in developing its industry and agriculture and boosting national income.

Between 1950 and 1959 the volume of Soviet industrial production multiplied 2.8 times. In the same period the Soviet Union's national income increased by nearly 2.5 times. In 1960 alone the volume of Soviet industrial production rose by nearly 11 per cent. Between 1950 and 1959 the productivity of Soviet labor rose by 88 per cent. The results of the first two years show that the goal of the seven-year plan is being exceeded and that the day is not far off when socialism will attain the world's highest level of labor productivity.

The everyday concern the Communist Party and the government display for the well-being of the Soviet people is manifested in such measures as increasing the production of consumer goods (62-65 per cent compared with 1958), shortening the workday, raising the wages of low-paid factory and office workers and gradually abolishing taxes on the income of all factory and office workers.

Between 1950 and 1959 Soviet retail and wholesale prices of consumer goods dropped by 25 per cent. The seven-year plan provides for still further reductions in prices and the consequent rise in real income and purchasing power for the Soviet people.

There is no inflation in the Soviet Union, nor can there be. Both wholesale and retail prices are fixed by the state. The purchasing power of the ruble is thereby controlled. The waves of inflation

which sweep other countries periodically do not affect the purchasing power of the ruble. The stability of the Soviet monetary system is guaranteed by the fact that the state controls foreign trade, one of the crucial advantages of a socialist economic system. The amount of currency in circulation is regulated by the supply of commodities at the state's disposal, a supply which grows day by day.

The ruble is the world's only monetary unit whose gold value has increased in the past half-century. The ruble's new gold value is 27.5 per cent higher than it was in 1913, as compared with the American dollar, whose gold value is only 59.1 per cent of what it was then, and the pound sterling and West German mark, whose respective values have dropped to 34 per cent and 59 per cent.

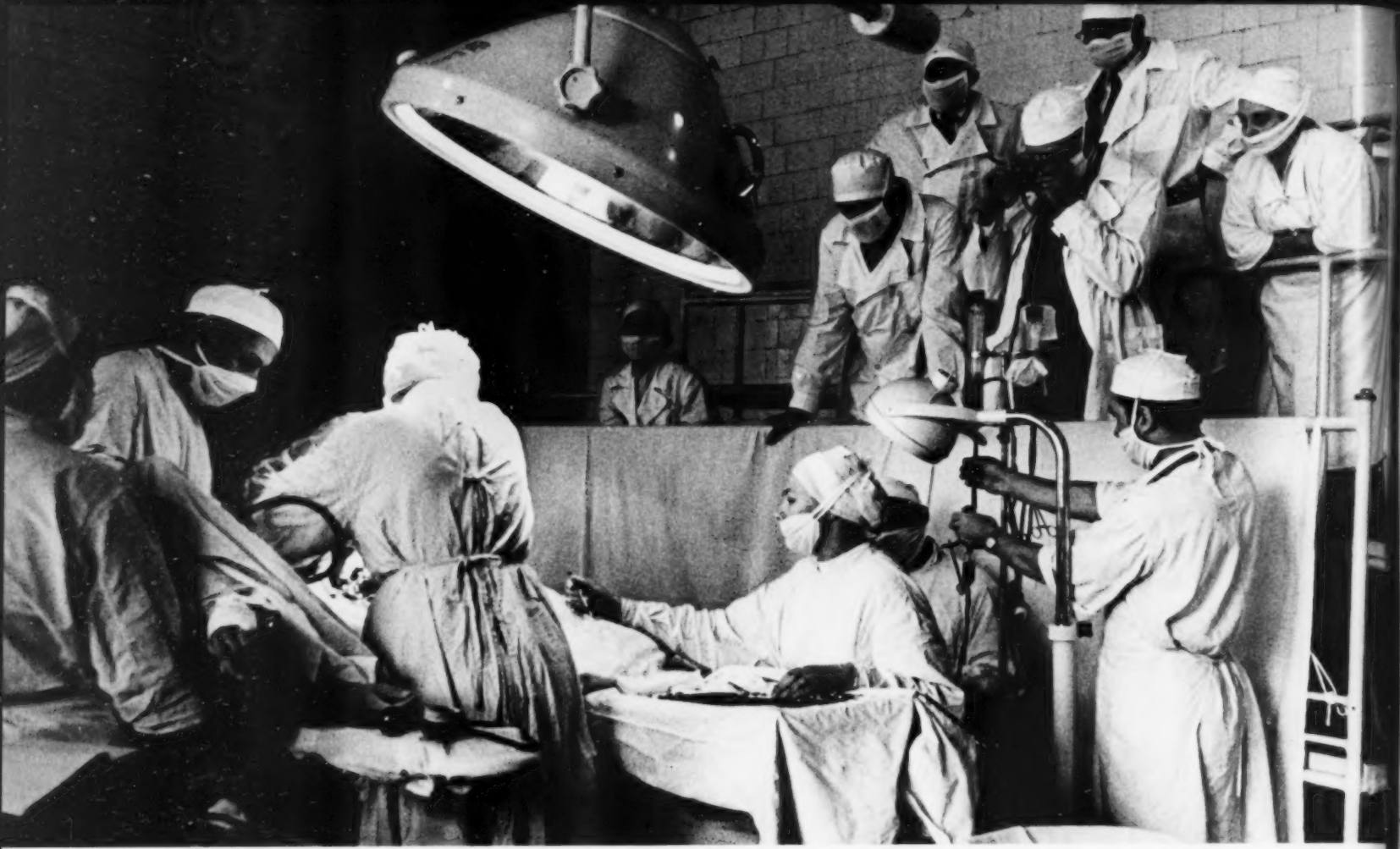
The Italian lira and the Japanese yen suffered the greatest devaluation—to 0.49 and 0.33 per cent of their 1913 level. The gold value of the French franc still stands up comparatively well—at 62 per cent of its 1913 value.

The new ruble with its increased gold value has been exchangeable since January 1, 1961, at the following rates: 90 kopecks to one American dollar (the 1913 rate was 1 ruble 94 kopecks); 2 rubles 52 kopecks to one pound sterling (1913 rate—9 rubles 46 kopecks); 0.25 kopecks to one Japanese yen (1913 rate—96.9 kopecks).

The new exchange rate makes it possible to compare world prices with wholesale prices in the Soviet Union. The relative competitive values of specific items on the foreign market can therefore be determined more accurately.

The higher exchange rate of the ruble has no effect, either way, on the material interests of other countries. The reduction in the rate of a particular foreign currency relevant to the ruble is accompanied by a proportional reduction in export and import prices quoted in rubles. Credits, clearing balances and two-way payments are all translated in terms of the new ruble with its higher gold content. This revaluation will do no damage to either side in trade transactions.

The increase in the gold value and exchange rate of the ruble on the basis of its real purchasing power will further the international prestige of the ruble and its stability in international payments.



## American Doctors Meet Their



*Professor Alexander Shevelev of the Institute of Public Health describes the Soviet medical setup.*



*The visitors see Soviet medicine in practice at one of the many district polyclinics in Moscow.*



*Dr. Richard Carey of New York tests the skill of one of the dentists at the clinic.*



in

tests the  
the clinic





Dr. Edward Mazique (right), president of the National Medical Association, is greeted by a Soviet colleague, Ministry of Health official Yuri Lebedev.

The American physicians' delegation led by Dr. Mazique tour Soviet health facilities. Here they observe an operation at the Institute of Surgery.

## Soviet Colleagues



Comparing notes with Dr. Protopopov. The American doctors left with warm praise for the Soviet health organization and practice.

## SOVIET PUBLIC HEALTH

**F**OR the physician and the layman who are not frightened by figures, tables and diagrams, the recently published volume of statistics on Soviet public health and medical services makes informative and thoughtful reading.

Here are some of the statistical data. Population growth? From 159.2 million in 1913 to 214.4 million by the middle of 1960. Soviet public health workers do not go in for "theories" of overpopulation and birth rate restriction. They say the earth still has plenty of room—great sections of it uninhabited, others underdeveloped. The concern of Soviet medicine, they say, is to prolong life.

Therefore, these figures: in 1913 the country's death rate was 30.2 per thousand inhabitants and by 1960 it was cut to 7.3—a very commendable drop to be placed at the door of Soviet science, which is working without pause on ways of preventing and curing diseases.

The average span of life in the country in 1957-58 was 68 years—more than double that before the Revolution. Men now live to 64 years on an average and women to 71.

The government gives monthly grants to 3.5 million mothers with large families. There are 417,000 women who have seven or more children.

The health of the Soviet people is protected by a huge assembly of doctors—they now number more than 400,000. All kinds of medical services are provided free of charge, entirely at the expense of the national budget.

In the eastern regions of the country, where disease and epidemics were so universal during the czarist regime, there has been an especially large increase in the number of doctors. In Turkmenia there are 34 times as many physicians now as there were in 1913, in Kazakhstan and Uzbekistan 42 times, in Kirghizia 66 times and in Tajikistan 112 times.

In 1959 there were 18 doctors for every 10,000 people in the Soviet Union, compared with Britain's 10.5, Iran's 1.3 and Pakistan's 0.7. The distribution of physicians within the country is indicated by these figures—45.3 per 10,000 inhabitants in Leningrad Region, 38.1 in Kiev Region, 31.4 in Georgia, 24.2 in Latvia, 21.9 in Azerbaijan.

The statistical data collected in the book reflect the tremendous work being done in the Soviet Union to safeguard the health of the people.

*WHEN  
A  
WORKER  
NEEDS  
AN  
OPERATION*

By Yakov Mikhailov







**S**TEPAN BUBNOV is a train switchman at the Belokamennaya Station in the Moscow suburbs. In 1954 he began to complain of heartburn and then a dull pain in the stomach. He was given a thorough medical examination, and the tests showed high acidity and other symptoms that pointed to the beginning of stomach ulcers.

The Railroad Workers Union, of which Bubnov has been a member for almost 25 years, sent him to a special sanatorium for gastric ailments in the Caucasus called Mineralniye Vody (Mineral Waters), one of the finest in the country. He paid only a third of the cost for his stay, the rest was paid from the state social insurance fund which is administered by the unions.

He returned in good health, but four years later, in December 1959, he again began to have pains in his stomach. In January 1960 the pains grew worse and the ulcers began to bleed. The bleeding was so heavy that the district doctor sent him to the Central Railroad Workers Hospital in Moscow for treatment.

