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**HISTORIC
EVENTS
OF 1917**

—See Page 1

GENERAL INFORMATION

USSR

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LENIN EXPLAINS THE TASKS AHEAD OF THE YOUNG SOVIET STATE AT REVOLUTIONARY HEADQUARTERS.

USSR

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	Page
Great People's Revolution by Andrei Sverdlov	1
Communists of the Kirov Plant by Alexander Kuznetsov	7
Communist Party Congress to Discuss the Country's Economic Future	17
College Education in the Soviet Union by Mikhail Kruglyansky	18
Beryozka— Folk Dance Ensemble by Mikhail Dolgopолов	30
Soviet-American Diplomatic Relations: Historical Review of a Quarter-Century by Mikhail Menshikov	38
The Volga Giant— Kilowatt-Hours in the Trillions by Andrei Ionov	40
Biography of a Man and a Farm by Yakov Tsvetov	48
The Kukryniksy: Three Cartoonists in One by Natalia Sokolova	53
Animal Space Travelers Returned to Earth	56
Sculptors to Carve Sputnik Obelisk	57
Home Made Robots and Helicopters by Alexander Mokletsov	60
November Spells Holiday Balls	62

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STORMING THE WINTER PALACE CLIMAXED THE OCTOBER SOCIALIST REVOLUTION OF 1917 THAT PLACED ALL STATE POWER INTO THE HANDS OF THE WORKERS AND PEASANTS

GREAT PEOPLE'S REVOLUTION

By Andrei Sverdlov, *Historian*

ON NOVEMBER 7 the two hundred million people of the Soviet Union and their friends throughout the world celebrate the 41st Anniversary of the Socialist Revolution of 1917. On that day—October 25 by the old calendar—the workers and peasants of Russia overthrew the old regime of exploitive wealth and feudal nobility, and took government power into their own hands. The October Socialist Revolution, marking a new era in social progress, was swept to victory by the entire course of the country's historical development.

Russia in the beginning of the twentieth century, then an autocratic monarchy, had become the symbol and reality of the self-destructive contradictions of imperialism. Oppression of national minorities, ignorance, superstition, poverty, rule by lash and gun—this was woven into the very fabric of the czarist regime.

The working people fought back with bare hands. There is nothing in human history to equal that grim and long-enduring fight—the doggedness of the strikes for a bare living, the scope and intensity of the

revolutionary upheaval which swept all over the country from 1905 to 1907.

Armed uprisings of working people broke out in the large industrial cities. It was during the 1905 Revolution that the Soviets of Working People's Deputies, workingmen's councils, first arose in various parts of the country to lead the revolution.

Together with the movement of workers in the cities, there was unrest in the countryside and mutiny in the imperial army and navy. Although the 1905 Revolution was literally drowned in blood, the czar was compelled to make some few liberalizing concessions.

Soon enough, however, taking advantage of the lack of unity and organization of the forces fighting for freedom, the autocratic regime decimated the revolutionary forces and withdrew even these few concessions. But this first revolution was only prelude to the second. The oppression and poverty which engendered it remained.

Continued on next page



GERMAN AND RUSSIAN SOLDIERS FRATERNIZING AT THE FRONT IN 1917.

GREAT PEOPLE'S REVOLUTION

Continued

Czarism Crumbles

The First World War further widened the immense gap between the autocracy and the people. It aggravated all the deep-rooted crises, domestic and international. The senseless loss of hundreds of thousands of men at the fronts, the economic devastation, the hunger, the nationwide chaos—this was the Russian autocracy in its death throes. Czarism was literally breaking apart.

Early in 1917 the great strikes and demonstrations which began in Petrograd—then the country's capital—swept through one city after another. By February 23 all of Petrograd's workers had risen, the strike was all-embracing. On orders of the czarist officialdom, soldiers and policemen with machine guns were posted in attics, basements and fire-station towers to shoot down any worker who ventured on the streets.

On February 27 troops of the Petrograd garrison mutinied, the soldiers joined the revolutionary workers. Police stations, the regional courthouse and the gendarmerie building were set ablaze. The gates of the jails for political prisoners were smashed open with rifle butts.

The night of February 27-28, a Soviet of Workers' Deputies was formed to take control of the capital. The example set by Petrograd was followed by working people in Moscow and cities all over Russia. The monarchy simply crumbled away and the subsequent abdication of Czar Nikolai II was no more than a belated recognition of the fact.

Although it had been the working people supported by most of the soldiers—they could more rightly have been called peasants in uniform—who had fought and overthrown the autocracy, the fruits of the victory were gathered by the aristocracy of industry and finance. Their representatives who dominated the State Duma, a consultative body under the czar, formed what they termed a Provisional Government to replace the czarist ministers who had been swept away by the February Revolution.

The Soviets of Workers' Deputies, which actually held the real power in Petrograd, at first gave their support to the Provisional Government. This is to be explained by the fact that the majority in the Soviets at the time were members of the Menshevik and the Socialist-Revolutionary Parties which followed a policy of compromise and reconciliation with the industrialists and big landowners.

Both these parties, very prolific in their promises, had every chance to win the favor of the masses. Even prior to the revolution they were able to conduct their activities openly and freely, often with the blessing of the authorities. As for the Bolshevik-Communist-Party, the czarist regime forced it underground. Now, after long years of fierce persecution, the Bolsheviks were again subjected to unbridled baiting. This helps explain why they initially were a minority in the Soviets.

The Bolsheviks differed sharply in their evaluation of the course of events from the pseudo-socialist Mensheviks and Socialist-Revolutionaries, and particularly from the Constitutional Democrats, a party of employers and landowners. They believed that the revolution was far from complete, so far as the vital interests of the workers and peasants, the majority of the population, were concerned. They held that the working people needed their own democratic government which would end the war, end poverty, exploitation and benighted ignorance.

Soberly assessing the situation in Russia in the light of the lessons learned from world history, the Bolsheviks concluded that only with a socialist form of government could the country overcome its century-old backwardness and rid itself forever of social, political and national oppression.

Could the Revolution Develop Peacefully?

As convinced as they were for the need of socialism in Russia, the Bolsheviks did not, nevertheless, call for the immediate overthrow of the Provisional Government. Through Vladimir Lenin, the Bolshevik Party on April 3, 1917, outlined a course by which the revolution could develop peacefully.

Events came in rapid sequence. The people saw soon enough that the government of employers, bankers and landowners that had come to power on the crest of a revolutionary surge, was deaf to the most basic of their demands for peace, bread and land.

The breaking point came on the heels of a statement by the foreign minister of the Provisional Government, Pavel Milyukov, that Russia, in spite of the people's demand for an immediate peace, would continue the war "to a victorious end."

A mighty burst of popular indignation and great demonstrations of protest throughout the country compelled the Provisional Government to reshuffle its ministers, replacing the most discredited of the advocates of war. To placate popular resentment, some of the leaders of the Soviets—Socialist-Revolutionaries and Mensheviks—were taken into the government. Alexander Kerensky was one of them.

But this slightly more leftist, so-called coalition, Provisional Government continued with much the same policy, one which did violence to the basic interests of the working people and the nation both. The situation grew even more critical after June 18, when the government ordered a large-scale offensive at the front. That venture, inadequately prepared, took a huge toll of lives.

High-sounding speeches of the Mensheviks and Socialist-Revolutionaries about shorter working hours—Russian workers had the longest working day in Europe—remained no more than empty phrasing. It was true that wages had increased, but prices went up, too—out of all proportion. From February to October 1917 wages rose an average 500 per cent, but consumer goods prices rose an average 1,109 per cent!

The enormous landed estates remained unbroken, and land was not distributed to the peasants. Instead troops were dispatched to prevent the starving rural population from seizing these great private parks themselves.

Though the people had made a revolution, Russia remained in the clutches of industrialists, bankers and landowners. They controlled the nation's economy, the state apparatus, the army command, the press. As for the Mensheviks and Socialist-Revolutionaries, they, too, were influential. They headed the Soviets, were supported by some army officers and by most of the liberal intellectuals, they controlled hundreds of newspapers.

The Bolsheviks, who worked at the grass-root level, had no facilities of that kind. The Party's treasury rarely held more than 3,000 rubles at a time. They had neither a large organization nor a big press. There

were Bolshevik papers in Petrograd and Moscow, but in many large cities the Party had no press at all through which to present its program.

The Bolsheviks had only the hatred of the government. Nevertheless, their influence with the people grew steadily, while the prestige of the Provisional Government, the Mensheviks and Socialist-Revolutionaries seemed to wane day by day.

How did this come about? The Bolsheviks spoke as one with the people, their program identical with the program of the workers and peasants.

The strength of the Bolshevik Party came from its unity around the idea of socialism. It was a party hardened by years of struggle and sacrifice. It was a party whose members had seen the inside of many czarist jails and had suffered years of Siberian exile.

The strength of the Bolshevik Party lay in its analysis of the motivating forces of social evolution, in its judgment of major historical shifts as the outcome of conflict between classes, one struggling to maintain a decadent status quo, the other struggling to move mankind along the difficult road of social and economic progress.

The Bolsheviks were strong in their leadership. Vladimir Lenin was a great thinker and a man who had the genius to translate his thinking into living action, his comrades were men and women dedicated to a future they were building, a future for the millions of workers and peasants.

Even that rabid enemy of Bolshevism, General Spiridovich, who headed the czarist gendarmerie, in his memoirs later published in Paris, wrote that in 1917 "the leading group of Bolsheviks had far more energy, courage and initiative than the government and all the parties and organizations backing it."

Reaction Gathers Its Forces

Half a million workers and soldiers filled the Petrograd streets in a great demonstration on June 18. They demanded an end to the war, land to the peasants and the dismissal of ten ministers-industrialists from the government. These were the demands of the Bolshevik Party, also.

But the industrial and financial powers that ruled the country were not to abdicate voluntarily. They were gathering their forces for an attack on the people. Rumors of a general lockout and the dispatch of revolutionary regiments of Petrograd's garrison to the front were circulated by agent-provocateurs in factories and army barracks to incite armed uprising. Documents later revealed that this uprising of Petrograd workers and soldiers was to be the pretext for smashing the Bolshevik Party and thus destroying the leadership of the revolutionary movement.

The Party was able to expose the plot and to prevent an armed struggle at a time when the possibilities for the peaceful development of the revolution were still far from exhausted. The workers and soldiers were persuaded not to take up arms, but they gathered spontaneously in a mass demonstration of protest against the policy of the Provisional Government on the evening of July 3.

The Bolsheviks believed the demonstrations inopportune, but once they began, the Party joined the people. On July 4 more than 400,000 workers, soldiers and sailors of Petrograd demonstrated for peace, bread and freedom. Most were unarmed and there was no attempt to attack either government buildings or officials.

Squads of officers and cadets opened rifle fire; in some parts of the city the demonstrating people were machine-gunned. The government the next day moved troops from the front into the capital. Martial law was proclaimed. The offices of the Bolshevik newspaper *Pravda* and the headquarters of the Party were demolished. Many of the party leaders, only a short while before released from czarist jails, were imprisoned again.

Lenin barely managed to escape with his life—he was hidden by workers while the police and army officers scoured the city in search of him. In an attempt to discredit Lenin and thus undermine the growing influence of the Bolsheviks, the Provisional Government, with the support of the Socialist-Revolutionary and Menshevik leaders of the Petrograd Soviet, resorted to the clumsy slander that Lenin was a spy for the Germans.

To give this lie the look of truth, it was buttressed by the perjured statement of a professional stool pigeon later exposed as a simultaneous agent for both the Russian and German intelligence. The government and the yellow press raised a hue and a cry for Lenin's execution.

The Bolsheviks demanded of the Executive Committee of the Soviets that it immediately cease to circulate and support the obvious slander. Lenin, then in hiding, proposed a meeting by appointment with the Committee's Inquiry Commission. He was prepared, he said, to answer any question they wished to ask.

The Executive Committee of the Soviets did not reply to his proposal for a meeting of inquiry nor did the members of the Inquiry Commission appear at the place appointed. Lenin waited for them in vain from noon to 6:30 in the evening on July 7.

The Mensheviks and Socialist-Revolutionaries insisted that Lenin submit to trial by a Provisional Government court but refused to guarantee his safety. To report for trial under such conditions would have been tantamount to suicide. The Bolshevik Central Committee forbade Lenin to appear and insisted that he leave Petrograd.

The People Defend the Revolution

In July came the turning point. The Constitutional-Democrats, who represented the big financial interests, were returned to the government. The Socialist-Revolutionaries and Mensheviks in the Petrograd Soviet supported the government completely and unconditionally. The counter-revolutionary forces were still in the saddle and riding high.

Capital punishment at the front was reenacted as of July 12. Conventions of landowners, bankers and industrialists openly called for a "strong government," with no attempt to conceal that the term meant a coup which was to do away with all the political freedom so recently won, to make short shrift of the Bolshevik Party, the trade unions and other workers' and soldiers' organizations, to disband the Soviets and to establish a bayonet-propped military dictatorship.

The czarist general Kornilov, a thoroughgoing monarchist, was to be the dictator. And as though to precipitate events, shortly afterward he was appointed Supreme Commander-in-Chief of the armed forces of the Provisional Government.

Analyzing the situation shortly after the July events, Lenin wrote that all hopes for a peaceful development of the revolution had vanished and there was no alternative but armed uprising. This conclusion

Continued on next page

MARCH OF 1917. THE PEOPLE POUR OUT IN SUPPORT OF A NEW LIFE.



GREAT PEOPLE'S REVOLUTION

Continued

formed the basis for the decisions adopted by the Sixth Congress of the Bolshevik Party held in Petrograd from July 26 to August 3.

As the Bolsheviks had forecast, the mass movement against the attempts of the Provisional Government to turn back the revolutionary clock gathered force and scope from day to day. The influence of the Mensheviks and Socialist-Revolutionaries declined catastrophically.

In answer to the July massacre of the Petrograd demonstrators, angry protest meetings were held by workers in many cities. The masses rallied ever closer around the Bolshevik Party.

The people were becoming more and more convinced that only the Bolshevik program and leadership could prevent a return to the autocracy toward which the big landowners and industrialists and their Provisional Government were forcing the nation. Exercising their right of recalling deputies, the workers replaced the Socialist-Revolutionaries and Mensheviks in the Soviets with Bolsheviks and their adherents.

The reactionary forces in the meantime were preparing their *coup de force* with the aim of establishing a military dictatorship. On August 25 General Kornilov moved his troops to Petrograd. Kornilov and his backers planned to disband the Soviets and to go a step beyond, to depose the Provisional Government. Even the feeble attempts of the Provisional Government to preserve the façade of political freedom was anathema to the forces which supported Kornilov and military dictatorship. The manifesto, prepared in advance, declared that Kornilov "assumed the mission of saving the nation."

The very first news of this menacing move stirred the country. Committees for the defense of the revolution sprang up in town and countryside. Workers' battalions were hurriedly formed in Petrograd. The garrison of the capital was alerted and regiment after regiment was rushed off against Kornilov. Detachments of Baltic sailors hurried to

the defense of Petrograd. Workers in Moscow, the Ukraine, all over the country, demonstrated against the Kornilov adventure.

No fighting took place. The revolt ended almost before it began. When Kornilov ordered his troops to Petrograd he did not reveal the reason for the march on the capital. The reason—counter-revolutionary conspiracy—was told his advance units by Petrograd workers, soldiers and sailors. The offensive came to a halt, Kornilov's divisions refused to fight a fratricidal war.

The venture a failure, General Krymov, commander of the advance troops, committed suicide. Kornilov and his fellow-conspirators were arrested.

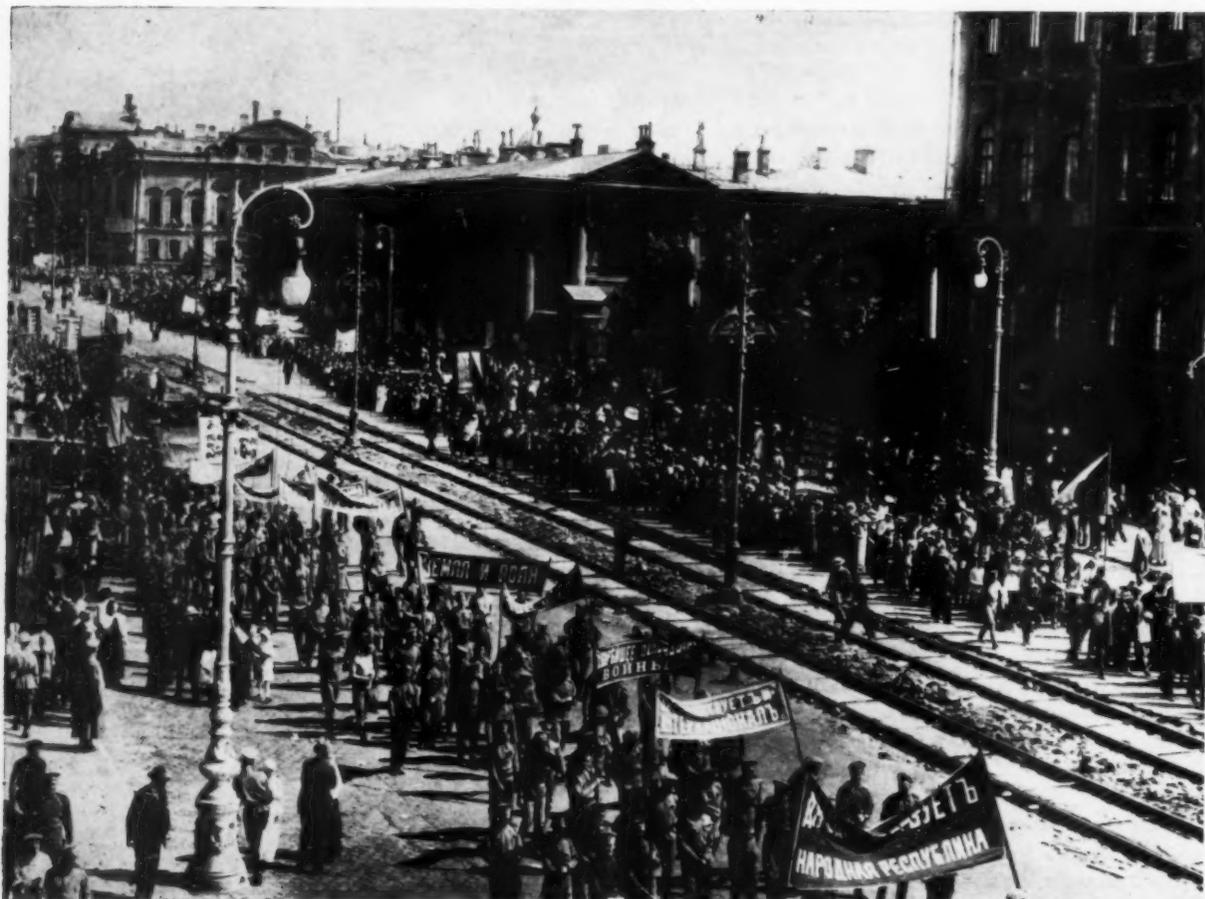
On August 31, the day the Kornilov revolt was put down, the Petrograd Soviet of Workers' and Soldiers' Deputies for the first time adopted a Bolshevik-sponsored resolution to transfer all power to the Soviets. It was passed by a vote of 278 to 115, so crushing a defeat for the Mensheviks and Socialist-Revolutionaries that the presidium of the Soviet which they controlled was forced to resign.

Following that, the Bolsheviks also came to power in the Soviets of Moscow, Ivanovo-Voznesensk, Krasnoyarsk, Tula, Odessa and in all the Soviets of the Urals, the Donets Basin and Siberia. Everywhere in the country the working people refused support to the Mensheviks and Socialist-Revolutionaries and delegated the Bolsheviks to represent them at the Soviets.

The patience of the people had been stretched to the breaking point. They had lost all faith in the empty promises of the Provisional Government. They moved to decisive action to take what they had fought a revolution for. In several factories in Moscow, Kharkov and the Urals they drove out employers who had cut production in order to skyrocket prices, and took over the management of the factories. With no hope left that the Provisional Government would break up the great estates, the landless peasants seized land and farm implements, in many places fighting pitched battles with the police.

At the front discontent with the Provisional Government mounted. The soldiers did not want to spend a fourth winter in the trenches fighting a war that had lost all sense and meaning. What were they being killed for, they asked. There were more and more instances of regiments driving out those of their commanding officers who were

ON JUNE 18, 1917, A HALF MILLION WORKERS AND SOLDIERS DEMONSTRATED IN PETROGRAD'S STREETS FOR LAND, BREAD AND PEACE.





JULY OF 1917. SHOTS RIDDLE WORKERS' PEACEFUL DEMONSTRATION.

faithful to the old regime and electing commanders from their own ranks who were revolutionaries.

From end to end of the country millions of people were rising.

Seeking desperately for a way to strangle the revolution, the Provisional Government took the road of treason, the more reactionary groups openly calling for foreign armed intervention. The big oil tycoon Lianozov, who subsidized the Constitutional-Democratic Party, in an interview given to an American journalist, talked of intervention as the only hope. "Sooner or later," he said, "the foreign powers will have to intervene in our affairs."

In August Riga was surrendered to the Germans—shortly after General Kornilov, on the eve of his abortive revolt, had stated publicly: "Perhaps we should sacrifice Riga to make the country conscious of its duty again."

After the failure of the Kornilov coup, the Provisional Government proposed to open the front and surrender Petrograd to the Germans. The big landowner Rodzianko, former chairman of the State Duma, wrote in this vein in the Moscow paper *Russian Dawn*: "I think we should leave Petrograd . . . Some people are fearful that the Soviets will perish in Petrograd. But I shall rejoice if these institutions are destroyed."

Kerensky, who then headed the Provisional Government, began secret preparations for the capital's evacuation. Only the resolute protest of the Petrograd workers and soldiers, who disclosed the treasonable preparations, prevented the surrender of the capital. Then Kerensky tried to pull the revolutionary soldiers out of the city. But in this attempt, too, the Provisional Government was checked.

At meetings of workers in the factories, of soldiers in the troops, of sailors on the warships, at meetings of city and regional Soviets everywhere in the country the slogan was forwarded: "All Power to the Soviets!"

With the Provisional Government calling for foreign bayonets to put down the revolution, a peaceful transfer of power to the Soviets, feasible in April, May and June, was now altogether impossible. The slogan "All Power to the Soviets"—this time to Bolshevik Soviets—was the call for an armed uprising that would place state power in the hands of the people.

On October 12, the Executive Committee of the Petrograd Soviet formed, on the motion of the Bolsheviks, a Military-Revolutionary Committee. It subsequently became the headquarters of the armed uprising.

