

4th Stock

DETROIT PUBLIC LIBRARY APR 26 1958

SOVIET

ECONOMY TODAY

See Page 4

USSR

No. 5 (20)—20 Cents



USSR

ILLUSTRATED MONTHLY

1706 Eighteenth Street, N.W.
Washington 9, D. C.
ADams 2-3426

The magazine *U S S R* is published by reciprocal agreement between the governments of the United States and the Soviet Union. The agreement provides for the publication and circulation of the magazine *U S S R* in the United States and the magazine *Amerika* in the Soviet Union.

	Page
May Day Is Holiday Time	1
The Soviet Economy Today and Tomorrow by Iona Andronov	4
Tourists Welcome	10
Pharmacologists Exchange Visits by Dmitri Petrov	14
Eighty-man Amateur Symphony Orchestra by Sergei Zharkov	16
A Billion Books a Year by Nikolai Mikhailov	22
National Art Show by Natalia Sokolova	23
New Scholars in a New Uzbekistan by Khabib Abdullayev	36
Young Violinist and Pianist To Perform For American Audiences This Fall	40
Mezzo-Soprano Plans U.S. Concert Next Season	42
The Soviet Farmer and Machine Power Mikhail Sukhanov	44
Growing Wheat Pyotr Zabazny	48
Ballet School by Yuri Fantalov	52
Fire Fighters by Yuri Pavlov	56
Strongmen by Efim Rubin	60
Vacationing in the Caucasian Mountains by Victor Ruikovich	62

Front cover: Azerbaijan University coed in her native costume in May Day parade.

Anything in this issue may be reprinted or reproduced with due acknowledgement to the magazine USSR.

Subscription Rate:	
6 Months	\$1.00
1 Year	1.80
2 Years	3.00

Published by the Embassy of the Union of Soviet Socialist Republics in the USA.

Second Class mail privileges authorized at Washington, D.C., with additional entries at Milwaukee, Wis., and Chicago, Ill.

Printed by The Cuneo Press, Inc.



MAY DAY CELEBRATIONS THROUGHOUT THE COUNTRY START WITH A BIG PARADE. THIS ONE IS IN MOSCOW.



IN HIGH HOLIDAY SPIRIT, THESE MARCHERS NEED ONLY THE SOUND OF THE LIVELY ACCORDION TO PERSUADE THEM TO STOP AND DANCE ON GORKY STREET IN MOSCOW.

May Day Is Holiday Time

MAY DAY is holiday time in the Soviet Union, celebrated with giant parades and festivities throughout the country.

It was a commemorative day, but of a grimmer sort, long before the Socialist Revolution of 1917. Russian workers met and marched on this traditional working-class holiday, but it was to demonstrate for bread and freedom. On more than one May Day the czar's police and armed troops shot down workers gathered to observe the holiday. Many lost their jobs, many were sentenced to prison at hard labor. But in spite of bans and prohibitions, in spite of jailings and persecution the workers downed tools on May Day to express their will for a better life and their faith that it would be won.

It is different now and has been ever since the peoples of Russia made the country their own. Fittingly, the holiday falls in spring, the season of rebirth. City streets and village lanes are adorned with greenery, flags and pictures. Everything and everyone is festive. It is a day of flowers and bright colors.

May 1st and 2nd are legal, paid holidays. The celebration in every

corner of the country traditionally begins with a parade. But this is not the tense demonstration of workers which older people still remember from pre-Soviet times. This is a carnival parade, with song and unrestrained merriment. It is a parade which pictures achievements in industry, farming, science, the arts—colorful with floats and banners, placards and streamers.

May Day traditionally commemorates the unity of working people the world over, and delegations from many countries come to the Soviet Union at this time to join in the celebration.

In the evening the streets fill with crowds again, to dance to orchestras and to enjoy concerts by leading artists performing from stages built in the big open squares and parks. May Day balls at factory clubs and concert halls last far into the night, and home parties are legion.

The second day people spend strolling in the country or watching the big soccer teams play. The older people rest and exchange reminiscences of the older May Days which made this happy spring holiday possible for millions.

More pictures on following pages



THE MERRY-MAKING IN STREETS DECORATED WITH GAY BANNERS AND MULTICOLORED LIGHTS CONTINUES UNTIL THE WEE HOURS OF MORNING.

May Day Is Holiday Time Continued

WITH THE LONG WINTER FINALLY OVER AND THE COMING OF SPRING, THE BOATING AND FISHING SEASON BEGINS ON LAKES AND RIVERS.





FOREIGN GUESTS NEAR KREMLIN WALL DURING CELEBRATION WAVE TO MUSCOVITES.



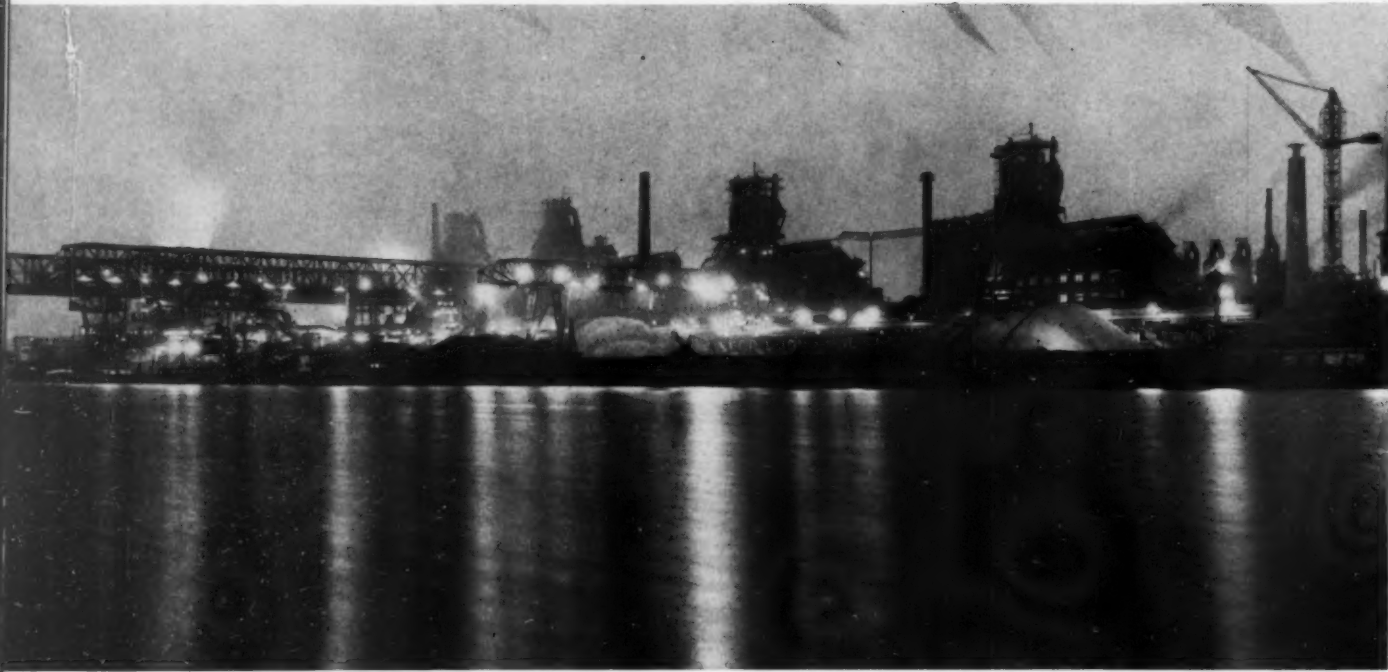
SUNNY WEATHER GIVES THE CYCLISTS AND HIKERS A DAY IN THE COUNTRYSIDE.

HOLIDAY OPEN-AIR CONCERTS GIVEN BY LEADING ARTISTS DRAW BIG CROWDS.



THE CITY STREETS BECOME VERITABLE FLOWER GARDENS ON THE MAY HOLIDAY.





NEW IRON AND STEEL MILLS ARE GOING UP TO SUPPLY THE GROWING NEEDS OF THE ENGINEERING INDUSTRY AND CONSTRUCTION PROJECTS.

The Soviet Economy Today and Tomorrow

By Iona Andronov

TAPPING OF THE NEW OIL FIELDS HAS GIVEN BIRTH TO NEW REFINERIES.



IN ALL FIELDS of national endeavor—heavy industry, construction, farming, consumer goods production—the Soviet economic graph moves on a steadily rising upward curve. This is no jagged graph marked by high peaks and low valleys which cancel each other out over a period of a decade or two, but the steadily upswinging curve of a healthy and prospering economy.

With the Soviet Union accounting for approximately 20 per cent of the world's industrial output, the effect upon world economic stability is great, the potential immeasurably greater. Here is an unparalleled market for world goods, for that mutually profitable trade that means more prosperity, not for the Soviet Union alone, but for every one of the countries with which it exchanges goods.

In the past year alone, Soviet foreign trade increased by 13 per cent, from 29 billion rubles in 1956 to 33 billion in 1957. And this is only a fraction of the possibility. The Soviet Union is ready and eager to expand its trade with any interested country on mutually profitable terms.

Factory and Farm

The most characteristic feature of the Soviet economy is its activity. Every worker participates in the busy economic life of the country, and everyone feels it in terms of greater personal income and improved well-being. People in city and country are training for better-paying skills. Employment opportunities are wide open in industry, agriculture, the professions.

In every one of the 15 republics which make up the Soviet Union, this activity is reflected in production figures that increase sharply every year. These annual increases, that in many cases run as high as 23 per cent, hold for all branches of industry, from metal smelting to machine production, from cotton processing to the finished textile.

Both in consumer goods and in heavy industrial production, the Soviet Union has long ago recovered from the enormous destruction of the war. In 1956, industry was turning out three and a half times

more goods than in prewar 1940. For 1957, the rise was 10 per cent over 1956, although only 7.1 per cent had been planned for.

The country now produces in one year the same quantity of industrial goods it previously turned out in 15-20 years.

Farm production has moved along more slowly than industrial development, but its pace has been rapidly accelerating, with more land being sown each year, with constantly increasing crop yields and with more livestock being raised.

In the past four years, in spite of periodic drought, the gross wheat harvest jumped by 40 per cent; sugar beet by 70 per cent; and corn by nearly 100 per cent. Production of meat was boosted by 38 per cent and milk production by nearly 50 per cent.

Early last year Soviet farmers pledged themselves to reach the high American per capita output of meat and dairy products within the immediate future. The 1957 figures show that in milk and butter production this goal has been practically reached, and that good headway has been made in increasing meat production as well.

This year the plan is to increase total gross farm output by 17 per cent and total gross industrial production by 7.6 per cent. The first months of the year already indicate that these figures will be exceeded.

Employment and Incomes

In this past year, 800 large new plants have been added to the country's industrial network and 849 new state farms established.

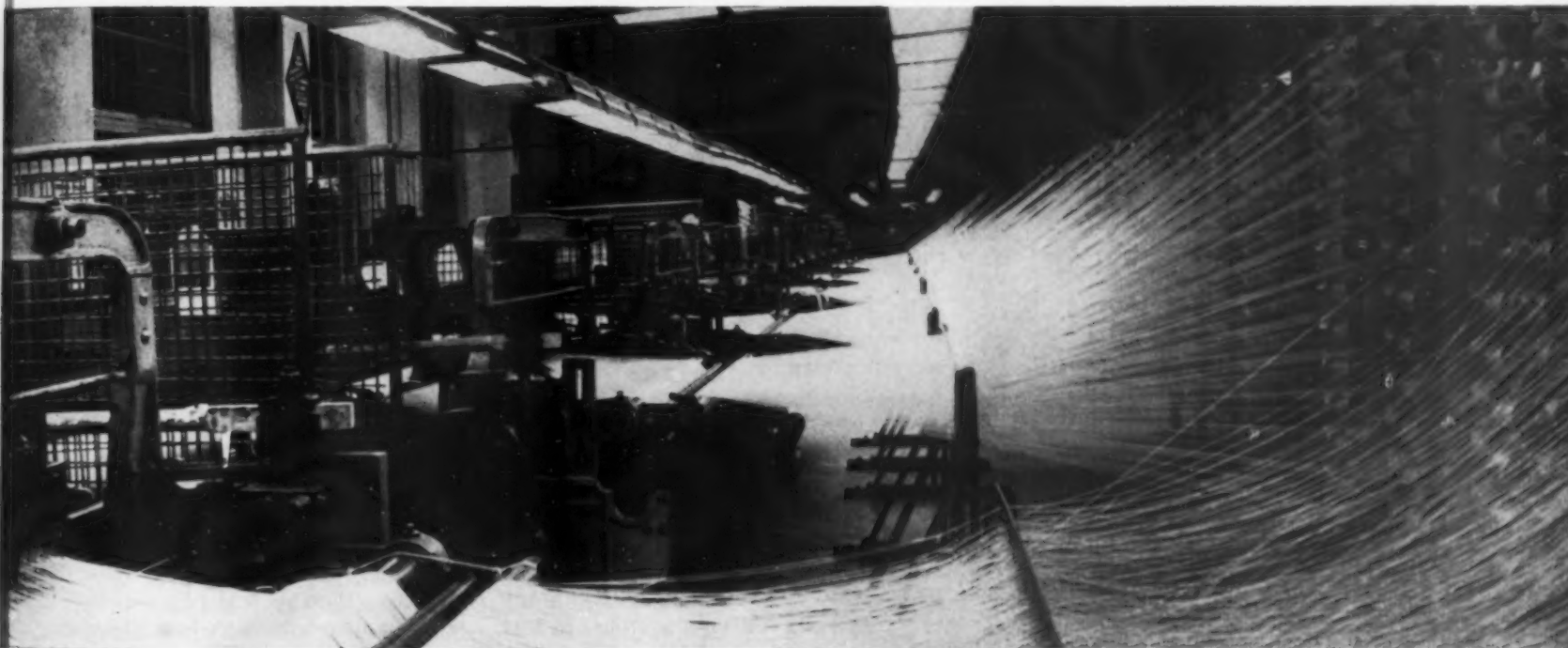
The number of workers employed has increased by 2,100,000. It is estimated that 2,300,000 more will be needed this year. The total number of employed workers will have risen to 54,400,000 from the 31,200,000 figure of the prewar year 1940. And, as it has for every one of the past 25 years, the Central Statistical Board reports a growing need for man power.

Ever increasing budgetary allocations are spent for schools and classes that train for better jobs. Last year 7,800,000 workers took these free courses, 300,000 more than in 1956.

In all parts of the country there is a constant demand for more engineers, doctors, teachers—every one of the professions. This year, 837,700 students will graduate from colleges—64,100 more than last year—to swell the total of six million specialists now at work.

Of the total national wealth produced, a greater sum is budgeted yearly for education, grants-in-aid to mothers, pensions and social insurance, public health, vacation accommodations, and other welfare items.

A RECENTLY BUILT PLANT OF ARTIFICIAL FIBER. PRODUCTION OF ALL KINDS OF CONSUMER GOODS IS BEING CONSTANTLY INCREASED TO SATISFY THE GROWING DEMAND.



Housing Construction

The building materials industry, which until recently lagged behind others, increased its production by 23 per cent last year, a record figure. Everywhere in the Soviet Union you see construction under way, in both city and country.

Housing, a seriously short segment of the Soviet economy, is expanding with rapid strides. Plans for 1957 called for construction at state expense of some million and a half apartment units.

By mid-year, however, it was found possible to raise the figure, and the latest reports show that 1,600,000 new apartments were tenanted during the year—a third more than in 1956. Besides, 770,000 dwellings were built in rural areas, mainly by collective farmers. Incorporated in the new housing projects are stores, social and recreation centers, stadiums, schools and clinics in large numbers.

The annual rate of housing construction in the Soviet Union is now equivalent to 10.2 apartments per thousand of population compared with 6.7 in the United States, 6.2 in France and 5.9 in Great Britain.

Literally every citizen enjoys some, if not all, of these payments and privileges at the expense of the state. For 1957, the budget allocation for these purposes was originally set at 192 billion rubles. But final calculations by the year's end showed an expenditure of 201 billion rubles. This is almost a third of total expenditures allocated in the national budget.

What these figures indicate when translated into the citizen's day-to-day living is more personal income and greater purchasing power. In 1956 retail trade turnover increased by 9 per cent and in 1957 by another 14 per cent.

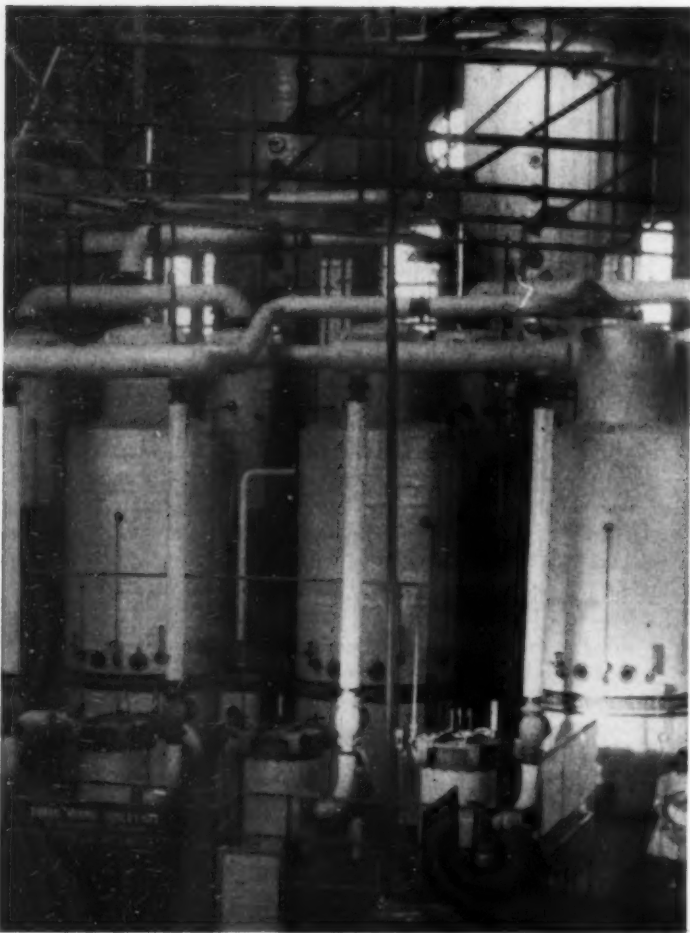
Old-age pensions were raised last year. The total paid out was 58 billion rubles as compared with 36.5 in 1956. Transition to a shorter working day is under way—this without reduction in wages. The earnings of factory and office workers in the lower wage brackets have been raised and this group has been exempted from the payment of taxes. Consumer prices for food and other necessities have been systematically reduced, and the quantity of consumer goods available has increased.

Continued on next page



THE COUNTRY'S WHEAT OUTPUT JUMPED BY 40 PER CENT IN THE PAST FOUR YEARS. OTHER BRANCHES OF AGRICULTURE REGISTERED SIMILAR OR EVEN LARGER INCREASE.

A NEW SUGAR REFINERY. PROCESSING PLANTS ARE BUILT ALL OVER THE COUNTRY.



The Soviet Economy Today and Tomorrow

Continued

The steady improvement in living conditions and better medical facilities have increased longevity and sharply reduced the death-rate—from 18.3 per thousand in 1940 to 7.5 today. There has been a big drop in infant mortality. In 1957, only 45 out of every 1,000 newborn infants died before they reached the age of one year; in 1940 the figure was four times as large—184.

Goals for Tomorrow

On the basis of the expansion of heavy industry, the Soviet Union has reached a point of development at which it can sharply expand production of consumer goods. Within the near future it will be able to supply all calls for these goods which have increased tremendously in the past few years.