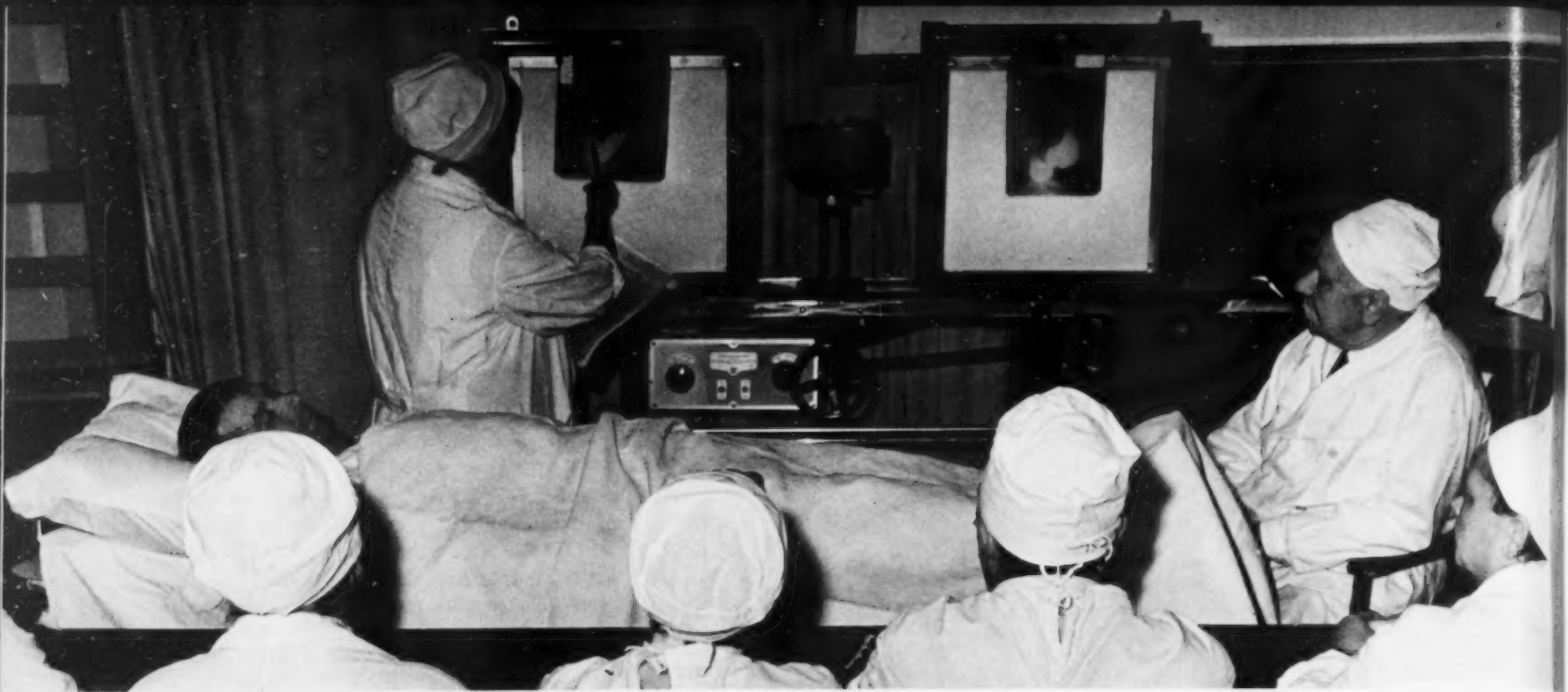
#### **Hospitalization and Surgery**

The first thing they did at the hospital was to run a series of tests, X-rays and an electrocardiogram. Then a consultation was held with the participation of a diagnostician, a surgeon and the physician in charge of Bubnov's ward. They decided that surgery was imperative.

But before the operation could be performed, the patient's general condition had to be improved. He was placed on a carefully selected diet, given medication and three blood transfusions. This course of treatment took three weeks. Then Bubnov was wheeled in for surgery. The operation was performed by Dr. Vera Skitovich assisted by Dr. Abram Brodsky, with Professor Vasili Braitsev present as consultant.

The patient was very weak after the operation, and for six days there was a nurse at his bedside for 24 hours a day. A consultation on the seventh day showed that he was recovering, slowly but surely, and his wife and

*Stepan Bubnov was operated on for ulcers a year ago at the Railroad Workers Hospital. Dr. Vasili Braitsev checks him periodically.*



*A consultation of staff surgeons on Bubnov's case. During the year the staff did 2,001 operations, varying from simple to very complex surgery.*



*One of the hospital's laboratories. Bubnov paid nothing for the tests, surgery and hospitalization. These are all free in the Soviet Union.*

daughters were then permitted to visit him.

Bubnov stayed at the hospital for another month and a half. The time passed quickly, with friends and co-workers dropping in to wish him a speedy recovery. On March 5 he went home with a certificate from the hospital that entitled him to paid sick leave from his job for another 26 days.

During the entire period of Bubnov's illness and hospitalization his family had no financial worries. Every second week, on regular pay-days, his wife received payment of sick benefit amounting to 90 per cent of his usual wages from the state social insurance fund. And the family didn't pay a kopeck for any of the tests, surgery, consultations, hospitaliza-

tion or nurses, since all kinds of medical services are free and are entirely at state expense.

#### **Cost of Treatment**

How much did it cost the state to put Stepan Bubnov back on his feet? The head bookkeeper of the hospital broke down the figures. "It costs us 50 rubles and 67 kopecks a day to keep one patient. So that Bubnov's 45-day stay comes to 2,280 rubles. The four blood transfusions—three before the operation and one after—cost another 600 rubles. The 24-hour nursing service for six days comes to 392 rubles. Then there were four

consultations before and after the operation, and five consultations in April, May, June, July and August after the patient was discharged. That was 900 rubles. Adding it all up, Bubnov's treatment and operation came to 4,172 rubles."

The Central Railroad Workers Hospital, like all other medical institutions in the Soviet Union, is financed from the national budget. The 1960 budget allocated 13,566,000 rubles to this hospital, enough to cover staff salaries, general maintenance, new equipment and all other expenses. In 1959 it treated 9,717 people and performed 2,001 operations. Like Stepan Bubnov, none of the patients paid a single ruble for treatment, surgery or hospitalization.



**Above:** Before the patient was wheeled in for surgery, he was given a three-week course of medication and diet to improve his general state of health.

**Right:** Post-operative treatment. Bubnov spent 45 days in the hospital. His stay, surgery, tests and all treatment cost the state 4,172 rubles.

**Below:** He had four blood transfusions, three before the operation and one after, and round the clock nursing service for six days following surgery.

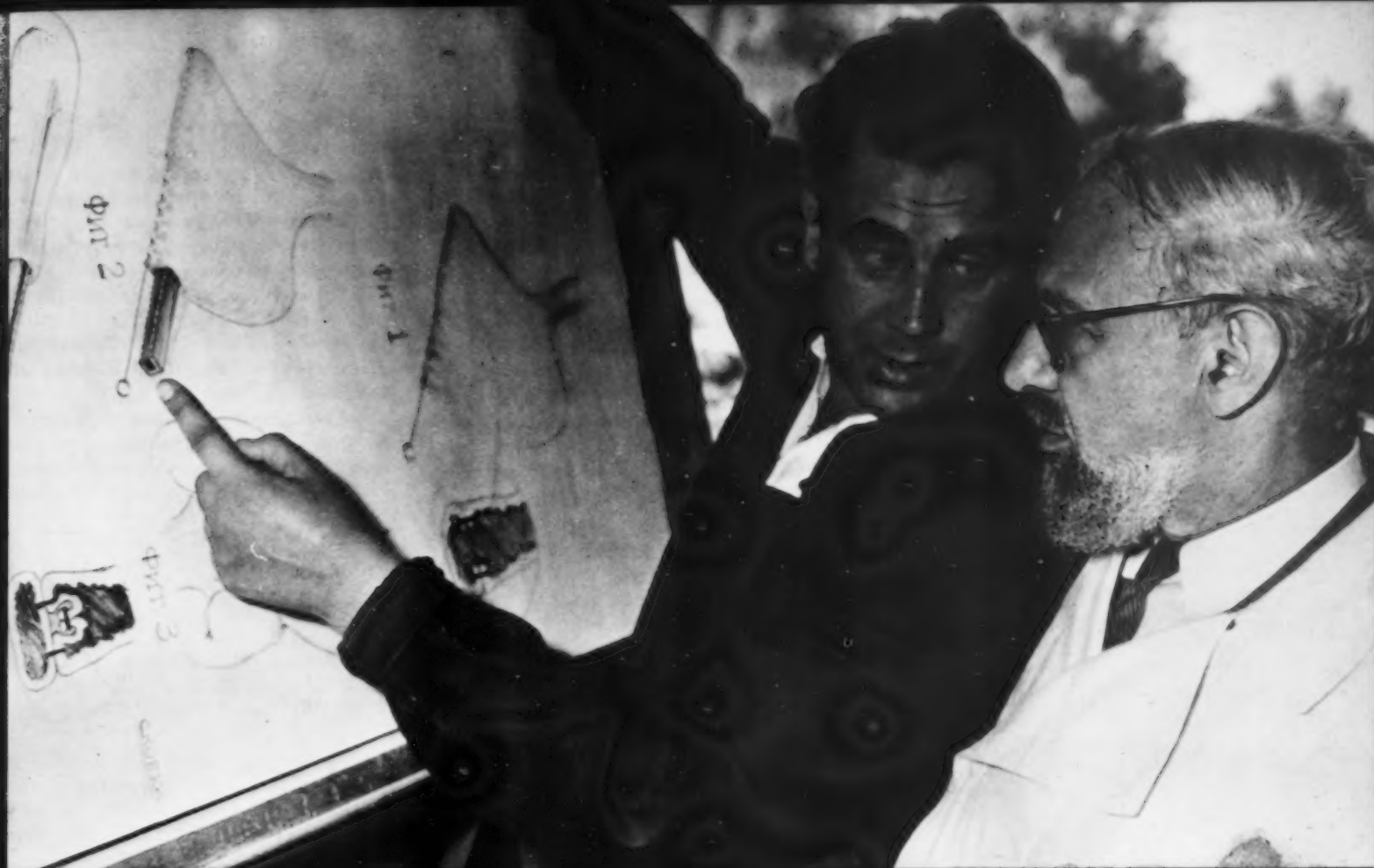




Designer Anatoli Ozhgikhin and Dr. Anatoli Geselevich at the Institute for Experimental Surgical Equipment in Moscow. This is the world's first research center where physicians and engineers work together to create new medical instruments and apparatus. Some of the surgical equipment designed at the institute is shown here:

1. An artificial knee of metal and plastic.
2. An instrument for suturing the breastbone and the ribs.
3. An instrument for joining the stomach and intestines.
4. Apparatus for artificial blood circulation.
5. Apparatus that serves as an artificial kidney.
6. An instrument for suturing hard cerebral membrane.
7. An instrument for suturing blood vessels ranging from 9 to 17 millimeters in diameter.
8. A set of spare bushings for instruments suturing blood vessels of varying diameters.

By Mikhail Ananyev  
 Director,  
 Research Institute  
 for Experimental Surgical Equipment



# MEDICAL ENGINEERING

**A** MEDICAL SPUTNIK—that's what the eminent Italian surgeon Mario Doliotti called this unique instrument for suturing tiny blood vessels when it was demonstrated at the 1957 International Congress on Cardiovascular Diseases in Atlantic City.

The idea was conceived by a group of engineers headed by Vasili Gudov and the design was shaped for clinical use with the close cooperation of surgeons. This joint effort grew into our Research Institute for Experimental Surgical Equipment.

