The Secret of Soviet Strength

THE SECRET OF SOVIET STRENGTH

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PREFACE TO THE AMERICAN EDITION

EVERY word written in *The Secret of Soviet Strength,* and in my earlier and more comprehensive book, *The Soviet Power,* receives daily and hourly confirmation on the Eastern battle front where Hitler's armies reel before Red Army blows.

At the moment of writing, two hundred and ten German divisions man the lines opposed to the Soviet Union. Yet Russia forces Germany relentlessly from port to port.

No figures speak more eloquently than figures like these, and none give greater justification to the claims made for the Soviet Union in this book. They bespeak courage, skill, preparedness on the war front and the home front and a deep belief in the value of their new order of life.

Two years of war have supplied the final test to the Soviet system. Russia stands firm. She suffers gigantic and terrible losses, but stands firm. Russia places all progressive humanity in her debt. If there were no socialism in the Soviet Union there would be no safety in Great Britain. Indeed, Great Britain would already have ceased to exist as such. And the outlook for the United States of America would, in 1943, be as desperate as it was for us in 1940. There is no single person in England or America but should be filled with gratitude for Soviet heroism and for the Soviet system and leadership.

A great change marks the present attitude of England in this respect. The vast majority of my countrymen are moved to sympathy and admiration. Millions wonder today how they were led to believe the propaganda and

lies which before the war had created so fantastic a picture of our great ally. Firm friendship between the two peoples grows as the scales fall from our eyes.

And I have reason to believe that a similar process proceeds in the United States, though more slowly with you than with us, for the United States stands more remote from the war and has been spared the sufferings which have stricken Europe.

Yet the process continues in both lands. It could hardly be otherwise. You are as logical, as clear minded, as capable of reasoning and of seeing what is happening in Russia as any of my own fellow-countrymen. Your people are not blind. As they gaze at the gigantic struggle which proceeds in Eastern Europe, they are bound to ask why and how Russia has changed so vastly in a brief two decades and a half. You can draw your own conclusions and doubtless do so. And doubtless, too, anti-Soviet views are at the moment as unfashionable in the United States as in Great Britain.

Yet it would be folly and self-delusion to imagine that all the antagonism and bitter hatred of the past is dead. Great powerful vested interests still threaten to intrude. In holes and corners the same old lies and suspicions still prepare to raise their heads. Capitalism fears socialism and beneath the lip service of today lurk slanders hatching for tomorrow.

That throws an added burden upon us, the common people. We are surely capable of thinking for ourselves. We have learned the truth. We must spread the knowledge of it. We must, in season and out of season, combat those who would deprive us of the fruits of Russia's heroic sacrifices; we must relentlessly oppose those who would recreate again the system that led to our present disasters, and would lose for us the impending peace as they lost the

peace in 1919, and create a third world war within a score of years.

These sinister powers must be fought with all our might, and knowledge and truth are the only weapons which can bring success to the people's cause. That is my apology for presenting this book to an English and American public.

I would add this further word. A great prize lies within our reach.

Viewing the present war, not from the narrower and immediately personal point of view, but as part of a divine process whereby wisdom is acquired, rays of light already pierce the gloom. We are learning, on the negative side, and learning as we could learn in no other way, the evils of Nazism, fascism, and the Japanese variant of these bestial systems. We are also learning, on the positive side, the true worth of the Soviet system and the quality of the Soviet people. Out of this war is being forged a friendship which lays the foundation for a new world system in which peace can endure and become permanent.

If the four great countries now allied stand united after the war as they stand united now, animated by the ideals they now possess, hating war then as they hate it now, but vividly aware that risks must be run and positive constructive means applied for its prevention, then a new world era will dawn in our day, and life will rise to a higher, nobler plane. Such a goal is worth the concentrated will of every freedom-loving, justice-loving man and woman, boy and girl.

The Deanery, Canterbury
August, 1943

FROM PREFACE TO THE BRITISH EDITION

The Soviet Power, my larger book on Russia, written before the war and published after the invasion of Poland, appears now in upwards of twelve languages. Its circulation, exceeding two million copies in the English tongue alone, is, I am told, unique.

All know that Russia is strong: not all are encouraged to enquire why she is strong, still less to observe how we may speedily acquire similar strength and thus replace an old order which is not only morally weak but has utterly failed to feed, clothe, house and educate us—to say nothing of arming and protecting us—in the measure made possible by modern science and industrial technique. To provide that enlightenment, to apply the lesson of Russia in a thoroughly British way, to picture the possible new Britain, to estimate its cost and characterise the instrument of its achievement stand out as major purposes of this book, which I dedicate to my own children and to the generous forward-looking youth of all lands.

Let me close this preface, first with a hint to readers, secondly with a quotation from a much-neglected warning in the preface of my larger book.

The hint concerns the order in which the material of the book is presented and in which, according to inclination, it might be read. Book II, which deals with human life—children, women, men, nations and big themes like culture, morality, liberty and religion—may awaken a more lively interest than Book I, which deals with material achievements. That might suggest that the order of the

Books should be reversed. I resisted the temptation to do so, however, for without a correct estimate of the sheer magnitude of the material achievement and still more without an understanding of the moral and scientific foundations on which it is based, we shall never learn the lessons which Russia can teach and will thus miss the opportunity which our own British situation affords for a kindred change along British lines. So I would advise those who regard Book I as dull, to start with Book II and then return to Book I to find the answer to the question which will constantly arise: "Whence comes the money to do these marvellous things?"

Second, the warning from the preface to *The Soviet Power,* which I would reiterate, runs thus: "There is need to guard against a too rosy optimistic view of life in the Soviet Union. My own approach in this book is from the sympathetic side. I ask in the first place for a sympathetic understanding of the problem. I lay stress on the successes and good things of the experiment. There are shadows as well as lights, and I am well, and oftentimes painfully, aware of them. But if I have said less of the defects and lack of success, it is chiefly because other writers have already (and with over-emphasis) done the task for me; and because I feel that this over-emphasis and concentration upon defects, whilst ignoring the *massive moral and material achievements,* accounts for the unsympathetic attitude of many who should, and if they knew more would, welcome the experiment and learn from it."

1. SOVIET STRENGTH IN WAR

RUSSIA sprang upon an incredulous world a supreme surprise when, on June 22, 1941, she withstood Hitler's unexpected and brutal assault and broke the blitzkrieg upon the land as we had broken it in the air.

Twenty years ago Russia was the land of the illiterate peasant, the wooden plough and an infantile industry. Twenty years ago, Germany, on the other hand, was at the peak of her potential industrial efficiency, second only to that of the United States.

Germany, during the intervening years, had spent time, money and energy in perfecting the most destructive war machine the world has ever seen, ready to fling it, at a moment's notice, against the nation which barely began to emerge from mediaeval slumber until fifteen years ago.

But in meeting Russia, Germany has met her match. The anti-Soviet propaganda of twenty-five years has been exploded by the events of fewer weeks. Russia is no longer the land where precision machinery is "tied up with string and wire"; no longer the land where the spirit of man is crushed and her internal economy ready to collapse. All such charges are now seen at their true value and we marvel at the efficiency and quantity of Russian equipment, the skill of Russian leadership, the inventiveness of Russian strategy and tactics, and the courage, unity and selfless sacrifice of Russia's common people.

Twelve months earlier Hitler had flung his war machine against the armies of two other great empires which for

years had been anticipating attack and were said to be prepared for it. General Ironside had assured us of England's ability to stand. General Gamelin had spoken similarly for France. Holland and Belgium stood by the Allies' side. Hitler confronted four foes on the field, not one.

Yet within thirty-five days Holland was bombed into submission. The French were routed. Belgium collapsed and England, failed by her Allies, and suffering immense losses in essential war equipment, had escaped annihilation only by a miracle of skill and courage and good fortune.

Twelve months later, a date which the future will assuredly regard as a supreme turning point in the history of the world, Hitler flung himself on Russia. The Soviet forces, standing entirely alone, wholly and obviously unprepared for attack, were called upon to bear the full shock of assault from an army vastly stronger than that which had overwhelmed the Allies.

For Hitler had enjoyed more than the benefit of surprise. His armies, enriched by booty from all the countries he had conquered, flushed by a long series of victories, were spoiling for battle. The Nazi multitudes, reinforced by the Finns on the North, the Hungarians in the centre, and the Rumanians in the South, deemed themselves invincible, and not without reason. Holland had fallen, Belgium had surrendered, France had capitulated. In Norway and Greece, as well as in France, England had been swept into the sea. And even in Crete, an island fortress far removed from German air bases, and long prepared by England against attack, the German troops, landing against heavy odds from the air, had swept the British forces once more into the sea and enriched themselves by an all-important air base from which to endanger the Suez Canal.

Furthermore, the German armies by a dashing and victorious sweep, in face of our planes, and despite our ships, had cancelled our victory over the Italians on the North African coast and stood at Sollum, on the frontiers of Egypt itself.

The Nazis might well claim invincibility. Armies and Empires had fallen like ninepins before them.

One country alone, should England be dispatched, stood between Hitler and world domination. That country was Soviet Russia. With Russia defeated, the coal, iron and corn of the Ukraine, and still more important, the oil of Baku would relieve Germany from all anxiety concerning supplies. At her leisure she could starve, bomb or invade England into submission.

Did ever conqueror see triumph so near to the taking?

The temptation was too alluring and Hitler fell to it. Defeating Russia he would kill two birds with one stone. Strengthening his hands for the final assault upon England, his imperial rival in a commonly accepted game, he would cripple for half a century that Communism which, as a menace to him and to those industrialists and financiers of whom he was their hired gangster, was regarded as a menace even more fundamental than the menace of England itself.

And indeed, if he now turned eastwards, England might herself decide to join him. Who knew? Bolshevism, he maintained, was a menace to both Germany and England alike. And Hitler knew that powerful forces in England, and more especially in the U.S.A., dreaded Communism more than they dreaded him. He calculated upon England's Lavals and Pétains to aid him. Such elements in English life, he might reasonably argue, would ensure England's sympathetic neutrality while he smashed Russia for all time. Hess's visit was not without significance.

So Hitler s troops massed on the 1,500-mile Eastern front. Tanks, planes and men stood in instant readiness for attack. Russia was to be taken by surprise. Dive bombers should blast a way for the German armies; motor cyclists, armoured cars and tanks should crash through on land and in a matter of weeks, if not of days, Moscow and Leningrad would fall, and then Russia would collapse as France, Belgium, Holland and Greece had collapsed. In one triumphal sweep the world would be safe for Hitler and Hitler's friends.

So the blow was struck.

But Russia did not fall.

Russia stood.

Russia strikes back and strikes back triumphantly.

Why did she stand? Whence comes her strength to strike back?

Those are the fundamental questions which this book seeks to answer, and their answer will fling down a challenge to ourselves.

2. THE MORAL SECRET OF SOVIET STRENGTH

RUSSIA is strong in her army. That we have seen. We now seek the cause.

Behind Russia's strength in war lies her strength in peace. Russia is strong in the arts of war because she has been strong in the arts of peace. Strong in battle, because strong in industry, in agriculture, in schools and colleges, in science and hospitals.

Strong in protecting life because strong in releasing life, whether in infant and child, in boy and girl, in youth and maiden, in man and woman. Strong in withstanding massed attacks of men and materials because strong in

developing the latent capacity, and enlisting the sympathy of the one hundred and fifty different nationalities which make up her Union. Russia reaps in war the harvest she sowed in peace.

Russia's strength, to put it in a nutshell, lies in her moral and scientific achievements. Russia has introduced moral principle and scientific method into the heart of productive life. That is the prime cause of her matchless strength.

What she has done, though profoundly complex in operation and detail, is extremely simple in principle. A child can grasp it, and Russia will never be understood by us or by anyone else unless the basis on which she has established her achievement is understood.

Let it be stated, then, in language as simple as the thing itself.

Those who planned the present order in Russia began their task by asking an elementary question: *"For what purpose should things be made?"*

There is but one adequate answer to that question. Things must be made in the interests of man. Things, like the Sabbath, must be "made for man and not man for things." Man needs housing, clothing, food, education, medical assistance, sanitary services, transport services, pictures, music, gardens. . . .

To give the maximum amount of these things, the maximum amount of safety and well-being to every individual upon a substantially equal basis, providing for each the opportunity to work, with pay appropriate to his skill and industry, leisure after toil and social security in days of sickness, incapacity or old age; that is the true purpose and motive for industrial production. The well-being of man is the true object of industry.

Production should therefore be controlled by need.

Such control is reasonable, moral and advantageous. It is profoundly Christian. It is obviously possible. And could anything be more simple?

But it demands a Plan. It also demands public control of land, mines, factories and every species of machine necessary for large-scale production.

Here, as yet, we in England neither recognise the principle, nor provide the conditions for its operation.

The Soviets recognise the one and make provision for the other.

It is thus, as we have said, quite impossible to appreciate the massive nature of the change wrought in the Soviet Union unless we examine side by side with it the principle operative in the order which it supersedes in this and other countries.

This we must proceed to do.

Ask yourself for a start the following question: *What is the actual position of production in England today?* What causes blast furnaces to be lit, mines to be dug, houses built and cars constructed?

Today it is the private profit of certain individuals or groups of individuals which sets the wheels of production revolving. Men with coal beneath their land sink mines only if they can make profit, or enough profit to counterbalance the trouble. Perhaps they prefer to dig no coal at all lest it should spoil their private park. Naked men cannot enter cotton mills and weave their own shirts however great their need. Masons must loaf in idleness and remain indecently housed if no one can make *profit* from their labour.

In short, things today are made, not for use, but for profit. Capital seeks not the greatest good but the greatest profit. Should dog racing yield more profit than the provision of food, clothes, or shelter for children, then capi-

tal finds its way to the profitable but less social forms of production.

This is regarded as profoundly immoral by Soviet Russia. Must we not agree with such an estimate? Have Christians, at any rate, any cause to object?

Whilst asking these questions we had better, for clearer understanding, ask a third. Who owns the land, the factories, the mines, and other means of production? Who decides whether this thing or that shall be produced? Is it those who need the things? Is it those who see the need of the things in others? Is it the public as a whole?

Decidedly not. It is, in the main, a private person or a group of private persons. The owner—or the capitalist as we call him—is the absolute possessor. Without his command machinery stands still, and his command depends upon the profits available.

Consumers and workers suffer. Consumers lack the goods; workers lack employment.

Of course, in wartime, in a time of national emergency, private profits must yield to national necessity; and private ownership and control to public need.

What we have found necessary to do in war, Russia has been doing in peace. And what we have done temporarily, and therefore of necessity in an amateurish and half-hearted way, Russia has done with scientific thoroughness. Witness her wartime mass removal of people and machinery to new sites. Where we fumble, she acts with speed and resolution.

Russia has avoided the inefficiencies of an uncontrolled economy, avoided the booms and slumps, the unemployment and insecurity which harass us still and threaten us again.

In short Russia has done the moral thing in industry and it proves to be successful.

In Russia the instruments of production are publicly owned. They are worked not for profit but for public use. The needs of consumers are the controlling factor. The people as a whole decide which things are needed most and produce them first. The people as a whole, through their appropriate organs, prepare a national budget. As every competent housewife prepares the family budget, planning, as my mother planned for a large family, what should be spent on food, housing, clothes, education, charities or holidays, and spending the surplus on luxuries or provision for the future, so Russia prepares her great Family Budget, and prepares it on the national scale.

Thus then, though in its outworking the Russian Plan is the most complex and intricate scheme in the whole range of human enterprise, besides which the mightiest industrial organisations, like the Ford plant in the U.S.A., are mere child's play, yet in its broad outlines the planned production which aims at producing consumable commodities in adequate quantity for the use of all, together with the machinery which is necessary for their production, is capable of as simple a statement as is a domestic household budget.

It begins not with the producer and his private interests. It begins with the consumer. Consumers' needs are the pivot round which Soviet industry revolves.

A rough picture of these needs would suggest, for example, as primary, the need for safety from attack, and the need for clothes, shelter and sustenance.

But weapons and clothes demand iron, steel, copper, and other raw materials for their making. That demands mines and foundries. These things and the big assemblies of machines for working metals into railways, saws or buckets are called capital goods. Tsarist Russia possessed few capital goods. Soviet Russia had therefore to provide

them forthwith and they have formed the major feature in three successive Russian budgets.

Men, however, cannot live on capital goods alone, much as they may need them. Men cannot eat a rolling mill. Men need bread and meat, and houses and clothes, and the amount annually required for these necessary things must take their place beside other items in the national budget.

During all the earlier years Russia kept consumable commodities in short supply in order that she might build up her capital and defence resources. She tightened her belt and built her Ural and Kuznetsk steel works and a hundred other plants in a hundred other places. With what wisdom she acted can now be seen when she is suddenly called upon to withstand the shock of German assault.

In addition to food, clothing, housing, and the capital goods necessary to produce them, schools must be built, teachers trained, health services maintained and in short all the means provided for physical and cultural well-being.

So the Plan is comprehensive, providing goods and services for all according to essential need. Hence it grows in complexity. We can readily extend the list ourselves if we give a moment's thought to our own requirements or the requirements of our children through all the varying stages of life and growth: maternity homes, infant schools, junior schools, senior schools and colleges, with all their attendant teachers, professors and research students, together with all the essential materials and services needed to make them effective.

The Plan must provide for all this and it does so.

Mr. Philip Price has rightly described the Plan as "the first organ in the world for carrying out in practice the

theory that each citizen is part of a great human family and has rights in that family in so far as he performs duties to it."

All are to work.

All are to be assured of the fruits of work.

3. RUSSIA'S FIVE-YEAR PLANS

TURN now to the Plan itself, remembering that the needs of the community must determine the activities of the producers. Remembering too that every individual enterprise must pass under public control, together with every acre of land and every ounce of raw material.

The formulation of the Plan will obviously be a complicated enterprise demanding extensive equipment and guided by highly skilled statistical experts.

The equipment is provided, in peace time, in the heart of Moscow city, where lie a series of buildings unsurpassed by any in the world for the extent of their operations. The tentacles of that central office stretch far out, over a sixth of the earth's surface, to collect information as to their peculiar activities from every factory, farm, hospital, regiment, or the thousand and one other forms of civilised enterprise. The details of those activities must be ascertained; what goods they can produce and what materials, equipment and services they need.

The Central Office must discover:

(a) The available human power. Youth and age, each has a place in its files.

(b) The present output capacity of each unit of activity and what is required in raw materials, credit facilities or transport facilities to produce that output.

(c) The needs of the multitudes of individuals who make the things or render the services for food, clothes, health and culture, and that of the people as a whole for defence or capital goods—mines, railways, blast furnaces or machines.

On the data thus received an estimate is formed of the next five years' possible output if every factory or farm works efficiently and receives the maximum needed assistance.

That total output will of course be liable to constant alterations through altered circumstances, increased by fresh inventions, decreased by war.

Prolonged and careful discussion by the representatives of the people leads at length to a decision on the forthcoming programme of production; a decision, for example, as to whether boots or gramophones, armaments or maternity homes, schools or mines, blast furnaces or factories shall be supplied.

This is a serious and vital decision. If, to speak broadly, more money is spent on capital goods—blast furnaces or factories, less can be spent on consumable goods—food, clothing or newspapers. If more is spent on health services less can be distributed in wages.

These decisions call for wide and animated discussion. In the final decision, as is most right, the voice of the Supreme Soviet, the equivalent to our Parliament, must be heard.