The Uprising

The Second All-Russian Congress of the Soviets was to open its sessions on October 25. Since the Soviets then represented the majority of the working people who backed the Bolshevik program, the Provisional Government hurriedly mustered its forces to behead the Congress. It moved its most reliable frontline units to Petrograd, alerted the cadet schools and strengthened the police force. It had decided to arrest Lenin immediately and "all the active participants of the July events" and to prosecute the Military-Revolutionary Committee.

But the Provisional Government, although still able to announce decisions, had lost the power to carry them out. The center governing the life of the capital and the country had shifted to the spacious building of the Smolny Institute which the Bolshevik Party, the Military-Revolutionary Committee and the Petrograd Soviet had made their headquarters—the headquarters of the revolution, where armed workers' detachments were concentrated, where soldiers and sailors and envoys from towns and villages all over Russia came for advice and instructions.

On October 24 the Provisional Government tried to isolate the workers' districts from the city center. It ordered the communicating bridges over the Neva River to be raised. But, acting for the Military-Revolutionary Committee, detachments of Red guards and sailors cleared the cadet forces from the bridge approaches.

The Provisional Government ordered the cruiser *Aurora*, which was completing repairs in the Petrograd shipyards, to sea. But, obeying the orders of the Military-Revolutionary Committee instead, the crew eased the warship into the Neva and trained guns on the Winter Palace, the last refuge of the ministers.

Troops ordered from the front to the assistance of the government either refused to board army trains or stopped the trains on approaching Petrograd to join the revolutionary forces.

The illusory authority of the government of national treason, the government that had set itself against the most basic interests of the majority of the people, waned with every order, every decision, every proclamation.

Late in the evening of October 24 Lenin came to the Smolny to lead the uprising. On the night of October 24-25 the revolutionary workers, soldiers and sailors took over one government building after another, one railway station after another, the power station, the telegraph office, the telephone exchange—all done in disciplined calm without firing a single shot. By morning of October 25 the people had control of almost the whole of the capital. The only spot left to the Provisional Government was the Winter Palace.

And that morning on all the Petrograd billboards was posted the historic proclamation:

"From the Military-Revolutionary Committee under the Petrograd Soviet of Workers' and Soldiers' Deputies.

"To the citizens of Russia.

"The Provisional Government has been overthrown. The state power has passed into the hands of the organ of the Petrograd Soviet of

Continued on next page

THE DAY AFTER THE OCTOBER REVOLUTION EVERYONE CALLED FOR PEACE.





MAY OF 1919. LENIN ADDRESSES WORKERS IN A MOSCOW SQUARE.

GREAT PEOPLE'S REVOLUTION

Continued

Workers' and Soldiers' Deputies—the Military-Revolutionary Committee—which heads the Petrograd proletariat and garrison.

“The cause for which the people have fought—the immediate proposal of a democratic peace, the abolition of landed-estate property, workers' control of industry and the formation of a Soviet government—is now guaranteed.

“Long live the revolution of the workers, soldiers and peasants.”

This proclamation was signed by Lenin.

The Second All-Russian Congress of the Soviets convened late in the evening of that same day to determine the future of the country.

At this very time the revolutionary forces stormed the Winter Palace. On the night of October 25-26 it was taken and the members of the

Provisional Government arrested. It is worth noting that shortly thereafter the ex-ministers were released on their word of honor together with all officers, cadets and soldiers who had been captured fighting against the revolutionary people.

The Second All-Russian Congress of the Soviets, representing 20 million of the organized working population, assumed state power. On October 26 the Congress issued the first two decrees of the people's power—the Decree on Peace and the Decree on Land.

The Decree on Peace was an appeal to all belligerent peoples and their governments for a just and democratic peace without annexations or indemnities.

The Decree on Land declared that landed estate ownership was abolished forthwith and forever without compensation, and was replaced by national ownership of all lands. Here was the century-old dream of the landless Russian peasant come true.

The Congress formed the first workers' and peasants' government in mankind's history—the Council of People's Commissars. It was headed by Vladimir Lenin.

Following the example of Petrograd, workers and peasants rose in the Ukraine, Siberia, the Urals, Transcaucasia, the Baltic regions, the Caucasus. Soviet power spread triumphantly to every part of Russia.

The World's First Socialist State

The October Revolution, supported as it was by the vast majority of Russia's people, was perhaps the most bloodless ever made. According to some sources, a total of five persons, according to others, a total of seven were killed during the uprising in Petrograd.

The Soviet Government lost no time in making the people's will the law of the land. In a matter of weeks it gave the workers and peasants what the Provisional Government had been unable to accomplish in its eight months of existence.

The world's first Socialist State abolished ranks and titles, granted women equal rights with men. It introduced the eight-hour day and placed workers in direct control of the factories. The policy of the Soviet Government concerning the country's national minorities was stated in clear and powerful language in *The Declaration of Rights of the Nations of Russia*: equality, sovereignty, self-determination.

But the story of the October Socialist Revolution does not end here. The young Soviet Republic was almost immediately plunged into a civil war imposed by supporters of the old regime which the revolution had swept into the gutters of history. This was a bloody struggle against well-financed and well-equipped counter-revolutionary armies bolstered by the interventionist armies of fourteen foreign states—a struggle that left the country devastated.

The Soviet people fought hard to defend what they had won in the Revolution. When the war was over, they worked with the same energy to reconstruct the ravaged land and then build socialism in their country.

The forty-one years of the world's first Socialist State were fraught with sacrifice, but they were also filled with great successes in all fields of the economic, political and cultural life that have given the Soviet Union its present place as one of the leading nations. ■



COMMUNISTS of the KIROV PLANT

The Communist Party of the Soviet Union has nearly 8 million members, people in every walk of life. They all belong to the Party branches at their places of work. This is a picture of the Party branch at a big engineering plant.

By Alexander Kuznetsov

Photos by Dmitri Chernov

THE Communist Party branch at the Kirov Engineering Plant in Leningrad is one of the oldest in the country. It goes back to the nineties of the last century when workers met illegally in small groups to study the principles of scientific socialism. These study circles were later joined in the League of Struggle for the Emancipation of the Working Class founded by Lenin in 1895.

The Kirov Plant was then called the Putilov Works, after its founder. It was built 157 years ago and manufactured the first Russian rails, locomotives and railroad cars. The history of the plant is an important chapter in the biography of a century and a half of Russian industrial development and, by that token, in the development of the Russian labor movement.

The earliest strike at the Putilov Works took place in 1871. It was a strike for the most elementary rights of labor, the first of many, and was fought grimly and courageously, not only against the factory owners but against the whole of the massed power of czarist autocracy. Strike meant blacklist and

Continued on next page



MORNING SHIFT WORKERS STREAM INTO THE PLANT.

COMMUNISTS of the KIROV PLANT *Continued*



MIKHAIL PEREVERZEV IS ONE OF PLANT'S WELDERS.

permanent unemployment, it meant police terror and jail and exile.

A strike for a bare living wage, in czarist Russia, was inevitably a strike for political freedom, and the Putilov Works was one of the first where the labor movement merged with the revolutionary socialist movement to give rise to the Russian Social-Democratic Labor Party which developed afterward into the Communist Party.

There are veterans of the labor struggles of the early part of the century among the plant's Communists, men for whom the Socialist Revolution of 1917 is a page from the story of their own lives. They have long been retired on pension but many, still active, contribute their valuable background of experience to the work of the Communist branch.

Most of the members are young people who know about the old labor struggles only from history books and from the stories the old-timers tell. They were born and brought up under socialism.

Who Joins the Communist Party

Here then are old people and young, men and women of a variety of occupations, of different backgrounds, of different educational levels, with interests in many cases widely dissimilar.

Who joins the Communist Party of the Soviet Union, a party which imposes a demanding discipline and heavy obligations upon its members and grants little more in the way of advantages than the influence and prestige earned by a person who voluntarily assumes unpaid public responsibilities?

Communists like the plant's older men led the labor battles of the turn of the century and were active participants of the Revolution. Many of them will carry the scars to the end of their lives. Communists picked up the heaviest burdens during the long years after the civil war, when the country was rebuilding out of devastation, just as now many young Communists from the Kirov Plant vol-

Continued on page 10

FITTER KONSTANTIN GOVORUSHIN HEADS THE PARTY UNIT IN HIS SHOP.



COMMUNIST MITROFAN ZHUKOVSKY IS ONE OF THE BEST STEEL SMELTERS AT THE PLANT.





JOINING THE PARTY IS A GREAT EVENT FOR SOVIET CITIZENS. MIKHAIL SOFRONOV, A LATHE OPERATOR, APPEARS BEFORE THE PLANT COMMITTEE ON HIS CANDIDACY.

COMMUNISTS SERGEI ZHAROV AND NIKOLAI BOBROV ARE EXCELLENT LATHE OPERATORS, AND BY THEIR ACTION, NOT BY WORD, SET THE EXAMPLE FOR NON-PARTY WORKERS.





MECHANIC VLADIMIR KARASEV (RIGHT) IS AN ALTERNATE MEMBER OF THE PARTY'S CENTRAL COMMITTEE.

unteer for the toughest pioneering jobs in the Urals and Siberia to open new areas for cultivation.

During the Second World War it was the Communists who took, and were expected to take, the most dangerous positions at the front—the rear guard in retreat and the most exposed positions in advance. In spite of that, in the months immediately following the Nazi invasion, when the country lived through the darkest days of the war, the number of men and women who applied for Party membership more than tripled.

This figure goes far to answer the question. It is a tribute to the human spirit—this willingness to give your life, if need be, to defend what you believe in and what you live by.

The Communists in the Kirov Plant believe in socialism, not simply as a philosophical idea, but as a way of life. They are united by a single world outlook, convinced of the inevitability of an eventual socialist world and joined together to build in the Soviet Union the pattern for that world.

The Communists are workers, whether by hand or brain, who, by virtue of their Party membership, must be the best and most productive people in their shops so that not alone by word but by action they can merit leadership. They are people who accept the Party program and its decisions and work actively to carry them out.

The Party Branch

The Party branch at the giant Kirov Plant has 4,000 members and elects its executive committee, as do all Party branches, at general membership meetings. The present chairman of the Kirov Plant committee is 47-year-old Sergei Kalinin. He started working at the plant as an unskilled laborer when he was 20, then became a steelworker. Combining work and study, he succeeded in obtaining a post of an engineer.

Director of the plant Ivan Isayev, who also started work at the plant as a laborer, is a member of the executive, as are welder Alexander Kvashnin, rolling-mill operator Ivan Grechikhin, milling-machine operator Ivan Leonov, mechanic Vladimir Karasev and other shop representatives.

Of the 4,000 Communist Party members at the plant 44.4 per cent are manual workers. Another 41.6 per cent are engineers and technicians; most of these men and women started as manual workers. The remaining 14 per cent is made up of office workers.

This is about the usual distribution in Party branches in industrial enterprises throughout the country. The preponderant majority, in the case of the Kirov Plant four-fifths of the membership, is made up of people engaged directly in the production process.

Continued on page 13



PARTY UNITS HEADED BY ELECTED COMMITTEES FUNCTION IN ALL SHOPS OF THE PLANT. THE MACHINE SHOP COMMITTEE HEARS A REPORT ON RATIONALIZATION PLAN.

MEMBERS OF THE PARTY'S REGIONAL COMMITTEE.

NON-PARTY FOREMAN SETS UP JOB ASSIGNMENTS.

SHOP WORKERS JOIN IN TALKS ON MAJOR ISSUES.



1958
UN



WORKERS, BOTH PARTY AND NON-PARTY, CHECK UP ON THE FULFILLMENT OF THE UNION CONTRACT. HUNDREDS PARTICIPATE IN THESE SURVEYS IN EACH DEPARTMENT.

COMMUNISTS of the KIROV PLANT

Continued

ENGINEER VASILI SNIGIREV PAYS PARTY DUES TO A SHOP UNIT'S SECRETARY.





What Is Expected of a Communist

The Communists in the plant enjoy no special privileges. Like any other worker, their wages must be earned and are gauged by what they produce.

If a non-Party worker "soldiers" on the job, he is responsible only to himself and to his wife, perhaps, who can conclude how well he worked by the size of his pay envelope. If he is a Party member, however, this will be only the beginning of his troubles.

He will be taken sharply to task by the other members of his Party branch, people who work on the benches alongside his. His shirking is no longer a purely personal thing, it reflects discredit on him as a Communist and therefore on every Communist in his group. He represents the leadership of the country and is therefore obligated to act as a leader. If not, he does not stay in the Party long.

As pace-and-quality setter, the Communist is expected to keep up with advances in his skill. He is expected to attend the technical classes given at the plant, to keep educating himself. More than that, he is expected, again by force of example, to persuade non-Party workers to attend classes with him. His effectiveness as a Communist is to be measured by the degree to which he develops his own potentialities as a worker and citizen, and the degree to which he helps his non-Party neighbor to develop.

It is no accident, therefore, that the Communists working in the Kirov Plant have been responsible for many of the very important changes in technology and for innovations which have increased production many times over and have lightened the work load at the same time.

The Communist Vladimir Karasev, for instance, who has been working as a lathe operator at the plant for 30-odd years, is the originator of many important techniques. One of them, the use of a highly efficient end milling cutter of an original design, meant an additional million rubles for the plant. Through similarly inventive ideas milling-machine operator Ivan Leonov and fitter Pavel Zaichenko, both Party members, have saved for the plant sums running to very large annual figures.

This is not to suggest that it is only the Communists who propose such time and labor-saving techniques at the Kirov Plant and in many thousands of other Soviet plants. However, Party members are expected to be the most knowledgeable workers. They are the ones to whom a non-Party worker can go for help in solving a tricky problem or in getting an idea worked out.

Day-to-Day Activities

Not too long ago several of the assembly men in the mechanical shop shared with Communists Nikolai Pichuzhnikov, a fitter, and Vasili Osipov, a milling-machine operator, their idea for eliminating the department of technical control. This department was opened after the war, when many inexperienced workers were hired. These new men had long ago become craftsmen and the department had not only outlived its usefulness but was an irritant, besides being a waste of money.

The matter had come up at shop meetings but for one reason or another, largely neglect, the department was still operating.

The two Communists thereupon brought the question up at a meeting of the Party group in the shop. The proposal to eliminate the department was endorsed and communicated to the plant administration. Now every worker in the shop places his own mark of approval on the processed part or the assembled section of a machine.

The Party branches do not substitute for the administration of a factory or for a governmental agency. They follow the methods characteristic of any public organization. Here is an example, illustrating the usual procedure:

During the postwar years, the Kirov Plant embarked on a program of large-scale housing construction for its many thousands of workers. Although in the one year, 1957, the plant

Continued on next page



COMMUNISTS STUDY TO RAISE THEIR POLITICAL LEVEL.



THESE ENGINEERS STUDIED NIGHTS WHILE WORKING.

GROUP OF WAR VETERANS FROM ONE OF THE SHOPS.





NIKITA KHRUSHCHEV, FIRST SECRETARY OF THE PARTY'S CENTRAL COMMITTEE, CONGRATULATES VETERANS OF THE KIROV PLANT FOR SERVICE TO THE COUNTRY.

COMMUNISTS of the KIROV PLANT

Continued

spent more than 13 million rubles on building, general feeling was that the program was not moving along nearly fast enough.

The plant's Party committee came to the conclusion that construction could be speeded up if the plant built a shop to turn out silicate blocks for prefabricated houses. The committee addressed its decision to Plant Director Ivan Isayev.

As a Party member, Isayev was obligated to carry out the decision of his Party branch. Had he disagreed, he could have appealed to the higher Party body, but since he was fully in agreement with his fellow Party members at the plant on this matter, the shop was built.

Much of the Party branch's activity is with matters of this kind which immediately concern the welfare of the plant's workers. All

the Communists in the plant are members of the trade union and by virtue of their activities on behalf of their fellow members are frequently elected to the leading trade union bodies in the plant.

General Party Policy

The interests of the Communists in the Kirov Plant are not, however, limited to the factory. At Party meetings they discuss the more general problems of Party policy, those which affect the entire country. Now, for example, nearly all attention of the plant branch is focussed on preparation for the 21st National Congress of the Communist Party to be convened in Moscow in January, 1959.

Continued on page 16



MASS MEETINGS OF ALL WORKERS ARE CALLED PERIODICALLY BY THE KIROV PLANT'S PARTY COMMITTEE TO DISCUSS PROPOSALS AND SURVEY OPINIONS ON MUTUAL PROBLEMS.

COMMUNISTS of the KIROV PLANT

Continued

Each time, when the Party's Central Committee advances one or another question for the nationwide consideration, the Communists of the Kirov Plant express their views, and propose changes and amendment to the drafts of Party policy documents. Their voices carry weight in deciding issues involving the whole Party organization of Leningrad, one of the largest in the country.

In discussions with his shopmates, the Communist at the Kirov Plant speaks as his Party's representative. He must keep abreast of current national and international events. But more than that, he must have the necessary knowledge to relate the events to his socialist convictions. The program of the Party is no purely theoretical set of principles divorced from the realities of work in his shop, any more than it is divorced from the realities of the national and international scene.

Where his Party falls short, either in the shop or in larger areas, a Communist must be prepared to face criticism from the workers around him, to admit shortcomings and to take steps to eliminate them. He must be equipped with the background and the current information to explain the policies which his Party advances—whether they relate to the plant or to the larger areas of domestic and foreign affairs.

The Communist Party of the Soviet Union requires all this—and more—from a member, whether he is a metal worker or the highest of government officials. ■



COMMUNIST ALEXEI BAIKOV, A PLANT VETERAN NOW RETIRED ON PENSION, FREQUENTLY VISITS HIS OLD SHOP.



PLANT PAPER KIROVETS APPEARS THREE TIMES WEEKLY.

Plant's relic. Mikhail Kalinin, the first Soviet President, worked on this lathe from 1896-1899.



LENIN AND PUTILOV WORKERS—PAINTING IN THE LENINGRAD MUSEUM OF REVOLUTION.



COMMUNIST PARTY CONGRESS

TO DISCUSS THE COUNTRY'S ECONOMIC FUTURE

THE COMMUNIST PARTY of the Soviet Union will hold its 21st Congress on January 27, 1959. Its agenda is to be: "Control Figures for the Development of the National Economy of the USSR in 1959-1965."

Behind this formal phrasing is the extraordinary record of a country that has lifted itself by its own economic bootstraps in forty-one years to a position where it challenges the United States for the world's business. Ahead is a plan, in the very real arithmetic of tons of steel poured, yards of cloth woven, bushels of wheat grown that moves, with massive seven-year steps, toward an economy of plenty.

This Congress proposes to set guide figures within the 1959-1965 period for achievement in industry and farming primarily. These are the two gears on which the nation's economic life turns.

But these figures will also be determining others no less consequential—how many engineers and teachers and physicians are to be trained; by how much working hours can be reduced and real wages increased and social services expanded; how many new apartment houses and theaters are to be built; how much scientific skill is to be allocated to send a rocket to the moon.

There is no small area of the country's life, which will not be intimately and vitally affected by these control figures which the Congress will be adopting in January. And there is no Soviet citizen whose life will not be touched.

It is for this reason that so long a period—almost twenty-one weeks—intervenes between the announcement of this Congress and its opening deliberations. Preceding the Congress thousands of meetings will be held at which recommendations will be made; there will be countless amendments submitted for changes in the draft proposal. There will be no person in the country who has not been provided with the opportunity to speak his mind on the plan as a whole or on any of its parts.

The discussions will be general, even though this is to be a Congress of the Communist Party. The decisions adopted will be representative of a public opinion much larger than that of the Party membership. If it is to lead wisely and effectively, the Party decisions must reflect that public feeling since it will be the job of the membership to see that goals adopted by the Congress are met. They will be required to set the example in their own fields of endeavor.

Delegates to the Congress will be elected by secret ballot at Party conferences on a regional level and Party congresses on a republican level. There will be one delegate with voting power from every 6,000 Party members, and one delegate without vote from every 6,000 candidate members. The regional conferences and republican congresses will also discuss the theses of the report that will be later delivered at the National Congress by Nikita Khrushchev, First Secretary of the Party's Central Committee.

The Party congresses have been important milestones in the country's development. The 20th Congress, held in 1956, laid out guide figures which were met and, in many basic areas, surpassed. During this period measures of vital significance for the national economy have been car-

ried out. Among them are such major changes as the decentralization of industrial management and the reorganization of the state machine and tractor stations, or recently adopted decisions on the accelerated development of the chemical industry and on the new procedure for agricultural procurement.

The citizen anywhere in the Soviet Union sees the results of the Twentieth Congress' deliberations in the actualities of his daily life. In his foodstore he can buy now more meat or dairy products. If he lives in Irkutsk he now lights his home with electricity generated by the new power station on the Angara, the first major power station in eastern Siberia. When he travels he books passage on a jet plane which covers the distance from Moscow to Vladivostok in ten hours.

He knows the Congress provided the impetus for the extraordinary achievements of Soviet science in these last years—the launching of the earth satellites, the work on controlled thermonuclear reactions, the explorations and research done in the Antarctic and the major findings in many other fields of study which are Soviet contributions to the International Geophysical Year.

Economic achievements can be judged from the fact that the Soviet Union's annual rate of increase in industrial output is considerably faster than that of any of the Western countries—an average annual rate of growth during the last four decades is 10 per cent as compared with 3.2 per cent for the United States, 1.9 per cent for England and 3.2 per cent for France. This is a certain guarantee that the Soviet Union will exceed even the United States in total industrial production in the near future.

The 1959-1965 plan for economic development to be discussed by the 21st Party Congress proposes to set goals which will bring this near future even closer, to take a long step forward toward the levels of annual industrial output envisaged for the next 15 years: 250-300 million metric tons for iron ore; 75-85 million tons for pig iron; 100-120 million tons for steel; 650-750 million tons for coal; 350-400 million tons for oil; 800-900 billion kilowatt-hours for electricity; 90-110 million tons for cement; 9-10 million tons for sugar; 700-850 million yards for woolen fabrics and 600-700 million pairs for leather footwear.

No less impressive figures are to be set to boost grain and livestock, milk and meat production. The goals for housing construction are to be set so as to end the housing shortage completely within the next dozen years.

This will require a greater productivity of labor which is to be achieved by application in all branches of industry and agriculture of the latest findings of modern technology and an even larger emphasis than at present on research and scientific investigation. This will require, in its turn, even wider horizons in education than the present ones for the Soviet worker.

The Congress will be mapping, as have the Congresses which preceded it, not only the economic future of the country but its social and cultural future in the most comprehensive sense as well. ■



MOSCOW. HERE IS THE LARGEST SOVIET UNIVERSITY.

The last issue of *USSR* magazine carried a detailed article on public schools, the first of a series on the Soviet system of education. In this issue the country's colleges and universities are discussed.