When the USSR Ministry of Public Health established the institute in 1952, we people on the staff, specialists in various fields of medicine and technology, had no precedent to go by. What sort of research center would this be? What kind of instruments were to be designed?

## Stitching Human Organs

We decided to start with suturing instruments. The doctors explained to the engineers what they wanted these instruments to do, and the engineers traced out designs they thought would do the jobs specified by the doctors. Soon enough, however, it became clear that we had to find an answer to this question if we were to design the kind of suturing instruments we were aiming at:

How do different human tissues react when subjected to tests of strain, torsion or rupture?

The question was put by the engineers—they were accustomed to thinking in terms of the strength of materials. The doctors didn't have the answer—for them this was an entirely new approach to human anatomy and

physiology. So our doctors and engineers tackled the problem together. They jointly studied not only blood vessels but nerves, intestines and stomach from this new angle. The suturing instruments to be designed had to take account of the particular properties of the various organs they were to be used for.

As a result of our painstaking research we built automatic and semi-automatic instruments that stitched together blood vessels with diameters ranging from 1.3 to 20 millimeters. We also built instruments for joining nerves, bronchial tubes, bones and soft tissue. Other instruments were designed for gastrointestinal operations—for stitching the intestines together and for joining intestines to stomach.

Especially concentrated work was done on apparatus that would speed heart and lung

operations. Here we designed stitching instruments for the base and tissues of the lungs and for the auricle and Botallo's duct.

Our instruments can be easily used by any competent surgeon. They make operating simpler and faster, but what is even more important, they improve the quality of the operation ensuring reliable joining of organs and tissues.

#### Substituting Heart and Kidney

But in such areas as heart surgery, there is no substitute for skilled hands. What our medical engineering institute has been working on is apparatus that would supply these hands with the most favorable operating conditions. One such condition, which surgeons have dreamed about for a long time, is to block off the heart from the blood circulation system while an operation is being performed.

The first apparatus ever to be suggested anywhere for artificial blood circulation was built by the Soviet scientist Sergei Bryukhonenko back in 1927. But it found no use in clinical practice because of the faulty design—it did not match the anatomical and physiological peculiarities of the human organism.

When our institute faced the problem of creating an apparatus to substitute for the human heart, we approached it from different angles. Physicists and surgeons, engineers and biochemists, physiologists and mathematicians put their heads together attempting

to find answers to a multitude of questions.

To begin with, we had to work out the theoretical underpinnings for this future "mechanical heart." The laws had to be deduced that control the heart contractions, the bloodstream, the dilation of the blood vessels, and so forth. Then the theory had to be translated into engineering blueprints from which an operating model could be built. The equation we undertook to solve had more unknowns than established magnitudes, but it was solved.

This artificial blood circulation apparatus of an original design built by Soviet scientists works. It has already proved itself in scores of clinical operations and has helped people with inherited or acquired cardiac insufficiencies to resume normal living. It has also been tried out in the treatment of infarctions.

Another substitute apparatus we have built is an artificial kidney. It can block off the natural organ for several hours and even days while necessary treatment is carried on. Switched into any blood vessel in the arm or leg, our artificial kidney can also render other services. It can, for example, drain excess water from the body, or inject drugs and glucose. When used to inject oxygen directly into the bloodstream it serves for a time as an artificial lung.

#### Permanent Substitutes

Our artificial heart and kidney, efficient as they are, can substitute for diseased organs only for relatively short periods. The problem which has occupied the attention of medical specialists for a long time now is the creation of permanent substitutes.

At our institute we have a special laboratory where various bones and joints are modelled of metal and plastics. Particularly interesting are the substitutes devised for the joints of the knee, elbow and hip.

In this area the engineering and medical personnel of the Central Institute of Prosthetics has worked out some remarkable substitutes. A group of scientists headed by engineer Alexander Kobrinsky built a metal hand, for example, of the most unusual kind. It does almost everything that the human hand can do—all at the order of the human brain.

The action of their artificial hand is based on the interception of the biocurrents that originate in man's nervous system. The electrical discharges passing through the nerves are received by amplifiers and then by an electronic brain. Here all impulses are distributed, and each is directed with almost unbelievable precision.

They control magnets which, in turn, control the pressure of oil in a piston. Through a system of levers the piston opens and closes the hand. The fingers do not simply press, they accurately reproduce the muscular efforts dictated by the human brain. Obeying the brain, the hand is now strong and energetic, now limp and weak.

This is a very sensitive hand indeed. Now the task is to design a new model of an artificial hand which will be able to feel warmth and cold, as well as the shape and solidity of an article it grips.

#### From Laboratory to Clinic

All the work of our institute and other similar research centers is based on close cooperation between experimental laboratories and the medical services, between practicing doctors and research scientists, between the medical and the engineering specialists. One of the decisive advantages of such cooperative work is this—the new instruments and apparatus move from the institute to clinics and hospitals very quickly.

Direct participation of engineers is of special value. They are practical people and they think in terms of utility and mass production. We at our institute have a special laboratory experimenting with the technology of production for the manufacture of instruments. After the factory begins production, the instruments are tested and improved here if necessary.

These laboratories become increasingly important as more medical equipment is produced. Between 1951 and 1958 the production of medical equipment in our country tripled. The rise by 1965 is expected to exceed the 1958 level by 3.5 times.

Scheduled by the current seven-year plan is a considerable rise in the manufacture and use of medical equipment based on the findings of electronics and nuclear physics. This serves to stimulate scientific research.

Work is going on now in cybernetics as related to medicine (diagnostic machines). There are experiments on the use of color television, ultrasonics and semiconductors. There are also investigations aimed at the use of electronics to develop electrical and biological stimulators.

All this is most promising for the future—and not a very distant one. The stimulators, for example, open up truly fantastic possibilities for reviving the brain, heart, lungs, stomach, and almost all the internal organs.

#### Foreign Opinion

We are always glad to share our research findings. They are communicated to foreign colleagues who visit Soviet institutes, and we report on them at international conferences. Foreign businessmen are often interested in Soviet medical equipment, particularly in our instruments for suturing blood vessels.

In 1959 we received at our institute Mr. G. Rand, head of an American company. He expressed the opinion that our instruments should save the lives of Americans as well as Russians. The distinguished American surgeon Dr. De Bakey noted in our visitors book that the institute where these suturing instruments had been created deserved to be called a truly remarkable research center.

Professor Sattler of Austria spoke in admiration of these efforts to mechanize surgery. Dr. Kappelen of Norway asserted that he had long been dreaming of this kind of instrument and was most eager to have one.

Dr. Melrose, who built the British artificial heart and lungs, declared that his visit to our institute was one of the most memorable events in his career. He had witnessed, he said, the results of creative cooperation that scientists the world over might well emulate.



The young man is writing with a metal hand that is actuated by biocurrent signals from his brain.

Dr. Anatoli Geselevich shows new instruments to surgeons from various parts of the Soviet Union.



# RADIO HAM

By Daniil Leonidov  
Photos by Iger Vinogradov

**T**HIS RADIO HAM has friends in every corner of the globe. Alexander Shadsky throws his switch over, sends his call letters "UAZBW" winging across the air waves and chats with other hams in far-off places as casually as you and I would have a telephone conversation.

In this noisy sea of air it takes knowing to locate the particular friend you want to contact. Through the pandemonium of ship calls, reports of land stations or a feverish disaster call that silences every other radio voice momentarily, an American short-wave amateur in, let's say, Parkersburg, West Virginia, will hear a familiar voice in English: "This is Moscow short-wave UAZBW calling. Been trying to get you. How are you? Fine skiing weather here today. What's new?"

Alexander Shadsky—his radio friends call him Sasha for short—is 26. He has been interested in radio ever since he was a youngster. First he kept himself busy assembling his own sets at home. Then he equipped a radio center at his school—all by himself. After graduation from the school and the

usual tour of army service he went to work in a factory and enrolled for a correspondence course at the Communications Institute. It took a good deal of planning to hold down a job, study and still find time for his hobby.

It was in 1956 that UAZBW's voice first appeared on the air waves. Shortly afterward Alexander Shadsky exhibited a home-built transmitter at the Fifteenth USSR Radio Exhibition. For his original design he was awarded a First Class Diploma and the honorary title of Master Radio Designer.

In the comparatively short time he has been operating he has won fifteen international diplomas, among them the American "Work All Continents" certificate. He is a member of the Radio Society of Great Britain and the American Radio Relay League.

Alexander Shadsky has loads of friends in the United States and he keeps in touch with them by radio and mail. He has made radio contact with short-wavers in every state of the Union with the exception of Ohio and Nevada. Once he has those two, he will be entitled to the "Work All States" certificate.

Moscow radio ham Alexander Shadsky (call signal UAZBW) gets a visit in person from American Robert Waters (call signal W1PRI). These two have been trading visits via the air waves for a long time.



Shadsky keeps in touch, by short wave and letter, with radio hams all over the United States.

He has won 15 international certificates, including the American "Work All Continents" award.



# ELECTRIC

By Ignati Novikov

USSR Minister of Electric Power Plant Construction

**I**N ELECTRIC POWER PRODUCTION the Soviet Union today stands first among European countries and second only to the world's leading power producer, the United States. In 1920 when Lenin advanced his plan for electrification we held eighteenth place.

Lenin proceeded from the concept that the economic strength of a modern nation is determined by the quantity of metal it produces and the power it generates to put the metal in motion. By these criteria Russia before the Revolution was an economic cipher. Our country was at the bottom of the world's list of metal, machinery, fuel and power producers. The total capacity of all our power stations in 1913 was 1.1 million kilowatts, and the output about two billion kilowatt-hours. In terms of per-capita output it came to no more than a twentieth of that of the United States.

Russia, said Lenin, had to make the great leap from age-old backwardness into the modern world, to build an up-to-date industry

and a mechanized agriculture. The lever by which Russia would lift itself was electricity. To build new industrial complexes, to develop the backward areas of the country and to push the entire economy ahead, power development had to be given priority. Speaking of the new type of society, Lenin wrote: "Communism is Soviet power plus the electrification of the whole country."

## Creating a Power Base

In December 1920 the Eighth Congress of Soviets adopted the State Plan for the Electrification of Russia, known in our history as the GOELRO plan, its abbreviated name. This was our first national economic program, the one that inaugurated the tremendous job of transforming the country.

The construction of power facilities envisaged by the GOELRO plan was modest by present standards—twenty thermal electric stations with a total capacity of 1,110,000

kilowatts and ten hydroelectric stations with a total capacity of 640,000 kilowatts. But at the time the plan seemed fantastically ambitious to many people.

Bold as it was, the GOELRO plan was successfully fulfilled, and—even more than that—it was carried through in less time than the 10-15 years that had been scheduled. The goal was reached early in 1931 in spite of the economic chaos and destruction that had been left as a legacy of foreign intervention and the Civil War of the twenties.

The country now had a modern power base for developing its industry. The series of successful five-year plans laid a solid foundation for basic industries that ensured a continuous growth of all other areas of the economy. Electric power development kept moving ahead with engineering progress, especially in turbine construction. At the same time, young people were trained and the country's corps of power engineers grew. All this accelerated the production of electricity,





# RIC POWER DEVELOPMENT

and as early as 1936 the Soviet Union had climbed to third place among world power producers.