An objective of equal importance is that of ending the present housing shortage in the next ten or a dozen years. This, too, is altogether possible in view of the expanding Soviet economy. This year a third of the total allocations for construction in all areas of the economy will be spent on housing. There are more new houses being completed now than ever before in the country's history.

That the objectives set for tomorrow are very real and very practicable is witnessed by economic progress in the past decades, which, except for the interruption of the war, has moved steadily forward. This is a factor of socialist planning—continuous development without fear of overproduction.

It is over-all, integrated planning which combines the thinking and experience of the country's millions of workers and farmers. It makes possible the benefits of automation without its hazards of unemploy-

ment. It is able to utilize for the public good ideas and inventions to save valuable time and labor which can be used more productively elsewhere.

All-round mechanization and automation is being introduced wherever possible. Obsolete equipment is being replaced or modernized. Last year alone more than 1,500 new types of machines and mechanisms were put in production.

The country's almost inexhaustible wealth of natural resources is being put to ever more effective use. New industrial centers are being built in regions where natural deposits have been found. Key industries are in process of expansion.

Increases are planned for construction development in the chemical industry by 50 per cent, in iron and steel by 42 per cent, and in iron ore mining by 73.4 per cent. Construction and development in basic industry will accelerate the pace of the whole economy.

But even these large plans give only a preview of the potential of the Soviet economy. Additional evidences of this great potential are the launched earth satellites, the production of super high-speed jet and turboprop passenger planes, the level of Soviet scientific development in mechanics, metallurgy, chemistry, radio-engineering and automation.

Such phenomena as super-conductivity, super-pressures of a hundred thousand atmospheres, super-temperatures of a million degrees, and those remarkable phenomena which occur at temperatures close to absolute zero are today's research problems and tomorrow's industrial practices.

The research findings in electronics, telemechanics, semi-conductors and atomic physics will in the near future be used to produce cheap power to develop industry and to manufacture less expensive and better consumer goods. The first atomic electric station in the world, set up in the Soviet Union in 1954, is likely to change the character of power production. Atomic electric stations with capacities of 200,000 to 400,000 kilowatts are now going up.

The higher level of production will be greatly facilitated by further improvements in the structural make-up of the country's economy. Last year the Supreme Soviet—the national legislature—adopted a decision to decentralize management of industry, which has already proved most beneficial in raising both quantity and quality of production. The last session of the Supreme Soviet held in March decided to reorganize state-owned machine and tractor stations which had been servicing collective farms on a contract basis.

Under this decision the collective farms will be able to purchase tractors, harvester combines and other machinery needed for their field operations, while the machine and tractor stations will be transformed into repair and technical service stations. The reorganization will provide for more efficient and widespread use of agricultural machinery and will stimulate the creative initiative of farmers in making better use of the potentials of collective farm production. This will undoubtedly result in a new advance of all branches of agriculture with beneficial effects on food and light industries. The country's population will receive more and cheaper consumer goods and the collective farmers will benefit from increased incomes.

Long-Range Planning

Socialist planning must peer into the future, it must see a long way ahead. Being drafted now is a plan for the country's economy for the years between 1959 and 1965.

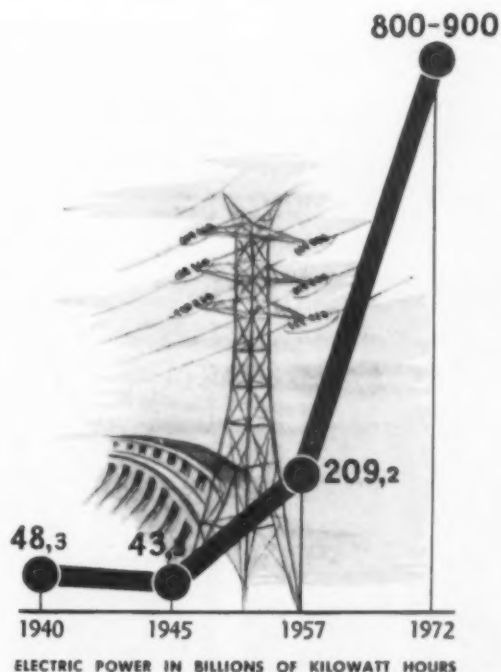
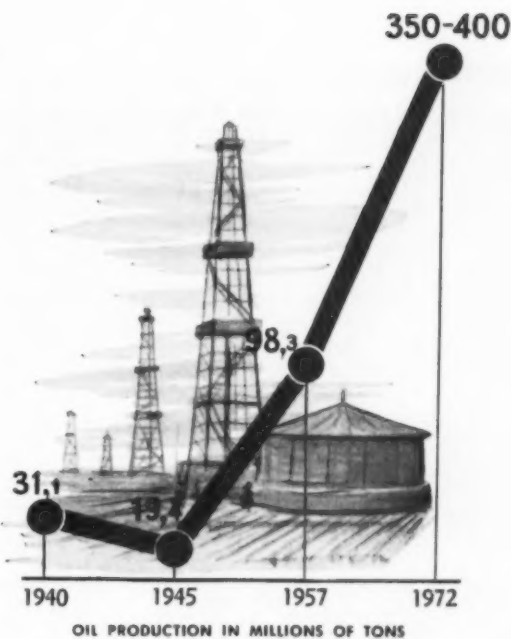
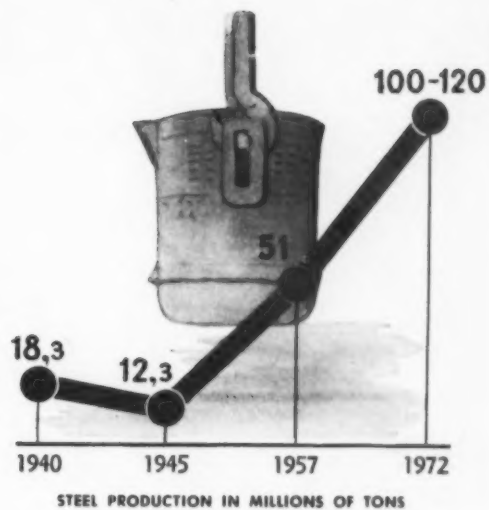
The new plan runs for seven years, a longer period than the previous five-year plans. The longer period is to allow for new and unforeseen problems which inevitably arise, and to provide sufficient time to solve them. This contingency was not allowed for in previous plans. This seven-year plan fits into a longer view fifteen-year plan.

These are the major elements in this grand over-all plan for industry and farming. In per capita production of nickel, chromium, manganese, sugar, wheat, flax and several other products, and in numbers of hogs and sheep raised per capita, the Soviet Union has already reached the level of the world's leading producers.

The plan predicts that for farm production as a whole, the level of the world's leading producers will be reached in approximately six to seven years. The same length of time will be required to reach the leading production level for iron ore, coal, cement and woolen fabrics. For many industrial goods, however, considerably more time will be needed.

In general, the long-range plan requires the doubling or tripling of

Continued on next page

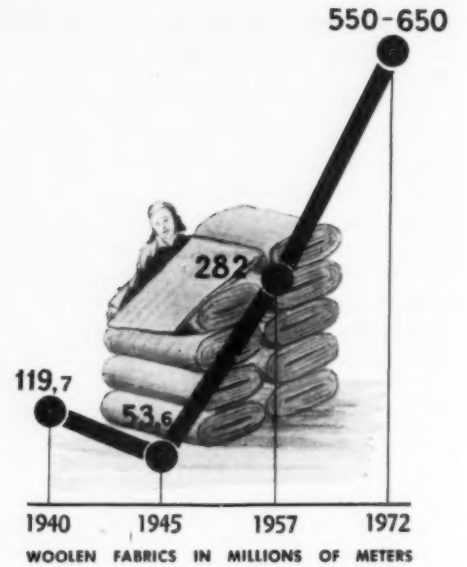




1946 1958
PUBLIC HEALTH BUDGET IN BILLION RUBLES



1946 1958
PUBLIC EDUCATION BUDGET IN BILLION RUBLES



LAST YEAR PRODUCTION OF TEXTILES WAS ALMOST EIGHT BILLION YARDS.



The Soviet Economy Today and Tomorrow

Continued

production in key branches of industry. Preliminary forecasts indicate that in the 15-year period, Soviet annual industrial output can build to these levels: in steel, to 100-120 million tons; in coal, to 650-750 million tons; electric power, 800-900 billion kilowatt-hours; cement, 90-110 million tons; sugar, 9-10 million tons; woolen fabrics, 600-700 million yards; leather footwear, 600-700 million pairs.

If past experience is to serve as guide, this is not rash speculation. The more likely possibility is that 15 years will see even more accomplished than is predicted by the plan.

The material possibilities are at hand. Given a climate of international good will and peace, an expanding Soviet economy presents a challenge in peaceful competition to raise the world's standard of living to the high level which progress in science and technology makes altogether possible today. ■

MORE THAN 23.5 MILLION CLOCKS AND WATCHES WERE PRODUCED LAST YEAR.



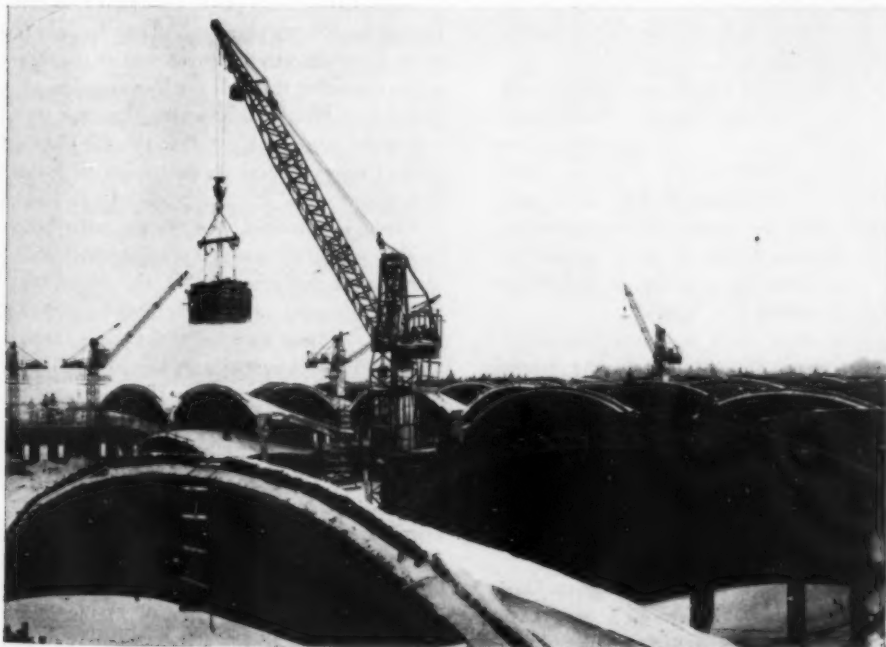


REFRIGERATORS AND OTHER HOUSEHOLD APPLIANCES ARE IN EVER GREATER DEMAND AS CONSUMER BUYING POWER RISES.



THERE IS ALWAYS AN EAGER MARKET FOR THESE ECONOMICAL LOW-PRICED MUSCOVITES AS WELL AS FOR LARGER CARS.

A CONSTRUCTION SITE TYPICAL FOR THE GROWTH OF THE COUNTRY'S CONSUMER GOODS INDUSTRY.



THIS TYPE OF PRODUCTION IS ALSO CONSTANTLY GROWING.





TOURISTS WELCOME

A GROUP OF BRITISH FARMERS DURING THEIR STAY IN MOSCOW. LIKE MANY OTHER FOREIGN GUESTS THEY DROVE THEIR OWN CARS ON A TOUR THROUGH THE SOVIET UNION.

THE LANGUAGE BARRIER IS NO OBSTACLE FOR THEM.



WITH SUMMER just around the corner, more and more tourists are arriving in Soviet cities and villages from all countries of the world. And they are met by welcoming people who are as interested in the visitor as the visitor is in them.

In 1957 the Soviet Union was host to more than a million foreign guests. While many tourists come alone, by far more prefer to travel in groups, with people of similar interests, trades or professions. It may be a group of farmers who are particularly interested in visiting collective farms to get a picture of Soviet agriculture, or a group of physicians who come to attend a congress.

Whatever their work and interests, whatever their views or attitudes on the Soviet Union, they will be received with that traditional hospitality on which foreign travelers unfailingly comment. They can, if they choose, visit not only museums and places of historic interest, but factories, farms and research institutes to see the Soviet people at their day-to-day work.

Dozens of tours crisscross the country. During the current travel season new ones have been added, to Siberia, the Baltic Republics,

Moldavia and Western Ukraine. Ten additional tours are now being worked out.

Last year, for those wishing to travel through the country in their own cars, automobile tours were arranged. They include the route from the city of Brest on the country's western border, through the Byelorussian capital city of Minsk, to Moscow. Another route is mapped from Moscow, through the Ukraine to the Crimea, one of the best vacation resorts in Europe.

Through Intourist, the Soviet state-owned travel agency, visitors are provided with every convenience for comfortable and pleasurable touring at moderate rates. Intourist maintains business contacts with more than 150 foreign firms and travel agencies in almost every part of the world, including the United States.

Intourist does much more than meet visitors halfway to make their stay in the Soviet Union memorable. To facilitate travel between Soviet cities, often removed from each other by great distances, Intourist has arranged for free passage between any two cities on a tourist's itinerary within a limit of 600 miles. Foreign guests pay only 25-50 per cent of the actual cost of railroad travel and 50-84 per cent of



GUESTS FROM ICELAND IMMEDIATELY BECAME FRIENDLY WITH MOSCOW'S PIGEONS.



AMERICANS ALBERT AND DAVID MESLIS DECIDED TO PURSUE A MOTORBIKE TOUR.

the cost of plane travel. Tourists also enjoy a privileged rate of currency exchange which gives them 10 rubles to the dollar instead of the official rate of four, and are given 25 rubles a day for incidental expenses.

On several international and domestic airlines new jet planes have been introduced in recent years. The cost of travel on these fast airliners is roughly equivalent to railway fare. Besides the saving in money, there is also a considerable saving in time, compared not only with train travel but even with other types of planes.

The time element is a rather important factor, considering the distance from city to city in so large a country, and also the distance between West European countries and the Soviet Union. Agreements between Soviet airlines and those in major European cities makes it easy for a tourist to get to the Soviet Union from practically every country.

For the convenience of foreign guests, In-tourist sells a special ticket for complete tour services that covers hotel, food, excursions, travel between cities, and other items. The cost runs anywhere between 70 and 700 dollars, depending upon services required and length of stay. For low-income travelers—students, for example—service costs have been reduced by 25 per cent. In the off-season period, from October to May, travel costs for all tourists are lower by a fourth compared with the summer months.

Other services have been introduced in the past two or three years that make the life of a tourist easier. For example, the border, customs and currency formalities have been simplified. Collective documents prepared for groups are used more extensively. All large border airports, seaports and railroad stations now have foreign exchange offices.

Expanding tourist travel, fostered by the Soviet Union and growing from year to year, has an importance far greater than the purely commercial. There is no better way of improving understanding between countries than through the exchange of visits between their citizens. *More pictures on following pages*

TOURISTS THE WORLD OVER ARE QUITE SIMILAR, AND THEY ARE EASILY SPOTTED BY A MOST CASUAL GLANCE.





BRITISH M.P.'S OSBORNE AND KERBY WERE AMONG THE MANY FOREIGN GUESTS RECEIVED BY NIKITA KHRUSHCHEV DURING THE RECENT MONTHS.

DIETHERLANDERS OF THE BUILDING TRADES INSPECT A MOSCOW HOUSING PROJECT.



TOURISTS WELCOME

Continued



FINNISH GROUP HAS BEEN INVITED TO TOUR THE SOVIET PARLIAMENT BUILDING.

GERMAN FARM AND FORESTRY GROUP INSPECTS THE NEW VOLGA CAR ON EXHIBIT.





ITALIAN CONDUCTOR CARLO ZECCHI (RIGHT) WITH SOVIET COMPOSER YURI SHAPORIN.



ELIZABETH TAYLOR WELCOMED IN MOSCOW ON A RECENT VISIT.



EMINENT SOVIET PAINTER ALEXANDER GERASIMOV PRESENTS HIS WORK TO MRS. ROOSEVELT.



NOBEL PRIZE WINNER SELDEN WAXMAN WAS AMONG U. S. VISITORS.

CZECHOSLOVAK MINERS, ON TOUR IN THE SOVIET UNION, FIRST WANTED TO VISIT A MINE.



ITALIAN PEASANTS GET WARM GREETING AS THEY VISIT A FARM.





DOCTOR W. HORSLEY GANTT IS BEING SHOWN AN EXPERIMENT TO DEMONSTRATE THE EFFECTS OF NEW MEDICAL PREPARATIONS AT THE PAVLOV INSTITUTE OF PHYSIOLOGY.



Pharmacologists

Exchange Visits

By Dmitri Petrov

THE MUTUAL VALUE of the scientific exchange program was once again evidenced in the recent visit of a group of American pharmacologists who spent three busy and instructive weeks in the Soviet Union. They worked out their own travel program and toured the medical institutions and industrial plants they had selected to visit in Moscow, Leningrad and Kharkov.

During their stay in Moscow the American guests spent several days observing work in progress at the Chemico-Pharmacological Institute, especially in the production of new medical preparations. At the Therapeutics Institute of the USSR Academy of Sciences they were invited to examine drugs and research procedures used in testing effects of treatment for various ailments, particularly cardiovascular diseases. The group also visited the Institute of Pharmacology and Chemical Therapy, the Institute of Medicinal Plants, and met with officials of the Ministry of Public Health and members of the Academy of Medical Sciences.

American pharmacologist Dr. Maurice Nance commented on the work being done. He said that "Soviet doctors are working boldly. That is why they are getting good results, both in their clinical and theoretical research."

In Leningrad the visitors spent considerable time at the Institute of Experimental Medicine and went through the Chemico-Pharmaceutical Factory. In Koltushi, near Leningrad, they studied work being done at the Pavlov Institute of Physiology.

They also visited research institutes and laboratories working in diseases of the brain, pediatrics, obstetrics and gynecology. In Kharkov they saw a plant for the production of experimental medical equipment and visited a pharmaceutical plant. Dr. W. Horsley Gantt, professor of psychiatry from Baltimore, made a trip to Sukhumi, a town on the Black Sea, to observe scientific work being done there.

The leader of the delegation, Francis Grant who is director of the Smith, Kline and French Laboratories, stressed the value of the visit and the continuing need for contacts between the two countries.

"Our stay in the Soviet Union," he said, "was fruitful. We made extensive observations and carry back with us most interesting impressions. The attitude of the Soviet people was one of rare friendliness and cordiality, from the young girl packer we met at the Kharkov Chemico-Pharmaceutical Factory to the eminent scientists we talked to. Everywhere we were met hospitably."

He went on to say: "The medical industry of your country is making good progress. I am certain it will go on to outstanding achievements. Laboratories and institutes are splendidly equipped and are staffed by high-quality specialists. Our common aim is to establish businesslike and mutually advantageous relations in the drug trade. We are much in need of these kinds of contacts and we will do our best to expand them in every way we can."

Charles Scull, another member of the delegation, head of one of the departments of the same firm, spoke of the high morale and enthusiasm of workers in the Soviet medical industry. "For me," he said, "it was news to find that in the Soviet Union specialists in different, and often only remotely related, branches of medicine work together to solve problems. Because of this, there is no narrowness in scientific work. This approach makes for greater coordination. With such an excellent organization in the medical industry and with this coordination of work, Soviet science will undoubtedly move on to great successes."