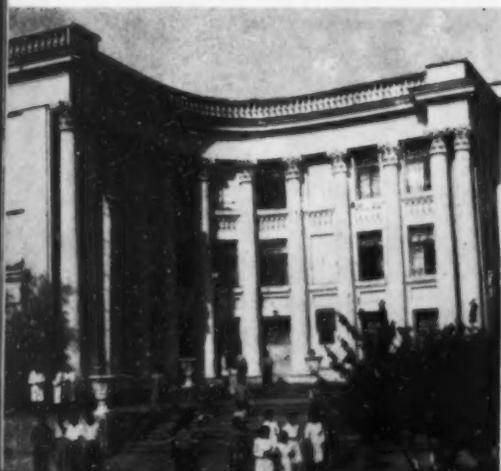
These articles show the educational system as it exists at present. Next in the series will be an article covering the discussions now under way on how to better adapt the school to the changing needs of modern life.

COLLEGE EDUCATION

in the Soviet Union

By Mikhail Kruglyansky

FRUNZE. THE KIRGHIZ MEDICAL INSTITUTE.



STALINABAD. STATE UNIVERSITY OF THE TAJIK REPUBLIC.



TBILISI. UNIVERSITY OF THE GEORGIAN REPUBLIC.





RIGA. A VIEW OF THE LATVIAN STATE UNIVERSITY.



TASHKENT. PEDAGOGICAL INSTITUTE OF THE UZBEK REPUBLIC.



MINSK. THE POLYTECHNICAL INSTITUTE.

CONSIDER the wide range of skills and specialties, the enormous aggregate of trained brains and hands that were required to place sputniks into their orbits or to build atomic power plants, and you have a measure of the progress made by the Soviet system of education during the past four decades. Here are some statistics to illustrate it:

The number of college-trained specialists has increased 20 times compared to a four-fold increase in factory and office workers. The country now has 24 times more scientists than before the Socialist Revolution of 1917, and about 30 times more engineers. The total number of specialists with college education or specialized secondary school training is now almost seven million compared with a pre-revolutionary figure of 200,000.

Free to Everyone

The Soviet educational system is based on the assumption that a society concerned with developing its creative potential must make higher education easily available to everyone with the capacity to use it productively. Following this fundamental principle, Soviet colleges and universities afford all citizens an equal opportunity for admission without regard to race, nationality, religion, sex or any other discriminating factor.

All education is free through the graduate and professional level. There are no entrance or tuition fees, nor are there library, laboratory or other fees of any kind.

Financial cares are no barrier to college study, since monthly stipends sufficient to cover normal living expenses are granted. More

than 30 per cent of the country's students receive these stipends, the amount depending in part on need and in part on proficiency in academic work. Stipends are paid throughout the entire year, including vacation periods, and increase with each year of study.

The operation of all colleges and universities is financed from the national budget. This includes the cost of construction and building maintenance, purchases of equipment and literature, instructors' salaries and students' stipends. To cite the example of technical colleges, the average cost of training one student through the entire period of his course comes to more than 60,000 rubles.

Free training coupled with the stipends provides solid reinforcement of the constitutional right to education and assures a real opportunity for families from every section of the population to send their children to college. At the disposal of those who wish to take college courses while working, there are numerous evening and correspondence institutes spread throughout the country.

Pages of History

The history of higher education in Russia is traced back to the 17th century when the country's first advanced school was founded in 1634. At the time of the 1917 Revolution there were 105 colleges and universities with an annual enrollment of 127,000 students. Quite a few of the old Russian colleges and universities ranked among the world's best and attained universal renown for their scientific and educational achievements. Among

Continued on next page

YEREVAN. THE ENGINEERING INSTITUTE.



KIEV. THE UKRAINE'S STATE UNIVERSITY.

ALMA-ATA. STATE UNIVERSITY OF KAZAKHSTAN.



KAUNAS. INDUSTRIAL INSTITUTE OF THE LITHUANIAN REPUBLIC.



YAKUTSK. NEWLY BUILT STATE UNIVERSITY.



1958 UM



President Alexander Nesmeyanov of the USSR Academy of Sciences is a faculty member of the Moscow University.



Industrial workers such as these, of the Gorky auto plant, take courses in evening polytechnical institutes for their diplomas.



Laboratory lesson in metallography at the Barnaul Agricultural Machinery Institute.

COLLEGE EDUCATION *in the Soviet Union*

Continued

their graduates were many people who won fame in various fields of endeavor.

With all this, higher education under the czarist regime was calculatedly discriminative. Access to the colleges and universities was mainly the privilege of the propertied, since it was much too expensive for the working people. The national minorities were practically barred from institutions of higher learning. Women received the right to enroll as late as the turn of the present century, especially after the 1905-07 Revolution, and only for an abridged list of courses.

Reconstructing the entire school system of the country, the Soviet Government not only proclaimed the right of every citizen to an education, but also guaranteed this right. In 1919 a special decree regulating admission to colleges and universities was adopted abolishing all the old discriminative rules.

The system of higher education has been greatly expanded. Now there are 767 colleges and universities in the country with an annual enrollment of 2,100,000 students. This is four times the aggregate number of students in Britain, France, West Germany and Italy, where the combined population is about 200 million—almost the same as in the Soviet Union.

Available to Every Nationality

The geography of higher education has been altered radically. Before the 1917 Revolution, colleges and universities were situated in 21 cities, mostly in Central Russia. Today they are located in 224 cities. Branches of correspondence institutes are operating in 300 cities and communities.

There is no region in the Soviet Union now

Future architects and builders, these students are in a drawing class at the Byelorussian Polytechnical Institute located in the capital city of Minsk.



Study Hall at Yakut University. Four decades ago the Yakuts did not have even an alphabet.



without an institution of higher learning. College education has become really accessible to all national groups inhabiting the country.

While formerly the Ukraine had only 27 colleges and universities, now it has 138. In all the vast expanses of the Asian part of the country there were only four, while now these regions have 200. In the territory of the present republics of Byelorussia, Lithuania, Moldavia, Azerbaijan, Armenia, Kazakhstan, Uzbekistan, Turkmenia, Tajikistan and Kirghizia there was not a single college—a fitting example of the czarist policy of depressing the national minorities. Today these republics have 152 colleges and universities with a total student body of more than 320,000.

Many cities, which prior to the Revolution had no institutions of higher learning, have now become large college and university centers. Among these is Tashkent, the capital of Uzbekistan. Its university, founded in 1920, was the first institution of higher learning in Central Asia. Besides the university, Tashkent now has 15 colleges. The development of higher education in Uzbekistan can be judged from the fact that the number of students per thousand of population in this republic now exceeds that of both the United States and Britain.

The story repeats itself for any one of the Soviet republics, and for the country as a whole. It is given added point when one recalls that czarist Russia's rate of illiteracy was 75 per cent, that in the Central Asian regions only 5 to 20 persons in each thousand were able to read and write, that 80 per cent of the country's children of school age were denied even an elementary education, and that 48 nationalities had no written language of their own.

Single Nationwide System

All Soviet colleges and universities comprise a single nationwide system administered by the USSR Ministry of Higher Education. Some institutes which train specialists for a specific field are closely connected with the corresponding branch of the economy or culture. But general teaching and scientific guidance for all remains under the jurisdiction of the Ministry of Higher Education.

The Soviet Union has several types of schools of higher education—universities, polytechnical institutes and colleges for specific fields of professional training. Some of the institutes are called academies, but the word is historical rather than descriptive. Such famed institutes as the Timiryazev Agricultural Academy in Moscow or the Kirov Forestry Academy in Leningrad have retained their old names but in structure and function they do not differ from the newer institutes.

Universities

Moscow University, which is formally known as the Lomonosov State University of Moscow, is the leading educational institution of the country. Founded in 1755, it now has a student body of 22,000 undergraduates plus 1,100 enrolled in its graduate courses. Among these students are representatives of 70 nationalities of the Soviet Union and other countries.



The Komitas State Conservatory in Yerevan has produced many leading Armenian composers and musicians. Every Soviet republic has institutes in various fields of culture.

The university is divided into departments of mathematics, physics, chemistry, mechanics, biology, geography, geology, history, philology, philosophy, economics, journalism and jurisprudence. In 1956 a department of Oriental languages was established. The university also has a number of research departments. The largest are the physics and astronomy research centers, the anthropology institute and museum, the zoology and geography museums, and the botanical garden.

Among the university's faculty of 2,800 members are some 500 Doctors of Science and 90 Academicians, including President of the USSR Academy of Sciences Alexander Nesmeyanov, Nikolai Semenov, Nobel Prize winner, and many other eminent authorities of international reputation.

In structure and function the Moscow University is typical, but it is by far the largest in the country. Other universities vary in their traditions, the size of their student bodies and the number of their departments. Nevertheless, the level of training is the same in all, and the graduates receive equal rights.

Before the 1917 Revolution the country had a total of 13 universities with a student body of 33,000. Today there are 39 universities with an enrollment of 250,000 students.

This expansion goes on continuously. During the postwar years universities were founded in the capitals of the Moldavian, Tajik and Kirghiz Union Republics. In 1956 two new universities were opened in the East—in Vladivostok and in Yakutsk. Previous to Soviet times the Yakuts had no written language of their own.

In 1957 universities were opened in the capitals of the Kabardino-Balkarian, Bashkir, Mordovian and Daghestan Autonomous Republics. By the fall of 1959 classes will begin at the new university now under construction in Novosibirsk. It will be the fortieth university in the Soviet Union.

Technical Institutes

Like the universities, the polytechnical institutes and the specialized colleges which train for a wide range of professions and specialties in engineering, agriculture, pedagogy, medicine, architecture, art, music and other fields of endeavor are directed by the Ministry of Higher Education.

In many cases the specialized institutes have sprung from university departments. A case in point is the Byelorussian State Uni-

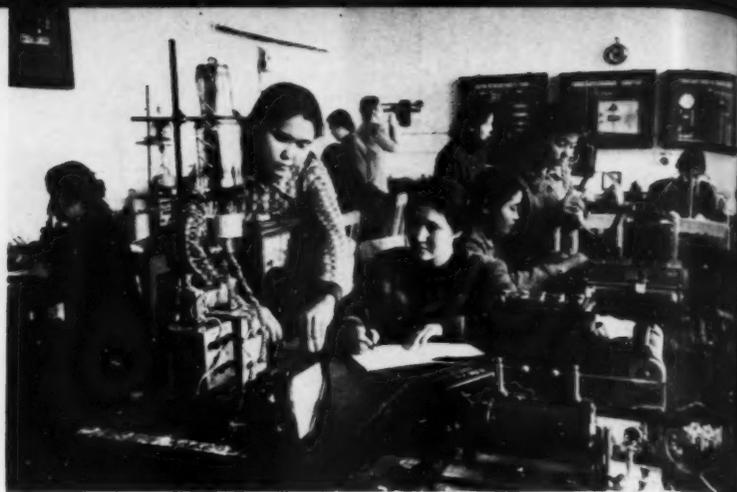
Continued on next page

A scale model of a complete line operating in the institute's laboratory is helpful to students of railroad engineering in visualizing many problems.





MECHANICAL ENGINEERING STUDENTS PUT MUCH TIME ON DRAWING BOARDS.



FUTURE KAZAKH TEACHERS LEARN TO DEMONSTRATE SCIENCE PROJECTS.

COLLEGE EDUCATION *in the Soviet Union* *Continued*

versity founded in 1921. Over the years some of its divisions grew to a point where they developed into independent institutes—a polytechnical institute, a medical institute, an institute of pedagogy, an institute of national economy and an institute of law.

The Soviet system of higher education is not frozen. It is fluid enough to change with current needs. The structure of both the polytechnical institutes and the specialized colleges has gradually been altered to conform more adequately to the constantly increasing demands of the country.

While some of the institutes have retained their traditional structure through the years, many witnessed the establishment of separate colleges that grew out of their departments, much the same as out of university departments. Thus, out of the electrotechnical department of the 130-year-old Moscow Higher Technical School, the country's oldest polytechnical college, developed the independent Power Institute. Soon it became the largest in the country.

Conversely, there are specialized colleges which have over a period of time developed into polytechnical institutes. An illustration

is the Technological Institute for Building Materials founded in 1943 in the city of Chimkent, Kazakhstan. At first it prepared engineers for the one specialty—the technology of silicates. To meet the requirements of Kazakhstan's developing economy, two additional departments were added—mechanical and construction engineering.

The number and character of the institutes and colleges reflect the very great changes in the nation's development within the Soviet period. Prior to the 1917 Revolution there were only 16 technical institutes with an enrollment of about 20,000 students. Now there are 200 with a student body of 786,000 being trained in some 200 engineering specialties.

Professional Colleges

Future agronomists, zootechnicians, power farming engineers and veterinarians study at more than 100 agricultural colleges. The large-scale farming and farm mechanization program has required trained people in every farm area. They come, in larger numbers every year, from these institutes. Enrollment in 1955, for example, was double that in 1940.

Institutes for teacher training form one of the largest groups of professional schools. Universities also have departments for teacher training. There are pedagogical colleges in all the republics. The Russian Federative Republic alone has 111 such colleges which annually graduate 25 to 30 thousand secondary school teachers. There are special institutes for foreign language teachers.

With medical services being constantly expanded everywhere in the country and the great emphasis put on preventive medicine, new medical colleges are founded almost yearly. Ten new ones were opened in the past few years. There are 78 now with a student body of more than 150,000. Most colleges have two major divisions—one for training in a variety of specialties, the other for training pediatricians. Some also have divisions of dentistry and pharmacy.

There are 50 colleges for the fine and applied arts. Painters, sculptors and graphic artists receive their training in nine art institutes and three university departments. Several cities have architectural institutes and some construction engineering colleges have architectural departments. Students of applied arts in metal, wood, ceramic, plastics, glass and textiles study at specialized institutes in Moscow and Leningrad.

CHEMISTRY STUDENTS PUT CLASSROOM THEORY TO TEST IN THE LAB.



PHYSICS MAJORS WORK INDEPENDENTLY ON RESEARCH IN A LABORATORY.





THE STUDENTS OF ASTRONOMY DEVOTE LONG HOURS TO WORK IN THE LABORATORY AND OBSERVATORY.

It selects candidates for vacant teaching posts. It awards degrees. It plans and directs courses of study and projects for research. The larger universities, colleges and institutes also have departmental academic councils presided over by their deans.

Admission Rules

Soviet colleges and universities admit young people who have completed secondary school. All applicants must pass the entrance examinations. The subjects depend upon the type of institution, except for the Russian language and literature plus one foreign language, which are mandatory in all colleges and universities.

Examinations are competitive, but the admission rules apply more favorably for applicants who have worked for at least two years in industry, agriculture, offices or any other area of employment. Experience has shown that this work background forms a more solid foundation for studies at the college level, and now up to 80 per cent of all vacancies in student bodies are reserved for such applicants.

Methods of Teaching

Teaching in both colleges and universities is done largely through lecture and laboratory practice. Supplementing these are class work, research papers or projects, practical work and independent study.

Lectures develop fundamental principles and major approaches in the subject. They will usually be accompanied by demonstrations and visual aids. Class study is done principally in the humanities and is conducted in the form of question and answer and discussion. Laboratory work is heavily emphasized, as are other forms of independent work and study in libraries and at home.

Many of the courses in the technical institutes require a research project done independently under the instructor's general supervision. Institutes for the humanities require a course paper of a semi-research, semi-review character. *Continued on next page*

Musicians, composers, musical critics and teachers are trained in 21 conservatories. There are 16 schools for the stage arts, ballet and motion pictures. Besides giving individual dramatic training, the theater institutes also train whole groups which form the core for new national theater companies, particularly in the non-Russian republics. Between 1935 and 1956 the Lunacharsky Theater Art Institute in Moscow and the Ostrovsky Theater Art Institute in Leningrad graduated 600 actors in 35 such companies.

The Cinematography Institute in Moscow trains script writers, cameramen, actors, directors and set designers. Leningrad has an Institute of Motion Picture Engineering. Writers are trained at the Gorky Institute founded in Moscow by the Union of Soviet Writers.

Departments and Academic Councils

Structurally any university, college or institute is composed of departments, each for a definite specialty or group of related specialties. The departments are headed by deans appointed from among the professors of a given department. The number of departments will vary with the size of the institution and particular fields of study.

The instructional and research unit is the chair, one for each subject or closely related group. Staff meetings of the chairs are held regularly once or twice monthly to discuss teaching and research progress, to consider new textbook manuscripts and other questions germane to the work of the given chair. At these meetings papers are read from time to time by invited experts in allied studies and reports are presented on new developments in science or technology.

All posts of professors, associate professors, instructors and assistants are filled by competitive contests held generally once every five years. Professors are required to hold the degree of Doctor of Science, associate professors and instructors the degree of Master of Science. Selection of candidates to fill teaching vacancies is made by the Academic Council of the institution concerned. Voting is by secret ballot.

Each Academic Council is composed of the institution's assistant directors in charge of studies and research, deans of the departments, the heads of the chairs, representatives of the professors and instructors, as well as representatives of student organizations. These student representatives are full members of the Council with voting rights.

The Academic Council has wide powers.

MEMBERS OF A STUDENT SCIENTIFIC SOCIETY CONSULT WITH ACADEMICIAN LEONID SEDOV.



NUCLEAR PHYSICS STUDENTS LEARN TO OPERATE THE DOSIMETER.



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8
UMI

COLLEGE EDUCATION in the Soviet Union

Continued

Approximately 40 to 50 per cent of instructional time is spent at lectures, the remainder on laboratory and practical work. Attendance is compulsory at all lectures, classes and laboratory assignments. The usual duration of a course is an academic year and is planned to allow for mastery of a specifically outlined body of knowledge before the student moves on to the next course in the sequence.

The academic year is divided into two semesters—one from September 1 to January 23, the other from February 7 to June 30. There are two long holidays—the winter vacation, from January 24 to February 6, and the summer vacation, from July 1 to August 31.

Examinations are oral and are given twice a year just preceding the vacations. The schedule will usually allow three or four free days between examinations. As a rule the examination will cover the work of an entire subject.

Students are marked on a four-point system: excellent, good, satisfactory, unsatisfactory. Reports of laboratory and practical work are marked accepted or not, as the case may be. A student who receives more than two unsatisfactory grades after either the winter or spring examination session is dropped from the academic rolls.

Flexibility of Curriculum

The flexibility which is characteristic of college structure is also true of the curriculum. From time to time one or another college—the Urals Polytechnical Institute at Sverdlovsk and the Tallinn Polytechnical Institute in Estonia are recent examples—change their teaching procedures. In case of these institutes it was felt advisable to reduce the number of lecture hours by 10 to 15 per cent, to increase the number of optional courses, and to eliminate secondary material from lectures that could readily be found in

AGRONOMISTS ARE TRAINED ON FARM MACHINES.



GEOLOGY STUDENTS OF TAJIK UNIVERSITY GET PRACTICAL EXPERIENCE IN THE FIELD.

textbooks. All this was done to allow more time for independent work in laboratories and workshops and for independent reading of the literature in the field.

The course of study in Soviet colleges and universities runs from four to six years, depending on the specialty. In teacher-training and library institutes and some colleges, the course is four years; in technical institutes it runs from five to five and a half years; and in medical institutes, six years.

Some 300 specialties are now taught, with new ones added as the need is felt for trained people in areas opened up by advancing science and technology. Courses of study are revised periodically to keep them abreast of current findings.

Since most professors and instructors work closely with research centers, design bureaus and experimental agencies, they are able to keep their students informed of new developments in between curriculum revisions. Authoritative men in each of the fields are drawn on for guidance in revising courses of study.

Soviet colleges try to avoid narrow specialization. But at the same time in today's very complex society it is impossible to train encyclopedists. The Soviet school attempts to meet the problem by providing a broad theoretical background as foundation for specialized training.

As a result the basic curriculum for engineering, for example, will be standard regardless of particular specialization. The curriculum for a given specialty is planned to provide a background of training for work also in related specialties which have a common foundation.

This standardization of the basic curriculum, besides providing a broad scientific base, has the additional virtue of job flexibility. Engineers trained in one part of the country find no difficulty in using their skills in widely different parts of the country, where the engineering problems will be quite different.

Courses of Study

The courses of study in each of the colleges and universities divide themselves into these main groups: a general scientific group; socioeconomic subjects and a foreign language; and a group of specialty courses. The technical institute curriculum will have, in addition, a general engineering group.

The curriculum for the technology of machine building, one of the engineering specialties much in demand, illustrates the attempt to train specialists with a broad scientific horizon. In his five years of study the future engineer will be equipped to do independent and creative work.

The 4,508 instructional hours are distributed as follows: for the general scientific group—32 per cent; for the general engineering—35 per cent; for the specialty courses—25 per cent; for the humanities—8 per cent. Approximately half the time is allocated for class studies, laboratory and practical work. In the five years the student is required to complete five projects in the general engineering and specialty courses. During the entire period of study he takes 41 examinations and presents 49 reports.

The general scientific group of courses will include higher mathematics, descriptive geometry, chemistry and physics. The general engineering group will cover theoretical mechanics, resistance of materials, theory of mechanisms and machines, course of machine parts, technology of machining metals, theory of metals and their thermal treatment, gen-

AT A FIELD STATION OF MOSCOW UNIVERSITY.





BUDDING JOURNALISTS OPERATE THE LINOTYPE.



MAKING MAPS FROM AERIAL PHOTOS IS A SCIENCE.



TEXTILE CLASS WATCHES A KNITTING PROCESS.

eral heat engineering, general electrotechnics, mechanical drafting, fundamentals of machine designing and elements of construction.

These groups of courses are given in the first two years and part of the third. Specialization begins in the latter half of the third year.

The group of specialty courses includes such subjects as lifting and transporting machines and mechanisms, fundamentals of interchangeability and technical measurements, hydraulics and hydraulic machines, theory of metal cutting and metal-cutting machines, electrical equipment of machines, designing and production of cutting tools, technology of machine building, designing of devices, mechanization and automation, economics of industry, industrial safety engineering and fire-prevention techniques.

Socio-Economic Subjects

All students in every college and university take courses in socio-economic subjects. For those who major in such fields as philosophy, economics, history or law, the program is more extended and detailed, since these subjects are closely related to their respective specialties. In such institutes as technical, agricultural or medical colleges, the students receive only fundamental knowledge sufficient to give them an understanding of the social and economic development of the world in which we live.

The studies include an examination of the principal classical and contemporary schools of philosophy and political economy, as well as an analysis of various social and economic systems and forms of government. All this provides a broad background to give a student the scientific explanation of the theory and practice of socialism upon which his country's life is based.

All students, irrespective of their specialty, study one of the foreign languages. In such fields as history or philology, for example, the study is quite naturally more thoroughgoing. Other students receive knowledge which enables them to read freely foreign literature in their respective fields to keep abreast of

foreign experience. College and university libraries subscribe to innumerable foreign publications, both technical and cultural, and have a vast amount of the world's classical literature.

Besides the required subjects, the students may take a number of optional courses. These widen their scientific outlook and deepen their knowledge of the chosen specialty. The optional subjects for students specializing in the technology of machine-building, to cite one example, include extensive study in mathematics related to their field or advanced work in the designing of automated machines and lines.