The Second World War destroyed about 40 per cent of the power capacities of the Soviet Union, but even this very heavy loss could not markedly cut down the speed at which the power industry was moving. New stations were constructed in the eastern regions, the old plants were rebuilt, and by 1946 the lost capacity was regained.

In the postwar years power development was especially rapid. By 1959, when the current seven-year plan was adopted at the 21st Congress of the Communist Party, the total power capacity had been boosted to 53.6 million kilowatts and the annual output to 235 billion kilowatt-hours, topping prewar 1940 by almost 500 per cent.

New power capacities have been built not only in the central regions but in all parts of the country. The Central Asian republics—Uzbekistan, Kazakhstan, Tajikistan, Turk-

menia and Kirghizia—with their combined population of 23 million generated five times more electricity in 1957 than Turkey, Iran, Pakistan, Afghanistan and Thailand with their 156 million inhabitants.

How have we achieved our high rate of growth in power capacity and power generation? We concentrated on building large thermal and hydroelectric stations equipped with aggregates of enormous capacity. The electricity they generate is transmitted over great distances via super-high-tension lines. Automation and telemechanics are used to an ever growing degree to operate these power setups.

## Increasing Power Capacities

In the postwar years, and especially in the fifties, a number of thermal stations with capacities ranging from 300,000 to 600,000 kilowatts were built in various parts of the country. In 1959 more than 70 turbines with

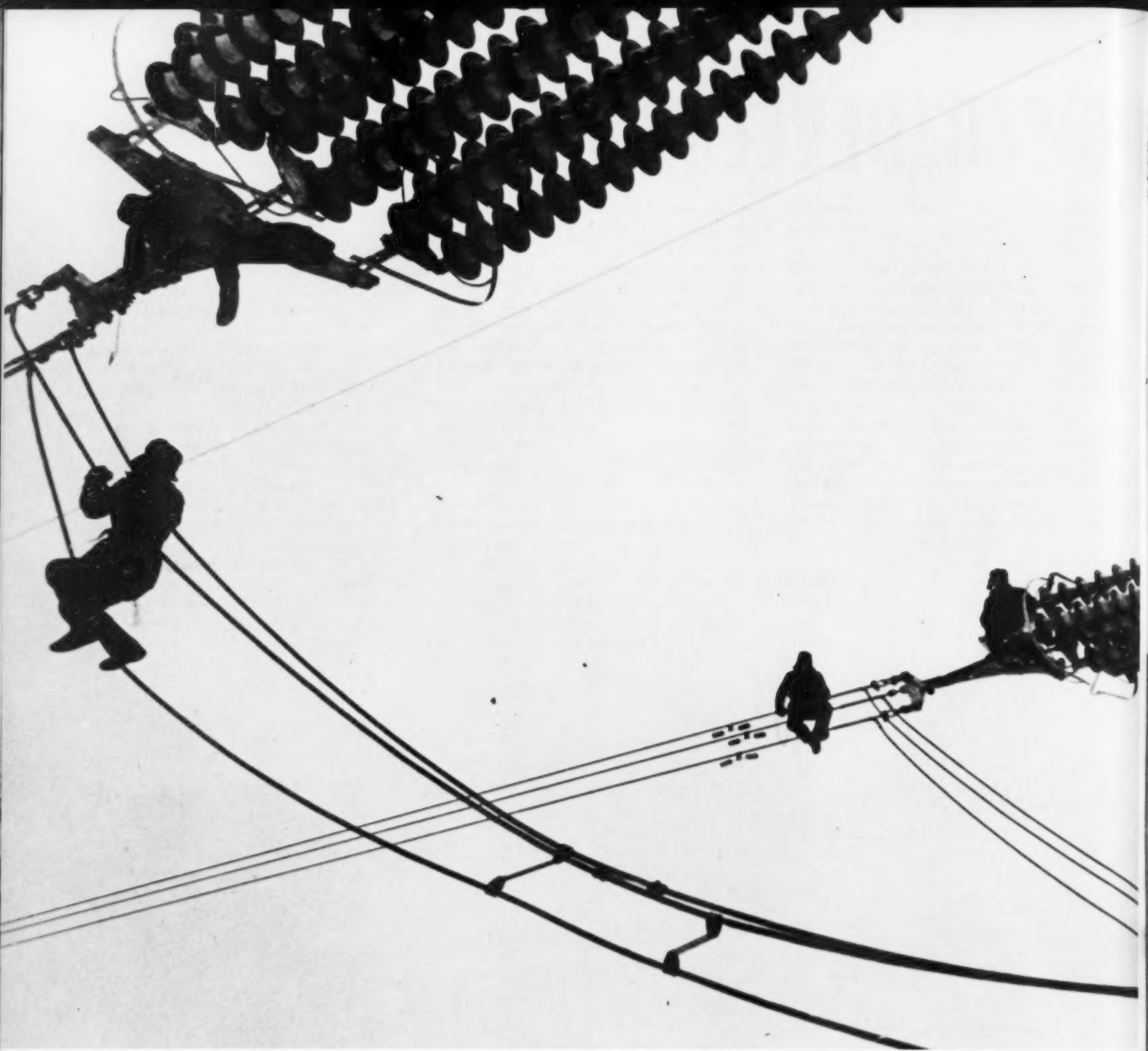
a capacity of 100,000 to 150,000 kilowatts each were being used at electric stations supplying power to individual districts. The first 200,000-kilowatt turbine was assembled at the South Urals Power Plant.

Also in the fifties we began to build thermal stations with a capacity of more than a million kilowatts each in regions where the fuel is mined. Among them are the Nazarovskaya and the Belovskaya in Siberia, and the Troitskaya in the Urals. It was during the same period that the construction of big hydroelectric plants was started—one on the Kama River, the Gorky Station on the Volga River, the Mingechar in Azerbaijan, the Tsimlyanskaya on the Don River, the Kakhovka on the Dnieper River and the Ust-Kamenogorsk in Kazakhstan.

In 1957 the Lenin Hydroelectric Station on the Volga near Kuibyshev began to operate at its full capacity of 2,300,000 kilowatts. It was the world's largest power plant at that time. Late in 1960, one year ahead of sched-



*The Lenin Station on the Volga.*



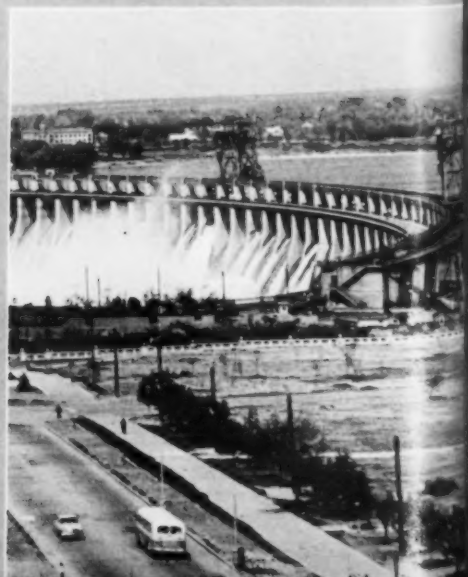
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*These figures illustrate the growing capacity of hydroelectric stations built in the Soviet Union. The Volkhov Station, completed in 1927, is very modest from today's point of view. The Dnieper Station started operation in 1932 and for a long time it remained the largest in Europe. The Lenin Station on the Volga, completed in 1957, was the largest in the world until 1960 when it was exceeded by the Stalingrad Station. Now under construction in Siberia are the Bratsk Station on the Angara and the Krasnoyarsk Station on the Yenisei, which will be even larger.*

**58,000 kw.  
VOLKHOV**

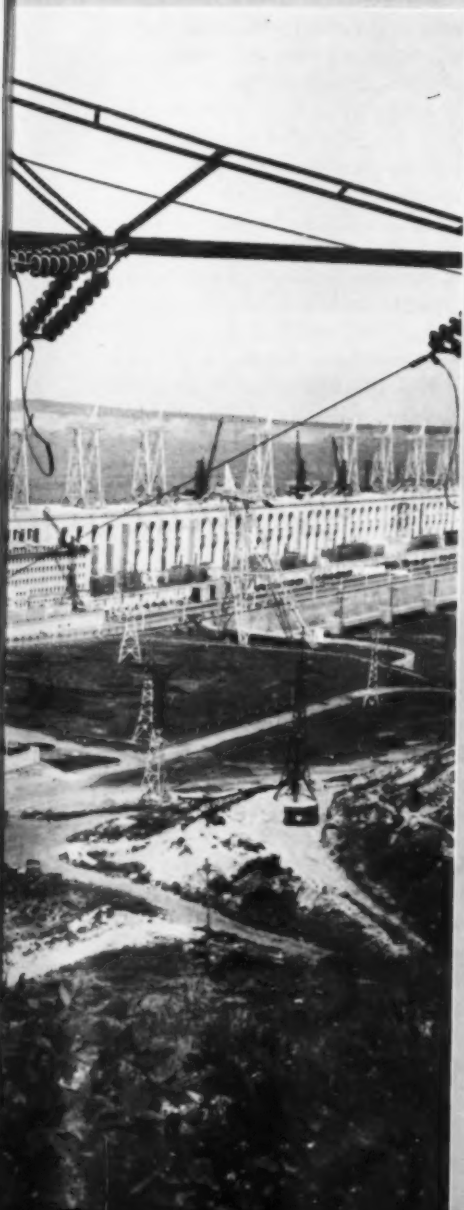


**560,000 kw.  
DNIEPER**



By the end of 1965 the present length of transmission lines will be more than tripled, and the job of creating a single power system for the European part of the Soviet Union will be just about finished. The ultimate goal is to form a single power system for the whole of the country.

