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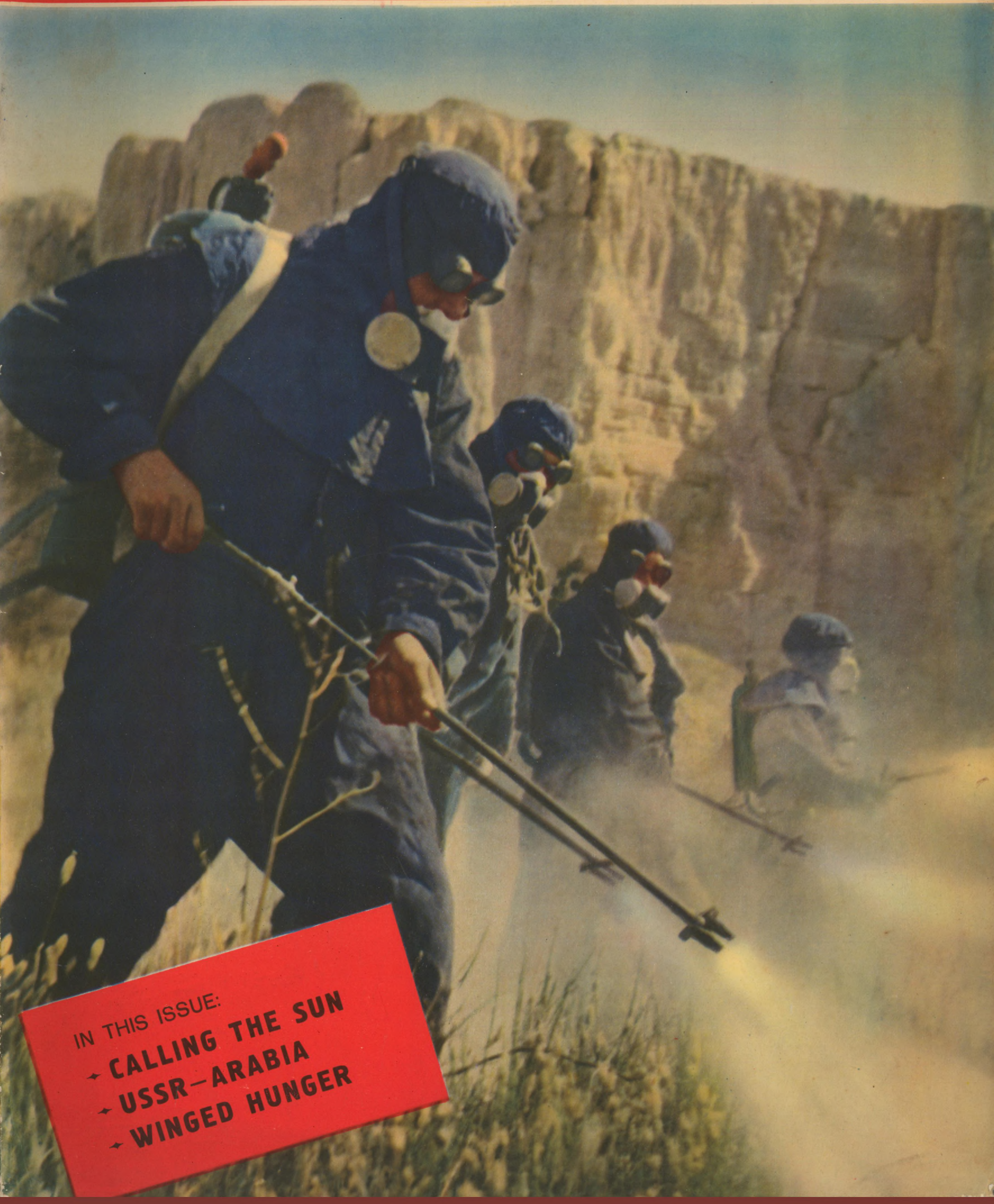
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SOVIET UNION

No. 7 (89)

1957



IN THIS ISSUE:

- ✦ **CALLING THE SUN**
- ✦ **USSR-ARABIA**
- ✦ **WINGED HUNGER**

MY REPUBLIC

Hachim TEUNOV, Kabardinian author

The Kabardino-Balkar Autonomous Soviet Socialist Republic. . . To reach our republic you have to travel right up to the northern foothills of the Caucasian mountains.

Run your finger along the northern fringe of these mountains on any map and you will not miss our capital—Nalchik, a town well worth getting acquainted with. It is known for its hospitality to visitors, who can be sure they will be loaded up with excellent fruit from the collective farms and told many interesting facts about the Republic's past and present. Some of these facts you will learn from me, for I have a very good reason for citing them now.

In olden times the fields and mountain gorges of Kabarda were the battle-ground of endless clashes between our people and such unwelcome invaders as the Huns, the Hazars, the Mongols, and the Tatars.

The people of Kabarda saved itself from extinction by deciding to ally itself with Russia. This decision was adopted by the Haseshko—the grand people's assembly—in July 1557. During the four hundred years that have passed since then history has shown time and again that the decision was a correct one.

The Great October Socialist Revolution brought my people freedom and autonomy. We recovered our statehood.

We have every reason to rejoice. Our country has changed out of all recognition. My father, I recall, had to travel for days along donkey paths to reach the mountain villages. I, his son, get there in no time riding in a car up first-class motor roads. Wherever you go in the Republic you will see the towering masts of high-tension transmission lines. Great herds of cattle and horses graze on the alpine pastures.

Our old men never thought their Kabarda would one day have its own mills and mines and factories, that Kabardinians and Balkars would make precision instruments and machines known far and wide inside the Soviet country and beyond its borders.

Forty years ago only two out of every hundred of my countrymen could read. Today for every hundred citizens of the Republic there are an engineer, a doctor, an agriculturist, two schoolteachers, three college students, twenty-five high-school pupils, ten skilled workers, mechanics, tractor drivers, and harvester combine operators.

Kabardinian, Balkar, or Russian—we are all working for a better life.

Photograph: Overhead cableway in the mountains of Kabarda. The man of the proud smile is Abu Aloyev, a miner at the Tirniauz Colliery.

Photographed by M. Grachov

COVER: The charge of the Antilocust Foot. Where neither planes nor lorries can be used to fight the locusts, the Antilocust Foot goes into action (see "Winged Hunger" in this issue)

Photographed by Y. Korolyov



SOVIET UNION

A Commentator's Notes

ILLUSTRATED MONTHLY

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1957



Bulganin and Khrushchov at a reception given by President Urho Kekkonen during their visit to Finland
Photographed by "Soviet Union" special correspondent A. Garanin



Finns give the Soviet envoys a warm welcome

N. A. Bulganin, Chairman of the Council of Ministers of the USSR, and V. I. Sukkelainen, Prime Minister of the Finnish Republic, sign a Soviet-Finnish communiqué



WHEN SHALL WE MAKE A START? In his interview with correspondents of the Columbia Broadcasting System Khrushchov stated:

"We say, let us stop the explosions, let us stop the tests, let us ban the hydrogen and atomic weapons and reduce armed forces, and then we shall come to complete disarmament. . . . We must make a start, however small. As it is, there is nothing but talk and verbal gymnastics."

Khrushchov's clear and frank interview aroused enormous interest among the world public. It also gave rise to confusion in certain circles. Apparently some Western politicians are more concerned to weaken the impression of the interview than to overcome the deadlock in the disarmament problem. Without going into their motives in detail let us ask ourselves one question: Can anyone regard as peace-makers those who for several years have been systematically drowning concrete disarmament proposals in a bog of verbiage and reservations?

The more armaments are produced, the greater the danger of war. As scientist and layman alike know, nuclear explosions contaminate the air and menace the health of people in all countries and all continents. The only people who don't know it are the children whose future is threatened. Is this not the reason why people all over the world are asking the leaders of their various countries and their representatives in the committees and sub-committees of the United Nations the unambiguous question: When shall we start? We must make a start, however small!

The Soviet people fully support Khrushchov's proposals. He has given those who doubt the sincerity of Soviet intentions a fair offer: let's try it out, accept our proposals for disarmament, for prohibition of the atomic weapon, or at least agree to stop test nuclear explosions for two or three years. That would be a real start. Among Soviet people at work and at home this is one of the main subjects of conversation.

Unfortunately, the work of the sub-committee in London has not so far brought any hopeful results. What is more, certain Western newspapers are again trying to create a stir about last year's events in Hungary. The real object of this smear campaign is to fan the fires of suspicion and distrust and sand up the machinery of disarmament that is already almost at a standstill. Weighing up the facts, the Soviet public regards the propaganda in the Western press about the Hungarian events as a ruse of cold war supporters, who are trying to divert attention from the disarmament problem. There is no other logical explanation. But the soap bubbles of short-lived sensations can hide neither nuclear explosions nor the machinations of those who oppose disarmament. The idea of peace, the idea of disarmament has taken possession of the minds of millions, and the most important question today is still: When shall we make a start?

FRIENDSHIP AND CO-EXISTENCE ARE A CONCRETE POSSIBILITY

At a meeting of many thousands of Muscovites, K. Y. Voroshilov, President of the Presidium of the USSR Supreme Soviet, talked of his tour of China, Indonesia, Viet-Nam, and Mongolia. This tour has strengthened friendship and common understanding and furthered the development of business contacts. The press describes it as an act of peace.

Soon after Voroshilov's return from Asia, Bulganin and Khrushchov set out on a friendly visit to Finland. It is no secret to anyone that in the past there have been alienation and even serious conflicts between Finland and the USSR. But this was against the interests of both states. Now Finland and the USSR, in spite of the difference in their political systems, have become not merely good neighbours, but real friends. Our economic relations, as well as cultural and scientific ties, are constantly developing and bringing mutual advantage to both countries.

During the Soviet leaders' visit to Finland both sides reviewed the development of economic and trade relations with satisfaction. Agreement has been reached on additional deliveries of goods to a value of 100,000,000 rubles.

The Soviet Union has constantly championed the principle of co-existence between states with differing social systems. In the West some people—mistakenly or deliberately—doubt the validity of this principle. The relations between the USSR and Finland are a real proof not only that co-existence can become an important factor in international relations, but that it is economically fruitful, that it serves peace, and that it can grow into good-neighbourly friendship.

The Soviet guests arrive in the town of Lahti



URHO KEKKONEN:

The Policy of Friendship Between Finland and the USSR Is an Irrefutable Fact

The Editors of this magazine requested the President of Finland, Urho Kekkonen, to answer two questions. Their questions and the President's answers follow:

Question: What significance do you consider the visit of Bulganin and Khrushchov has for the development of Soviet-Finnish relations and the strengthening of peace in the north of Europe?

Answer: The most important result of the visit of N. A. Bulganin and N. S. Khrushchov, as I see it, is that the policy of trust between Finland and the Soviet Union has been further clarified. Thanks to this visit, the support that wide sections of the population in both countries gave to a policy of friendship between our states has been consolidated and strengthened. The warm welcome that the Finnish public gave the leaders of the Soviet Union is particularly worthy of note.

A good undertaking has many favourable consequences. The complete success of the visit has resulted in the policy of friendship between Finland and the Soviet Union becoming an irrefutable fact in the minds of people throughout the world.

The visit is also significant from the point of view of peace in the north of Europe and common agreement among the nations. Fruitful co-operation between Finland and the Soviet Union should serve as proof that

military undertakings are not the essential and primary factor in ensuring the security of a small country, but that greater security may be achieved, with less sacrifice on the part of the people, by co-operation based on mutual trust. At one period great distrust existed between Finland and the Soviet Union but in the course of time it has been dispelled. We consider it an exceptionally important achievement that it has been possible on a basis of mutual confidence to create friendly relations between our two countries that will provide a firm foundation for the prosperity of the independent national life of our people.

Question: What would you like to wish the readers of the magazine "Soviet Union", which also appears in Finnish?

Answer: I hope that the peoples of Finland and the Soviet Union will continue to take an interest in each other and each other's conditions of life, and that their knowledge of one another will correspondingly increase. I hope that their mutual respect and esteem will be preserved and strengthened. I hope that the policy of peace and friendship between our peoples will take firm root in the hearts of all citizens and will become an influential factor in activity directed towards the ensuring of international peace.

In the suburb of Tapiola Bulganin and Khrushchov visited the flat of a Finnish worker Bertel Dickman. Here we see Bulganin saying good-bye to the Dickman family



Khrushchov in one of the trade schools of the town of Lahti



Urho Kekkonen, President of the Finnish Republic, gave a banquet in honour of the Soviet guests

Their visit over, Khrushchov and Bulganin leave hospitable Finland





REPUBLIC OF INDONESIA. The people of Djakarta welcome K. Y. Voroshilov, President of the Presidium of the USSR Supreme Soviet, on his arrival in the city
 Photographed by D. Baltermants



DEMOCRATIC REPUBLIC OF VIET-NAM. Wherever he went during his Asian tour, Voroshilov found a warm welcome and kind friends. Here we see him with the President of the Republic, Ho Chi Minh
 Photographed by A. Stuzhin

MONGOLIAN PEOPLE'S REPUBLIC. This photograph was taken in Ulan Bator. During the meeting in honour of Voroshilov's arrival a young dove alighted on the platform. The Soviet guest gently picked it up and handed it to a young citizen of Mongolia as a symbol of peace and friendship
 Photographed by D. Baltermants



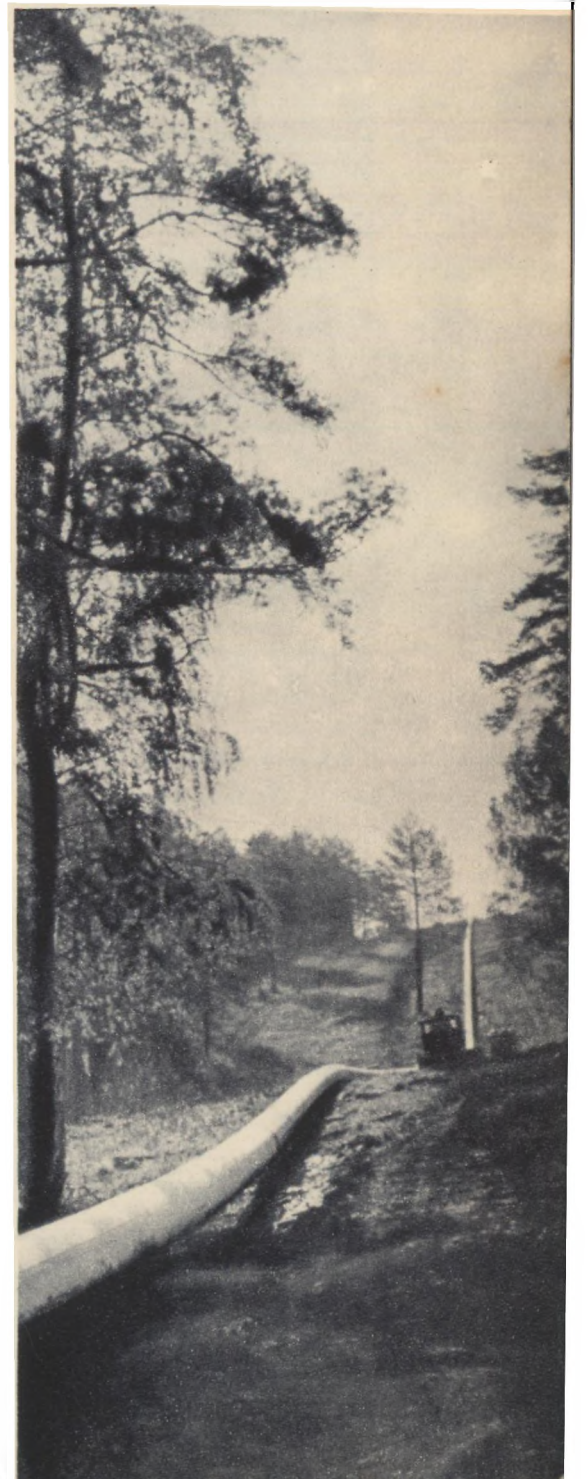
OIL ARTERY OF SIBERIA

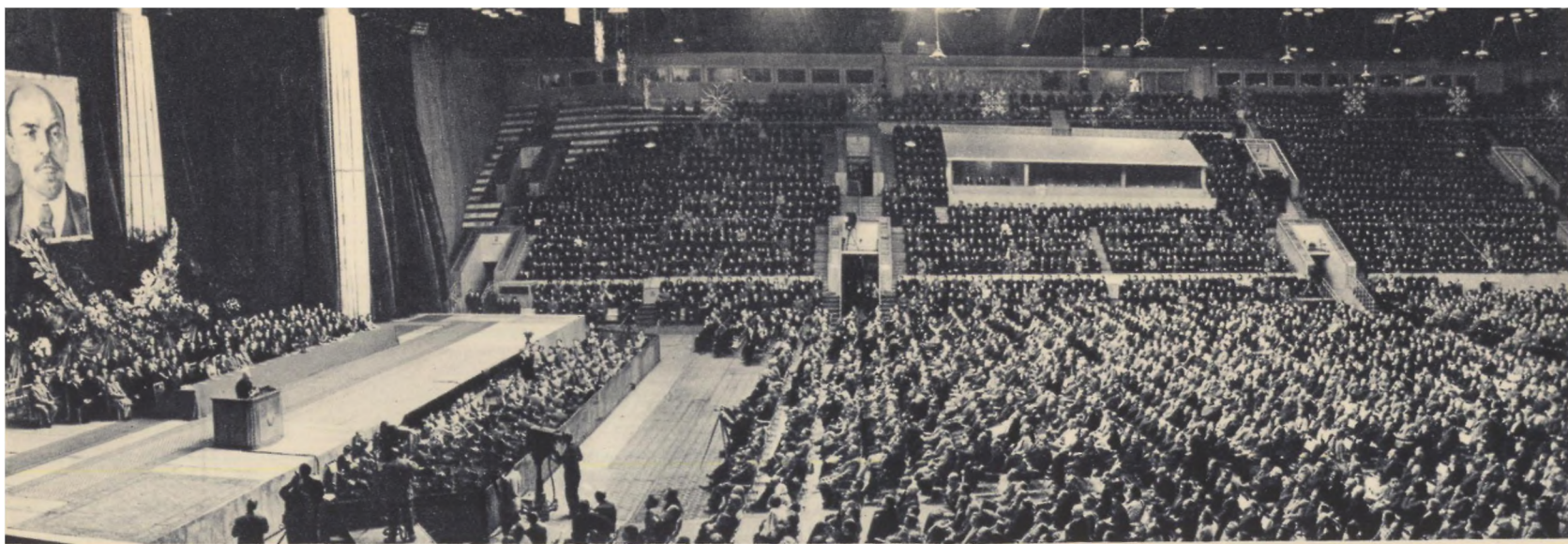
Photographed by V. Georgiev

The first hundreds of miles of the oil pipe-line from Tuimaza to Irkutsk joining the Volga country and Eastern Siberia have been laid. 28.5 inches in diameter, the new pipe-line will stretch for a distance of 2,300 miles and feed Siberian industry with fuel extracted from the oil wells of Bashkiria.

This is one of the most important constructions of the sixth five-year plan. Its builders will have to cross the Ural Mountains, thousands of small and hundreds of navigable rivers, including the Ob and the Yenisei. Innumerable paths will have to be cut through the taiga; the marshes of the Barabinskaya Lowlands and the stony slopes of Eastern Siberia will have to be overcome. With the mechanization of pipe-laying at its present level such tasks can be carried out quickly. The speed of building the new pipe-line is three times greater than when the Tuimaza-Omsk pipe-line was laid at the end of the last five-year plan.

The photographs show the Tuimaza-Irkutsk pipe-line being laid.





MOSCOW. On his return from his tour of China, Indonesia, Viet-Nam, and Mongolia, K. Y. Voroshilov spoke at a big meeting of workers of the Soviet capital and told them about his visit

Photographed by A. Batanov and V. Sobolev



GEORGI DIMITROV

The Soviet people have celebrated the seventy-fifth anniversary of the birth of Georgi Dimitrov, great son of the Bulgarian people and outstanding figure in the international workers' revolutionary movement. In the Hall of Columns in Moscow representatives from factories, construction sites, institutions of higher learning, public organizations, and the Soviet Army gathered to hear B. N. Ponomaryov, Member of the Central Committee of the Soviet Communist Party, speak on Dimitrov's life and work. Memorial meetings were also held in other towns and villages of the USSR.

Here we see a shot from the Moscow-Sofia co-production "A Lesson of History", a film about Dimitrov.



It is 400 years since the voluntary union of Bashkiria with the Russian state. The working people of Bashkiria celebrated this date as a national holiday symbolizing the indissoluble friendship of the peoples of the Soviet Union. During forty years of Soviet rule the Bashkir Autonomous Soviet Socialist Republic has achieved outstanding successes in its economic life. Since 1913, industrial production in Bashkiria has increased over a hundredfold and its achievements in developing its national culture have been enormous. The picture is of a procession during the republic's youth and student festival held to celebrate the anniversary

Photographed by L. Yakubov

General I. Gošnjak, Secretary of State for People's Defence of the Federative People's Republic of Yugoslavia, has been a guest of Marshal of the Soviet Union G. K. Zhukov, USSR Minister of Defence. This photograph was taken at Moscow airport

Photographed by V. Sobolev





Drawing by Irakly Toidze

Moscow Awaits You!

Some young people who are eager not to miss the World Youth and Student Festival have been setting off to Moscow in June and even in May. The young citizens of the even younger Korean People's Democratic Republic, who are taking part in the relay run of peace and friendship, will journey across China, Mongolia, and the Soviet Union before they reach Moscow.

The thoughts and feelings of these future participants in the Festival reach Moscow long before their own arrival, in the form of letters, records, and sound tape which in great quantity is daily forwarded to Moscow 400—that is the postal address of the Festival's headquarters, its Preparatory Committee. Young men and women all over the world tell of what they are doing in preparation for the Festival, how they work for peace and international co-operation, and protest against the testing of nuclear weapons. They send songs that will be sung at the Festival and shower good wishes on their Moscow friends.

Newspapermen from everywhere take a keen interest in how the Festival organizers will help the press, for even an ace reporter will never be able to cover from three to four hundred events a day and see everything that will happen at the Festival. A Press Centre will be set up in the Moskva Hotel, where the foreign correspondents will be living. Besides a round-the-clock supply of fresh information, the newspapermen will daily receive a comprehensive bulletin published by the Press Centre. They will be able to contact their papers by phone from any suite in the hotel, and from special international telephone exchanges at 7, Gorky Street or 24, Kirov Street. The Press Centre's Information Bureau will supply them with any information and published material they request and the Photo Bureau will issue any photograph desired from its photo show, which will be replenished every day. Also at the Photo Bureau the reporters can have their own films developed and printed. Foreign newspapers and magazines will be on sale at every newspaper kiosk and mobile news-stand. Speeches made at the bigger Festival meetings by participants will be interpreted simultaneously through headphones in five or six languages.

About ten million postcards have been issued to mark the occasion of this world youth jamboree. Fifteen new stamps have been put out to mark the Festival. Post offices will stamp your letters with special Festival postmarks.

The great day is approaching! Welcome to Moscow!

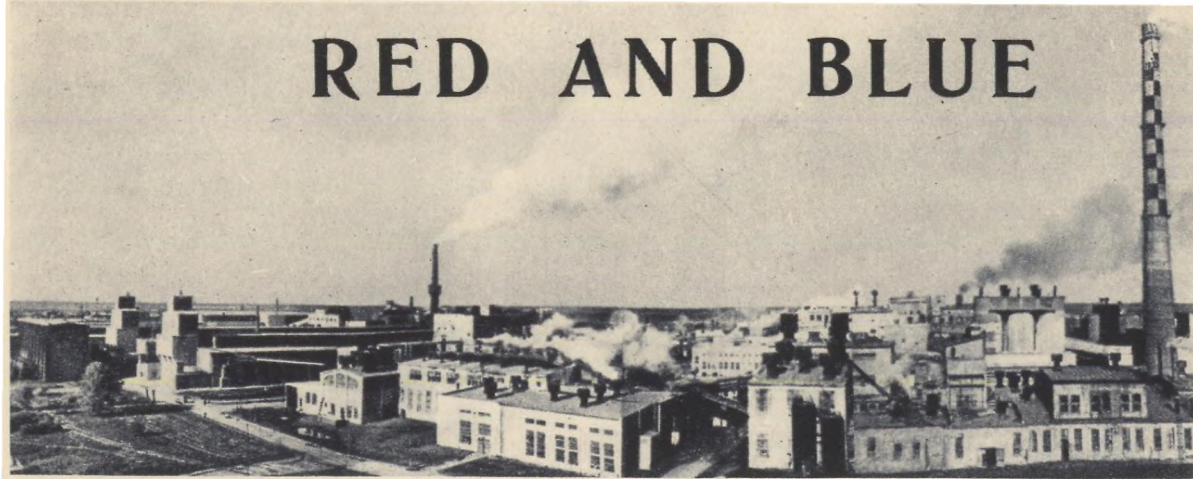


Foreign newspapermen will live at Moskva Hotel, where the Festival's Press Centre will be located
Photographed by N. Khorunzhy

Foreign guests at a ball in the Hall of Columns, Moscow, held in honour of the coming Festival
Photographed by Y. Brilliant and I. Kogan



RED AND BLUE



Inside the chain zone of the revolving furnace. After reconstruction it was tested and now it is being checked by shop manager O. Zakharzhevsky and chief engineer V. Pochivalov, both winners of a Lenin Prize, team-leader I. P. Kosarev, and senior furnaceman G. I. Ivanov



A quarter of a century ago the Volkhov Works produced the first Soviet aluminium. On its anniversary the staff of the works was congratulated by the Central Committee of the CPSU and the USSR Council of Ministers. Front-rankers of the works received Orders and medals. Here we see the director of the works I. Talmud, Lenin Prize winner, speaking at the anniversary meeting

Photographed by Y. Bagryansky

By Oleg PISARZHEVSKY

DRAMATIC SETBACK I intend to tell my story not from the beginning, but from the middle, with one of its most dramatic incidents.