Practical Training

Practical training is an integral part of the course of study. It helps test the theory learned, confirms theoretical principles studied in class and gives the student a sense of

work as it is practiced in our day-to-day living.

This on-the-job training is a continuation of the work the student does in college workshops and laboratories in the earlier period of his course. Future teachers do practice teaching in schools; medical students work in hospitals and clinics; future lawyers work in courts and other legal agencies; engineering students help build machines, mine for coal, drill for oil, do geological field work.

The most modern factories, farms, hospitals
Continued on next page

OPERATING ROOMS GIVE SURGICAL STUDENTS A PROFESSIONAL GRASP OF TECHNIQUES THEY WILL NEED.



1958
UMI



AN INSTITUTE'S LIBRARY IS USUALLY FILLED.



COLLEGE EDUCATION *in the Soviet Union*

Continued



SOMETIMES IT'S NECESSARY TO STUDY WHILE EATING.

and schools are used for practical training. The instructors are men and women chosen by the industry or institution who combine a thorough knowledge of their field of work with the talent required to communicate it to students. In factories, for example, practical work instruction is given by the best equipped of the engineering personnel. All these people receive additional compensation for teaching and are relieved of their customary duties if necessary.

The enterprise at which the student does his practical training is required to supply everything needed without charge. During training, students in addition to their regular stipends are paid a daily allowance of five rubles, their traveling expenses both ways, and are provided with free living quarters. Not infrequently technical institutes will arrange a student's practical training at the enterprise where he expects to be working after graduation.

The time apportioned to practical work is determined by the nature of the specialty. Students in areas such as building, transport,

agriculture, forestry and economics spend 20 to 30 weeks. Students of history and philology, physics and mathematics, law, pedagogy and veterinary science spend from 6 to 20 weeks.

The Diploma Project

The diploma project or paper sums up the student's mastery of the material learned and his ability to work independently. Some 20 to 25 weeks are allocated for work on the project in the final year before graduation.

Topics of diploma works are most varied. An art student will submit a painting, a ballet student may dance in a school production of *Swan Lake*, a history student may present a research paper on some aspect of foreign policy, an engineering student may design an automated factory production line. Many of the technical projects are inspired by an actual need of industry and not infrequently the student's design will be used by a plant.

The project or paper must be defended be-

CRAMMING FOR MID-TERM EXAMINATIONS SEEMS EASIER IF IT CAN BE A JOINT PROJECT.



ONCE THROUGH THE EXAMINATIONS EVERYONE FEELS LOTS BETTER.





AGRONOMY STUDENTS' GRADUATION EXAMS SUM UP FIVE YEARS OF THEIR COLLEGE STUDIES.



PREPARING FOR HER ENGINEERING DIPLOMA THESIS.

fore a State Commission of Examiners at a public session. The audience will be teachers and fellow students. In technical fields it will often include plant engineers and workers. Some institutes require both diploma projects or papers and graduation examinations. Others, teacher-training institutes and medical institutes are examples, require only graduation examinations.

Studying While Working

Higher education through evening and correspondence colleges is assuming ever larger significance in the Soviet Union for secondary school graduates who wish to continue their studies while working. During the current school year as many as 950,000 are studying in the evening or by correspondence—70,000 more than during the previous year.

It is estimated that in the past five years the evening and correspondence colleges have trained more than 250,000 specialists, 170 per cent more than in the five years preceding. An even heavier emphasis upon these types of schools is likely to result from public discussions that have been going on for some time now.

Most of the regular technical institutes have evening divisions, many of which are situated directly at the factories. As illustration, the Moscow Automechanical Institute has an evening division at the big Moscow Auto Plant; the Leningrad Polytechnical Institute has one at the Leningrad Metal Plant; the Urals Polytechnical Institute has an evening division at the Heavy Machinery Plant in Sverdlovsk.

The All-Union Correspondence Polytechnical Institute, the largest in the country, has ten departments offering 62 different specialties to 33,000 students. The institute has 27 local instruction-consultation centers in the Urals, Siberia and the Far East. Last year alone the institute graduated 1,230 trained engineers.

There are more than 30 independent institutes and more than 600 local departments and centers which now devote their efforts to providing the working students with advanced professional training. The number of these

evening and correspondence schools is being expanded rapidly.

Evening and Correspondence Courses

Every evening and correspondence college assures its students the same level of training as similar institutes of the regular type, but because of the nature of this instruction the courses take one year longer.

The curriculum of the evening and correspondence colleges also differs somewhat. For example, the volume of descriptive sections of specialty courses is abridged and on-the-job practical training is not required except for that before the diploma project. These omissions are believed possible because the overwhelming majority of evening and correspondence school students are enrolled in the field of study in which they work and thus have the needed production experience.

The curriculum for students of evening colleges calls for 16 hours of obligatory studies a week. Both in lectures and in class studies principal attention is given to general theoretical subjects. But specialty courses, though taking somewhat less time than in regular colleges, are by no means neglected.

In the correspondence courses the main emphasis is placed on independent work of the student. The local instruction-consultation center helps him with course material, arranges for laboratory work, goes over reports and advises on diploma projects. The center also offers lectures covering key problems.

For all those who combine work with study, most favorable conditions are established by law. Their work schedule at their places of employment is arranged so as to give the maximum convenience for their studies. They receive additional paid vacations for examination sessions. Another convenience is that many evening and correspondence colleges open branches in factories.

Upon defending their diploma projects and passing the graduation examinations, evening and correspondence school students are granted the same privileges and opportunities as students of the regular colleges. As a matter of fact, the combination of schooling with work is likely to develop the most highly qualified specialist. The management transfers him to more important posts as he progresses in studies from year to year, even before he has completed the full college course.

Continued on next page

WHERE COULD THERE BE A BETTER ARGUMENT THAN AMONG SERIOUS PHILOLOGY STUDENTS BEFORE EXAMS?



1958
UMI



COLLEGE STARS SEEK TO UPSET GRANDMASTER VASILI SMYSLOV.



STUDENTS' CLUB OF MOSCOW UNIVERSITY STAGES THE CLASSICAL OPERA *EUGENE ONEGIN*.

COLLEGE EDUCATION in the Soviet Union *Continued*

Textbooks

Soviet college and university textbooks in each field of knowledge present the material succinctly, uncluttered by superfluous details. Textbooks are compiled on the basis of broad scientific generalizations and take into consideration both native and foreign experience.

For the most part the texts contain material which has been proved well-founded and stable. However, there are books which include current problems which may be controversial, and discuss various methods for advancing the given field of science. This kind of presentation is aimed at developing creative thinking in the student.

Textbooks for all subjects are published in very large editions. During the postwar years alone many thousands of titles were issued in printings totaling more than 74 million copies. In addition to the textbook output of 40 publishing houses, many texts are published by large universities and institutes for distribution all over the country.

Libraries

All texts are available at college and university libraries in sufficient numbers to meet the needs of all students. They are loaned without charge for the term or the year. A student may, if he chooses, buy texts at the very low prices charged.

Besides the large libraries at institutes, there are some 400,000 public libraries with a total of 1½ billion books. Exclusive of school libraries there is one public library for every 1,400 of the population in the Soviet Union as compared with the one library for every 21,600 in the United States and the one per 82,000 in Britain.

Creative Initiative

A major aim of Soviet higher education is to foster creative initiative and experimental research. The student does his first independent work in the laboratory, in seminars and in elective courses.

In recent years the tendency of colleges and universities in planning curriculum has been to reduce the number of lecture and class hours and substitute one type or another of independent study. While previously 36 hours weekly throughout the entire period of study were devoted to required courses, largely lectures, now only the lower classes adhere to that schedule. In the upper classes only 18-24 hours weekly are given to required courses, with proportionately more time allotted for optional courses and independent work and research.

Scientific research and creative activity is encouraged in every possible way. Frequently, for students who do promising research on themes related to the material studied, the number of required laboratory hours and home assignments will be reduced. On occasion such a student will be permitted an individually arranged schedule to give him more time for his own research.

Research projects must be defended before a committee of the faculty at public sessions at which students comprise the audience. These public defenses have the double function of acquainting fellow students and the interested public with the results of student research and of teaching the student to express himself with clarity before a very critical audience.

The best of the research studies are published in periodic collections of student scientific work. The Ministry of Higher Education holds countrywide contests annually for the best student papers in a number of fields of study with awards in cash and medals.

Student Scientific Societies

Research work in student scientific societies is strongly emphasized in all Soviet colleges and universities. Guided by a faculty member who is expert in the field, students at these scientific societies carry on independent research and discuss their original papers. Students do both individual research and group investigations.

These student scientific societies are func-

tioning in 500 colleges and universities. Although they are voluntary and require considerable out-of-class work, they attract an exceedingly large group of interested students. The creative leadership of the guiding faculty member is, of course, a significant factor in developing interest in the research work with the resulting student activity.

Eighty per cent of the students specializing in machine parts at the Aviation Institute in Ufa are active in the work of their scientific society. This large proportion of active student researchers is not uncommon. Moscow's colleges have 70 such societies with a membership of 35,000. In Leningrad more than 15,000 students are members of scientific societies in their colleges. Some 90,000 of the country's medical students are members of the school scientific societies.

The activities of the societies are not limited to the organization of research by their student members. Excursions to large research centers, industrial plants, collective farms and hospitals are arranged. Many of the societies hold lectures and forums for secondary school students.

The societies issue their own bulletins and proceedings and arrange their own conferences to sum up the results of research done in the course of the year. Students from similar institutes in other cities are often invited to these sessions.

Student Life

Most students live in dormitories. The rent for a furnished room is a very modest 15 rubles monthly. This sum also covers such services as cleaning, linens and utilities. The deficit created by maintaining these dormitories is made up from the fund of the college or university.

All schools have cafeterias or dining halls where prices are much lower than elsewhere. Medical and dental service is provided without charge. The larger schools in such cities as Moscow, Leningrad, Sverdlovsk and Tbilisi have entire student communities, with many dorm buildings, sports and recreation facilities and stores of all kinds.

Student life and activity is no more confined to books and study in the Soviet Union



THIS STUDENT BAND CAN PLAY JAZZ BOTH HOT AND SWEET.



DOES ANYBODY CARE FOR A GAME OF WATER POLO?



MOTORBIKE RACES DRAW CROWDS.

than elsewhere in the world. Music, dancing and the theater have their thousands of adherents, organized into amateur groups. All sorts of sports are exceedingly popular. Student athletic groups are organized in the Burevestnik Sports Society which unites 1,700,000 student members. The All-Union Student Games, held annually, have become the traditional national review of student athletics, preceded by city and regional contests with thousands of participants.

International Exchanges

Soviet students are represented in the International Union of Students and participate in the work of the World Federation of Democratic Youth. The USSR Student Council receives foreign student delegations and, in general, attempts to develop the widest contacts with student groups abroad. In 1957 the Council prepared the student program for the Sixth World Youth Festival held in Moscow in which students from 90 countries took part.

Soviet colleges have been establishing exchange arrangements with colleges abroad on an increasingly regular basis. Soviet students are now studying in many foreign countries, and more than 16,000 foreign students from 24 countries are enrolled in Soviet colleges. The USSR-USA cultural agreement signed early this year, provides for such student exchanges for the first time between our countries.

College-Trained Specialists

Year by year the number of college-trained specialists in every field of endeavor, whether in technology or farming, the sciences or the arts, has been growing in the Soviet Union. During the five-year period from 1951 to 1955 more than 1,120,000 people were trained in a variety of fields, 72 per cent more than in the previous five-year period.

In 1958 about 290,000 specialists graduated from the country's colleges and universities. Of this number about 90,000 are engineers, 30,000 agricultural specialists, 100,000 teachers and more than 20,000 physicians.

The following comparative table shows the number of college and university graduates

in 1928 and 1956 and their distribution in professional fields of work:

	1928	1956
	<i>in thousands</i>	
Total number of graduates	28.7	259.9
Industry and construction	8.9	61.0
Transport and communication . .		9.7
Agriculture	6.4	26.2
Economics and law	2.0	18.7
Education and art	5.2	124.1
Public health, physical culture and sports	6.2	20.2

The college-trained young man or woman in the Soviet Union has no job problem. Since the training of specialists in various fields is planned to conform with the country's actual needs, all graduates are assured of work in their own field.

Jobs

Some three months before graduation each student is interviewed by the school's job placement commission made up of faculty and student representatives. He is given a survey of employment possibilities, their locations and pay. Together with the commission he makes his choice.

Before reporting to his job he gets a month's vacation and an allowance amounting to his monthly stipend. If his job requires that he move to an area distant from his home, he is allowed a sum amounting to one-half of his future monthly salary for himself and one-fourth for each member of his family, plus traveling expenses, the cost of moving his belongings and a daily allowance of one-thirtieth of his monthly salary.

Once settled on the job, it is the rare worker who is satisfied to vegetate. The constant need for personnel with high qualifications and the accessibility of facilities to train for advancement act as a perpetual stimulus for self-improvement. ■

This is the second of a series of articles on Soviet education. Next issue: *School and Life.*

COLLEGE BASKETBALL MAINTAINS ITS HOLD.



WOODLAND HIKES HELP ONE FORGET EXAMS.





FOLK DANCE ENSEMBLE

By Mikhail Dolgoplov

Photos by Georgi Petrusov

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THE BERYOZKA DANCE COMPANY IS COMPRISED OF 40 YOUNG DANCERS, THE OLDEST OF WHOM IS 28. THE VIVACITY OF THE GIRLS WINS THEIR AUDIENCES ON EVERY STAGE.

IN the winter of 1948 an amateur dance festival was held in the rural communities of the Russian Federation with thousands of dance, song and instrumental groups participating in their native villages. The performers were milkmaids and tractor drivers, school teachers and village store sales girls. The best of the groups were chosen to perform in the nation's capital . . .

When a group of girls moved gracefully onto the stage of the Moscow Hermitage Variety Theater with birch twigs in their hands and glided into the lovely patterns of their dance set to the music of the haunting folks song *In the Field a Birch Tree Stands*, the hall resounded with "Bravos."

The call for encores was so demanding that the contest judges had to suspend the rules to permit the happy and excited contestants to repeat the dance. The audience went out calling them the Beryozka—Birch Tree—dancers, and the very appropriate name stuck.

Nadezhda Nadezhkina, a ballet artist at the Bolshoi Theater, was given the task of creating a professional choreographic ensemble out of the group.

The Repertoire

Nadezhkina, an accomplished ballet mistress and teacher, studied the traditional patterns of the Moscow, Ivanovo, Gorky, Perm, Kalinin and Siberian women's dances and built original compositions based on them.

Her *Link Reel* is based on a very old north Russian dance. The fanciful patterns are



AS THE GIRLS FLOAT ACROSS THE STAGE IN THE SPINNER'S REEL, THEY ACCENT THEIR MOVEMENTS BY A SONG.

woven out of a single moving chain of dancing figures. Hence its name. Costumes are long purple gowns, sleeves decorated with a wide gold band. As the girls weave the design, the gold bands link to form a long gracefully undulating chain.

In the *Spinner's Reel*, first one, then a second and third group of the dancers are spotlighted. In gowns of gold brocade they sit

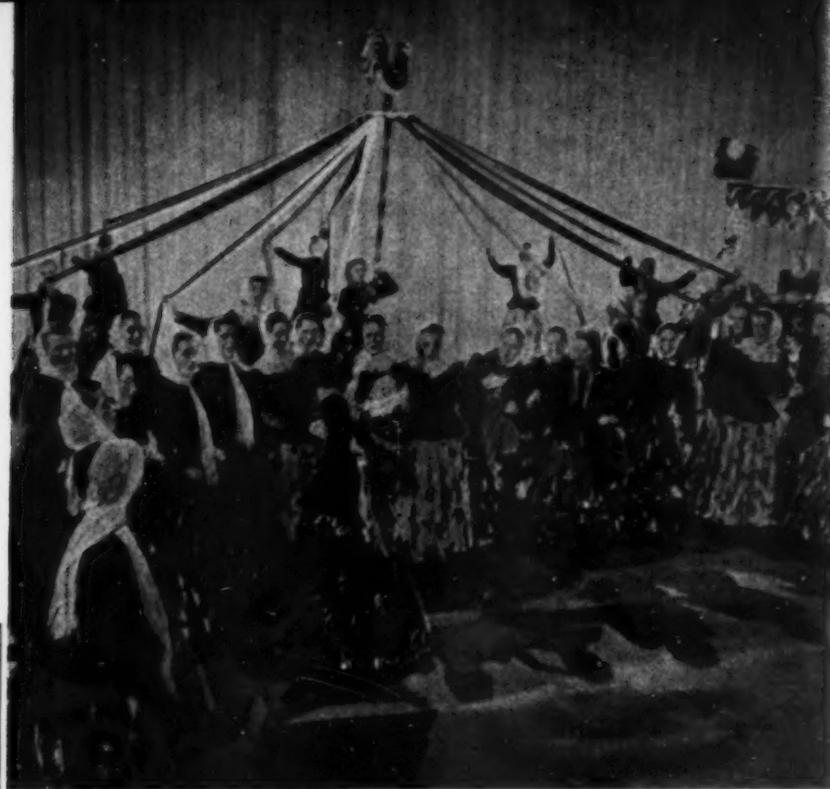
spinning at the doors of farm cottages, their movements accented by a song they accompany themselves with. As their arms move in the motions of a spinner, we almost see the many colored rainbow threads glistening through their fingers.

For the *Swan Reel* the girls wear long silk gowns, lake blue, with ample sleeves, as white
Continued on next page

1
6
5
8
UMI



Continued



VILLAGE HARVEST CARNIVAL FROM AUTUMN FAIR.



as swan's down. In one of the figures they hide their heads behind the moving waves of white and with raised hand form the image of a stately swan with neck and head gliding behind the billowing white sleeve. Each dancer wears a ring with a black stone on her finger which sparkles in the light like a swan's eye.

The *Beryozka Waltz* is a charming dance, somewhat stylized, through which Nadezhdina conveys the dreams and longings of the young Russian maiden. The girls dance with scarves that they fling about to build a lyrical mood.

The dances of today's collective farm villages have an important place in the Beryozka repertory. The *Prokhodka* is a miniature built round a village "lady-killer"—the farm accordion player. The girls lead him onto the stage. As he plays, the girls vie with each other in a variety of fancy steps to attract his notice and win his favor.

In her *Autumn Fair* Nadezhdina choreographs a harvest festival at a collective farm. The field work is over and the bumper harvest gathered, and here is the fair full of youth, gaiety, color and pretty things to buy.

The Dancers

The dance company numbers forty young women. There have been changes in personnel, naturally, in the ten years since the ensemble was built with the amateur dancers as nucleus. Many of the girls are now graduates of the Bolshoi Theater's School of Choreography, but there are still some who learned their dancing in amateur groups at factories, farms, schools and community centers.

Jella Agafonova is one of the girls who came to the Beryozka directly from a school amateur dance group. Endowed with a lovely voice and most graceful body, Jella is one of the company's leading dancers. In private



MERRY DANCE BUILT AROUND A FARM "LADY-KILLER."

life she is happily married and the mother of a two-year-old boy.

Lyuba Trynova is another of the company's stars who learned her dance ABC's at a Young Pioneer Club. She was only fourteen when the Nazis invaded the country, but she and a friend each added a few years to their ages to join one of the groups that performed for soldiers at the front. She has danced on stages where the accompaniment was supplied by shells bursting a short distance away.

Nina Ryabova comes from a collective farm family in Ryazan Region. She danced in her school's amateur group and sang in the school chorus. During the war, she worked in a tube-rolling mill. The war over, she studied at a theater school and then moved to the Beryozka ensemble.

The majority of the dancers in the company, however, got their training at the Bol-

Continued on page 35





Continued

Maslennitsa is an old Slavic holiday marking the end of winter. It is a time of universal merrymaking, singing, dancing and feasting. The participants, in carnival costumes, honor their ancestors and hail the birth of a new season. In the rapidly-moving *Maslennitsa Carnival* depicted here the Beryozka dancers bid a frolicsome farewell to winter.



shoi's School of Choreography. Tamara Lukyanova was graduated in 1949 and joined the ensemble that same year. A gifted dancer and singer, Tamara is even a more gifted teacher and choreographer. She was recently appointed assistant to the director, Nadezdina, and devotes almost all her time to staging and coaching. She dances herself in the *Maidens' Reel* only when one of the regular dancers is absent.

Double Career Girls

Galina Tarasenko is another Bolshoi graduate. She is 21, has been with the company for four years and is a most serious minded young woman who has concluded that since "a dancer's life is very short" she should prepare for a second career. She has passed the examination for entrance to Moscow University and is studying Russian literature through the university's correspondence division.

Regina Nikiforova is another double-career woman. She is a major in the history of art at Moscow University. Regina is the daughter of an army officer who was killed toward the end of the war. She was brought up by her mother, an industrial engineer. Regina is married to another graduate of the Bolshoi Choreography School, Boris Nikiforov, who dances with the Bolshoi Company.

Mira Koltsova is one of the company's youngest dancers. She came to Beryozka straight from choreographic school last year to almost immediately become one of the company's leading dancers. She divides her energies between dance and music. She dances a leading part in *Swan Reel*, *The Spring Reel* and *Dance with Kerchief* and sings the lovely lyrics of the *Beryozka Waltz*.

Rehearsals

The Beryozka is young—in spirit and in chronology. The oldest of the girls is only 28. The only girls who have left the company have been those with young children who wanted to give them their undivided attention.

Continued on page 37



BALLET MISTRESS NADEZHDA NADEZHINA LEADS THE GROUP AND WORKS OUT EVERY DETAIL OF ITS DANCES.



THE YOUNG DANCERS RECEIVED THEIR DIPLOMAS.



NEW NUMBERS ARE CONSTANTLY BEING INTRODUCED.

MEMBERS OF THE BERYOZKA ENSEMBLE. L. to R.: YEVGENI KUZNETSOV, ACCORDIONIST; MIRA KOLTSOVA, JELLA AGAFONOVA AND LYUBOV TRYNOVA, DANCE SOLOISTS.





Continued

GOSSAMER KERCHIEFS FLOAT OVER THE RUSSIAN WALTZ BERYOZKA.





A GROUP OF LOVELY GIRLS WITH LEAFY BIRCH BRANCHES GLIDES ACROSS STAGE TO THE MUSIC OF *IN THE FIELD* A BIRCH TREE STANDS IN A TRULY MEMORABLE BIT OF DANCING.

But even these former ensemble members keep in close touch with the group, attend rehearsals and occasionally join in the dancing.

The ensemble members rehearse almost constantly. Much of it is exercise practice at the bar, the same practice done by every ballet artist. There is a good deal of singing rehearsal, since the Beryozka dances are frequently accompanied by songs. Sometimes the leading soloist will sing, sometimes the whole group.