**2,300,000 KW.**  
**LENIN**

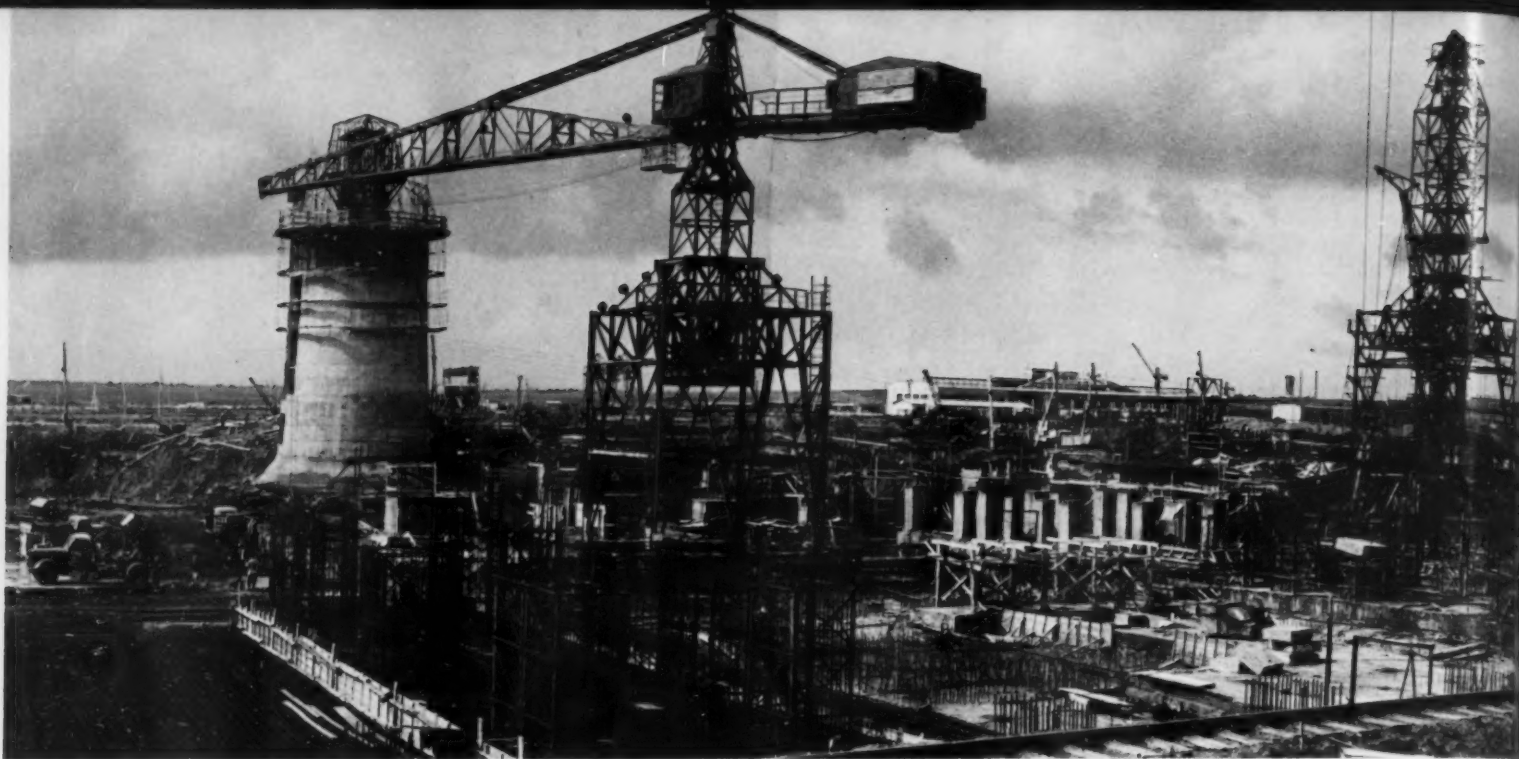


**4,500,000 KW.**  
**BRATSK**



**5,000,000 KW.**  
**KRASNOYARSK**





ule, the Stalingrad Hydroelectric Station, also on the Volga, reached its full potential—more than 2,500,000 kilowatts. Even larger stations are presently under construction—the Bratsk with four million kilowatts and the Krasnoyarsk with five million, both in Siberia.

Electric stations of such size require serial manufacture of new powerful equipment and the design of units of an unprecedented capacity. Thus, a 225,000-kilowatt unit was built for the Bratsk Station and a 500,000-kilowatt unit is in process of design for the Krasnoyarsk Station.

Machine builders are now completing designs for a steam turbine with a capacity of 300,000 kilowatts to work on super-high steam parameters. Work is also under way on designs for an 800,000-kilowatt steam turbine. The first boilers with a steam output of 540 and 640 metric tons an hour have already been built, while 950-ton boilers are in production and larger ones being designed.

An important engineering advance was marked by the completion in 1960 of the Kremenchug Station on the Dnieper with a capacity of 625,000 kilowatts. This is our first hydropower plant of an open type without a special machine hall and with a large regulating water reservoir.

Power plants operating on nuclear fuel are being built along with the thermal and hydroelectric stations. The world's first atomic power plant, with a capacity of 5,000 kilowatts, was built in the Soviet Union in 1954. Atomic plants with capacities of 400,000 to 600,000 kilowatts are under construction at present. The peaceful atom will be used for electrification on an ever increasing scale.

#### A Single Power System

The goal of the complete electrification of a country as large as the Soviet Union calls

for big power systems and a single high-voltage transmission network. Lines stretching for hundreds of thousands of miles connect power grids with industrial centers, and new lines are being built in various parts of the country.

The world's first line with a supertension of 400,000 volts was commissioned in 1956. It stretches from the Lenin Hydroelectric Station on the Volga to Moscow. It was surpassed two years later by the 500,000-volt line from the same station to the Urals. Since 1959 a line of equal voltage has been supplying electricity from the Stalingrad Station to Moscow.

The second chain of the Stalingrad-Moscow line and the 800,000-volt DC line from Stalingrad to the Donbas are now under construction. As soon as they are completed, the job of creating a single power system for the European part of the Soviet Union will be practically finished.

This will mean a more rational use of the country's power resources. The power plants of the eastern regions will also be tied in eventually. Then high-tension transmission lines will stretch from Asia to Europe to form a single power system for the whole of the Soviet Union.

#### Seven-Year Plan

Our power development under the seven-year plan is based mainly on the construction of large thermal electric stations and also on hydroelectric projects of great size ensuring economical use of investments. The country's power capacities are scheduled to increase by 58-60 million kilowatts. This is considerably more than the capacity of all plants built during the four previous decades.

The output of electric power, as scheduled by the plan, will have increased to an annual

500-520 billion kilowatt-hours by 1965. The plan also calls for the construction of 125,000 miles of transmission lines with voltages from 35,000 to 500,000. This will more than triple the present length.

The scope and rate of our power development requires radical changes in approaches to building designs and methods of construction. The major trend is to build from prefabricated structural ferroconcrete and do the assembling on the construction site to cut time and labor.

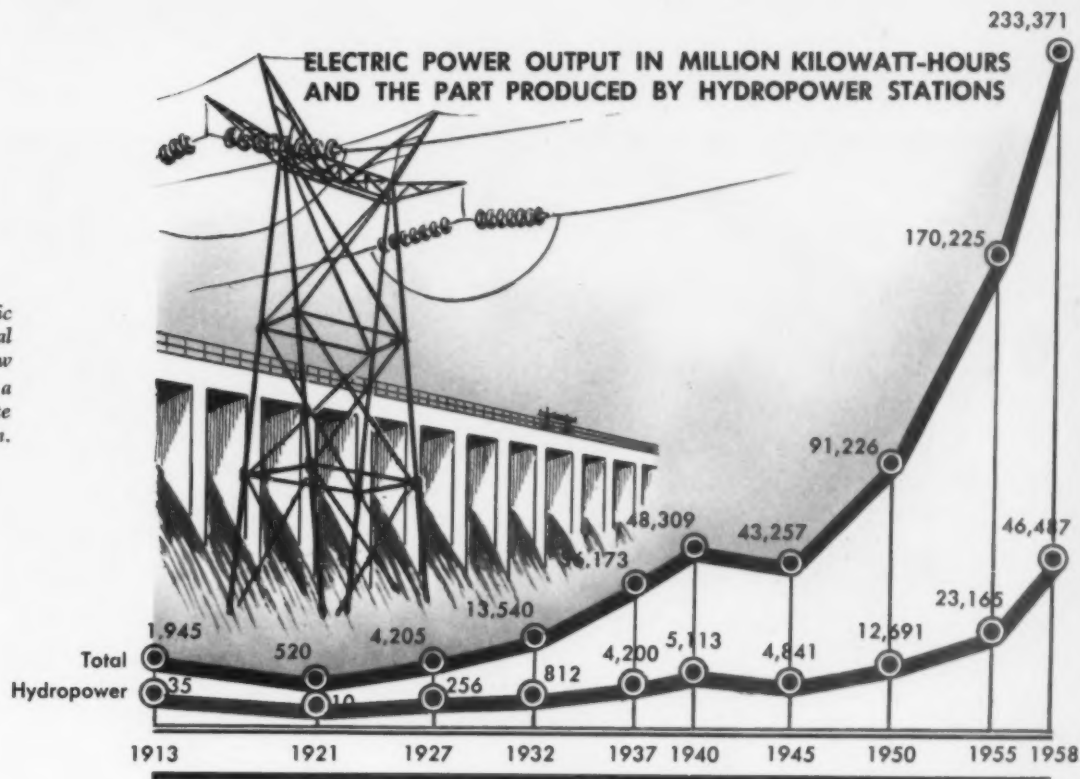
A number of standard models for thermal stations with capacities from 12,000 to 2,400,000 kilowatts have been prepared. They envisage both the up-to-date power equipment and the most advanced building techniques. Two standard-model stations with a capacity of 2.4 million kilowatts each which will have 300,000-kilowatt units are now being built, one near Moscow and the other in Kazakhstan. Prefabricated structural ferroconcrete makes up 92 per cent of the entire volume of their construction, with only 50 types of standard elements being used.

Industrial methods of construction are being worked out for mass-scale use of standardized ferroconcrete sections. The design of the Saratov, the Kiev and some other hydroelectric projects presupposes that 60 to 80 per cent of the structures can be assembled from prefabricated elements. At the present time 33 thermal stations with a total capacity of 22 million kilowatts are being built of ferroconcrete units delivered from factories.

In dozens of new thermal stations scheduled by the seven-year plan, the assembly of structures from prefabricated materials will make up 95 per cent of the total volume of construction. This will guarantee speed since the first section of an assembly-built station can begin generating power within 24 to 36 months after construction begins.



Under the seven-year plan the emphasis is on thermoelectric stations and giant hydropower projects ensuring economical use of investments. This is the Nazarovskaya Station now under construction in Eastern Siberia. It will have a capacity of more than a million kilowatts and will operate very cheaply on coal from the nearby Kansk-Achinsk Basin.



The huge scale of construction and the new building methods have presented our power engineers with all sorts of new problems. One of them is to work out designs for more economical electric stations. Such new methods as aerial photography are used in surveying. Transmitting high energies over long distances by using direct current is another problem that has been keeping power experts busy.