During the stay of the American pharmacologists, five Soviet specialists in the manufacture of pharmaceuticals and medical equipment, headed by Alexander Natradze of the Ministry of Public Health, left for the United States on an exchange visit. ■



An experiment on conditioned reflexes is being demonstrated for the guests at one of the laboratories of the Pavlov Institute of Physiology.



During a visit to the Moscow Institute of Pharmacology and Chemical Therapy Americans exchanged new medical preparations with Soviet colleagues.

American pharmacologists, shown at a pharmaceutical factory in Leningrad, commented on efficient organization of the medical industry and modern equipment in the labs visited.





SYMPHONY ORCHESTRA OF OREKHOVO-ZUYEVO TEXTILE WORKERS PERFORM AT THEIR PALACE OF CULTURE.



Eighty-Man Amateur Symphony Orchestra

By Sergei Zharkov

THE STAGE lights up on a symphony orchestra of eighty. The conductor makes his bow and the crowded concert hall is filled with the beautiful melody of Tchaikovsky's *Iolanthe*.

The last chord, and a thunder of applause bursts from the audience, interspersed with cries of "Bravo . . . Mikhail . . . Maria . . . Yuri . . ." An unusually familiar audience, the stranger thinks, to be calling these formally-clad musicians by their first names.

But this is an informal symphony orchestra and a personal audience. The big man at the double bass is Yuri Dyukov, a forgeshop worker; the pretty cellist is Kapitolina Beliaeva, a weaver; the young bassoonist alongside her is Yuri Shibanov, a fitter in the bleaching mill. Most of them work at the Orekhovo-Zuyevo Textile Mills, either in the shops or offices. A few of the musicians are students at the textile school and, to fill out, there is a schoolteacher or two and a designer. All amateurs and all good musicians.

Orekhovo-Zuyevo is an industrial town in the central part of the Soviet Union with a population of about 120,000. Although it has a number of other kinds of industrial plants—chemicals and instrument-building among them—its major industry is textiles, with 700,000 yards of fabric a day turned out by the eight mills of the giant Orekhovo-Zuyevo plant.

The plant's social and recreation center, or the Textile Workers' Palace of Culture as it is called, has a variety of amateur circles. Half a dozen years ago the amateur singers, dancers, actors and musicians got together and put on a production of the opera *Puss in Boots*, based on motifs from 17th century Charles Perrault's fairy tale. It was staged at the Palace of Culture.

The production was interesting, but the musical accompaniment, which was provided only by a pianist, was something less than adequate. This was a point on which both musician and audience were in complete agreement, and someone suggested that an orchestra be formed to prepare for future productions and perhaps to arrange symphony concerts, too.

The amateur musicians laid the project before the plant's trade union committee, which finances the Palace of Culture and its activities, and 200,000 rubles were allocated for the purchase of musical instruments.

That was the simpler problem solved. The much more difficult one was to find musicians. There were plenty of music lovers at the mills, but few of them could read music. David Push, the conductor of the future orchestra, and a fine musician—he was educated at the Sverdlovsk Conservatory—had no recourse but to train his musicians from the ground up. It meant three or four hours of hard work every evening after a day at the mills for these future violinists, cellists, clarinetists, percussion players.

Some of them found it hard going, this constant and everlasting repetition of each musical phrase, but they kept at it. Cellists Kapitolina Beliaeva, a weaver, and Galina Aksyonova, a cook who worked in the factory canteen, were as happy as children when they graduated from exercises to their first honest-to-goodness piece. *Continued on page 19*



CONDUCTOR DAVID PUSH HAD TO BUILD HIS ORCHESTRA FROM SCRATCH, INVOLVING LONG REHEARSAL HOURS.

TEXTILE WORKERS AND THEIR FAMILIES TURN OUT EN MASSE TO HEAR THE AMATEUR SYMPHONY ORCHESTRA.





GRIGORI MOROZOV, BOOKKEEPER IN THE BLEACHING MILL OFFICE, IS THE ORCHESTRA'S FIRST VIOLINIST. HE HAS DEVOTED HIS LEISURE TO MUSIC FOR 45 YEARS.

SOMETIMES MIKHAIL ZVONOV, AN OLD FRIEND, STOPS IN TO TALK ABOUT MUSIC.

Amateur Symphony Orchestra *Continued*



HERE MOROZOV GIVES SOME FUNDAMENTALS TO HIS GRANDSON.



Mikhail Shumliansky, a fitter, had a real passion for music, but a bad ear. Conductor Push had turned him down as orchestra material. But Shumliansky wouldn't take no for an answer. Although he's no longer young—a family man with two daughters—he joined an amateur ensemble, practiced with them for a full year, applied for admission to the orchestra again, was turned down again, but extracted permission to attend rehearsals. That was four years ago. Now Shumliansky is the beaming first violin in the front row of the orchestra.

Maria Anisheva, a weaver, had a rare musical memory and a very good ear. She had no difficulty getting into the orchestra and has a record for never having missed a rehearsal, in spite of a double program. She works at a full-time job and attends evening school.

Anna Prokhorova, an attractive kindergarten teacher, had a rather special problem only indirectly associated with music. She was regular at rehearsals and was making excellent progress when, quite abruptly, she stopped coming. When other orchestra people visited her to find out what the trouble was, Anna explained that she had decided to leave the orchestra so as to keep peace in the family.

She was recently married, and her husband was jealous—there were too many men in the orchestra. Her friends got down to cases with the jealous husband, and with such good effect that he joined the orchestra training group himself. Whether it was for musical or other reasons, nobody is inclined to argue. The fact is, he is doing well in both areas—music and romance.

Most of the musicians have a high-school education. Some are working and studying at

Continued on next page



CELLIST KAPITOLINA BELIAYEVA IS A WEAVER BY DAY, BUT MUSIC WITH THE SYMPHONY IS A SECOND CALLING.



HERE SHE IS AT THE FACTORY BUT SHE IS ALSO A CORRESPONDENCE STUDENT OF A TEACHER TRAINING SCHOOL.

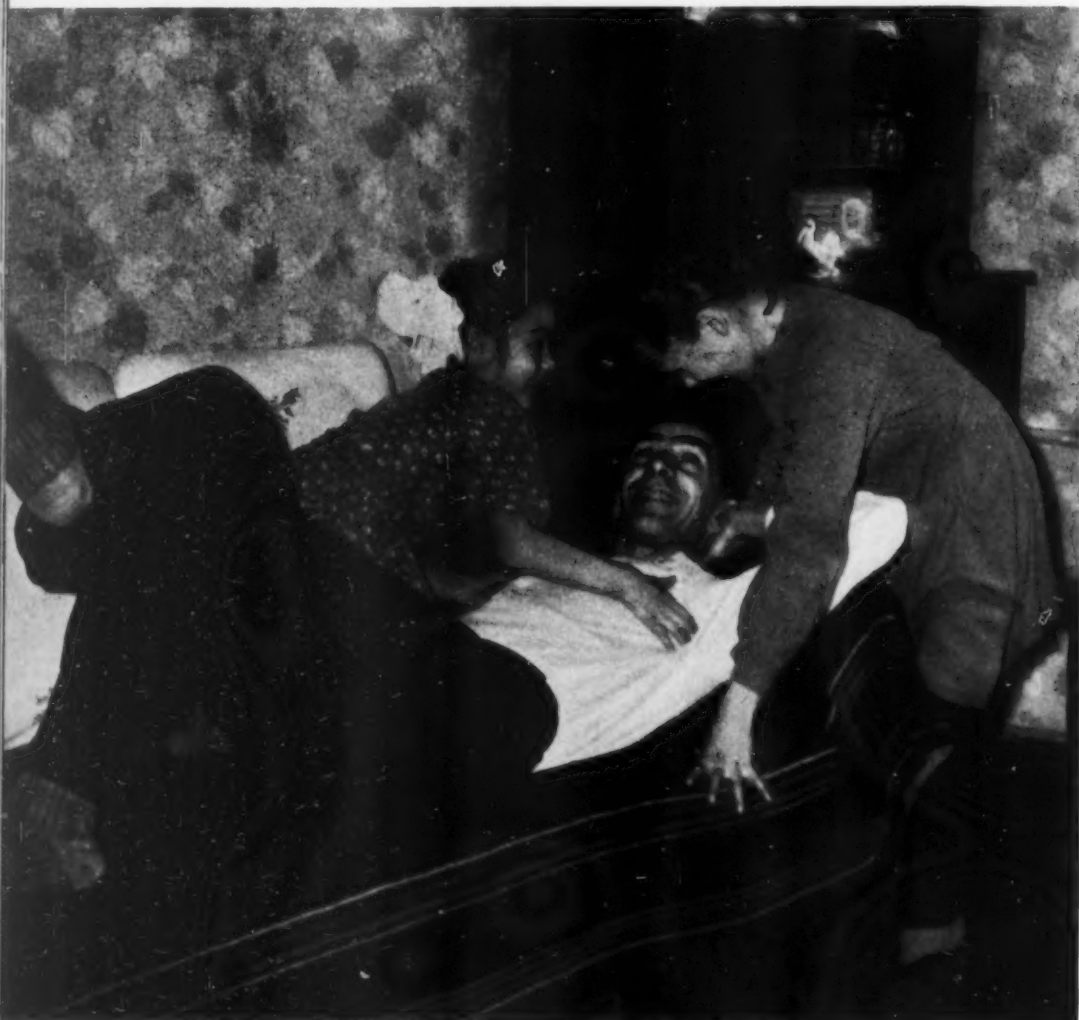


IT TOOK MIKHAIL SHUMLIANSKY YEARS OF EXTENSIVE STUDY TO MAKE THE ORCHESTRA



A VIOLINIST IN ORCHESTRA MIKHAIL IS A FITTER BY PROFESSION.

SHUMLIANSKY DEVOTES ENJOYABLE SPARE HOURS TO HIS VIOLIN—WHEN HIS TWO DAUGHTERS PERMIT IT.



Amateur Symphony

the same time. Kapitolina Belayeva is taking a correspondence course at a teacher training school. But the orchestra means so much to her that she won't give it up, even though pressed for time.

The orchestra's influence spreads in widening circles through the town. Kapitolina's younger sister, Vera, is a member of the amateur string ensemble at the Palace of Culture and hopes soon to qualify for the orchestra. Cellist Victor Antonov, an electrician, has two daughters studying music. Nina Gerasimova, a schoolteacher who is an orchestra violinist, has a home trio—her father plays the accordion, her brother the guitar, and she alternates between violin, accordion and piano.

Some members of the orchestra are in process of becoming first-class professional musicians. Alexander Timokhin, a weaver's son, and Galina Volkova, a former textile worker, are now studying at the Moscow State Conservatory, and Lilya Bulavina is a student at the Gnesin Music School.

The orchestra, in its sixth year now, is the pride of the town, and its concerts are invariably successful. Its repertory includes such varied compositions as Beethoven's *Fifth*



NOW THE ORCHESTRA AND OTHER GROUPS OF THE PLANT'S AMATEURS REHEARSE *ARINA*, AN OPERA INSPIRED BY THE 1885 STRIKE OF OREKHOVO-ZUYEVO TEXTILE WORKERS.

Orchestra *Continued*

Symphony, Glinka's *Waltz-Fantasia*, Brahms' *Hungarian Dances*, Khachaturyan's *Nocturne for Violin and Orchestra* and *Saber Dance* from the ballet *Gayane*, and Schubert's *Unfinished Symphony*. Its repertory is as large and its performance as accomplished as some professional orchestras, and it has played before audiences in Moscow's Tchaikovsky Hall and elsewhere.

Now in rehearsal is the score of the opera *Arina*. Composer is David Push and librettist is Alexander Druzhelovsky, who is director of the Palace of Culture.

The opera was inspired by the events of 1885—a strike of the local textile workers for better conditions. The first act has already been produced, with a cast of 150: soloists, chorus and dance ensemble. Galina Borisova, a nurse at the mill clinic, sang the title role of Arina and Victor Chumakov, an electrician, played the supporting role.

The opera will be presented for its first full production in the fall by the Palace of Culture. It will be sung entirely by textile workers. The accompaniment, needless to say, will be supplied by the Orekhovo-Zuyevo Amateur Symphony Orchestra. ■

TEACHER ZOYA SIZOVA, VARIETY SOLOIST, AND THE QUARTET "GET WITH IT" FOR A GERSHWIN NUMBER.



NOT TOO LONG AGO I was driving around Moscow with a foreign visitor, a delegate to the Inter-Parliamentary Union. We noticed a long queue outside a store.

"What's the line for?" he asked me.

We stopped the car and put the question to the people waiting. It was a book store which had advertised editions of the complete works of Anton Chekhov, Jack London and Sergei Esenin, and these were buyers.

It was some time before my foreign guest could get over his astonishment. "I've been in most parts of the globe," he kept saying, "but this is the first time I've seen people lined up halfway down a street to buy books."

It is not an uncommon sight in a Soviet city. Not because books are a rarity, but because a large edition of a popular book, Soviet or foreign, contemporary or classic, will frequently be sold out the day it is issued.

Foreign visitors are always surprised at the sight of so many book-stalls in the streets of Soviet cities, in the vestibules of office buildings and inside factories, along with the more usual bookshops. They all do a brisk trade.

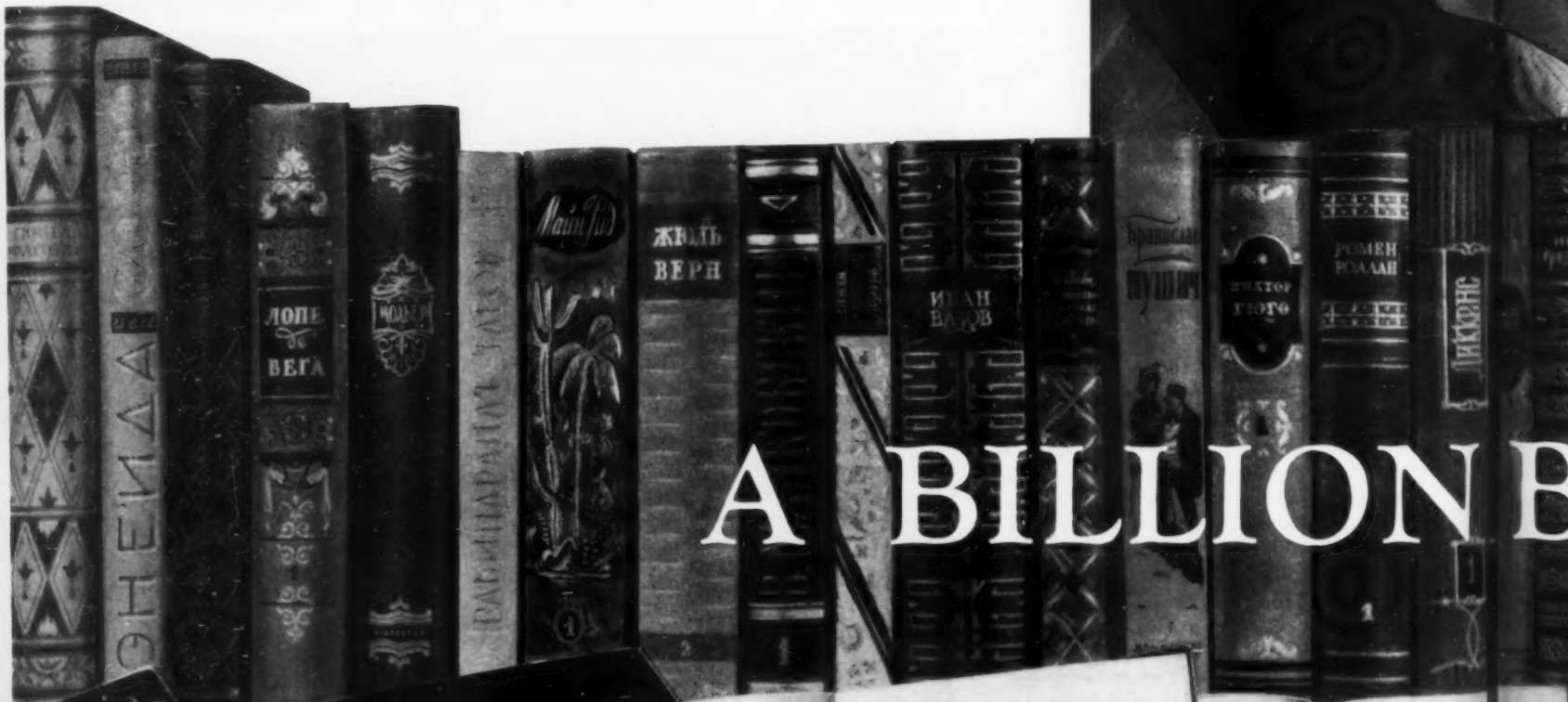
Reading has become an essential part of Soviet living, and book-buying is universal throughout the country, even in remote parts. Home libraries for large numbers of people of all degrees of educational background, factory workers and farmers included, have become as important a part of home furnishings as radio.

This is quite aside from the public libraries, of which there are 400,000 in cities, towns and villages. Libraries are crowded, reading rooms are always full-up in the evening.

All public libraries in the Soviet Union are free. Some are owned and maintained by trade unions and cooperative societies; most are state-owned and operated. Most of the publishing houses, printing plants and book outlets are also public property.

Statistics on book publication and sale are usually a fairly reliable index of the cultural, and even of the scientific, development of a

Continued on page 24



A BILLION B



БАЛЬЗАК





Shop display of current books by workers. A 5-year total runs to 100 million copies.



One of the reading rooms in Moscow's Lenin Library which is the largest of the country's 400,000 public libraries.

◀ Marina Shelepina, a publishing house editor, and Alexei Malinkin, an electrical worker, discuss his book where he describes the new methods he introduced in his trade. Some 16,000 workers, farmers and engineers have published similar books during the past five years.

By Nikolai Mikhailov
USSR Minister of Culture

BOOKS A YEAR





THERE ARE NUMEROUS BOOKSTALLS IN ADDITION TO THE MORE USUAL BOOKSHOPS.

A BILLION BOOKS A YEAR

Continued

nation. One may hazard a guess that there is a correlation of considerable significance between the large circulation of books in the Soviet Union and so advanced a scientific achievement as the launching of the first earth satellites.

Book Publishing—1913 and Today

Consider the Russia of 1913 and the Soviet Union of today with regard to book publication. Here are the comparable figures. In 1913 a little more than half a book was published per person. Today, with the country's population largely increased, there are five and a half books published per person, while the figure for average world book production is slightly more than two books per person.

These five and a half books published for each Soviet citizen cover all existing fields of knowledge, books for every age group and every conceivable interest.

As the general educational level rose during the past 40 years, people demanded more solid reading. This is partly reflected in the steady increase in the average size of books. The average book today has two to three times as many pages as it did in the late twenties.

The size of editions, too, has greatly increased. In 1913 the country issued a little more than 99 million books; the figures for 1957 were



better than a billion. According to UNESCO, all the countries in the world publish five billion books annually. The Soviet Union is thus the world's largest book publisher.

A study of the books a country publishes and the reading habits of its people tells a great deal about where the country is heading, what its aims and goals are. In the Soviet Union the broad perspective of education—and that includes book publication, of course—is an informed and socially-minded citizenry with an understanding of both the humanities and the sciences as they relate to modern life.

As a consequence, the range of book publication is extremely wide. Books on philosophy, economics and politics, on technology, industry and agriculture, textbooks in every field of science and the social studies, fiction, poetry and art books are on sale everywhere and are circulated by every library.