The ensemble's music director is Alexei Koposov. Instrumental musical accompaniment is provided by a quintet of accordionists led by Yevgeni Kuznetsov. The members of the quintet also play between dances. All the costumes, striking in their beautiful color combinations, are designed by Lyubov Silich.

Recognition and Fame

Said the newspaper *France-Soir* when the Beryozka company danced for Parisian audiences last year: "Run to the Sarah Bernhardt Theater where you will see a wonderful ensemble of young Soviet girls dancing with astonishing grace and feeling. If you like folk dancing, you will be charmed, if you do not, you will be won over completely."

The Beryozka Folk Dance Company elicits such rave notices on every tour. When the dancers make their first tour of the United States this fall it is no rash prophecy to forecast reviews as glowing from American critics.

In the short ten years since it was founded, the company has toured twenty countries. The

dancers have been cheered by audiences in Sweden, Norway, Finland, Belgium, Austria, Holland, Switzerland, Greece, France, England, Poland, East Germany, Czechoslovakia, Rumania, Albania, China, Hungary, Egypt and Lebanon.

The *London Times* used such adjectives as "amazing" and "delightful" in describing the company. The Dutch *Utrecht Dagblad* wrote of the deeply moving quality of the *Birch Tree Dance*.

The ensemble looks forward to its first American tour, and American audiences, too, may look forward to as exciting a series of dance performances as the Moiseyev company gave last spring in their cross-country tour of the United States that drew sell-out audiences everywhere. ■

1958
UMI

SOVIET-AMERICAN D

Historical Record of

By Mikhail Menshikov

Soviet Ambassador to the USA



IT may well be that November 16, 1933, will be written down by historians of the future as one of the more decisive dates of modern history. That date marks the formal establishment of diplomatic relations between the United States and the Soviet Union.

President Franklin D. Roosevelt in a letter addressed to Maxim Litvinov, then the USSR Foreign Minister, wrote: "I trust that the relations now established between our peoples may forever remain normal and friendly, and that our nations henceforth may cooperate for their mutual benefit and for the preservation of the peace of the world."

Normal and friendly relations between our countries had been broken off after the Socialist Revolution of 1917 in Russia. They had been a fact of international life since the time of America's declaration of independence from British rule.

Russia was an absolute monarchy when the colonists were rebelling against the British crown. The Russian Government nevertheless refused to support George III in putting down the American Revolution.

The czar's stand was, understandably, not motivated by republican feeling; it was dictated by interests which Russia had in common with the aspiring democracy. But regardless of motivation, the objective result was to help the colonists win independence and to lay the foundation for almost a century and a half of friendly relations.

The instructions given by Congress to Francis Dana, the first American envoy to Russia, stressed the desire for "good will and friendly relations" that would redound "to the mutual advantage of both nations." It was this spirit which characterized the long period up to 1917.

There were no controversies between our countries which were not peacefully resolved. More than once Russia and the United States acted jointly as intermediaries to help arbitrate international disputes. More than once our countries were allied against a common enemy.

Characteristic of the period, too, was the exchange of goods and commercial paper, of travel, of postal and wire services, of the hundred and one other reciprocal activities by which countries in our interdependent world are tied together.

All of this was abruptly cut in 1917 when the United States refused to grant diplomatic recognition to the newly-born Soviet Republic. This was the unfortunate prelude to a period in which the United States together with thirteen other powers sent interventionist armies to our country to help put down the socialist government which had been chosen by the peoples of Russia.

"We Are For Economic Agreement"

But even during these unhappy years the Soviet Union strove to resume friendly ties with the United States. In the one short period between August 1918 and December 1919, the Soviet Government made proposals to the United States on ten different occasions to establish normal diplomatic relations.

Ever since its first days the Soviet Union has always adhered to the livable proposition that regardless of differences in economic systems and forms of government, there are great areas of common necessity—peace and neighborly exchanges between the nations.

Lenin, founder of the Soviet State, declared quite definitely: "We are very much for economic agreement with America, with all countries, but especially with America."

The Soviet Union believes that peaceful coexistence is a fundamental principle of international living and has always implemented it with concrete proposals for mutual benefit. There was no single year between 1917 and 1933 that the question of the normalization of Soviet-American relations was not raised by one or another Soviet Government leader or diplomat.

But it was sixteen years before representatives of the two countries met and normal relations were formally renewed. This was almost a decade after the Soviet Union had established diplomatic relations with Britain, France, Germany, Italy, Japan and other countries.

The artificial isolation of the two countries was certainly advantageous to neither. It accounts in considerable measure for the lack of information which Americans have of Soviet life and the other way round. It is only too axiomatic that ignorance is a breeding ground for suspicion and mistrust.

Consider the difference in international climate that would have resulted if the present reciprocal exchanges in cultural, scientific and technical fields had been going on between our countries for four decades instead of less than a year since the Soviet-American agreement on contacts was signed. Consider, too, what mutual benefits could have resulted if normal trade between our countries had been going on for this long period.

Soviet economy over these years has had to develop a costly self-sufficiency, to some extent at the expense of consumer goods production. The United States could have supplied many of the Soviet Union's needs to the large profit of American business and with an accompanying beneficial effect upon employment.

Some trading did go on during these years, but it was inevitably hampered by the absence of diplomatic relations. It is a reflection of the times that in 1932, for example, trade between the Soviet Union and Britain was five times greater, and so for most countries with which the Soviet Union had normal relations.

New and Better Times

But the times also forced improved relations, with the economic crisis no small influencing factor. Many Americans, representative of divergent political views and occupational interests, saw the need for better Soviet-American relations. They were moved by various considerations, some political, some economic, some cultural.

Many American trade unions in such large industries as auto, transport and textile declared themselves for the establishment of normal relations. So, too, did farmers from every state in the union at the National Conference on Farmer Aid.

A letter sent to President Roosevelt in 1933 by 800 faculty members in 268 colleges urged that diplomatic relations be established. It was followed by a similar message signed by a large group of economists and academic leaders emphasizing the fact that "world agreements cannot be successful without the Soviet Union."

These were more than isolated sentiments. They were typical of

N DIPLOMATIC RELATIONS

rd of a Quarter-Century

general public feeling which included that of many American businessmen who were interested in expanding trade. The resolution adopted in the fall of 1933 by the New York conference of the Association of American Exporters urging quick normalization of relations expressed the mood of many industrial and commercial people.

Franklin D. Roosevelt, upon his first election to the presidency, expressed himself in favor of direct contact with Soviet officials which could facilitate reaching a formal agreement. "If I could talk personally with anyone representing Russia," he remarked in the summer of 1933, "I would settle the whole problem."

After a realistic appraisal of prevailing public opinion, Roosevelt took the initiative himself by sending a message to Soviet President Mikhail Kalinin on October 10, 1933. He thought it desirable, the message said, to try to end the abnormal relations which existed between two countries that for more than a century had enjoyed a traditional friendship. He expressed his regret that relations had been permitted to deteriorate and proposed that negotiations be opened.

President Kalinin replied for the Soviet Union. He wrote: "I have always thought it most regrettable that during these sixteen years a situation had existed in which our two great republics have been deprived of the advantages of normal relations. I am happy to note that you too have reached this conclusion. . . . May I express my feeling that the abnormal situation to which your letter makes reference has an unfavorable effect not alone on the interests of our two countries most immediately concerned, but on the world situation generally. It heightens international tensions, makes it more difficult to assure world peace, and gives encouragement to those whose aim is to disturb this peace."

Commenting at a press conference President Roosevelt made the point that these letters were the first official documents to pass directly between the two governments in sixteen years.

Amicable Soviet-American Relations

President Kalinin indicated in his message that the Soviet Government had named Maxim Litvinov, its Minister of Foreign Affairs, as representative for the Washington talks. Litvinov arrived in the United States on November 7, 1933.

An opening statement made by Litvinov to the press stressed the thoroughly unnatural alienation between the two republics that had obtained up to then. In spite of that, the Soviet Foreign Minister said, both peoples had been following each other's progress with great sympathy. He expressed the fervent hope of the Soviet people for happier American-Soviet relations.

The talks between President Roosevelt and Foreign Minister Litvinov began the same day and were successfully concluded on November 16. Both countries agreed to exchange diplomatic representatives. They pledged no interference in each other's internal affairs, to respect each other's sovereign rights and territorial inviolability.

The outcome of the talks was welcome news to people everywhere. In both the Soviet Union and the United States it was hailed as the

formal resumption of a long-interrupted friendship. President Kalinin, in a radio address to America, said he was confident that the establishment of diplomatic relations opened a new era of cooperation between the two nations.

American press comment reflected the favorable reaction of wide sections of the public. Secretary of Labor Perkins thought the agreement would serve to stimulate American industrial recovery, as it did when a trade agreement, based on the most favored nation principle, was signed shortly thereafter.

Trade developed to the point where Soviet purchases of American goods more than tripled between 1933 and 1937. American purchases of Soviet goods by 1938 equaled that of Germany, Italy and Japan combined. Trade would unquestionably have taken on much larger proportions had it not been for such hampering factors as American unwillingness to grant credits.

But regardless of these deterrents, the resumption of normal relations was a most significant factor in developing trade. Mutually advantageous trade laid the basis for the economic cooperation between our countries during the Second World War.

Stimulated also was the interest of both nations in each other's life. Ties of understanding were strengthened by the organization of joint Soviet-American scientific conferences and by joint activities in cultural areas which for the first time in years brought creative people of both countries together.

Not all that could have been done was done. But there is no question that even these partial measures served as a vitally important foundation for the crucial military alliance of the Second World War, crucial to both countries and to the world at large. One hesitates to think what the outcome would have been had the United States and the Soviet Union not joined forces to defeat fascism. It is a thought to ponder on.

Conference Table vs. Conflict

As it was, the many difficult problems of the war and those which the end of the war inevitably brought were solved over conference tables. Quite understandably, not all of it was smooth and easy sailing by any manner of means. There are no ready solutions for problems which affect a world of peoples, a world in which the varied and frequently conflicting interests of many nations must somehow be resolved.

But whatever the difficulties and the insufficiencies of the conference table, it is the only alternative for war that human ingenuity has yet been able to devise. That, too, should give us thought.

President Roosevelt was not unaware of the alternative when he wrote of the Yalta Conference that it was a real guarantee that the great nations can work together in peace as well as in war. It is a great pity that this realistic conclusion was not developed in recent years. But fortunately, we still have every opportunity to prove the correctness of these words.

There is no choice for us but peaceful coexistence—that principle of good-neighbor relations which both our countries affixed their signatures to 25 years ago. ■

The Volga

1951



FIRST SURVEY AT THE CONSTRUCTION SITE OF THE VOLGA'S LENIN POWER PLANT.

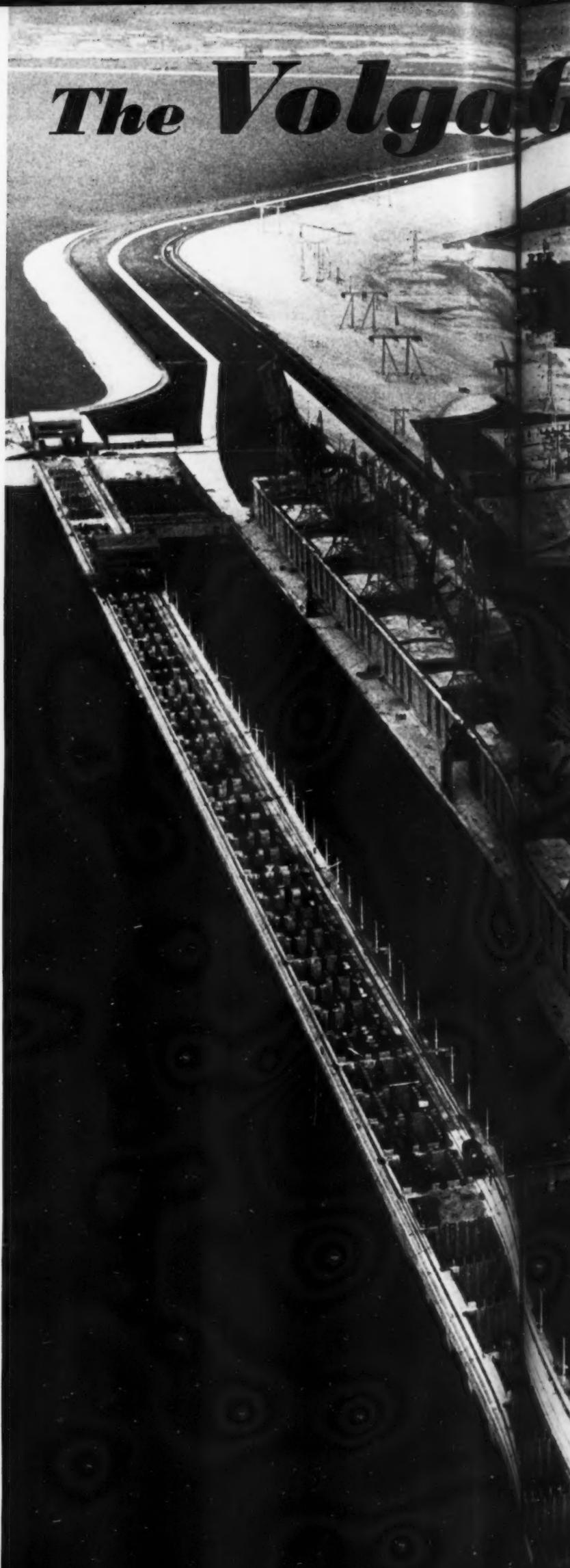
KILOWATT-HOURS in the TRILLIONS

By Andrei Ionov

IN SONG AND STORY that reach back to a dim antiquity the River Volga is the mother, beneficent and life-giving. For 2,300 miles it flows through plain and city, irrigating farmlands, supplying power to town and village and serving as a great waterway between points thousands of miles distant. In its basin, an area of 580,000 square miles, lives more than a quarter of the population of the Soviet Union.

But the river is not always benevolent. There are flash floods in the spring and summer shallowing when the hundred of shoals make river traffic hazardous. There are droughts in bad seasons and dry withering crops. And there is the waste of this immense body of water flowing day after day into the Caspian Sea which could be generating electric power for the busy industrial cities on its banks.

The Volga is being tamed. It is a work of many years' duration and





will last for years to come. It was begun by building a cascade of stepped dams, reservoirs and power stations in the upper reaches of the river. The first link, a relatively small one, was the Ivankovo dam and hydroelectric station built north of Moscow. Then moving downstream, the river was curbed by the dams of deeper reservoirs and its power harnessed by the Uglich, Rybinsk and Gorky stations.

On the left, where the Kama River flows into the Volga, the Perm station was built and the Votkinsk station begun. On the right, the Volga and Don were joined by a canal to feed water to the arid Don steppes and the Tsimlyanskaya station was erected.

The Newest Link in the Chain

The most recent link in the cascade to be completed is the Lenin Hydroelectric Station northwest of the city of Kuibyshev. With its capacity of 2,300,000 kilowatts, it is the world's largest hydroelectric projects yet built. Its dams of reinforced concrete cut across the Volga from bank to bank for almost three miles.

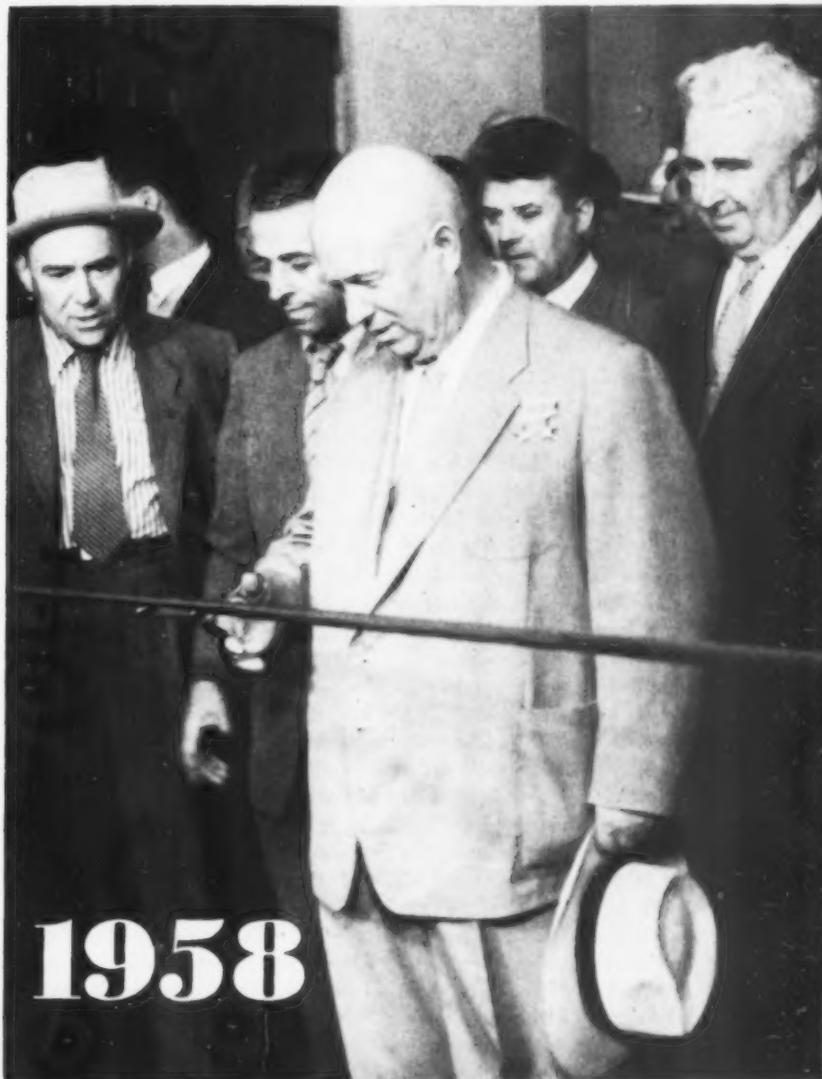
The station itself is a leviathan among hydroelectric structures, 2,300 feet long, 330 feet wide and 260 feet high. It houses some 34,000 instruments and pieces of apparatus. A staff of 15 people in all monitor this automated giant.

There are 20 turbines, with rotors as tall as a three-story building, more than 30 feet in diameter. The massive rotor vanes each weigh 20 tons. The efficiency is a high 93.5 per cent. The generators, transformers and circuit breakers are Soviet made, especially designed for the station.

The dams of this power project have raised the level of the Volga here by almost 100 feet. The artificial body of water created is 375

Continued on next page

PREMIER NIKITA KHRUSHCHEV CUTS THE RIBBON AT THE PLANT-OPENING EVENT.



1958
UMI

The Volga GIANT

Continued

miles long and 25 miles wide. It has been named the Zhiguli Sea.

This newest link in the Volga power chain, as gigantic as it is, is only one segment of the plan conceived in 1920 to electrify the country. In 1916 all of Russia's power stations generated a total of little more than 2.5 billion kilowatt-hours of electricity. The new Lenin Hydroelectric Station by itself will be generating an annual 10.8 billion kilowatt-hours. And this is only 5 per cent of the total the country as a whole produces today.

But even this additional 5 per cent added to the nation's power production will have far-reaching effects on the welfare of the man in the street. Engineers figure that it takes the physical labor of 20 people, roughly speaking, to produce the equivalent of a single kilowatt of electrical energy. With its capacity of 2,300,000 kilowatts the new hydroelectric station will be adding the energy of 46 million people to the country's power total. That translates into lower production costs, larger total of goods available and lower consumer prices. With more mechanical aids, human labor power can be shifted to more productive areas and working hours can be cut proportionately.

A Seven-Year Battle

It took seven years to build this new Volga station. This is considerably less time than was needed to construct the hydropower projects which until 1958 were considered the biggest in the world. The time and money saved in construction and the innovations in design and maintenance have made possible a reduction in the cost of each kilowatt-hour of electricity to 1.6 kopecks. This is six to eight times cheaper than at any previous power station.

There were a number of factors which made for the large differential in construction costs. There was first the wide experience accumulated by Soviet hydropower experts in building on the sandy and loamy soil of the Volga floodlands.

The big earthen dams and the reinforced concrete of the station and the water collector were merged into a single structure. The more usual procedure of building separate structures would have been impracticable and prohibitively expensive in the loamy soil of so voluminous a river as the Volga. The large pieces of equipment were assembled beforehand. This, too, saved time and costs.

Specialized labor was trained right at the construction sites. Evening schools and technical colleges were set up in the immediate vicinity to train workers in a large number of the skills required. In the seven years it took to build the project, the schools on the site trained 54,500 skilled workers and graduated 500 engineers.

Construction machinery was shipped from plants all over the country. There were some 10,000 different pieces of machines and mechanisms used—cranes and excavators, big 25-ton dump trucks and power shovels that moved 1,300 cubic yards of earth an hour.

It was a seven-year battle against time, against the river, against weather. The steel framework was built in frosts so biting that the welders had to be replaced every half-hour. Drivers had to push their loaded trucks through snow drifts piled like great hills, with the wind howling through every chink in the cab. Men had to chop through river ice three to four feet thick in the winter and in the spring keep a footing in water that pushed against them with flood pressures.