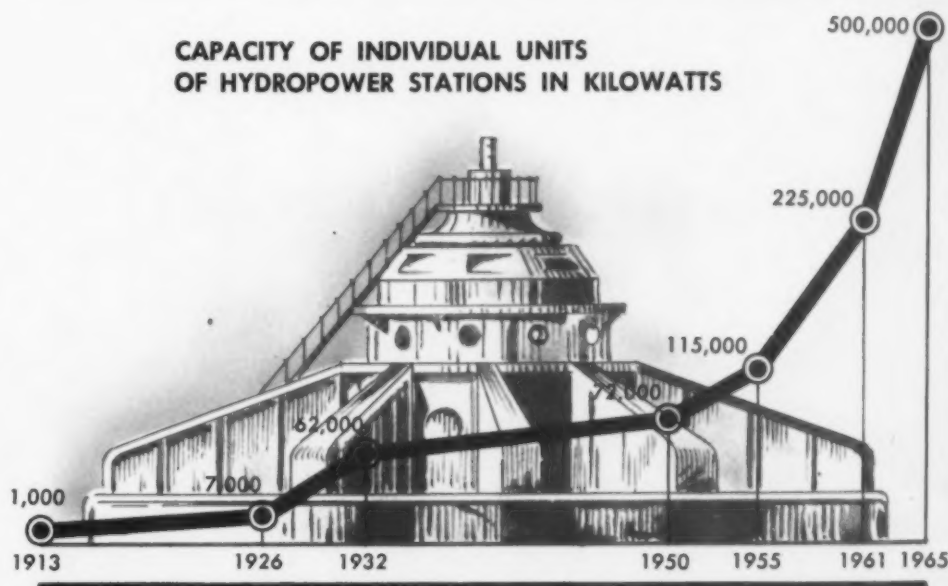
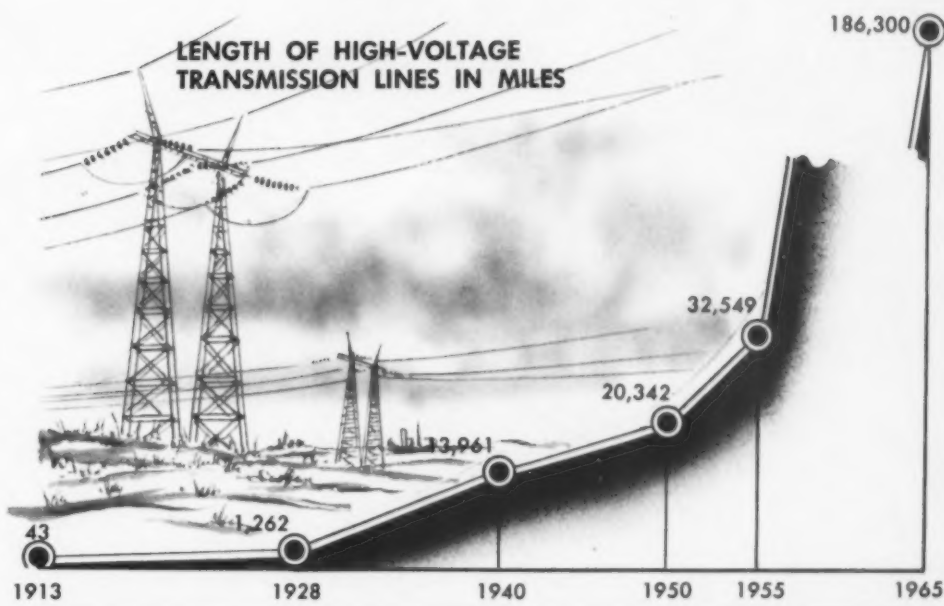
#### Twenty-Year Program

A great deal of work is now being done in the Soviet Union on a long-range program for the country's economic growth in the next twenty years. Power development is one of the very important elements in this program.

The demand for power supply from both industry and the population keeps rising year after year, and it will rise even more rapidly in the years to come. Experts estimate that 900 billion kilowatt-hours will have to be produced in 1970 to meet the demand, 1,500 billion in 1975, and 2,300 billion in 1980. With this rate of growth the Soviet Union will outstrip the United States both in total output and per-capita consumption of electric power between 1972 and 1980.

The scheduled growth of power supply will inevitably mean greater productivity in every area of the country's economy. In 1980 the consumption of electricity per man-hour of labor in industry will be nine times what it is now. In agriculture there will be a 22-fold increase in power consumption.

This is the present and the future of power development in the Soviet Union. In making a reality of Lenin's formula "Communism is Soviet power plus the electrification of the whole country," we are laying the material and technical foundation of a communist society.





*Self-portrait*

# Isaac Levitan

By Sergei Gerasimov  
People's Artist of the USSR

**I**SAAC LEVITAN, famous for his inspired portraits of Russian nature, wrote in one of his letters: "I can imagine how beautiful Russia is now, the brimming rivers, everything coming to life. . . . There is no land as beautiful as Russia." His friend, artist Mikhail Nesterov, said of Levitan: "He brought out the quiet and unsuspected beauty concealed in every Russian landscape, its soul and its charm."

## Portraits of Russian Nature

Levitan belonged to the Moscow school that produced many distinguished artists. Among Russian landscape painters he unquestionably ranks first. He looked at the countryside through the eyes and the heart of the people. He loved nature with the understanding of those who have lived with its shifting moods and vagaries. He saw behind these moods nature's affinity with man. His landscapes are pervaded with so moving a vision of inner beauty that they unfailingly touch the viewer.

Levitan died young, at 39, but he won the admiration of his contemporaries and of posterity. He was born in 1861 in Lithuania, the son of a poor Jewish family. From his very earliest years, he was determined to become an artist in spite of the innumerable obstacles that stood in his way. At twelve, he managed to be admitted to the Moscow School of Painting, Sculpture and Architecture.

While at school he had a hungry and homeless life. He had no more than five kopecks a day for food and often spent the nights in empty classrooms. But his talent was acknowledged almost at once by his teachers. His pictures were singled out at student exhibitions. At the age of sixteen he began to be spoken of in glowing terms for his insight into nature and his skill in transferring it to canvas.

## His Teachers

Levitan's years of study coincided with the period when the Moscow school was exerting a predominant influence on Russian art. It was closely associated with the *peredvizhniks*—a society of itinerant painters who popularized pictorial art in the provincial cities. One of them, Savrasov, was Levitan's landscape class teacher. He was a man with an extraordinary capacity for conveying his own passionate love of nature to his students.

Levitan's early work was undoubtedly influenced by Savrasov and by Polenov, another

## THE ARTIST'S BIRTH

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teacher. But the young painter soon took his own very individual direction. His pictures can be recognized at a glance. They are distinctive for their uncommonly broad and free brushwork, their airiness, luminosity and a remarkable plasticity of technique creating an impression of ease.

Levitan looked to the Russian countryside for all his paintings. He searched for subjects in the very heart of Russia—on the Volga River, near the old Russian towns of Zvenigorod and Ostankino, in Babkino where he lived with Chekhov and his family, on Lake Udomli near Vyshni Volochok.

Some of his pictures were done directly from life, others from sketches, many from memory—he had unusual visual recall. But they are all generalizations of landscapes he has seen. His celebrated *Evening Bells*, with its lucent blue of water and sky, is tranquil and serene, as harmonious as a moving Russian song. His *Eternal Peace* has the feel of meditation, of an elegy, but the sky of his painting with its dull drifting of thunderclouds leaves a threatening impression.

*Vladimirka* is an anguished painting, born of tragic recollections. One summer, returning from a hunting trip, Levitan was walking on the Vladimir road. He stopped, remembering that this was the road shackled prisoners took to Siberian exile after conviction by the czarist courts. Levitan painted this deeply moving landscape with its leaden gray sky directly from nature.

### He Painted Courage

There has been a tendency to associate Levitan with the somber and desolate. And many of his paintings do indeed evoke that mood. But they have another quality, too—an enduring faith in the future.

What courage and joy pervade his *Fresh Wind* with its decorated barges and sparkling blue water—you almost feel the fresh breeze along the Volga. Or take the spirit of celebration in his *Golden Autumn*, the triumphant symphony of clouds in his *Lake*, the land awakening in his *High Water in Spring* and *March*. The bright radiance of his *Birch Grove* is as typical of the artist as the fairy tale mood of his *By the Pool*.

Chekhov was Levitan's friend, and their work has many things in common—an earnest seeking and hope, an intuitive awareness of the surrounding universe, their profound faith that the beautiful will finally triumph in both man and the world.



*Golden Autumn*

*By the Pool*





*Fresh Wind*

*Eternal Peace*








*March*

*Evening Bells*



## TEACHER AND PUPIL



*A principle of Soviet pedagogy is that pupil participation is an important element in the learning process. The physics teacher observes while a student performs an experiment.*

THE FIFTH IN A SERIES OF ARTICLES ON SOVIET TEACHERS

By Yakov Mostovoi

This is the fifth in a series of articles on the Soviet teacher. The first, on teacher training, appeared in the September 1960 issue. The second, on the economic status of teachers, appeared in October. The third, published in November, discussed the rights and privileges of teachers; and the fourth, in December, outlined the teacher's task in relation to the course of study.





ON SEPTEMBER 1, when school opens, it is the custom for the first-grade pupils and their teachers to lead the procession into the auditorium where the principal wishes the school assembly a good study year. Then the children go to their classes.

Let us begin our visit to a Soviet school with the first grade. The lesson has just begun and the teacher is telling the children how they are expected to behave in this new environment. Every word is a revelation to these youngsters. This is *school*. They have listened to their elder brothers and sisters talk about it, and have been waiting impatiently for this day when they too would be "grown-up." Now here they are and here is the teacher, the authority in class, as their mothers and fathers are at home.

The teacher takes them into a new and fascinating world where there are things to learn every minute of the day and all sorts of unfamiliar problems and responsibilities to be met. A first-grade teacher has her hands full. The children must be taught a host of things—how to sit properly, to stand up straight, how to hold their pens, where to keep their textbooks and copybooks. At the very beginning of the term, apart from reading, writing and arithmetic, they must be taught the rules of conduct. The teacher must know when to be firm, when to praise, when to make a joke. All this takes much understanding and insight, besides teaching ability.

But the reward for our first-grade teacher is the speed with which these little children learn. Visit the same class two or three months after the beginning of the term and they hardly seem like the same youngsters. The lesson now runs smoothly, and the children are even more eager and alert. Their store of knowledge has grown. They have already begun to read whole words and to write—not quite correctly, of course, but a good beginning. They know how to add two apples to three, how to sit at a desk, how to hold a pen and pencil.

The children's preschool experience and freshness of perception help, but the teacher's skill is the vital factor in the learning process. Relaxed, as though she were playing familiar games with the children, she teaches them how to read and count, write and draw. And when the objects around them—chairs, tables, toys, dolls—suddenly take on new meaning, there is no end to their delight.

The class is like a well-integrated orchestra led by a fine conductor reading a difficult score. Lessons are followed by ten or fifteen minute periods for rest and play. But even during these recesses the teacher is likely to be found with her charges in the school courtyard or in the corridor. This is the time for confidences and personal questions, all of which lead, in time, to teacher-pupil friendship.

With years the children acquire new interests. The novelty of some of the subjects wears off and then the teacher must find new and different ways to reach her students and keep them interested or else she is heading for trouble.

#### The Homeroom Teacher

From the first through the fourth grades all subjects are taught by one teacher. The children learn their native language and arithmetic and, later, such subjects as the elements of natural science, history, drawing, singing, physical culture and manual training.

Starting with the fifth grade each subject is taught by a different instructor. But every class has a homeroom teacher whose job it is to coordinate the efforts of all the subject instructors.

The homeroom teacher follows the progress of each of her pupils. If a child falls behind for one reason or another, she arranges for him to get extra help in his studies. She gives much of her time to extracurricular activities that widen the pupil's horizon and store of knowledge—such things as excursions and visits to the theater, museums and art galleries. She will, from time to time, visit the homes of her students.