Dreamers and enthusiasts had long sought to extract aluminium, that "winged metal", from a raw material which was new and unused by anyone. But when after years of disbelief, argument, frustration, and perseverance a factory was at last placed at their full disposal and their work was encouraged by the highest authority, they found themselves facing a blank wall. The new technology elaborated in laboratory conditions involved practical obstacles no one had foreseen.

The huge furnaces devoured hundreds of tons of raw material and moved these lumbering tons about in their bowels charged with red-hot gases until the moment came for the compound to sinter. But sintering was rapidly followed by melting, which caused no end of trouble. Those who saw their hopes dashed because they did not know the flimsy margin between the two processes were willing to pay a heavy price to put their finger on this margin. But no, the revolving mammoth furnaces poured out a fiery molten stream and with every revolution of the furnaces this liquid mass clung to their walls and gradually thickened there. Then the huge works would come to a standstill.

COLOURS OF VICTORY The staff of the Volkhov Aluminium Works near Leningrad, at which the dramatic setback occurred, lived through many disappointments and emergencies until the rebellious material knuckled under. It was a day of smiles and congratulations when a silver river of liquid aluminium, tinged with a reddish glow, gushed into the crystallizers.

Soon after, a well-known man of business from overseas closely connected with a company which controls aluminium production in a major capitalist country asked to be shown the Volkhov Works. A pastmaster in all the processes of aluminium production, he marched straight to the raw materials depot, looking neither right nor left.

Stopping before a massive gate, he impatiently pushed aside one sliding leaf of the gate and looked across the threshold. The whole depot was taken up by a bluish-grey mountain—the mineral whose name nepheline proceeds from the



Greek "nephele", meaning "cloud". The keen eyes of the foreign businessman could see nothing but nepheline in the depot and no sign of bauxite, the reddish-brown ore from which aluminium is still produced all over the world. A problem which had worried technologists throughout the globe had been solved: a substitute had been found for bauxite—nepheline. Before the Volkhov Works achieved this miracle, no one had been able to prove that the task was a feasible one. By many it was regarded as a scientists' dream. And now the foreign guest could see for himself the bluish mountain of nepheline in the depot. It meant that the aluminium industry, whose bauxite store was dwindling fast, had acquired a new and inexhaustible source of raw materials.

But that is not all. Besides containing aluminium, nepheline is a veritable treasure-house of valuable properties.

Blue, not red. Nepheline, not bauxites... The visitor from overseas shut the gate quietly and strode away, pausing only to aim his camera at a light chestnut horse that was unhurriedly carting saturators with aerated water to the stokers. This living anachronism seemed to afford him some consolation. He would never have believed that the reason for the horse's presence on the works' territory was far removed from conservatism or lack of funds. The personnel of the works are, indeed, religiously devoted to technical innovation and the works has funds enough to transport aerated water from shop to shop by helicopter. The mystery of the horse is linked with the indisputable fact that a valuable fertilizer is to be found in any stable, and that the chief engineer of the works spends most of his spare time on his hobby, which is growing trees, bushes, and flowers in the works' settlement.

HOW MANY FACTORIES? The research at the works was inspired and conducted by a group of men who won a Lenin Prize for 1957: I. Talmud, O. Zakharzhevsky, V. Pochivalov, N. Vlodavets, V. Krochovsky, and F. Stokov. Their work is tied up with times past and present.

Having learned how to make aluminium from nepheline, the Volkhov Aluminium Works won a big battle in technology.

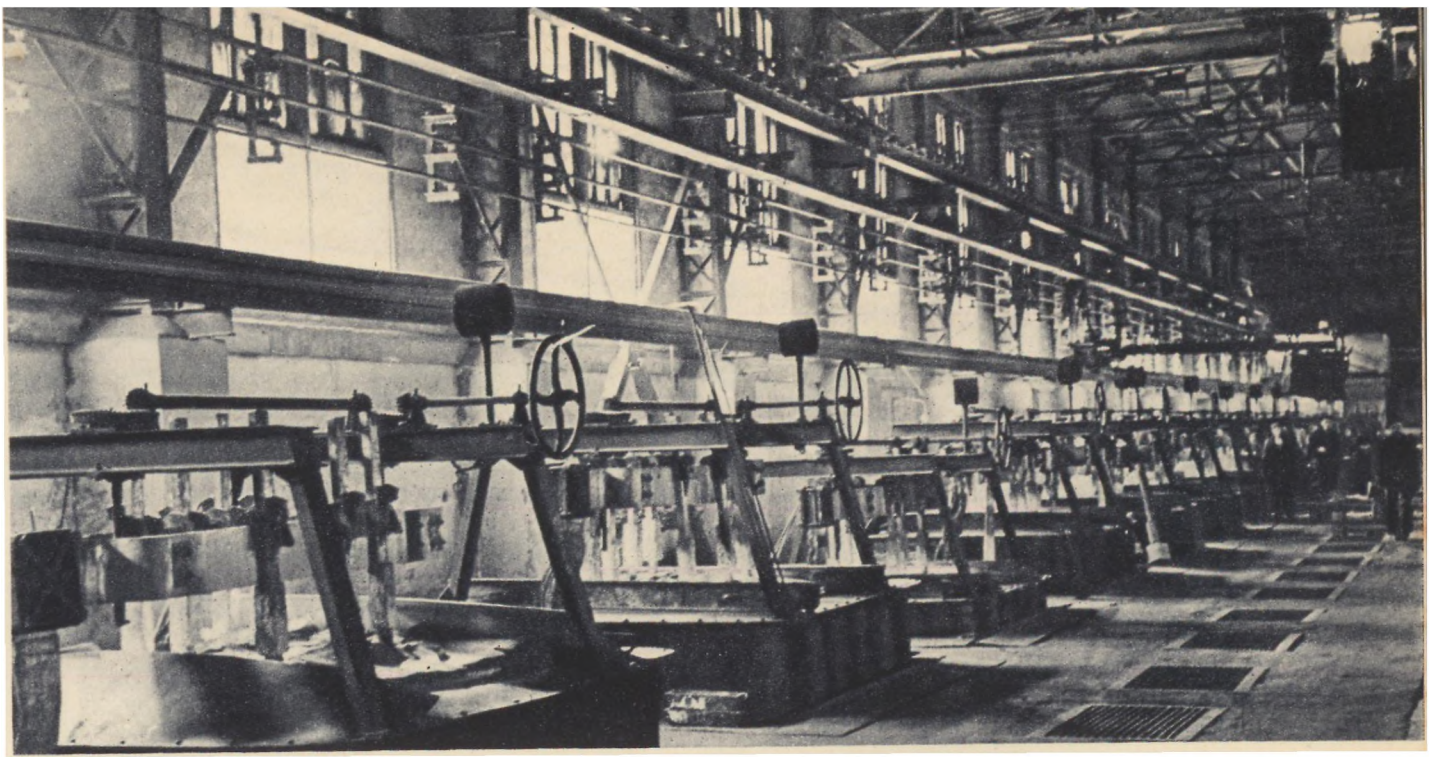
The obsolescent revolving furnace—a steel cylinder 415 feet long through which a lorry can easily drive—is to be replaced by a new aggregate of the same calibre in the record time of 20 to 25 days. This might mean nothing to the layman but it will make a technically minded man's eyes widen. The works is rich enough to experiment simultaneously with dozens of models of filters. Original designs of apparatuses for separating the mixtures are being created. Automation reigns supreme in technology, easing labour and boosting productivity.

The Volkhov Works, the first-born of the country's aluminium industry, which recently celebrated its twenty-fifth birthday, has pioneered many new technical departures. By showing how to extract aluminium from nepheline it has opened up fresh opportunities for the industry in many regions of the country which have rich deposits of nepheline.

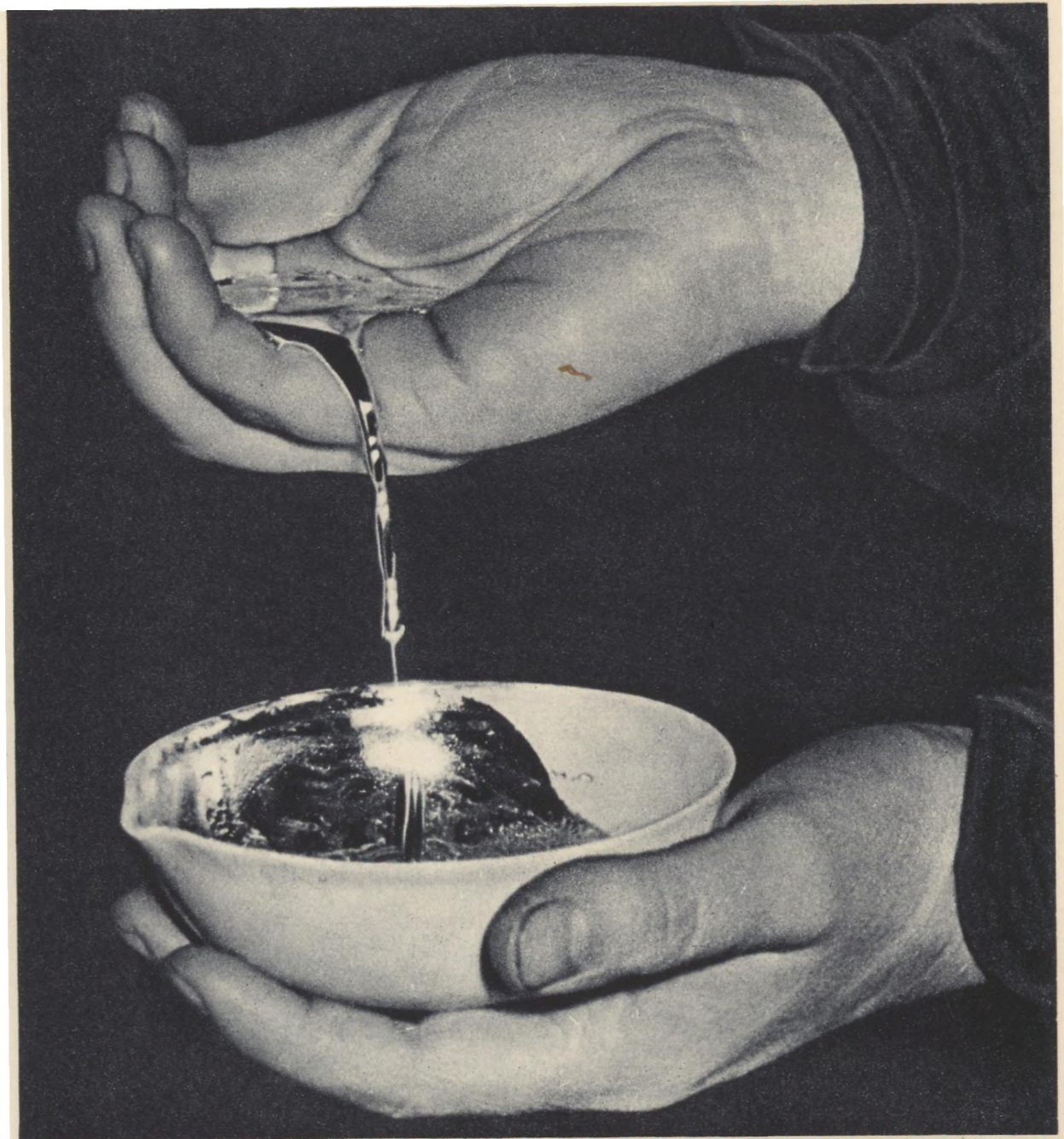
A signal aspect of this latest victory of the works is that it constitutes a new triumph for the idea of each enterprise becoming a national-economic centre combining as many specialties as it is profitable to combine. From nepheline the Volkhov Works produces, besides aluminium, soda and potash and excellent cement from the leftovers. Simultaneously with the extraction of aluminium its companion is extracted: gallium, a precious metallic element with a very low melting point and a high boiling point, which is valued higher than gold. All these elements are to be found variously compounded in nepheline. The difficulty that has been overcome was that of separating them with the utmost profit.

Academician Alexander Fersman, the late Soviet mineralogist and geochemist, wrote: "Each mineral can be evaluated only when it is regarded from every angle. In mining it is necessary to forsake the old methods of extracting just one mineral. We must learn to use the entire mineral mass as a whole and have all the waste and scrap industrially processed, increasing the scale of production of the various shops and combining them."

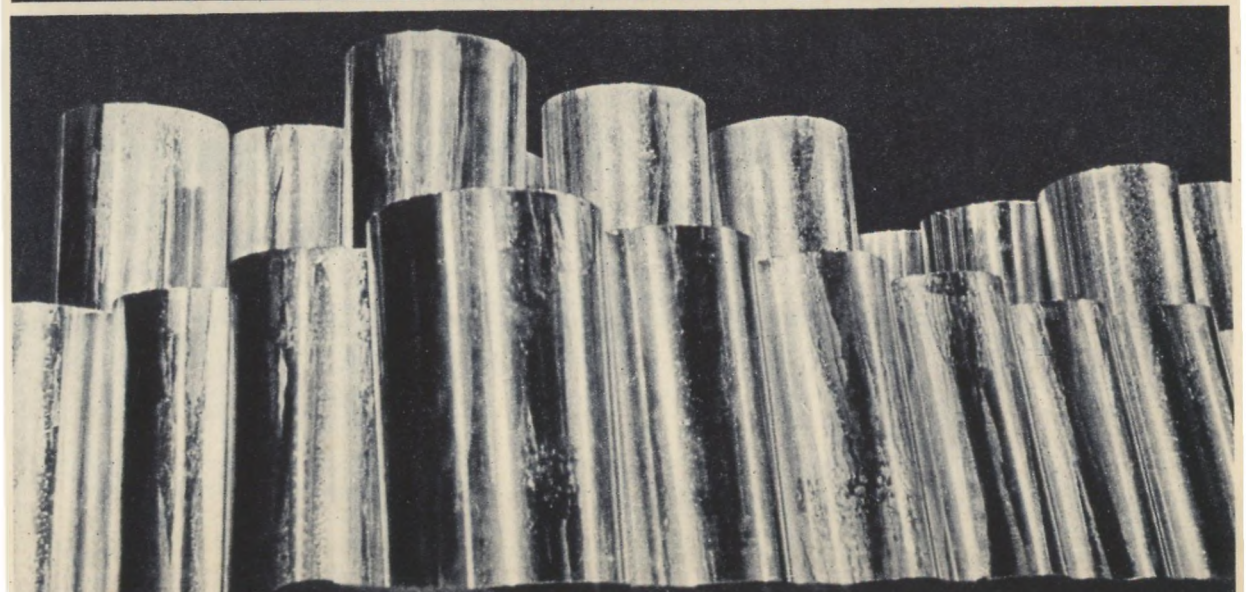
The know-how of the Volkhov Aluminium Works acquires increasing importance, for it is a living example of the application of new forms of industrial management and progressive economic departures.



Here aluminium is separated from its admixtures



Metal that melts in your palm. The temperature of your palm is 97°F., and that is warm enough to melt gallium, the more-valuable-than-gold companion of aluminium in nepheline. Below: The works' basic output—ultra-pure aluminium



Builder Ivan Voropayev



Photographed by V. Kivrin

In 1932, a 20-year-old young man applied for work at one of Moscow's housing sites.

"Your name?" asked the building manager.

"Voropayev."

"Trade?"

"None."

Twenty-five years later, in 1957, at a ceremony in the Kremlin Ivan Voropayev was awarded the Order of Lenin and the Hammer and Sickle Gold Medal of Hero of Socialist Labour.

Working on Moscow's different building sites he became a fitter, studied in his spare time, and later was put in charge of a building team. The biography of this building worker is part of the history of present-day Moscow. There is hardly a district in Moscow which he has not helped to build. At present, his team is working on the biggest housing project in the Soviet capital, in the south-western district, where the new edifice of Moscow University rises majestically on the Lenin Hills.

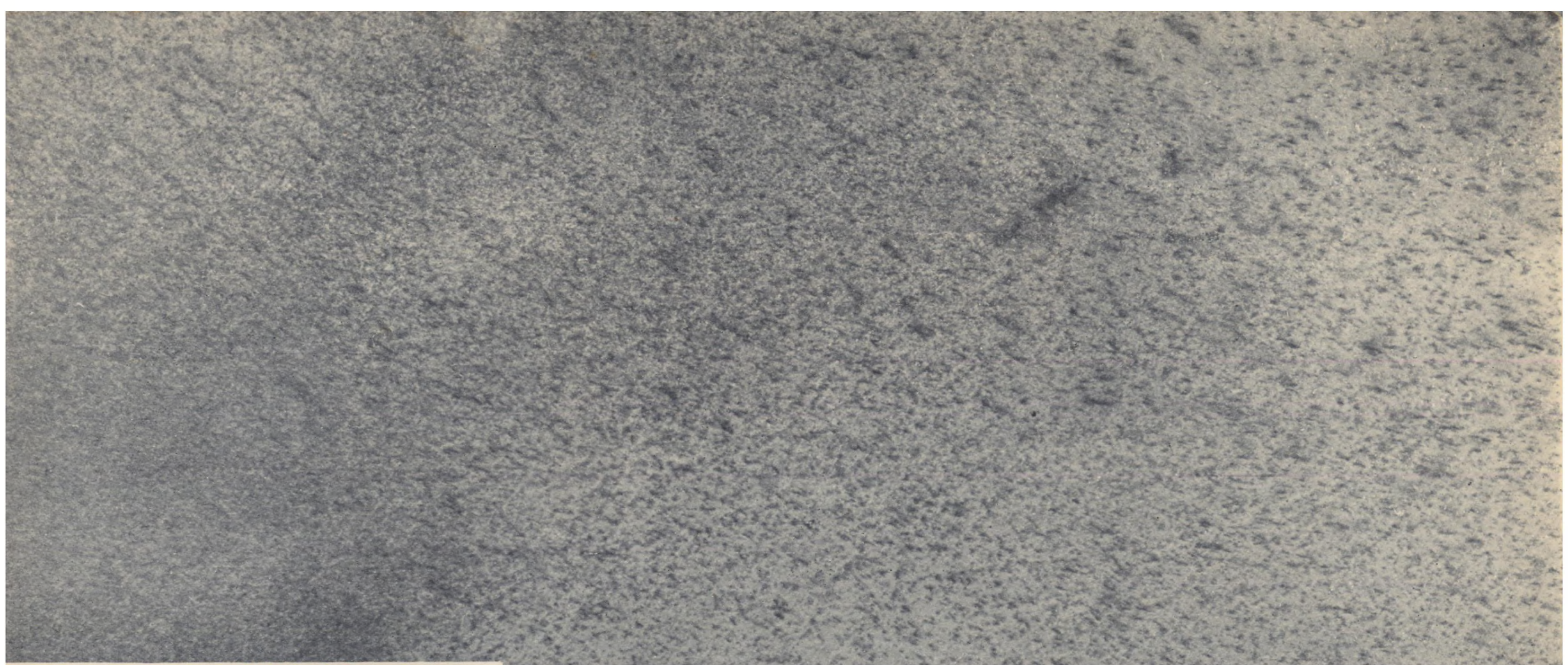
The site of Voropayev's endeavours was not all that changed with the passage of time. There is no comparing the modest house for the workers of the Frunze Factory which Ivan Voropayev helped to build when he first came to work twenty-five years ago with the 14-storey beauty of 700 apartments in University Street where he is now working. The fitter's and plumber's job, too, is not as simple as it used to be. Today, the fitter and plumber have to be real craftsmen in modern housing installations, and Voropayev's team are just that.

You can just imagine how many apartments Voropayev and his workmates helped to build if this year alone something like 200,000 Muscovites are moving into new houses.

Walking along the verdant boulevards of the south-western district we talked about the building trades and about the joy of construction, difficulties notwithstanding. Modest to the point of shyness, Voropayev spoke most of all in terms of "we", meaning not only his team but all building workers in general. And when I asked him what was the secret of his outstanding achievements he promptly replied:

"We aren't the only team that's doing its best. Recently I moved into a new apartment not far from here, on the Borovskoye Highway. I don't know who built it but you can take my word for it that it is a better job than we ever did. The secret is that we are building for ourselves, for the people."

A. Okhrimenko



WINGED HUNGER

Frontier guards spot them first and radio the Ministry of Agriculture. The story of the fight against "Winged Hunger" is told on the following pages



Every blade of grass
is devoured

Camera Report by Yuri Korolyov

It happened in May last year. The frontier guards were the first to sound the alarm. Creeping along ravines and up steep slopes, swimming across rivers, swooping through the air, the enemy invaded the territory of the Soviet Union and in a short time occupied 210,000 acres. Ordinary weapons at the disposal of the frontier troops were helpless against these invading hordes. The only thing to do was to send out warnings of the approaching danger and soon radio messages from the frontier posts were pouring into Ashkhabad, the capital of the Turkmen Republic.

Special units armed with modern apparatuses and powerful chemical weapons were sent into the areas captured by the enemy. The advance was halted but it was too late to prevent the enemy from digging in. The battle to destroy the locusts could be renewed only the following spring...

Before flying out to the affected areas we visited the central quarantine and plant protection department of the Ministry of Agriculture. This is what Y. N. Ivanov, a leading Soviet entomologist and assistant chief of the department, told us about the locust:

"Of all the numerous pests that attack farm crops the locust, which is well known for its ravenous appetite, is probably the most dangerous. In one day, remember, a locust eats two or three times its own weight of green stuff.

"Nearly 500 types of locust can be found in the Soviet Union, the most harmful being the Moroccan and Asiatic species, which sometimes fly into the Soviet Union from the south.

"In pre-revolutionary Russia the Moroccan locust bred freely on the soil of Central Asia and the Transcaucasus. Hordes of these locusts swarmed over the country, destroying crops, pastures, and tree foliage. These locust plagues left whole districts without an ear of grain.

"In its active phase, the Moroccan locust gathers in dense swarms and sometimes marches or flies considerable distances. In its two months of life every female deposits 3-5 egg-pods, each of which contains approximately 40 eggs. If it is not destroyed in time the Moroccan locust multiplies enormously the following year.

"The fight against the locust in the Soviet Union has been put on a sound scientific and technical basis. Research institutes studying plant protection have worked out effective methods of destroying the pest. Industry produces the necessary chemicals in tens of thousands of tons. There are powerful land and aerial apparatuses that are now used to deal quickly with large tracts of country. Permanent anti-locust expeditions and units are stationed in regions where mass breeding of locusts is likely to occur.

"As long experience in fighting this dangerous pest has shown, mass breeding of Moroccan locusts can be prevented only by fighting them simultaneously on the territory of the Soviet Union and of neighbouring countries. The USSR had concluded pacts with its neighbours on the basis of which co-operation in locust control has been carried on for many years."

We spent several days in the steppe and saw the advance of the "Winged Hunger", as the locusts used to be called of old in the East. Out of every egg-pod deposited in the earth in the previous year dozens of insects appeared. This brownish grey mass swept on and on tirelessly. Where the locust had passed, the steppe was left absolutely bare, as though it had been burned. Luckily only the pastures suffered. The locusts never got as far as the flowering orchards and cotton fields.

The fight was waged over wide expanses. Day and night messages came in to headquarters with news of fresh breeding grounds, the direction taken by the locusts, and the density of the swarms, which sometimes grew to 10,000 insects per square yard. Day and night convoys of lorries brought up supplies of insecticides to be sprayed from aircraft, from lorries and tractors equipped with special apparatuses, and even by hand in places transport could not reach. The insecticide known as hexachlorane was unfailingly effective. First the insects crawled about agitatedly, then their movements became feeble, and at length they died. The hills and valleys were covered with a carpet of dead locusts which dried quickly in the hot sun and crunched under one's boots. The wind whipped it up into big dunes.

I wrapped up a handful of the vanquished enemy in a piece of paper to show people in Moscow. But the long journey, first by road, then by train and plane, did its work. When I opened the packet in the editor's office a sprinkle of dust fell out. That was all that was left of the "Winged Hunger".