But before that final voice is heard there comes another prior step, a step of high importance in principle. A tentative quota from the plan is sent to each particular enterprise, specifying the work proposed for each. The workers' observations on the plan are sought and weighed. Not only, then, does the broad feature of the plan receive

discussion; each industrial unit is also allowed a voice in the detail allotted to them in the whole operation. Each is awakened to a sense of its own responsibility. *That is democracy in practice.*

At length the Plan is issued.

The Five-Year Plan it is called, for each Plan projects the work for the next five years.

The issue of the Plan is awaited with an eagerness unimaginable here. It provides the standard, incentive and goal for millions.

The contrast between successive Five-Year Plans stands out for the people's encouragement and stimulus.

The formulated Plan is an inexpressible boon for the industrialist, in whatever category he may operate, for he knows what are his tasks for the succeeding five years, without wondering whether his employment will hold out so long or not.

A British engineer, operating in Russia, has expressed it thus:

"For an engineer, a maker of machines, work in a Soviet factory offers tremendous satisfaction. The commercial principle that holds sway in capitalist industry very often forces engineers to spend their energy, strength, and knowledge for nothing, several factories turning out one and the same article, each striving when an order comes to secure the contract. All making new designs but only one obtaining the order. The other designs are wasted.

"In the Soviet Union, on the other hand, all tasks are linked up with the development of industry and the engineer knows that the plan he has drawn up will be used."

* * * * *

The present Five-Year Plan is now the Third. It was designed to be completed in 1942. Broadly speaking,

before the outbreak of the Russo-German war, the planned production was keeping up to schedule. In some respects it was in advance of schedule.

As a sample of the vast scope and intentions of that Plan let me quote from its Fourth Section, which defines the basic tasks outlined for raising further the material and cultural level of the working people of the U.S.S.R. In summary form it runs as follows:—

> The fulfilment of the First and Second Five-Year Plans brought about tremendous rises in the material and cultural levels of the peoples of the U.S.S.R.
>
> The Third Five-Year Plan must ensure that the needs of the working people with regard to necessary goods, products, housing, cultural and everyday services are satisfied to an even greater extent. It is not a question now of abolishing unemployment and eliminating poverty in the village—we have already achieved this, completely and for ever. Our task today consists in raising the well-being and cultural level of the working people to an extent that would meet the increased requirements of the Soviet people—requirements unattainable even in the richest capitalist countries.
>
> The following tasks are scheduled:—
>
> 1. To increase consumption by one and a half times, in accordance with the growth in the income of the workers.
> 2. To raise state expenditures on the cultural and everyday needs of the working people in cities and villages; expenditures on social insurance, education, health protection, aid to mothers of large families, and the like, from the 30,800 million rubles of 1937 to 53,000 million rubles.
> 3. To carry out broad measures calculated to raise

the cultural and technical level of the working class to that of engineers and technicians.

4. To effect universal secondary education in the cities and universal seven-year secondary education, accompanied by the extension of ten-year education, in the villages and in all national republics.
5. To raise the number of students in universities and technical colleges to 650,000, with increase of the quality of higher education.
6. To increase the network of cinemas, clubs, libraries, houses of culture and reading rooms; permanent and other sound cinemas to be organised on a large scale and increased six times.
7. To expand health protection services, and improve hospital service, extend children's hospitals, improve labour protection and the organisation of recreation and physical culture for the workers. State expenditure on health protection to be increased to 16,500 million rubles in 1942 and the number of cots in permanent nurseries and kindergartens to be increased from the 1,800,000 of 1937 to 4,300,000 in 1942.
8. To expand housing construction so as to furnish thirty-five million square metres of new floor space by 1942.

Congress fixes the growth in national income at 1.8 times under the Third Five-Year Plan. This income will provide both the capital goods and the strengthening of the defence services as well as meeting the above and other needs of national consumption.

Contrast Russia's Five-Year Plan and our own Budget. One is a budget of increased production and met with

enthusiasm. The other is a budget of deduction and met with misgiving, if not hostility.

4. SCIENCE IN SOVIET LIFE

I

RUSSIA'S new moral basis is paralleled by her new scientific basis.

Science looms large in Russia. The significance of science begins to grip the masses of the people. The application of science becomes an everyday affair in every walk of life. Take these three instances at random:

(1) Philip Jordan, writing in the *News Chronicle* of July 28, 1941, tells us that on the battle front, 100 miles west of Moscow, he found electric eyes and ears that spot enemy raiders on their way to that city and an electric voice which warns the capital of their approach. No observation posts in Britain, France or Egypt can achieve position results so quickly; or transmit them so speedily to the central control station as those he finds here in a remote corner of the Russo-German front.

Each observation post is equipped three-fold; by telegraph with its neighbours, with headquarters posts and with all the cardinal compass posts; by an emergency telephone system should the main power be put out of action, and by wireless which can be used when other systems fail.

King George, in the British capital, looked down, as the daily papers told us, in a room at the War Office, on a map divided into squares where girls pushed hither and thither small blocks of wood which represented enemy planes or flights of squadrons. There, in the Russian capital, the scientifically-minded Russians used electricity to replace the girls, and by means of a visionless projector,

marked in tiny coloured bulbs that cover a map on the wall the precise strength, direction and speed of the attacking planes.

I recalled the wall map in the Children's Palace in Moscow, where similar coloured lights served to mark the successive stages in Moscow city's growth.

(2) Take next the new invention of a Soviet three-dimensional cinema picture, which gives not only colour and sound, but depth and perspective as well.

It is the work of S. P. Ivanov, a youthful scientist. His invention is extremely ingenious, and though a complete description of it would take too long and involve numerous diagrams, its main features are as follows:—

In place of the screen on the stage of the theatre, where the depth picture is shown, is a large metal frame on which 30,000 extremely fine wires have been strung. Placed end to end their total length would be ninety-five miles. The sides of the frame are of steel to withstand a strain of twenty-five to thirty tons. The rays of light pass through the surface of this harp-like screen composed of radial transparent and opaque bands. The rays of light are partially absorbent by the wires and partially pass between them on to an ordinary screen, likewise in the form of narrow strips. The same thing happens with the second image, with the difference that the rays passing through the opaque bands fall on the second screen between the strips of the first image. In this way, two images are thrown in alternating strips on one screen, a strip for one being followed by a strip for the other.

This new three-dimensional cinema theatre eliminates the boundary between the spectator and the actors on the screen.

Confetti and streamers appearing on the screen in the three-dimensional film suddenly seem to be flung into the

hall and the spectator involuntarily ducks his head to avoid them.

A flock of birds appears to be heading straight towards the spectator and so on.

Many problems remain yet to be solved. The most serious is that which compels the spectator to sit precisely in one position in order to obtain the stereoscopic effect. The inventors are working at this and other problems and hope in two or three years to enable the film-goer to see things, as they appear in life, from every position in the theatre.

(3) My final instance is chosen because it depicts the grip of science on Russia's youth.

A group of youthful Soviet Pioneers, eager in the pursuit of nature study, frequented the hot-house at the Palace of Pioneers in the city of Taganrog. They read, studied and sowed their own seeds in their own experimental plots.

Rovitsky, the local research agronomist, was fond of youth and encouraged the boys, giving them seeds and advice. In return they unpacked his cases, made entries in his books and acted in general as his handy-men.

With Volodya, a boy of fourteen, he became especially friendly. They experimented, studied and chatted together.

One day, whilst unpacking an old box, Volodya came across an unusual ear of wheat. He showed it to Rovitsky who exclaimed, "Ah, so that's where the lost eighth ear of wheat was! I thought it was gone for good."

Years earlier, Rovitsky had received a sheaf of wheat from the Yeish District. He discovered eight ears of a remarkable variety. He recognised it as a kind that grows in Egypt. None so far had been found in Europe.

Rovitsky had planted seven ears, with very disappoint-

ing results. Half the seeds had died of pest and half had produced quite ordinary wheat. The eighth ear which he had lost had now turned up.

"Let *me* have the lost ear. I will make another try," begged Volodya, and Rovitsky, though with some hesitation, agreed. He held out no hope of encouragement, though he added that if Volodya should succeed, he might be doing a really important work, for while ordinary wheat yielded only thirty-five grains, these special wheats sometimes bore seventy-five grains or even more. By producing such grain, crops might be doubled or even trebled.

The boy planted the wheat and with his companions picked over the grain and sowed it next spring. Half the ears were ordinary wheat. Nothing daunted he picked out the best and replanted them. This process he repeated yearly. By 1936 Volodya had five square metres of grain.

In 1939 he gave two kilograms to a collective farmer for planting in ordinary field conditions on an ordinary farm. The result was extraordinary, far surpassing local varieties. In 1940, the boy was permitted, as a supreme and much coveted honour, the right to sow a patch of his special wheat in the All Union Agricultural Exhibition at Moscow. His patch with its remarkable crop drew crowds of eager visitors.

II

The reason for the outburst of scientific interest, with its rich promise of achievement, among the masses of the people lies in the attitude towards science of the Soviet leaders themselves.

Whilst fascism despises science, persecutes science, distorts science and neglects science—save for its use in war—

Russian socialism welcomes science and grants science facilities unknown in any other land.

Never in Russia do you hear the phrase "frustration of science," which had become ominous here before the war. Never do you hear Soviet members of Parliament, as I have heard members of Parliament here, advocating a "moratorium on science" for producing commodities in too great abundance.

Always you hear the cry, "More power to the scientist."

The Soviet leaders believe in science, utilise science, and encourage science. They did so from the first.

Marx was brought up in the tradition of science. Lenin in his exile spent a great portion of his time in a thorough analysis and a criticism of the later scientific developments.

Consequently even before the civil war and the famine were over, the Soviet State gave deliberate encouragement to science.

Russian scientists, though few in number, received unlimited state backing and began with enthusiasm the task of developing a Soviet science and a Soviet technique. Overcoming initial difficulties between 1917 and 1927, progress quickly became assured. The development of science and industry went hand in hand and the new universities and schools began to turn out large numbers of scientists. The standard of training, low at the outset, continually improves.

A study of Soviet science reveals the following points:—

(a) Soviet science is daring in the scale of its operations. Even by 1934, the Budget for science was one thousand million rubles. One per cent. of Soviet national income was being spent on science; ten times as much as England spends.

Soviet science is no longer regarded as a luxury.

It is part of the whole social fabric, linked up at every stage with the productive processes.

(b) Soviet science endeavours, as in other countries, to speed the productive processes. But never at the cost of human life, health or happiness; always with a view to building up life as its primary end.

(c) Soviet science encourages the industrial workers at every conceivable turn, and in ways unknown here, to assist actively in the application of science to industry. Workmen are encouraged to think, to plan, to invent, doing so with the full knowledge that the fruits of their thinking will become available for the mutual benefit of themselves and society.

(d) Soviet science is solidly knit together and intertwined in all its branches. Its problems are not faced separately and in isolation, but as parts of an integrated whole. Science is pushed forward along a *planned* line and that planned line forms part of the whole cultural planned advance, though its special field is left open for pursuing surprise avenues which may always occur in scientific thought and discovery. The plan is a guide, not a fetter.

Research surveys of definite fields are the things aimed at and planned for. Financial resources are divided amongst these several fields of research in the proportion which appears to be most profitable. Here, for example, is an outline of some of the planned fields of research:

(1) To develop methods of prospecting for useful minerals, especially tin, rare metals and oil.

(2) To solve the problems of electrical power transmission by creating, on a scientific basis, a unified elec-

tric power system throughout the U.S.S.R., with high-voltage transmission.

(3) To rationalise and extend the use of natural gas and by-product gas from industrial plants.

(4) To find a new type of fuel for internal combustion engines.

(5) To raise the grain yield of the country from 7,000 million poods to 8,000 million poods, by laying the basis for a further increase in fertility.

(6) To establish scientific bases for the development of animal husbandry and fisheries.

(7) To develop long-distance control of machinery and to extend automatic processes in industry.

(8) To study the history of the peoples of the U.S.S.R.

With this definitely technical programme, there also goes longer range research in electricity, the structure of solids and liquids, the nature of chemical actions and the like.

III

The organisation of Soviet science is elaborate. Three of its leading factors can be mentioned here:

(1) The highest body is the Academy, consisting of ninety members, each a scientist of the highest distinction, who is responsible for one or more institutions in his own particular sphere.

(2) Next come the universities and technical schools, whose main function is educational, though they too possess research laboratories closely linked with the Academy's research institutions.

(3) Then come the still more important research institutions connected with industry: the metal institution, the fibre institution and such like. These deal

with the basic problems connected with the industry and include upon their staff scientists of the greatest distinction. The research institutions connected with industry and agriculture are closely linked up with the Academy; the distinction between academic and industrial science, which is the rule in England, is absent in the Soviet Union.

There is, through all this organisation of research, a double flow of activity.

Problems arising in industry are formulated in the works' laboratories and passed on to the technical institutes. If possible, they are solved there. If not, they are passed on to the Academy. Industry therefore presents science with problems.

On the other hand, fundamental discoveries made in the Academy or the Universities are immediately passed on to the technical institutes to be put into useful practice at the earliest possible moment. Science presents industry with facilities and opens up to it fresh fields of activity.

IV

Science in the Soviet Union ventures further afield and is more ambitious than here. It steps outside the research laboratories and invades the schools. Going into the street it rivets popular attention and awakens popular interest. Science becomes a corner-stone in Soviet education, and a magnet in Soviet life. Science is taught from its earliest stages in every school and dominates the curriculum of the upper standards. The teaching of science in schools is thorough and effective, and the numbers taught, in proportion to the population, far exceed similar numbers in Great Britain and Germany.

The contrast between the Russian attitude to science

and ours is great and to their advantage. Science is ignored by our leaders and neglected by our army. The war reveals the consequence.

The Soviet Union has one supreme advantage over most other countries. It is able to draw upon the intelligence of a whole population rather than on one section of it, marked off by wealth.

Moreover one can say with no fear of contradiction that the adult Soviet population as a whole show a greater interest in science than in any other land. The sale of scientific books is enormous, not only popular books on science but practical and serious works. Almost every scientific book is translated into Russian and is assured of an extensive sale. Dirac's *Quantum Mechanics,* for example, sold 3,000 copies in a few months against England's sale of 2,000 in three years. News of scientific discoveries takes the place of the tittle-tattle of English daily journals. Science is not dreaded by workers in a land where its application in industry throws no one on the scrap heap of unemployment. Science is welcomed where the increased national production which it produces becomes available for all.

The words of Pavlov, the Russian physiologist of international reputation, may fitly close this chapter: "Our country opens wide vistas to the scientist and in all justice it must be said that science in our country is given generous support, very generous indeed."

5. RUSSIA'S SIXTH OF THE WORLD

RUSSIA is vast and varied. Russian territory in the past 440 years, say since 1505, in the days of Henry VIII, has increased at the rate of fifty square miles a day; from

850,000 square miles then to its present 8,340,000 square miles. A country with mountain plateaux two and a half miles high, with mountain peaks four and a half miles high, with lowlands sinking several hundred feet below sea level, with 400,000 square miles of desert, and 4,000,000 square miles of frozen Arctic tundra.

This vast territory is peopled by 150 nationalities, speaking different languages, each with its own culture, customs and habits. The climate ranges from an area in northern Asia regarded as the coldest spot on earth to the deserts of the south where heat renders life scarcely bearable. Fourteen seas of three oceans—the Atlantic, the Arctic and the Pacific—wash the shores of the Soviet Union. An express train travelling west to east or east to west takes ten days to pass from frontier to frontier. When it is 8 a.m. in the west, it is 6 p.m. in the east. The northernmost island lies 621 miles from the North Pole; the southern frontier touches Afghanistan. Polar bears roam in the north; tigers in the south.

A journey through Russia from north to south unfolds a cross-section of world geography. It begins in illimitable stretches of tundra, or barren wilderness, which support only lowly forms of life, or hardy reindeer, arctic fox and polar bear. Dark, icy winter grips the land for six or nine months of the year. It is a frozen land, whose soil never thaws, save on the surface, when for short summer days mosses and lichens, berry-bearing shrubs, bright flowers and coarse grasses enjoy a brief existence.

South of the tundra stretches the taiga, or forest of firs and jungle undergrowth. Nearly half the coniferous forests of the earth, 1,900,000 square miles of them, grow in Russia, yielding a never ending supply of pine, fir, spruce and larch. Here hunter and trapper procure furs—ermine, sable, fox and squirrel.

Southward again lie the mixed forests of oak, beech and ash, while still further south the rolling treeless steppes constitute 12 per cent of Russia's land surface. Its soil is mainly black and of the highest fertility, passing now rapidly under intensive scientific cultivation.

Southward again Soviet Russia touches the sub-tropical zone; rich and fertile from the extreme west to the shores of the Caspian Sea; stretching eastwards thence across the sandy wastes of Kara-Kum, and Kizil-Kum, to the Central Asiatic oases, where rice and the white cotton thrive, and vineyards and mulberry groves mingle with orchards of apple, pears, peaches and apricots.

A journey from west to east unfolds another vast panorama, cut in two by the Ural mountains, 2,000 miles distant from the Polish border, European Russia to the west, Asiatic Russia to the east.

Moscow, the capital of the Union of Soviet Socialist Republics and of the Russian Soviet Federative Socialist Republic lies in the centre of European Russia. The ancient Kremlin, crowned with its red star by day and night, stands amidst multiple-storied modern buildings, linking old with new. The Congress of the Soviets meets in the Kremlin, where Stalin lives and works.

North-west from Moscow lies the Leningrad region, amidst damp meadows and slow-flowing rivers whose dark forests now yield place to golden wheat. Leningrad, built by Peter the Great, at the cost of 100,000 lives, is a fine classical town of straight streets, noble squares and stone-built canals. The machine-building industry finds its centre in Leningrad.

North-east of Moscow lie the conifer forests, merging southwards into grass lands and plough lands, sprinkled here and there with new industrial towns.

West of Moscow lies Poland and between the two run

the drained marshes of Byelo-Russia with glades of wide-leaved trees, oaks, maples and limes thriving in the warmer, moister airs brought by Atlantic breezes.

South of Moscow and its forests lies the almost treeless expanse of Kursk and Kuibyshev. Here we enter the slightly undulating black soil plain where wheat grows and new industries thrive. The treeless steppes lead to the Azov-Black Sea area, running southwards in the centre to the Crimea, westwards to the Ukraine and eastwards to the Caucasus mountains and the oil-wells of Baku.

The Black Sea Riviera skirting the Black Sea shore is Soviet Russia's prime beauty spot.

East of the Black Sea rise the snow-capped Caucasus Alps, reaching in Mount Elbruz the highest peak in Europe. Glaciers fill its precipitous ravines and, melting, descend in blue cascades to the plains and palm beaches below.

South of the Caucasus lies Georgia, Stalin's native land, with Armenia and Azerbaijan.

Asiatic Russia lies eastwards of the Ural mountains. Tundra marshes in the north, then the taiga forests, then the black soil plough lands and birch woods in the centre, with the wide-ranging steppes in the south. South-east of Siberia lie the Altai mountains and the Kuznetsk with its vast basin of coal.

Southwards of Siberia again lies Kazakstan, the immense nomadic Cossack Republic. Innumerable herds roam the Cossack steppes. Not a tree is seen in this almost riverless land.

South of Kazakstan and north of Afghanistan lie the five Republics, Uzbek, Turkmen, Kirghiz, Tadjik, and Kara-Kalpak: a yellow plain under a blue dome best describes them, animated here and there, where water is available,

with oases, cotton fields, and majestic groves of poplar trees.

Here rise the Pamirs, the world's highest mountain group.