Books on various phases of technology, industry and agriculture make up a large part of the total output of Soviet publishing houses—nearly 46 per cent. This compares with 7 per cent in 1913. There is a wide distribution of books describing new methods and techniques in industry and agriculture, usually written by the innovator—industrial worker, collective farmer or engineer. In the past five years some 100 million copies of such books were published.

Statistics show that 50 million people—approximately one out of every four inhabitants of the Soviet Union—are engaged in some kind of study. This large figure means that an enormous number of textbooks must be published yearly. In 1913 textbooks comprised 8 per cent of the total number of published books; the present figure is 25 per cent.

Continued on next page



A BILLION BOOKS A YEAR ARE TURNED OUT BY THE COUNTRY'S BINDERIES.

WIDE CHOICE OF CHILDREN'S BOOKS DEVELOPS GOOD READING HABITS.



As the national culture of the various peoples has flourished, so has the publication of books in each of the languages. Exclusive of the Russian, the total printing of books published in the languages of the peoples of the Soviet Union was 38 times greater, on the average, than in 1913.

Printings of books published in Ukrainian have increased by more than 150 times. In pre-Soviet times there were no books published at all in what is now the Tajik Republic; in 1956, some 450 titles were issued in a total of 3.5 million copies. Of these, 2.8 million were in the Tajik language. The Estonian Republic issues three times as many books as it did in 1940.

An even more unusual, and quite unprecedented achievement, is the publication of books in the native tongues of 40 nationalities which had no written language until Soviet times. Millions of people who four decades ago would have had no access to the treasury of world culture now read books in their own language. More and more books—fiction, textbooks, books on the arts and sciences—are published every year in these newly created written languages.

Giant Editions

Translations of the best work from each of the national literatures enriches the whole country's intellectual life. In the past few years, works of Ukrainian literature have been translated into 40 languages; Georgian literature into 19; Byelorussian into 16; Tatar into 13, and so for the others.

Russian literary works are published in scores of the languages spoken in the country. Alexander Pushkin's poetry has been issued in 82 languages in editions totaling 84 million copies; Maxim Gorky's works in 76 languages with 88.5 million copies issued; Leo Tolstoy's books in 80 languages with more than 76 million copies; and Anton Chekhov's short stories and plays in 72 languages with 52.5 million copies.

A BILLION BOOKS A YEAR *Continued*

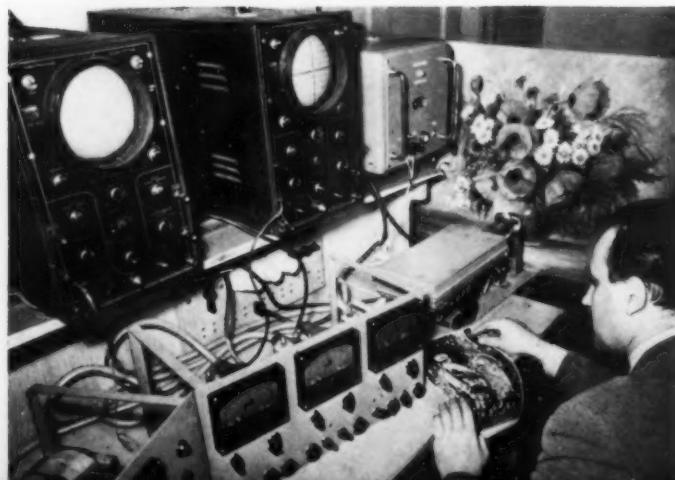


Books in Every Language

Since teaching in the schools is carried on in the language of the people living in the particular part of the country, many of the books are published in multi-language editions. Secondary school textbooks are printed in 59 languages of the peoples of the Soviet Union and in 12 foreign languages.

Fiction, including translations of world classics and works of contemporary foreign writers, and the classic and modern literature of the various Soviet nationalities, is published in editions totaling many millions of copies. The annual printing of novels, short stories, poems and plays exceeds 340 million copies. The average edition of a book today is 16 times larger than in 1913, while the number of books of fiction published per person has increased 17 times over.

ELECTRONIC EQUIPMENT HELPS DEVELOP NEW COLOR-SEPARATION METHODS.





NEW LARGE PRINTING PLANTS ARE BUILT TO FURTHER INCREASE BOOK OUTPUT.

These giant printings are done for contemporary writing as well. Mikhail Sholokhov's novels have been translated into 56 of the languages spoken in the country and issued in a total of 26 million copies.

In foreign translations, to cite UNESCO figures again, Soviet publishing holds first place and has held this pre-eminent world position for many years. In the past two years alone, fiction by writers of 53 foreign countries have been published in translations totaling 193 million copies.

The Soviet reader is interested in the literatures of the East and the West, both classic and contemporary. Honoré de Balzac has been published in 17 of the languages spoken in the Soviet Union; in editions with a total of 10 million copies; Victor Hugo in 45 languages in 13 million copies; Jules Verne in 23 languages in 12.8 million copies.

Among English writers, first place is held by Charles Dickens, who has been published in 18 languages in 7.6 million copies. The most popular of American writers are Jack London, Mark Twain, and O. Henry. Jack London is the most widely read of all foreign writers. His books have been issued in 18.5 million copies in 32 languages.

All told, 2,572 books by 218 American writers, including contemporary authors, have been published in the Soviet Union in 50 languages and a total printing of better than 77 million copies.

More Readers—More Books

In spite of these enormous printings, demand for books still exceeds supply—the reason for the line in front of the Moscow bookshop and for waiting lists of sizable length for popular books at circulating libraries.

That the supply has not caught up with this extraordinary demand for good books is to be explained by two reasons: First, and most significant, is the truly enormous reading public that the Soviet educational system has created in these past four decades, a public which increases with each passing year. Second, is printing capacity and paper supply.

The paper industry in the country actually had to be built from the ground up after the Revolution. The modern Balakhna mill on the Volga today produces more paper by itself than did all the mills of czarist Russia. In recent years many big pulp and paper mills have been built near the country's large forest areas. Many more are now going up in Siberia, the Urals and other forest regions.

Large printing plants with modern equipment began to be built only in the thirties. The first Soviet-produced linotype machine was manufactured as late as 1932. Now there are thousands of large and small print shops in towns from coast to coast. In the first ten years after the war, the machine-building industry turned out upward of 60,000 presses and machines of all kinds to speed up printing and book production.



THE FICTION AND JUVENILE SECTION IN ONE OF MOSCOW'S NEW BOOK STORES.

At present 180 types of varied printing equipment are manufactured. The Soviet publishing industry is being steadily improved and expanded and book production continues to grow from year to year. There is still much to be done, however, in the way of mechanizing and automating book production processes to increase quantity and improve quality.

But even with unlimited printing facilities and paper supplies, it is unlikely that supply will catch up with demand, so fast-growing is this great audience of book readers, undoubtedly the largest and the most demanding the world has ever seen. ■



Beating Swords into Plowshares by E. Vuchetich

National Art Show

By Natalia Sokolova

Editor of the Art Magazine *Iskusstvo*

A NATION-WIDE show with more than 8,000 exhibits of fine and applied arts was opened in Moscow last November to commemorate the fortieth anniversary of the Soviet state. Participation of artists and craftsmen was so wide and public interest so keen, that in addition to the big Central Exhibition Hall supplementary display space had to be used in the USSR Academy of Arts Building and other galleries.

Artists of all generations, the masters of various forms and media, took part in this exhibition. The works on display reflected the life of the country and its people in a wide range of moods and motion. The artists' treatment of historic and contemporary themes in pictorial and sculptural arts elicited warm, sometimes heated comment from on-lookers, both for and against. Subject, composition, values, drawing, all came in for their share of debate.

One of the interesting things about the exhibition was the large number of works by younger artists, the generation born in the 20's and 30's. Their novel approach in portraying life, and often, too, the romantic fervor with which their images were drawn, compelled the visitor to stop and look.

The artists of the older generation—Sergei Gerasimov, Alexander Deineka, Arkadi Plastov, Martiros Saryan, Boris Ioganson—displayed work individually characteristic. Gerasimov and Plastov have long been noted for their portrayal of landscape and peasant life of Central Russia. Deineka looks to the worker in the large industrial cities for his models. Saryan paints the poetic beauty of his native Armenia. Ioganson uses the epic themes of working-class struggles.

Deineka's paintings had the quality for which he has long been distinguished. His drawing is sharp, often harsh, but his color tones are always precise and subtle, a treatment thoroughly suited to his studies of machines and men, industry and the industrial worker.

Lenin, the founder of the Soviet state, was much in evidence at its birthday exhibition. The simplicity and warmth of the man and the indomitable spirit of the revolutionary were expressed in several media. In sculpture, Lenin's personality was best portrayed, in my opinion, by Veniamin Pinchuk whose work is marked with a restraint that serves admirably to convey the moral strength of Lenin.

Art critics and exhibition visitors were much moved by another Lenin-inspired work—the painting *Smolny in 1917* by the Ukrainian artist Semyon Guetsky. The theme is one which has particularly vivid memories for those whose recollection goes back to the early days of the Revolution.

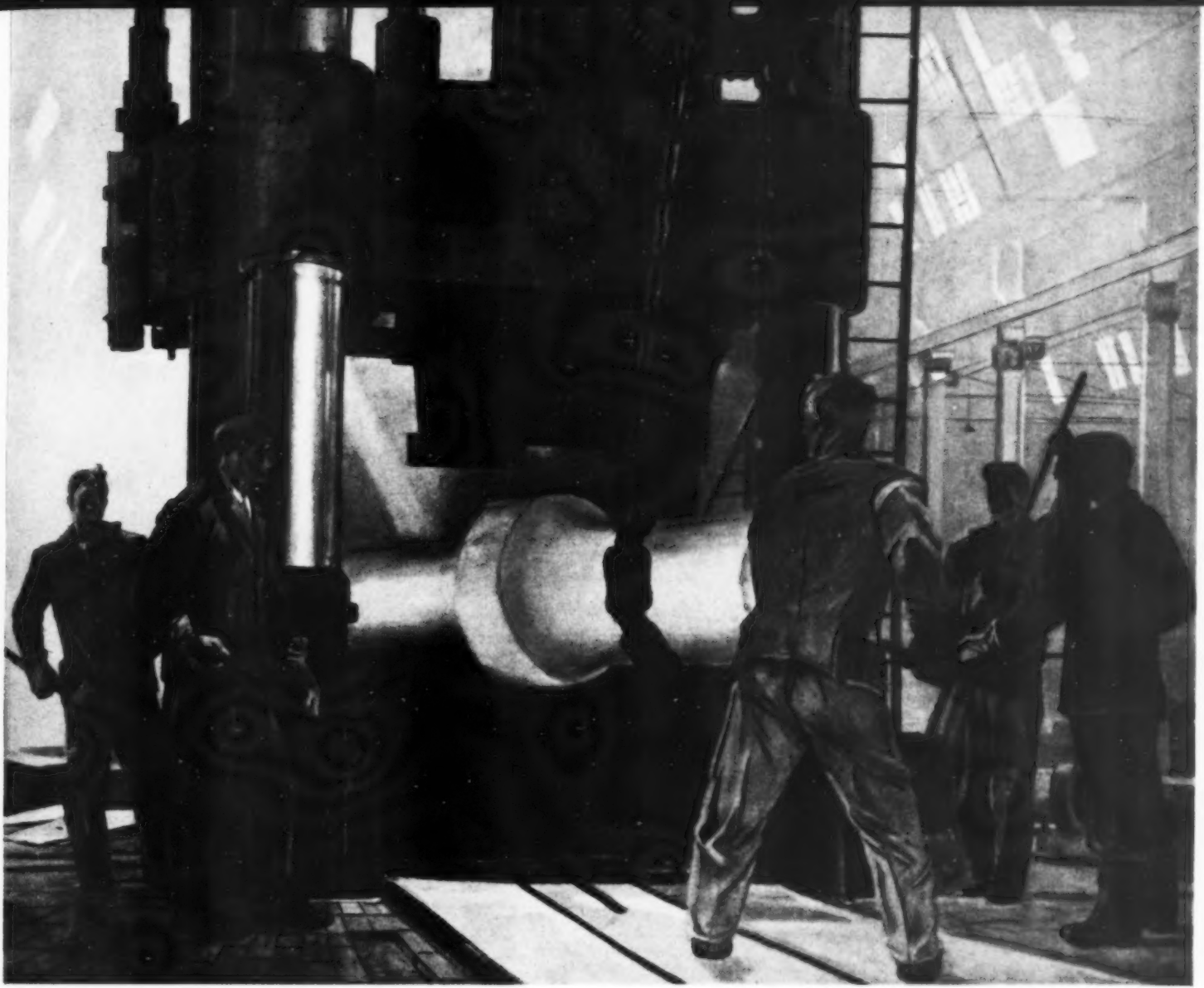
It is 1917, and the Revolution is not yet won. Lenin stands quietly looking at a group of battle-worn soldiers sleeping on the floor of the Smolny Institute, headquarters of the Revolution. There is kindness in his look, concern, a wide-embracing humanity.

This crucial period in history is also the theme of a large canvas by the young artist Alexander Atsmanchuk titled *The Order Has Been Given*. This is the opening phrase of a popular song about the years of civil war and foreign intervention.

Continued on page 32







The Forgemen by A. Deineka

Construction Site Concert by M. Volodin





Stronger Than Death by E. Fivelsky



A New Shift Arrives by E. Samsonov

The University's Embankment by G. Savinov





Toward Evening by S. Kacharov



National Art Show

Continued

The viewer knows that the young soldier of the Revolution and his girl friend, the central figures of the painting, are in love and he knows, too, the fortunes of war are about to separate them. There is a tender longing to be together in their expressions, but also a stubbornness that says that "the order of the Revolution will be carried out." The artist has portrayed with deep understanding the fate of Soviet youth, who were ready to sacrifice themselves to preserve the freedom won in the Revolution.

Boris Nemensky derives the subject for his painting from the Second World War. Here are the trenches again, and the land scorched by enemy shells. A soldier, obviously a farmer in peacetime, looks at something held in his open palm. They are grains of wheat which have survived in this burned-out earth, and they bring thoughts to the soldier of the life he has left behind.

The historical subjects toward which many of the exhibiting artists turned was a very natural one for a show of this kind. But subjects were by no means confined to the history of the past. As prominent were themes of today, many of them interpreted with deep feeling and lyricism—friendship, love, childhood, life in factories and in homes, in city streets and farm villages.

On display were the work of artists from every one of the Union Republics, characterized by a variety of mood and treatment. Of particular interest were the paintings of artists from Kazakhstan—a Central Asian Republic where easel painting is of relatively recent origin. I was also impressed by the works of the Azerbaijan exhibitors. Most of them were younger artists, born in the late 20's and

Continued on page 34







Ararat Valley by A. Kodzhoyan

Latvian Fisherman in the Atlantic by E. Kalins





Still Life by O. Tatevosyan



National Art Show

Continued

early 30's. It is a modern, prosperous, sun-drenched land they depict.

Among the best of the paintings on exhibit were works of Mikhail Gusein-ogly Abdulayev and Agasaf ali Dzhafarov, both young artists from Baku who exhibited a series of studies painted on a visit to India. *Back from Work*, a large canvas by Abdulayev of Indian peasants returning home from the fields, captures attention for its profound human and lyrical perception of the life of the people emphasized by the magnificently painted background of mountains veiled in twilight blue.

In sculpture, the exhibits seemed to demonstrate a tendency to the monumental, stimulated by the largeness of vista of Soviet life and the great openness of the country's landscape. Too, there seems to be a growing interest in the realistic portrayal of life's great truths through symbol and allegory.

Fiveisky's splendidly executed *Stronger Than Death* is characteristic of this tendency. Fiveisky's stoic trio facing their executioners typify the strength of the people's struggle against Nazi enslavement and the inextinguishable patriotism that marked Soviet citizens in the Second World War.

Vuchetich's figure of a naked warrior hammering his sword into a plowshare and Kibalnikov's worker holding aloft a golden symbol of the sun's energy best expressed, in the opinion of most viewers, the spirit of the times—the striving for peace and the conquests of modern science. ■

Warm Day by A. Levitin



With Her Grandfather by V. Yefanov



NEW S

IN A NEW U

By **KHABIB ABDULLAYEV**

President, Uzbek Academy of Sciences

FIVE HUNDRED years before Copernicus developed his heliocentric theory, Biruni, an eleventh century scholar from the region of Central Asia which is now Uzbekistan, considered the possibility of the sun as the center of the solar system and calculated the radius and circumference of the globe.

The ancient towns in this region were world-renowned for their scholars centuries before the voyages of Columbus and Magellan proved that the earth was round.

Al-Ferghani (called Alfraganus in the West), ninth century mathematician and astronomer who derives his name from his birthplace, the Uzbek town of Ferghana, was the author of *Fundamentals of Astronomy*. Translated into Latin from the original Arabic, this book was still being published in Europe 800 years after it was written.

In the same century Muhammad ibn Musa al-Khorezmi (Khowarizmi), a native of the town of Khorezm, propounded the fundamentals of algebra. The words *Al-Jabr* from the title of his treatise gave that branch of mathematics its name.

Tenth century philosopher and encyclopedic scholar Muhammad Farabi, born in the town of Farab on the Syr Darya River, was one of the founders of the theory of music.

Abu Ali ibn Sina (Avicenna) from the town of Bukhara, twelfth century philosopher and physician, worked out a system of medicine in his treatise *The Canons* which remained an authoritative guide for physicians the world over for hundreds of years afterward.

The Samarkand astronomical school of the fifteenth century, headed by Ulugh-Beg, attained precision of observation that was unmatched anywhere in the world at the time.

Alisher Navoi, fifteenth century scholar, wrote great and imperishable poetry which is still admired today.

Past and Present

These are all names for the centuries, but for most of the Uzbek people of their times—illiterate, sunk in superstition and poverty—they were names unknown. Central Asia for hundred of years was ravaged by foreign invaders from the south, by nomads from the north, and by incessant internal feudal hostilities that dismembered the country.

Scholars fled to safer regions or were exiled. In his verse, Navoi



Sagdy Siradzhinov (center), exponent of the Tashkent mathematics school, works with graduate research scholars at the Uzbek Academy of Sciences.



Khabib Abdullayev, President of the Uzbek Academy of Sciences, is an eminent geologist. He is well known for his theoretical works on ore formation and is an authority on oil deposits.

The Uzbek Academy was founded in 1943, but traces its beginnings to the prewar period, when it existed as a branch of the USSR Academy of Sciences with some ten scientific institutes. The Uzbek Academy today has 30 institutes and a total staff of 3,500.

Long-range program now being prepared will materially step up the work of the Academy in organizing research over the next 10 to 15 years.

W SCHOLARS

W UZBEKISTAN

speaks of himself as a homeless wanderer. Biruni, Avicenna, Farabi and many other scholars lived most of their lives in foreign lands.

The ancient learning perished, libraries were destroyed, and a period of cultural darkness set in for these Central Asian peoples which continued through the czarist period. It did not lift until after the Socialist Revolution of 1917.

In Uzbekistan, as in other Central Asian Soviet Republics, it was no simple matter to create a modern industrial society out of a feudal economy in 40 years, to educate a whole people, to reinvigorate a culture. But the result is an enlightened people and a prospering nation.

There was not one college in Uzbekistan before the Revolution. Now in our republic with its 7.3 million population, more than 130,000 students are enrolled in 32 colleges and 102 specialized secondary schools. They are training for leadership in industry, agriculture, the professions, arts and sciences.

Today 91 of every 10,000 Uzbek men and women have a college education. That is double the figure for France, seven times greater than for Turkey, 28 times more than for Iran.