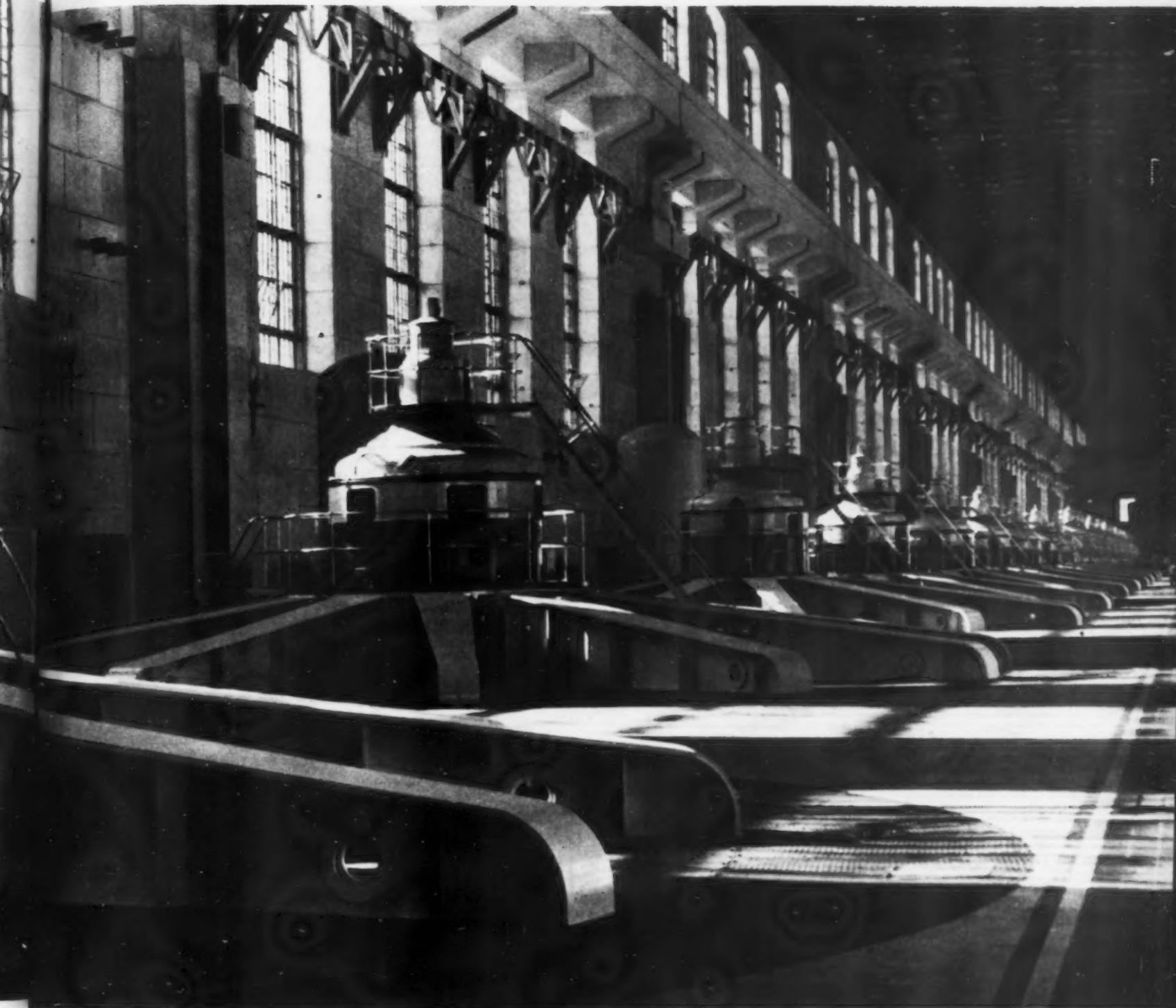
They have stories to tell, these men and women who helped build the big station. Many of them have been written about in magazines and newspapers and have been honored with the highest award the Soviet Union gives its workers—Hero of Socialist Labor—people like Alexei Ulesov, electric welder; Vasili Lyamin, Mikhail Yevets and Vasili Klementiev, excavator operators; engineers Kirill Smirnov, Alexei Tregubov, Pavel Bedny and a host of other enthusiasts with a pioneering spirit.

The cheap power generated by the new Volga station is now being used to run trains, turn factory wheels, light homes, irrigate farms. It is wired to Moscow, to the Ural cities, to the Tatar and Bashkirian oil fields. It will be sent farther, to the industrial centers of the Ukraine and the North Caucasus as soon as the Stalingrad station, now being built, is included in the country-wide power system.



CENTRAL CONTROL ROOM OF THE LENIN HYDROELECTRIC STATION HOLDS ITS "BRAINS."





TWENTY TURBO-GENERATORS OPERATE IN THE POWERHOUSE TO PRODUCE 2,300,000 KILOWATTS. SOME 500,000 VOLTS FLOWS TO THE COUNTRY'S CITIES AND VILLAGES.

As the links in the Volga power chain are constructed, one sees the entire economic character of central Russia changing, new communities arising and old towns growing into large industrial cities, industries expanding at a fantastic pace. The city of Stavropol is one of many that have appeared near the Lenin Station. In this new and rapidly growing industrial center huge plants are being built for production of synthetic rubber, artificial fibers, mercury-arc rectifiers, cement machinery, building materials, furniture. The same panorama of construction is to be seen in the regions around the Rybinsk, Gorky, Perm and the partly built Stalingrad hydroelectric stations.

A Master Plan for Power

The building of power sources in the Soviet Union is proceeding according to a master plan, one which has first priority because it is basic to the development of every aspect of the economy. The plan

is aimed to tie in every village, town and city in a single ramified power system. The function—to generate power at the cheapest possible cost and to distribute it most economically and most rationally.

More immediately, the plan designs as eventual links in this single power chain a number of power centers in specific economic areas of the country. The Volga-Kama cascade, of which the new Lenin power station is a segment, is one of these power centers, but not the only one.

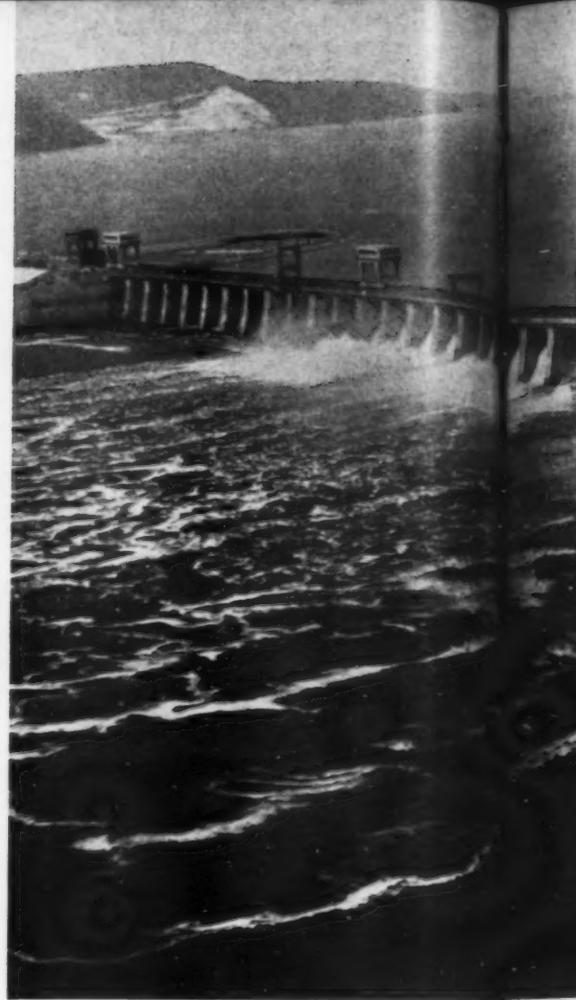
In the Ukraine two large hydroelectric stations on the Dnieper River are supplying power to local industries and consumers. Others are being built. The Irtysh River is being harnessed to provide electric power for Kazakhstan. On the Angara River in Siberia the Irkutsk station has been built and the Bratsk station, with a capacity of 3.6 million kilowatts, is under way. There are plans for even larger stations on Siberia's mightiest river, the Yenisei.

Water power, however, is not the only source from which the Soviet

Continued on page 46



THE 3,218 FOOT LONG REINFORCED CONCRETE SPILLWAY OF THE DAM. A WORKER CHECKS UP ON THE WATER FLOW.



The Volga GIANT

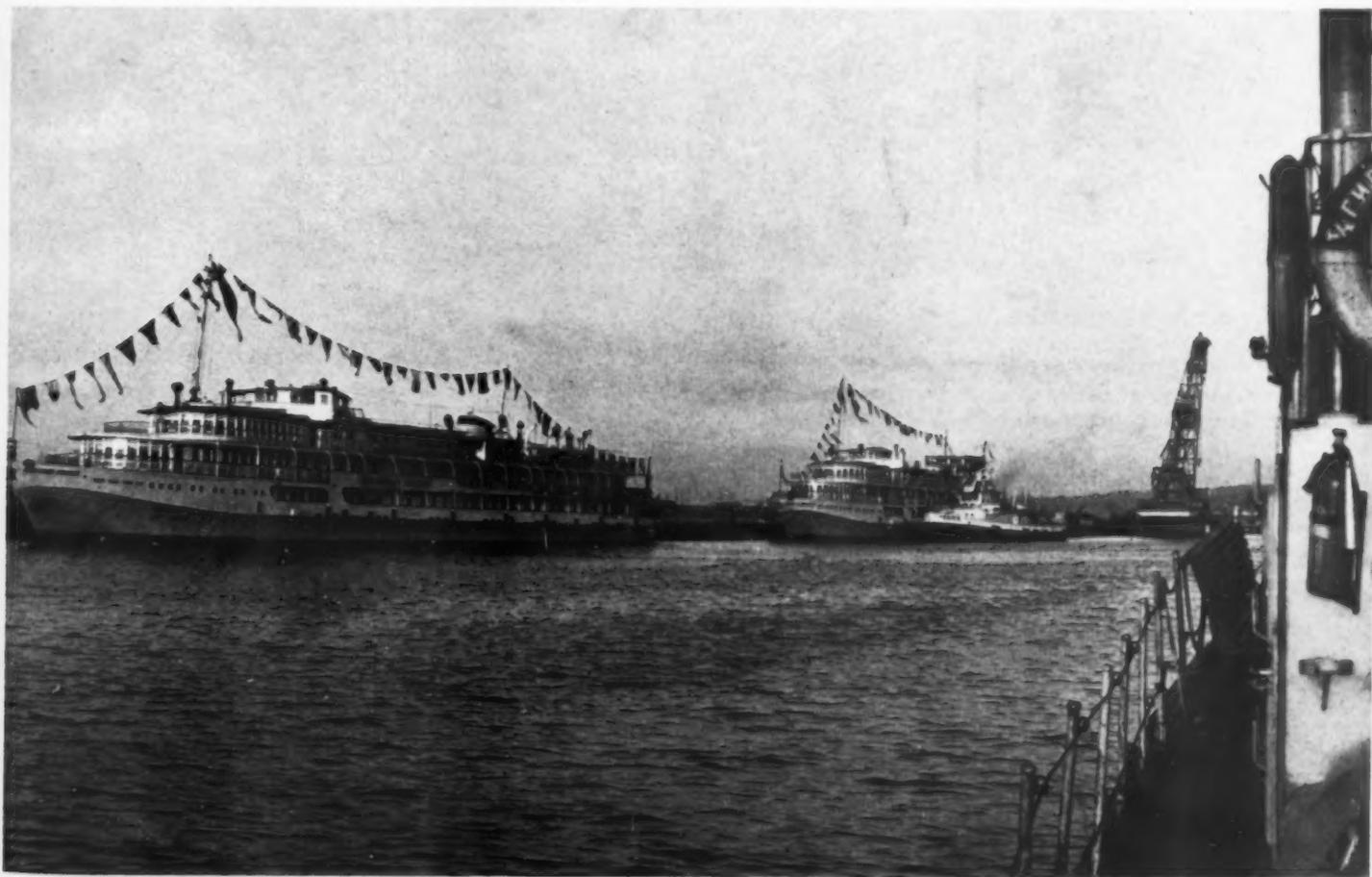
SUPER-HIGH VOLTAGE CERAMIC INSULATORS.





GENERAL VIEWS OF THE STATION'S SPILLWAY WITH ITS SLUICE GATES OPENED.

THE NEW MAN-MADE ZHIGULI SEA, 375 MILES LONG AND 25 MILES WIDE, PROVIDES AN INEXHAUSTABLE WATER RESERVOIR FOR THE LENIN HYDROELECTRIC STATION.





GENERAL VIEW OF ZHIGULYOVSK, ONE OF THE NEW TOWNS THAT HAVE ARISEN NEAR THE STATION. OTHER TOWNS ARE STAVROPOL, KOMSOMOLSKY AND SHLYUZOVY.

The Volga GIANT *Continued from page 43*

Union draws its electricity. As a matter of fact, 81 per cent of the electric power in the country today is generated by thermal power stations. And with the recent discovery of great new deposits of natural gas, oil and cheap coal, preference is being given to construction of these stations in many parts of the country in order to get large increases in power capacities within the shortest possible time.

Atomic power stations, too, will be developing as important factors in the power production of the country. The world's first atomic station has been operating successfully in the Soviet Union. Last

September, a section of another atomic station, with a capacity of 100,000 kilowatts, was placed in operation. When completed the station's full capacity will be 600,000 kilowatts.

Consider these figures as index for the power production forecast by the master plan. In 1920 the Soviet Union was producing 500 million kilowatt-hours; by 1930 the figure had jumped to more than 8 billion; by 1940 to 48 billion; by 1950 to 91 billion, this in spite of the destructive war; and five years later, by 1955, had almost doubled, to 170 billion. By the end of this year, it will total more than 230 billion kilowatt-hours.

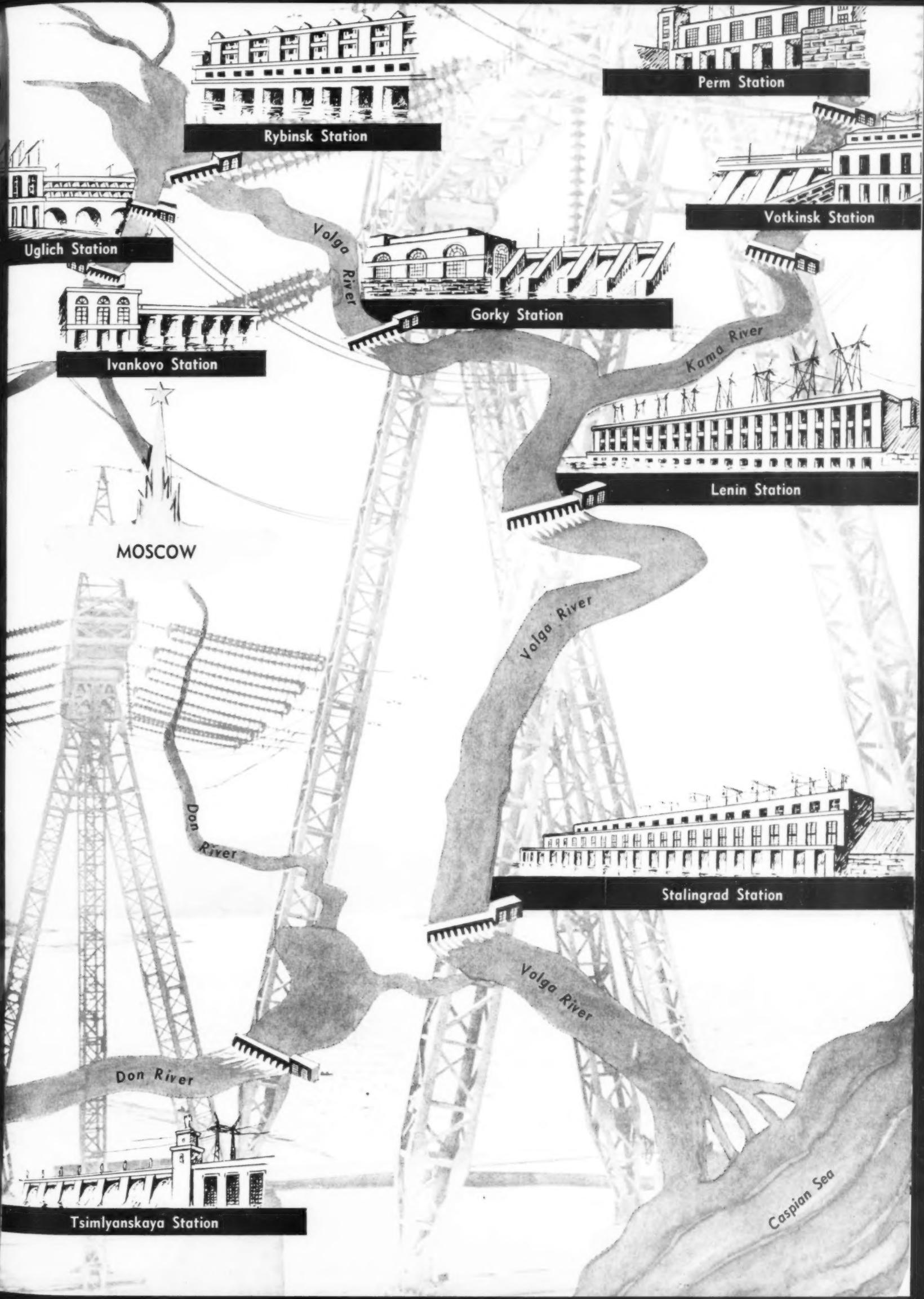
The forecast is not unreasonable—800 to 900 billion kilowatt-hours by 1972. And by the end of the century—15 trillion—a power potential almost too fantastic to visualize even in figures. ■

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Rybinsk Station

Perm Station

Votkinsk Station

Uglich Station

Gorky Station

Ivankovo Station

Lenin Station

MOSCOW

Stalingrad Station

Tsimlyanskaya Station

1658 UMI



The story of Kirill Orlovsky is also the story of Rassvet (Dawn), one of the largest and wealthiest of collective farms, with an annual income in the millions.

Orlovsky holds the two highest awards granted to Soviet citizens—Hero of the Soviet Union, for outstanding courage in the Second World War, and Hero of Socialist Labor, for his accomplishments in farming. He is a deputy to the USSR Supreme Soviet, the national legislature.

During World War II Orlovsky fought at the front, suffered the loss of his right hand and the fingers of his left. He was granted a disability pension sufficient to keep him in comfort and an apartment in a good Moscow residential district.

But he could not resign himself to idleness. He left Moscow and went back to his native Myshkovichi, a Byelorussian village. It had been occupied by the Nazi armies, laid waste when they retreated, a few broken buildings left as gutted mementos.

This is the story of what he and other farmers made of Rassvet, excerpted from The Narrative of Kirill Orlovsky by Yakov Tsvetov, a biography of a man and a collective farm.

BIOGRAPHY of a MAN and a FARM

By Yakov Tsvetov

THE FIGHTING had not yet moved far from the village when Kirill Orlovsky came back to Myshkovichi—the rumble of shells could still be heard in the near distance.

He crossed the meadows. The fences were down, broken and scattered. He passed the first cottages, their roofs torn, windows stuffed with rags. They had been houses for people to live in when he had last seen them years ago. Now they looked desolate.

"The Shemetovs live here!" piped a child's voice. He turned to see a little girl behind him—five, perhaps—dirty, her yellow hair uncombed, her brown legs powdered with dust up to the knees.

"This is where the Shemetovs live, here!" she cried again, out of breath from excitement. She pointed to a cottage. Outside it laundry hung from a line stretched between two maples that forked from a single trunk. A young woman with a tired face stood at the door. The child kept staring up at him hopefully, fearfully.

The woman smiled at Orlovsky, but it was a forced smile, her eyes stricken. "I've told you so many times," she said to the child, "that your father knows his house. He won't miss it when he comes."

Orlovsky looked at the scorched land around the house. The woman said bitterly, "They've trampled and burned everything in the village, the murderers!"

Last fall she had plowed up a small plot of

land, sowed two measures of rye. In the spring she had planted three sacks of potatoes. It was all she had.

When the rye began to ripen and the potato plants to flower, there was a small surge of hope. Perhaps they would have enough to pull through to the spring if they mixed the flour with crushed acorns. But only the night before the big German trucks, retreating, had crushed the plants. Then fire spread and burned what the truck treads had left, burned outbuildings and crops, hers along with the rest.

Orlovsky walked by a naked, burnt-out stretch of land. Where he remembered the collective farm's outbuildings had stood, there were now only cluttered piles of half-burnt bricks. An old man with a huge white beard was shuffling his slow way through the clutter. It was Pavel Belyavsky. "Kirill," he cried, his face lighting up. He stretched his work-worn hands in greeting. "Have you come back on leave?"

"No! For good, Pavel," Orlovsky answered. "I've come to stay, to help start things again."

"Start with what? There's nothing to start with! Can't you see?" The old man spread his arms helplessly. "There's nothing left, not a horse, a cow, a plow, not even any seed. Nothing at all! Zero!" There was no complaint in his tone, he was simply stating facts.

"We'll have to begin with zero then," Kirill said simply. *Continued on next page*



NEW HOMES AND GARDENS OF THE BYELORUSSIAN VILLAGE OF MYSHKOVICHI. A POWER PLANT, LUMBER MILL, BARNs AND WORKSHOPS AROSE ON WAR RUINS.

BIOGRAPHY of a MAN and a FARM

Continued

Kirill had been elected chairman of the Rassvet Collective Farm—a thankless task, it was a farm only in name. The farm office was a wretched shanty which stood alone at the end of Zykov Lane. The hut was standing, but only because the Nazis had thought it too dilapidated to be worth the match to burn it.

It was five in the morning. He had called a meeting and the bookkeeper, Ivan Khomich, and the other members of the farm board were expected momentarily. There was plenty to talk about. The most pressing was the lack of seed. The government had allocated seed to the farm but there was no telling when it would come. Troops were still rolling along by truck and rail, harassing the retreating enemy. But the season wouldn't wait. If the fields were not sowed at once, there would be no crop.

The board decided to appeal for a loan of the meager store of food-seed each of the farmers had managed to preserve. Fyokla Teleshova brought a bucket of rye, Pavel Belyavsky half a sack of grain, old Kristina Danilovna brought a handful of rye seeds in a towel. "I hear you've been collecting seed," she said. "Here's what I have. I'd give more if I had it."

There was new heart in the collective farm. The fascists had been driven out. Life was resuming its hopeful course. People were busy and beginning to remember to smile again.

There was not a single horse or cow on the farm. Men and women went out in teams to cut the grass, to plow by hand, hours before dawn. There wasn't time to sleep, too much to do until seeding was done and finished.

Snatching an hour of sleep whenever they could, smiths and carpenters worked, each of them like two men, to repair smashed farm tools that were gathered on roadsides, streets,



UNDER KIRILL ORLOVSKY'S LEADERSHIP THE FARMERS TURNED RASSVET INTO A MILLION-RUBLE ENTERPRISE.

gullies, wherever the fascists had thrown them. They needed iron to mend plows and harrows, to make cartwheels, to use for a dozen different things.

With the help of village boys and girls, the men dismantled whatever pieces they could use of shattered tanks, machine guns and broken trucks left behind by the enemy. The smith Arkhip said, "The Hitlerites left us plenty of both iron and grief."

Then one day, heralded by a cloud of dust, a herd of horses limped into the village. They were lame, emaciated, their sides crusted with blood, but they were horses. Heading the procession was the farm youngster Genka riding a gaunt horse with a lamed right front leg. Seven other boys, exhausted but their eyes shining with excitement, herded the animals. That summer of 1944 many horses had been left behind by retreating troops and had run wild in the woods. The collective farm boys had been out for a week catching them. They were back in triumph with seventeen.

There was seed now, and animals. It was time to begin sowing.

* * *

Harvest. Yesterday the collective farmers had been wondering where they would store the grain. Today the carpenters were knocking a barn together. A couple of boxes of nails had been found under an overturned German truck.

Ivan Khomich had somehow managed to get hold of a dozen spools of heavy thread to mend the torn sacks, and now the old women sat on their porches working away with thick needles.

These were restless days, eventful, things happening. Before they left, the Germans had taken Fyokla Teleshova's cow—the last cow in the village. But only the day before yesterday a black, hornless cow with a blaze on her forehead had turned up at the cottage on the edge of the marsh. The animal was hardly able to stand, but it wouldn't take long to fatten her up.