The child's homeroom teacher is the one who shows him how to work and to get along with others, who helps him in his club and social activities, who most influences his behavior. Her duties and responsibilities are important indeed and cover a great deal of ground. It is vital, therefore, that she be a real friend and adviser, somebody whom the children will trust with all their secrets, somebody with whom they

will share their dreams and ambitions. If she succeeds in becoming that kind of a friend, she will also succeed in molding character.

#### Graduation

For ten years the teacher is guide and adviser and friend until the final examination marks are posted and her pupils' schooldays, with all their joys and griefs and worries and achievements, come to an end. The parting is a poignant one for both teacher and student, and the graduation party an event long remembered.

The girls usually come in white party frocks and with bouquets of flowers, the boys in dark suits. The parents are there to hear the farewell speeches. The teachers wish their old students a happy and successful future, and the graduates give their thanks to teachers and school. There are hugs and kisses and handshakes, and a general air of festive excitement prevails. Then comes the solemn ceremony when the diplomas are presented. And after that the dance band strikes up the first waltz of the evening, and the parents' school committee members get busy setting the tables in the adjoining room.

It will be the small hours of the morning before the party breaks up and the young people make their farewells. Some will probably not meet again, many more will remain fast friends and will keep in touch with their favorite teachers, write to them about the good things and bad they encounter and seek them out for advice.

Soviet schools have a day set aside for alumni reunions each year. This is a long-standing tradition. People will travel long distances for these reunions with old teachers and classmates who have become doctors, actors, industrial workers, statesmen, teachers. They sit down at their old desks that seem to have shrunk in size and trade remembered incidents and resurrect bygone friendships. And their hearts are filled with deep and warm emotions for their school and teachers.

#### The Learning Process

In their ten years of schooling Soviet children are given a broad theoretical and practical grounding that ranges from the multiplication table to the theory of relativity, from the ABC's to an appreciation of modern literature, from clay modeling to the operation of complicated machinery.

Soviet teachers operate on the principle that the child must actively participate in the learning process. They believe that just as the oak grows out of the acorn, so does new knowledge grow out of the old. New material is introduced, therefore, only when there is complete mastery of what has been taught before. Then it can be grasped easily, connected logically and assimilated. The learning process, they feel, can be made more effective by wide use of visual aids and by guiding the pupil so that he arrives at the correct conclusion by himself.

Here is an illustration. In a seventh-grade chemistry class in one school, the students were to determine what a substance was. An ordinary match was used for demonstration. A match can be broken and divided into several pieces, but the substance out of which it is made will remain unaltered. This the students knew from the previous lesson. The teacher merely had to remind them of the fact. Then he struck the match and let it burn to the end. The children themselves were led to deduce that the former materials no longer existed, that instead of the sulphur, phosphorus and wood there was now a bit of charcoal, that there had been smoke, and that some heat had been generated. This was established in the course of a lively discussion. By common effort the children arrived at a definition of a substance and were able independently to point out the differences between physical and chemical phenomena. The teacher thereupon asked them to give examples of chemical action which they saw around them.

The next lesson showed that the students had grasped the concept. The teacher set their minds to working by putting questions that forced them to draw on their own store of knowledge and observations. He made them use their eyes and minds, make comparisons and draw conclusions. In this way the class, guided by the teacher, came to an understanding, independently, of the different properties of a substance—color, specific gravity, smell, reaction to heat.

Such a learning approach helps the children to experience the pleasure of making their own discoveries, encourages them to verify theory and thus to fortify their judgments.

Laboratory work and practical training are given a prominent place in the course of study. There are laboratories and special rooms for physics, chemistry, biology and geography.

The teacher, whatever his subject, tries to relate the theoretical study to life and practice. In mathematics classes, children are taught to measure the height of trees and buildings by using theorems of geometry. In senior mathematics they learn how to use a slide rule. Even the textbooks in simple arithmetic present the children with practical, everyday problems to solve.

In teaching such subjects as physics, chemistry, natural science and mechanical drawing, the practical emphasis comes naturally. But in lessons in history or the native language the link to practical needs is not so apparent and must be searched for. Teachers will use regional tie-ups in the study of history or ask students to draft a business letter in language study.

### Labor Training

In recent years the Soviet schools have been placing more and more stress on labor training. World-famous educators have time and again affirmed the importance of manual as well as mental labor in the education of the child. From the first grades Soviet school children do manual work with paper, cardboard, modeling clay; they tend flower gardens, etc. In the senior grades the emphasis is on vocational training. The students work in factories and on farms. In the school building itself, labor training takes various forms of self-service. Older students even help with the construction of school buildings.

Manual labor is very much part of our school life. We are trying to rear people who respect their own labor and the labor of others and who have learned how to work with both hands and brain.

Soviet children like manual training. They work at their projects with great interest and enthusiasm, and the results give them a sense of real accomplishment. The teacher, by personal example, tries to inculcate a love for work in his students. He helps them develop their skills and prepare themselves for the vocations for which they show an aptitude.

The labor projects vary with the region and school. In rural districts the teacher will supervise a team of students at farm work. The collective farm allocates plots of land to such teams. A plot may cover an area of several hundred acres. The farm provides machines, implements, expert advice and quarters. The rest is up to the students.

They work at the same jobs grownups do during their practical training period in the summer, master various farm trades—from tractor driver to dairymaid—and, now and then, achieve really remarkable results. The work is paid for, and with the money earned the school arranges trips through the country and excursions of various kinds. Part of the money goes to pay for amateur art activities.

City school children get their work training at factories and plants. At graduation, along with a diploma, the student is given a certificate attesting to his proficiency in one or another trade. The graduate who takes a job in industry can, as a result, begin his work career with greater confidence.

Those who wish to go on with their schooling are given every encouragement. Some enter colleges or institutes directly after graduation; others take a job and continue their education at one of the many evening or corresponding colleges.

Whatever vocation the student will eventually choose, school teaches him the values of manual work. In school laboratories and workshops, in factories and on farms, these future Soviet men and women are prepared for socially useful living.

### Molding Character

No less important than work habits for the growing individual are ethical standards and rules of behavior. These are learned by the child from his very first day at school. What makes teaching so challenging a profession is the responsibility of guiding the moral and ethical growth of boys and girls so different from each other in age, character, mental ability and study attitudes.

You see a group of first-grade children flocking around their teacher,

timid but fascinated by their new surroundings. They are terrible tattletales, most of them. They keep running after the teacher, as they did after their mothers, whispering into her ear, "Kolya hit me. . . Misha took away my book . . . Lida teases. . ."

Or take fifth- and sixth-grade children—a difficult lot. They want to feel grown-up and they tackle problems far beyond their grasp. At times their behavior is altogether unpredictable, serious one minute and full of the devil the next. They need special treatment. You have to teach them to act sensibly and at the same time you have to be careful not to hurt their pride or stifle their initiative.

Look into a class of eighth graders. They have their problems, too. They are all busy berating a lazy classmate. Justice is on their side of course. But how righteous they are about it.

Here are a bunch of tenth graders. Only a while ago they were awkward boys and girls. Now they are teenagers, excitedly arguing the complexities of friendship, love, integrity, moral courage. They are in a difficult period, faced with the problem of choosing a vocation. They must have mature guidance, be taught to recognize the commonplace and the sordid, helped not to make mistakes that may be irreparable.

All this is the teacher's responsibility. He must be watchful, always alert, sensitive to the problems of his students.

Life at school is never static. The children grow, their needs change, their reactions sharpen. Nothing escapes their notice, not only the teacher's outward demeanor, but his real feeling about them. If the teacher does not like his students, no sweet words or smiles will hide the fact. Sooner or later it will come to the surface, and with it, trouble.

The essential quality of the Soviet teacher must therefore lie in the real affection he feels for his students, the responsibility he willingly accepts for their growth as fine human beings.

Anton Makarenko, the famous Soviet educator and writer, summed up his teaching experience in this phrase, "to exact as much as possible and to respect as much as possible." This has become a guiding principle for Soviet teachers and underlies the conscious tendency of the

*The teacher has the responsibility of guiding the moral and ethical development of the younger generation. In this the Young Pioneers, for children from 10 to 14, and the Young Communist League, for older children, are his right arm.*



Soviet school to foster the independence and initiative of its pupils. Hence the important place given to self-government and self-service. Students, especially those in the upper grades, have their own governing bodies and themselves work out many of the problems of school life.

### Children's Organizations

A very important educational role is played by the children's and young people's mass organizations. The large number of third- to seventh- and eighth-grade children join the Young Pioneers where they do work for the community and acquire a sense of social responsibility. Community responsibilities are assigned early. They begin with such simple tasks as keeping the classroom neat and watering the flowers. In later grades they include planting trees on the school grounds, coaching younger children, and other such duties. Children at fourteen or fifteen join the Young Communist League where their range of duties and interests widens considerably.

One of the principal tasks of the Young Pioneers and the Young Communist League members is to assist the teacher in molding character. The student is being educated in a collective society, but that does not imply any sacrifice of individuality. The teacher gives the child every opportunity to develop his own personality and his special talents. He guides that development by word, deed and example. He is generous with praise and with public commendation, honor cards and awards when they are deserved. And he is sparing with his punishment—conduct marks, reprimands, and, when all else fails, a summons to the teachers' council.

Now and again he has to cope with the lazy and selfish child, spoiled by bad upbringing. But these problem children, too, are his responsibility, and he tries a variety of approaches to win them over. He talks with the child, the parents, and enlists the help of classmates and other teachers. If he is patient and honestly fond of children he will eventually break through and make another young friend and good student.

It is on understanding and common interest and effort that the relation between teacher and pupil is built in the Soviet school.



*The teacher guides by word, deed and example. He is generous with praise and public commendation whenever they are deserved, and sparing with punishment. But there are times when a dressing-down is the only way to get results.*



By Leonid Dugan  
Photos by Igor Vinogradov

## The Librarian



*Tasya Matveyeva, librarian in Shchelkovo, a small town near Moscow, is taking professional training by correspondence at a library institute.*



**I**F YOU WANT to be a good librarian, you have to know books, but you also have to know readers. That was the essence of a long conversation that Tasya Matveyeva had with librarian Anna Doroshina.

Tasya had just graduated from secondary school and was inclined toward library work for her profession. And so she had gone to the chief librarian at the library in Shchelkovo, the small town near Moscow where she lives.

"You have to get to know your readers," said Anna Doroshina, "and they have to feel that your advice about books is worth following. To give a reader the feeling that he'd be missing a great deal if he didn't read the book you recommend, you not only have to be acquainted with the treasury of the world's literature, but you have to know the reader as well—his interests and background. It means being a psychologist and an educator and a librarian all wrapped up in one."

With that introduction the chief librarian offered her a job as trainee. She had always thought that Tasya, a long-time favorite young reader of hers, had an inquiring mind, liked books, and had all the makings of a good librarian.

Tasya enrolled as a student at the Correspondence Library Institute. Besides the professional subjects—principles of library science, bibliography and cataloging—she took courses in education, psychology, literature and history. Her practical experience she acquired at the library where she worked and at the Lenin Library in Moscow, where the correspondence school is located.