Uzbekistan has one hundred scientific research institutes—for industrial and agricultural research, mathematics and physics, geography, geology, astronomy, history, linguistics, the arts. Some 6,500 scientists, heirs to the tradition of the scholars of the past, work at these institutes.

The Uzbek Academy of Sciences

The best of the Uzbek research people are associates of the Republic's Academy of Sciences. Our Academy, a focal body for research in all fields of study, developed and grew with the founding of the modern educational system.

Its beginnings date back to 1920, when the first university in the Central Asian Soviet Republics was founded at Tashkent, capital of Uzbekistan. The faculty then was largely made up of professors from Moscow and Leningrad, whose objective it was to develop a corps of Uzbek scholars and scientists.

In the thirties the first Uzbeks and members of other national groups in that area to hold doctorates in science had made their appearance. They headed the work of the scientific research institutes belonging to

Continued on next page



Sabir Yunusov (left), shown with a young researcher, is a well-known chemist, heading group that discovered 60 new alkaloids for drug development.

UZBEK SCHOLARS

Continued

the Uzbek branch of the USSR Academy of Sciences. In 1940 the branch had 10 scientific institutes with a total number of 210 researchers, of whom 28 held doctorates and 58 master's degrees in science.

The scientific endeavors had increased to such an extent that the organization of an independent Academy of Sciences of the Uzbek Republic in 1943 was inevitable. It now has 30 institutes with a total personnel of 3,500, including 75 doctors and more than 400 masters of science. Whereas ten years ago the Academy published 47 scientific papers, the corresponding figure for 1957 is 190 scientific papers.

Developing Scientific Schools

The scientists of Uzbekistan have developed their own schools in the further pursuit of knowledge. The Tashkent mathematics school on the theory of probability and mathematical statistics, founded by the late Vsevolod Romanovsky, is being successfully continued and expanded by Tashmukhamed Sarymsakov, Sagdy Siradzhinov and his other pupils.

Much has been contributed by Tashmukhamed Kary-Niyazov, the author of a major work on the ancient Uzbek astronomical school of Ulugh-Beg, in the field of methodics in mathematics and in the elaboration of Uzbek mathematical terminology.

In the field of theoretical and applied mechanics we have the noted works of Khalil Rakhmatullin on the aerodynamics of a permeated body and Magamet Urazbayev on the theory of resilience, which have enriched the theory and practice of building mechanics, aseismic construction, etc.

The Tashkent geological school evolved under the influence of the noted Russian explorative geologists of Central Asia. It is successfully pushing research in the theory of formation of magnetic ores and ore deposits, in the teachings on formations and lithology, in the geochemical lines, hydrogeology, etc.

The school of the chemistry of alkaloids is also doing important work. The Uzbek Academy of Sciences has now become one of the main Soviet centers in the study of alkaloids.

Similar examples may be cited in other branches of science, such as the humanities, for instance. Scholars in Tashkent and elsewhere in Uzbekistan are making notable contributions in many studies, their achievements recognized internationally. In these past few years at least 30 Uzbek scientists read papers at international congresses.

Tapping New Areas of Knowledge

With new areas of research being tapped by growing numbers of well-trained Uzbek scientists, our Academy has reorganized some of the older institutes and founded new ones to extend the scope of work.

The Power Institute was recently reorganized into the Institute of Energetics and Automation. In connection with this, a number of laboratories on the automation of different branches of industry have been opened. The Institute is now preparing a blueprint for a unified power system for all of Soviet Central Asia.

Since Uzbekistan is a land of cotton, the study of the theoretical foundations of the biology of cotton is of exceptional importance. For this purpose a special Institute of Genetics and Plant Physiology has been established by our Academy.

To concentrate research on such problems as the influence of a hot climate on the human organism, rational food regimes and local medicinal raw materials, the Institute of Experimental Medicine was established.

The newly organized Institute of Nuclear Physics, equipped with an experimental reactor, grew out of the work of Sergei Starodubtsev, Ubai Arifov, Sadyk Azimov and other Uzbek physicists on the peaceful uses of atomic energy. They have been using tracer atoms in research on cotton, industrial processes and medicines.

Last year the Uzbek Academy of Agricultural Sciences was founded. Associated with this Academy are 2,000 scientific workers in cotton growing, forestry and conservation, cattle breeding and a variety of other specialties. At their disposal are research institutes, testing stations and experimental bases in all parts of Uzbekistan.

Planning Ahead

The problems upon which Uzbek scientists work have an intimate bearing upon the economic growth of our Republic. The theoretical work of a group of chemists led by Malik Nabiyev served to change the technology of production of nitrogen fertilizers radically. Another group, headed by Sabir Yunusov, discovered 60 new alkaloids in local

Members of the Uzbek Academy of Sciences in a cotton patch where pneumatic picker, designed in the aerodynamics laboratory, is being field tested.



Professors Stepan Altunin (left) and Alim Mukhamedov observe working model of hydroelectric station in Academy's river-bed research laboratory.



plants, which means new drugs for fighting microbes and bacteria. Researchers in the Institute of Zoology and Parasitology have carried out a number of investigations for the transformation of the fauna of Uzbekistan. Investigations in aerodynamics in which Khalil Rakhmatullin took an active part led to the creation of the first model of a pneumatic cotton picker. Fruitful work of this kind has been done in practically every area of science.

The institutes of our Academy are extending their research in the fields of geology, physics, chemistry, energetics, automation, construction and building materials. Our Academy plans to set up new scientific institutes for metallurgy, engineering industry, chemistry and the technology of nonferrous and rare metals.

The Uzbek Academy of Sciences is now in the process of drawing up a long-range plan for the training of scientific personnel and for organizing research for the next 10-15 years. It can, in view of the rate of development over these past few decades, confidently project a greatly accelerated future. ■

Ubai Arifov, the director of the Academy's Nuclear Physics Institute, is now working on using tracer atoms in research on cotton and medicines.



The Uzbek Academy's astronomical observatory does precise work. As far back as the fifteenth century, Uzbeks were famous teachers of astronomy.

Yunus Khakimdzhanov (left) and Abulfattakh Rasulev of the Institute for Oriental Studies are eminent authorities on ancient Uzbek manuscripts.





VLADIMIR ASHKENAZI'S TALENT WON THE QUEEN ELIZABETH PRIZE IN BRUSSELS WHEN HE WAS NINETEEN.



**BUILDING MUTUAL
UNDERSTANDING AND FRIENDSHIP**

TWO Soviet musicians who have played for enthusiastic audiences both at home and abroad will be appearing in American concert halls this fall—Igor Bezrodny, violinist, and Vladimir Ashkenazi, pianist.

They will tour American musical cities as part of the exchange agreement concluded between the United States and the Soviet Union some months ago covering a large area of cultural activities.

Both are young men—Bezrodny is 28 and Ashkenazi is only 21—but as virtuosos they rank with the great instrumental performers of today.

Igor Bezrodny

"The noble musicality displayed by the young violinist in his performance of Bach's *Ciaccona* amazed all." "His playing was impeccable, grand, full of emotion, without any

IGOR BEZRODNY HAS SEVERAL PRIZES RECEIVED AT INTERNATIONAL COMPETITIONS. HIS CONCERTS IN FOREIGN COUNTRIES WERE HIGHLY COMMENTED BY MUSICAL CRITICS.



Young Violinist and Pianist

To Perform For American Audiences This Fall

hint of striving for effect." This was the typical tenor of press comment following Igor Bezrodny's tour of Holland.

Bezrodny is a masterly interpreter of Bach. At the 1950 International Contest held in Leipzig to commemorate the bicentennial of the death of the great composer, Bezrodny was awarded first prize. He is no less a splendid interpreter of Handel, Mozart, Beethoven and Brahms. Critics have been moved to comment on the delicate water-coloring of his Debussy's *Claire de Lune*, the poetry of his Prokofiev sonatas and the fascinating movement of his Ravel's *Tzigane*.

Igor Bezrodny is the son of musicians. Both his parents teach the violin. He was born in 1930 in Tbilisi, capital of Georgia. At the age of six he began studying with his father.

In 1937 the family moved to Moscow and there he entered the Central Music School. This school, affiliated with the Moscow Conservatory, gives talented children both a general and musical education. His teacher was Abram Yampolsky, who has trained such eminent violinists as Leonid Kogan, Yulian Sitkovetsky, Eduard Grach and Yelizaveta Gilels.

In 1948 Bezrodny entered the Moscow Conservatory. While still a student he won first prize at the Jan Kubelik International Contest held in Prague in 1949, and in 1951 he was awarded a Stalin Prize. After graduating from the Conservatory in 1953, he stayed on as a postgraduate student and subsequently as teacher.

His foreign concert tours have been invariably successful. He has played to audiences in Austria, England, Belgium, Holland, France, Finland, Switzerland, Japan and in Latin American countries.

His American program will include sonatas by Prokofiev, Handel, Bach and Debussy. He will also give several concerts of classical and modern music for violin and symphony orchestra. ■

Vladimir Ashkenazi

This musician is one of the outstanding Soviet pianists of the younger generation. He was born in 1937. His father, pianist David Ashkenazi, is an accomplished performer of popular music.

Vladimir began his study of the piano when he was six, and almost immediately manifested a rare talent and unusual musical memory. After only a year of study, he could



VIOLINIST'S WIFE SVETLANA IS A STUDENT OF MOSCOW'S CONSERVATORY FROM WHICH HE GRADUATED IN 1953.

play symphonic music rearranged for the piano.

In 1945 he was admitted to the Central Music School affiliated with the Moscow Conservatory. His busy program included general courses, music and athletics—he played a great deal of soccer.

While still at school, Ashkenazi participated in the 1955 Warsaw Chopin International Competition and won second prize for his rendition of Chopin's Etudes. That same year he entered the Moscow Conservatory, where he studied under the noted pianist and teacher Lev Oborin. He is now in his third year at the Conservatory.

In 1956 he played before a jury composed of Artur Schnabel, Robert Casadesu, Emile Bosquet, Renata Borgatti, Emil Gilels and

other leading musicians at the Queen Elizabeth International Competition in Brussels. Fifty-five pianists from fifteen countries contended for prizes in this competition considered by musicians as "the gate to world recognition."

The requirements were taxing. Besides playing a difficult and varied program of compositions, each participant was given seven days for study of a previously unannounced concerto by a Belgian composer. Vladimir Ashkenazi won a first prize for his remarkable performance.

During his tour of the United States, Ashkenazi's repertory will include Rachmaninov's *Concerto in C Minor*, Chopin's *Concerto in F Minor*, Prokofiev's *Second Concerto*, and Brahms's *Concerto in B-Flat Major*. ■



Each day begins by practicing new pieces, with concertmaster Alexander Erokhin accompanying.



Dolukhanova loves skiing for the sport's sake, not simply because good singers must stay fit.



When she turns some of her creative talents to the kitchen, a tasty Armenian *bakhlava* results.

Mezzo-Soprano

Plans U.S. Concerts Next Season



ZARA DOLUKHANOVA, mezzo-soprano, will make her first concert tour of the United States next season as part of the American-Soviet cultural exchange program.

Endowed with a voice of rare beauty and great range, the singer stirred Moscow audiences in her first major concert ten years ago. The occasion was the premiere of the *Cantata of the Motherland*, written by the young Armenian composer Arutyunyan. Her rendition of the "Cradle Song" in the third movement of the Cantata was an experience still remembered by music lovers. Her voice, deep and rich in the low ranges and crystalline in the high, held the audience completely captive.

Many people maintain that the concert singer cannot dramatize a character musically. That is held to be the particular province of the opera singer. Zara Dolukhanova's remarkable dramatic technique is living argument to the contrary. She can with equal grace and musical fidelity create the character of Joan of Arc in the aria from Tchaikovsky's *Maid of Orleans*, and of Rosina in the aria from *The Barber of Seville*. With equal dramatic mastery she sings Schumann's *Woman's Love and Life* series, the romances of Richard Strauss, Prokofiev's *Ugly Duckling*, Debussy's *Wonderful Evening*, the fortune-telling scene from Moussorgsky's *Khovanshchina* or Grieg's *Dance of the Kids*.

It is the uncommon singer who is able to achieve a complete interweaving of the poetic phrase interpreted in music. One might call it the ideal of musical speech. Dolukhanova achieves that harmonious blend, an essential unity between the poetry of the spoken line and the poetry of music. For the audience she is able to evoke a charmed emotional atmosphere, that momentary coincidence of mind and mood, which marks great singing.

Dolukhanova was born in Moscow in 1918. Her father, by profession an engineer, played the flute, clarinet and trumpet. Her mother was considered to be one of the best singers in her native Leninakan in Armenia.

Zara began to study the piano when she was six. Then she became interested in the violin, and at twelve was accepted for violin instruction at the Gnesin School of Music in Moscow. At 16, however, she quite suddenly decided to switch to voice training.

Her teachers were disturbed by what they thought to be adolescent changeability. "I remember," says the singer, "that even our gentle director was angry at what she called my fickleness, but my future teacher of singing, Vera Beliayeva-Tarasevich, after testing my voice, decided to let me study with her." Zara was graduated from the voice class in 1937 and her marked ability secured her admission to the Gnesin Music Institute.

Dolukhanova made her debut in 1939 in the role of Olga in Tchaikovsky's *Eugene Onegin* at the Opera and Ballet Theater in Yerevan, capital of Armenia. But later she devoted herself entirely to concert and radio work. Her repertory is wide, ranging from opera to folk song. In the past few years, aside from concerts in the Soviet Union, she has sung for audiences in England, France and the East European, Scandinavian and Latin American countries. ■







The Soviet Farmer and

By Mikhail Sukhanov

EVERY one and a half minutes a tractor comes off the conveyor of a Soviet farm-machine plant; every three minutes, a seeder; every five minutes, a tractor plow; every seven minutes, a grain combine. They rumble out of the factories by the thousands in a steady and continuous fleet headed for the farms.

It was only thirty-five years ago that the first Soviet-made tractor was produced, modeled after a machine bought from Henry Ford. An epoch-making machine, that first one, for a country that had plowed and sown and hauled with hand tools and muscle power for generation on generation.

To be more exact, this was not the first tractor built in Russia. Back in 1888, Fyodor Blinov, a man with much native talent, a locomotive engineer by profession, successfully tested a caterpillar tractor run by a steam engine he had built. He was commended and awarded a bronze medal. But for all practical purposes the lethargic czarist officialdom attached no real importance to the invention.

Nor had they to a previous invention, a combine-type grain harvester built by Andrei Vlasenko in 1868 that he called a "reaper-thresher." That, too, was awarded a gold medal and left to rust in a barn.

Yakov Mamin invented a low-powered wheel tractor with a non-compression diesel engine that he called the "Gnome," and in 1911 began producing it in his own small factory. But he found no buyers to speak of.

For the miserably poor peasant of pre-revolutionary Russia, a tractor was totally beyond reach, and so far as the big landowners were concerned, they saw no reason to buy expen-

sive machines when there was more cheap labor available than could be used.

Nevertheless, Yakov Mamin had better luck than his predecessors. After the Socialist Revolution of 1917 he was one of those who helped lay the foundation for the country's tractor industry. His sons were educated at engineering schools and built careers as tractor designers.

120 Million Horsepower

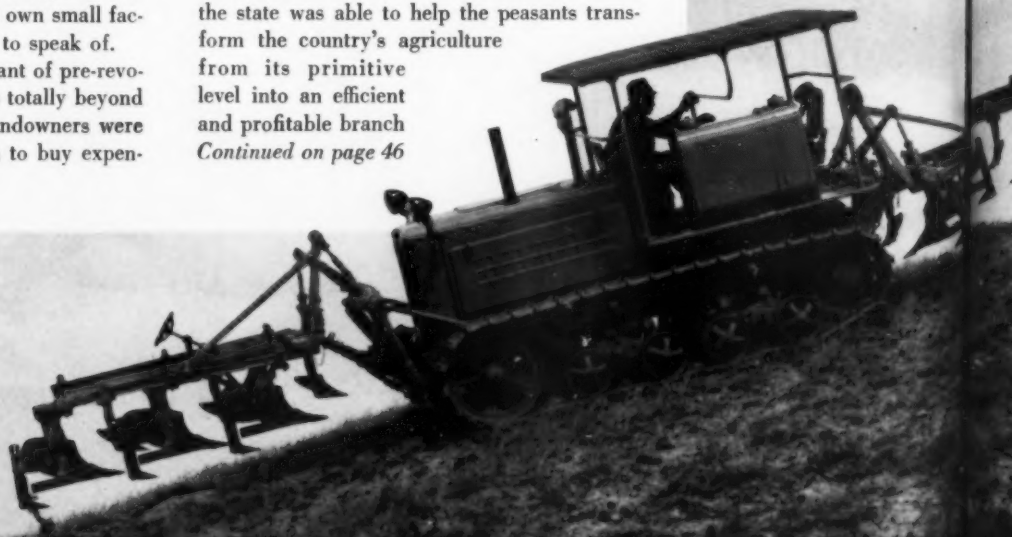
Thirty years ago the draft animal was the principal, almost the sole, motive power on the farm. Machine power was insignificant—a low five per cent. Today the figures are reversed—with machinery accounting for about 95 per cent of motive power.

The extensive introduction of farm machinery started in the late twenties and got into full swing in the early thirties, after the small peasant households had united their plots and resources into large-scale agricultural co-operatives, called collective farms.