All this takes us slightly more than half-way across the continent. Eastwards again lie the rolling folds of Eastern Siberia, and beyond that Yakutia, a territory large as Europe and moulded on the majestic scale, with deep lakes, vast rivers, boundless forests and rich mines; all awaiting scientific development.

Between Yakutia and the Pacific Ocean extends the Far Eastern area traversed by the Amur River with rice fields and vineyards, and jungles where tigers roam.

6. RUSSIA'S NATURAL RESOURCES

THE Soviet leaders had embarked upon a colossal task. To feed, clothe and house 170 millions of people, scattered over a sixth of the earth's surface, to give them scope for mental and moral as well as physical growth, demanded wide resources.

Taking the measure, therefore, of their task, the leaders proceeded to discover and appraise the natural riches of Soviet territory. They made an inventory of the national wealth. And this involved widespread exploration and intensive scientific examination. Tsarist Russia knew little about its territorial riches. Vast mountain ranges and their contents, yawning deserts and their possibilities had daunted the enterprise of private pockets. No generous public purse had been forthcoming. Even the land that the Tsarist rulers thought they knew—the very strata that lay beneath their feet in Moscow—waited still for skilled scientific imagination to reveal its wealth.

The Soviet Government immediately directed Soviet geographers to undertake their tasks. Year after year scientific expeditions were dispatched to search icy Arctic shores and oceans, to ascend the Pamir mountains, to pierce Siberian forests. Motor cars, aeroplanes, ice-sledges and ice-breakers led the explorers further and further afield; white tents were pitched and bonfires blazed in regions unvisited before.

Geographers explored. Topographers plotted maps. Geologists hammered rocks for minerals. Botanists tested plants, seeds and soils.

The search was as thorough in scope as wide in range. Weather, for instance, plays a large part in modern, as in ancient, life. Knowledge of weather is indispensable when planning agriculture on a comprehensive scale. Weather follows natural laws, which are intricate but discoverable. Meteorological observations in arctic regions provide the key to weather movements over the whole U.S.S.R. Arctic expeditions are dispatched to collect the necessary data. No mere spirit of adventure sent Professor Schmidt to the North Pole or set Papanin and his companions adrift upon the breaking Polar ice. It was Soviet housekeeping that demanded the knowledge they could obtain. So they crossed Arctic seas to seek it and found adventures in abundance on the way.

A similar practical motive sent ice-breakers on adventurous journeys from east to west and west to east across the Arctic Ocean. For centuries seamen had dreamed of a north-eastern passage from Atlantic to Pacific. In 1932 Schmidt made the dream come true. He performed the through journey in a single season. Ports, fuel bases and lighthouses now dot the northern waters, and the northern route becomes at last a commercial possibility.

Unremitting geological search combs the Arctic for

useful minerals; Novaya Zemlya yields asbestos, the Vaigach Island non-ferrous metals, Fridtjof Nansen's Land coal, and the Taimir Peninsula mica and oil.

Again, just as Arctic weather influences a whole continent, so alpine weather in the Himalayan and other mountain masses of Central Asia affects the water supply on the level lands that spread out from their slopes, conditioning growth on the cotton farms which depend for water upon the rushing mountain torrents. Asiatic cotton farmers must know the laws which determine weather changes and feed their irrigation canals.

So now an observatory stands perched high up on the Pamir mountains at an altitude of 14,111 feet, with automatic meteorological apparatus still higher up on Stalin peak at 18,312 and 22,390 feet; outposts on the "Roof of the World" which give warning to the farmer in the plains beneath.

In the rocks of the Pamirs the geologist finds innumerable rich minerals, including fluorite, invaluable for optic lenses.

When a great State owns all the mineral wealth of a land and has the wit to concentrate on explorative work, fruitful results are ensured. New resources will be unearthed. The map will demand repeated revision. New names will appear.

The Kuznetsk coalfield supplies a striking example. Found and plotted by the Soviet Union, it now ranks among the world's largest mineral resources: Kuznetsk could supply the whole world's needs, at the present rate of consumption, for 300 years.

Coal, indeed, in vast quantities, appears on the map in widely extended and often in little expected areas. On the banks of the Arctic Pechoa, for instance, or beneath the feet of Moscow citizens.

Prospecting for oil leads to similar results and a chain of new stations is plotted on the latest maps along the entire western slopes of the far-spreading Ural mountains and thence northward to the Arctic and southward to the Caspian Sea.

Indeed Russian mineral wealth of every kind seems inexhaustible. Its range is enormous. The Soviet Union is the only unit in the world which possesses practically all essential raw materials in case of blockade. Brooks Emery, the American economist, enumerating twenty-two strategic raw materials, points out that Great Britain, apart from her colonies, lacks nineteen; Germany lacks eighteen and the U.S.A. lacks nine. The Soviet Union lacks only four—tungsten, tin, antimony and nickel. And already this deficiency is being made good from within the Soviet borders itself.

The Tsarist estimate of two million tons of iron resources has increased to upwards of 260 billion tons.

Long before the Revolution it had been noticed that the magnetic needle showed curious signs of disturbance in Kursk. The earth's magnetic pull on the Kursk steppes exceeds by nearly four times the pull of the northern magnetic pole. The physicist Leitz had endeavoured to reach the metal by boring. His resources proved insufficient and the official Russian science of his day was too sceptical to act. The matter was dropped.

But even whilst the Civil War was yet in full swing, Lenin sent Soviet scientists to investigate in Kursk. Geological exploration began literally under the fire of guns, for the military front crossed the Kursk steppes.

In 1922 ore was discovered at a depth of 160 metres and the estimate of the world's iron resources was doubled at a single bound. The Kursk region possesses as much iron ore as every other iron-bearing district put together.

Apatite and nepheline, invaluable for the manufacture of aluminum, glass, fertilisers and tannin, has also been discovered in almost unlimited quantities in the Kola Peninsula, far north of the Arctic circle. The apatite resources are estimated at two billion tons. The nepheline of the Kola Peninsula is practically inexhaustible. A mountain side has been blasted away to a height of 1,500 feet, exposing an enormous cliff of the white and glittering substance. Fifteen trains are loaded with 6,000 tons of the ore each day.

The geological map of Russia fills in the blank spaces with astonishing rapidity. It is not yet complete, and exploration never pauses. By the beginning of the first Five-Year Plan only 11.5 per cent. of the land was known scientifically. By the beginning of the second Five-Year Plan 25 per cent. was known.

Even in 1933 a network of institutes for geological investigation was being administered by 6,000 engineers and technicians and 100,000 workers. Where else in the world is the equal of this to be seen?

7. RUSSIA'S CHANGING INDUSTRIAL MAP

I

Soviet science explored the possibilities of Soviet wealth. Soviet enterprise began at once to exploit the wealth.

Hand in hand with Soviet exploration went the redistribution of Soviet industry. Advance proceeded along three fronts at once in order to meet new needs.

(1) An inventory was prepared of all national wealth in raw materials and power possibilities.

(2) An educated and technically skilled proletariat was created, as it were, out of the blue.

(3) Industry was redistributed.

It is the last advance which concerns us here. Redistribution of industry has changed and still changes the map of Russia at an unprecedented rate. Maps of yesterday and today deserve careful comparison. They present fascinating data to those skilled in map-reading. For maps can be read as books are read. Geologists read maps. Soldiers read maps. Sociologists read maps. Geological maps plot the nation's wealth. Military maps reveal its strategic positions. Economic maps register its towns, roads, fields and mines and speak of the activities of its men and women and the relationships which exist between them. Maps fix time and record history.

Maps change and the rate of change provides an index of national vitality. Soviet maps, tingling with life and movement, are out of date before the ink is dry on them.

Dispersion of industry, rural enrichment and industrial development leave their marks in vivid splashes on Soviet maps. Neck by neck the industrial map marches along with the geological map. The geologist drives the stake and says: "Dig here"—for coal, oil or iron ore. Mines are sunk and oil wells drilled with a minimum of delay. Time-lag between discovery and exploitation, so disastrously prolonged here, is brief in Russia. Opportunities are seized with avidity and developed with zest.

A vast change was needed. Tsarist industry had been wastefully or unevenly distributed. Factories and works had massed themselves around Moscow and the Ivanov region, all in the extreme west. The east was left a blank. Looking at a map of all the Russias of the Tsars, one saw a very spider's web of railway lines radiating from Moscow and Leningrad, in one-thirtieth part of the whole, and only scanty threads across the twenty-nine thirtieths which comprise the remainder. Lines radiated to and from the Moscow centre or the Leningrad centre with few

lines of inter-communication betwixt town and town other than these.

Physically Moscow and Leningrad were out-of-the-way districts, situated on an insignificant plain in the upper courses of the Russian rivers. The economy of the Empire and the interests of industrial capital had founded an arbitrary centre there. The rich raw materials of Russia's colonies were hauled to the centre, congesting railways and robbing natives in the land of their origin. Coal and metal were sent from the Ukraine to the capital, to the detriment of local metal industries.

Moscow cotton merchants forced upon the inhabitants of Asia their shoddy goods, ruining the beautiful native handicrafts. Exquisite Oriental carpets were replaced by stuff of cheaper make and stained with aniline dyes of coarser quality. Nothing was done to build up native industries. Russian Asia lacked factories. The only textile mill outside the narrow western ring was in Baku, and that worked for the Persian market.

The lead and zinc mines of the Altai mountains, the oil of Transcaucasia and the gold of Siberia were exceptions; but these centres of abstractive industry were rare outposts in an empty land.

A third of Asia, the largest continent in the world, provided less than three per cent. of the total output of all the Russias. Asiatic Russia was "a pool of historical stagnation." The industrial patch on the outskirts of physical Russia, which was called Moscow, had grown into a metropolis. The economic map bore no relation whatsoever to the map of natural resources. In the centre, industries, but no coal, oil or ore. Moscow situated on clay; St. Petersburg on a swamp. The Tsarist rulers neither knew, nor cared to know, that there was combustible shale in the St. Petersburg region, or ores and brown coal in the re-

gion around Moscow. The centre burned fuel not its own, robbed as it were, without adequate compensation, from the Ukraine.

Absurdity could be added to absurdity, such as the silk spinning mill built at Rzhev, on the upper Volga, 2,500 miles from the home of the silkworm; or the copper works in the Ivanov region importing copper from the Urals. Raw materials in one place; factories in another. Finished articles carried back to be sold in the land whence its raw materials had come. Evil added to evil; social labour wasted; the centre dangerously strong, the outer lands dangerously weak; raw materials purchased too cheap, the finished product sold too dear; methods of abstraction wasteful and unscientific, oil pumped from top layers, best trees only felled, and forests by rivers and railways ruthlessly destroyed. Mines were sunk and abandoned. Water penetrated oil-bearing strata. Distributive areas, such as Baku, were connected more intimately with distant Moscow, and with still more distant London, than with adjacent Azerbaijan. Every commodity used—money, pipes and rails—was brought to Baku, none produced locally; all the extracted oil removed from Baku which produced it.

The centre alone grew strong. Away from the centre lay a continent of hunters and shepherds—hungry, illiterate and oppressed.

Lenin saw with utmost clearness the danger and moral obliquity of all this. He wrote: "What of the outlying peasant regions and the rest of Russia, where hundreds of miles of country roads, or rather roadless country, separate villages from the railway, from material connection with culture, with capitalism, with large-scale industry, with the large towns? Does not the patriarchal regime of sloth and semi-savagery predominate in all these places?"

In short, Russia was still a country primarily and primitively agricultural, with an industry which, though considerable in the aggregate, was feebly developed for a country of such huge proportions.

Lenin perceived that this was wrong, morally wrong and nationally dangerous.

Morally wrong, for it was robbing primitive peoples of raw materials, which might have been developed locally to provide the means for an advancing civilised life.

Nationally dangerous because it located Russia's wealth and industry in perilous proximity to German tanks and bombs.

Nationally unhealthy because it failed to use social labour to the best advantage; failed to utilise the abundant opportunities, which the possession of raw materials provided, for spreading the whole continent over evenly with expanding industries maintained by thriving populations.

Soviet leadership produced speedy and radical change. Russia rapidly became an industrial, and economically independent, country, learning new techniques, developing new processes, and creating out of untutored peasants able and skilled industrial workers.

Lenin aimed at "a rational distribution of industry in Russia from the point of view of proximity to raw material, the minimum waste of labour in the graduated process from the working up of raw materials to all the following stages of manufacturing the unfinished goods and even to the production of the finished article."

Works were erected where raw material was found. The path pursued by the product was shortened, social labour was economised. Industry penetrated backward areas, and planned socialist production, unharassed by fear of crip-

pling competition from the centre, grew by leaps and bounds.

The social effects are obvious. The equality of all peoples, which Soviet law had proclaimed, was being realised in fact by destroying the economic backwardness of populations which formerly had been nothing but degraded colonies of Russia.

Stalin, always eager, through his own past experience as a member of an oppressed nationality, for national liberty and national advance, continued vigorously the course outlined by Lenin. In 1923 Stalin wrote: "The Russian proletariat must do everything to ensure that centres of industry are set up in the outlying districts in the culturally backward Republics which are backward, not because of any fault of their own but because they were formerly looked upon as sources of raw material. This task must be achieved."

That was the programme, which is now being fulfilled with zest. Central Asia, Transcaucasia and other lands are subject to speedy industrialisation.

Thus the map changes.

The map of Russia ceases to present a mass of dots and lines on the western fringe with blank spaces throughout the rest of Asia, an industrial island surrounded as it were by a desert. Industry spreads east. The centre certainly grows, it could hardly avoid it. Moscow quadruples her population in twenty-four years. But other regions grow still more rapidly and the difference in the rate of growth lessens the difference in level of prosperity.

The ancient centre slowly changes in character, moving from textile mills to machine tool construction and electro-technical and chemical operations. It discovers and uses its own local raw materials; mines its own coal, burns its own peat and erects its own hydro-electric power

plants. The scientific problems of burning low grade coal and smelting iron with peat have been faced and solved. The science, skill and technique of the old centre now actually aid the regions to equal itself in the race, while centre and regions, thus united, enable the whole of Russia to catch up with the rest of the world in industrial efficiency.

II

Let us concentrate for a moment on an interesting instance of all this, an instance whose significance becomes luminous in the war-ridden world and perils of today. Not always do moral principles and scientific method reap so rich a harvest.

The geological map shows rich coking coal deposits at Kuznetsk. It shows rich iron in the Urals 625 miles to the west. The map of population shows increase in both places. The industrial map shows iron foundries in both. The agricultural map shows local development of foodstuffs in both.

The interpretation of the map is as follows: Soviet geologists found excellent and abundant iron ore in the Urals, the vast mountain range which cuts Russia in two, east and west. They immediately sought its complement in coking coal and found it at Kuznetsk 625 miles further to the east. Iron foundries now operate at both places with railway trucks plying between the two always travelling full, ore moving one way and coal the other.

Two immensely significant steel plants have thus sprung into existence. Yesterday the Ukraine produced the major part of Russia's steel, to the peril of national security. Today the balance is readjusted by the Urals and Kuznetsk, the one 875 miles east of Moscow and the other 625 miles further to the east. Steel works there stand at

both places as mighty forts of Soviet defence. To the layman they look like forts of heavy artillery. Lofty and spacious shops manned with alert operatives. Terse explicit orders ring out in reply to telephone calls from the several shops, like orders on a battlefield determining the range and intensity of fire. Special quality steel issues from these Ural works. Zest and zeal drive the output up as never before. The year's schedule was completed early in last November. Output per square metre of furnace surface has been increased by the work of men like Popov, Basetov and Fedetov; while the steel smelter Ushakov has cut the time necessary for full operations down to the low level of nine hours.

Women replace men, even in the steel works, where forty-five per cent. of the workers today are women. Old-timers return from their pensioned leisure. New workers are speedily trained to replace those called up for service. No one counts his time his own. Each is eager to economise every minute of the nation's time. Munition factories, evacuated wholesale from the occupied areas, are packed thick into the Urals, whose population grows incessantly.

Scientists join in the public effort and work with renewed intensity, adapting themselves in the present emergency to short-range work for speeding the war effort. Research parties start out forthwith; crowded trunks block the corridors of scientific institutes. One group, under A. I. Ivanov, searched the Middle Urals for a rare element needed in making high-quality steel, and found it. The State Metallurgical Department already exploits the precious deposits.

Scientific workers have plotted out a detailed map of the titanium-magnesite deposits. The Ural branch of the Academy explores the possibility of enlarging its vana-

dium supply. Lotkin has found a deposit of wolfram, the ore which yields tungsten. New methods have been applied with success to the discovery of fresh deposits of copper pyrites.

Women geologists, Zabolotskaya, Barisheva and others, labour beside the men.

Hundreds of millions of tons of new coal deposits have been found. Coal production next year will increase by eighty per cent. as compared with 1941.

Science mobilizes all its knowledge in the service of national defence.

Kuznetsk and the Urals have a special and topical interest in wartime. To me they assumed high significance in view of Hitler's unwarranted attack, and on the fifth day of the Russo-German war I could write in confidence that, even if Moscow and Leningrad fell—and I believed they would not fall—Russia would never yield but would fall back on the Urals, another great arsenal 875 miles away to the east. If that should fall, which was still more improbable, Russia had Kuznetsk 625 miles still farther to the east, compelling the advancing Germans to stretch out a supply line perilously long, courting military disaster.

The development of the Urals and Kuznetsk are however only typical of a change in the map which is at once universal and deliberately planned and takes place over two continents in territory whose extent staggers the imagination.

8. HARNESSING SOLAR POWER

THE industrialisation which was to change the map of Russia depended upon Russia's power possibilities. Goods were needed for living: food, clothes and houses. Weapons

were needed for defence. Machines were needed to make both goods and weapons. Metals were needed to make machines and power was needed to drive them.

Power was primary.

Lenin saw it and with brilliant clarity said: "To save Russia we require not only a good harvest in the peasant farms, that is not sufficient. We need not only an efficient light industry which will be sufficient to supply the peasantry with the manufactured goods they require, for this too is not enough. We must have a heavy industry. Without the restoration and development of our heavy industry we shall be unable to organise any industry, and without organising our industry we should perish as an independent country. We must be able, by exercising the greatest possible economy in the State, to use every kopek we save to develop our large-scale industry, to develop electric power . . ."

Lenin saw that power was fundamental.

Machines need power to produce, and power to drive them.

The discovery of sources of power other than human muscles has made possible what Russia has done. Power has shifted the burden from the back of man to the back of the machine. Power comes from the sun. The sun must be harnessed.

Ours is a *power* age; an age skilled in the art of harnessing the sun. We dam rivers, harnessing the power that lifts sea to the sky and discharges it again as rain. We take coal or oil, the bottled sunshine of a million years and harness their expansive and explosive powers to drive hammers and axes and give heat and light. It is solar power which replaces muscles in modern life.

Power plants discard human labour. Working in terrible solitude they can be controlled by a handful of men.

One British station alone in its twenty-four-hour run provides energy equal to the entire adult employed population of England, or nearly so.

Lenin rightly took stock of Russia's sources of solar power; of coal, oil, and falling water.

Lenin concentrated first on falling water power. He quickly saw Russia's hydro-electric potentialities. "One of the most important tasks," he declared, "facing the national economy was to devote special attention to the electrification of industry and transport and to the application of electricity to agriculture."