The library in a small town is an important part of its cultural life. A school child doing his term assignment, a doctor preparing a lecture, a teacher working up a conference report—all of them come in for recommended reading lists. Even when the amateur theater group of the local House of Culture is rehearsing a play, the librarians are called on for background material. Besides that, the Shchelkovo library is the coordinating center for thirty village libraries in the area.

There are seven workers on the library staff. Tasya is one of them. Two are institute graduates. One girl is in her third year at the institute. Another two are graduates of a library secondary school and are now preparing to enter the institute. The seventh girl is studying at a library secondary school.

Librarians work a seven-hour day. Those who are studying work only five hours when they have classes. They also get an extra day off a month.

There are two types of library training schools. The specialized secondary schools require seven years of general schooling for admission and offer a three-year course for librarians of village and other small libraries. The professional schools on the college level require complete secondary education. They offer a five-year course of study and train librarian-bibliographers for large libraries.

There are 134,500 public libraries in the Soviet Union, not counting scientific and other specialized libraries. Their total collection of books is somewhere in the neighborhood of 800 billion volumes. As compared with the prerevolutionary period, the number of public libraries has grown almost ten times and their book collections 85 times.

All public libraries are maintained by the local budgets. The Shchelkovo Soviet, for example, spends 124,000 rubles a year to keep the town library going. The library has a collection of 40,000 volumes grouped in ten catalogue divisions—reference, general political, Marxism-Leninism, science, technology, history, physical culture and sports, linguistics, literary criticism and fiction.

The readers cover the whole spectrum of trades and professions, and their choice of books is correspondingly varied. We leaf through the readers' cards on Tasya's desk and select one at random. It lists name, age and occupation—in this case, Pyotr Semyonov, 28, machinist. Among the books he borrowed recently are Volume IV of *The Collected Works of Mark Twain*, *Handbook for Machinists*, Panferov's *Bars*, Feuchtwanger's *Foxes in the Vineyard*, *New Ideas in Lathe Work*, Remarque's *Three Comrades*.

Tasya explains: "To really get an idea of the wide range of interests of our readers, you ought to come to some of our readers' conferences and get-together with writers. The guest at our last meeting was Galina Nikolayeva, the novelist who won a Stalin Prize for her *Harvest* in 1951. Her last book is *Battle on the Road*, a story that calls for a fresh and creative approach to day-to-day problems. The readers themselves decide what subject they want to discuss at these gatherings and the writers they want to meet. We do the arranging.

Mondays the library is closed, and Tasya has the day to herself. She has breakfast with her husband, sees him off to work, takes her six-year-old daughter to the kindergarten, tidies the house and prepares dinner. But her idea of a free afternoon is to go through book reviews so she can keep up with the vast amount of published material that comes out every week.

A display of the newest books. The library is a vital part of the town's cultural life. It runs frequent forums and writer-reader get-togethers.



Tasya in consultation with one of the specialists at Moscow's Lenin Library.





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1. Retired army officer Pavel Kovryzhenko claims that he gets younger every day teaching children various skills.
2. There are some 200 boys and girls in the various do-it-yourself groups he got started at the neighboring school.
3. Some are for future machinists and engineers; others for those who like their castles in the air built and painted.
4. Bone carving takes precision and patience. There are hobby groups in photography, woodworking and stenography.
5. Television assembly is one of the most popular hobbies. Instructors are fathers, mothers, elder brothers and sisters.





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# A NEW LEASE ON LIFE

By Nikolai Zakolupin  
Photos by Alexander Pakhomov

DAVEL KOVRYZHENKO, like so many people who have been active all their lives, found time hanging heavily on his hands when he retired from the army three years ago. There were hobbies, of course, but that was not quite enough—he wanted something productive to do.

Secondary School No. 458 is fairly close to the street in Moscow where Kovryzhenko lives, and he used to walk that way when he took a stroll. Every once in a while he'd stop to look around. He got to know the principal and the teachers and soon came to be welcomed as an old friend by the children.

He had been in the army most of his life. For close to forty years he had trained and taught the men under his command. So that his interest in schools and in teaching was natural enough.

One day he dropped in to see his young friends after classes had let out. There were all sorts of after-school activities going on. He walked to the carpentry shop where several teenagers were working on their projects—one was making a shelf, another a picture frame, another a box with a carved cover.

Kovryzhenko showed one boy how to handle a jigsaw so that it wouldn't bind, another how to adjust a plane. Before he knew it, the youngsters were all coming to him with their questions and difficulties.

In the most natural way in the world he had stepped into the role of teacher. He liked it, and the boys liked him. They begged him to come again.

Kovryzhenko did a lot of thinking that night, and in the morning

he went to the school principal and offered to lead a "do-it-yourself" group. Without pay, of course—his pension is sufficient to take care of all his material wants. The principal agreed and soon Kovryzhenko was teaching his first group of twenty-seven students.

It didn't stay at that number very long. Many other children wanted to join, especially after the group held its first handicraft exhibition. Kovryzhenko started several new groups—for those interested in wood turning, bookbinding, bone carving and other crafts. Now there are some 200 children taking part.

Kovryzhenko doesn't teach all these various groups. No one person possibly could. Who does?

"Well," he says, "imagine that one fine day instead of our boys and girls, their dads and mothers, elder brothers and sisters, grandpas and grandmas came to school. Can you imagine how many experts we would have in all sorts of fields? That is just what we did—we asked them to come in and help us. And many of them were glad to."

Engineer Igor Rudakov is teaching a group how to assemble TV sets. Retired airman Gennadi Barkhatov leads a photography group. The girls learn sewing and dress designing from Zinaida Sidorova, and stenography from Tatyana Chagina. Some of the groups, especially those for the younger children, are led by the best of the seniors. They are proud to be called instructors and take their jobs very seriously.

"For the children," says Kovryzhenko, "these activities help to develop skills and reveal latent talents. For me and the other pensioners who lead the circles, it's a new lease on life."

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# YURI VLASOV OLYMPIC STRONGMAN

By Viktor Viktorov

A SPORTS COMMENTATOR on a weekly magazine such as our *Ogonyok* sometimes meets athletes under very unusual circumstances. This is how I became acquainted with Yuri Vlasov, Olympic weightlifting champion.

There was a letter from a reader in my mail one morning last winter enclosing an old snapshot of a shy-looking boy of about thirteen. The letter read: "In 1949, when I was teaching in a school, there was a boy in my class named Yuri Vlasov. This is a snapshot I took of him. When I compared it with the photo you carried in your magazine, I found out that this student of mine is now the famous weightlifter Yuri Vlasov. I would very much appreciate it if you could send him the congratulations of Ivan Studenikin, his former teacher."

The letter gave me a welcome excuse to call up Vlasov, and a couple of hours later I was showing him the snapshot. He smiled and said: "That's me all right, and I'm very glad to hear from my old teacher."

Vlasov caught me looking at the photo and making comparisons. He is a tall man, built big but without any bulk. "It doesn't look much like me now, does it?" he asked. "I guess I've changed a lot in the eleven years since."

"Did you dream of becoming world strongman at the time?" I asked.

"Frankly, no. My sports in school were skiing and, of course, soccer. Weightlifting takes lots of brawn; it's not a sport for children. I took it up later, when I finished school and became a student at the Air Force Academy. Now I'm a radio engineer by profession and I also picked up two hobbies—philosophy and literature. I even took a crack at short-story writing. I must confess, though, that I've had a lot more success with bar bells than I've had with stories. The editors keep returning them to me about as fast as I send them out. By now I have about twenty stories and even a film scenario stacked away in the drawer."

It sounded to me as though it needed two men's time to do all the things Vlasov was doing, and I asked him whether he was ever tempted to give up weightlifting with its demanding training schedule.

"No," he said, "I've put too much into it. Weightlifting is not something you're born with—at least I wasn't. When I first started, I told myself, paraphrasing the Greek saying a little, 'It doesn't take a god to lift a bar bell,' and got down to hard work."

After five years of steady training Vlasov got his dividends. At the 1959 World Championship in Warsaw he totaled in the three events (press, snatch, and clean and jerk) 500 kilograms. Quite a lift that was—it gave him the world title in the heavyweight category.

Where does Vlasov hide his strength, I ask myself every time I meet him. It isn't apparent in spite of his 250 pounds of bone and muscle.

Bob Hoffman, who has trained so many American weightlifters, called him "the graceful heavyweight" when he saw him perform in Rome.

There was drama in the Olympic contest. Vlasov said to me at the time: "I'm getting ready for the big show, and it looks like a battle. I'll be standing alone against two Americans—Jim Bradford and Norbert Schemanski—and that's no joke."

The weightlifters competed just before the end of the games. I very vividly remember that night when the strongest men in the world gathered to match one another. It would not be exaggeration to say that all attention was focused on three men—Jim Bradford, Norbert Schemanski and Yuri Vlasov. A battle of giants this was.

I think all of us—the press and the crowd of weightlifting fans who packed the great hall—felt Vlasov's tension and the tremendous effort he was making. In the press he beat Bradford by 5 kilograms, but that margin wasn't enough to satisfy him. Everybody knew that the slightest mishap in the decisive event, the clean and jerk, could change the picture radically.

The experts remembered, of course, Vlasov's world record in the clean and jerk in 1959. But since then American Dave Ashman had beaten this record with a lift of 201 kilograms. Although Ashman hadn't made the Olympics, there was Bradford, an athlete not to be underestimated—Hoffman had hinted before the battle that he wouldn't be surprised if Bradford broke the world record for the total set by Anderson.

The decisive stage in the battle came in the wee hours of the morning. Bradford had already taken all his three tries in the clean and jerk. He had matched Anderson's world record for the total and set a new Olympic record of 512.5 kilograms.

Vlasov mounted the platform for his first clean and jerk when the bar was already at 185 kilograms. He beat Bradford's Olympic record and Anderson's world record by 8 kilograms. When he appeared on the platform for the second try, the bar was at 195 kilograms and again the world record for the total changed. Now it was 530 kilograms.

But Vlasov still had another try left, and it was obvious that he would use it for a shot at Ashman's world record in the clean and jerk. And that's what happened. Vlasov asked for 202.5 kilograms on the bar. It's hard to describe the way the hall rang with applause when the gigantic bar was taken to the scale after the lift for a recheck of the weight while Vlasov was already being acclaimed for an Olympic gold medal and two new world records.

Five days later I met Vlasov again. This was in Moscow at a reception given in honor of the Soviet Olympic team. I shook his hand and once again I looked hard for the shy 13-year-old in this big friendly man who was now the world's strongman number one.

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**Left:** The Olympic weightlifting champ with his artist wife Natasha and a recent family addition, daughter Alyonushka.

**Below:** "Five years of steady training went into that 1,110-pound lift I made," says Vlasov. It gave him the world title.

**Right:** This busy athlete is a radio engineer by profession. For relaxation he studies philosophy and writes short stories.





LENIN HILLS STATION OF THE MOSCOW SUBWAY — See story page 38