To supply this new type of farmer with the machinery he needed, to teach him how to operate it and to educate him in the use of modern agricultural methods, a wide network of state-owned machine and tractor stations was established. Through these stations, which served the collective farms on a contract basis, the state was able to help the peasants transform the country's agriculture

from its primitive level into an efficient and profitable branch

Continued on page 46



d Machine Power



GIANT 250-HORSEPOWER TRACTOR USED FOR HEAVY-DUTY WORK



DIESEL TRACTOR EQUIPPED WITH POWERFUL HYDRAULIC LIFTING ARMS



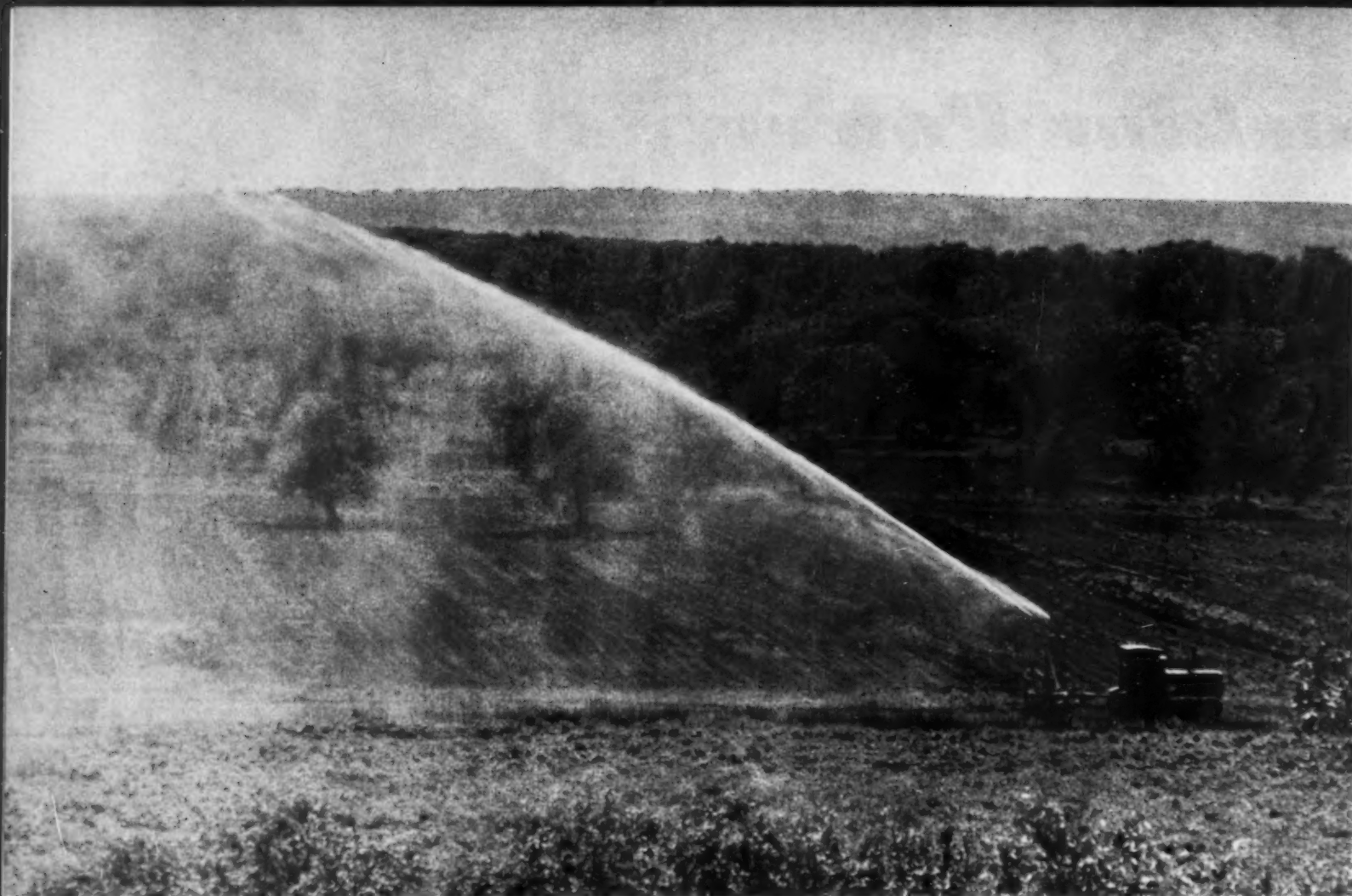
LATE MODEL OF THE BELARUS TRACTOR PUT OUT BY THE MINSK PLANT



LIGHT ROW-CROP TRACTOR MANUFACTURED BY THE VLADIMIR PLANT

SELF-PROPELLED VEGETABLE SEEDER SOWING BY THE DRILL METHOD





TRACTOR-DRAWN IRRIGATING MACHINE, SHOWN HERE ON THE FIELDS OF A MOLDAVIAN COLLECTIVE FARM, HELPS TO SUSTAIN CROPS DURING PERIODS OF DROUGHT.

The Soviet Farmer and Machine Power

Continued

of the economy based on modern machinery and scientific achievements.

Since 1929 the power available to farmers has increased nine times over. Combined machine and animal traction in 1929 ran to slightly more than 21 million horsepower; by 1957, according to incomplete data, it had risen to 120 million horsepower. Now there are 1,700,000 tractors; 450,000 grain-harvester combines; 660,000 trucks and millions of other machines in use on Soviet farms.

The harvests, better than anything else, tell the story of the advances of agriculture over these years. There has been an almost three-fold increase in the marketable grain compared with the pre-revolutionary level. The supplies of meat have doubled, while milk and wool production have more than tripled that of

czarist Russia. In some fields of animal husbandry and in crop farming the marketable produce has increased as much as six times.

The use of farm machinery on a large scale in these past years, while raising farm productivity, has at the same time cut labor expenditure sharply. This fact is most vividly demonstrated in the census of the farming population, which was reduced by one-half compared with the pre-revolutionary period.

The country's expanding industry not only has absorbed all the manpower available, but its need for labor has never been satisfied. Yesterday's farmers—the young people, for the most part—trained in the free trade and technical schools, have become city workers. No farmer coming to the city has to pound the pavements for a job. The job searches him out.

Farm mechanization has incomparably lightened the farmer's labor and cut his working hours. He has the time and the opportunity to specialize, to learn a skill. He does not have to wear himself out with the thousand endless chores of the small, marginal farm.

More than a million farmers have become tractor operators; hundreds of thousands are combine operators, engineers and agronomists. The Soviet farmer today grows his crop scientifically, he breeds his livestock with the benefit of the most advanced methods and techniques. With universal free education all the way through college, he has every opportunity to become an educated man and to develop all his potentialities.

Recent Reorganization

At the present stage of the country's agricultural development the principal task is to achieve a sharp and rapid increase in productivity to satisfy the growing demand for

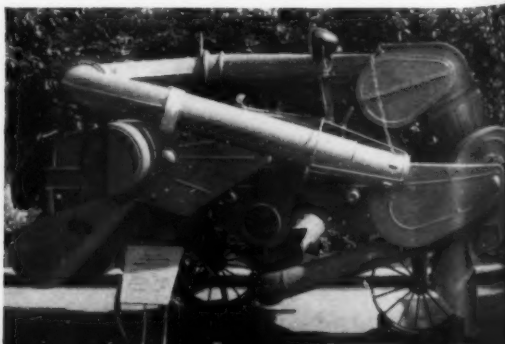
TRIPLE-DISC FLOW USED WITH HEAVY TRACTOR



TRACTOR-DRAWN MACHINE FOR DIGGING POTATOES



UNIVERSAL GIN USED IN COTTON-GROWING AREAS



foodstuffs and raw materials for light industry.

There is no doubt that this challenge can be met by today's collective farms, which, for the most part, are economically sounder than ever before. Their growing incomes have enabled them to make large capital investments and purchase new machinery for the expansion of production. However, in recent years it became evident that the servicing of the collective farms through machine and tractor stations was obsolete in many ways.

As a result, farmers initiated searches for new forms of providing technical services for the collective farms which would be better adapted to the increased requirements of further expansion of agricultural production and would ensure the most efficient and economical use of machinery. Their initiative, supported by the Communist Party and the Soviet Government, finally took the shape of a suggestion that at the present stage it is expedient to sell tractors, harvester combines and other machinery directly to the collective farms, while the machine and tractor stations should be transformed into repair and technical service stations.

Early in March this suggestion was advanced for nation-wide discussion. Widest segments of the population both in the countryside and in the cities participated, beginning with membership meetings of collective farms and workers' meetings in factories and winding up with a session of the Supreme Soviet—the national legislature.

A variety of opinions were voiced concerning details, but there was general agreement that the proposed change would undoubtedly make for a greater share of on-the-spot management and greater efficiency. It was also generally agreed that the collective farms would further consolidate their economy and increase their incomes, while the entire country would benefit from the resulting increase in supplies of marketable produce.

Late in March the Supreme Soviet adopted a decision on reorganization of the machine and tractor stations. Beginning this year agricultural machinery will be sold directly to the collective farms for cash or credit, on terms depending in each case on the farm's economic condition. The changeover from the previous forms of the technical servicing of the collective farms will be effected gradually and will take into account the specific features of the various areas to ensure a further expansion of the country's agriculture.

300 Types of Machines

Previous to the Second World War, Soviet factories turned out 84 types of farm machines; in 1957 they were producing 300 types. There has been a particularly large increase in production of diesel tractors, the most economical type. They make up about 70 per cent of the fleet now at work in the fields.

The farm-machine industry manufactures a self-propelled chassis on which 40 different farm tools can be mounted. It turns out square-hill planters for corn and other row crops, grain-grass drills, potato planters, seeder-cultivator-fertilizers.

Machines are mass-produced for organic and mineral fertilizing—a loader-mixer for

combining manure with peat and organic with mineral fertilizers; a soil-penetrating machine for organic, mineral and granulated fertilizers and for liquid ammonia used in sowing grain and industrial crops.

Among other machines being manufactured are haymowers that cut a 46-foot swath, self-propelled and uniflow grain combines, split-trail reapers, and pickups for harvesting grain by stages. A universal corn harvester combine is now in use which cuts down the plant, strips it and feeds the ears into the truck rolling alongside, while grinding up the stalks into silage.

Not only is industry making better machinery; the farmers are using the machines to better advantage. Average annual cultivation per tractor has increased by more than 20 per cent as compared with prewar figures: 1,280 acres are now plowed per tractor if figured in terms of 15-horsepower units.

Closing Gaps in Mechanization

For all practical purposes, farm mechanization in the country is universal—97 to 98 per cent of the grain plowing and sowing and almost 90 per cent of grain crop harvesting are done by machine. Planting of cotton and sugar beet is almost entirely mechanized.

There are gaps in the picture, however. Potato planting, sugar beet harvesting, truck farm and orchard cultivation, haymowing, siloing and livestock operations are still incompletely mechanized. But it is only a question of time before machines will replace muscle power in all farm operations.

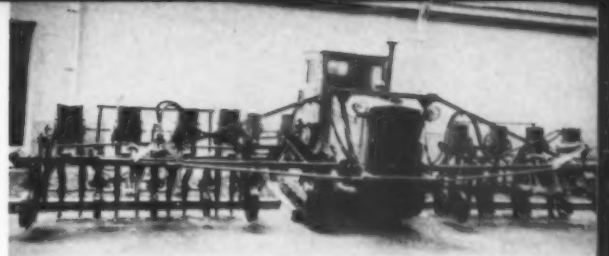
Soviet scientists, collaborating with practical farmers, have worked out a comprehensive system of farm mechanization based in principle on the industrial conveyor. It covers more than a thousand different kinds of machines suited to various zones and provides the very real possibility of fully mechanizing all farm work and further raising farm productivity.

An example is a set of machines in a special hookup, recently introduced by several farms in Omsk Region, that helped mechanize all harvesting operations, from reaping to loading and unloading of grain. Contrasted with the previous hookup, also mechanized, labor expenditure now is seven times lower.

Soviet engineers have devised a number of unique machines. Engineers A. Sheldyayev and A. Shmelkin have built a vibroplow that does not mold back the soil in a continuous solid layer but shakes it up into small lumps. This makes for better moisture retention and more favorable growing conditions. Inventor A. Babayev has developed a compressed air-seeder which drops seeds along with water and fertilizer, and plants them with almost mathematical precision.

Not infrequently farmers themselves turn inventors. Collective farm chairman D. Popov, to cite only one example, invented a cultivator with discs of original design. It weeds and loosens the soil in two directions at the same time, along the rows and between them.

New machines flow in an endless stream to the farmer, to lighten his labor and bring the day closer when the country's agriculture will be able to satisfy all demands for foodstuffs and raw materials. ■



TRACTOR-MOUNTED CULTIVATOR-FERTILIZER ASSEMBLY



MACHINE TO PLANT SEEDLINGS 4 ROWS AT A TIME



TRACTOR-DRAWN SUGAR BEET HARVESTER COMBINE



SELF-PROPELLED COMBINE FOR HARVESTING GRAIN

TRACTOR-DRAWN COMBINE FOR HARVESTING CORN





GROWING WHEAT

By Pyotr Zabazny

A LOAF of wheat bread, said Kliment Timiryazev, the Russian scientist, is one of the great inventions of the human mind. The origin of this basic food dates back to the prehistoric times, when primitive man singled wheat out of the existing wild crops and began to cultivate it. Archeological research shows that it was known several thousand years before our era to the peoples who lived in what is now China, India, Egypt and the countries of the Near East. From those places wheat has traveled and taken root in far-flung parts of the earth.

In Russia, wheat has been grown for more than a thousand years. During this long period many strains have been developed. In more recent times Russian wheat was carried to various parts of Europe and America and took seed to produce local varieties. That beneficial "exchange," we might call it in present-day terms, is gratefully acknowledged by food plant specialists writing today.

Egon Stark, of the University of Manitoba, wrote in 1948 that most of the Canadian wheat strains originated from Russian varieties which were acclimatized to the great open plains of North America.

J. Allen Clark and the late B. B. Bayles, leading agronomists of the United States Department of Agriculture, concluded in a study of American wheat that the main varieties of hard wheat cultivated by American farmers were originally imported from Russia.

A sheaf of Russian wheat growing on Amer-

ican soil might well stand as symbol of Russian-American exchange of food, trade, science, culture and friendship.

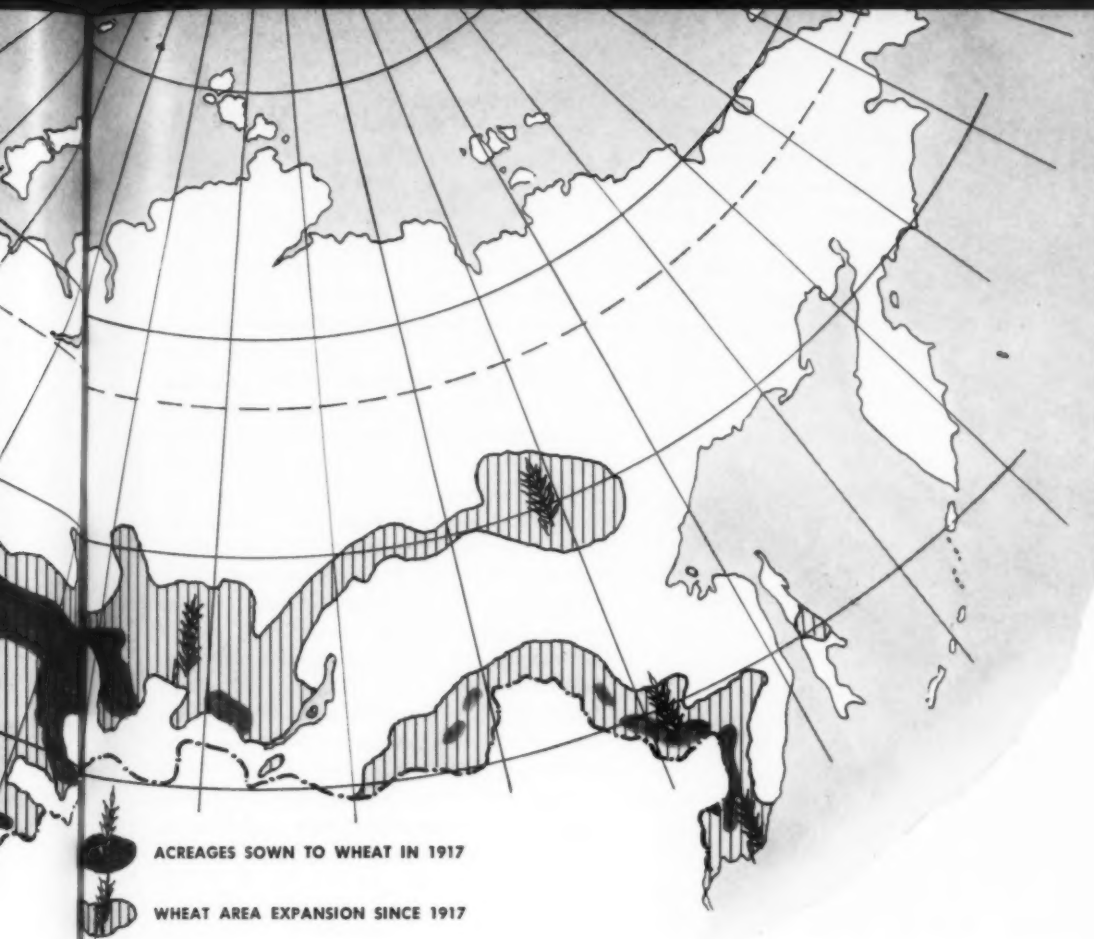
A Changed Farm Map

In all its ancient history, wheat has never been given the thought and attention it is receiving in the Soviet Union today. Scientific institutions are working with collective farms to develop new wheat strains which will yield larger and better crops. Wheat is being grown in new regions, and new methods of cultivation are being tried on a large scale.

With the collective farm system and the introduction of modern farm mechanization, radical changes have been effected in wheat production within a relatively short period.

In pre-Soviet times wheat was concentrated in the southern parts of the country—in the Ukraine, Moldavia and the North Caucasus—in the Volga region and West Siberia. There was little wheat grown in the central, western and northern areas, where rye was the traditional crop. It was not that either soil or climate were unsuited to wheat, but that the small peasant farmsteads, with their hand tools and primitive growing methods, could not compete with the cheaper wheat of the South.

Because of this haphazard crop distribution, the agricultural map of old Russia showed two big spots: the "golden" for wheat, and the "gray" for rye—almost equal in acreage. The



"golden" area was composed of some 82 million acres sown to wheat, the "gray" area somewhat less than 69 million acres sown to rye. They represented 31.6 and 27.8 of the total grain crop respectively.

During the Soviet period, this map has been markedly altered. The "golden" spot is very much larger and the "gray" much smaller. By 1957, wheat was being grown on almost 173 million acres, while rye was grown on only 45 million acres. The proportion of the total grain area has now increased for wheat to 50 per cent and diminished for rye to 14 per cent.

The old rye regions in the central, western and northern parts of the country are now raising good wheat crops. Scientific cultivation and large-scale use of farm machinery have reduced production costs, and national planning has eliminated the old, wasteful price

competition which set up artificial and unnatural barriers to restrict cultivation of this basic food.

As a result of crop redistribution, spring wheat, which grows the most valuable varieties, is now raised on 73.5 per cent of the wheat acreage.

The acreage under wheat is being expanded year by year. With the reclamation of virgin and long-fallow lands in Kazakhstan, Siberia and the Urals, more than 57 million additional acres were sown to wheat in the past three years. This year an additional 12 million acres will be sown to grain, including wheat.

For size of its sown area and gross crop of wheat, the Soviet Union stands first in the world. It grows 28 per cent of the world's wheat.

Continued on next page



GRASS-WHEAT HYBRID



WINTER WHEAT "ODESSKAYA-3"



SPRING WHEAT "SARATOVSKAYA"



SPRING WHEAT "BYELORUSSKAYA"

SPRING WHEAT "OMSKAYA"



SPRING WHEAT NO. 525



SPRING WHEAT "LUTESTSENS-62"





HARVEST TIME IN SIBERIA. BETTER SEED AND SCIENTIFIC METHODS OF CROP CULTIVATION HELP BOOST YIELDS.