Up till then Russia's electrical development had been negligible, though her potentialities were stupendous. So at least thought Lenin, though here he differed from H. G. Wells, who for once proved a wrong prophet. Wells had written in his notebook of 1920 that Lenin had succumbed to the Utopia of the electricians: "He is throwing his weight into a scheme for the development of a great power station in Russia to serve whole provinces with light, with transport and with power . . . Can you imagine a more courageous project in a vast flat land of forests and illiterate peasants, with no water power, with no technical skill available, with trade and industry at the last gasp? Projects for such electrification are in process of development in Holland and they have been discussed in England, and in those densely populated and highly developed centres one can imagine them as successful, economical and altogether beneficial. But their application in Russia is an altogether greater strain upon constructive imagination. I can't see anything of that sort happening in this dark crystal of Russia, but the little man in the Kremlin can . . ."

And the little man was right.

The Dnieper Dam is the proof.

Now blown up by Russian mines to prevent its employment for German industry, the dam was planned while German bullets were still singing over the banks of the Dnieper in 1921.

"Without a plan for electrification," said Lenin at the Eighth All Russian Congress, "we cannot tackle the work of actual construction. We need this programme as the first rough draft to be placed before the whole of Russia of an economic plan, calculated ahead for at least ten years and showing the way now to give Russia in actual fact the economic basis that is required by Communism . . . Communism is Soviet Government plus the electrification of the whole country. Otherwise the country will remain the country of small peasant economy, and it is up to us to realise this quite clearly."

In March, 1921, Stalin wrote to Lenin:

I move:

(1) That not a single minute more be wasted on talking about the plan.

(2) That a practical start be made.

(3 That at least one-third . . . of all we do be subordinated to the interest of this start.

And the start was made on the Dnieper.

Rocks were blasted. Rails laid. Excavators moved to the attack and at length, after eleven years, the dam was complete and a mighty river finally harnessed.

The dammed up waters rose above their former level as high as a six-storied building. Great steamers, lifted from the lower river through giant locks, steam through sixty miles of broad waters where rapids had formerly barred their path.

A turbulent stream, dashing over its rocky bed at 3,000 cubic yards a second, is now harnessed in a silent flow

within nine turbines, through channels many yards in diameter to generate power nearly double that of the Niagara plant.

"Come to Russia in ten years' time and see what we shall have done in the meantime," said Lenin as Wells left him in 1921. In 1932 the dam was completed.

The Dnieper dam looms large in our imagination now. It is but one of Russia's many electrical works.

The Russian Government, driven from Moscow by the exigencies of the war, moved to Kuibyshev, because Kuibyshev is the site of a power station destined, when all is completed, to be the largest in the world, conquering floods and droughts, carrying ocean steamers through a land of cotton fields and fertile crops where only desert had reigned before.

Pylons and cables intrude upon the Soviet scene.

Hydro-electric stations arise on the shores of Arctic seas, on the sultry steppes of Kazakstan or high up in Armenia, where Ararat rises to the skies and the mountain torrents roar down to feed Lake Sevan.

Grandiose schemes, eclipsing those of the Dnieper and Kuibyshev, propose to utilise the fall of the Angara and Yenesei and other huge rivers to electrify the Far Eastern territory of the Soviet Union.

No vested interests, no property rights, check the growth of Russia's electrical development. Soviet engineers are free to use the best sites and concentrate investment upon gigantic installations with unmixed blessings for every Soviet citizen.

II

Hydro-electric stations occupy the premier place in Russia's power scheme. But other sources of power are by no means neglected. For Russia advances in the matter of

power production, as in other respects, on many fronts at once.

Coal, the bottled sunshine from prehistoric forests, has been England's major source of power. On coal England rose to her industrial pre-eminence. The very difficulties of procuring coal opened new avenues to industrial advance. Flooded mines demanded pumps. Invention harnessed steam, raised by burning coal, to rid the mines of water. The stationary steam engine was a British response to urgent need. Steam harnessed to the pumps proved a stepping-stone to steam harnessed to the hauling of trucks. And not long afterwards steam was carrying passengers, driving cotton looms, wielding hammers and sawing logs. England had abundant coal for power and England grew rich and prosperous, through skilful use of her fuel resources.

Russia too has coal. More coal than England. More coal than any land. Perhaps more coal than the rest of the world's coal resources all pooled together.

Tsarist Russia never dreamt of the riches latent in her coal supplies. In the coal map of pre-revolutionary Russia the Don basin stood unchallenged but perilously exposed to enemy attack. The coal map otherwise was blank.

Soviet Russia has filled in the blank places. Following the geologists' curt "Dig here," railroads are laid, shafts sunk, winding heads raised; villages, towns, schools, hospitals, cinemas, orchards, gardens and wheat fields spring into being and new areas of thriving industry and vital human life speedily follow the enterprising pioneers.

Coal shafts begin to form a chain across the continent. We have spoken of Kuznetsk and the Urals and their paramount importance in time of war. They do not stand alone. Russia, driven out from the Don, has other sources of heat, light and power, other hydro-electric works, other

coal mines, and other technically trained and vital populations to man her machines, to fly her planes and fire her guns. Not often, nor so dramatically, is moral policy so speedily justified as it has been in Russia's newly distributed industry and feverishly developed natural resources.

The vast river Yenesei, running through Eastern Siberia from south to north along the central axis between the Atlantic and Pacific Oceans, traverses a coal field which promises to rival the riches of the Kuznetsk basin.

Huge outcrops are discovered in Pechora of the frozen north and again in Karaganda on the sultry steppes of Kazakstan. On the Amur river, over against Japan, is a coal field with resources estimated at 100,000 million tons.

Russia, however, seeks to avoid the evils in the use of coal, which have cast a blight over our own and other lands.

For coal has changed the face of England in more respects than one. Coal gave England industrial pre-eminence, but coal darkened English skies, and painted England black; her trees and fields, her clothes all turned to sombre black. England's coal age has been England's dark age. Coal drove England's population into cities. Coal denuded her countryside. Coal drew men from the hilltops to the valleys, where railways could run. Coal hewn solely for profit and uncontrolled in its application, wrought evil as well as good.

Soviet Russia plans her coal extraction and her coal consumption in the interests of human life. She burns her coal, wherever possible, where coal is found, and transmits the power by electric cable where need demands.

Furthermore, Soviet Russia introduces new methods of mining. Not only by highly developed cutting instruments, saving the miners' muscles and lessening the mining hours required for the standard unit of production,

but by radical changes in the very method and place of its conversion into power. As far back as 1881 Professor Ramsay had suggested a means by which coal could be turned into gas as it lay in the unhewn seams of the earth. Ramsay's ideas lay dormant until Soviet soil gave them new life. And once again it was Lenin, the dreamer, who said:

"Under Socialism the application of Ramsay's method, through 'liberating' the labour of millions of miners, and so on, will permit the reducing of working hours for everyone from eight to, say, seven or even less than that . . . will render work more hygienic, will relieve millions of workers of smoke, dust and dirt, will speed up the conversion of filthy, abhorrent workshops into clean light laboratories worthy of man."

Experiments began in 1931. In 1938 gas from underground gasification had been supplied to the boiler furnaces of a chemical coking plant. By 1939 the Gorlovka station in the Donbas was supplying 15,000 cubic metres of gas an hour. Its output since then has rapidly increased and a large plant has been designed at Lisichank to supply 100,000 cubic metres an hour.

In principle the process is simple. A shaft, driven above the seam to the far end of the coal to be operated on, admits air to a controlled fire, transforming the coal into a gas, which finds its way to the surface along a second shaft driven below the coal seam. The numerous technical problems in the application of the principle, such for instance as the proportions of air and oxygen needed to produce gas of different qualities, some suitable for lighting and some for heat and power, have been patiently overcome.

The process extends. Mining operations and the transport of coal are proportionally eliminated, whilst the cost

of gas has been cut by fifty per cent. Workers are freed from dangerous tasks. Valuable national material is economised. Labour is saved. Skies grow cleaner and the air purer. Health improves.

Russia plans in other ways also to ease the miner's burden and economise fuel. Chief among these is the utilisation of heat, now wasted in countries like England on a huge scale in the process of cooling steam engines, where the steaming canal beside factories is a familiar sight. Steam engines require coolers to condense the steam and add to the back-pressure on the piston head. Those coolers extract heat. In England this heat is lost. In Russia it is utilised for district heating.

To burn coal in every house and every room is uneconomic, and even in modern electric power stations about two-thirds of the fuel consumption is wasted owing to the loss of heat in cooling the water.

"Heatification" is the name Russia has coined for district heating through waste steam, and she began the process in a small way in 1924, when two pipes were laid down in Leningrad. By 1929 thirty-four consumers were coupled up. By 1938 the heat distribution in Leningrad had an extension of forty-four miles. By 1939 the amount of heat distributed in the U.S.S.R., after a development period of only fifteen years, was equal to the heat supplied by all the gas industries of England in the year 1933.

The planning of heatification is now combined with the planning of electrification. The aim is to supply heat from the main to every house with an immense saving in dirt, smoke and energy: no groping down to the cellar to fire, at wasteful cost, the household boiler.

In Moscow the boon is even greater than it would be here, for Moscow's local coal is of a peculiar nature. It is a shale with a large potash content and loses a large per-

centage of its heat-giving properties unless burned within some twenty-four hours of being brought to the surface. While thus ill adapted for burning in a household grate or boiler it can be used scientifically and economically for large-scale production of electric power on the spot, Kashira, where it is mined, with the additional advantage that the potash residue can be utilised in making china in an adjacent factory erected for that very purpose. Heat from the main sets free household coal which must otherwise travel 600 miles from the Donets basin, where it is needed for local uses.

The net result of all these simple and effective economies is fewer miners, cleaner towns and a healthier race.

9. PREPARING MATERIALS

POWER works through machines. Metals are indispensable for machines. Power and metals are primary.

Civilised living has two rough standards of measurement, the power standard and the metal standard; the horsepower employed and the metal tonnage produced.

In a cultural museum at Oslo or at Nuremberg we may examine at leisure the re-created primitive log hut and its utensils. Wood predominates. Metal is scarce. The hut is fitted and pegged, not nailed and bolted. Wooden platters for eating, wooden beds for sleeping, wooden carts for riding, wooden stakes for defence and wooden pikes for assault. Metal is rare: a pot perhaps for cooking, an axe for cutting and a hammer for smashing and driving stakes.

In the modern house, on the other hand, and on the modern battlefield, metal predominates; saucepans, hearths, cookers, irons and sewing-machines; guns, tanks,

shells and bombs. Metals everywhere. Light metals, strong metals, white metals, yellow metals, stainless metals.

Iron and steel are basic.

Heavy machines are made of steel. Rails and locomotives are made of steel. Beams and girders for building; wheels and frames and couplings for spinning machines and weaving machines; chassis, cylinders and crankshafts for motor cars. Steel has a thousand uses. Steel is basic.

Hence the saying that national advance in the arts of civilised life may be judged by steel consumption.

Tsarist Russia used a minimum of steel per head. The United States leads the world in steel consumption. But Russian use of steel advances at a rate unparalleled in any period of American history.

A world of information can be extracted from such a table as the following of pig-iron production, pig-iron forming the basis of steel production:

Production of Pig-Iron in the U.S.S.R.
(Millions of tons)

1913	4.2	1932	6.2
1920	0.1	1934	10.4
1927-28	3.3	1937	16.0

The first figure, 4.2, was normal for Tsarist days. The next figure, 0.1, shows the drop through war, famine and civil war. The third figure, 3.3 in 1927, shows that the Soviets are recovering ground. The last two figures show the leap ahead under the new moral and scientific stimulus of Soviet economy. Figures of today are more striking still.

Russia increases iron and steel output with startling rapidity, and broadens the base of its construction. The metallurgical south is reborn, with new blast-furnaces and open-hearth furnaces: it could boast before the war that it

possessed one of Europe's largest blast-furnaces. But the south no longer predominates.

In 1913 the Donbas produced seventy-four per cent. of Russia's pig-iron. The balance is now tipped eastwards. Six new blast-furnaces of the Ural-Kuznetsk Combine rise 130 feet into the air and illuminate the night sky a thousand miles away from Hitler's planes, in what was once a barren tract. The output here is huge, scheduled for 14.5 million tons in 1942, or two and a half times Japan's total steel production.

War creates enormous demands for raw materials. Iron obtained annually from all deposits, or oil pumped from all wells, is exhausted in a single month of war. More metal, more coal, more oil and more mineral salts is the motto which sends geological parties digging and boring for fresh deposits and urges technicians to speed the process of production.

"Never has metal been smelted at such a rate before," writes an *Izvestia* correspondent from Magnitogorsk. "The steel worker Sokolov has completed his batch two hours and forty-five minutes ahead of schedule." Every iron and steel works shows now a similar accelerated production.

The fruit of the moral Soviet regional policy of developing minerals where they are found and using them to build up a prosperous cultivated local population has been abundantly justified, as Hitler is learning to his cost. The loss of the Donbas was a grievous blow to Russia, but not a fatal blow. For the Urals and Kuznetsk enabled the undefeated armies of Russia to fight on.

And other mills in other regions still more remote assist them; the smelting factory of Novo-Tagitsky in the north and the Bakal and Khalibov works in the south share the task, and another mill risen at Chelyabinsk. Far Eastern Siberia erects for local needs a mill which, though it would

be unprofitable for private enterprise, yet serves Soviet needs of providing a metal base where need demands it.

Nor is the extreme east neglected. A metal base arises on the Amur River and its tributary. In the extreme west, on the other hand, Moscow is utilising its own coal, peat, coke, pyrites and metal scrap; extending its own metal base and diminishing its former metal deficiency.

Iron and steel are basic, but other metals are also needed and other metals are found. Non-ferrous metals, which assume increased importance today, not only for their own sake, as in the case of copper, nickel and aluminum, but also for their influence as alloys on basic iron and steel. Metal alloys replace the simpler metals for a multiplicity of uses. And scarcer and rarer metals prove invaluable in their manufacture. Discovered in small deposits perhaps, but used in small quantities, their value cannot be exaggerated.

Formerly Russia imported a great percentage of her non-ferrous metals, copper, lead, zinc and nickel. Today she digs them from Russia's soil and works them, when possible, where they are found. Copper occurs in quantity in the Urals, and in greater quantity in Kazakstan, where the Pribalkhashsky Combine rapidly becomes one of the largest enterprises of the copper industry in the world, supplying Central Asia for the first time in its history with a copper industry.

Aluminum works, nickel works, magnesium works appear. Gold is mined from resources the largest in the world. Other metals occur and are eagerly sought, especially at the moment when external supplies are threatened by war. Geologists ply yet more diligently their quest for every species of metal; for aluminum, chromium, nickel, cobalt, corundum, sulphur, pyrites and mineral salts.

The search is keenest where close proximity to railways involves least expenditure of effort, transport and power.

Chromium, niobium, vanadium are valued for alloys to produce up-to-date strong tanks; aluminum, magnesium and beryllium for constructing light, strong aircraft.

Russian science concentrates for the moment on immediate war needs. When peace comes the long-range view will once more return.

Soviet chemists pull their weight beside Soviet metallurgists. The chemical age competes with the metal age. Plastics invade the factory and the home. Cars run on synthetic rubber. Cloth is woven of artificial fibre and stained with artificial dyes. Fields thrive on artificial fertilisers. Ships no longer take perilous journeys 7,000 miles around Cape Horn to seek nitrates from Chile to fertilise our fields. Sixty miles of nitrogen rise vertically above our heads. The chemist brings it down like snowflakes from the point of a carbon needle, extracted solely from the atmosphere.

The chemist helps indirectly with our food supplies, extracting margarine from coal, and designing, with cellulose-splitting enzymes, to convert wood pulp into palatable food.

Russia is rich in chemicals. Russia could supply the whole world with nitrogen, potassium, phosphorus and sulphur, substances fundamental to the chemical industry. Yet Tsarist Russia ignored the chemist. At the seaports, on the external frontiers of Russia, foreign capitalists worked on imported raw materials, sulphur pyrites from Italy, phosphorites from Morocco and rubber from Brazil. Native raw materials were ignored.

Under the Soviets the native chemical industry was born and quickly grew. Nitrogen was produced extensively, aniline dyes distilled, plastics and artificial fibre and

a host of other essential substances extracted and developed.

Russia's enormous natural resources are exploited unceasingly. Apatite, the phosphoric raw material from which fertilisers are made, is excavated in immense quantities from the Kola Peninsula in the far north and helps to pay British and American bills for tanks. Ammonia and soda are amongst the many products from the Urals, where coal, potassium, limestone, salt, sulphur, pyrites and phosphorites lie close to each other and ready to be used.

Glauber's salts are extracted from the lifeless shores of the Caspian sea and the Kara-Kum desert beyond it.

Synthetic rubber is a thriving industry. The Kara-Kum desert motor race of 1933 was run on Russian-made synthetic rubber tyres.

10. MAKING MACHINES

SOLAR power, replacing human slaves, operates, as we saw, through machines. Machines multiply the fingers of men. Machines weave cloth, plough fields, transport goods, conquer oceans and air. Machines assume multitudinous forms and perform multitudinous tasks, producing goods in incredible quantities at incredible speeds.

Machines undertake every species of task, heavy or fine. The rough hand of an electric shovel scoops up a ton at a bite, shifting 30,000 cubic yards of earth in twenty-four hours and displacing a gang of 15,000 workers. The sensitive finger of a lamp-making machine casts off its shower of electric bulbs at the rate of 422 per minute and relieves 10,000 men.

The United States leads in the multiplicity and com-

plexity of its machines. Tsarist Russia lingered furthest behind. Soviet Russia challenges the whole world by its present rate of progress.

Tsarist Russia produced, for instance, no agricultural combines or tractors. Few were used, and even those were imported. Scythes, Russia's major agricultural implement, came from Austria.

Such machine factories as existed were confined to the centre and the Ukraine. The East not only lacked the factories; it seldom saw a machine.

The U.S.S.R. had a long furrow to plough to catch up with the rest of the world, but her leaders, tackling machine problems with the same energy which had mastered power problems, educated peasants into mechanics and erected construction plants where their product was needed most.

New branches of the machine industry were created: motor and tractor building, aeroplane construction and the like. Russia's constructive skill grows. No species of machine daunts the Soviet worker. Complex automatic machines, new models of machine tools, complete metallurgical equipment and many refinements of apparatus hitherto confined to the most highly skilled nations are designed and executed in Russian factories.

The Plan reserves the centre, Moscow and Leningrad, for complex and exact machine construction. In that direction their operations expand. The ball-bearing factory in Moscow, for instance, becomes noted for its skill and magnitude: all Russia rolls on Moscow's ball-bearings. Moscow specialises in fine cutting and measuring instruments; Leningrad in heavy steamer and hydro-generating plants.

So much for the centre.

But machine construction bursts the bonds of its former

home in the west and travels eastwards and into backward lands. Agricultural regions now not only employ machines, they make them. The cultural level of the agricultural labourer rises. Peasants who yesterday dug the earth and scattered the seed now manipulate complex scientific tools. Machine-building plants rise in the purely agricultural regions of the Volga and the Northern Caucasus. Stalingrad has its tractor works; Saratov its combine factory; Kuibyshev its automobile plant. In the second Five-Year Plan the U.S.S.R. constructed four large automobile works to provide industrially undeveloped regions with industrial equipment and enterprises.

Machine-building plants have been wisely placed and wisely planned. They work for no capricious market. They know where their product is to go. Agricultural machinery is developed where it best serves agriculture, machine-tool construction where machines are intensively produced, textile engineering where cloth is woven and spun. Starting even from zero the eastern region had accounted for one-tenth of all Russian machine production by 1937. Never too strongly can we urge that it is Russia's moral, scientific and common-sense programme which has been the means today of her—and our—salvation. For, as was the case with iron and steel, so here it is to the newly created areas of machine-tool construction that the plants removed so skilfully and on so large a scale from the Donbas found a home, while the heavy machines and the metals for their construction were already being produced beyond the range of German bombs.