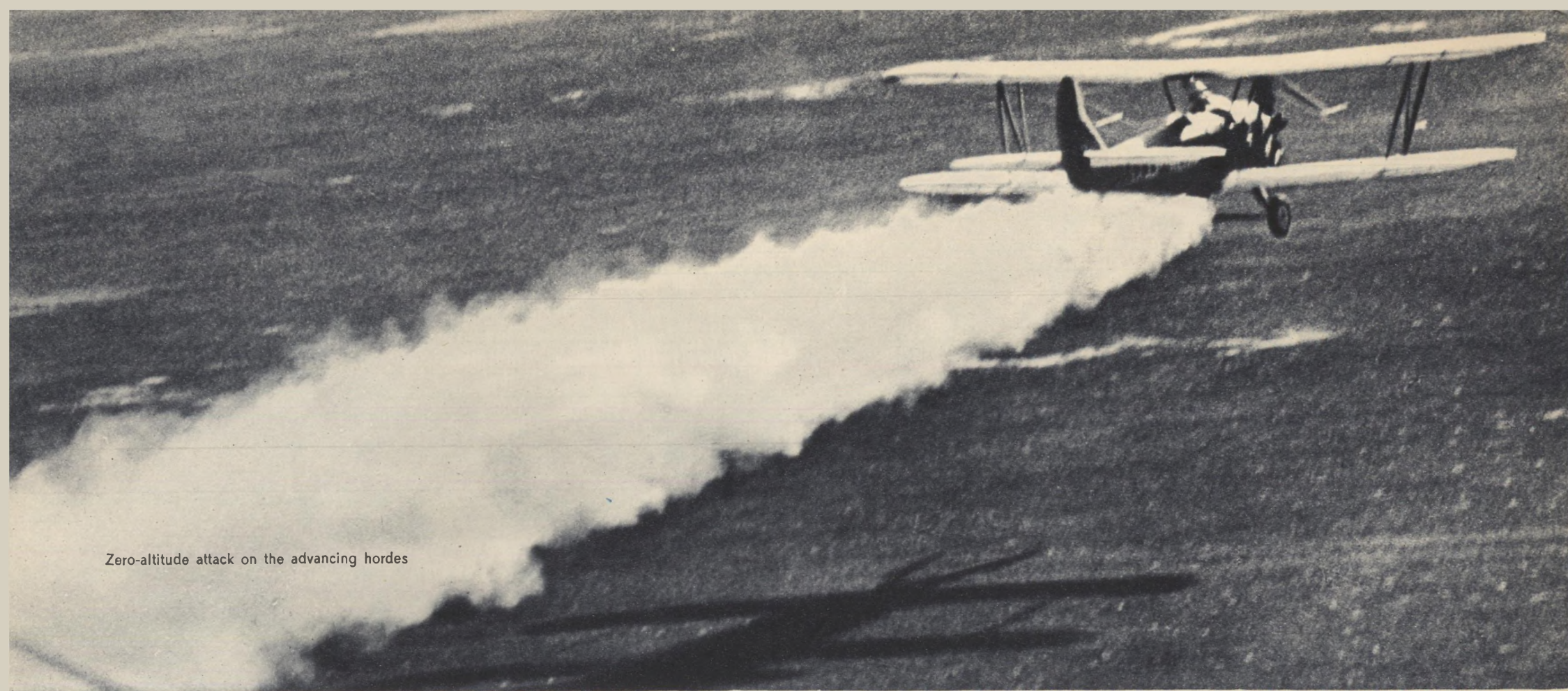
Pilot A. Dvornikov dusting locusts with insecticide



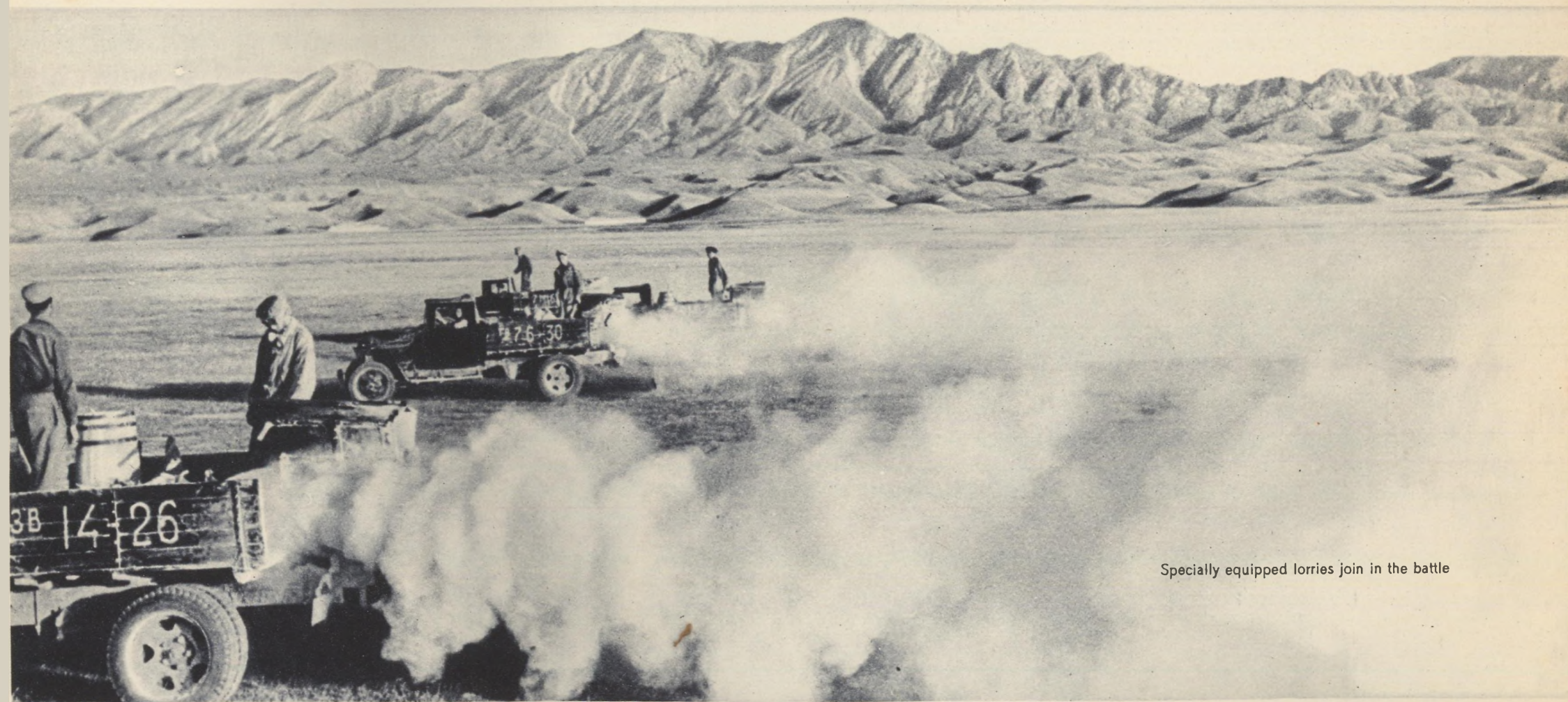
Chemical insecticides are prepared



Loading a sprayer



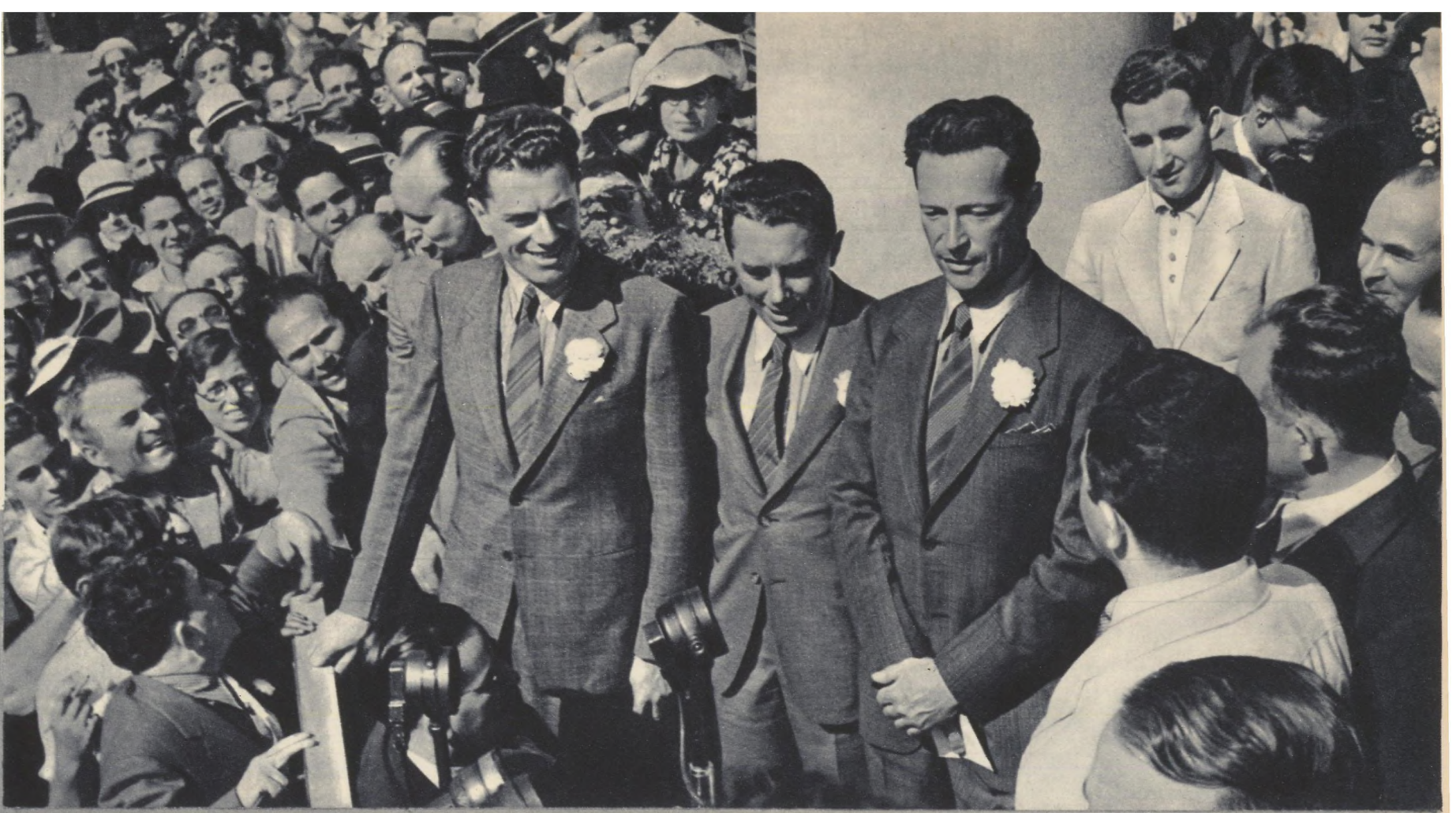
Zero-altitude attack on the advancing hordes



Specially equipped lorries join in the battle



"Apotheosis of war"—locusts killed by insecticide



M. Gromov, commander of ANT-25, A. Yumashev, co-pilot, and S. Danilin, navigator, at a meeting in Los Angeles. On the right—general view of the meeting

ANT-25 before the take-off

MOSCOW



Stamp issued to commemorate the Moscow-Los Angeles flight with portraits of the airmen and map of the route



Photos from M. M. Gromov's album

- LOS ANGELES

The 20th Anniversary of the First Flight Across the North Pole

In June 1937, Valery Chkalov, the distinguished Soviet airman, made the first non-stop flight from Moscow to the USA across the North Pole. Less than a month later, on July 12, 1937, the Soviet air aces, Gromov, Yumashev, and Danilin, repeated the performance. Sixty-two hours seventeen minutes after taking off they landed near the town of San Jacinto between Los Angeles and San Diego. The red-winged ANT-25 flew 7,140 miles non-stop. Newspapers all over the world followed this flight.

July 13

"If Gromov reaches San Francisco he will have broken the world's long-distance record of 5,675 miles established by the French airmen Codos and Rossi in 1933." ("Manchester Guardian")

July 14

Telegram from the President of the USA to Mikhail Gromov: "I have been greatly pleased to learn that you and your companions have safely completed your flight from Moscow to California, establishing a new world record. Your achievement has aroused great admiration, and I wish to express my heartiest congratulations. Roosevelt."

"From the pole the airmen had decided to follow the 120th meridian of longitude. Gromov and his companions made no mis-

take, and (like good orthodox Communists) they deviated neither to the left nor the right of the line." ("News Chronicle")

The "Evening Standard" on that same day said that the greater part of the journey lay over territory on which a forced landing would have meant death.

July 15

"The Soviet airmen have, in the shortest time, covered the greatest distance ever flown by aircraft... American experts regard this flight as an achievement." ("Neues Wiener Journal")

"Good morning, Messrs. Gromov, Yumashev and Danilin! The 'Daily Express' hasn't an editorial hat, but if it had we would take it off to you." ("Daily Express")

"The Russian flight from Moscow over the Pole to California takes away the breath..."

"A record once held by Great Britain and since 1933 by France thus passes to Russia..." ("News Chronicle")

July 16

"If the Soviet Union has other men like Gromov and we are sure that it has, then those who are planning war would do well to re-examine their war plans." ("Právo Lidu", Czechoslovakia.)

S. Danilin, M. Gromov, and A. Yumashev (taken in 1957)



The three heroes were presented with diplomas making them honorary citizens of Los Angeles



NEWCOMERS TO THE FOREST

By I. TOLOKONNIKOV

There was a rustle in the thicket and the graceful head of a deer appeared suddenly above the bushes. Ears cocked warily, he stood for a few seconds, then stepped calmly and unhurriedly across the clearing to be followed a few moments later by a nervous little herd of does.

"That's Buyan," the warden of the Gzhel hunting reserve, who was showing me round his domains, whispered. "It'll soon be a month since we let the deer out to roam freely here but they still come back to the pen to try their favourite feed."

Not long ago white and grey partridges that had previously been kept in enclosures were set free in the forest. Partridges, roe deer, and hares were also released in other reserves of the Moscow Society of Hunters.

In this way the fauna of Moscow Region is being greatly enriched. Large reserves covering an area of nearly 173,000 acres have been set aside in remote tracts of forest land with suitable conditions for nesting, breeding, and rearing. To make sure the newcomers are properly fed, wild rice from the east, water chestnut, Sakhalin buckwheat, and oats are sown. For the elks and deer salt-beds have been made in glades and forest clearings.

Last winter stacks of hay and clover were left in many parts of the reserves, as well as twig food for hoofed animals and hares. Unthreshed sheaves of oats were left standing on the edges of gulleys and near shelter belts where flocks of grey partridges were known to be wintering. In the spring hundreds of "sandbaths" appeared in the nesting places of wood game where the birds could keep themselves in good trim. On the Moscow Sea and other reservoirs with wooded banks and thick rushes artificial nests were set out for the wild duck.

In the past two years a huge number of birds and animals brought from Tuva and the Soviet Far East, from Arkhangelsk Region and other parts of the country have been set at large in the twelve reserves of Moscow Region.

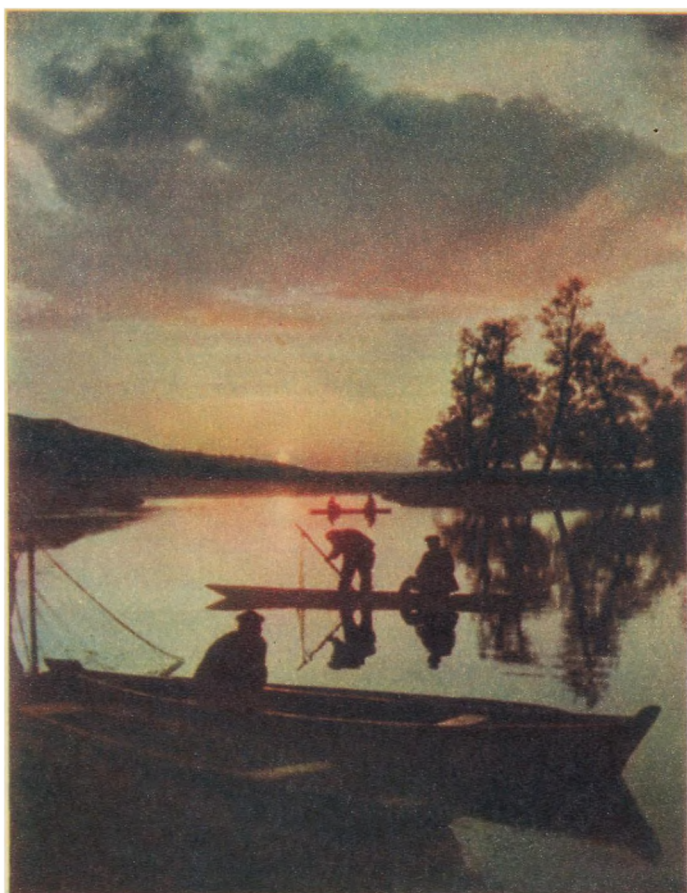
In the next three years it is planned to transfer to the hunting society's lands over 24,000 grey and white partridges, woodcock, grouse, spotted deer, roe deer, Ussuri boar, and 20,000 incubator ducklings. This will make quite a difference in the amount of fauna in the region.

Photographed by P. Yarovitsky





Now who, among them, is the most popular lad in the village?



What better fun than to go fishing at the break of day?



Lucky man, Ivan Chebishov, dispatcher at the machine-and-tractor station. He gets the news before everybody else



"Who can think of exams when the lilacs are in bloom!" says Ivan Nikulin, teacher and student

THE LADS OF OUR VILLAGE

By Olga KRETOVA

Photographed by S. Kropivnitsky

On the right bank of the Bityug, Voronezh Region, sprawls the big village of Korshevo.

What a delight to the eye these parts are with their undulating hills dipping down to the river over rock and boulder or gently sloping to the water's edge and away on the left bank there are water meadows, leafy woods, and pine-dotted sand dunes.

What can be more enchanting than to stand at the old weir of an early morning when the dark silhouettes of the willows stand out in bold relief against the rose-tinted sky and watch the sun as it rises in a flaming ball over the distant hills, its ruddy glow reflected in the water, so that the boys fishing in the river seem to be catching the sun instead of fish in their net.

At one time the greater part of the adjacent lands belonged to the court noble Count Orlov. Forty years ago it became the property of the people, the rightful owners, the tillers of the soil.

If, forty years ago, you had happened to ask any one of Korshevo's oldtimers, "What is your occupation?" he would, as likely as not, have looked at you with incomprehension not knowing what the strange word meant and then catching on to its meaning would have replied "peasant". The present young men of Korshevo are also peasants, for that matter, but when it comes to the ques-

tion of their occupation the reply is quite different: tractor driver, agronomist, mechanic, gardener, combine operator, truck driver, teacher, and even concrete layer. And as for Ivan Nesterov we are jestingly informed that he is the "chief water carrier".

That every factory has its chief engineer, every machine-and-tractor station its chief agronomist and every office its chief book-keeper is no news, but it certainly was something new to hear of a "chief" water carrier. Little wonder we wanted to make his acquaintance. With this in view we directed our steps to the new building of the collective-farm club where plaster work was in full swing. "Nesterov? He's just been here with water and is now most probably in the orchard." We made for the orchard and seeking out the watchman asked him where we could find Nesterov. "Ivan? He only just finished watering the trees and dashed off to the construction site of the power station."

So off we went in that direction but again we were too late. This time we were advised to look for the "chief water carrier" at the construction site of the poultry farm.

Just then from a bend in the road a tank truck shot into sight, and sitting atop it a young man. It was the elusive Nesterov.

We introduced ourselves and got to talking. Among other things we learned that in the winter Ivan Nesterov worked as a fitter

(Continued on page 17)

The day's work over, Victor Shcherbakov, tractor driver, and Raisa Chernisheva, milkmaid, are enjoying a motor-cycle run



Getting the collective farm's fleet of cars ready for "action"





Like his mother and father, Nikolai Shcherbakov is a first-rate tractor driver



Dmitry Trineyev, "captain of a steppe liner", will soon be moving into a cosy "harbour". And many is the girl who stops to look at the new house of the combine operator



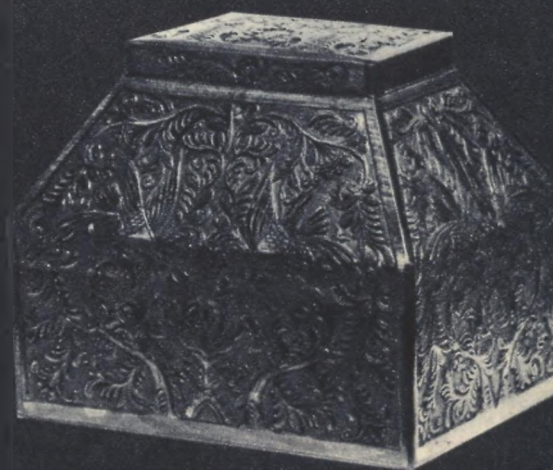
The day is drawing to a close. (1) Alexander Mezhev, an agronomist, looks pleased with the quality of the maize (2) Dmitry Nikulin, accountant, demonstrates his skill as a dancer (3) These lads are again showing their mettle, this time on the volleyball court (4) Ivan Chebotaryov, assistant mechanic, quickly finds the break in the cable way of the pig farm



WOOD CARVING

For centuries past the craftsmen of the villages of Abramtsevo and Kudrino near Moscow have been famous for their workmanship in wood carving. The make-up kits, decorative dishes, small wall cupboards, and caskets fashioned by them are remarkable for the beauty of design, the effective play of light and shade, the superb interlacing of carving with the smooth, polished surface of the wood. Shown here is the workmanship of M. V. Artyemyev and V. V. Vernoskov, the son of a veteran craftsman and creator of the present Kudrino style of carving

Photographed by Y. Bagryansky and V. Kivrin



in the collective-farm garage, that he had finished a course for drivers, that he is keen on sports—wrestling, boxing, and skiing. The skiing team organized by him took first place at the regional contests.

"It seems that Nesterov is the most popular lad in the village," we remarked to the chairman of the collective farm, Mikhail Vasilyevich Kartashov. He smiled, saying:

"What does 'most popular' mean today?"

The word "today" set us thinking. Indeed: the most popular in what, and from whose point of view?

In the old days the most popular lad in the Russian village was invariably the accordion player. He was also invariably the sole musician, there being only one accordion in the whole village if not in several of them. The accordion was the centre of attraction and its lucky owner the idol of the girls and the envy of the rest of the lads.

But with the passage of time the machine age came to the countryside, the tractor making the first inroads. The accordion player now had a rival, a smudge-faced and dust-coated rival, true, but for all that he symbolized the future.

The sceptics held that the drone of the motor would drown out the notes of the accordion and the warble of the skylark. But the village girls thought otherwise.

In the meantime, the first lorry driver made his appearance in Korshevo. Before long there were two of them, then three, then five, then ten... Today the collective-farm garage boasts nearly two dozen motor vehicles and of course as many, if not more, drivers.

Korshevo's first teacher was a village lad. Today, of the thirty-two teachers in its school, fifteen come from the village. Former pupils of the same school, they received a higher education and then returned to take up teaching in their native Korshevo.

But to get back to the subject. Who, after all, is the most popular lad in the village?

Is it Ivan Chebichov, dispatcher at the machine-and-tractor station, who is taking a correspondence course at the Forestry Institute? It is no small thing to be in radio contact with all the tractor teams, to be the first to know what is taking place in the fields.

But then again, in the event of a technical breakdown it is Vasily Ovsyannikov, the mechanic, who is the one to render "first aid" to the tractor drivers. Notified by the dispatcher he immediately dashes off to the team with his mobile repair shop. But Vasily is dreaming of another work-shop where after laying down the spanner he can take up the brush and palette. Painting is his second passion.

And what about Ivan Chebotaryov, the assistant mechanic who is in charge of the fodder combine, the automatic cattle troughs and the cable ways for distributing fodder at the cattle-breeding farms? He is quite a figure in the place and the milkmaids and other of the farm girls are well aware of that.

In our search for the "most popular lad" we spoke with a number of collective farmers who told us many an interesting thing about their farm.

"With such lads about nothing is impos-

sible," was the comment of one and all. "The government has called upon us to catch up with America in per capita output of meat, milk, and butter. Can we manage that within the next few years? We think we can. As Comrade Khrushchov has pointed out, to achieve that we need to produce 6.7 metric tons of meat in live weight and 14.1 metric tons of milk per hundred hectares of farmland (1 hectare=2.47 acres). As far as butter is concerned we're not far behind even now."

The collective farmers had discussed the matter thoroughly and had arrived at the conclusion that there was every possibility of advancing even further. They considered the figure "10.0 metric tons of meat per 100 hectares of farmland" quite feasible for the coming year. As for the milk yield it couldn't be better: the collective farmers plan within the year to cap the target figure of 40.0 metric tons per 100 hectares of farmland.