GROWING WHEAT

Continued

Wheat with More Protein

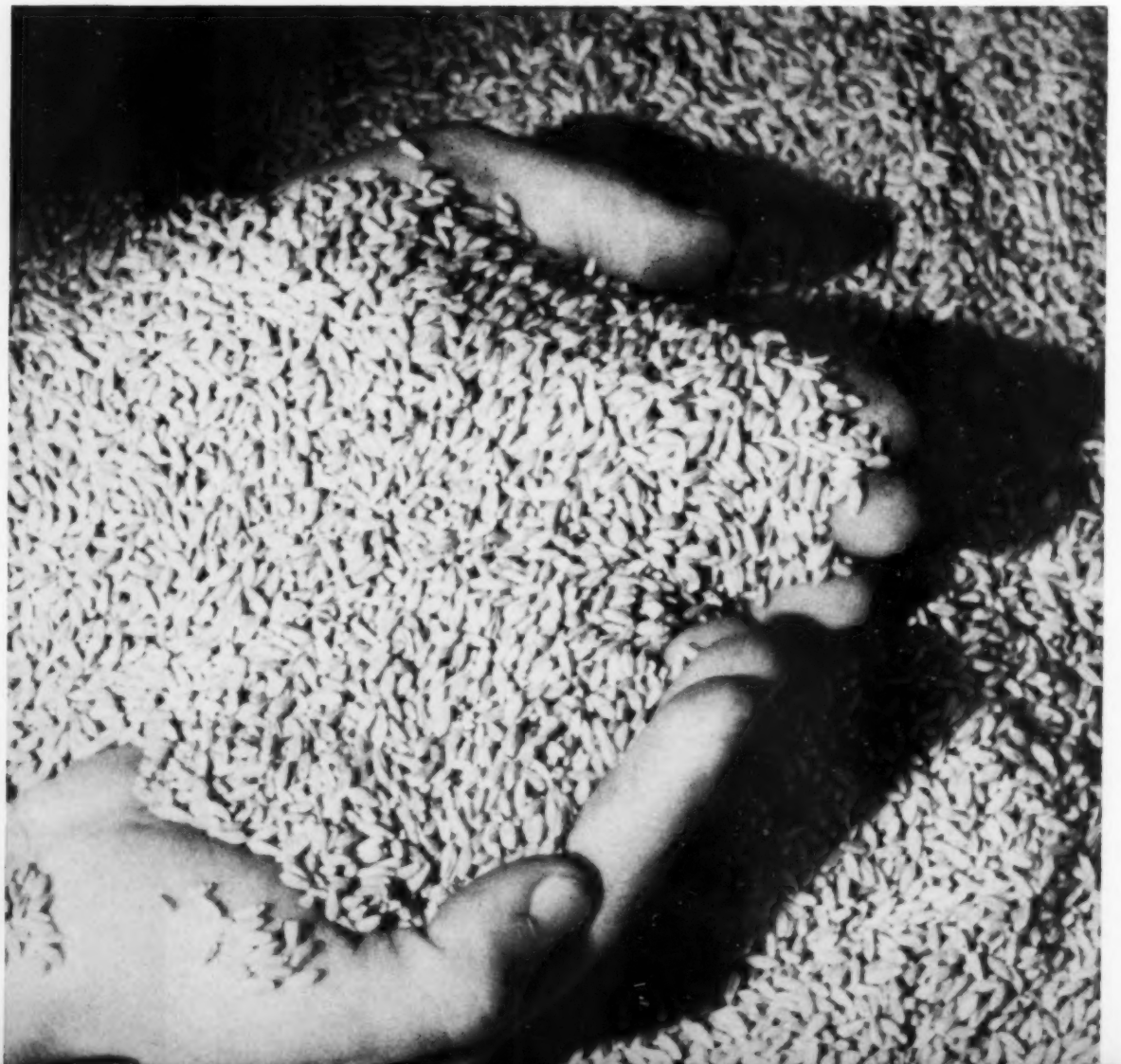
It was the eminent British chemist and physicist, Sir William Crookes, who wrote of the special position allocated to wheat by civilized man because it was the food most suited to develop the muscles and brain.

Soviet science has done much to improve the taste and nutritive qualities of wheat. Many varieties of wheat have been developed with a high content of protein which is the essential constituent of man's diet.

For comparison: West European wheat has 11-14 per cent of protein; Canadian wheat has 16-17 per cent; American has 16-20 per cent; and the Soviet varieties have 17-26 per cent. The international standard is 12.5 per cent.

This process of improving wheat has been going on since the earliest days of the Soviet Union. In 1921, special legislation on seed selection was passed. Out of that beginning has developed a country-wide network of scientific institutes, selection stations and seed-growing farms.

SOVIET VARIETIES OF WHEAT CONTAIN FROM 17 TO 26 PER CENT OF PROTEIN WHICH IS THE ESSENTIAL CONSTITUENT OF MAN'S DIET.



Soviet selectionists have produced 315 varieties of wheat. Among those particularly widely-grown are the varieties developed by Alexei Shekhurdin, Pyotr Konstantinov and Pavel Lukyanenko. The "Lutestsens-62" spring wheat variety developed by Shekhurdin, as one example, is grown on close to 17 million acres.

The work of Academician Nikolai Tsitsin has been especially productive. By means of remote hybridization he has developed new forms of perennial wheat and couch-grass hybrids and rye and wheat hybrids which are remarkable for their high yield and their resistance to pests and disease.

Along with improvement in seed production there has been decided emphasis upon improved growing methods, a process in which selectionists, agronomists and practical grain farmers work together to make a common contribution. Crops are improved through widespread use on the collective farms of such scientific growing methods as treatment with warm air, checkerboard and narrow-row planting of seeds together with granulated phosphate fertilizer, and top dressing of plants with organic and mineral fertilizers. Such simple but extremely effective methods of renewing seed have been followed as planting spring wheat in the fall to improve the hereditary properties of the seed and to yield a larger kernel.

The use of elite seed and scientific methods

of crop cultivation have contributed largely to big wheat harvests, even in unfavorable seasons.

Although modern farming has by no means learned how to control nature completely in its more destructive moments, considerable headway has been made to temper its force. In the dry farm regions, irrigation systems have been built, swampy areas have been drained, shelter belts and windbreaks grown to protect farm fields in the steppes. Great wheat fields stretch today where there was only bog or desert not too long ago.

All these factors have united to help grow more wheat. As compared with 1913, the most favorable growing year in czarist times, marketable wheat production has increased by 400 per cent, an addition of 36 million tons of wheat.

A Ready Market

In spite of the long spell of dry weather which affected a large part of the Soviet farm area in 1957, the grain crop harvested was large enough to meet both domestic and export needs. Early in 1958 the Soviet Union concluded agreements for export of approximately three million tons of grain.

At the end of the past century, when Southern Russia was the country's principal grain producer and the North the consumer, Dmitri

Mendeleyev, the celebrated chemist, wrote with truth: "When grain is dear, the North cries and hungers, and when grain is cheap, the South grieves."

That woeful commentary on food production and distribution no longer holds true. Both the South and the North now produce all the grain they need. The grain farmer looks forward to a high yield.

A large harvest no longer means, as it did in 1892 when Mendeleyev wrote, a glutted market and low prices. No matter how high his yield, the Soviet grain farmer has a ready and waiting market. As evidence, in the past few years of bumper crops, the government, which is the largest buyer in the Soviet Union, has been paying collective farms higher prices for many of their products, grain among them.

The combination of higher productivity in all branches of agriculture and higher government-fixed procurement prices accounts for the higher income of the collective farmers—an income which has grown by more than fifty billion rubles only during the past four years.

Nor have higher prices paid by the government to the farmer raised the price of bread and other foodstuffs for the consumer. Consumer prices of foodstuffs, bread among them, were reduced again this year. In the Soviet Union, what benefits the farmer, benefits the consumer. ■





Ballet School

By Yuri Fantalov

FOR 220 YEARS the Leningrad Ballet School has been training the world's great dancers. Pavlova, Nijinsky, Fokine, Karsavina, Ulanova and scores of other great figures in ballet, past and present, learned their first pirouettes at this school.

By August of each year the school receives the applications of as many as 2,000 hopeful future ballet stars. The most promising of the applicants take competitive examinations to determine who will be accepted to fill the 40 places in the entering class.

Head of the admissions committee is Nikolai Ivanovsky who is in charge of professional training at the school. He is a veteran of the Russian ballet and had an eminent career as soloist. For the past 20 years he has been teaching in the school from which he graduated 45 years ago.

"In my day," he says, "there were only 90 of us, boys and girls, at the school. Now we have 330 pupils. But it is not quantity we are so much concerned with—although that, too,

is important—as it is quality. We demand much more of our pupils now. And we have to, because the demands upon the dancer are so much greater than they used to be."

Ballet as an art has been going through a radical change in the Soviet Union in these last few decades. Soviet choreographers, while making selective use of the past achievements of the classical Russian ballet, have been turning more and more to the great works of literature in search of new and significant themes and seeking to combine the classic ballet with the folk dance. Prokofiev with *Romeo and Juliet*, Khachaturyan with *Othello* and *Spartacus* and Peiko with *Jeanne d'Arc* have brilliantly translated into dance great world events and figures and great literature.

This dynamic approach to the ballet requires of the dancer much more than the skill to do an "arabesque," let us say, no matter how graceful and poetic. It needs a background knowledge of the history of society and an understanding of human behavior. It must

be in tune not only with the past, but with the present and the future.

Hence the changes which have been developed in the curriculum of the Leningrad School and of the dozen other professional ballet schools in the Soviet Union. The course of every school has three major divisions—the choreographic, the musical and the general educational.

The old ballet school had no comprehensive and unified system of training. Each school and each teacher followed an individual pattern, derived from a particular background of stage experience.

In the late twenties a Leningrad ballerina and teacher, Agrippina Vaganova, worked out a unified system of classical dance training for girls. Her book *The Fundamentals of the Classical Dance* is based upon the natural principle of working from the simple to the complex and is the basis for present-day training.

In the first class, the children learn the basic

ballet positions, do simple exercises to strengthen the leg muscles, study plastic movements and develop poise. Most of these exercises are done at the bar. Toward the end of the year the children put on their ballet slippers to do the first toe exercises.

In the second and third year classes, exercises are given without bar support. Exercises for the full foot, the ball of the foot and the toes develop the muscles and the skill to do movements in allegro tempo. In the same way, leaping and spinning movements are done first at the bar and then in the center of the room without support.

From the sixth through the ninth year the children are taught duets; folk and character dances, both native and foreign; and old-time dances. The art of acting is taught as well in these years.

The piano is taught from the first year, advancing to ballet music in the senior year.

Progress is checked carefully. If during the first two or three years the child does not show promise, he leaves the school. He is still young enough to find a more suitable vocation and has lost no ground in general school subjects since he has been taught them at the ballet school.

The pre-Soviet ballet school did not consider general education, aside from the fundamentals, necessary for a career as a dancer. General education was limited then to the first four classes of elementary school.

Now, when children enter the ballet school at the age of ten, they have already had three years of general elementary schooling. After four years in ballet school, they have completed the same program of the seven-year course as in general schools.

From the fifth through the ninth year in ballet school they continue their work in Russian and foreign literature and history, a foreign language, mathematics, physics, chemistry and biology in survey form. At the same time the children are given classes in the history of ballet, theater and fine arts, as well as in make-up and fencing. None of these subjects were included in the pre-Soviet ballet school.

All the way through, from the second half of the first year to graduation, students perform on the big ballet stage with professional dance groups as part of their training. It gives them practice in dancing before an audience and accustoms them to the stage, footlights and theater. The Leningrad Ballet School students dance in *The Nutcracker*, *Sleeping Beauty*, *Shuraleh*, *Fadette*, *Morozko* and other ballets.

A highlight of the Leningrad ballet season is the annual graduation production of the School, often repeated for several performances before large audiences of dance enthusiasts, who speculate on future ballet stars.

On occasion, ballets especially commissioned by the School are performed at these graduation concerts. Two such ballets have been given in recent years—*The Stationmaster*, composed by Andrei Petrov after Alexander Pushkin's story of the same title, and Georgi Portnov's *Daughter of the Snows*, after Tikhon Syomushkin's novel of Arctic life, *Alitet Goes to the Mountains*. Both are new three-act ballets and are excellent training media since

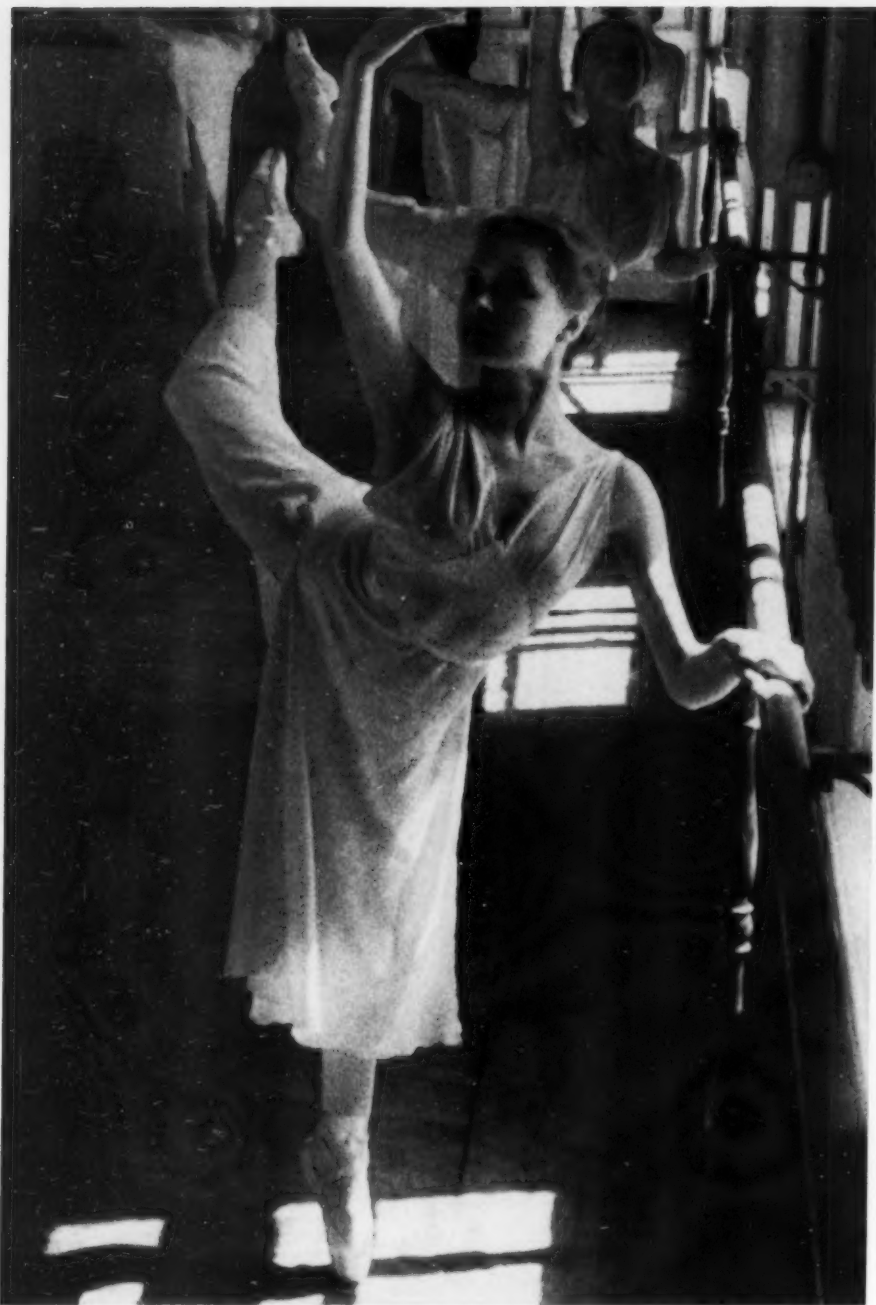
Continued on next page



At the end of their first year at the school, after having learned basic ballet positions and strengthened leg muscles, they don ballet slippers and do their first toe exercises.

The junior class discusses the graduation concert with Nikolai Ivanovsky, Dance Director of the school. This is the crowning event of nine years of thorough ballet training.





MOVEMENTS ARE PRACTICED AT THE BAR AND THEN IN THE CENTER OF THE ROOM WITHOUT SUPPORTS

Ballet School

Continued

students have no previous productions to emulate and must therefore display their own initiative and artistic inventiveness.

The Leningrad Ballet School trains dancers for the various national groups within the Soviet Union and also for other countries. The first national studios were founded ten years ago and since then they have trained dancers for Kirghizia, Moldavia, Ossetia, Bashkiria and Buryat-Mongolia. Among the foreign students graduated during this period were those from Hungary, Bulgaria and Rumania.

At the present time there are eight such studios with a hundred children from Tajikistan, Kazakhstan, Lithuania, Turkmenia and Tataria, as well as from the German Democratic Republic, Albania and Rumania. They all live and study on full scholarships.

Tuition in Soviet ballet schools is free, as it is in every school. The cost of training a ballet dancer—it will run from 8,000 to 11,000 rubles a year, depending on whether the pupil boards at the school or not—is paid by the state. Students of the three upper classes who make satisfactory progress are given, in addition, a monthly stipend.

Former Leningrad Ballet School graduates star in all the major theaters of the country and in theaters abroad. They maintain fond connections with the School by letter and occasional visits.

Jelu Barbu of Rumania, a 1955 graduate, is now a star in the Bucharest Ballet Theater. He wrote to his school recently to tell about his major role in the new Rumanian ballet, *Haidush*. "I shall always be grateful to my old school for teaching me how to live and to dance," his letter concluded. ■



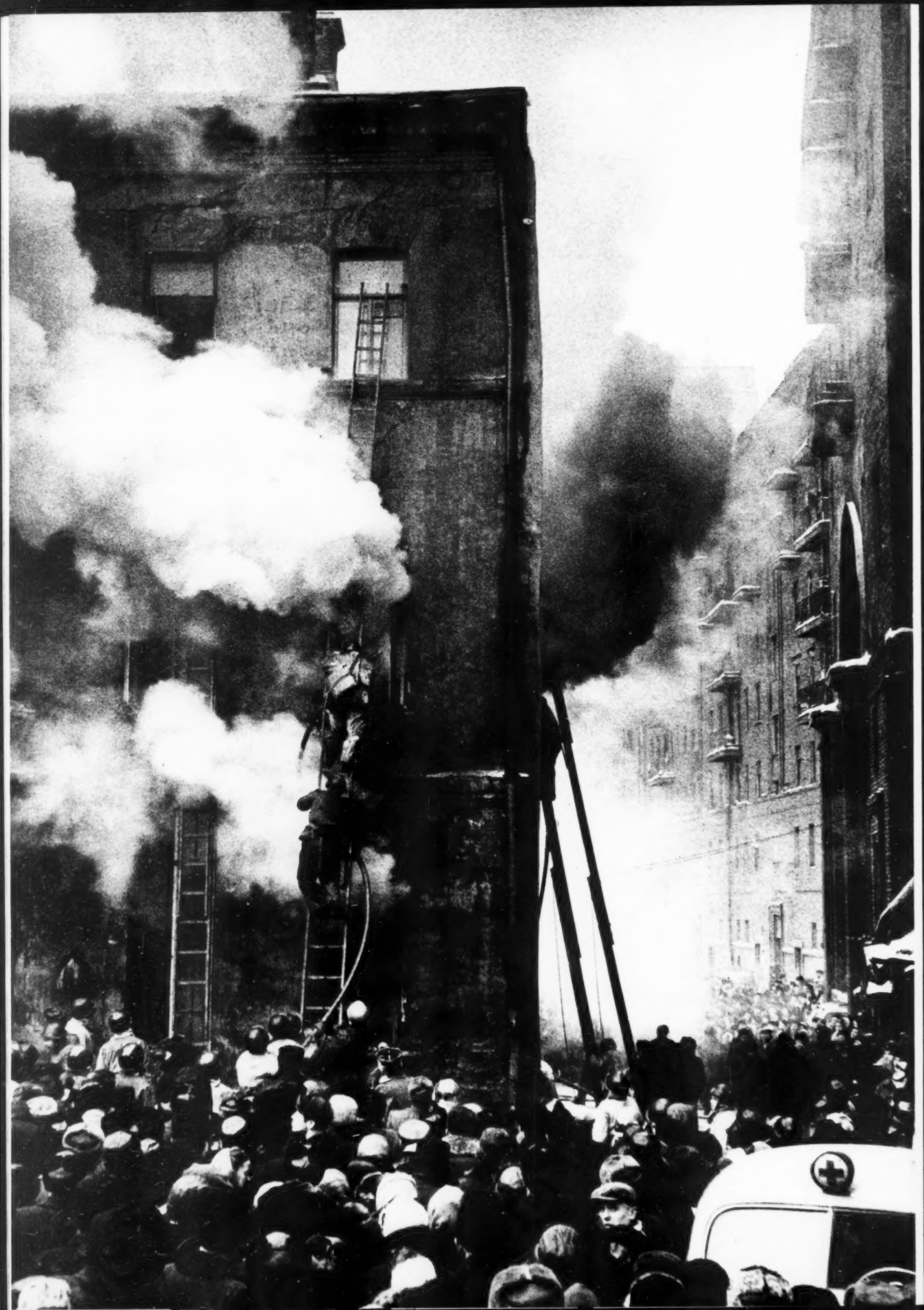
Galya Ovsyannikova, like all students of the ballet school, studies humanities and sciences. At the left: Galya in a physics class. Above: practicing the piano.