Whilst no branch of machine construction is now neglected, and whilst the range of variety and the mass of output increase with accelerating speed, it is perhaps in this realm of agricultural machinery that progress has been most dramatic.

When war broke out in June, 1941, Moscow was enjoying the thrill of a great All-Union Agricultural Exhibition. Half a million people visited the Mechanisation Pavilion in three weeks. Among the 400 agricultural machines exhibited eighty were new or modernised forms, as compared even with the last year's display. Arduous and complex processes formerly performed by hand are now turned over to machines. Not only is ninety per cent. of ploughing and reaping done by machines and fifty per cent. of grain harvesting by combine harvesters, there is a parallel and steady increase of ingenious machines for specified processes connected with industrial crops.

When a machine is perfected and able to stand up to all tests, especially the test of actual work on farms, it is handed over for mass production and Soviet engineers tackle fresh problems. They were working, at the outset of the war, on 150 new types of agricultural machine models. That is not to mention work on tractors and trucks of new design. The Communist Party had achieved the all-round mechanisation of agriculture during the third Five-Year Plan, engineering energies during its two earlier years having been directed to mechanising grain cultivation. Now it concentrates on the mechanisation of sowing and harvesting industrial crops.

Soviet engineers, for example, have designed the world's first combines for harvesting crops such as sugar beet, flax, hay, maize and potatoes. One machine model, made at Rostov-on-Don, is experimenting on picking and pressing tea leaves and, at the same time, pruning the bushes. Machines are made which can plough submerged rice fields or plant vegetables. The new flax combine harvester not only accelerates harvesting but improves the quantity and quality of the fibre. A mechanical trencher digs the soil on the sugar-beet plantation and hills it up against

the roots; at harvest a combine digs up the roots, cuts off the tops and stacks the tubers in piles, harvesting an acre an hour. The flax combine pulls, cleans and binds three acres of flax in an hour. Other machines will clean between 1500 and 1700 pounds of raw cotton in an hour.

Unification of production is the necessary counterpart of variety of production. For instance, instead of twenty-one different combine harvesters designed for twenty-one different crops, it was found that one model serves for the major part of each machine, with slight changes of appliance for particular crops. This cheapened and quickened production and extended indefinitely the use of the machines when made. One seed drill is manufactured now where, formerly, five were made. This inaugurates a new technical revolution in the production and exploitation of farm equipment. It saves metal and sets miners free.

An annual output of 50,000 universal cultivators, now made possible by unification, is aimed at, with a corresponding fall in the net cost of production and a simplification of spare parts and workshop repairs.

Having outstripped the most advanced countries in the field of known agricultural machinery, Soviet Russia blazes wholly new trails in appliance and technique.

11. PRODUCE OF FIELD AND FARM

I

MACHINES are not an end in themselves. Machines have a purpose. Machines harness solar power and produce speedily in the mass what man makes slowly and individually by hand. Machines produce bread, sugar, clothes and boots, but demand wheat, wool, cane and leather on which to operate.

Machines need farms and farms need machines. Tsarist

farming lacked machines. Twenty million petty peasant farms were the main element in the Tsarist agricultural economy, ill-equipped, ill-planned and totally unscientific in design and in method. Rotation of crops was scarcely known and seldom practised. Artificial fertilisers were rarely used. The function of the sun in the growth of plants was unexplored. Poor seed and poor soil produced inadequate crops. Hand labour permitted no surplus beyond provision for the peasants' personal needs. Peasant farmers in their ignorance wrought incalculable harm to the land, destroyed primeval forests, ruined ancient pasture lands.

Agriculture itself, viewed broadly, was ill-balanced. The areas lying north of the Black-Soil Belt—which ran eastwards from Kiev and served as mainstay for the nation's larder—produced little and drew its foodstuffs from the south. Grain-trucks blocked railway lines. Swamps stood undrained. The possibilities of the frozen lands of the north and the deserts of the south remained unexplored and unutilized by men to whom science was a closed book and rule of thumb served as the rule of life.

The Soviets effected radical and rapid changes. With the needs of the whole community in mind, and under scientific direction, they reconstructed the Soviet map with astonishing speed. Golden grain spread out to north and east. White bolls of the cotton plant pushed their way along the southern steppes. Marshes were transformed into green pastures. Deserts blossomed and new regions of agricultural activity replaced the old blank spaces of the Tsarist map.

No easy task all this; nor undertaken in a casual way. It involved a thorough-going application of scientific method, and armies of scientific workers. Over and above all it needed a peasantry who understood the aim of the

new plan and who proved willing to co-operate with it.

Of primary importance was the transition from petty agricultural units, incapable of developing the industry for the future or of providing the surplus needed to feed the towns today, into units larger and more profitable. In December, 1929, Stalin said:

> "Can we develop our socialised industry at an accelerated pace with its agricultural basis consisting of a petty peasant economy which is incapable of increasing the extent of its reproduction and is moreover the predominant force in our national economy? No, we cannot . . . What we must do is to consolidate agriculture, to make it capable of accumulation . . . We must choose one of two paths . . . there is the capitalist path . . . We reject this . . . There is the Socialist path which consists of the implantation of collective farms and State farms in agricultural economy, a path which leads to the union of petty peasant farms with large scale collective farms equipped with technique and science and to the ousting of capitalist elements out of agriculture. We have chosen the second path."

During the period of the first Five-Year Plan (1929-32) agriculture was completely reorganised and a network of State farms, collective farms and machine and tractor stations was created and now preponderates. These machines and stations, together with the State farms, are the property of the State, that is of the whole people.

The collective farms are voluntary co-operative organisations. Their characteristics are defined as follows in the constitution:

> "Public enterprises in collective forms—with their livestock and implements, products raised or manufac-

tured by the collective farms . . . as well as their public structures, constitute the public, socialist property of the collective farms.

"Every collective farm household, in addition to its basic income from the collective farm enterprise, has for its own use a plot of land attached to the house, and, as personal property, an auxiliary establishment on the plot, a house, produce, animals and poultry, and minor agricultural implements . . ."

The income of the collective farm is divided amongst the members in accordance with the quality and quantity of labour expended by each; the labour being measured in "labour days" and paid for in kind or by money earned through the sale of the farm's produce.

The law permits private peasant ownership to exist side by side with collective farms. But by 1937 there were 243,700 collective farms, uniting ninety-three per cent. of all the peasant farms. State farms in the same year numbered 4,137; machine and tractor stations 5,819.

This change in the character of the Soviet farm led speedily, as was designed, to a change in its technical character. The scythe and sickle, the wooden plough and harrow have been replaced entirely by modern machinery. Machine and tractor stations enable the peasant to employ advanced agricultural appliances. Farms provide the labour, tractor stations provide the machines, whose pay for hire is in kind.

The process of mechanisation has been rapid. The capacity in horse power of tractors advanced from 278,000 in 1928 to 8,200,000 in 1937. The value of agricultural machinery advanced from 279 million rubles in 1928 to 2,439 million in 1937.

Agricultural labour, equipped with advanced machin-

ery, has become a form of industrial labour: its workers are trained in agricultural universities and technical schools. Between 1934 and 1937 the State Grain and Livestock Farms trained 1,195,357 tractor operators and 139,402 combine-harvester operators.

II

The reorganisation of farming and its mechanisation has been paralleled by a new zest for science in agriculture and horticulture.

Science on farm and field in Russia owes an incalculable debt to a Russian who had been condemned to work most of his life in obscurity.

Long before the Revolution Russia possessed, in Michurin, an horticulturist of outstanding merit. Born eighty-five years ago, he had plodded on in isolation, stinted in funds and unsupported by the Tsarist regime. In 1914 he wrote: "The years have passed and my strength is waning: it is terribly hard to have toiled without reward so many years for the common good and to be left without security in old age."

From the Soviets he received aid and immediate encouragement. Nearing his eightieth year he was able to say: "Life has become different . . . intensely joyous . . ."

Michurin was the magician who created raspberries, gooseberries and cherries of extraordinary size, seedless barberries and tangerines immune from frost. Michurin evolved the stunted cherry, which, buried beneath the wintry snow, escaped the rigours of wintry frost. Michurin produced a hybrid of strawberry and raspberry which grew on bushes. Michurin's roses bloom on Arctic shores. "Red magic" is Professor Hanson's epithet for Michurin's achievements.

The cardinal principles of Michurin's work are not diffi-

cult to grasp. They reflect the simplicity of genius.

Academician B. Keller summarises them as follows:

The crossing of plants far removed, *e.g.*, the wild with the cultivated cherry, or the Chinese apple with the desert grey—remote hybridisation is the technical name for the process—yields interesting results. Wishing, for instance, to evolve a pear as luscious as the French Beurre Royale and yet winter resistant for northern climates, Michurin rejected the idea of crossing the French pear with a winter-resistant pear from local parts. He knew that the wild pear, accustomed to the severe local climate, would win. He used instead a wild Ussuri pear, winter resistant, but imported from a distant locality and therefore lacking the local adaptability. His experiment succeeded.

Michurin taught that by cross-breeding plants from distant areas, in an area strange to both, the resultant plant becomes pliable and adaptable to new surroundings. It can be steered to any required end. Michurin tapped the wealth of hardihood and productivity which nature had banked up in wild plants through millions of years of plant history.

Michurin made another conquest. He crossed the American Belle Fleur apple with a Chinese apple, and evolved a new variety different from both, but whose fruit was of little value because it came early, was small and failed to last. So on the new variety—the Chinese Belle Fleur—he grafted again the American Belle Fleur, which taught the young plant the lesson it had apparently forgotten. The fruit at once improved, came a week later, and lasted seven weeks longer.

Michurin loved wild plants. He believed in their potentialities. He showed that in the existence of wild plants, the despised "Cinderellas" of nature, lay hidden inex-

haustible sources for renewing, enforcing and raising to fresh heights the entire world of cultivated plants.

Where Darwin had explained the evolution of plants, Michurin accomplished it.

III

The teaching of Michurin gains ground rapidly. It passes from strength to strength, carried on in the south, for example, by T. Lysenko working near Odessa with his methods of seed vernalisation and summer planting of potatoes.

Lysenko's success with wheat has added millions of bushels annually to Russia's granary. By extensive experiments he has established the important fact that plants develop through definite stages, which must follow one another in strict succession. Each stage has its own peculiarities and requirements. No stage can be omitted.

For example, there exists in the beginning of the life of a plant a stage when, if it is to develop further, it demands a definite temperature. Failing that temperature, development ceases.

This thesis was brilliantly confirmed by experiments with what is called winter wheat; the wheat that, when sown in the autumn, remains in the cold ground throughout the winter months.

To sow that wheat in the spring produces no results. It has missed its spell of cold.

Lysenko next discovered that plants can pass through their early stages not only in the soil but also out of it. Water and a low temperature are sufficient, and these can be given on a granary floor. The winter wheat, thus treated, skips a stage, as it were, and is ready to leap ahead when planted in the spring. Winter wheat becomes vernal

or spring wheat. Hence the name "vernalisation" for the process.

Thus is shortened the gap between sowing and reaping, which means in Russia that wheat can achieve good harvests in the far south where a week longer of scorching heat often blights the grain if the harvest is too long delayed; or when, in the north, an early harvest saves blight by frost.

Lysenko had similar success with potatoes.

On a farm near Odessa he discovered that by planting potatoes at the end of June instead of in the springtime big tubers could be produced in hot climates, a thing never previously achieved.

The reason was simple, but it took a first-class scientist to perceive it. Potatoes sown in springtime ripen in midsummer and doing so soon rot through the excessive heat. Potatoes sown in June, on the other hand, ripen in August-September, and, escaping the summer heat, swell in size as if in the north.

Beginning his experiments in 1935 the Russian scientist could avoid the gap between discovery and its fruitful application so grievously apparent here, and by 1940 saw 375,000 acres in the south yielding crops which five years ago would have been deemed miraculous.

Another scientist, similarly pioneering, has produced wheat in Kamchatka, the snowiest place on earth, and thus saved the costly transport of food to workers in that distant land. The snows hitherto have lasted too long in view of so short a summer's sunshine for the culture of wheat.

Titlyanov solved the problem with masterly simplicity. His dog-sled driver gave the clue when he said, on seeing the smoke arising from the Klynchevsky volcano: "Smoking again, if it starts spilling ashes around, there won't be

any sleds any more; spring will come sooner, and there'll be less time for hunting."

Titlyanov seized the hint and sowed ashes on a sixty square metre plot. The ashes caught the sun's rays. The snow rapidly melted. The earth warmed up. Wheat on Titlyanov plot was green while elsewhere people rode their sledges.

IV

Yet another scientific worker pioneering as a populariser of science is Timiryazov. "I work for science and write for the people," said Timiryazov, as he deliberately cultivated the art of graphic writing, much as Professor Huxley did last century in England, and has now succeeded in bringing the most advanced scientific ideas to the people by the use of simple, live and figurative language.

He never pursued science for science's sake, but rather in order that creative thought be transmitted to all mankind.

Timiryazov's special scientific task has been to examine the effect of the sun's action in the production of life upon earth: "The chlorophyl grain is that focus, that point in space, in which the vital force of the solar ray . . . is formed and accumulated, to be gradually released later . . ." And he adds: "The physiologist cannot rest content with the passive role of observer; as an experimenter he directs nature."

Timiryazov's popular expositions have enlisted an army of workers in the task of intelligent study and control of nature. Especially imparting to them an understanding of the sun's action in relation to life in order that they might make full use of the solar rays to advance its development.

The fruits of all this labour were exhibited at the great

Agricultural Show in Moscow in 1939, when Yefremov sowed his famous plot of wheat.

Yefremov and his companions had obtained a harvest-yield unknown before in history: eight tons per acre. They believe they can produce thirteen tons per acre.

Yefremov had absorbed the teaching of Timiryazov that the limits of fertility are determined by the amount of light energy shed by the sun on a given area, and that under field conditions no more than one per cent. of this energy is really used in plants.

The struggle to harness and utilise the maximum solar energy became the master passion of Yefremov's life. Crop yields ceased for him to depend on moisture and fertilisers. The sun must be counted as a vital factor too. He discovered that, within the limits of moisture and nutrition, a much larger number of seeds could be grown to the acre and in consequence more solar energy per acre utilised: in fact, that ten million grains per hectare was possible as against the actual 1,667,500 grains.

To achieve his aim Yefremov applied differentiated standards and methods of sowing, varying with the nature of the soil and so forth. Difficulties were encountered and overcome; the difficulty, for example, of the stalks which must be made stronger for close sowing. Deep sowing and, in addition, treatment with phosphorus achieved the desired end.

Yefremov had his reward. He grew several grains of wheat where less had grown before. He blazed a trail and others have followed it.

Yefremov is not alone. Thousands of local experimenters meet and aid the scientists in their efforts to harness nature to the service of man. Scientific institutes increase. Scientifically trained peasant workers also multiply. Michurin, the city which bears the scientist's name, has

become the centre of a fruit-growing area where scores of scientific workers conduct their researches and from which, as a centre, research institutes spread throughout the countryside. P. Yakovlev evolves there a hardy winter-resisting peach. H. Henikeyev raises hybrids of plums and apricots. S. Chernenko works at new varieties of table apples.

Scientists here, as elsewhere, are met and aided by the new peasantry, who, as members of collectives, have advanced in intelligence and possess resources formerly unknown. A new interest in fruit culture on the large commercial scale awakens and finds its outlet.

It is for this new peasantry that Timiryazov's popular expositions have proved their value.

12. CIVIC GROWTH

As the map changes and the farm changes, so the cities change, and the past twelve years mark an epoch of great constructive civic works in the Soviet Union. Old cities grow. Ill-conditioned cities are replanned. New cities arise, made possible and needed as the natural resources of the Soviet Union are developed, and as the network of waterways and great generating stations provide transit and power for new industries.

No city changes more rapidly than Moscow, nor has any been confronted with more pressing problems.

Twenty-four years ago Tsarist Moscow, a straggling city of a million souls, picturesque, ill-paved, ill-drained, ill-watered, ill-housed, had been aptly called an overgrown "village city." A sprinkling of many-storied houses and luxurious mansions stood amidst masses of dilapidated huts, two-thirds of the city built of wood and almost half

the population living in slum hovels or factory barracks fitted with three-storied bunks.

Years elapsed before the city fathers deigned to lay a main sewer. The very idea of underground travel or elevated railway was ridiculed when proposed in 1902 by the engineer Bolinsky.

Moscow asked for planning.

On a wall in the history room in the Children's Palace in Moscow there hangs a huge map of the city. Press a button and in coloured lights is traced an outline of the Moscow of the sixteenth century. Other buttons reveal in other coloured lights the city of the several later centuries. The last button depicts the Moscow of tomorrow.

On an adjacent wall is an imaginative painting of that future Moscow, done in ethereal blue, its towers reminiscent of the glory of the New York towers as I saw them when sailing up the Hudson River on a hazy summer's afternoon several years ago.

The Moscow of the future now takes shape, fashioned on stately and uniform lines drawn up in 1935 by hundreds of talented specialists.

Setting restrictions on mills and factories and limiting population to five million souls, the plan proceeds to provide for the rebuilding of the city on a nobler scale and the rehousing of its people in new and healthier localities, amidst greenery and trees, always with an eye to unity and beauty of design, and regulated by the following principles:—

(1) Maximum co-ordination between the interests of industry and residential interests.

(2) Maximum development and properly planned distribution of public institutions affecting residents' lives, such as schools, kindergartens, nurseries, theatres and clubs.

(3) Widespread incorporation of open spaces in the shape of wooded parks and gardens in the territory covered by the city.
(4) Provision for improved transport facilities between the several city areas.

Problems naturally abounded in the case of Moscow; water, transport, housing, all needed radical reconditioning.

1. Populous cities demand large water reserves for cleanliness, health and fire fighting. Moscow had none. Today she rivals Paris or New York.

When in an earlier age Moscow had been built as a fort, none dreamed of its swift expansion to a city of several million souls. The small river, a metre or two in depth, that sufficed for the early city, totally failed to serve a great metropolis.

Moscow planned, and planned on the grand scale. Eighty miles on the eastern side flows the Volga River. Its abundant waters must reach Moscow; brought thither not in pipes beneath the ground, but along a stately avenue, a pathway for steamers from the seven seas.

So the Volga was dammed; its floods flung back for 150 miles, swelling into spacious waters called the Moscow Sea. At a point nearest to the city the waters divide. One stream, passing through sluices, drives dynamos, generates power, heats and lights and ministers to a wide countryside. The other stream, reaching Moscow by a broad canal, expands into a lake within the borders of the City itself.

The task was huge, demanding equipment of every kind, power stations, locks, pumps . . . Excavation and cartage rivalled the Panama Canal. Trains loaded with the earth removed and materials imported would girdle the earth five times at the equator.

Fifteen bridges spanned the canal itself, and when the flood waters reached the Moscow River the new water level rendered all existing bridges useless; all needed and received total reconstruction.

This work was completed in four years and a half.

In four years and a half Moscow had provided herself with the world's best water supply, girdled herself with a handsome river and turns an inland town into a port, where ships from the great oceans will ultimately berth at her docks.

2. Transport problems of great complexity confront a city which increases its population four times in twenty-four years. Old streets need widening, fresh streets need cutting and modern transit facilities need providing.