The farmers hurried to the farm office to bring the good tidings. It meant milk for the nursery. No matter how hard things were, the nursery had to have milk.

But yesterday an elderly couple had walked into the farm office. "Did a black cow stray to your village? She's ours."

Kirill Orlovsky looked at Ivan Khomich, sighed, shrugged his shoulders. "We'll have to find milk for the nursery children some other way," he said.

* * *

Those hard days, it was very odd listening to Kirill Orlovsky talk about the time when the farm granaries would be filled to the brim and overflowing with harvested wheat. People smiled when he talked about the farm getting 3,000 quarts of milk from every cow, about steamheated cowbarns and semi-automatic feeding systems.

This was at a time when a carpenter came to beg for a dozen nails and a stableman for a bushel of oats. Most of the time there were no nails, no oats, and not much of anything else.

Some of the farmers smiled, "Stop dreaming, Kirill, come down to earth." Others were irritated that he talked of big numbers in the future when the bare necessities were lacking in the present.

But Kirill insisted, showed them possibilities, estimates, kept talking of a million rubles a year for the farm. His talk was not wild. It was very much down to earth—in terms of the best crop rotations for the farm, the mechanized preparation of peat crumb for fertilizing the apple orchard beyond the river, in terms of electric power—these were all tangibles.

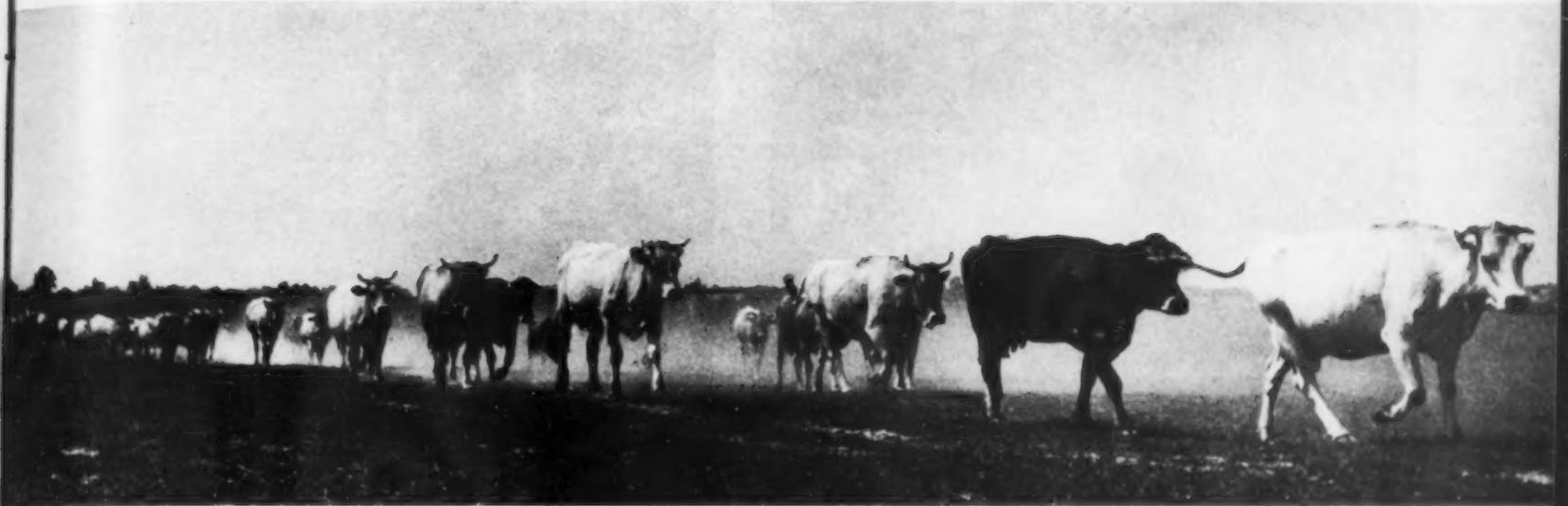
The farm was rebuilt. Orlovsky's prophecies, his "dreams" began to grow into very large realities. The farm would not have been rebuilt so quickly if the farmers had to depend entirely on their own resources. Government assistance was offered and gratefully accepted.

The government granted a large loan, in money, in seed, in mineral fertilizers, on easy credit terms. The state cattle farm Karavayevov lent its pedigreed milch cows. The state machine and tractor station provided machines and operators for sowing, cultivating and harvesting and took its payment in kind after the crops were in.

Continued on page 52

The village post office delivers 1,100 newspapers and scores of magazines every day in the week.





SOON AFTER THE WAR A STATE CATTLE FARM SENT SEVERAL PEDIGREED COWS TO MYSHKOVICHI. NOW THE FARM HAS SOME 1,000 HEAD OF BEEF AND DAIRY ANIMALS.

FLAX ADDS FIVE MILLION RUBLES EVERY YEAR TO THE FARM'S INCOME FROM MILK, MEAT, CROPS AND FRUIT.



Advanced stockbreeding at Rassvet includes quartz lamp treatment for its suckling pigs.

The collective farm's livestock section is proud of its large herds of fine-fleeced sheep.





KIRILL ORLOVSKY TAKES PART IN HELPING EDIT MATERIAL FOR THE FARM PAPER.



THE PAPER COMES OUT WEEKLY AND IS PUBLISHED IN THE FARM'S OWN PRINTSHOP.

BIOGRAPHY of a MAN and a FARM

Continued

After a while one had to think to remember when it was that the farm had been a jumble of blackened bricks and burnt timbers.

* * *

Spring had come to Myshkovichi. Our motor car was making its slow way along the muddy road. Ahead of the car old Pavel Belyavsky was walking, trying to avoid the water-logged ruts.

"You'd better get in with us," Kirill Orlovsky said. He swung the car door wide open. We rode on. The road cut across autumn plowland that spread as far as the eye could see.

The old man said, "Do you know, Kirill, it still seems too good to be true. There was absolutely nothing, nothing at all, only yesterday it feels like nothing but ashes, ruins and hungry people. And now everybody is rich all around."

"Yesterday!" Orlovsky laughed. "This is 1958. We've been too busy to watch the time fly by, but it's flown. We didn't see the changes, we were too busy making them. It was when the visiting farm delegation looked over our farm that I began to realize how many changes there were."

The visiting farmers had walked about the farm, peered into every building, talked to people and looked at last year's accounts. "When did the collective farm gross its first million?" they wanted to know.

No one knew exactly. It was too long ago. Bookkeeper Ivan Khomich rummaged through the old accounts until he found the first six-cipher figure. It was in the neighborhood of 2 million rubles for 1950. A year later the income for grain, flax, potatoes, wool, cattle, milk, butter, eggs, honey, vegetables and fruit sold to the government and at market came to 3 million rubles. The next year it was 5 million; the next 10, then 16, and so on.

In 1957 the collective farm grossed 17½

million rubles, and for the year current its income is certain to rise by another million. The farm families that make up the membership of the collective will each receive from 20,000 to 30,000 rubles for the year, some even more.

"How long did it take you to work up to the million mark?" the guests asked.

"It took us about 10 years," Orlovsky answered.

As they walked about the farm, the guests saw new building sites with piles of brick, iron tubing, rolls of iron netting, great spools of wire. The collective farm was still making changes, adding improvements.

As our car moved ahead we caught a first glimpse of the village in the distance. A flowering apple orchard spread away from the cottages. The mile and a half round cattle enclosure was fenced and lined with maple and birch trees. We could see the high water tower, the silos, the roofs of cowsheds that seemed to stretch for acres and housed a thousand head of brown Kostromas, black mottled Kholmogory and reddish Estonian cows.

Farther on were the power plant, the workshops, the lumber mill, the flour mill, the barns and the storehouses. As we passed, we

caught a view of the pig pens, the kennels, the spacious drying yards, the new brick slaughter house, the hothouses and the separator section of the creamery.

We were shown the spot where the first stables had been rebuilt after the war. They had later been pulled down to make way for two garages. The farm now owns 30 autos. This year the farm is going to buy 22 tractors, 15 grain and silo harvester combines, 2 excavators and other machines.

Our car rolled onto a broad street. Cottages with window frames ornamented in blues, oranges and vivid greens nestled among the trees. We were driving through the center of the village.

We passed by a building with tall columns amid the birch trees. This was the library and post office. Farther on was the village school and the House of Culture with its many big double windows.

Kirill Orlovsky was quiet as we drove along. He must have been looking at another picture in the background—charred ruins, burnt fields, an old man with a white beard shuffling through the ruins in bast shoes, and a five-year-old child, her legs powdered with the deep dust of an unkept road looking up at him fearfully, hopefully. ■





AN ILLUSTRATION TO CERVANTES' DON QUIXOTE.



SERGEI MIKHALKOV'S THE FOX AND THE BEAVER.

THE KUKRYNIKSY

Three Cartoonists in One

By **Natalia Sokolova**

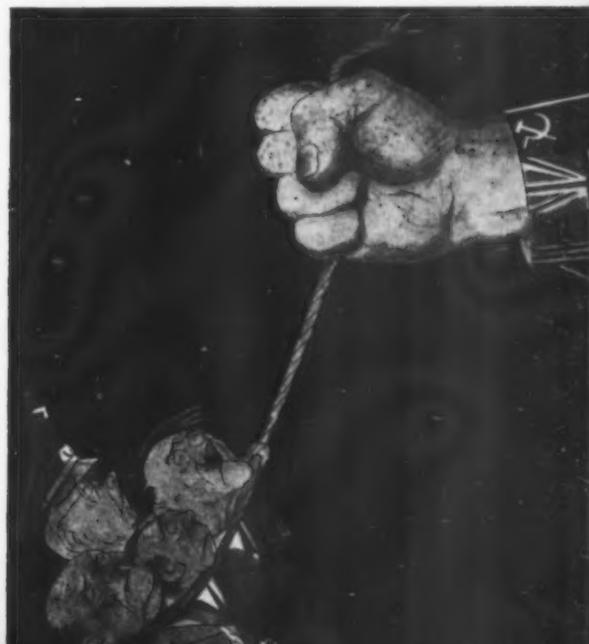
Member of the USSR Academy of Fine Arts

WHEN the Kukryniksy, world famous trio of cartoonists, held their first art show in Moscow twenty-six years ago, they described themselves as a joint 85 years of age with a joint eight years of living in art school dorms and joint possessors of one diploma in the fine arts and two in the graphic arts.

The catalog description went on to say that the trio had spent the two years previous working jointly on posters, book illustrations, paintings and theater sets, and they heartily recommended the collective method of thinking, studying and working to all and sundry as more profitable and more effective artistically than individual thinking, studying and working.

Continued on page 55

WE'LL STRANGLE THE ENEMY WITH ALLIED EFFORTS.





TANYA. CAPTURED BY THE FASCISTS, THE NOOSE AROUND HER NECK, WITH HER LAST BREATH THE 18-YEAR-OLD ZOYA KOSMODEMYANSKAYA ROUSES THE PEOPLE TO FIGHT.

THE END. A PAINTING OF THE LAST DAYS OF THE HITLERITE GENERAL STAFF IN THE CELLARS OF THE REICHSCHANCELLERY AS THE FASCISTS' MAD HOPES WERE BLASTED.



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THE KUKRYNIKSY

Three Cartoonists in One

Continued

The Kukryniksy trio—one hardly thinks of them any longer as three individual artists—are 26 years older today. The rather cryptic Kukryniksy—in Russian it sounds just as strange—is made up of the first syllables of each of their names: Mikhail Kuprianov, Porfiri Krylov and Nikolai Sokolov. Though now they live in three separate and spacious apartments, distinguished cartoonists, painters and book illustrators, they still work together and still divide their earnings into three equal parts. If one takes ill, the other two sweat out a cartoon for deadline and sign it with the common name.

A Most Unusual Way of Working

The well-known Soviet poet, Alexander Zharov, describes his first meeting with the three young men in 1925 when he was editor of the Moscow literary magazine *Komsomolia*:

Three rather poorly dressed young men stepped into my office and said: "We're artists. What we mean is that we're art school students. Can we do some drawing for your magazine?"

"We put out a purely literary magazine, without illustrations," I told them, "so we haven't anything to offer you. Besides, there are a few too many of you, don't you think?"

"Yes, but we work together . . . you know, like a single person."

"But you sign your three names to a single work?"

"No, one name—Kukryniksy."

"And what do you do?"

"We draw cartoons."

"All right, make me a cartoon of these three writers sitting here."

The boys sat down and got to work without a word. First one of them made a sketch. Then the second added some lines to the sketch and passed it on to the third who also added a line here and there. The sketch made the rounds of the three this way several times.

As they worked, the room filled with people looking on. It was the first time any of us had seen three artists drawing a single cartoon. When they were through, we gave them a hearty hand—the cartoon was splendid. We printed it in our magazine as a new feature, "Friendly Cartoons," that we introduced especially for these three very unique artists.

Biting Cartoons

The Kukryniksy cartoons are known in most countries of the world but the three are also acknowledged in the Soviet Union as consummate illustrators of Gorky, Saltykov-Shchedrin, Chekhov and Cervantes and as the gifted painters of *Fascists Fleeing from Novgorod*, *Tanya* and *The End*. Characteristic of the Kukryniksy is a wide range of media and artistic expression.

The Kukryniksy cartoons are clever and biting. Some of them have played a salient role in criticism of art and literature. They have made fun—caustic fun at times—of works and of the men who produced the works. Their cartoons are merciless in dealing with hacks, philistines and panderers to cheap tastes.

Before the war, when the fascists were gathering their forces for an onslaught on everything decent, the Kukryniksy gave up what they called their "artistic meanderings" and turned to vitriolic political cartooning of Franco, Mussolini, Hitler and the lesser fascists and would-be fascists.

During the war their anti-fascist cartooning was so sharp, so scathing and at the same time so funny that they did wonders in destroying the myth of Nazi "invincibility" and in lifting spirits even during the darkest and most ominous days of the war.

So eloquently did the cartoons make their point that Nazi officers frequently ordered their troops to stop and tear down posters deriding the "Führer" and his lieutenants. At the Nuremberg trials of war criminals, foreign cartoonists complimented the Kukryniksy upon their caustic portrayals of the fascist leaders.

Eloquent Paintings

The Kukryniksy paintings are as trenchant and penetrating. *The End*, a postwar painting, depicts Hitler and his generals as cowering ferret-faced figures caught in a bomb-proof shelter that has turned into a trap.

Tanya portrays the people heroically fighting the fascist occupation. Tanya is the name that Zoya Kosmodemyanskaya, the young partisan fighter, used. She was captured and hanged by the Nazis. The artists visited the village of Petrishchevo near Moscow where the fascists executed the girl, spoke to peasants who had witnessed the murder and made many sketches before they did the painting. It is one of the most moving paintings of the war—the young girl standing up bravely against the enemy minutes before her death.

The war over, the artists returned to more peaceful themes, to political cartooning and to book illustrating. At one of the postwar art shows the Kukryniksy exhibited a group of landscapes done individually and signed individually.

Although they work collectively on their cartoons, they find that landscape painting requires a more individual and more personal approach. Kuprianov favors city scenes and marine views. Krylov is fond of the rural views in the Moscow environs. Sokolov is drawn to the country bordering the Volga. Their landscapes, however, do have the common element of intimacy and lyricism.

Book Illustrators

Their collective book illustrations have the same lyric quality. Particularly fine examples are the illustrations they did for Chekhov's wonderful *Lady with the Dog*, the story of a young woman in love with a married man. As depicted by the Kukryniksy, the views of the Crimea suffused with sunshine and of the meeting of the lovers are so beautifully moving that they have been reprinted in many Soviet and foreign magazines.

Their illustrations for Gorky's books, notably for *Foma Gordeyev* and *Mother*, are most vigorous, appropriate to the heroic characters in the novels. In *Foma Gordeyev* they portray in sharply etched lines the young merchant fighting the ruthless financial sharks who try to break him. In *Mother* they draw the heroic workers of the period of the Russian Revolution of 1905.

From 1949 to 1952 the Kukryniksy worked on their illustrations for *Don Quixote*. This was their first try, and a highly successful one, at illustrating a non-Russian work. They had to vie with such masters as Daumier, Goya and with Doré, 19th century French artist whose illustrations of *Don Quixote* have been world famous for almost three-quarters of a century. They nevertheless drew a new and highly individual portrait of Cervantes' hero, a man wrapped in meditation, only his eyes betraying his frenzied dreams. The two-volume edition of *Don Quixote* published in 1953 has 74 Kukryniksy illustrations.

The Kukryniksy have a very large and devoted following, both among connoisseurs of art and with the public at large. They have received the honored award of People's Artists of the Russian Federative Republic, among other distinctions.

Since the end of the war the three artists have visited Germany, Finland, France and Italy. Not long ago they revisited Paris, not as tourists this time, but as guests of the Daumier Society, organized on the initiative of the Danish cartoonist Bidstrup. The three were honored with election as vice presidents of the Society, in recognition of their work as anti-fascist cartoonists during the war and their equally untiring work as cartoonists devoted to peace. ■

ANIMAL SPACE TRAVELERS RETURNED TO EARTH

A NEW record was registered by Soviet space-exploring scientists late this past summer when two dogs were shot 280 miles into the upper atmosphere in a geophysical rocket and returned safely to earth. Launched in the middle latitudes of the country's European part, this big one-stage rocket was another Soviet contribution to the IGY program.

In issue No. 9(24) of our magazine we described in detail Soviet explorations of the upper atmosphere by means of rockets. An account was given of a one-stage rocket launched earlier this year, which climbed to a record altitude of 294 miles, but it carried no experimental animals and a lighter payload of instruments.

The new rocket carried an unprecedented 3,726 pounds of geophysical and radiotelemetering instruments with their power sources, a hermetically sealed chamber with the experi-

mental animals and various auxiliary systems.

A significant feature of the rocket was its successful stabilization throughout the flight, including the period when it was flying by inertia. The specially designed installations prevented the rocket from rotating around any of its axes.

This made it possible to direct some instruments right toward the sun, while others were placed on the rocket's shady side. An additional advantage was that the transmission aerials could be set in a definite position so as to investigate the density of ionization in the upper atmosphere.

The rocket flew in the preset direction at a slight angle to the vertical. On return to earth it landed in the precisely calculated spot, no small scientific achievement by itself in a project where an infinitesimal decimal point means hundreds of miles.

Scientific equipment of the rocket included a wide range of instruments to register various data in the upper atmosphere—its ionic composition, the concentration of free electrons and positive ions, electronic temperature, air pressure, hits by micrometeoritic particles, ultraviolet section of the solar spectrum and the infrared radiation of the earth and the terrestrial atmosphere.

The chamber for the dogs had a specially designed motion picture camera for filming their behavior during the flight, and a group of instruments to register their biological functions.

The two pioneering space travelers Belyanka and Pyostraya—the English equivalents are Whitey and Spotty—were in fine condition after their 280-mile drop. They had done three months of rehearsal training and had become so accustomed to the hermetically sealed chamber, to the instruments fastened to them and to flight conditions, that they had learned to walk into the rocket by themselves.

This familiarity was important to guarantee that reactions induced by unaccustomed surroundings would not influence the behavior of the animals in flight, and the data obtained from the experiment would not be distorted by extraneous effects.

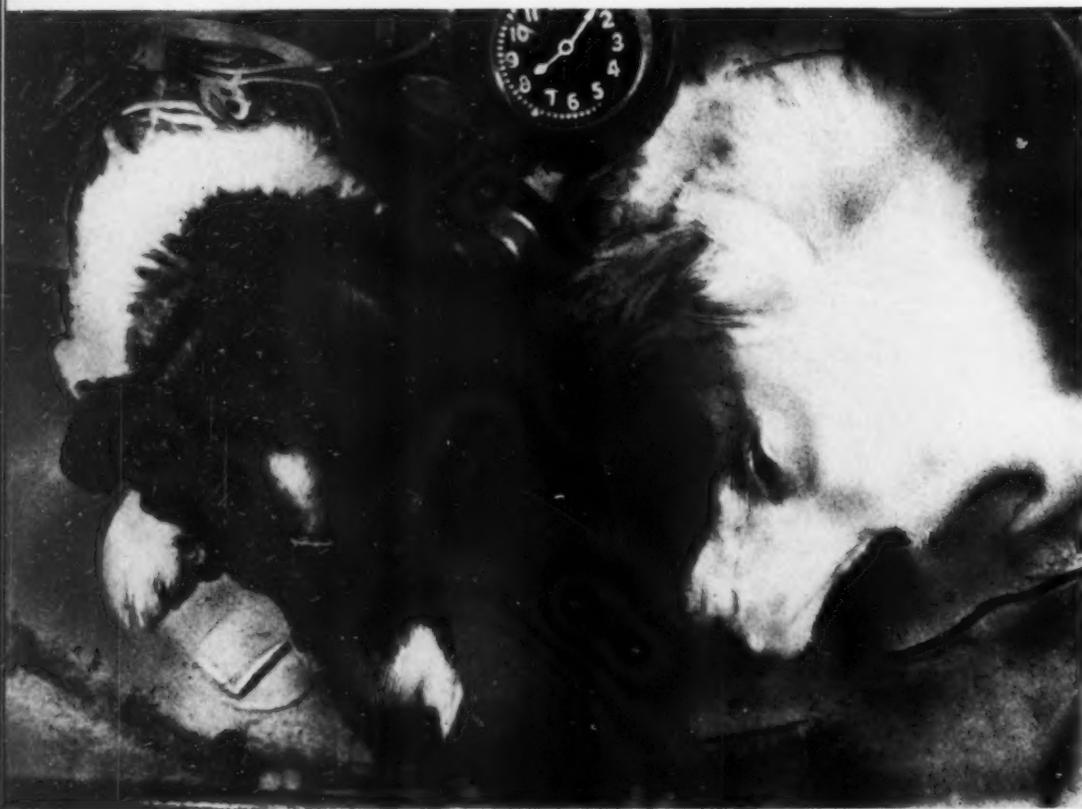
The reentry of the rocket from the upper atmosphere presented a serious technical problem since the instruments and especially the animals had to be returned to earth safely. To achieve better results in braking the speed, the rocket had a two-part structure.

In descent the nose, which held the animals and instruments, separated from the main body. At this time aerodynamic brakes came into play and considerably reduced the speed of the nose through the denser layers of the atmosphere. Then, at an altitude of some three miles above the earth, an auxiliary parachute opened. This one, a while later, pulled open a larger parachute that landed the nose safely.

During braking in the dense layers of the atmosphere, the animals experienced overload as during the start when the rocket's engines began to work. The overload was greatest at the moment when the parachute system opened. The experiment shows that the animals stood the overload quite satisfactorily.

Throughout the entire flight all the apparatus of the rocket worked without a hitch and brought back these hardy little travelers with data which world science will be using to break through the biological barrier to human flight into space. ■

Experimental dogs as filmed by the rocket's motion picture camera. Installed in the animals' compartment, it registered their behavior throughout the flight to a 280-mile altitude and back to earth.