OCCASIONALLY ORIGINAL BALLETS ARE PREPARED FOR THE GRADUATION RECITAL. THIS ONE IS A SCENE FROM PORTNOV'S DAUGHTER OF THE SNOWS.



From the second half of the first year to graduation, students perform on the big ballet stage with professional dance groups as part of their training. At the left: Galya in the dressing room. Above: dancing the role of Masha in Tchaikovsky's *The Nutcracker*.







Fire Fighters

By Yuri Pavlov

LIGHTNING strikes a big oil tank just outside town. The tank explodes and a pillar of fire streaks into the dark night sky. A torrent of burning oil flows toward the quietly sleeping town, consuming everything in its way.

That was a blaze that Soviet fire fighters will not forget in a hurry. The oil burned for a full day and most of the night following. It was only early the next morning that the flames were under control.

"There have been few fires like that big one," Abram Rubin will tell you. He's a veteran fireman and one of the top-ranking officials of the Soviet fire-fighting service.

"There are strict fire-prevention regulations enforced by law, and one of the main jobs of the fire-fighting service is to see that they are observed in all residential, factory and public buildings. As a rule, fires just don't have a chance to get started. According to recent figures, we have only 0.28 fires a year per thousand of population for Moscow as against 0.8 for Paris and 1.8 for London.

"But no matter how careful people are or how strict the regulations, fires do occur from

time to time. Our men are always on the alert because they know that even a small fire may present a grave danger."

Fire Alarm

The work of Moscow's fire department is typical for any big city. When a fire is reported, it is immediately flashed to the central communications center and shows up as a flickering red light on a big map of the city. Operators phone the alarm to the firehouse nearest the scene and moments afterward the red fire engines, with sirens wide open, race to the spot.

Details of the fire, if they have been reported, are passed on by radio to the engines. Simultaneously, the alarm is transmitted by radio to all other fire brigades in the city. They remain on the alert for emergency call.

If they are needed, fire trucks equipped with powerful smoke-suction devices, foam and carbonic acid extinguisher installations, or emergency squads equipped with oxygen apparatus and special clothing for smoke and gas fighting are rushed along.



EQUIPMENT AND MEN ARE EVER READY FOR ACTION.

THE FIRE CHIEF CALLS OUT DIRECTIONS TO FIREMEN AND WARNINGS TO THE CROWD OVER THE LOUDSPEAKER.



Rescue Work

The red light flickering on the big map in the central communications office may be for other emergencies.

A while ago, on one of Moscow's construction jobs, a swinging crane boom accidentally cracked a metal rod scaffold. A bricklayer working on the scaffold just managed to grab hold of an iron hook and hoist himself on to the narrow wall before the scaffold crashed to the ground. The wall was only two bricks wide and towered 230 feet above the street.

A fire engine came racing to the spot and ran out a ladder. But heaps of piled brick prevented the engine from backing close to the wall and the ladder fell short—and there was no time to wait for an engine with a longer ladder.

One of the firemen, Timofei Polyakov, snatched up a narrow escape ladder and a safety rope and began climbing. It was bitter cold and the ladder swayed dizzily in the high wind. Polyakov clambered up to the last rung of the main ladder and, perched dangerously on his toes, managed to secure the escape ladder to the wall. He grabbed hold of the bricklayer not a second too soon.

This was Fireman Polyakov's thirty-second rescue. His thirty-first had been an eight-year-old adventurer, Victor Levushkin.

Victor was visiting Moscow for the first time and he thought he'd take a walk around the city by himself. Without telling his moth-

Continued on next page



A TOP STORY FIRE. ALARMS ARE TRANSMITTED BY RADIO TO FIREHOUSE NEAREST SCENE AND OTHER BRIGADES ARE ALERTED TO STAND BY FOR EMERGENCY CALLS.

Fire Fighters *Continued*

Firemen go through rigid basic training and a special daily program of sports exercises to keep them in trim and improve their skill.



er, he started off. As he was walking across the Krimsky Bridge he thought he'd like to have a better view of the city, as he explained later, from the top of the arch.

There were few passers-by at the moment and apparently no one noticed the boy climbing. He kept going up and up, then stopped to see how high he was. One look down at the Moscow River far below him, and he grabbed the girder convulsively and stuck.

Timofei Polyakov raced to the scene in a fire engine, climbed up after him, and pried him loose.

Award For Valor

Nikolai Smirnov is another Moscow fireman who is establishing a record for rescues. One of his was off duty, on what he thought was going to be a quiet night at home.

He was awakened in the middle of the night by cries for help from a neighboring five-story house. People were trapped in the top story with the flames shooting out beneath the roof of the house.

There was no time to wait for the fire engine. Seconds counted. Smirnov raced across



the courtyard, climbed up the fire escape to the fifth story, walked gingerly along a 15-foot-long, narrow ledge, holding on to the wall with his fingernails, and reached a window.

There were a little boy and an old woman in the burning room, cowering in a corner away from the flames. There was no way of getting them out, except back across the ledge. Smirnov picked up the youngster, carried him along the ledge and handed him down to the firemen, who had come by this time. Then he went back for the old woman.

For such courageous acts, many firemen were presented with the "For Valor in Fire Fighting" Medal, an award established by the Soviet Parliament. Appropriately it pictures a fireman carrying a child in his arms through flames.

Volunteer Firemen

Assisting the professional fire fighters are volunteer firemen. Their main task is to see that fire regulations are observed at home, school and shop. Fire prevention, say both professional and volunteer firemen, is still the best way of fighting fires.

The Moscow volunteer firemen's association has a membership of several hundred thousand. Many of the members have distinguished themselves in action.

Vasili Yefimov, a railroad worker and volunteer fireman, climbed the 160-foot steeple of a Moscow railway station to put out a fire. Vasili Malkov, high school student and junior volunteer fireman, recently rescued three children from a burning house.

Fire-Prevention Equipment

There is a special fire-fighting research institute which coordinates the work connected with the designing of new fire-prevention equipment and bringing old equipment up to date. Recently the institute held an exhibit in Moscow.

On display were old fire-fighting apparatus and the latest equipment. A suit made of aluminum fabric that looks a little like a medieval suit of armor attracted many of the visitors. This suit makes it possible for firemen to work surrounded by flames for a considerable time.

Another exhibit which caught the fancy of the visitors was an unusual fire prevention gimmick. It is a small rectangular box on a stand. Should the visitor strike a match to light a cigarette, a tape-recorded voice booms out of the loudspeaker attached to the innocuous box—"No smoking here, if you please."

There were pieces of fire-prevention equipment on exhibit which were familiar to many visitors, for example, the automatic thermo-notifiers. These devices, operating on semi-conductors, ring an alarm when the temperature rises beyond a fixed point. Also widely used are devices working on isotopes of polonium which automatically sound if smoke appears.

These and many others of the most modern type of fire-prevention and fire-fighting devices are in everyday use in public buildings, factories and apartment houses to protect life and property. ■



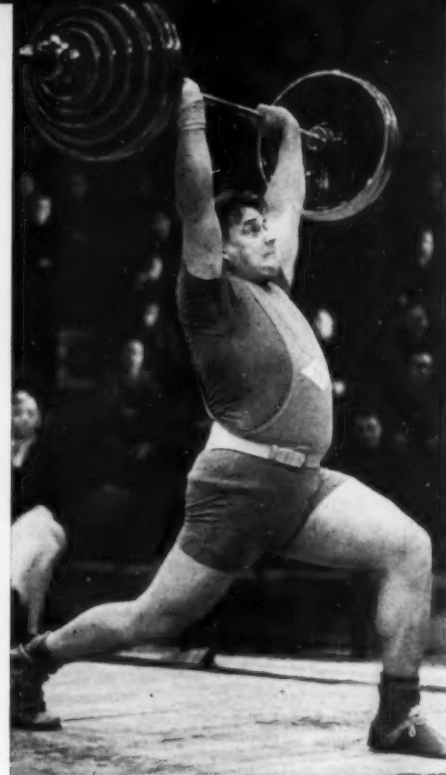
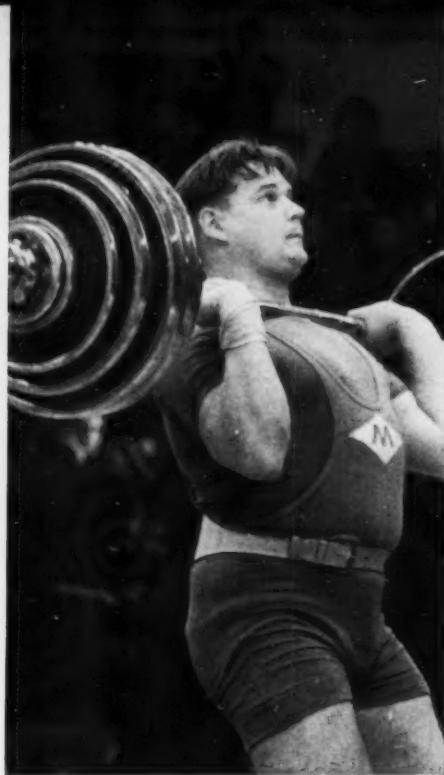
A NEW JUNIOR MEMBER OF THE VOLUNTEER FIRE-PREVENTION SOCIETY RECEIVES HIS BADGE FROM THE CHIEF.



AN EXHIBITION SHOWING FIRE-FIGHTING SERVICES IN THE SOVIET UNION WAS RECENTLY HELD IN MOSCOW.

A LIGHTER SIDE OF THE SERVICE-FIREMEN'S JAZZ ORCHESTRA. THEY ALSO HAVE OTHER AMATEUR GROUPS.





ALEXEI MEDVEDEV, THIS MOSCOW PATTERN-MAKER IS THE WORLD'S STRONGEST MAN. HE IS 30, WEIGHS 264, AND WON CROWN BY AMASSING A TOTAL 1,102 POUNDS.



STRONGMEN of the Soviet Union and the United States—"Two Great Weightlifting Powers"—will get together for a competition in May. The trip of our strongmen to the American continent is a reciprocal one. A team of USA barbell performers visited our country in 1955 and competed in Moscow and Leningrad.

STRONGMEN

By Efim Rubin

Five of our weightlifters who matched their strength with the Americans three years ago remain top-notchers in their respective classes.

Arkadi Vorobyov, a 33-year-old middle-heavyweight and the captain of the Soviet team, was brought up on the Volga River. He took an early fancy to diving and when he grew up, became a professional deep sea diver and served in the Navy. After being demobilized in 1951 he enrolled in the medical institute in the Urals city of Sverdlovsk. He graduated from that institute last year and is now taking a postgraduate course there. Vorobyov is well known as a prominent public figure. He is a deputy to the Sverdlovsk City Council.

Vorobyov's initial appearance in a weightlifting meet, back in 1947, did not bring him

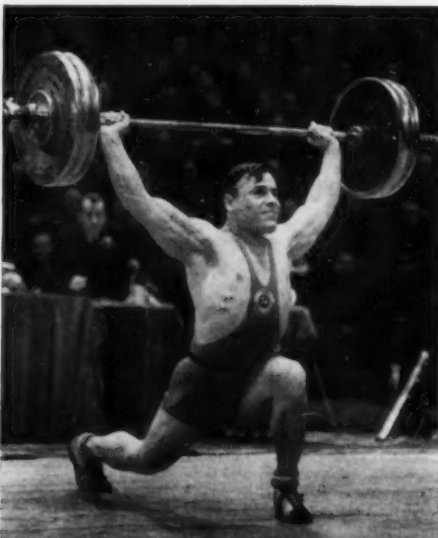
any laurels. He tried to register 287 lbs., but the attempt was unsuccessful. As a result he did not win a single point for this exercise and dropped out of the scoring. This was the first and also about the last failure of the future world champion.

Vorobyov won recognition in Stockholm during the 1953 world championships. He then placed first in the light-heavyweight division. A year later at the world championships in Vienna, Vorobyov again captured a gold medal, this time in the middle-heavyweight class. Following this Arkadi became the Olympic champion in Melbourne and added more laurels at the 1957 world championships in Teheran, where he established two world highs, 319.6 lbs. in the snatch and an aggregate total of 1,036.1 lbs.

ARKADI VOROBYOV, MIDDLE-HEAVYWEIGHT



TROFIM LOMAKIN, LIGHT-HEAVYWEIGHT



VLADIMIR STOGOV (RIGHT), BANTAMWEIGHT



Another brilliant member of the Soviet team is light-heavyweight Trofim Lomakin, an army officer. He is the same age as Vorobyov and they are friends in life but rivals on the weightlifting platform. Lomakin hails from Siberia, where his great-grandfather, grandfather and father worked as gold miners, and he followed in their footsteps. He first went in for weightlifting in 1947, when he was in the Army. There are a number of legends about his physical strength. One of them recalls the time when Lomakin bet he could overturn a car with its wheels pointing skyward and won the wager.

The sport world heard of Lomakin and learned his worth after his stellar victory in Helsinki during the XV Olympic games. He occupied first place in the light-heavyweight category with a total of 920.3 lbs. In Teheran, Lomakin confirmed his high class by capturing the 1957 world title with a 992-lb. total, a new world achievement.

The third of our strongmen leaving for the United States, heavyweight Alexei Medvedev, was satisfied with the role of reserve on the USSR team until 1957. He was present at the world championships, was in Melbourne too, but remained in the shade. Then, finally, he had a chance to prove his mettle. At the tournament in Teheran he amassed a total of 1,102 lbs., overtook the Argentine strongman, Humberto Selvetti, and ascended to the top rung of the stand of honor as the 1957 world heavyweight champion.

Medvedev, now 30, is a student of the Moscow Institute of Physical Culture. He began practicing weightlifting when he was working as a pattern-maker in a Moscow engineering plant. Together with other keen sport enthusiasts he devoted the greater part of his free time to persistent training. The weight he lifted in the course of a single workout added up to ten tons. Continuing to work in the engineering plant, Alexei reaped the first fruits of his effort in sport—he became the heavyweight champion of Moscow.

Whereas Medvedev's teammates are thinking of ways of avoiding putting on extra weight, the heavyweight, on the contrary, wouldn't have any objections to that. He has added 88 pounds in the last ten years and he now tips the scales at 264.5 pounds.

The world bantamweight champion is Vladimir Stogov, a 28-year-old truck driver. His start in weightlifting was accidental. It happened when he was serving in the Army.

The bantamweight contender from his unit suddenly fell ill during an army weightlifting meet. The disappointed trainer spotted the stocky figure of Stogov among the onlookers and coaxed him into substituting for the ailing man. He explained how the barbell should be pressed, snatched and jerked. Stogov approached the barbell and to the great surprise of everyone collected 418 lbs. to take first place.

This occurred in 1953. Two years later Stogov was crowned champion of the world. In 1957, while performing in Teheran, he set up a new world record total of 760.5 lbs., and Stogov himself weighed only 123 lbs.!



IN USA-USSR MEET OF 1955, STOGOV'S PERFORMANCE WAS JUDGED BY AMERICAN REFEREE ROBERT HOFFMAN.

Another truck driver on the USSR squad is middleweight Fyodor Bogdanovsky. In 1950, when he was 19, he emerged victorious in a strongmen's competition in Vishny Volochok, a small town on the Moscow-Leningrad railway line. He gained a triple exercise total of 641 lbs.

The winner gave his first interview to a reporter at that time. He said that he had been fond of "fussing around with iron" since boyhood. Back in the garage Fyodor did not have much difficulty in raising heavy truck tires, crankshafts and even a tie-car axle. Having tested his strength in sport, Bogdanovsky entered the Leningrad Institute of Physical Culture.

Fyodor racked up his most impressive victory in the Melbourne games. There he won the gold medal of Olympic champion in the middleweight class. He holds two world records: 297.6 lbs. in the press and a 925.9-lb. total. It must be pointed out that Fyodor ran into bad luck twice: in the 1955 and 1957 world championships he remained in runner-up position because his own weight proved heavier than that of his rival—in the first instance, by 2.8 ounces and in the second, by 4.2 ounces.

FYODOR BOGDANOVSKY, MIDDLEWEIGHT.



The Soviet team includes Victor Bushuyev, a lightweight, who works as an assembly hand and fitter at the Gorky Electric Power Station. He began his weightlifting career seven years ago at the age of 19—bought a pair of Indian clubs, found an old barbell somewhere and repeated the necessary exercises daily before a mirror.

Bushuyev's first triumph came in 1957, when he became a champion of the World Youth Sports Games and a world record-holder. Two months after that, in Teheran, he gained the title of world lightweight champion, showing an excellent total of 837.7 lbs.

Finally, the USSR squad includes 27-year-old Yevgeni Minayev, a featherweight from Moscow and a welder by trade. He first won prominence at our national sports festival in the summer of 1956, where he gave us a world record with a 251.3-lb. press. Soon after that he was sent to Melbourne where he finished second to the American featherweight Olympic victor, Isaac Berger. But on the following year, in Teheran, Minayev proved to be in front. He was called an alchemist who could turn silver into gold. His world record total equalled 799.1 lbs.

YEVGENI MINAYEV, FEATHERWEIGHT.



Vacationing in the *Caucasian Mountains*

By Victor Ruikovich

PLANNING an excursion in the mountains one should always be prepared to put up with some discomfort. Mountain climbing requires a certain amount of effort, the fitness of an athlete, courage, and frequently Spartan endurance.

Those who prefer to spend their vacation in a quiet spot, where the very air is languid, make sport of the mountain climbers, saying that "a good life does not drive one up the mountains. . . ." The mountaineers have a ready answer for them: "There is no good life without mountains! . . ." Both are prepared to stand up for their opinions, but I am inclined to side with the admirers of the mountains.

Chains of snow-capped peaks holding up the blue sky; evergreen fir-tree forests with their healthful fragrance; deep canyons cutting across giant mountain ranges; rushing

streams which seem to sweep down from the sky as it were—these and other features of the Caucasian mountain ranges, appeal to every heart. They have a special appeal to a man who has the spirit of a pioneer, of a conqueror of nature, who loves to test his skill, strength and courage in battle with the elements.

Thousands of people are vacationing in the Caucasus in summer and in winter. They need not worry about finding shelter, for the numerous resorts, tourist and sports camps, maintained by trade unions or by athletic societies, are prepared to receive them. The charge for a room with meals, for sporting gear and guides is 600 rubles a month on the average.

I snapped the pictures appearing on these pages in one of these tourist camps. It is situated in the Dombai Valley, to the west of Mt. Elbrus.

NEW GUESTS MAKE PLANS FOR TOMORROW'S TRIP UP THE SIDE OF THE MOUNTAIN.





VACATIONERS BUILDING A DOMBAI VALLEY "SNOWMAN".



A GAY IMPROMPTU CONCERT AT THE DINNER TABLE.

NEW SNOW OFFERS A STRONG INVITATION TO EVERYONE.

More pictures on following page

Caucasian Mountains

Continued



CROSSING ROCKY FORD ON SKIS RISKS A DUCKING.

GIRLS, OF COURSE, WON'T ADMIT THEY'RE TIRED.



ARTISTRY OF NATURE IN MOUNTAIN CANYON.



SWAN LAKE ON THE BOLSHOI THEATER STAGE
See Soviet Ballet School story on page 52