Of course it was anything but smooth sailing at first. There was a time when the collective farm had its difficulties, especially with fodder. The cultivation of maize helped to remedy matters. At present, over 3,700 acres have been planted to this crop.

Our reader is most probably beginning to grow restless: figures and again figures. And still we don't know who is the most popular lad in Korshevo.

True enough. But the collective farm's achievements have, in no small measure, been made possible by those very lads and we might therefore conclude that they are all the most popular in the village.

Still, who is the most popular in other things? Perhaps Korshevo has only one accordion player, the idol of the girls, the centre of attraction of the entire village youth?

In place of an answer we were advised to visit the tractor team of Ivan Ryabinin out in the field.

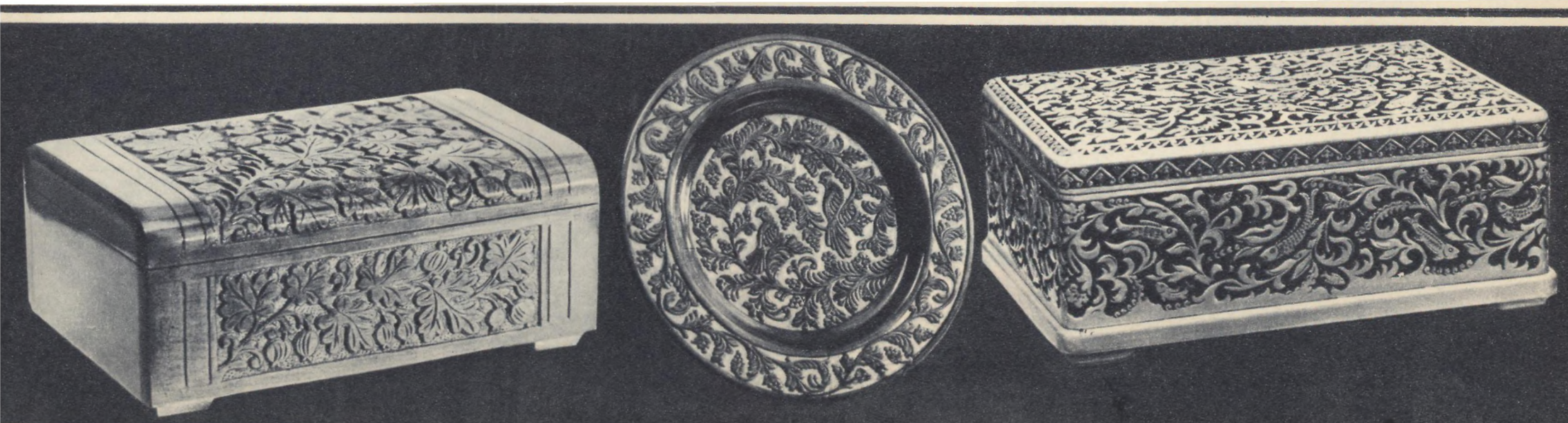
We arrived toward sunset. The tractor drivers had just finished their supper and were gathering in front of their camp. The team, we were informed, had seven tractors, eleven accordions, and a repertoire to suit everybody's taste. Alexei Zenkov, a curly-headed, dark-browed tractor driver, who bubbled over with merriment, was quite a virtuoso with the accordion. But alas, at the recent regional youth festival where a combined collective-farm ensemble of 60 accordion players performed, none of the tractor drivers in his team were among them. And, Zenkov is now assiduously working to improve his technique.

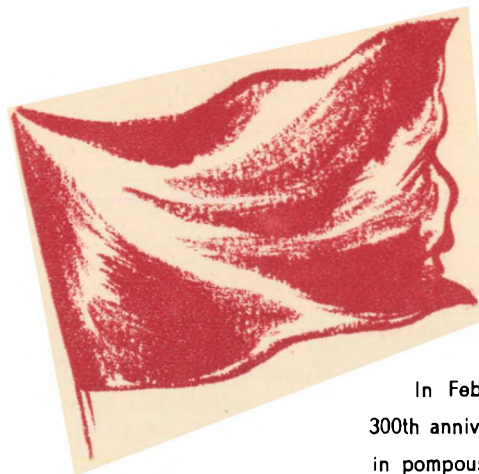
If we are to take sport or amateur art as our criterion we find ourselves in a similar predicament. Last winter Ivan Nesterov carried off the first prize in the skiing contests; in the spring Nikolai Morozov won the championship in the discus event at the regional festival. Only yesterday, the concrete layer Vasily Kuchin was named the best dancer around here in the village, but today the laurels went to Dmitry Nikulin, the farm's accountant.

Well, we just don't know who after all is the most popular lad in the village. We'll have to ask the girls.



Perhaps this is the most popular lad in the village?





JULY

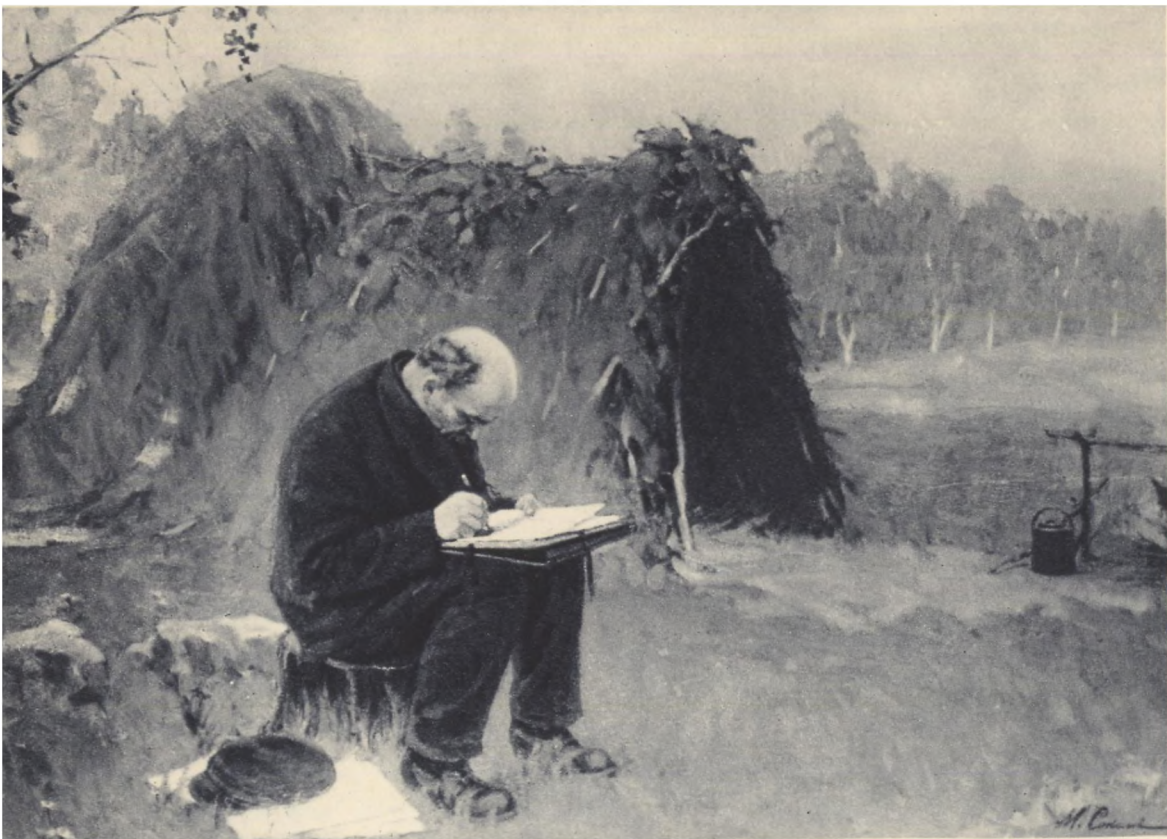
In February 1913 Russia's ruling classes celebrated the 300th anniversary of the house of Romanov. There was no lack in pompous speeches about the "stability" of the tsarist system. Yet four years later the autocracy in Russia was overthrown.

But power fell into the hands of the bourgeoisie, which formed a Provisional Government. It did not, and could not, meet the popular demand for freedom, peace, and bread.

That is why Russia entered a new phase in the revolution, which brought victory to the forces of socialism, alone capable of leading the country out of ruin and starvation, out of the costly war, capable of establishing a truly democratic system and winning genuine freedom for the people.

It was the Communist Party that headed the struggle for the transition from the bourgeois-democratic revolution to a socialist revolution. Lenin and the Party thought that in the course of events the masses would oust the bourgeoisie by peaceful means and put power into the hands of the Soviets born of the revolution.

On July 1 more than 400,000 Petrograd workers and soldiers held a demonstration at the graves of the martyrs of the revolution. The bourgeois parties, and the Socialist-Revolutionaries and Mensheviks who adjoined them, expected it to approve the imperialist policy of the Provisional Government. But the overwhelming majority supported the Bolshevik slogans, "All Power to the Soviets!", "Down with the War!", "Down



Late in July 1917 Lenin had to leave Petrograd, where he was being hunted high and low by the sleuths of the Provisional Government. He took refuge in a shanty near Razliv Station. "V. I. Lenin in Razliv" is the title of a painting by N. Sokolov

Mass demonstration in Petrograd on July 1, 1917



1917

with the Capitalist Ministers!" and "We Want Workers' Control over Production and Distribution!"

The anything but pro-Bolshevik "New Life" admitted that "the Sunday demonstration was evidence of a genuine 'Bolshevik' triumph among the Petrograd proletariat and garrison."

The bourgeoisie had no inkling of another major defeat in store for it. On the same day, July 1, the Provisional Government ordered a Russian offensive at the front. The Government's idea was simple. In the event of a victory it meant to stamp out revolutionary tendencies in the army and turn it against the impending revolution. But the offensive failed. The hopes of the reactionaries were dashed. Popular opposition to the Provisional Government grew by the hour. Numerous lesser demonstrations merged into a general manifestation that threatened to sweep away the hated government. It was a spontaneous mass movement of workers and soldiers. The Communist Party placed itself at its head and sought to turn it into a peaceful, organized manifestation of the workers' and peasants' will. The Party held that it was too early for an armed uprising. The revolutionary crisis had not yet matured. On July 17 more than half a million workers, soldiers, and Kronstadt sailors went out into the streets. V. I. Lenin addressed them.

The Provisional Government sent counter-revolutionary troops, made up chiefly of cadets and officers, to crush the demonstration. They opened fire on the peaceful people. Shots

rang out in various ends of the city. Machine-guns fired upon the defenceless crowd from windows and roofs. Nearly 400 workers and soldiers were killed.

The counter-revolutionaries wrecked the offices of the "Pravda" editorial offices and the "Trud" printing plant, which put out Bolshevik publications. The Provisional Government enforced martial law in Petrograd and issued a warrant for Lenin's arrest. Lenin had to go into hiding. There were wholesale arrests, pogroms, and searches. The bourgeoisie launched a regular war against the people.

After the July events power passed fully to the Provisional Government, while the Soviets, in which the Socialist-Revolutionaries and Mensheviks held sway, became its appendage. The popular movement which culminated in the July 17 demonstration was described by Lenin as "a last attempt to induce the Soviets to take power by means of manifestations".

A new period began in the history of the Russian revolution—a period of clashes and explosions, a period in which the proletariat prepared for the armed uprising.

The bourgeoisie had done their utmost to retain power. Yet a people unwilling to live in the old way is invincible. This was discovered by the Russian bourgeoisie, whose rule the working class and the poor peasantry, supported by the soldiers and sailors, overthrew before long.

We shall tell in subsequent issues how this came about.



Demonstrators in Nevsky Prospekt in Petrograd on July 1, 1917



July 1917. Russian and Austrian soldiers fraternize in the front-lines

Mass meeting organized by the Bolsheviks in Moscow on July 1, 1917



The bourgeois Provisional Government ordered its troops to open fire on the July demonstration in Petrograd

After the July events the Red Guards went underground but kept their arms. In August they rose to defend Petrograd against the White Guard troops of General Kornilov. The picture shows Petrograd Red Guardsmen in training



Briefly

RESTORED TO LIFE



"How are you, old chap? How are you feeling?"

"Fine. I've just started rowing and playing basketball again. . . ."

This was how Ivan Burkov and Andrei Volikov, his doctor, greeted each other when they met at the Military Medical Academy.

At the end of December when bitter frosts brought the temperature down to between 30 and 40 degrees below zero, a man who had been lying frozen in the forest was carried into the clinic. His pupils did not respond to light, his blood pressure did not register, his arms and legs were locked in a half-bent position. The temperature of the body was only just over 72° F. And no wonder, for the man had been lying outside in a forty-degree frost for nearly eighteen hours!

Very few cases are known when it has been possible to save people who had been frozen. Usually it can only be done when the temperature of the body has not fallen lower than 78.7°-82° F. In fighting the cold, the body exhausts itself. It needs oxygen but the lungs cannot breathe, the tissues

need nutritive substances but the blood scarcely moves. Consequently the man dies.

Surgeon Volikov gave the patient an injection that slowed down metabolism in the tissues of the body and thus reduced the organism's need for oxygen and nourishment. The next step was to apply controlled breathing with the help of special apparatus. Only

then did they begin to thaw out the man's frozen limbs. To do this the patient was put in a bath where the temperature of the water was gradually raised from 93° to 100.5° F. In a short time the pulse rate became more or less steady and the blood pressure began to rise; the muscles relaxed and it was possible to straighten the arms and legs.

A long hard struggle to save Burkov's life still lay ahead. Surgeon Volikov remained constantly at the patient's bedside. Only at the end of the second week did Burkov recover consciousness, but even then his speech was not restored. The cortex of the brain remained in a state of inhibition. Syllable by syllable Burkov learned to speak all over again. Then he gradually began to recognize his wife, son, and friends. After a time the doctor allowed his patient to read.

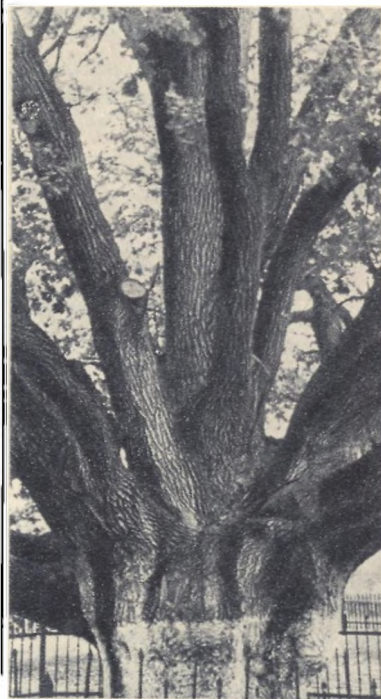
A few months later a medical commission pronounced Burkov to be in perfect health.

Here we see Andrei Volikov and Ivan Burkov (right) greeting each other.

BORN IN THE THIRTEENTH CENTURY

This oak is the same age as Nizhny Novgorod, Berlin, and Warsaw. It is much older than Helsinki, Tokyo, and Calcutta. When Marco Polo began his travels through China and the first debates were being held in the English parliament, the tree was already growing and its thick foliage was rustling in the wind. The Mongol invasion, the Crusades, the Battle on the Ice, all took place during the lifetime of this veteran of the world's flora. For over seven centuries it has spread its mighty branches in the village of Verkhnyaya Khortitsa near the Ukrainian town of Zaporozhye. Now it is under the protection of the state and carefully looked after.

Here we see the "Oak of Zaporozhye". It is 118 feet tall, the circumference of its trunk is 249 inches and its crown is 141 feet in diameter.



HERE AND IN ARGENTINA

In the spring of 1955, when P. M. Zhukovsky, Director of the USSR Plant Breeding Institute, visited Buenos Aires, the Argentina-USSR Cultural Relations Institute arranged for him to meet Argentine botanists and plant breeders. During the meeting, at which the Soviet scientist delivered a lecture, it turned out that there were several problems that interested the plant growers of both countries. The attention of Soviet scientists centred on certain disease-resistant varieties of Argentine potato. Argentine specialists got interested in Soviet wheat. It appears that certain types of Argentine wheat which in the geo-

graphical conditions of the USSR had won Argentina the reputation of being "the land of immunity" suffer in their own country from local fungoid diseases that do not exist in the USSR. The scientists were interested in testing the resistance of Soviet wheat against these diseases and while he was in Buenos Aires P. M. Zhukovsky made an agreement on the subject with José Vallega, Director of the Argentine Institute of Plant Cultivation.

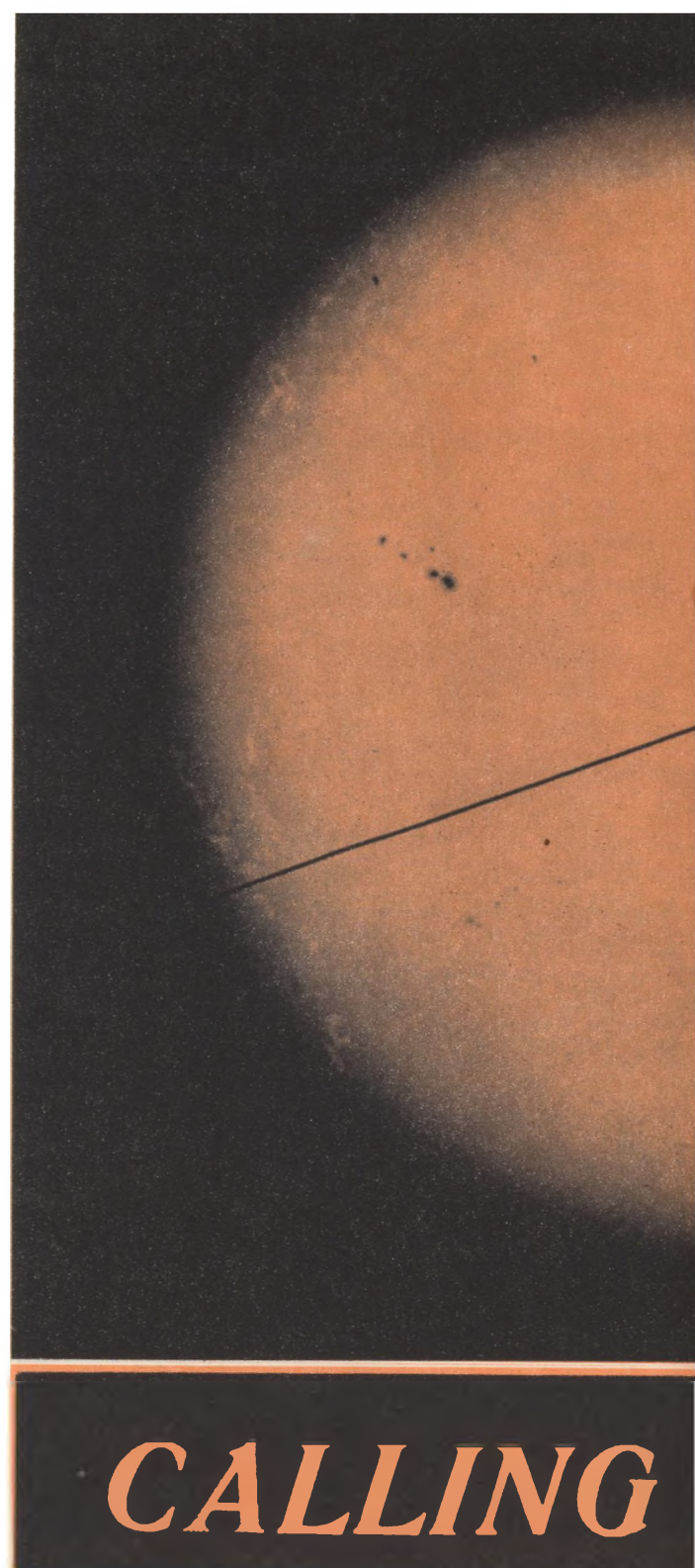
In Buenos Aires the Soviet scientist received a collection of Argentine varieties of potato in return for which he sent his Argentine colleagues over 150 samples of Soviet wheat. Doctor

José Vallega decided to inoculate them with two of the most widespread types of Argentine fungoid diseases—brown and stem rust (*Puccinia triticina* and *Puccinia graminis*). The experiment lasted two years.

Not long ago, a work on the subject written jointly by Doctor Vallega and P. M. Zhukovsky was published in the USSR. It turned out that certain varieties of Soviet wheat are not susceptible to these diseases even in Argentina, while most of the others have no considerable resistance to brown and stem rust.

Co-operation in this field is continuing. P. M. Zhukovsky has received an invitation from the University of Mendoza to make a journey to the Andes. Together with Argentine scientists he will collect wild and cultivated varieties of potato that are immune to disease.

Here we see P. M. Zhukovsky speaking at a gathering of Argentine specialists in botany and plant selection. On his right is Pablo Chanussot, President of the Argentina-USSR Institute.



CALLING

By Alexei RUSSETSKY



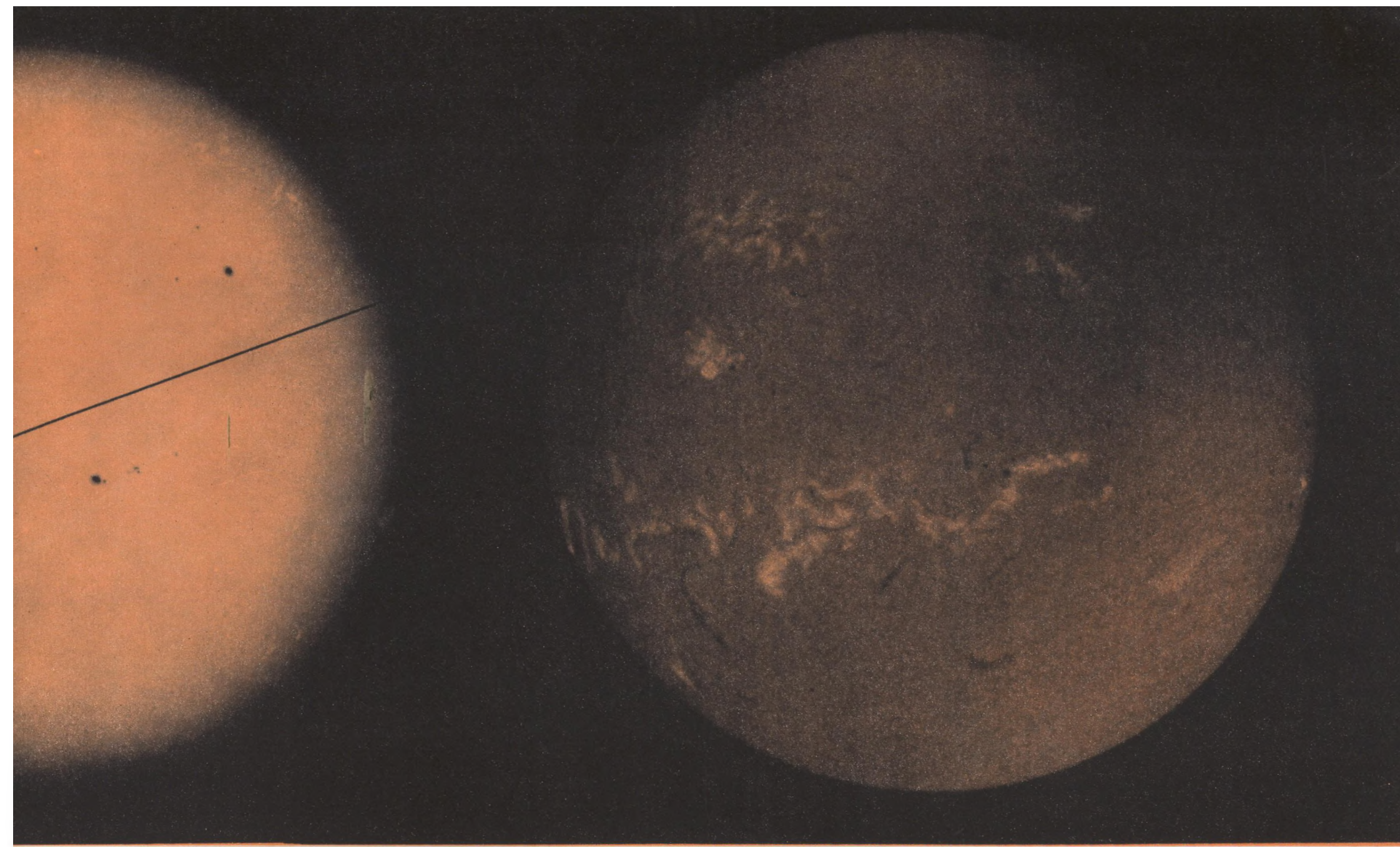
There is a direct link between the lofty and restless passion for knowledge that irresistibly attracts the human mind to the mysteries of the atom or the cosmos and the striving to make knowledge serve mankind in everyday life. This is best illustrated by the example of a rapidly

developing science called the physics of the Earth.