Moscow tackled her transport problems as she had tackled her water problems. Thinking and acting speedily, she reserved the centre of the city for cars and trolley buses. Then, as other towns had done, she dived beneath the surface and built, in radial lines, an underground railway system, called the Metro, unsurpassed by any system in the world for its amenities, its large halls and stations lined with marble and adorned with statues; built it in record time and on a wave of enthusiasm, civilians of every degree and profession contributing voluntary work to speed its completion.

The Metro carried a hundred million passengers in the first year of its operation, without a single death and no significant accident. All equipment was Russian made.

Electric tramcars, stream-lined, adequately lit and heated, with automatic doors and motors of 500 h.p. which give magnificent acceleration, deal with the traffic on the outer and circular routes.

All city transport in the future is to be free. Present fares are negligible.

On the banks of the Moscow River the skeleton of a giant structure creeps up. It is the Memorial Palace of the Soviets, erected to commemorate the Union of Soviet Socialist Republics at the First All-Union Congress of Soviets held in December, 1922. It will constitute the centre of the Moscow of tomorrow; its statue of Lenin will dominate what will be the world's tallest building.

A massive rectangular base stands ready to carry a series of cylindrical superstructures, which continually diminish in diameter until they reach the statue which is to crown the whole.

That statue, fashioned in stainless steel, will stand 328 feet high. Placed beside the Bell Harry Tower at Canterbury Cathedral, its massive head would look down on our pinnacles from a height of a hundred feet. The outer covering of the building which supports it will be of grey granite and stainless steel.

The Palace—standing in a quiet square, where statues commemorating the founders of Utopian Socialism (our British Robert Owen amongst them) lead up to monuments of Karl Marx and Frederick Engels, the co-founders of scientific socialism—will serve as centre for the social and political life of the Soviet Union. It is to contain 6,000 rooms and halls.

The Large Hall, 328 feet high, in which our Bell Harry Tower could stand, with its weathercocks 100 feet below the vaulted roof, is designed to seat 21,000 persons and can be used as an arena for any purpose, from skating rink to swimming pool.

The Small Hall, seating 6,000, is to be used for the sessions of the Supreme Soviet; for trade union conferences and other large assemblies.

No amenity is to be wanting to this great building, from the ten vacuum cleaning stations, giving elementary sani-

tation and ridding the place of dust and dirt, to the ventilating system which will supply its rooms and halls with conditioned air, sea, mountain or forest at will.

Every branch of mechanical science concentrates on this national monument—special foundations to sustain its enormous weight, special steels, tiles and cements to strengthen and clothe it, special devices to kill echoes in its enormous halls, special lifts to pass swiftly from stage to stage, and special exits to clear its 40,000 visitors within fifteen or twenty minutes.

The Palace of Soviets gives the measure and scale and scientific thoroughness with which building programmes are planned and proceed throughout the Soviet Union.

For it is not alone in Moscow that civic activity reigns or civic strength develops. The infection spreads throughout the whole of Soviet Russia. Indeed the efforts, in relation to their past, have been greater elsewhere than at the centre. Happily so, for when Moscow and Leningrad were threatened and Kharkov and Kiev fell, other cities farther east, Magnitogorsk and Stalinsk, stand ready to receive machines from their swiftly dismantled factories.

1. CHILDHOOD

I

It is a sorry fact that millions of British children, on the day that the war broke out, were seriously underfed, one-sixth of them disastrously so, as we were informed in a scientific study by Sir John Boyd Orr, our leading expert on food and health.

In Russia, on the other hand, throughout a close inspection in five republics and nine cities I never saw a hungry child.

Soviet Russia treats child-life—all child-life—with profound respect, both for its own sake, that its latent powers may develop, and for the sake of the community; for well-trained citizens pull more than their own weight and augment communal wealth.

Soviet Russia begins child-care early: very early. Begins it with infancy and the pre-natal life, rightly arguing that if children are to develop into healthy men and women their earliest years and their mother's health have significance. Russia treats pregnant women with marked respect. Special seats in tramcars are reserved for their use, and as the time for delivery approaches the mother receives an adequate pension and retires from work: the pension continues for some weeks subsequent to the birth.

Birth increasingly takes place, not amidst the bustle and disturbance of a private house, for accommodation is still cramped in Russia, but in the quiet of a maternity hospital with doctors and nurses attending. From the maternity hospital the mother passes to the maternity home, where,

until she is fit to return to normal duties, she receives proper care, whilst learning, through skilled instruction, how to tend an infant child.

Pre-natal care leads to phenomenal decrease in infantile mortality, which in Tsarist days had become a scandal. Then, when England's mortality rate for infants not exceeding one year of age was 13 per hundred and Germany's 19.2, the Russian percentage was 27.

There is something moving about the rapidity with which the change took place and the motives which perhaps prompted its speed. During the hard and brutal years, when the fate of the Revolution hung still in the balance, there was need for vivid and practical expression of the idealism hidden in the heart of the upheaval. This found outlet in child care and crystallised itself in the slogan:

"Our Children—the Hope of the Future."

Personal sacrifice shielded children from hardship, and under a wave of enthusiasm the Department for Protection of Motherhood and Infancy was created and received a momentum it never lost.

The Russian infant becomes the care of the whole community; its fate never left to chance or to the whim or ignorance of the parent. According to Soviet law every child has the right to an equal start in life. Whatever the circumstances of its birth or the character of its parents, the child must be properly fed and receive all needed care. If parents live apart, Soviet law demands that the absent parent must contribute twenty-five per cent. of his or her earnings towards rearing the child; thirty per cent. towards two children and fifty per cent. towards three or more.

Divorce is thus penalised in the interests of childhood,

and careful parenthood deliberately fostered. Mothers of large families receive special allowance.

Correct motherhood, according to modern standards, is seldom instinctive. Young mothers need instruction in child care. Lack of elementary knowledge and skilled supervision produce avoidable risks and ills. In England the rich can hire skilled nurses and obtain skilled advice. Soviet mothers of every rank receive it gratuitously and as of right. Every week during the first ten months of its life the Russian mother takes her child to the doctor to be weighed and examined and herself to receive friendly advice.

Everything the mother sees and hears at the Consultative Centre has teaching value. Gay posters illustrate right and wrong child treatment. Models of beds and toilet tables, of suitable and unsuitable foods, suitable and unsuitable toys, hang on the walls for examination. The white overall and white headkerchief of the head nurse strike notes of cleanliness and hygiene; and if the baby has a cold or temperature mother and child enter a side-room divided by glass partitions into separate cubicles, each with its examining table for the child and chair for the mother. The doctor prescribes, and if necessary sends the infant for hospital treatment. The district nurse attends the examination and knows, when she later in the week visits the mother, what instructions were given and how they have been heeded.

Feeding receives peculiar attention and accounts for the healthy bodies of Russian children. Extra food is ordered if needed. If able to do so the parent meets half the cost; but in any event the child is assured of appropriate food.

Reforms were not effected without struggle. Crassest ignorance often opposed them. Peasant women resisted

sanitary feeding and shrank in horror from putting baby in a bath.

Maurice Hindus, speaking of the village beauty of his youth, whom, on his return to the village of his birth, he saw grown in thirty-five years into an old woman, seven of her nine children dead and another sickening, remarks, "It could not be otherwise, so long as the people live in ill-smelling, unventilated one-room huts, and share these with their pigs and chickens and calves. So long too as mothers seldom bathed their babies; and fed them, with unwashed fingers or through artificial nipples made of dirty linen, their own chewings of black bread and potatoes or the inevitable 'kasha' or gruel."

Patience and education however now tell their tale, with results registered in the fall of infantile mortality rates.

II

Lenin had an almost womanly facet to his virile masculine character. He was thoughtful in his attitude to women —it comes out in his treatment of his mother and his wife. He was peculiarly tender to childhood. Caressing some children one day he said to Gorky, "These will live happier lives than we. They will not experience much that we did. There will not be so much cruelty in their lives.

"And yet," he added, looking to the hills where the village nestled, "I don't envy them. Our generation achieved something of amazing significance for history. The cruelty which the conditions of our lives made necessary will be understood and vindicated." Gorky adds, "He caressed the children with a soft and tender touch."

This side of Lenin perceived the needs of women and the difficulties of a woman's life, sacrificed every day, as it is, to a thousand petty details. He desired to lighten her tasks and the better employ her energies.

He perceived, on the one hand, the value of women's work in industry, increasing producers withou. increasing consumers at a time when so much needed doing. He perceived, on the other hand, that woman's experience, intelligence and character grew as she entered more fully into the world's affairs. To enable her to work side by side with man, and be freed from many petty tasks to do so, he introduced at an early stage the creche, the communal kitchen and the mechanised laundry. One large kitchen absorbs less labour than a score of small ones, and one mechanised laundry more than a hundred wash-tubs.

The Russian creche sets the mother free from drudgery without robbing her of her children. It does for the Russian worker what the nursery does for the British rich. Nor is the creche merely a place where children are "minded." It is an educational institution, where a child learns to develop its muscles and exercise its senses. In the creche the child grows up in the atmosphere of order, cleanliness and beauty, with gay coloured toys at playtime and a sleeping bag on the balcony at regular hours of rest.

Life in the creche is bright and methodical. Meals are varied, scientifically planned and ample. Breakfast has its omelette, cereal, cocoa and bread and butter; dinner its vegetable soup with sour cream—a favourite Russian dish —its meat soufflé, carefully prepared vegetables and vitaminised dessert; tea its cereals and biscuit with buttermilk or tea; supper its cereals with milk and stewed fruit.

Payment for food and attention varies from twelve to sixty-five rubles a month according to a mother's earnings, the bulk of the cost being borne by the State.

Ailing children receive individual attention. Rickety children, for example, receive treatment with quartz or mercury lamps. All babies are inoculated against smallpox or diphtheria.

From first to last the mother is taught how to give her child skilled help and care. She is no more robbed of her child than my mother was robbed of me when a skilled nurse tended me. If the child is sick and in hospital, the mother can spend all day with it in the ward, receiving her meals there and learning a great deal about child treatment.

The creche is colourful and human, each child possessing, in addition to its name, an emblem: dog, daisy, or elk. Their small belongings bear their own emblem and each belonging has its own appropriate place. The day is carefully regulated, so long for walking, so long for music, clay-modelling or story-telling.

Great principles of life and conduct can never be taught too soon and find their way from the first into the creche. "Never do anything for this child which it can do for itself," is written over the door of the creche.

The principle of individual initiative embodied in the slogan finds its exercise in a hundred ways. Don't hand the toy from the table when the child can't reach it. Suggest buffet or stool. Of course the child may use the buffet afterwards to reach the jam-jar or the favourite pipe. Doubtless it will. Individual initiative is the cause of much trouble. But it is an indispensable element in life and needs careful fostering. Its fruits today are seen in Russia's skilled guerrilla bands.

Complementary to independence and initiative is the principle of collective enterprise. Children are taught in their tenderest years the art of living together. When, for instance, a child plays with building blocks, as they play with them in British nurseries, it finds blocks of different sizes. Small blocks for individual use; others large, though light, demanding more than one pair of small hands to lift them. With these, children work together and under-

take the serious task of co-operative building. For a small child's life is more serious than we are apt to think. What we call play are real tasks: toys are things to be held, balanced, fitted together. Houses, railway stations and bridges are things to be constructed. Soviet creche and nursery schools wisely guide the self-chosen serious tasks of life's earliest and most creative years. A million children now attend creche and nursery schools. Their numbers grow as accommodation increases.

Between the entry of school life at eight and the close of the creche period at three, comes the nursery school where cleanliness, order, cooking and setting of tables is taught. At six, formal education begins and the child learns to read and write, with wide interludes when games are played and the elements of dancing and music are learned. Nursery schools already accommodate one and a half million children.

Through all the eight years of the small child's life, as well as through subsequent years, the physical welfare of the child is a primary concern of the State. It is, in the later years, the concern of a special State department which supervises school and home sanitation, regulates school regime, renders dispensary services and guards the child against mental and physical over-strain, with special provision for the mentally and nervously abnormal child.

III

Her treatment of her children registers a country's social health.

Does it differentiate between child and child, favouring this class to the disadvantage of that, or does it treat all alike? Does it place girls on an equality with boys? Does it foster virile minds in healthy bodies? Does it inspire childhood and adolescence with wide and generous ideals

and provide, after school years are ended, an environment which leads to creative and purposeful careers for all of them?

In a word, treating each individual as an end in itself, does it train each to be independent, critical, beauty-loving and willing to fuse his personality with others in the creation of a healthy and united society?

Measured by these standards Tsarist Russia had lamentably failed. Periodic famines played havoc with childish physique. Intellectual starvation left the mind a blank. Education was wilfully neglected.

A spurt now and then towards a national educational system—such as that of Catharine the Great in 1782 beginning with the education of 20,000 children—quickly died down. Nicholas the First put an end to Catharine's experiment on discovering that education menaced autocracy. Secondary education was forbidden to all serfs, workers and peasants.

Ripples of educational activity stirred now and again across the ocean of ignorance and illiteracy and then subsided. With the shaking of political autocracy in 1905 liberal politicians seized the opportunity of pushing through educational reforms long overdue. That surface ruffle also died down; the Government's policy being crystallised in words of Tsar Alexander's Minister of Instruction:

"To teach the mass of the children, or even the majority of them how to read will bring more harm than good." The Tsar approved.

Another member of the Tsarist Government put it bluntly thus:

"Children of the wealthy classes should be protected from an influx into the schools of children of the poor and middle classes."

The Soviet Government changed this policy instantly and completely, providing an educational opportunity for Russia unknown in any other land.

It could not be otherwise with Lenin at the helm. He had craved for education, and proved an excellent student, had graduated from school with a gold medal, taking his degree with honours in two years instead of four, but doing it all in face of difficulties which steeled his soul and mapped his course. Expelled from the university because of his revolutionary tendencies, it seemed as if a university course was permanently closed. Not so, however. Lenin studied at home. Studied through long hours of intense application, but to a wide schedule, with time for methodical attention to health: swimming in the river was his favourite exercise, or practising on parallel bars in a wood near his home.

He was permitted, after presenting a petition, to take all the examinations in one sitting. To the astonishment of the Board he passed a four years' course in two.

The new educational policy, so planned from the earliest days, aimed at developing vigorous bodies and vital minds, inspired by generous and high-souled impulses. In operation for twenty-four years it fulfils its early promise, releasing unexpected ability in the masses of the people.

One of the first Soviet decrees made education universal and free to all, irrespective of race or creed. In that decree we find the key to the present colossal educational advance, which lifts Russia in two decades and a half from nineteenth to first place in world literacy. In 1914 eight million children attended Russian schools; thirty-six millions attend school today.

Lenin saw from the outset that high output and high culture are twin needs for a communist society. Hence

education holds its prominent place beside industry in each succeeding Five-Year Plan.

Universal and free to all until the fifteenth year, special aid is given to the child of exceptional aptitude.

School, with its serious preparation for life, begins at eight years of age. From the earliest to the latest years boys and girls mix; co-education is universal.

At the age of fifteen the educational paths diverge. At fifteen the industrial school opens its doors, with free hostel accommodation, free food and clothing, for all who desire an early entry into industry. Should the child wish, however, to continue school till sixteen or seventeen and then enter industry, it is possible to join a factory training school where he receives a six months' preliminary training plus free board and lodging and pay for any work done.

Those desiring a higher educational course will stay at school till eighteen, and if they have received "excellents" for two-thirds of their subjects, and "good" for the rest, they receive free places. At the university they receive grants to meet expenses. No limit is placed on the number of free places. A fee is charged only to those who fail to reach the required standard.

The widened basis of education is accompanied by a surge of intellectual quality and moral achievement.

Moral advance is perhaps the most significant feature and shows itself in innumerable ways. Discipline, for instance, is achieved without corporal punishment: canes are illegal and selfish competition discouraged. Class lists contain "excellents" and the reverse: they do not contain "first," "second" or "third" places. Competition of individuals within a class, encouraging anti-social concentration upon individual rewards, yields place to competition between class and class, decided by the number of "excel-

lents" achieved and stimulating the clever child to aid rather than surpass his duller classmate. Teaching another child he must penetrate more deeply into the knowledge he would impart. He learns the art of instructing as well. It is a double gain.

In general a Soviet school resembles an English playground rather than an English classroom and accounts doubtless for the solution of the problem of discipline without corporal punishment. Boys on a cricket field need no cane to make them heed instruction from a county cricketer. Why? Because they are as eager to learn as he to teach. Woolley, the famous cricketer who instructs the King's School, Canterbury, in cricket, for instance, is but the more experienced player in a game at which all wish to excel. The Soviet teacher is but the more experienced player in the game of creative life and constructive effort which from the first the child is encouraged to understand and love.

And this introduces us to another characteristic feature of Soviet education, which bears the unhappy name of "polytechnisation," and though simple enough in reality, is not easy at first to English understanding.

Soviet education aims at producing the complete citizen. This demands, among other things, bridging the gulf between manual and intellectual activity, an end achieved by giving the child a thorough understanding of the nature of productive industry as part of the social whole.

The Soviet child is brought into close contact with some Soviet factory in order that, at first hand, it may learn what industry is and what it is for; what place any industry occupies in the social order; what effect industry has upon the worker; and what effect this or that product exerts upon the social body as a whole.

This is an admirable innovation, wholly different in

principle from instruction in the use of particular tools or performance of technical tasks which will await the child later in industry. It is no industrial short cut, stealing school hours to supply industry with ready-trained "hands."

Technological training aims at making a many-sided social being; not a mere skilled worker, but a man or woman who understands not only the use of materials, nor even the scientific nature of the forces required to bring them to their final form—though that is a valuable part of the training—but in addition the man or woman who understands the effects of production, and particularly of new modes of production, upon the whole organisation of life, and upon each human being who is employed. It aims at understanding not the parts of life, but life as a whole.

It is difficult to overstress the social importance of this. Let me illustrate the kind of social lesson it teaches. Take a child to a one- or two-man smithy; or to a tinker's shop worked by brothers. He can readily understand that the ownership of such tools as they employ is quite appropriate.

Take him, however, to a great factory, with its subdivision of labour and all its interlocked activities and he will quickly perceive how dangerous it would be for some individual, other than those whose co-operative effort made the machines and whose skill drives them, to own the machines and control the lives and welfare of those who work them. Readily the child understands why that which is socially produced and socially operated should be socially owned. He gets a social consciousness. He learns how to judge the relative social value of different operations. If he becomes a chemist he will enquire, not merely how to make a product, a scent or a poison, but what effect

its production will have on society. If he becomes an engineer, he will enquire what is the social value of a railway he is invited to build. Social values will, in the case of this engineer, tend to take the place of monetary values.

IV

Something remains to be said of out-of-school activities and of the treatment of the exceptional child.

No child born lacks a hobby, collecting stamps, eggs or cigarette cards; constructing wireless sets or model railways, photography, painting, singing or dancing. Every child loves some out-of-school activity, even the gutter child who sails paper boats down drains; God help him and forgive those who wilfully neglect him. But how many British children of the artisan or even of the middle classes can follow their hobby seriously? They lack room, tools, materials and direction.

The Soviet city makes extraordinary provision for the child and its hobby. Every city and many villages possess their Palaces of Pioneers, well equipped for eager amateurs: aviation workshops, fitted with air tunnels and precision machinery; laboratories where animals and animal breeding can be studied intensively; hot-houses where the student can create new varieties of plants. Art, dramatics, ballet dancing, music, painting, sculpture, chess and photography, taught and practised. I examined one building where 2,500 children were at work in 209 circles on sixty-nine different subjects. I have never seen its like in any other land.