SCULPTORS

to carve

SPUTNIK OBELISK

TO CHISEL in enduring stone that moment when the first Sputnik was launched is the project for a contest being sponsored by the Moscow City Council. The design is to be an obelisk and is to image "the realization of the most daring dream in history—man's beginning effort to reach to the stars."

Designs and models submitted by more than 1,000 contestants, sculptors and architects from every part of the Soviet Union, are now on public display. The entries are identified only by title of composition; the name of the sculptor or architect is not given.

Visitors to the exhibition are provided with paper and pencil and are asked for a candid reaction and judgment. Their comments will be used by the jury of leading figures in art and architecture to evaluate entries for awards. Some thousands of written comments by lay visitors have already been collected and many more thousands will be gathered before the exhibition ends its run.

The comments, as is to be expected, are as diverse as the individual viewers and range from objective reactions by people who are clearly much more than amateur critics to the most subjective kind of criticism. Some of

the comments are rather strongly worded and some fall considerably short of logic, but in total they will be most valuable to the judges as clues to public taste.

The titles appended to the designs range from the symbolic *Mars*, *Dream Flight*, *Orbit*, and *Great Bear* to the more denotative *Intercontinental Rocket* and *Kaluga*. Kaluga is the town in which Konstantin Tsiolkovsky lived while he was developing his theory of rocket propulsion.

Some of the viewers tended to the categorical. Here is one: "Abstraction must be used to reflect the great ideas of mankind." Another expresses annoyance at "the abstract geometric figures and the winding spirals. They leave an unpleasant impression."

About an entry in which the principal detail was a nude, one comment reads: "The project is exquisite." Another, on the same entry, says with some heat: "I would like to say that a sculpture of a nude looks quite silly alongside a rocket going off into flight. Isn't it about time we stopped copying the ancient Greeks and Romans?"

The judges, obviously, will have no cut and dried job. *More pictures on following pages*

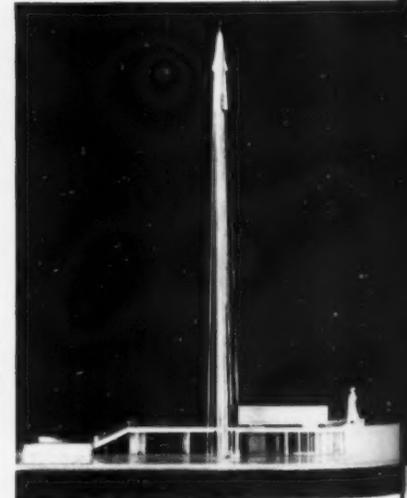
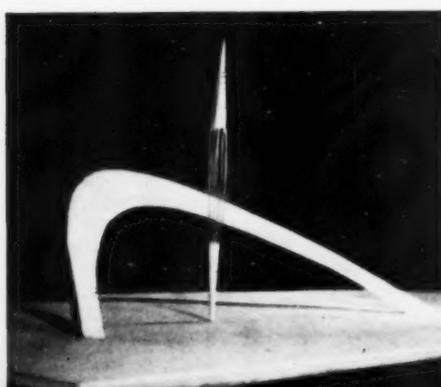
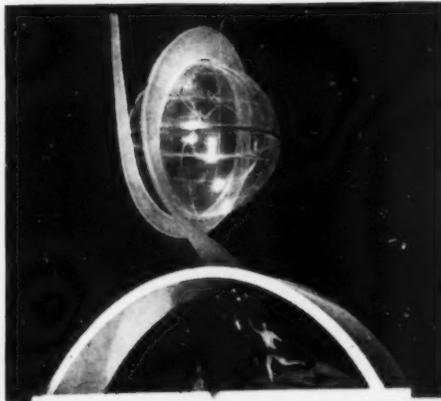
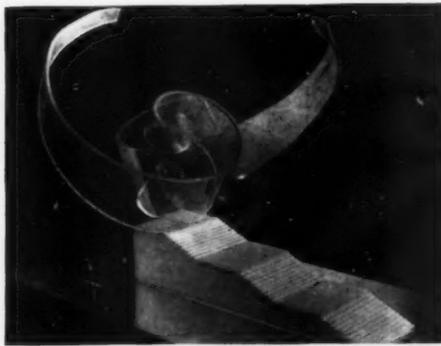
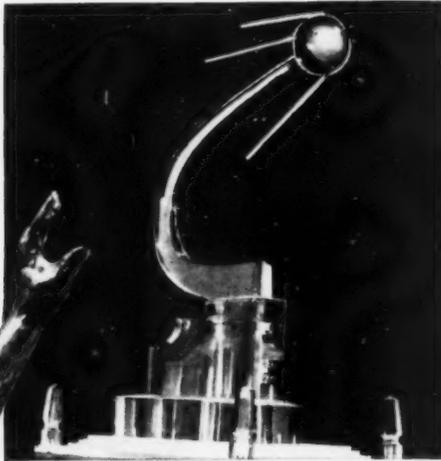
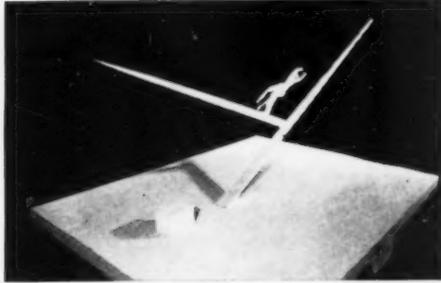
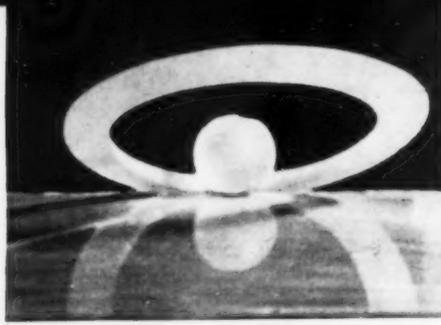


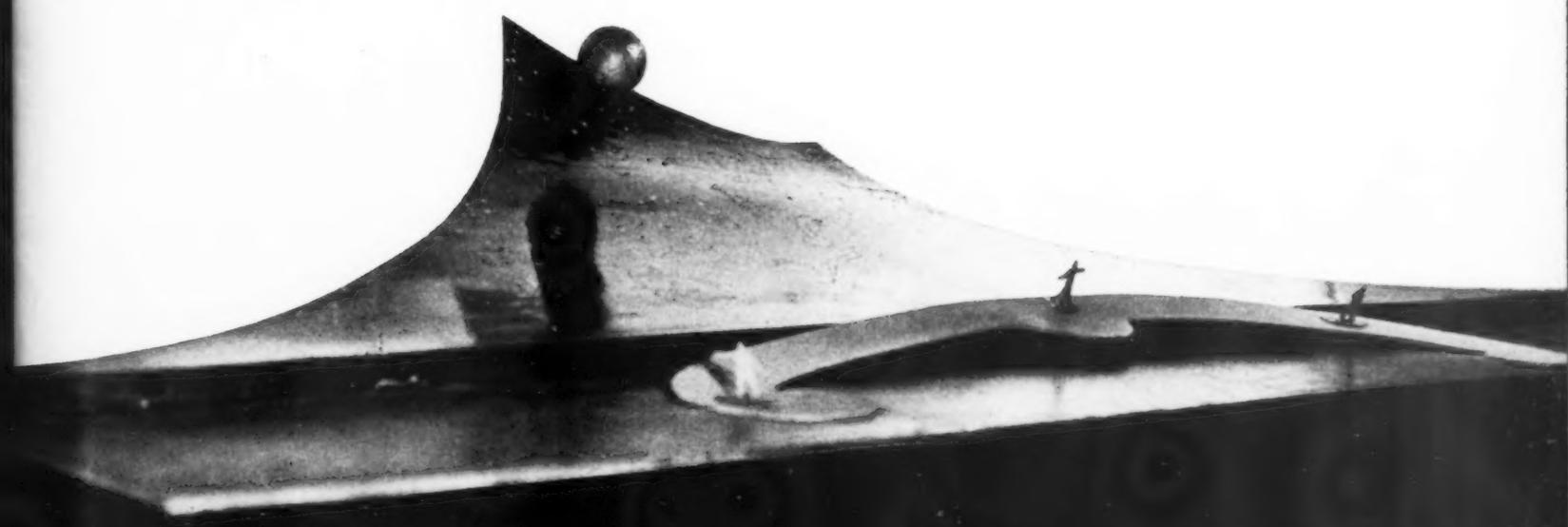
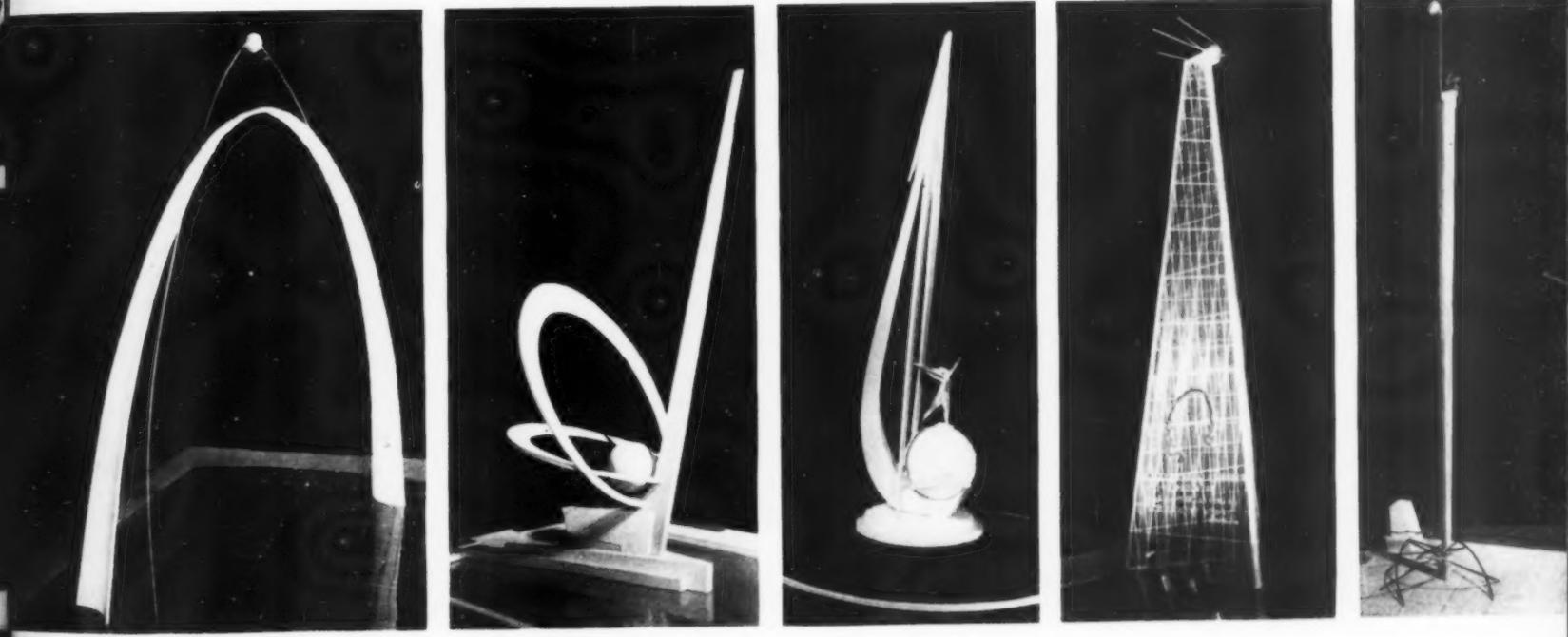
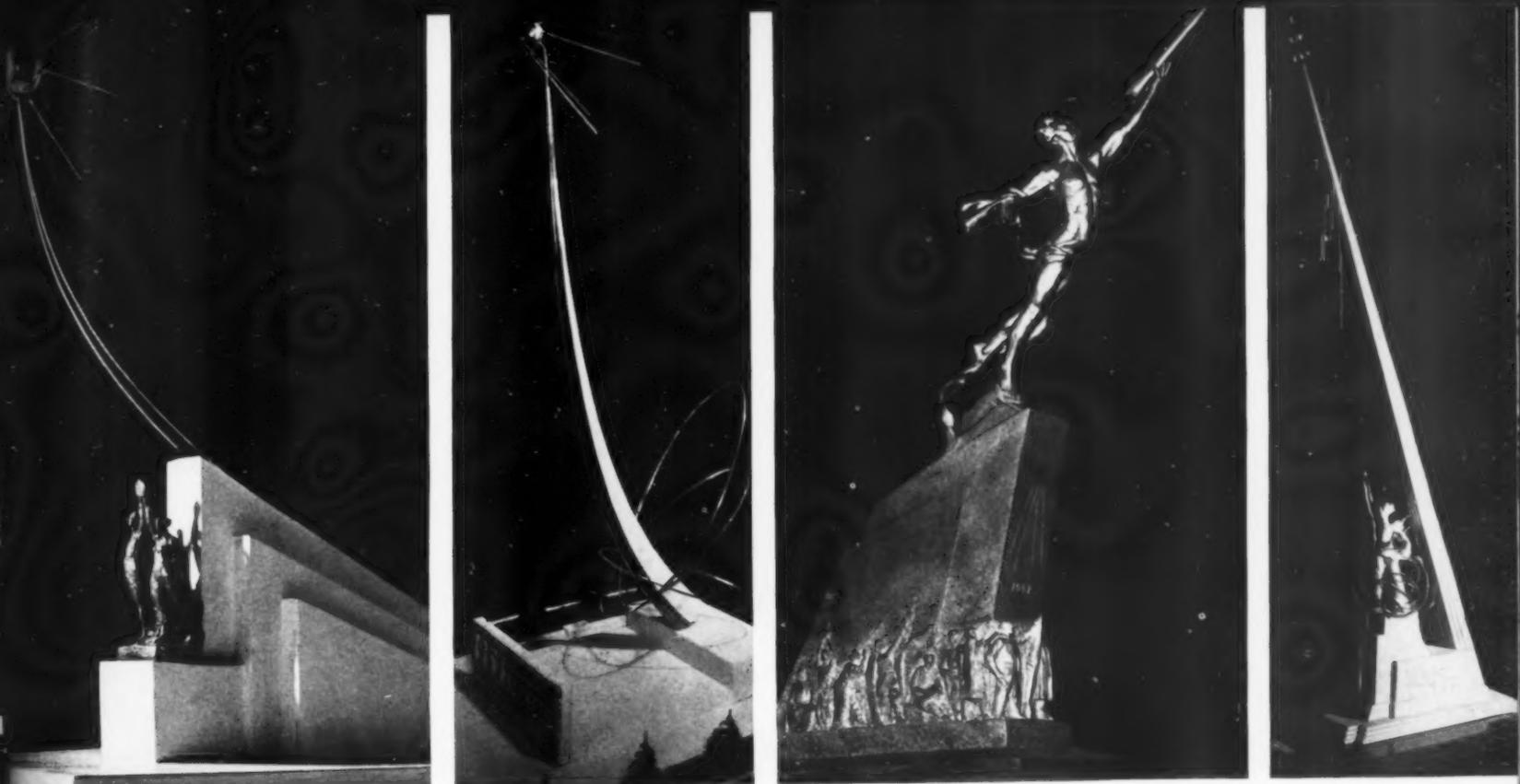
SCULPTORS

to carve

SPUTNIK

OBELISK







SEVENTH GRADERS PETYA SEMCHUK AND KOLYA POLAMAR USED TWO ENGINES IN THIS HELICOPTER.

HOMEMA ROBOTS ANDHE

By Alexander Mokle

THE VILLAGE of Balamutovka resembles a hundred other Ukrainian villages. It is some scores of miles from the nearest railway and off the main-traveled roads. It has 208 houses all told, not counting school, post office and farm administration building. Its main and only street runs between two rows of whitewashed houses with cherry trees set out in back.

But in a village like this one doesn't ordinarily walk down the street to find himself

face to face with a home made robot who walks and talks. And one doesn't expect a home made helicopter in Balamutovka, either, or a radio station built and manned by village school children.

A Robot

I was walking down this quiet lane on my first visit to Balamutovka when I saw an extraordinary metal figure on the move. From

a distance he looked like the Tin Man in the *Wizard of Oz*. He came toward me, raised his arm in greeting and announced:

"I am a remote-controlled robot made by the pupils of the Balamutovka school. I can pick up objects, pour water and do many other things."

At that moment the robot-creators aforesaid jumped out from the bushes they had hidden themselves behind and with much yelling and laughter bombarded me with questions that

STUDENT-MADE PARTS DECORATE THE WALLS OF THE CLASSROOMS.



JACK-OF-ALL-TRADES STANISLAV YAROSH IS NEVER INACTIVE.



MEMADE ND HELICOPTERS

under Mokletsov

they answered themselves, and in the same breath—"How do you like it? It's terrific, isn't it?"

There were some twenty of them surrounding me, boys with bristling hair burnt straw-color by the sun and girls with braided pig-tails, all with sunburnt noses and most with freckles. They were collective farm children, of a variety of ages.

When they quieted down they told me how they had built their robot. The inspiration and technical advice came from the school's physics teacher, Ivan Dekhtyar. The project was his imaginative way of teaching his subject.

All the children, commensurate with age and particular interest, had a hand in building the metal man. Some worked out the mathematics, calculated the size of the body, arms, legs and figured the dimensions of the material required. Others cut and fitted the aluminum. The older ones assembled the remote control system and the littlest ones had the job of cleaning up and polishing the units.

The robot I saw was a much improved model. The first one the children made couldn't speak, moved on rollers and raised his arms with difficulty. He was worked on and improved until he now responds to about fifteen different orders.

A Radio Station

Once the robot was done, Ivan Dekhtyar began talking about a radio station and it wasn't long before the twenty neophyte radio engineers were cutting and milling metal and

making transformers and induction coils according to blueprint specifications published in the magazine *Radio*. It was a big day when the proud announcement was made over the loudspeaker, "Attention! Attention! This is the Balamutovka school radio station broadcasting."

Then proposals for new projects popped from everyone and everywhere. But before any one of them was adopted, the children decided they needed their own workshop with more space than the school had to spare. Savva Sivak, history teacher and son of the best bricklayer in the district, suggested that they build their own workshop of brick. The idea was unanimously adopted, the children got to work and the workshop went up. The only adult help came in the roofing.

A Helicopter

In their own workshop the children assembled a car from old parts and built the screen for an open-air movie. These were relatively easy projects and they wanted something they could really put their teeth into. They found it in the helicopter project.

Information and advice came from popular technical magazines and from the school science teachers. The children made all the 'copter parts themselves—a 19½-foot main propeller, a 3½-foot driving propeller, two engines and fuselage. The only part they did not make was the engine for rotating the main airscrew. This was converted from an old motorcycle engine which they

tuned up to work perfectly in their helicopter.

The whole village gathered for the test flight and there was a loud hurrah when the 'copter rose some 50 to 70 feet and returned to earth in a very smooth landing. The only grief in an otherwise perfect day was that their teacher and guide Ivan Dekhtyar refused to permit any of the children to take the 'copter up on its test—not even the chief designers Kolya Timchenko, Tolya Kordas and Grisha Oleinik.

When they remind themselves of it, they still feel aggrieved. Mostly, however, they are too busy on some new project in hand to give it much thought. ■

RAYA FEDORUK SAYS HER FAVORITE HOBBY IS RADIO.



OPERATING THE ROBOT ARE STUDENT DESIGNERS VASYA PISARENKO, RAYA SIVOK AND SASHA KORDAS.

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NOVEMBER SPELLS HOLIDAY BALLS

NOVEMBER is especially meaningful to Soviet people because it marks the major national holidays on the 7th and 8th. This is a time not only of reflection on the country's accomplishments, but also for a round of parties held everywhere by the celebrants. Shown on these pages are scenes from one of the balls for students and young workers.



THE GIRLS BEGIN THEIR BALL PREPARATIONS BY STOPPING AT THE BEAUTY SHOP.



AMATEUR PERFORMERS OFFER A SERIES OF NUMBERS TO ENTERTAIN BALL GUESTS.

THE DAILY CARES OF THE CLASSROOM OR SHOP HAVE BEEN FORGOTTEN AS THE GIRLS GATHER TO HEAR AN AMUSING STORY.





THIS GROUP FINDS THE GUITAR MERRY ACCOMPANIMENT.



A DETERMINED GIRL PIANIST CAN GENERALLY MANAGE TO KEEP 'EM ON KEY FOR A HIT TUNE'S BIG CHORUS.



DEVOTEES OF JAZZ PREFER THE SAXOPHONE AND TRUMPET.

A POET AMONG THE GUESTS PRESENTS ONE OF HIS NEW EFFORTS.



THE MOST IMPORTANT FEATURE OF EVERY BALL IS FOUND WHEN THE BAND PLAYS FOR DANCING.

1958 UMI



RAFFLE TICKETS WIN SOUVENIRS AND HELP RAISE FUNDS FOR THE BALL'S COST.

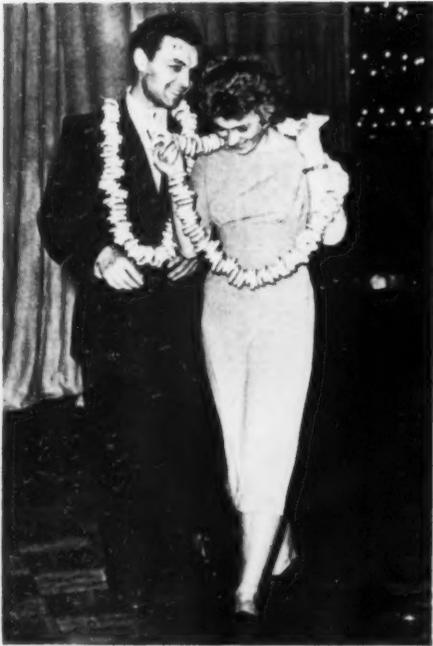


THE TRINKETS WON ARE SOMETIMES USEFUL GIFTS AND SOMETIMES ONLY AMUSING.

NOVEMBER SPELLS HOLIDAY BALLS

Continued

THESE COUPLES TRAILED HOME TO MOSCOW UNIVERSITY BY OUR SLY PHOTOGRAPHER DID NOT LIKE HIS FLASH.



HARD ROLL NECKLACES WON FOR DANCING GRACE.

THE BEST SINGER IS GIVEN A BOTTLE OF CHAMPAGNE.



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STUDENTS OF MOSCOW UNIVERSITY ARE JUSTLY PROUD OF THEIR MODERN CAMPUS SITUATED IN PICTURESQUE LENIN HILLS IN THE SOUTHWEST SIDE OF THE CAPITAL.

MAIDENS' REEL BY "SERYOZKA DANCERS. See story on page 30



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