The world weather service is one of its best known branches. Thousands of scouts lie in wait for air currents along all the routes they may possibly take. Every movement of the mighty atmospheric fronts and whirlwinds is recorded several times a day and plotted on a synoptic chart. The weatherman who bonds over the chart seeks to divine the strategy of the elements. Sometimes he has only a few minutes in which to solve a complicated problem. As the "herald of storms", who seeks to forecast the results of the battles between masses of air charged with moisture or scorching frost, he makes wide use of the vast arsenal of physics. That is understandable because everything which occurs in the atmosphere is a purely physical phenomenon.

The weathermen are usually rather successful at short-term forecasts. On the other hand, shipping, aviation, agriculture, and land transport require timely warning of the vagaries of the elements. That is when a knowledge of the laws governing the gigantic "planetary machine" is essential.

Sounding balloons fitted with automatic observation apparatuses are sent into the air. The atmosphere is attacked by shock waves of directed explosions and the reflected "echoes" are detected. Even the brilliant tracks of meteors give scientists data on the winds which rage at tremendous altitudes, and it is at these altitudes that swift jet airliners are already flying.



THE SUN

Separate strata of the solar atmosphere can be photographed with the help of a chromosphero-photospheric telescope. Left: a picture of the Sun's photosphere with a group of sunspots and faculae. The same telescope was used for photographing the chromosphere (right). Here we see light formations—filaments, protuberances, and a chromospheric flash.

Photographed by A. Garankin

The "planetary machine" is not only a thermal apparatus which is activated by the solar "boiler"; it is also a colossal electrical mechanism, while the Earth itself is a huge magnet. Although we don't actually feel magnetism, much in our life depends upon the electrical properties of the atmosphere and the magnetic qualities of the Earth. Is it not important, for instance, to learn to forecast magnetic storms during which the compass needle trembles and flutters and is no longer a sure guide?

The existence of wandering bits of atoms, of charged particles—ions and electrons—is facilitated at great heights, where the atmosphere is extremely rarefied. Because of free charges, these atmospheric layers are good conductors of electricity. That is why, despite their "softness" they can be compared to a metal shield, which reflects radio waves. Long-distance radio communication is based upon the interaction between radio waves and the ionosphere. Sometimes, the radio link is broken. The structure of the ionosphere undergoes mysterious changes and radio reception fades. Today, when radio has become the main hub of communication between continents and when radar must make the airways safe, a knowledge of "radio weather" is as necessary as the receipt of regular meteorological bulletins.

The solution of many problems is bound up with the Sun. From time to time it interferes in the life of the Earth by ejecting streams of fast-moving particles. These eruptions, which hold the observer spellbound, cause breaks in radio communication, the northern and southern lights, and magnetic storms. For these reasons, solar activity is not only the object of man's natural curiosity, it also has a vital effect on his practical interests.

Let us visit one of the numerous scientific establishments which deal with the fascinating problems of the physics of the Earth, the Institute of Terrestrial Magnetism, the Ionosphere and Radio-Wave Distribution.

This Institute is one of the links in the vast collective undertaking which began simultaneously, at a simultaneous international signal, on July 1, 1957, and which will continue until December 31, 1958. In that period, conditionally named a "year", the "planetary machine" and all types of cosmic influences upon it will be studied concurrently in all continents and on all the seven seas. The world's scientists have agreed upon various joint undertakings and the results of their united endeavour promise to be exceedingly fruitful.

Our guide at the Institute, Professor Yury Kalinin, showed us the laboratories and the instruments which will be used during the International Geophysical Year.

The aerial of the radio station follows the Sun like a giant sunflower. It catches the signals that come to the Earth from the Sun ejected by sudden bursts of energy. Since magnetic storms and luminous phenomena occur on the Earth twenty-four hours after substantial solar radiation it is possible for scientists to forecast when they will occur.

With their instruments and apparatuses, scientists are studying the entire gamut of electromagnetic phenomena that connect the Sun, the upper layers of the atmosphere, and the bowels of the Earth. Today, a radio "conversation" with the Sun yields much interesting information.

One of the instruments of the Institute's astronomic laboratory enables scientists to study the sources on the Sun's surface where the ejection of solar gases begins and to investigate the magnetic action which activates this flow.

In the magnetic observatory, there is a constant oscillation of thin rays of light in appliances which register all the changes in the magnetism of the Earth. These observations provide information on the magnetic storms that periodically break out on our planet.

Of equal importance is the measurement of the Earth's constant magnetic field, commonly called a magnetic survey.

This is the basis for magnetic charts used by all air navigators. A comparison of repeated readings made in one and the same spot makes it possible to determine the development of electromagnetic processes in the Earth, particularly in the Earth's nucleus, to a depth of thousands of miles.

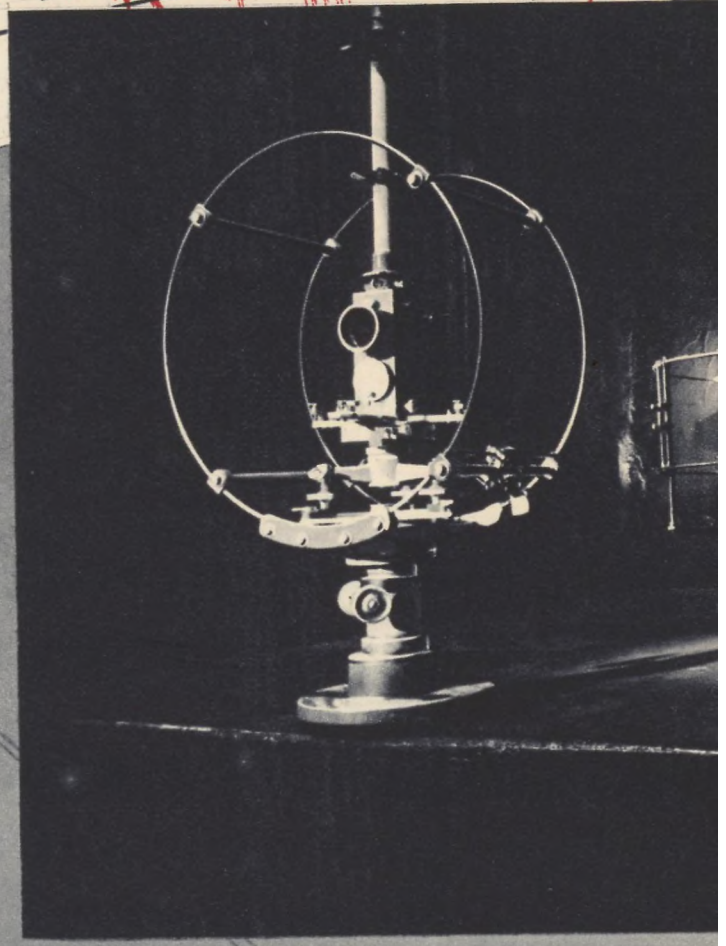
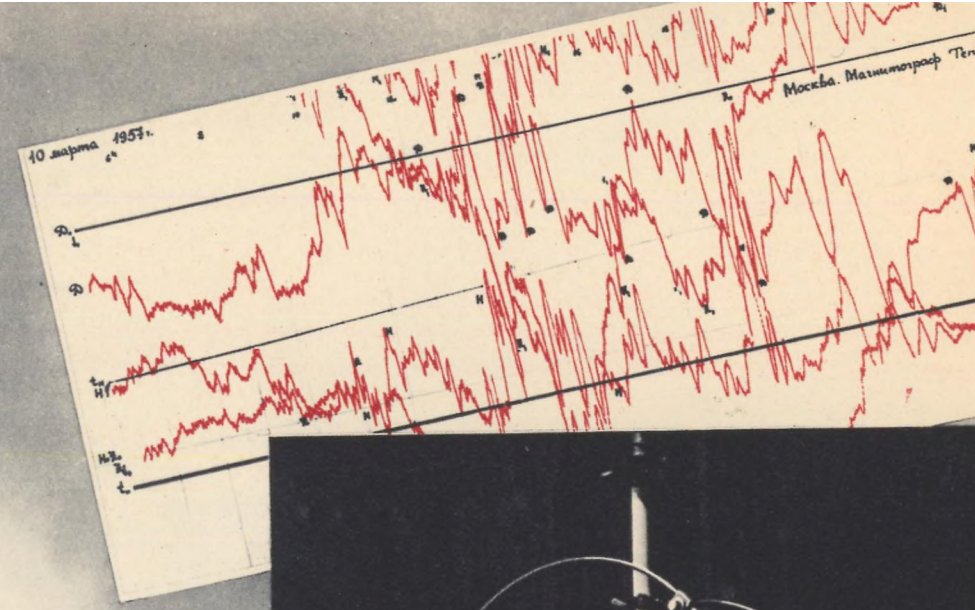
A year ago, the "Zarya", a non-magnetic research schooner, specially constructed for the Institute, made her maiden voyage in the North Atlantic. Exact measurements were made on board the vessel and the Earth's magnetic field was continuously registered throughout the voyage. This time, the "Zarya" will go on a nine months' cruise round Africa. On her way, she will stop at leading magnetic observatories and compare instrument readings.

The Institute has stations which keep the condition of the ionosphere under constant observation. With the help of observation data, scientists determine the best wavelengths for radio communication between countries, cities, vessels at sea, and airliners.

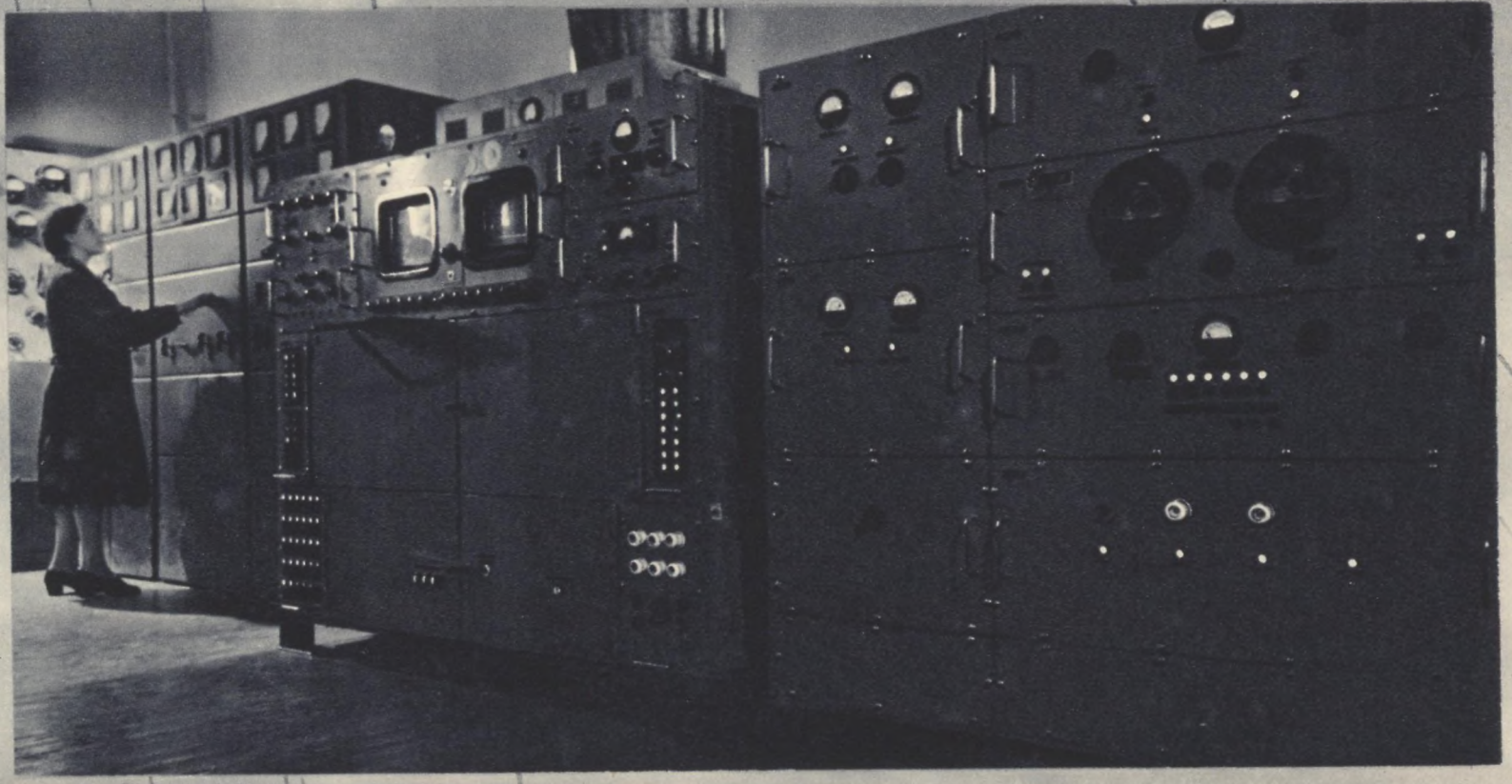
At the Institute, we saw a remarkable apparatus called a storm finder. It reacts to every flash of lightning, even if it is several thousand miles away. Co-ordinated observations from Moscow, Leningrad, Kiev, and Minsk, where such apparatuses are installed, make it possible to locate any detected discharge. This data is used by the meteorological service to check weather forecasts.

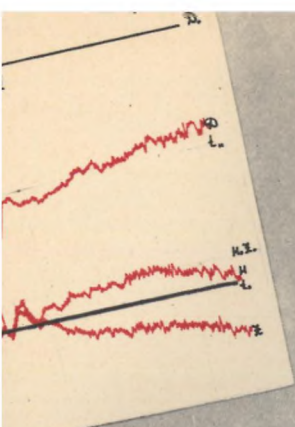
With preparations for the International Geophysical Year in full swing, representatives of the Institute have attended several international scientific conferences, while many foreign scientists have acquainted themselves with the apparatuses designed by the Institute and with the results of its research.

The work of Soviet geophysicists is strengthening friendly relations between the peoples of the Soviet Union and other countries, who are all equally interested in peace and co-operation.



No, this is not the master switchboard of a power system or an electric control panel of a motor vessel. It is part of a powerful radio station that continuously sounds the charged strata of the Earth's atmosphere at altitudes of over 60 miles with directed radio wave impulses. Continuous radio sounding keeps check of the state of the atmospheric strata on which the stability of radio transmissions depends





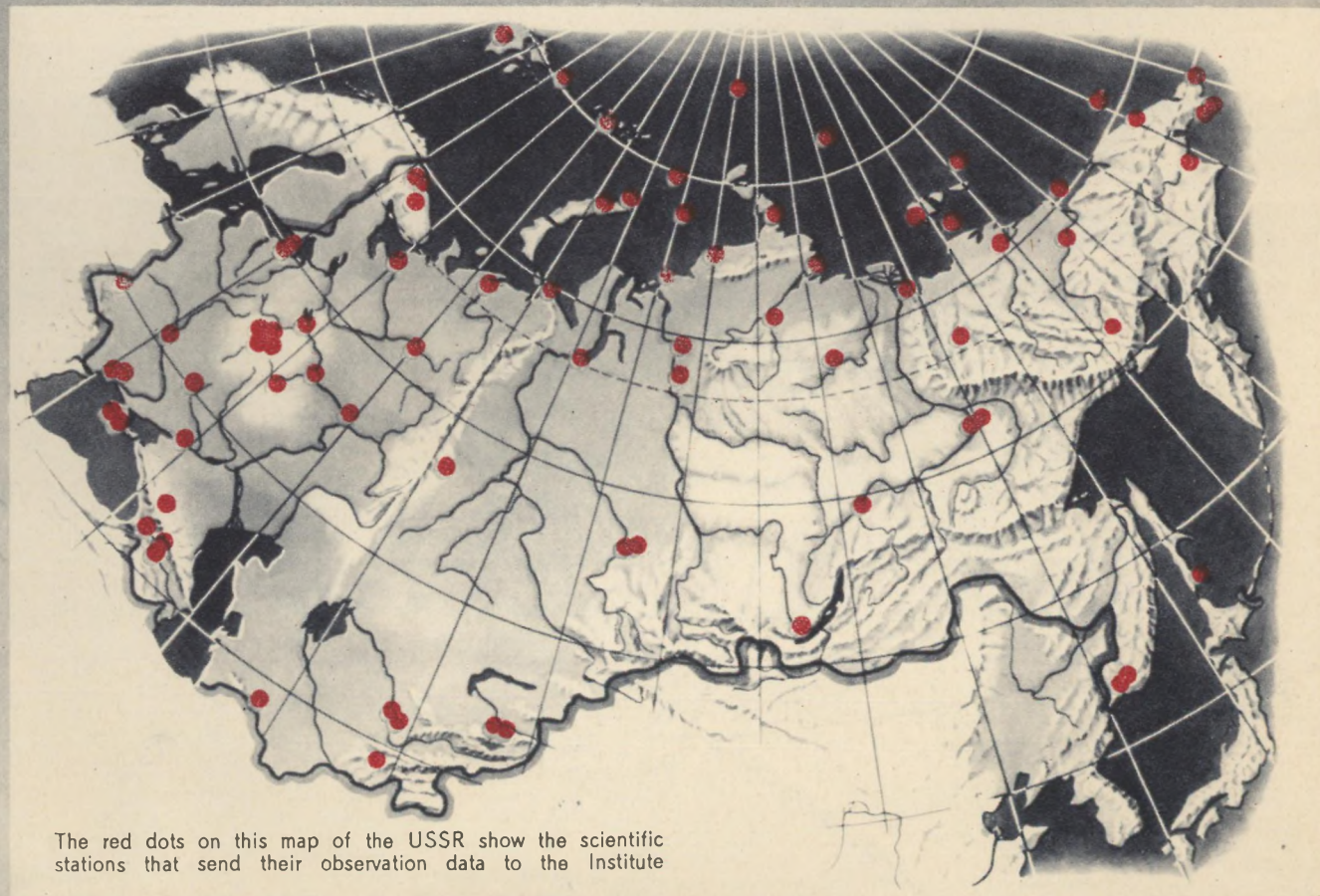
Day and night automatic instruments register the variations of the Earth's magnetic pole. Though the diagram above looks like a temperature chart of a delirious fever patient, it is really a record of a "magnetic fever",—a magnetic storm—that attacked the Earth. The electric currents that arose in the ionosphere at the time can be determined by means of such a record



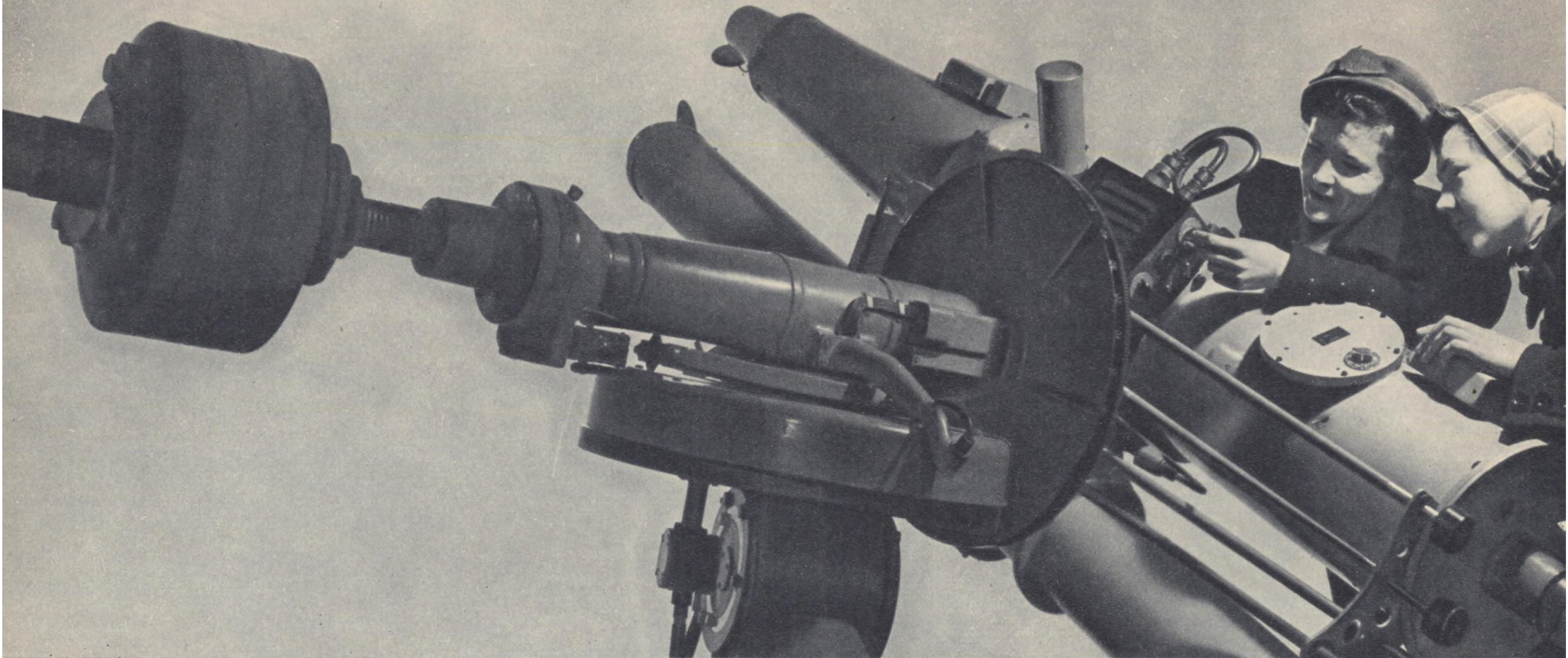
Only three decades ago no more than five persons were engaged in studying cosmic rays, yet today this branch of knowledge has hundreds of enthusiasts. The Institute's young physicists who are delving into the secrets of cosmic rays are like men blindfold. They have to guess, find out, and see in the dark. And they do see cosmic rays, not with their own eyes, of course, but with the eyes of an apparatus called an automatic ionizing chamber. Ludmila Yevtyukhina and Yury Voronin are shown assembling the apparatus



New precise methods of measuring physical magnitudes are being used in the most unexpected quarters. They have penetrated every branch of modern engineering and are now invading navigation. The picture shows V. Novish and O. Gorodnicheva improving an electromagnetic sea current meter. This simple device makes it possible to determine the speed of a current without slowing down a ship