And in and out among the children wander the experts; men like Professor Schmidt, or Papanin of Polar fame, giving advice and encouragement and selecting the most promising youths for further development.

Many towns possess a couple of miles of children's railway lines, where real, though miniature, trains are manned entirely by the children of the town.

These Palaces help the individual child to develop his gift. It is easier to speak about vocation in Russia than in England because wider provision is made for the exercise of special gifts. It is no accident that at the Third International Contest of Pianists in Warsaw in 1937, Russian youth won the first and second prizes, and in the same year, in Brussels, five out of the six first prizes for the violin also went to Russian young men and women.

"Soviet youth emanates a strength and joy which involuntarily astonishes me," wrote Lion Feuchtwanger. Their upbringing explains it. Their conduct in a war they neither desired nor sought illustrates it.

Concerning the intellectual quality achieved by Soviet education, let an English engineer of distinction speak from practical experience of a Soviet factory. Mr. Tustin, chief engineer in the electrical department of the Metro-Vickers plant in Sheffield, went to work in 1934 as consulting engineer in the Moscow Dynamo works which employs 8,000 workers to produce equipment for electric railways or tramcars.

Mr. Tustin says of youths who entered his factory from school at eighteen years of age that, though falling behind our highest English standard in technical training, their mathematical, systematic and theoretical training shows better results than ours; and once within the factory young students quickly master their jobs. "There is no doubt," he concludes, "of their enthusiasm, ability and capacity for hard work."

The Red Army achievement is the most brilliant commentary upon this estimate.

2. MANHOOD

I

THE Soviet Charter of Rights guarantees to each citizen of both sexes:

The Right to Work.
The Right to Leisure.
The Right to Education.
The Right to Material Security in old age and sickness.

These substantial and far-reaching rights were laid down in the present Constitution, called the Stalin Constitution. This Constitution, issued in 1936, is the latest constitutional development and reflects the growth of Soviet life and thought. For the Soviet written Constitution, no less than the British which is unwritten, is not a system rigid and eternal but, like ours, is moulded and changed according to the expanding life and new needs of the community. In the land of Socialism we find, as we might naturally expect, that the growth tends to breadth and liberality. The Stalin Constitution is worthy of a leading place in the line of liberal Constitutions which began with our Magna Charta and embraces the charters of France and the United States of America.

Nor does this Stalin statement of rights end in mere words. It is immediately translated into deeds.

All have the Right to Work. And much more important all have the opportunity to work. And it is the work of choice, with instruction and encouragement at every stage to reach higher posts in whatever branch of activity is chosen. Unemployment has ceased in the U.S.S.R. and fewer cases of round pegs in square holes occur in a country where a health service exists whose business it is,

among other things, to examine psychological troubles caused by industrial misfits and to suggest readjustments.

All have the Right to Rest. Russia, immediately before this war, enjoyed the world's shortest working day; seven hours being the maximum. Miners, whose task was dangerous, worked six hours and received annually a month's holiday with pay. Leisure will increase as wealth increases. This, indeed, is half the answer to those who affirm that unemployment will recur in Russia when she has overtaken her inherited industrial shortage. The other half of the answer being that in a planned economy labour can always be shifted to meet expanding needs. If the demand for miners decreases, more artists, musicians or scientists can be trained to meet the expanding cultural demands of the newly educated masses. For we must remember that leisure, when leisure comes, is leisure for all, not for a class. And the Soviets who recognise physiological and psychological value of leisure know also its cultural value and make cultural provision for it. In this indeed we have the beginning of a new and greater cultural activity than any the world has yet seen.

All have the Right to Education. And education does not cease with school days. It continues throughout life. Every factory makes a double product, things and lives. A tractor factory is a place where human lives as well as tractors are made, and must afford provision for the cultural and educational side of the worker's life. Opportunities are provided by the Trade Unions in the factories for reading, study or travel, for dramatic, musical, and all other cultural activities.

All have the Right to Security. Only those whose life has been harassed by fear of sickness, incapacity and old age, or by anxiety for the future of their children can gauge the boon of the right to security in a land where

the pension, if desired, comes early and is adequate, where the hospital bed is free and maintenance for the home continues as long as sickness incapacitates, and where the children are assured, whatever happens to the father, of food, shelter and prolonged school education, with an entrance at its conclusion into paid creative work.

And then, to crown all, this Charter of Rights extends to every man, woman and child of every race, colour or tongue throughout the 150 different nationalities of the Union. Article 123 of the Stalin Constitution defines thus these common rights of all:

"The equality of rights of citizens of the U.S.S.R., irrespective of their nationality or race, in all spheres of economic, State, cultural, social and political life, is an inescapable law."

Even from a selfish point of view this extension of liberty is essential. For just as it is a profound truth that no people is free which possesses an inferior class, it is also true that no people is free which dominates an "inferior" race.

The Soviet Union has striven to avoid both forms of bondage, beginning at home by undermining the basis of class difference by the abolition of private property in the means of production.

Differences of income and differences in standards of living are quite compatible with a classless society and still occur in Russia, and will continue to occur so long as Russia remains at the Socialist stage. But it is well to note that class difference goes deeper than difference of income. When one man uses another as a means to his end; when one man owns the machine by which the other lives, class difference is unavoidable. Class inequality is based on exploitation of one group by another. Liberated from that, the Russian worker stands in a new category and enjoys

a new dignity. That is, in fact, the supreme democratic advance which the Soviet power has achieved.

And it is a freedom in which all nationalities in the Soviet Union participate.

And in line with that freedom is the new freedom of the polling booth.

Within the factory each man has the right to make his voice heard in the conduct of his work, a right which introduces the democratic principle into the place where its absence has always been mostly acutely felt. A wall newspaper hangs in every workshop. All may contribute to it. Complaints, comments or suggestions can be written by anyone upon the wall newspaper and must receive attention. When tentative drafts of the Five-Year Plans are issued, the quota of work allocated to each unit of activity is discussed in the factory by *all,* not merely by the management. That is indicative of a new ruling principle. And, in addition to the wall newspaper, the Trade Union branch and the local Communist Party Group provide facilities where the voice of the people may be heard.

Outside the factory the franchise is wider than any in the world, unlimited by property qualifications or racial distinctions. Every indivdual of every race, colour, tongue or creed, and of both sexes from the age of eghteen years and upwards, possesses the right to an equal vote, a direct vote and a vote by secret ballot.

II

Efforts have, indeed, been made to deny the reality of Russian electoral rights. Much difficulty, to be explicit, has been felt in the fact that no opposition candidate stands to contest the official candidate on Election day. Two facts, however, should be borne in mind. First, popular election of an appropriate candidate takes place, be-

fore the election day, at public meetings, where various candidates have been put forward to advance their claims. Any elector may signify his choice at that, the earlier, stage. He may ratify that election or vote against the selected candidate at the final stage.

The other fact turns on the question of the "opposition" element in political life. Russian political life has no opposition party. How far this is bound up in our own case with vested interests and class dominance I leave others to judge. Where both are removed, one fundamental reason, at least, for a formal "opposition" is removed.

A more formidable objection centres round the prohibition of any criticism of the Socialist regime itself. Yet even here we must remember that Russia has been in the midst of a dangerous experiment, surrounded by nations hostile to its success. And when once in the midst of a difficult operation already decided upon, who can afford to stop and revise the fundamental basis of action? What engineer stays in midstream to argue whether the bridge, now half completed, had better not be of cantilever construction?

Doubtless room for divergence of policy exists, and will continue to exist, even when the fundamental question of whether society shall be Socialist or not is settled and one may well hope that the liberty of discussion on fundamental issues will grow as security grows. A constitutional opposition is a vital corrective which need no more challenge the fundamental basis of a society which rules out the possibility of legal exploitation than ours which rules out the possibility of legal murder. We have made, in our Parliamentary system of constitutional opposition, a distinct and valuable contribution to the art of collective living, providing the place where minor differences can be hammered out in public debate, but where, in times

of great tension and danger, opposition and faction have a way of disappearing and sinking themselves in the unity of the country as a whole. We see it now operating in this hour of war and peril.

A further difficulty arises in many minds from the suspicion that the Communist Party so dominates the State as to make negligible the power of the people's representatives, a fear more real formerly than now. For hints are not wanting that it is baseless. The removal of power, for instance, from the Young Communist League, the emphasis upon the right of non-Party people to full powers with the Party are significant. Still more significant is the deliberate subordination of the Executive to the Supreme Soviet, which is the equivalent of our own Parliament. But most significant of all is the determination of the Supreme Soviet to control the Budget.

The Soviet citizen not only possesses a real franchise and one wider than ours, his economic standing makes his electoral equality more real. Tom Brown may have an equal vote with Major Astor at the poll. Major Astor's millions of money give him control over millions of voters through the pages of *The Times* and *The Observer.*

Mr. G. H. D. Cole is, I think, right in suggesting that the Soviet leaders were anxious to plant western morality—a thing which it had never yet possessed—on the difficult soil of Russia. That this deliberate declaration, from the first, of their intention to do so was no idle boast is best seen by measuring their democratic achievements so far against the background of Tsarist autocracy which knew nothing of political democracy and political freedom. There are solid grounds for Stalin's assertion that "Our new Soviet Constitution will . . . be the most democratic constitution of all existing in the world."

Facts such as those we have traced suggest, of course,

that Stalin is no Oriental despot or dictator of the Hitler model. His readiness to relinquish power shows it. His willingness to lead his people along unfamiliar paths of democracy shows it. His clean-cut language embodying, as the basic law of the U.S.S.R., the Charter of the New Rights of Man in the Socialist society shows it. His action in assuming the Premiership shows it perhaps most significantly of all. At a critical moment he puts himself into line with real democratic practice and by raising the prestige and power of the Premiership has created a precedent which follows closely our own relatively new constitutional practice.

Looking back, then, across the past quarter of a century, we can trace democratic growth all along the line. And as Soviet Russia has moved in the past so she intends to move in the future. High as her present achievements stand, with its abolition of exploitation, with its wide extension of opportunity to all, the Soviet leaders aim at a goal higher still and one which, if ever it is reached, may exhibit the finest development of democracy the world has ever yet seen. The Socialist stage has been reached. The Communist stage lies ahead. When Communism is achieved Engels' words may come true: "Government over persons will be replaced by administration of things and the direction of processes of production. The State will not be abolished. It will wither away."

Towards that higher state of liberated manhood the Soviet Union now strives and its nature should be clearly understood.

The definition of the difference between Socialism and Communism is best expressed in the words of Karl Marx in his critique of the Gotha Programme: "From each according to his ability, to each according to his work."

That is Socialism. It comes with a demand—to give ac-

cording to ability, that is, to give all one can in the service of the whole. The Soviet Union strives to increase the ability of each, both for the sake of the individual and because the community needs his best contribution. When it goes on to add "to each according to his work," it enunciates the Socialist stage of society. For work varies in value, some is worth more, some less. A common basic wage exists for all workers. None need be workless, and the basic wage provides for the basic needs of man. If, however, a man fits himself for more advanced tasks he receives advanced pay: "To each according to his work." It is a mistake then to say that Socialism means absolute equality. It means relative equality; no man can, under Socialism, own the productive machinery which makes the millionaire; but the skilled man can command the higher wage. More significantly it means equality of opportunity.

To have reached that stage of development marks a great advance on the road to democratic equality.

But the declared and ultimate goal lies yet ahead. Socialism is not the goal but prepares the way to the goal. For Socialism increases wealth and reacts on character, and the ultimate stage aimed at demands an excess of both. Socialism increases wealth, so that one will be *able* to give to all "according to need." It increases character, so that one will *dare* to do it. For it is no light thing to give to each according to his need, apart from work as a condition. Will men work at all in such a State? Will they not stand idle and sponge on the community? That undoubtedly is the risk and that is why Communism makes more massive demands upon character than any other form of society. It takes a nation of gentlemen—as Bernard Shaw defines a gentleman: "the man who puts more into life than he takes out of it"—to run a Com-

munist State. Russia may work long before such a state is reached. The conduct of the people under the strain of war, ruthlessly scorching the earth, increasing output to the limit, and facing terrific odds with skill and courage, gives us hope that we may see it. When German generals warn their troops against the skill and will and initiative of Soviet children we see a significant finger-post on the road to the Communist State.

3. WOMANHOOD

I

IF A NATION is judged by its treatment of womanhood, Russia stands high. For, unlike any other country, everything we have said of men applies, in the Soviet Union, to women. No Russian changes have been more significant than changes in the position of her women. From the status of slaves and chattels to their male relatives and industrial masters, Russian women sprang at one bound, at least in the eyes of the law and in the intention of the Government, into equal rank with men. Equal before the law; equal in education; with equal access to school and university; equal in the right to vote and work, the Soviet woman won her charter of political, civil and industrial liberty from the first days of the Revolution.

Liberty in the family, no less than liberty in the State, is hers, for as a married woman she enjoys economic independence in the home. She can earn her keep. No profession and no industrial employment is closed to Soviet women, save such as is too heavy for her physical make-up.

No world was darker for womanhood than that which went with the Tsars; none brighter than that which came with the Soviets.

Industry was the wedge which pried open her door.

Industry had come late to Russia and though, in comparison with other countries, it was small in the aggregate, its units were large and became hot-beds for revolt. A sure instinct had prompted the Tsars to delay industrialisation. Industrialised nations develop liberal elements and the Tsars were autocrats. So industrialisation was postponed to the last possible moment, and its delay led the more surely to the dreaded result. For delay confined its range and when it came gave preponderant power to the few. The metal, textile and mining plants, outnumbering all smaller units of manufacture, gave to workers in these industries a relative power unknown elsewhere. The metal plant at Sormovo, for construction of steam engines, electric cars, heavy machinery and ships, employed between 15,000 and 20,000 workers. The Putilov works at St. Petersburg a like number.

The textile industries, however, exceeded these in size, and textile industries have always been woman's sphere of work since the days when she spun and wove in the home. Women took eagerly to textile work. Women were cheaper than men. Women were more steady in attendance, less prone to protest against ill conditions. Out of 606,000 Russian textile workers in 1911 nearly 414,000 were women.

The abortive revolution of 1905 increased still further the relative proportions of women to men. For men, already showing dangerous tendencies to organise in Trade Unions, were avoided by factory managers. Women workers in 1906 increased by 22,808; men decreased by 1,425.

Conditions in the meanwhile continued disgracefully bad. Employers opposed factory inspection. Hours of work averaged sixty a week in 1914. Factory buildings remained unfit for the numbers employed: "Low ceilings, enormous rooms with small badly placed windows, row

upon row of machines crowded together, poor seating, if any, seemed to be the rule. Ventilating systems and toilet facilities never entered the picture."

Living conditions were still worse and defied description. Animals were better housed. "Children seem to have slept on the rags in the corner, whilst adults sometimes took turns in vermin infested beds or slept on bare boards."

Wages remained shockingly low, especially in textile factories.

An annual death rate of forty-five per 1,000 was eloquent.

The war of 1914-18 merely augmented the trouble. Women and children replaced men. Wages rose, but prices outstripped them. Conditions deteriorated. Food ran short. Lack of employment and lack of fuel in the Russian winter drove the masses to desperation.

It was the poorest and weakest in the French Revolution who rose first, and it was women, the poorest and weakest of the Russians, who led the Russian revolt. Women wrung concession after concession from a reluctant Government. Women mounted barricades. Women in large numbers sacrificed their lives on "Bloody Sunday," when Tsarist soldiery received the petition-bearers with rifle fire in front of the Winter Palace. "I do not regret for a moment that I stood on the barricades," said a woman who lay dying after four bullets had struck her.

Women had earned their claim to stand side by side with men in the new era of equality. In the pains and toils of a century of struggle women had helped mightily to pave the way for the Revolution. Soviet womanhood won and was accorded a status and dignity unknown elsewhere.

Lenin, urged on by his own sympathetic understanding of a woman's limitations and handicaps, echoed the statesmanlike words of Karl Marx: "There can be no talk of any sound and complete democracy, let alone of any Socialism, until women take their rightful and permanent place beside men both in the political life of the country and in the public life of the community in general."

Twenty-two years later and Article 22 of Stalin's Constitution formulates the same principle, with greater precision and in words which enshrine the noblest charter womanhood has ever received: "Women in the U.S.S.R. are accorded equal rights with men in all fields of economic, state, cultural, social and political life . . . the possibility of realising these rights of women is ensured by affording women, equally with men, the right to work, payment for work, rest, social insurance and education, State protection in the interests of mother and child, granting pregnancy-leave with pay, and provision of a wide network of maternity homes, nurseries and kindergartens."

Eager to take advantage of their new liberties, Soviet women flung themselves into the task of "building Socialism." Women crowded factories and offices, swiftly fitting themselves for work in every branch of Soviet industry, in every profession and in all departments of public service.

II

How much of the new charter of womanhood and of the legislation which enabled its realisation was due to Lenin and grew naturally out of his own home experience will never be known, but it is illustrative to note the relations which subsisted between him and his mother and wife.

Krupskaya was a model wife to a hard-worked husband, striving always to set him free for the host of scientific and political matters which claimed his time.

Lenin, in turn, lavished care on Krupskaya. They worked in adjoining rooms, he in his small, modest but scrupulously clean study, she in the adjacent kitchen.

Sometimes he would overhear the low tones in which she would say that bread or some other thing was lacking. Immediately Lenin would appear at the doorway saying: "I am going for the bread; why didn't you tell me before? I must be useful about the house"; and he would be gone before anyone could stay him.

Krupskaya's mother ailed, and to her he showed especial care, fetching doctor or medicine and encouraging her with the words which he used to himself when suffering—for suffer he often did, from inflammation of the intercostal nerves—"The most important thing in illness is never to lose heart."

His attitude to Krupskaya, and hers to him, were models for the ideal socialist family in the ideal socialist state. She shared his ideals, his plans and the events of his crowded days. With her he walked, with her he relaxed, and with her he longed to stray far away from the crowded city and into the countryside.

When Krupskaya contracted thyroid trouble Lenin surpassed himself with care, managing the house, securing the ablest doctors, reading up the details of her disease and the methods of its treatment.

His attitude to his own mother in earlier years was similar. Permitting no strain of work to distract him, even in his busiest days, from attention to her needs, he wrote ample letters and wrote them at the cost of precious hours of sleep.

His gratitude and delight were unbounded when his

mother sent him and Krupskaya two bicycles with money she had collected among his friends: "He is as excited as a child," Krupskaya wrote to a friend, "he's terribly fond of his mother, but he never expected anything like this."

No man of our day has been endowed with a more masculine intelligence than Lenin. His grasp of political and social principles and possibilities, his power to drive himself and others towards his goal, leaves the world filled with astonishment and admiration. Side by side with it, however, he possessed this almost womanly mind and consequently saw more clearly than other men the difficulties which surrounded a woman's life and work.

"Very few men, even among proletarians, think how much labour and weariness they could lighten for a woman," he said in a letter to Clara Zetkin, and he set about the task of securing womanhood's freedom in the home, as well as in the political and industrial world.

Lenin knew furthermore that women suffered from biological handicaps connected with their function of bearing children, inflicting regular periods of psychic and physical depression, with general debility during pregnancy. He knew the burden of home and children. He knew also from the experience of working women all around him how tragically a woman's economic dependence on her husband worked out should he die prematurely and the whole burden of the family fell on her unaided shoulders.

Lenin it was, then, who, more than any other, determined from the first to set Soviet womanhood free. To assure her of the right to work. To compensate her for her handicap in child-bearing. To provide nurseries, creches, kindergartens and playgrounds for children, together with communal laundries and dining rooms in

factories which would rationalise female labour and save womanhood from her wonted drudgery.