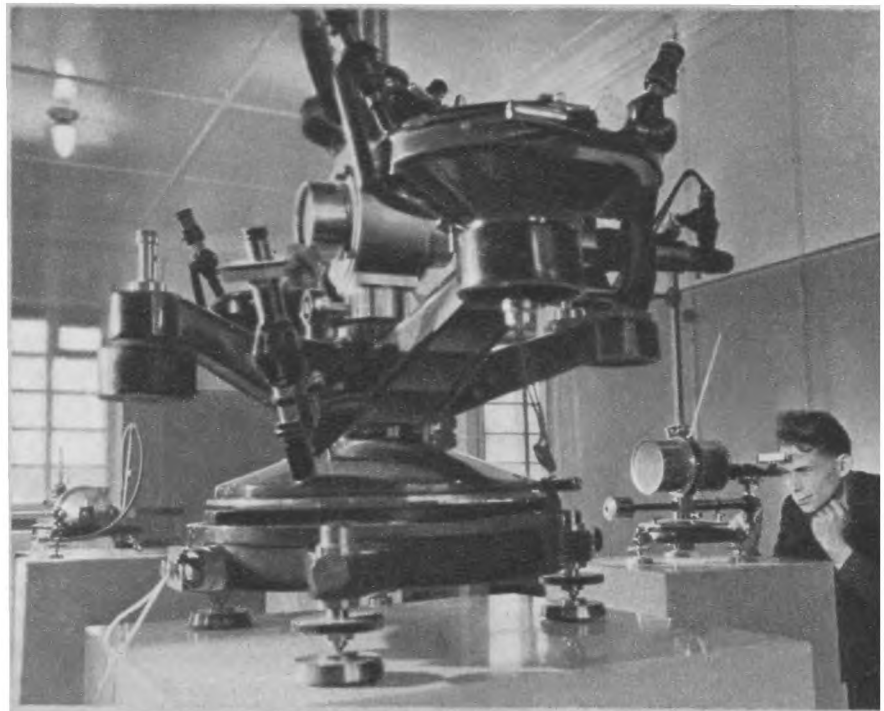
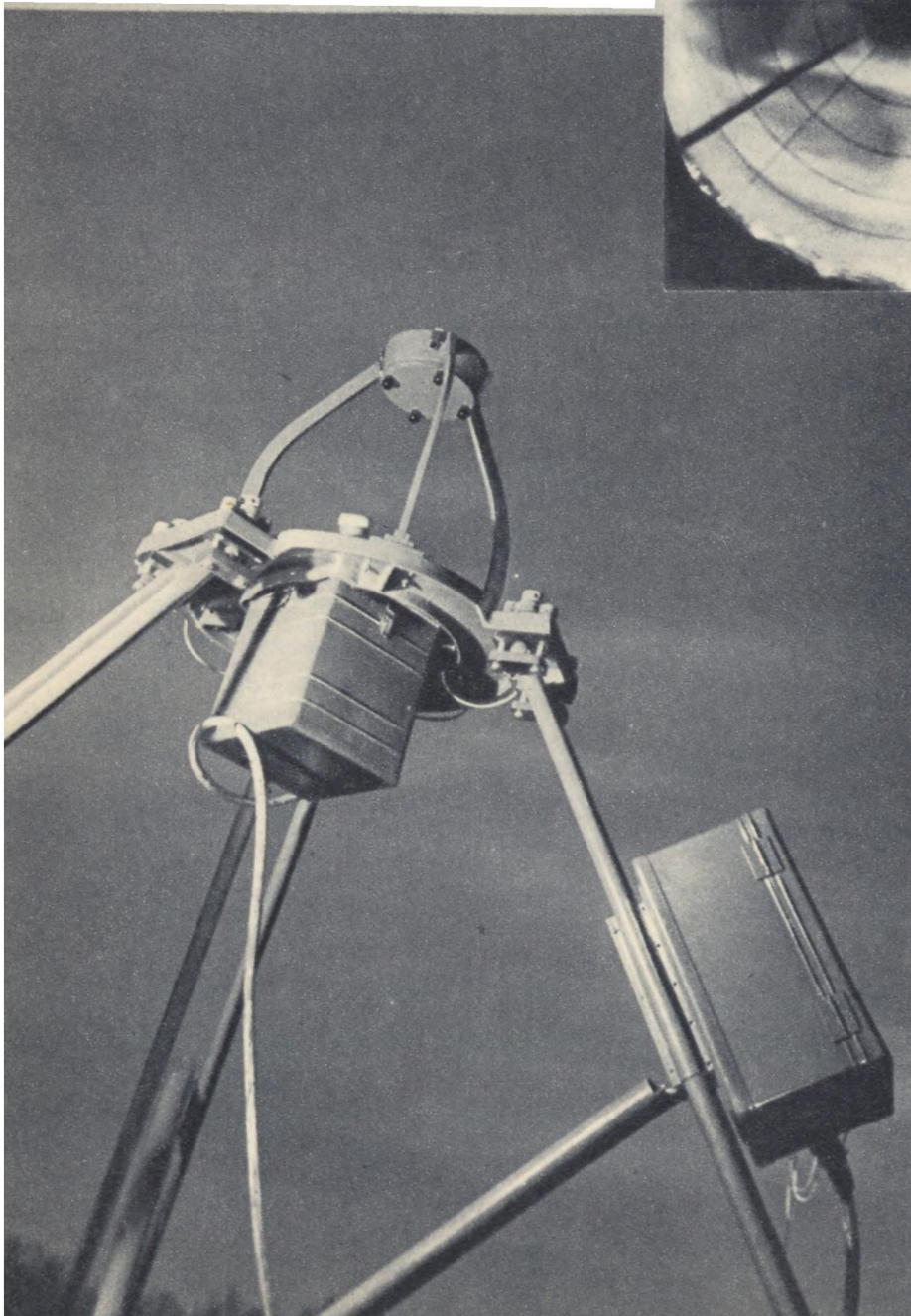
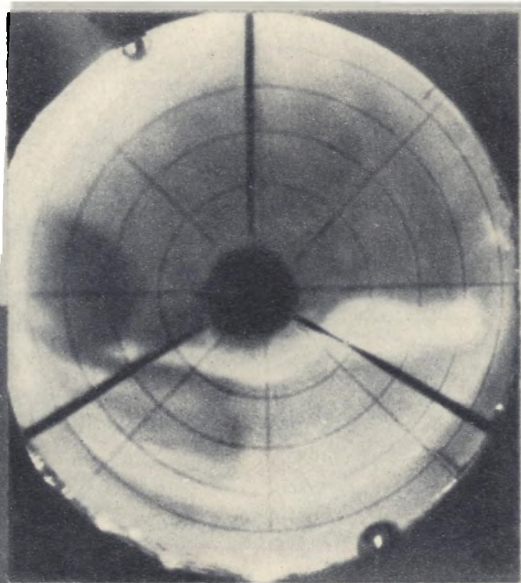


The red dots on this map of the USSR show the scientific stations that send their observation data to the Institute



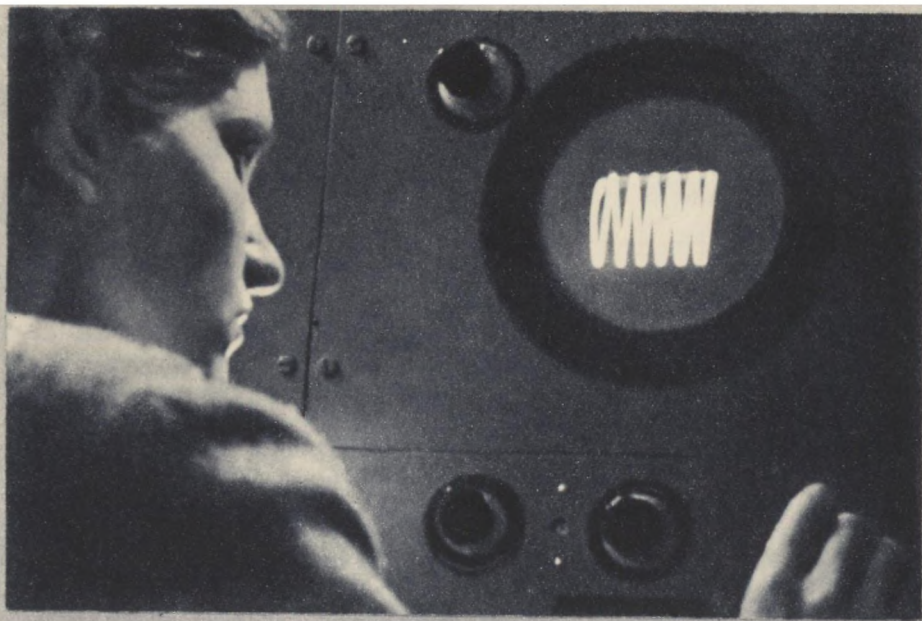
It was a good day with not a speck of cloud in the sky. Y. Kulikova and Z. Romanova of the Laboratory of Optical Methods of Studying the Sun are getting their impressive weapon ready for action. Its barrel is aimed audaciously at the solar disk. You've probably guessed that it is a telescope which helps to photograph the Sun's photosphere and chromosphere

This automatic camera photographs the aurora borealis. Cameras like this have been installed in many places in the Soviet Arctic and at Soviet Antarctic stations. Right: Picture of the aurora borealis taken in Murmansk with an automatic camera



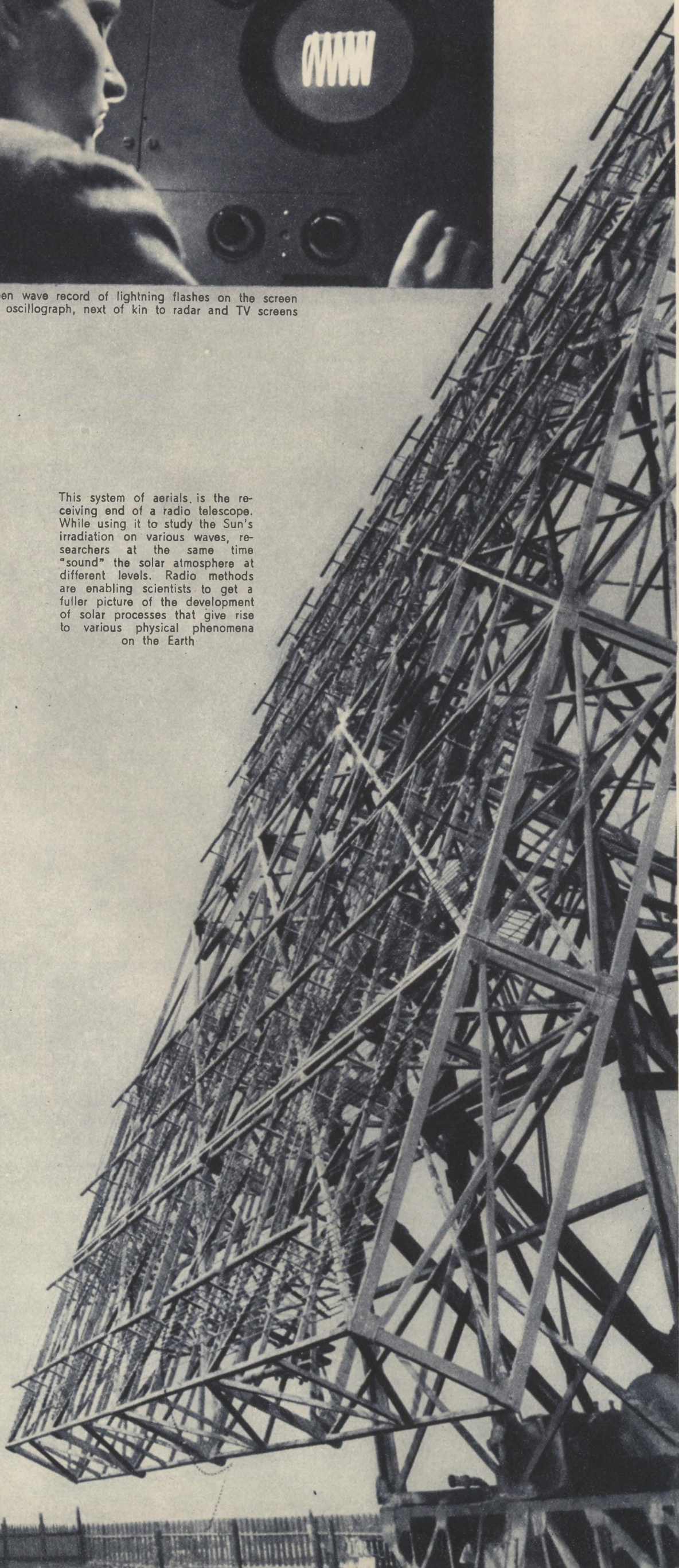
V. N. Bobrov, senior scientific worker at the magnetic observatory, measures the intensity of the Earth's magnetic field on an absolute magnetic theodolite





A green wave record of lightning flashes on the screen of an oscillograph, next of kin to radar and TV screens

This system of aeri-als, is the re-ceiving end of a radio telescope. While using it to study the Sun's irradiation on various waves, re-searchers at the same time "sound" the solar atmosphere at different levels. Radio methods are enabling scientists to get a fuller picture of the development of solar processes that give rise to various physical phenomena on the Earth



NIKOLAI PUSHKOV, Vice-Chairman of the USSR Academy of Science's Committee for the 3rd International Geophysical Year and head of the Research Institute of Terrestrial Magnetism, the Ionosphere, and Radio-Wave Distribution, told our correspondent:

"Scientists of nearly 60 countries have pooled their efforts to fulfil the far-reaching programme of the International Geophysical Year. A huge number of scientific stations all over the world are sharing in the investigations outlined by this programme. The latest machines, including an artificial satellite and rockets, will be used. In the Soviet Union, more than 100 major scientific establishments are joining in the work. Observations are being made by 503 stations and observatories, as well as by hydrometeorostations, survey vessels, and Individual observers.

"Our Institute will be busy with many kinds of observations. We are exchanging geophysical information with research establishments in many foreign countries. The number of scientific institutions wishing to keep in constant touch with us is growing steadily. Recently, Canada and the U.S.A. proposed that we systematically exchange data on the ionosphere. Swedish scientists want to exchange information on terrestrial magnetism and cosmic rays. Such exchanges are helping us to study magnetic storms, ionospheric disturbances, luminous phenomena, bursts of cosmic rays, and other phenomena that simultaneously affect our whole planet or a considerable part of it.

"The International Geophysical Year will not only broaden our knowledge in many spheres of science but will strengthen friendly ties between scholars the world over."



NADEZHDA MEDNIKOVA, senior scientific worker at the Institute, says:

"Last February I was a member of a Soviet delegation that went to Tokyo to attend the Regional Pacific Conference convened in connection with the International Geophysical Year. The scientists of Japan, U.S.S.R., China, U.S.A., Indonesia, the Philippines, Australia, and other countries who will be working in or near the western zone of the Pacific Ocean specified the programme of research and came to an agreement on co-operation, particularly in radio communication during what are known as Special World Intervals. These intervals are proclaimed in all countries when large spots, eruptions and other phenomena that produce magnetic and ionospheric storms and streamers of light at the poles appear on the Sun.

"The plans that have been adopted are already being carried out. One of the practical aims of studying the ionosphere is to improve radio communication between continents and countries. By elucidating the laws by which electrical phenomena change in the ionosphere we hope to help in the fight against disturbances in radio communication even when difficult "radio weather" conditions prevail in the upper strata of the atmosphere."



YURY KALININ, Doctor of Physics and Mathematics, Assistant Director of the Institute, said:

"I attended the International Conference of Scientists in Brussels which worked out the programme of research for the 3rd International Geophysical Year. The very spirit of understanding and co-operation that reigned there as well as the scale of the planned research inspire us with confidence that geophysics will be enriched with new and important discoveries in the near future.

"Personally, as a magnetologist, I am particularly interested in problems of the theory of magnetic storms.

"During the geophysical year, our Institute will be occupied not only with programme observations but also with another very important task. You see, we are one of the four world centres for collecting and spreading scientific data obtained at numerous laboratories and stations.

"I wish success to everybody who has joined us in our work!"

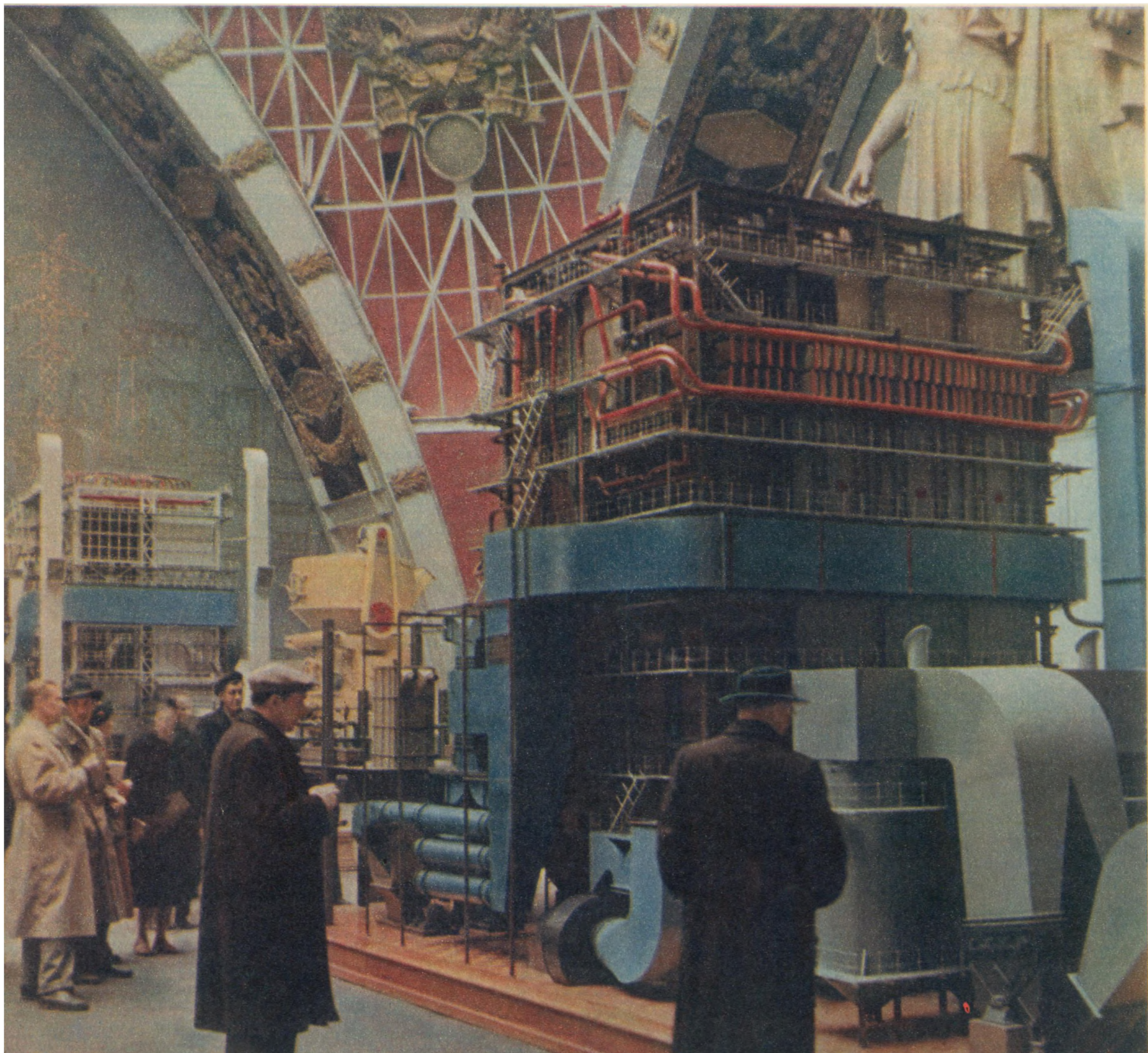




KHRUSHCHOV ON TELEVISION

At an interview given to representatives of the Columbia Broadcasting System of America, N. S. Khrushchov, First Secretary of the Soviet Communist Party, answered many questions on the Soviet Union's home and foreign policy, the international situation, and Soviet-American relations. A television film was made of the interview for audiences in the United States and the Soviet Union

Photographed by A. Garatin



50,000 EXHIBITS

The USSR Industrial Exhibition in Moscow is open again after being closed for the winter. Over forty branches of industry, from mining to confectionary, are represented. The 50,000 exhibits include a new first-class railway carriage, a "Festival" portable radio set weighing less than two pounds, the diagram of a giant synchro-phasotron that recently made technical history by accelerating elementary particles to 10,000 million electron-volts, and the latest thing in ladies' handbags.

There is a specially organized Pavilion of Science where visitors can learn about recent achievements of Soviet scientists that are being applied in industry.

Here we see a model of one of the super-powerful boiler units put out by the Podolsk Boiler Works. Producing 660 tons of steam per hour at a working head of 140 atmospheres and a temperature of 1058° F., the unit will be used for a new 200,000 kilowatt capacity turbine

Photographed by V. Kivrin

A Summer's Day
Photographed by V. Kinelovsky





The "Tashkent" loads grain for Egypt at the port of Novorossiisk
Photographed by E. Shulepov

USSR-ARABIA

TRADE FOR MUTUAL BENEFIT

By V. SPANDARYAN,
Chief of the South-East Asia and Middle East Department
of the Soviet Ministry of Foreign Trade

Commercial representatives of various countries will soon be meeting again at the International Fair in Damascus, hospitable capital of Syria, where a wide variety of machinery and goods will be exhibited.

The Soviet Union, interested as usual in extending mutually advantageous trade relations with all countries, will again take part in this international commercial event.

The Soviet pavilion at the Damascus Fair will cover an area of over 2,400 square yards, and there will be additional exhibits in the open air.

Visitors who attended last year's fair will find an almost entirely new display in the Soviet pavilion, particularly as regards motor vehicles, tractors, metal-cutting and wood-working lathes, pumps, compressors, boring machines, television equipment, electrical apparatus, and textile machinery.

In recent years, trade relations between the USSR and the countries of the Arab East have developed considerably. Our trade with Egypt, Syria, the Lebanon, and the Yemen is conducted on the basis of equal and mutually advantageous agreements, most of which were concluded in post-war years. In the past five years it has increased several times over.

In the first years after the Second World War, Soviet trading organizations put through several important deals with Egypt, undertaking to sell Egypt grain in exchange for cotton and other Egyptian goods. In August 1953, the two countries concluded a clearing payments agreement, and in March 1954 this was followed by a trade agreement based on the most-favoured nation treatment. Both agreements led to a further increase in the volume and variety of deliveries, so that in the last year alone the trade turnover between the two countries increased by 80 per cent. The Soviet Union considerably increased its export of crude oil and oil products, wheat, sawn timber, and various types of machinery to Egypt, while importing cotton and rice in exchange.

The Soviet industrial exhibition held in Cairo at the begin-

ning of the year has aroused lively interest among government, commercial, and social circles in Egypt and there is every reason to expect a considerable increase in the volume of Soviet-Egyptian trade during the current year.

The USSR is making progress in developing trade with the Syrian Republic. In November 1955, we signed a commercial agreement with Syria and did trade on the basis of clearing payments and most-favoured nation treatment. The results speak for themselves. Last year trade between the USSR and Syria increased sevenfold. The Soviet Union exported to the Syrian Republic machinery and equipment, rolled ferrous metals, sawn timber, diesel fuel, and other goods. Syria sent us cotton, hides, and wool. Representatives of the Syrian Eastern Economic Development Corporation, who visited Moscow, concluded a big contract for the purchase of various makes of Soviet cars.

Three years have passed since the Soviet Union signed a trade and payments agreement with the Lebanon. The agreement has brought about an increase in Soviet-Lebanese trade, which in 1956 was ten times higher than in 1954. Trade relations are developing with the Yemen. In accordance with the 1956 agreement we are sending cement, sugar, and various kinds of equipment in exchange for coffee.

Such, in brief, are some aspects of trade between the Soviet Union and the Arab countries. It should be mentioned that it is not the practice of Soviet foreign trade organizations to force the goods on anyone. It is also against our policy to send into a country goods that may compete with that country's own local and national industry. Arab countries are able to pay for Soviet goods, including complete plant equipment, with their traditional items of export without drawing on gold or currency resources.

It may be stressed in conclusion that the Soviet Union with its interest in strengthening peace in the Near and Middle East is developing trade with the countries of this region on a genuinely equal and mutually advantageous basis.

Odessa. Boring units ready for shipment to the Arab East

Photographed by A. Fateyev



Vladimir Safronov in the ring. Above:
After a training bout Safronov draws
K. Gradopolov, Merited Master of Sports

Pencil and Gloves

On its way back from Melbourne the Soviet Olympic team was speeding in a special train from Vladivostok to Moscow. A shortish young man with pencil and sketchbook stood at the window of the carriage reserved for the boxers. It was Vladimir Safronov, the train's most popular passenger during the Siberian lap of our journey. Vladimir Safronov is a Siberian himself and his countrymen turned out to be great patriots, for they greeted their "Siberian Goliath" at nearly every station. What if the "Siberian Goliath's" weight is only just over 125 lbs. He won the Olympic boxing championship, didn't he?

The train drew up in Ulan-Ude. Vladimir was born in this town twenty-two years ago. At high school he displayed an aptitude for drawing. His teachers noticed this and advised his father, a garage worker, to send the boy to an art school. His father did so.

Fifteen-year-old Vladimir also began to go to a boxing school.

In 1954 he won the USSR youth championship and later became champion of the Russian Federation.

Safronov was enrolled in the Olympic team as a stand-in. In Melbourne he got his chance: the champion, Zasukhin, had been taken ill and could not go out into the ring. To be quite frank, we trainers had little hope that Safronov would patch up the hole torn in our team by Zasukhin's illness. But the young boxer displayed fine grit and stamina during the rigorous Olympic tournament.

Safronov lives in Chita now. Next autumn he intends to complete his education in art in Moscow. He has chosen boxing for the subject of his diploma work: a portrait of a boxer who has suffered a defeat but has not lost the will to win.

K. Gradopolov,
Merited Master of Sports

K. Virupayev, Olympic champion in
Greco-Roman wrestling
Drawing by V. Safronov

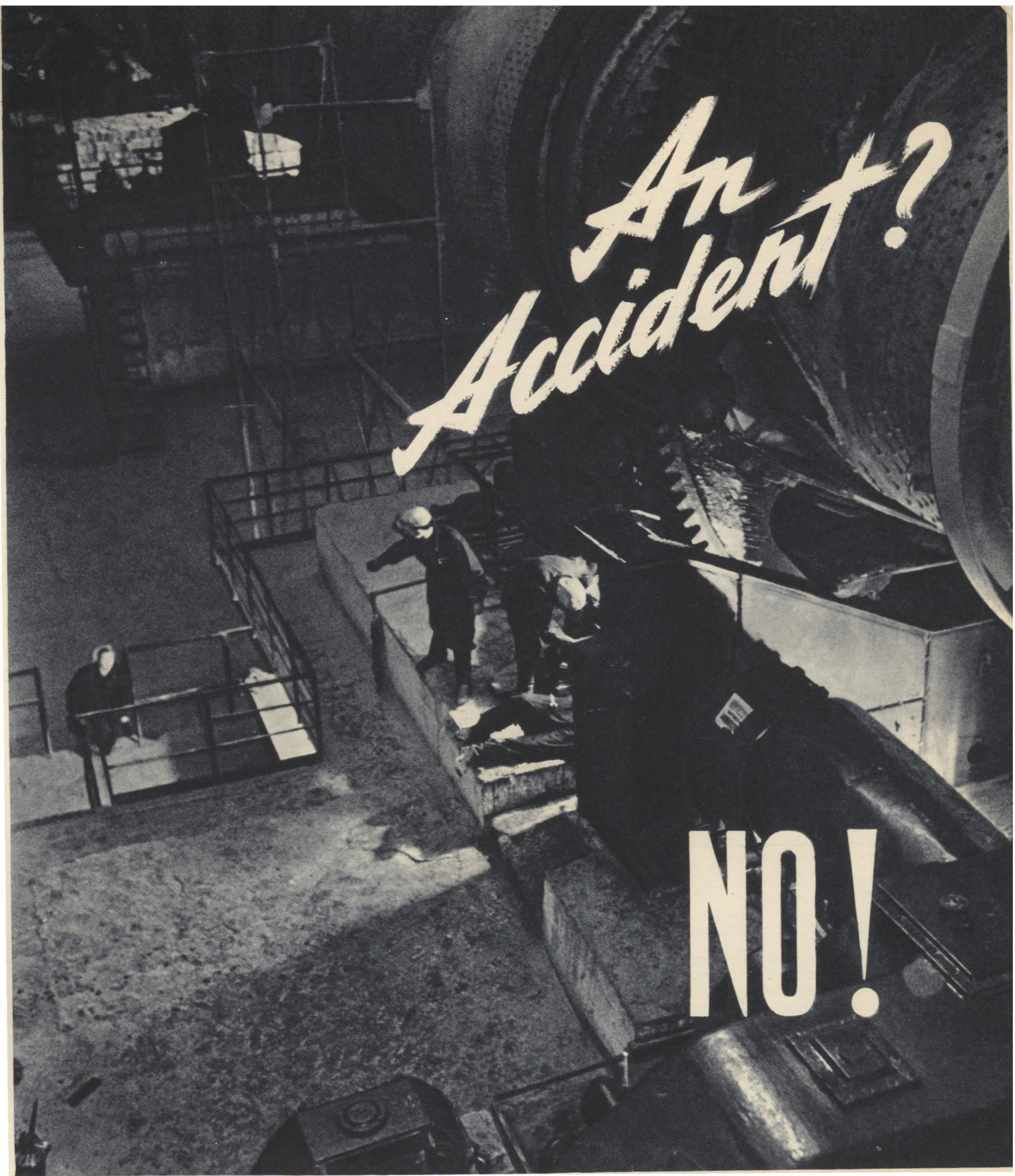


"An accident?" We rushed to the machine

*

The Soviet Government was only five days old when Vladimir Lenin signed a decree cutting down the workday to eight hours. This was the Government's first proof of its concern for labour protection. On May 17, 1918, at a time of Civil War and foreign intervention, Lenin signed another document which was the cornerstone of all Soviet labour legislation: a decree introducing labour inspection. The office of safety engineer was set up at every enterprise in the country. These pages tell about one such engineer.

*



An Accident?

NO!

"An accident? Not!" said the worker. "I was just changing the oil catcher"



By Valery AGRANOVSKY

Photographed by S. Kropivnitsky

I was not allowed to enter the factory at once. "A reporter? That's fine! You'll have to be instructed in safety technique before you can go sightseeing."

A few minutes later I found myself in the big room of Fyodor Kozinets, an engineer. All around the desk where the engineer was supposed to sit were posters showing what unpleasant things happened to people who forgot their safety rules. Looking at those posters, I decided that listening to safety instructions might not be such a waste of time after all.

The safety engineer's desk remained empty for quite a while, for Fyodor Kozinets, I was told, was

busy preparing a meeting of an examination board. I also found out that there was a hard-and-fast rule at the factory: at regular intervals all foremen, mechanics, and shop managers had to go before this board and show how well they remembered the rules of production technology and safety technique.

When Fyodor Kozinets came in at last, followed by the members of the board, I was subjected, as an outsider and newspaperman, to a very lenient examination.

"All right," said Fyodor Kozinets after brief instruction, "you can now go and have a look round. By the way, is there anything you are specially interested in?"



"Who allowed you to work without a safety belt? Put it on this minute!" demands the safety engineer. There's no hiding from him even at this height

I told him I had to write a story about safety technique and reminded him of an accident I had heard about in Moscow. Worker Gritsa got mixed up over the controls and overturned a dumpcar loaded with fifty tons of limestone onto himself.

This was an unheard-of accident at the factory, said the engineer, and, in conformity with the existing practice, the management sent a telegram to the Ministry. The accident was reported to the Minister. A representative of the Central Committee of the Trade Unions flew over. The factory conference of rationalizers discussed the accident at some length. It was Gritsa himself who suggested that the control of the dumpcar which made it possible to overturn it above the operator's head should be locked for good and all.

"Who, did you say, suggested that?" I asked.

"Gritsa. Yes, he escaped with his life by a miracle."

Thus began my acquaintance with the factory in the Ukrainian town of Nikolayev, which stands on the border of the Drogobich and Lvov regions and daily produces hundreds of tons of cement. Time was when up to two per cent of cement—20-25 metric tons a day, or several thousand tons a year—was diffused in the air above the factory premises in the form of fine dust and settled in the workers' lungs. The workers had to work in respirators. But even they did not always keep the dust out.

This scourge is now a thing of the past. The grinding shop, where the dust used to originate, is covered with glossy tiles as smooth as a mirror. The respirators are still kept in the storeroom but no one needs them any longer. Special units suck off the dust, filter it, and collect it in special reservoirs.

"All the new equipment we receive," said Fyodor Kozinets, "comes to us, as to all other factories, with standard safety guards. Designers never forget about them."

Fyodor Kozinets showed me round the factory and I couldn't have found a better guide. It was his job to see that no accidents happened, and to make sure of that he had to satisfy himself that all the workers knew the safety rules. Not only knew them but observed them at all times. If he sees a worker by the furnace without safety glasses, he has to sound the alarm and he can even demand that the offender be dismissed. The foreman of the careless worker either gets a severe reprimand from the director or loses his next bonus which he would normally receive for successfully fulfilling the production plan. If Fyodor Kozinets sees a damaged safety guard anywhere, he will not budge from the spot until the guard is as good as new.

He has many helpers, many vigilant eyes in every shop—public instructors in safety technique. He has all the funds he needs. It is obligatory that he spend not less than a given sum, but no limit has been set on his expenditures. He is free to spend as much as is necessary to ensure full and all-round protection of labour. The law gives him the right to stop work in any shop or even at the factory as a whole if it is dangerous to carry on.

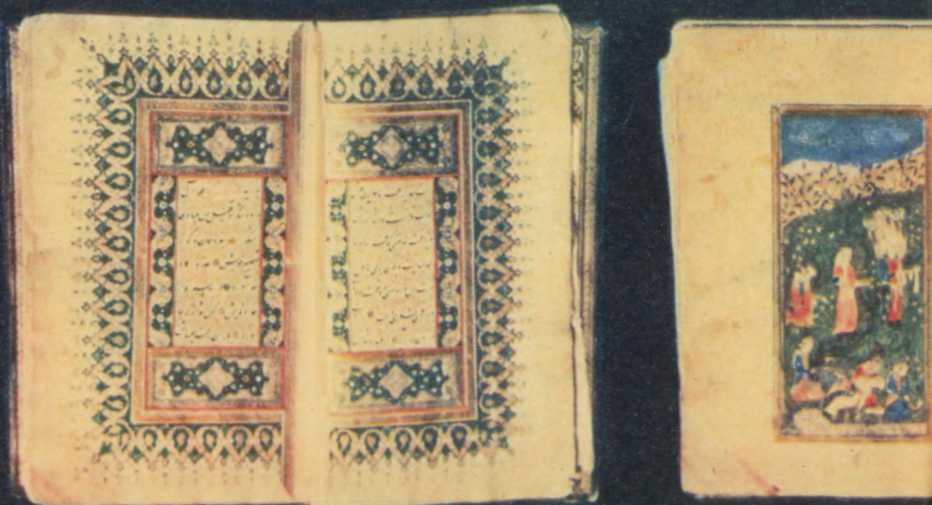
"Apart from that accident with Gritsa," said Fyodor Kozinets, "we have had no accidents during the last two years. And there won't be any in the future."

Having spent a few days at the factory, I left with the same optimism in my heart.

An ancient book-rest

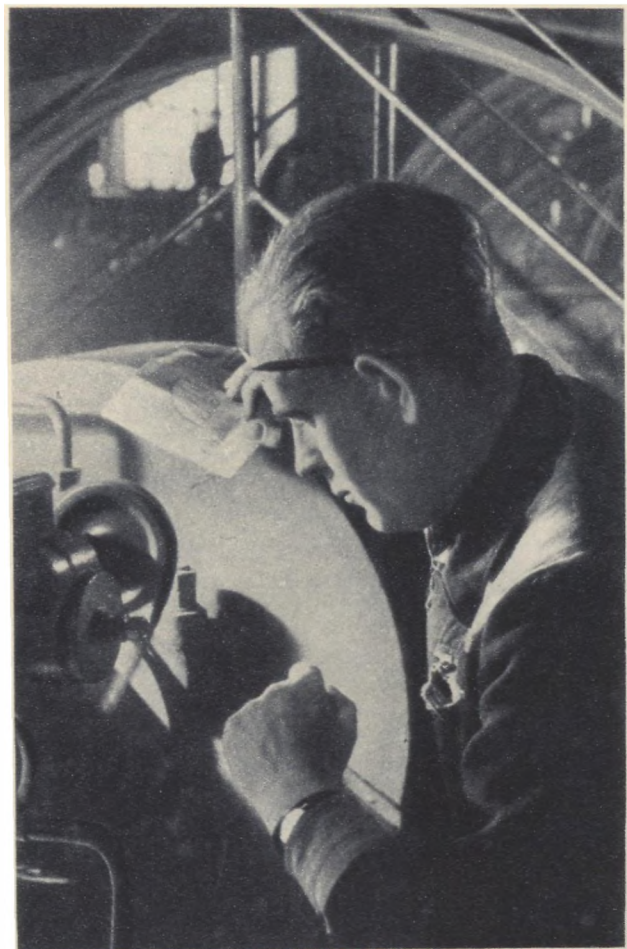


"Gulistan" ("Rose Garden") by Muslin-uddin Sa'di (13th century), transcribed by calligraphers of the mid-17th century. Next to it is the manuscript of "Yusuf and Zuleika" by Abd-ur-Rahman Jami (15th century), dating from the 15th or early 16th century



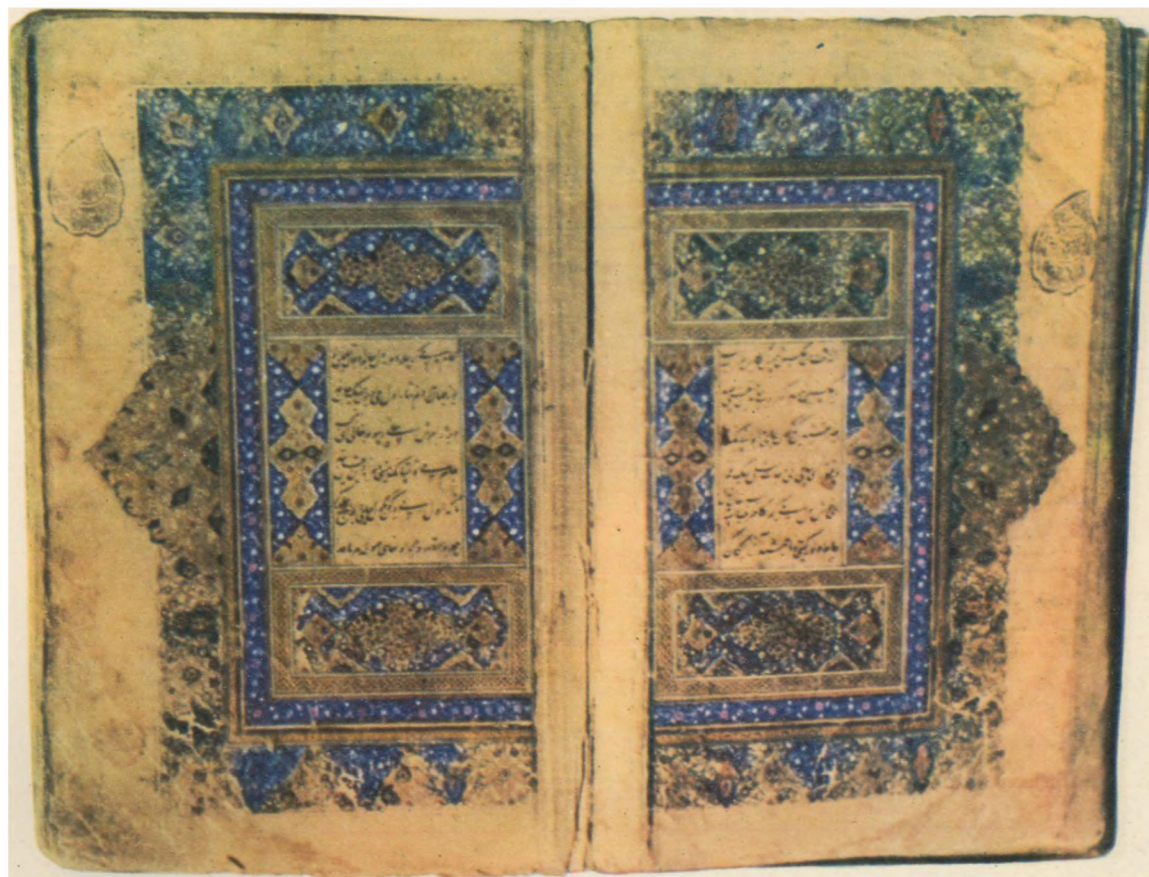


Danger is caged. Fyodor Kozinets is pleased to see the standard safety precautions on the new machinery



Vladimir Lagoida, a turner, wants to cage this fly-wheel, too

TAJIK BOOKS



Alisher Navoi's "Char Divan" (15th century), transcribed by 15th-century calligraphers

"A good book is worth more than a treasure," says a Tajik adage. Thousands of splendid volumes were recently on display at an exhibition of Tajik bookcraft in Moscow. There were books in Tajik and many other languages by S. Aini, M. Tursun-zade, A. Lahuti, M. Mirshakar, R. Dzhaliil, D. Ikrami, and many other Soviet Tajik writers. Other books on view were Tajik translations of Russian, English, French, and American authors.

Two stands displaying rare manuscripts—the work of assiduous scribes—were a centre of attraction. The filigree tracery on pages yellow with age is strikingly ornate. The miniatures and the fancywork of Eastern penmanship are executed with extraordinary grace and skill.

There is the story of a celebrated calligrapher who came to the court of one of Timur's descendants.

"How many distichs can you transcribe in a day?" the potentate asked him.

"Twenty," was the reply.

"Any scribe can do as much! You who are renowned in the Moslem world must not transcribe more than two."

That is four lines. The labour put into each of these books is stupendous.

The Firdousi Library in Stalinabad and the Tajik Academy of Science have many rare ancient manuscripts. And ever new ones are being unearthed. Valuable books are being discovered in archives or purchased from private collectors. Each find is thoroughly studied and often yields priceless scientific material.

Bibliographers are working on a composite catalogue of manuscripts kept at the Tajik Academy. It will embrace about 5,000 volumes.

Alongside the hand-written volumes of Persian and Tajik classics is a display of their "descendants"—books by the same authors published in large editions in Stalinabad today. These are based on minute research into ancient manuscripts. Looking at this intimate closeness of old and new, we cannot help thinking about the new culture of the ancient Tajik people—the culture that has brought the great works of ancient masters, at one time within reach only of the elect, to every man's home.

Y. Smirnov

Books published in Tajikistan today amount to large editions both in the Tajik and other languages

An early 14th-century manuscript of the monumental at-Tabari code of laws (9th and early 10th centuries), translated into Tajik by Abu Ali Bai'ami



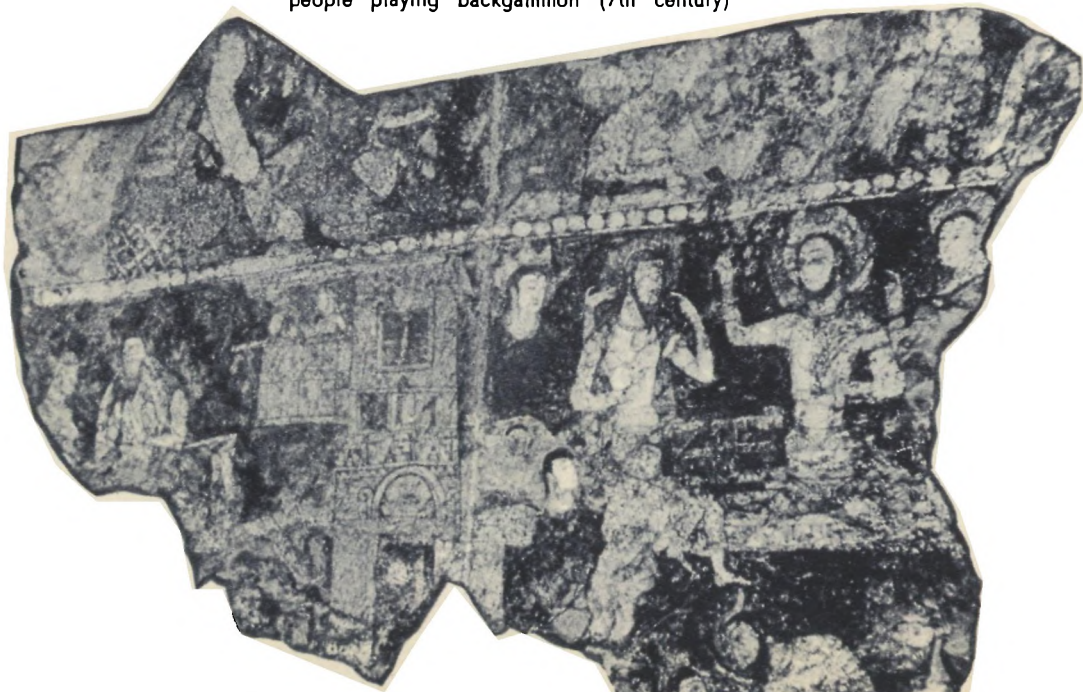
VOICE OF THE AGES

Photographed by Y. Khalip



Fragment of a clay sculpture found in the Penjikent excavations (7th century)

Section of a mural depicting an epic scene of people playing backgammon (7th century)



A. Belenitsky and his associate, I. Bentovich, examine vessels found in the ancient Penjikent fortress

Five hundred and fifty scientists and their foreign guests gathered at the USSR Academy of Science in Moscow recently to discuss archaeological finds of 1956. A. Belenitsky, who took part in the conference, is head of an expedition which for eleven years has been excavating in Penjikent. The "Soviet Union" has asked him to tell its readers the story of his excavations.

It all began with a lucky find. In 1932 a young shepherd found mysterious scripts among the ruins of an ancient fortress some 50 miles off Penjikent in the Zeravshan Valley, Central Asia. Soviet scientists identified them as belonging to the archives of Divashtich, who ruled Penjikent some twelve centuries ago. The documents, written in the language of the ancient ancestors of the Tajiks disclosed a dramatic chapter in the struggle of the people of Central Asia against foreign invaders. Divashtich fell in battle. The town, whose ruins our expedition is excavating, was deserted and destroyed.

The ancient Penjikent stronghold was not restored and the objects we have found give a comprehensive idea of the culture that flourished in pre-Moslem times.

The temples and dwellings we have excavated are evidence of great architectural skill. The people of Penjikent were craftsmen who produced all kinds of domestic utensils. Their works of art, particularly the paintings, which have preserved much of their original colouring, are of great value.

We have discovered some twenty structures with remnants of murals and ornaments reaching up to the ceiling; in some the vaults were ornamented. They give us cause to believe that Penjikent was a major centre of Eastern art. Apart from their artistic merits, they are highly valuable for their ample subject matter, which includes everyday and battle scenes and rituals.

We had the good fortune of striking upon several carvings in wood—a rarity in Central Asian archaeology. Strange as it may seem, we owe our find to the fires that ravaged the ancient town in its last days. Over the centuries the charred wood has lain unscathed under a blanket of earth, while the uncharred has long since become a shapeless mass.

Carvings in wood adorn ceilings, capitals, doors, and other objects, but our most remarkable find were three carved figurines of female dancers.

In 1956 we had the rare luck of unearthing a mural that takes up a large section of a wall to a height of almost 13 feet. The painting is in four tiers, each composed of many figures. One of the tiers, covered with a series of scenes, tells the story of a warrior who, among other things, killed the demon daeva—a maleficent supernatural being with a lion's head, a human body, and the tail of a snake. The mural apparently depicts mythical or epic legends. There is reason to believe that it describes Rustem, a hero still popular in Central Asian folklore, whose feats were perpetuated in the great Firdousi's immortal poem, "Shahnamah".

We continue excavations in Penjikent. We may well expect that they will reveal new facts about this ancient people.

A. Belenitsky

Woman's head—fragment of a 7th-century sculpture found in 1956





A Bream Wizard

ANGLERS

From Arthur J. Sparrow's Sketchbook



First catch



In full battle dress



Commuters



Not Biting



The Bait's Too Small



Biting



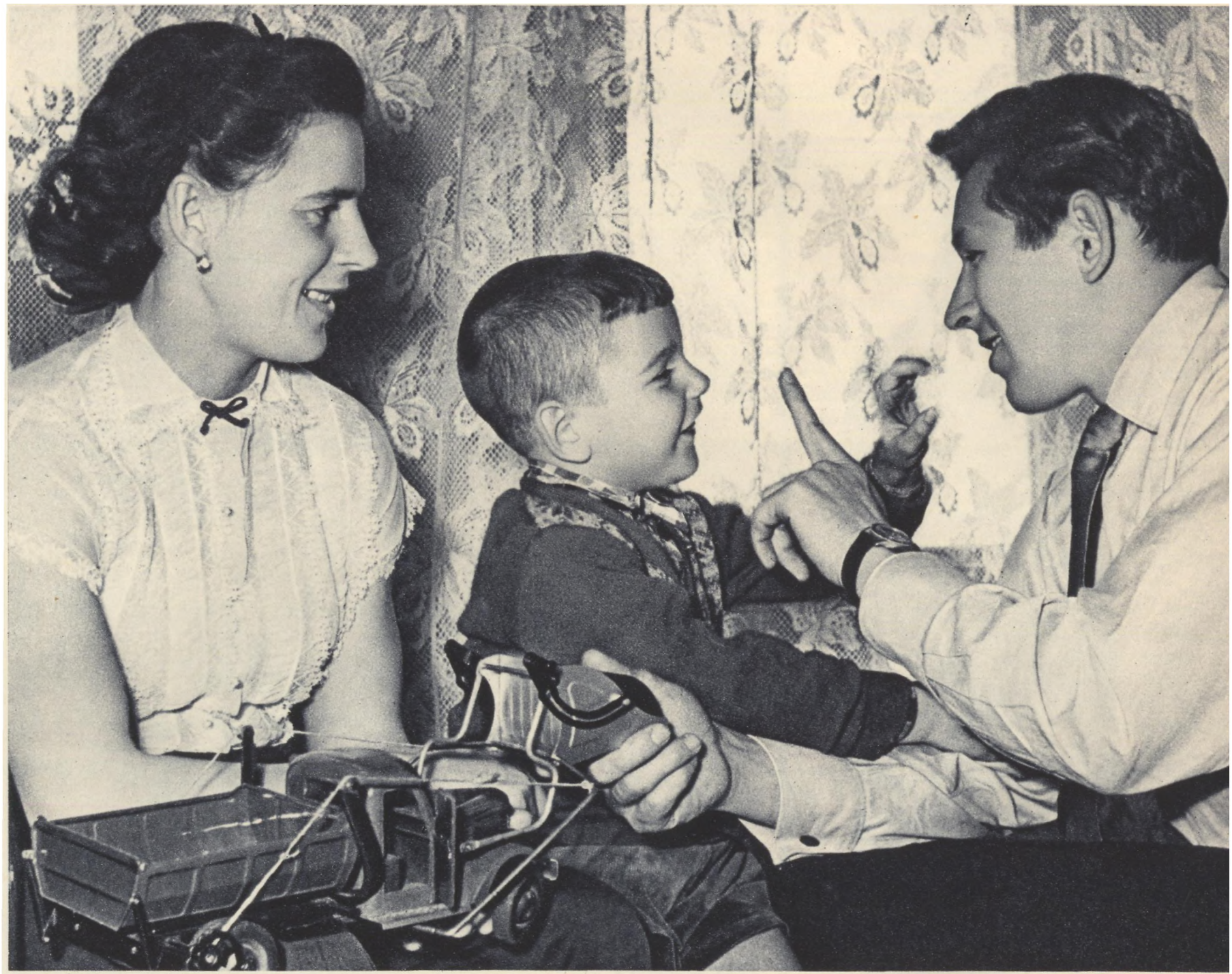
Tall Story



Wooden figurine of a female dancer, carved in Penjikent thirteen hundred years ago



The youngest of the Muratovs is being briefed on behaviour

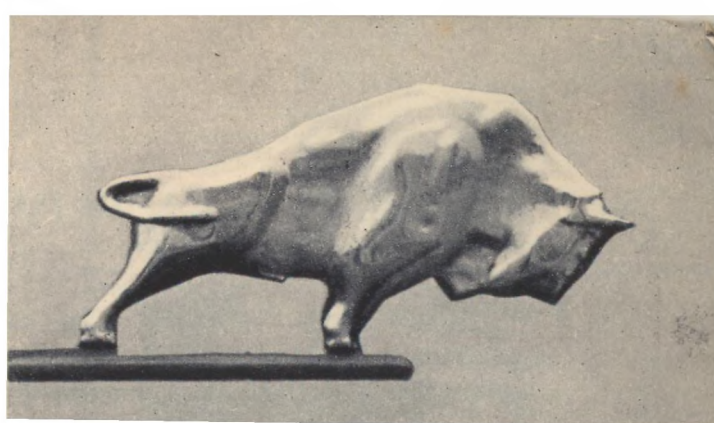


The 109 Muratov Medals





From the Muratovs' scrap-book



WE REPLY TO CARLO POLETTI

"Discussing the latest achievements of Soviet industry, and particularly the giant forty-ton motor lorry, with my friends, I found them somewhat sceptical," writes Carlo Poletti, of Malnate, Italy. "Would you, Mr. Editor, publish the main facts about this lorry in your magazine?"

We reply to you gladly, Mr. Poletti.

Output of high load-capacity lorries was called for by the mounting scale of construction in the Soviet Union. The 25-ton tip-up lorries of the Minsk Works gave an excellent showing at the building sites of the major hydropower stations in the European part of the USSR and Siberia.

Byelorussian automobile designers have produced new large tip-up lorries with a 40-ton load capacity. The lorry has a twelve-cylinder 450 h. p. motor. The usual motor lorry is no higher than the chassis of the new giant. The driver's cabin is air-conditioned—heated in winter and cooled in summer.

The Minsk Motor Works was built ten years ago. It has gone on from 6-ton lorries to produce successively 10-, 25- and 40-ton vehicles.

V. VIKTOROV

This couple have so many gold medals they ought to get a safe to store them in. But they keep them open to view in a glass cabinet, in the sole "custody" of a talkative parrot—a living memory of one of their distant voyages. The cosy little flat belongs to Sofya and Valentin Muratov, the famed Soviet gymnasts. They travel far and wide to compete in various meets, and, as a rule, return with new additions to their "collection". After the Olympic Games in Melbourne last year, it increased by four gold, one silver, and two bronze medals.

"These are souvenirs of contests in Prague, Berlin, Bucharest, Rome, Frankfurt on the Main, and Melbourne," the couple tell us. "And here is a scrap-book with clippings from the Soviet and foreign press."

The Muratovs have travelled a great deal. They have seen much, but were each time anxious to get back home to Moscow where their little son Seryozha waited for them and things kept piling up that had to be attended to.

Sofya Muratova, member of the Soviet gymnastics team which last year won first place in the Olympics, carried on with her studies on returning from Melbourne, and recently passed her annual exams. It is summer and vacation-time, but Muratova is buried in her books. She wants to take two years' exams at one go this autumn.

"Don't rush it. Give yourself a holiday after all your work."

"Oh, no," Sofya smiles, "I've been a schoolgirl too long."

Life does not always shape out as one would want it to. Sofya was eleven when the war broke out. Circumstances forced her to give up school in that grim time, and it was only many years later that she resumed her studies. Today she has made up her mind to pass all the remaining exams before the summer is out and go to college.

"Have you picked the institute yet?"

"Yes, Valentin's. We're inseparable."

Ever since his school days Valentin Muratov has been a keen sportsman, and when the time came he did not hesitate to choose the profession of physical instructor.

Photographed by V. Rukevich

Six years ago he married the young gymnast, Sofya Poduzdova, known today in the world of sport as Sofya Muratova. Ever since the sporting couple have been competing in all the major contests. Inseparable, they share the joy of victory and the gloom of far less frequent defeat. As for their medals, they keep them in a single heap and can scarcely say off-hand which are Sofya's and which Valentin's.

In 1953 Muratov was graduated from the Moscow Pedagogical Institute, and that same year scored his first major athletic success when he beat Victor Chukarin, Grant Shaginyan, and other leading Soviet gymnasts and became absolute champion of the USSR.

We found Valentin cramming for his post-graduate exam in philosophy and asked the subject of his thesis.

"Technique of a Gymnast's Movements," he replied. "It's a man-sized job. It wants special apparatus. I'm working on it right now with my instructor."

"As you can see, my wife and I do have the same worries," the champion added. "Training, competitions, exams, and bringing up Seryozha. And we go in for the same kind of thing too. We both love the ballet, and symphony music."

"So you don't share just the medals, but tastes and interests as well?"

"Well, not altogether. We have our little conflicts too. Sofya here can sit over her sewing for hours on end. As for me, I like to be on the move. We're thinking of a motor trip to the Baltic coast. It's a laugh. We've covered a good fourth of the globe, but have never seen our Baltic republics."

The Muratovs have numerous friends at home and abroad. A very young gymnast at the 15th Olympic Games in Helsinki, Valentin got to know the American athlete John Beckner. Later the Russian and the American again met in Frankfurt on the Main, in Rome, and Melbourne. Always glad to see each other, they exchange tips and put their heads together over new, difficult gymnastic combinations.

The Muratovs also have good friends among Japanese, German, and Swiss athletes. Anyone who approaches his Soviet colleagues is sure to get a helping hand or a friendly word of advice about the "secrets" of their gymnastic accomplishments. They have a wealth of experience. Judge for yourself. Valentin won five out of the seven first places at the eleven-nation gymnastic tournament in Western Germany. In the world championship in Rome, where the "crown" was contested by the world's best gymnasts, he shared first and second place with his elder colleague and friend, Victor Chukarin. Sofya Muratova twice won the title of absolute champion of the USSR, and triumphed three times at the youth and student festivals in Prague, Berlin, and Bucharest. All this was topped by their success at the Olympic Games in Melbourne.

The 109 Muratov medals are indeed a reminder of hectic days. And recently they have had more glad news, being among the Soviet sportsmen to be awarded Orders. Valentin was decorated with the Order of Lenin, and Sofya with the Order of the Red Banner of Labour. Again, as always, they shared honours!

Here are nine of the champion couple's medals. They have a hundred more





A "LIVING BUDDHA"

The stream of visitors to the Soviet Union this year is unusually varied. We had additional evidence of this when making the acquaintance of a young man whose name in the hotel register was supplemented by the intriguing title of "Living Buddha".

The bearer of this extraordinary title turned out to be a plain man and a glutton for knowledge. He showed a far greater interest in factories, museums, and theatres than the other tourists we have met.

We learned that today the "Living Buddha" is by no means a vicar of deity. His is rather a caste title, which prescribes a thorough knowledge of Buddhism and an ascetic life. After the death of a "Living Buddha" the appropriate Buddhist dignitaries bestow the title upon a male infant of the state or province concerned on the strength of portents known to them alone.

That was how Kung Min became one of the two "Living Buddhas" in Sinkiang and received proper Buddhist training. Like many young Buddhists, he hailed the People's Revolution in China and took up public work, being elected to a local self-government body.

During his 25-day stay in the Soviet Union Kung Min visited the Ukraine and the Caucasus.

"It was the most thrilling month of my life," he declared when leaving for home.

Photographed by V. Akimov



Christoph Jegher's etching (mirrored reflection)

IS IT A RUBENS?

A new canvas signed "Peter Paul Rubens. Christ the Infant and John the Baptist", was recently added to the exhibits in the Saratov Museum.

N. Gushchin, a Saratov artist-restorationer, was sent to Volsk, a Volga town, to help renew the art exposition of the local museum of regional studies. He found a badly soiled and warped old painting in the museum basement. The paint was damaged, the varnish had decomposed, and there were white spots in many places. Yet it was obviously the work

of a master. The vague, barely visible outlines of the figures and the style were suggestive of the Flemish school of the 16th and 17th centuries.

The canvas was brought to Saratov, where Gushchin restored it. It was a painstaking, time-consuming process, which taxed his skill and patience. But as he worked he felt more confident that he had not erred in his guess.

"In Paul Kristeller's 'History of European Engraving'," Gushchin says, "there is Christoph Jegher's etching of Rubens's 'Christ the Infant and John the Baptist'. The engraver is known to have been associated with Rubens. The painting found in Volsk is somewhat smaller in size, and painted expansively, freely, without detail. The mannerisms, the general style, and the colours would seem to indicate that it is a sketch which the great master made for his painting."

Art critics are debating Gushchin's guess. They are studying every detail of the restored canvas. It is up to them to decide whether its signature should be followed by a question mark.

Photographed by A. Nevezhin

N. Gushchin by the canvas he restored



Summer Fashions

Designers Y. Tomashevich
and Y. Istomina
(GUM Fashions Department).

Photographed by M. Gankin





Ceylon's Ambassador Extraordinary and Plenipotentiary in the USSR, G. P. Malalasekera, presents his credentials to K. Y. Voroshilov, President of the Presidium of the USSR Supreme Soviet, thus establishing diplomatic relations between the USSR and Ceylon

Photographed by V. Kivrita

Moscow has received a visit from a group of Iranian scientists led by Ahmad Farhad Moatamed, Chancellor of Teheran University. Here the Iranian scientists are seen taking a wreath to the Lenin and Stalin Mausoleum

Photographed by D. Sorokin



Our Visitors Say...



PROFESSOR DE CASTRO'S IMPRESSIONS

"What attracted your attention most of all in the Soviet Union?" a "Soviet Union" reporter asked the Brazilian professor Josué de Castro when he was visiting the USSR.

Doctor of Philosophy, Doctor of Medicine, writer on economics, member of the Brazilian parliament, Josué de Castro achieved international fame by his works on the "problem of hunger". In the light of contemporary facts he showed that it is by no means the numerical growth of man that causes millions of people to go undemourished. In 1952 his basic work "The Geography of Hunger" earned him the Roosevelt Prize awarded by the American Academy of Political and Social Science; two years later he was awarded an International Peace Prize. For a number of years de Castro has been President of the United Nations Food and Agriculture Organization.

This year de Castro went to China. He also visited the Soviet Union, making a long journey through Uzbekistan to see the Golodnaya (Hungry) Steppe.

This is what he said in reply to our reporter's question:

"I was particularly struck by the economic and social changes in the Soviet republics of Central Asia, which only thirty years ago could be classed among the most backward regions in the world. The fact that the per capita production of electric power in Uzbekistan is nearly equal to that of France is enough to give one an idea of how exceptionally fruitful the work of developing the Uzbek economy has been. The results of this work are being used for the benefit of the whole community.

"Not long ago I made a journey through North Africa, so I can make some comparisons. In Morocco, for instance, splendid cities and rich palaces stand in the midst of the terrible poverty that afflicts the local population. There the twentieth century seems to live next door to the tenth century in all its feudal backwardness. The peoples of Soviet Central Asia, who until recently were in the same backward state, have now attained the level of the European peoples. That is what I have concluded and what has particularly impressed me as a result of my journey."

CITY OF YOUTH



One dreary night in 1932 a lonely campfire burned on the mist-shrouded bank of the mighty Amur. For the young people, Komsomol members from all parts of the country, crowding the decks of an old steamboat in mid-stream it was the first light of a city, a city of their dreams, a city that did not yet exist and which they were to build with their own hands.

The young builders pitched their tents on the wooded bank and set to work with a will, facing up to all the difficulties that a wild and uninhabited region had to offer.

Thus began the history of Komsomolsk-on-Amur, the advanced post of Siberian industry, a city that became a living symbol of youthful courage and daring.

Komsomolsk has a short but glorious past and a great future. Even now scores of plants and factories of this city of youth are producing metal, rolled stock, machinery, and many kinds of consumer goods. The Siberian city's anniversary was celebrated by the whole country.

The small photograph above was taken in 1932 and shows the kind of huts the Komsomol builders of the city then lived in. On the right we see the Ordjonikidze Prospekt in Komsomolsk-on-Amur as it is today.

Photographed by Y. Sokolov and M. Kuznetsov





The Soviet delegates are welcomed by their Japanese friends



Gifts from the Soviet trade unions were handed to Iwai, General Secretary of the Japanese Labour Unions

WE GET TO KNOW THE JAPANESE TRADE UNIONS

I was glad to learn that the Editors of "Soviet Union" had received a letter from readers in Hokkaido, who want to know more about the USSR trade-union delegation and its visit to their country.

There were nine of us in the delegation, which was led by Vasily Prokhorov, Secretary of the Central Council of Trade Unions. Among us there were people of various professions and nationality: the Ukrainian miner Ivan Bridko, the Russian railwayman Arkady Motov, the Azerbaijanian teacher Sakhratdin Ismailov, the Kirghiz scholar Dzhumakhan Muratalieva, Candidate of Philology, and others. It was the first Soviet trade-union delegation to visit Japan in recent years.

As our plane touched down on Japanese soil we saw groups of people with banners and streamers. On many of them was the Russian greeting: "Dobro Pozhalovat!" (Welcome!)

During our three weeks' stay the delegation visited Hokkaido Island and the towns of Niigata, Kanazawa, Kyoto, Kobe, Osaka, and Nara.

I particularly remember our meeting with the people of Hokkaido. It was raining when we arrived in the small mining town of Bibai. Through the windows of our carriage we saw a veritable sea of umbrellas—despite the rain the workers and trade-union leaders had turned out to welcome their Soviet guests.

In Bibai we were given every opportunity to spend the short time at our disposal getting to know the enterprises of the town and the living and labour conditions of the miners. In the evening two thousand miners assembled for a meeting in honour of the arrival of the Soviet delegation. The workers spoke of the Japanese working people's desire to live in peace and friendship with the Soviet people. It was a pleasant surprise for us when the meeting concluded with an amateur concert of Russian songs and dances performed by our hosts.

We also went to Muroran, the centre of the Japanese metal industry in the north of the country. Where the road ran parallel to the railway, a little motor-bus with a loudspeaker on top dashed along beside our train, playing Russian songs all the way. From time to time we heard the voice of announcer saying: "Comrade workers! The Soviet trade-union delegation has come to visit our city!"

Our group met representatives of various sections of the population: workers, trade-union



I. Němec of Czechoslovakia and A. Abramov (left) of the Soviet Union fighting a bout that made the Soviet boxer the new heavy-weight champion of Europe

TASS



UPS AND DOWNS

This summer Soviet sportsmen have taken part in an unusually large number of interesting international events.

Our field and track athletes have competed in many countries, including Poland, Bulgaria, Sweden, Czechoslovakia, Yugoslavia, Iceland, China, and Greece. Footballers from Rumania, Brazil, England, Poland, and Turkey have played at stadiums in the Soviet Union.

At the European boxing championship held in Prague three Soviet boxers, Oleg Grigoryev, Vladimir Engibaryan and Andrei Abramov, won European titles and gold belts. Engibaryan, the Olympic champion, has a world-wide reputation, but it was the first time Grigoryev and Abramov had taken part in such an important contest. Abramov, who packs a tremendous punch with over 220 pounds of bone and muscle behind it, was particularly impressive.

In Istanbul the world catch-as-catch-can wrestling championship has been held. The Turkish wrestlers did very well in winning the team championship and four first places. World champions' gold medals were also awarded to the Soviet sportsmen Alimbeg Bestayev and Vakhtang Balavadze.

While these international events were being held various sporting contests were going on all over the Soviet Union. A hundred and ninety-seven weight-lifters competed in Lvov. Experts and fans alike counted on new records being set up at this USSR championship but what the weight-lifters achieved exceeded all expectations. The over-all result was six new USSR records

and four world records; seventeen competitors reached the standard required for the title of Master of Sport, a standard that is well up to the international level. Yevgeny Minayev, of Moscow (featherweight), who only last year distinguished himself by winning a silver medal at the Olympics, pressed a weight of 253 lbs. A Novosibirsk mechanic Ravil Khabutdinov (lightweight) pressed 280.5 lbs. Also with a press, Fyodor Bogdanovsky of Leningrad (light middleweight) lifted 298 lbs. A former underwater diver and now a graduate of the Sverdlovsk Medical Institute, Arkady Vorobyov (light heavyweight) snatched 315.7 lbs. All these were new world records.

Marksmen and gymnasts, representatives of the "traditional" Soviet sports, have also got fine achievements to their credit. One would like to be able, as usual, to include our footballers in that statement but, sad to say, Soviet soccer fans have had rather a lot of disappointments to bear over international matches so far. Hardly any season in the past brought Soviet footballers so many draws and defeats. At times it has been hard to recognize our famous teams from the uninspiring play with which they have opened the 1957 season. Only now are some of our teams beginning to get into fighting trim and overcoming their main fault—hesitation in shooting for goal.

The main sporting events of this summer will take place at the Third International Youth Games.

Y. Rubin



Meeting at a Tokyo tobacco factory



At a reception arranged by the trade unions and municipality of the town of Bibai Soviet guests wear the kimonos that have been presented to them

leaders, businessmen, governors, mayors. The majority of them, irrespective of their political views, support the development of good-neighbour relations with the Soviet Union and the expansion of Japanese-Soviet trade.

Naturally we were particularly interested in labour conditions in Japan. The General Council of Japanese Labour Unions had intended to show us a number of large industrial enterprises, but the efforts of our Japanese friends were not successful and our delegation was unable to visit big plants or factories belonging to capitalist corporations. We were only able to look over a few state enterprises. Their technical equipment and, in some cases, the working conditions there made a good impression.

With the help of our Japanese friends we achieved our principal aim of extending friendly contacts and common understanding with the Japanese trade unions. The Soviet delegates met the leaders of appropriate branches of the Japanese unions and talked with members of the General Council of Japanese Labour Unions. The result was a joint communiqué stating the need for Japanese and Soviet trade unions to fight for peace and unconditional prohibition of the atomic and hydrogen weapons, and for further development of all-round Japanese-Soviet contacts.

After our journey we returned to our usual occupations. Again Arkady Motov drives his train on the Moscow-Ryazan line. He left it for only a few days to take part in the session of the Supreme Soviet of the RSFSR, where he and the other delegates debated questions of re-organizing the management of industry and construction. Ivan Bridko, who during his stay in Japan had for the second time been awarded the title of Hero of Socialist Labour, was given a warm welcome by his miner friends in the town of Krasnoarmeisk. Dzhumakhan Muratalieva returned to her home town Frunze just when her students were busy preparing for their exams. As she is a teacher at the Pedagogical Institute there she soon found herself in the midst of bustling life.

As soon as we got back to our country we all found time to share our impressions with our brother trade unionists of our trip to Japan and of her gifted and industrious people.

I want to take this opportunity of conveying to our Japanese friends, personally and on behalf of the other members of the delegation, our warm gratitude for the grand welcome they gave us.

May the friendship of our peoples flourish!

By B. Chekhonin



Arkady Vorobyov sets up a world record TASS



The Brazilian football team "Bahia" from the city of San-Salvador played eight matches in the USSR, and the English team West Bromwich Albion three. Left, players jump for it in the match between "Bahia" and the Leningrad team "Zenit". Right, a tussle for the ball between players of West Bromwich Albion and the USSR Ministry of Defence team

Photographed by N. Naumenkov and A. Ptitin



Hammer-thrower F. Tkachov (USSR) was a winner at the international field and track competitions in Prague

A hard-fought waterpolo match between "Vasas" (Budapest) and "Vodnik" (Leningrad) ended in a draw with the score at 5 : 5

Photographed by A. Ptitin



Albert Ivanov, the Moscow marathon runner, finishes a run of 30 kilometres in 1 hr. 35 mins. 1 sec., a world record

Photographed by N. Sudarikov



TO JAPAN



Here are some of the scenes that will be shown to Japanese audiences. Left: Irina Tikhomirnova as Odile in Chaikovsky's "Swan Lake". Right: Olga Lepeshinskaya and Vladimir Preobrazhensky dance the waltz from Prokofiev's ballet "Cinderella". Top: a choreographic composition "Walpurgis Night" from Gounod's opera "Faust"

Photographed by Y. Umov and V. Shakhovskoi

At the end of August fifty artistes of the Bolshoi Theatre ballet will go to Japan at the invitation of the Association of Friends of Art and the newspaper "Yomiuri". They will dance scenes from Russian and West European ballets and also give an extensive concert programme. Among them are such outstanding performers as Olga Lepeshinskaya, Vladimir Preobrazhensky, Irina Tikhomirnova, Georgi Farmanyants, Yadviga Sangovich, and Alexander Radunsky. Their conductor will be Gennady Rozhdestvensky.

Interviewed by a "Soviet Union" reporter, Olga Lepeshinskaya said:

"Japan has always attracted us with its exceptionally interesting and original art. We know that the Japanese like classical ballet. At one time the great Russian ballerina Anna Pavlova danced in Japan. Not long ago we

met the Japanese artistes Tsuyako Kodaira and Taneo Isida. Closer ties are being formed between cultural workers of our two countries. Japanese films are being shown in Moscow, and Soviet films in Japan. People of Moscow have seen Japanese engraving of the eighteenth and nineteenth centuries and the work of the brilliant Japanese artist Hokusai. The Soviet artistes David Oistrakh, Lev Oborin, Igor Bezrodny, and Artur Eisen have visited Japan. We hope that our tour will help to strengthen friendly ties and common understanding between our peoples."

News from Japan shows that the Japanese public is interested in the coming tour. The newspaper "Yomiuri" writes that in Tokyo and Yokohama people are already queuing for tickets. Ballet-lovers came to the box-office once equipped with pillows, blankets, and breakfasts.

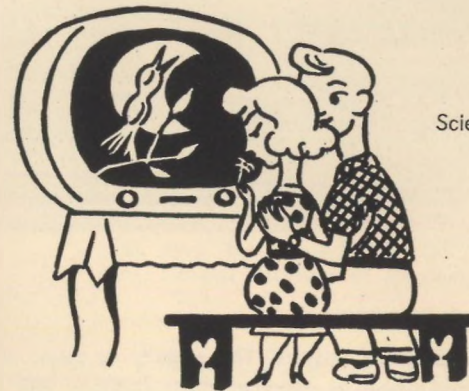


MEETING AT CANNES

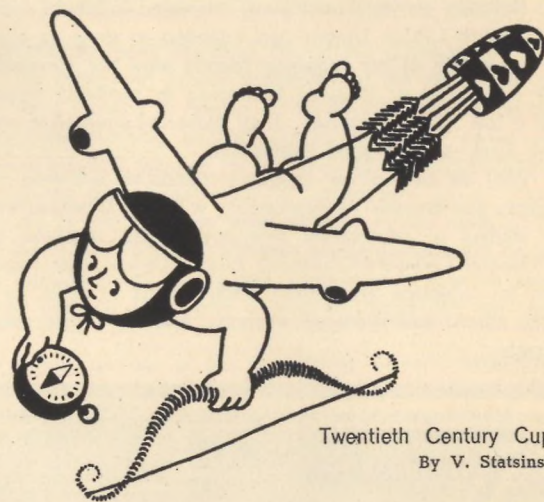
At the International Film Festival in Cannes success came to the Soviet film "The Forty-First". It was awarded a prize for its original script, humanism, and high romance. Here we see film actresses Pascale Robert of France and Masako Nakamura of Japan with Izolda Izvitskaya, heroine of "The Forty-First"

HUMOUR

Brain-wave for heat-wave
By V. Statsinsky



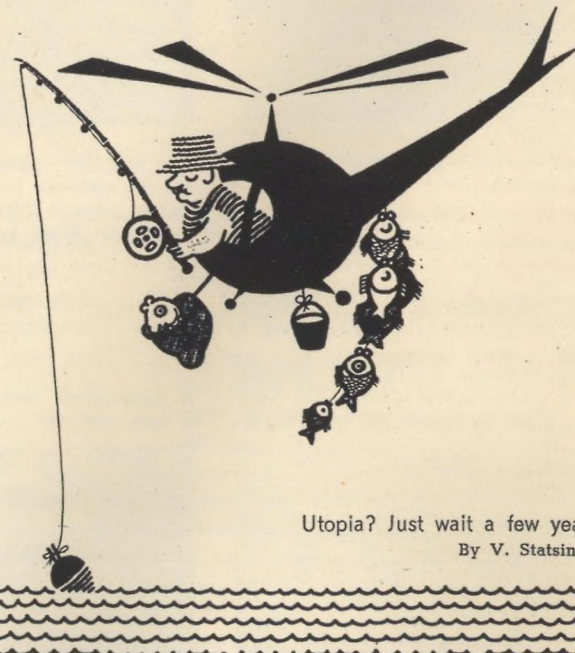
Science serves romance
By M. Bitny



Twentieth Century Cupid
By V. Statsinsky



Dress rehearsal
By M. Bitny



Utopia? Just wait a few years!
By V. Statsinsky

Father's Arrived!
Photographed by Y. Chernishov



BACK COVER: Motor-boating on the Black Sea coast of the Caucasus
Photographed by Y. Khalip

SOVIET UNION

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