Other freedoms followed automatically. Freedom to marry or avoid marriage follows from economic independence. Freedom to have as many children as is desired also follows when the mother can earn an independent income and children cease to be an economic liability.

Divorce is more free in Russia than here, though always severely discouraged, great stress being laid, in season and out, on the value of the family.

Russian motherhood enjoys exceptional legal protection. Paternity suits are encouraged and non-payment of affiliation orders is made punishable under the criminal code.

Promiscuity, it need hardly be said, was sternly opposed by Lenin, who likened it to drinking out of a glass, greasy in the rim through defilement of many lips.

In consequence of all this, sex plays a smaller part in Russian public life than elsewhere. No capitalism obtrudes to exploit the baser side of our nature. Co-education, healthy activity, creative tasks, work for a common all-absorbing goal, combined with economic independence, place sex on a natural and healthy footing. "Petting parties" are unknown in Russia and would be scorned if known.

All branches of activity are open to the Soviet woman. She may serve in any administrative post. The Supreme Soviet of the U.S.S.R. includes 189 women among its members, a larger proportion than in any other land. Women teach in schools, serve in hospitals, drive tractors in the fields. It is impossible to think of a People's Court of Justice without its women members, who supply the womanly touch which other countries lack.

Women share equal opportunities with men of educa-

tion in school and college; and, through the diminution of drudgery in the home, they gain and seize new opportunities for cultural pursuits abroad. Peasant women and workers constantly contribute to Soviet journals and women take their part in modern Russian literature.

The economic home, where the wife does the drudgery and is financially dependent on her husband, has gone. The family has been the gainer. Soviet women have leisure to mingle in social and political activities and share the wider interests of their children, making the home the centre of skilled and purposeful life.

The good citizen, rather than the good housekeeper, is the Soviet ideal for womanhood.

III

The degradation of womanhood in the southern, eastern and northern nationalities was unbelievable and confronted the Soviet regime with a major problem, the solution of which forms one of the noblest chapters in Soviet achievement.

The eastern woman was a chattel, a piece of property, a domestic slave and an economic slave. Her husband was her tyrant. The Mohammedan religion in practice had increased the degradation. Women became mere objects of lust, and were in consequence regarded as morally inferior, to be isolated in the dwelling and hidden behind the veil.

In the Islamic Caucasus women were regarded as essentially impure. A mountaineer would not give his hand to a woman unless first he had wrapped it in a piece of cloth. It was improper to show signs of loss if a woman died. Two weeks before the birth of her child an expectant mother was banished to a small, dark, primitive hut, unheated even when surrounded by snow. None

might speak to her. Food was passed through a hole in the roof. Animals brought forth their young by a fire; women brought forth theirs in the cold and the dark.

The Yakutian legend, current in the far north, of the model daughter, whose living body was set before the guests, to cut pieces off it and eat, whilst she, the victim, uttered not a moan, speaks eloquently for woman's status there.

A boy's cradle among the people of Azerbaijan was constantly guarded—a girl's untended however pitifully she cried.

The length of carefree girlhood and maidenhood varies directly with civilisation. The female child in Central Asia of Tsarist days must put away her toys and marry at nine. "A girl is a foreign commodity"; "a woman is her husband's chattel"; "a cow cannot choose her drinking pool, nor a girl her husband," were sayings common among the people of Azerbaijan, where little girls were sold in the market place along with agricultural products for three rubles, or thirty-five pounds of flour, and handed over naked or wrapped in hay.

Economically, however, grown women were valuable property in the east, performing the major tasks in house and field. In Northern Caucasus and Transcaucasia, in Azerbaijan, Kazakstan or Turkomen, in Buryat Mongolia, and far northern Asia life generally rested upon women's work: reaping, grinding, milling, shearing, tanning, cooking, weaving were the woman's daily duties. The whole produce of her labour, however, belonged to the man.

Women in the east were thus doubly enslaved. They belonged to oppressed peoples, and were oppressed by their own men-folk. It was long before the news of the advancing revolution, and of the promise for women

which this news contained, reached the women of the east.

Even when the men threw in their lot with the Soviets it was seldom that their women folk joined them. There were exceptions, however, and the story is told of Ashur, a Kalmuk woman, standing before one of the images of Buddha and saying to it, in face of the people and the priests: "My grandfather and my great-grandfather worshipped you . . . and we lived on in darkness and ignorance, like wild beasts. But now I spit thrice in your face . . . if you are a god punish me." She was nearly beaten to death. She escaped, however, eventually with some Red Guards to Rostov and later returned to her native town as a teacher in the children's school.

Slowly, with the rising cultural standard, the change came and much was done quietly through the operation of the law. One of the first acts of the Soviet Government was to forbid the sale of women or the marriage of girls of tender age. Surreptitiously the practice continued but slowly it died.

The age of consent was raised to sixteen; in Soviet Russia it is eighteen, the difference being due to the biological fact of speedier maturity in the east.

New methods of enlightenment were devised and missionary work by Russian women was carried on with astonishing courage, wisdom and skill. Clubs, open only to women, dealt first with legal aspects of a woman's life, then with cultural aspects, and finally with the processes of production. A needle-work shop started in Baku developed into a textile factory. Women doctors attended the Club and persuaded the women to come with their children to the Clinic.

Highly typical of the past is the woman's veil, or *paranja,* unhealthy, dirty, robbing the wearer of ultra-

violet rays, inducing rickets and trachoma. Its removal marked the passage from the old to the new. Strife ranged fiercely around it. Its abolition in Uzbek cost fourteen murders. March 8, 1928, International Woman's Day, was an outstanding date in the story of the *paranja,* when these symbols of degradation "were piled in rapidly growing heaps, drenched with paraffin, and soon the dark clouds of smoke from the burning common abjuration of a thousand-year-old convention, now become unbearable, flared up into the bright sky of the spring day . . . At the sight of this unique pyre the women's souls flamed aloft . . . joyful excitement prevailed . . . The East was stirred to the depths of its being."

As the course of knowledge grew and women learned of their new rights they would act suddenly and resolutely. Gul Bibi's case was probably typical. She refused at the wedding ceremony to be married to a man she had never seen. "I do not know this man," she said. "My father wants me to marry him, but I do not want to. I want to marry Nourrus the teacher: please register our marriage." Nourrus approached from the crowd and said, "I will marry Gul Bibi." The *paranja* was torn off and all the women cried, "Long live free women."

And so, along all fronts, the change proceeded and revealed itself in things we have long taken for granted. The use of soap, of washable underclothes, of a bed or a lamp, may seem small things, but they were steps in advance which at length has sent a larger number of women of all nationalities to sit in the Supreme Soviet assemblies than can be equalled by any other country in the world. And the women who serve there and elsewhere are possessed of an iron will, and a strength of purpose often in advance of men, steeled, as they have been, through centuries of hard toil at servile labours.

4. NATIONHOOD

I

SOVIET Russia embraces 150 different nationalities. Prominent among these is Georgia, in the Caucasus. Joseph Stalin is a Georgian. The nationalities in the U.S.S.R. owe more of their present liberties than many suppose to Stalin.

Lenin in exile wrote to Gorky: "Here with us is a wonderful young Georgian. He has collected all the Austrian and other material on the question of nationalities and has settled down to prepare a treatise on the subject."

Stalin had suffered in his own person through Tsarist efforts to "Russify" his people nationally, and enslave them economically. Stalin had at a very early age braced himself to fight both tyrannies. He became champion of the nationalities and champion of the workers.

And the nationalities had grave need of a champion. Lenin not inaptly described pre-war Russia as "the prison of the peoples." No oppression, no effort to break the spirit of the peoples, or divide them one against another, had been neglected. National tongues were disallowed, national education suppressed, raw materials ruthlessly plundered and industrial development blocked.

No means were too brutal to secure domination and no weapons too vile to employ. Traitors, like the Emir of Bukhara, who had put class privilege before national pride, lent themselves as ready tools in the policy of perpetuating feudal ignorance and economic slavery.

No means were too devilishly subtle to suppress protest or crush revolt. Discord was sown between people and people. Arbitrary boundary lines cut national groups in two. Hostile elements were tied together to effect disintegration.

It was a bitter and a cruel order which confronted Stalin's youth and was swept aside by his manhood. Perceiving acutely that workmen from his own homeland of Georgia could live harmoniously with fishermen from Sakhalin Island in the far east and peasants from Byelo-Russia in the far west, under an economic order which enriched all and impoverished none, and within a single political state, which respected national culture and encouraged native tongues, literature and art, he began to plan afresh. He cut across the age-long tendency of Russia to dominate all lesser peoples, and in 1918 urged the granting of federal autonomy to regions marked off by national characteristics.

It has been done as Stalin planned. A new era, securing the establishment of national liberties, has begun.

Within the Union nations are free and equal. Absolute equality of all nationalities, due representation, in the central organs, of all national republics and regions; with reasonably wide administrative, cultural and economic autonomy to each, with organs of administration locally recruited and employing their own language—that is now the basis of the Soviet Constitution.

To grasp the significance of all this we must remember the overwhelming preponderance of the Russian Republic as to population, wealth and industrial development. It was in full view of this preponderance that the central authorities deliberately used their power to establish, not a Russian national supremacy, but a genuinely non-national State, in which all nations should be equal and all national minorities respected. Such a total reversal of ingrained practice was a triumph of principle, and a reform which is bound to have profound effects on the future ordering of nations and states.

It was a reform which began at the right end, too—the

economic end. Not for a moment, also, was it permitted to remain as a mere pious statement on paper. It revealed itself in deeds. It expressed itself in goods. The nationalities were, from the start, physically as well as psychologically enriched.

Lenin, looking at the industrial map of the Soviet Union, and noting the abnormal development of European Russia, and the poverty of Asiatic Russia, had pointed out, as we have already seen, that this was not only inefficient and dangerous because it concentrated Russia's wealth within range of German bombs; it was morally wrong. It robbed primitive peoples of raw materials. It kept the national minorities in poverty and servitude instead of admitting them to partnership and opening the door to a rich and varied civilisation for all.

Lenin began at once to change the map and fill the spaces. Stalin aided him, and after Lenin's death continued Lenin's task. In 1923 Stalin wrote, "The Russian proletariat must do everything to ensure that centres of industry are set up in the outlying districts in the culturally backward republics, which are backward not because of any fault of their own, but because they were formerly looked upon as sources of raw materials."

That programme is now in full operation. It is persistently pursued. Central Asia, Transcaucasia and other lands quickly develop industrially and culturally. Bashkirians construct motor cars. Uzbek women, discarding the veil, weave textiles on power looms. Industry travels eastward with giant strides. Ideas are quickly translated into deeds in Russia.

It is one thing to say, in principle, that nations are equal. It is another thing to make them equal *in fact.* To produce equality *in fact,* however, has been the Soviet aim and progressively the Soviet achievement.

It is that principle and practice which makes the words "Russian Empire" no longer appropriate. There is no Russian Empire. There is a Soviet Union. Empire meant dominance from Moscow. Union means a partnership of states. Thus we read in Article 13 that the Union of Soviet Socialist Republics is a Federal State, formed on the basis of voluntary association of the Soviet Socialist Republics, with equal rights.

Its powers are wide and embrace maintenance of the "plan," treaties with foreign states, supply of armed forces, regulation of foreign trade, framing of the budget, establishment of basic labour laws, regulation of raw materials, and the like.

Its privileges are equally great. The interests common to all—living in freedom from economic exploitation, enjoying an industry planned for use, common postal and transport services and many more benefits—were assured to all, together with such special interests as freedom of language, literature, art and local customs.

II

The Soviet Republics differ widely in population, development and culture. The Ukraine was populous and advanced. The Kazakh, Tadjik, Kirghiz and Uzbek people were still in the dark ages. All now advance.

The Ukraine moved swiftly; in coal product outstripping France and Japan; in iron ore, England and Germany. The Kirov Iron and Steel Works in Makeyevka alone produce as much pig-iron as Poland and Italy put together.

Overlooking the Dnieper, the river of the great Dam, lies the grave of Shevchenko, the Ukrainian poet of freedom born a century and a quarter ago, and exiled because

he sang of a day when there should be no masters and no slaves.

The freedom he sought has arrived. The Ukrainian language is encouraged. Books in the Ukrainian tongue have increased a hundred fold and the one newspaper of 1914 has become the 1,400 of today. Hitler sought in vain for a fifth column in the Ukraine, though its temporary loss robbed Russia of a fifth of Soviet wheat, a quarter of Soviet maize and nearly three-quarters of Soviet sugar-beet.

The Ukraine possesses enormous natural wealth. Its mild climate, abundant rainfall, wide rivers and the fertile soil of the famous Black-Earth belt which stretches from east to west, on the one hand, and on the other its 66,000 million tons of coal in the Donets Basin, and 800 million tons of iron ore at Krivoi Rog set it in a class apart and formed the basis of its Soviet development and the lure of Hitler's armies.

Uzbekistan was as backward as the Ukraine was advanced. The Emir of Bukhara, its ruler, was a puppet of the Tsar, buttressed in his feudalism by the Mohammedan priests or mullahs, who held education, justice and family control in their hands and repelled science, mathematics, modern languages or any other form of modern culture. Agriculture, health, bridges, roads and sanitation all remained at the mediaeval level and industry was strangled at birth. The land that grew cotton was denied the right to spin and weave it.

The Russian capitalists brought all the ills and none of the goods of the modern world to the three Central Asian Khanates which spread out fanwise from the northern slopes of the great Himalayan mountain passes. They robbed the semi-nomad tribes, the Kirghiz, Turkomen and Uzbeks, of raw materials, encouraged the growth of

cotton and hindered its manufacture. Cotton crops were made to oust all other crops, providing more profit for landlord and merchant, whilst demanding less labour and flinging peasants into the hands of usurers, for cotton culture required more extensive capital than peasants possessed. Landlords and usurers throve. Peasants lost their holdings, and lacking factory employment many turned to banditry. Population dwindled.

At the head of this iniquity was the Emir of Bukhara, the Central Asian Quisling, who amassed a fortune of 100 million rubles, invested in Russian industrial and financial enterprises, together with £30 million sterling in gold and silver coins and ingots and jewels of fabulous value.

The struggle of the Soviet forces against this entrenched power was long and bitter. Alas, England took her share in it, too—on the Emir's side. But the Soviet Republic of Turkestan, where the new order had gained a foothold, struggled on, cut off from Moscow, and retreating into the mountains, improvising, some fighting while others tended the fields—dressed in raw hides and eating their horses when forage failed. These people refused to yield: "Every warrior," writes the peasant Trofimov, "had four cartridges—two loaded and two empty. While you used the loaded cartridges, the empty ones were being filled in our shop. Our women reconnoitred and smuggled powder from Chuguchak. We fought with knives, pitchforks, clubs, axes."

To the amazement of the world the Soviet Republic of Turkestan held out. The White Russian émigré Potekin points, in 1921, to "the incredible fact of the existence in 1918-1919 of the Turkestan Soviet Republic. Completely cut off from Moscow, surrounded on all sides by Dutov's, Kolchak's, Annenkov's, Denikin's and the English armies, deprived of transport, fuel and grain, the Turkestan Bol-

shevists managed to hold their own even in those difficult years."

The young Bolshevists in Bukhara never lost hope. And at last the tide turned. The Soviets in Turkestan smashed Dutov's crack army. Kolchak's Siberian force was wiped out. Denikin was defeated in southern Russia by Voroshilov.

The Emir, in desperation, declared a Holy War. The Bolshevists forestalled him and by an incredible feat of arms took his capital. The Emir himself escaped, leaving his hundred wives, but taking his gold and credit notes.

A brighter era then opened for the peoples. The artificial Central Asian States were broken up into smaller groupings on the sounder basis of ethnological, cultural and national affinities. The Tadjiks, dwelling in the roots of the Himalayas, and but a short flight from Kashmir, are one of these. North of them, and running from China to the Caspian Sea, lie Kirghizia, Uzbekistan, Turkmenistan. North of these again lies the vast Kazakh Soviet Socialist Republic.

Full-blown Socialism came slowly among these people, and in stages akin to its advent elsewhere: small peasant proprietorship at first, and then the rivalry of the tractor on the collective farm which made change inevitable. The steel horse had won. Peasants joined the collectives. Planned economy for the cotton industry of Central Asia had arrived.

Uzbekistan today develops into one of the most flourishing Republics of the Soviet East, with its huge textile mills, its hydro-electric stations to extract nitrogen for fertilizing cotton fields, with fresh industries of silk, food, leather and clothing, with 20,000 tractors and an output by 1935 of one million tons of cotton a year.

Culture spreads. *Hamlet* is heard in the native tongue

of a land where the very word "theatre" was unknown yesterday.

The peasants of Tadjikistan, in the mountainous roots of the Himalayas, are building up a new order. From their city, Stalinabad, industrialism and Socialism penetrate to the remotest villages. The swift torrents of the Vaksh River, running through Tadjikistan, after supplying power to the agro-industrial works, spread out in an irrigation network to fertilize 41,000 acres where the world's best cotton is grown.

The land of the Koran, the whip, the veil, the poverty and the cruel injustice becomes the land of life, prosperity and culture.

5. ROADS TO HEALTH

HEALTH is vital. Health is a national concern. A national health service, properly inspired, is positive in relation to health, not negative, providing guidance in creating and maintaining health, in rooting out and conquering disease, in preventing accidents and psychological misfits, rather than resting content with doctors to cure and hospitals to treat.

Health must be sought and augmented. National health must be the quest of all, and health services available for all.

That, in a nutshell, is the aim of the medical service in the Soviet Union. It should be our aim. It has been the dream of every doctor true to his profession. But the commercial character of British and American medicine makes the positive pursuit of health difficult, and we are content if we can call in a doctor when illness comes and pay for as much health as our pockets permit.

Medical aid in England, let me repeat, is, despite the noble service given voluntarily in hospitals and otherwise, a purchaseable commodity, especially in relation to the middle classes. Medical men are business men. Medicine (apart from the state services and the voluntary hospitals) is a trade. Its commercial aspect wars against its professional aspirations. We subject our doctors to strains which right-minded men resent and from which the Soviet medical service has found release.

In 1932 an American Committee, in a report on costs of medical service in the United States, observed that commercialised medicine lacks a proper working arrangement between the general practitioner and the specialist; it isolates the general practitioner from the hospital, provides no supervision as to the quality of medical care, hands the choice of practitioner over to those who lack the knowledge on which choice should be based, leaves excellent men idle and other men overworked and, through multiplication of equipment and overhead charges, makes medical aid needlessly costly.

The same criticism applies to England. Commercialised medicine lacks centralised control and fails to produce any positive drive towards national health.

The east proves strong where the west proves weak. Soviet medicine is rational, logical and clear. The principles upon which it is based are simple and reach far. Their bare enumeration must suffice.

1. Health service is free to all. Man, woman, and child are assured of free medical aid from birth to death. Free, too, is insurance against sickness, against maternity, against widowhood and old age.

2. Emphasis is laid, as we have said and as is peculiarly appropriate, upon positive health, upon prevention of disease rather than upon cure. Causes of disease and acci-

dent are pursued and attacked. The colliery medical service thinks more of preventing smashed bones than setting them. Upwards of forty research institutes, financed by Trade Unions, operate with the doctors to combat diseases contracted in the course of work. One branch of activity, to show how far-reaching are its methods, seeks to remove the menace to health through misfits of employment, a girl tied to a desk, for instance, when she should be at a lathe or on a tractor.

Problems of rest and recreation are vitally concerned with health, and the Russian health service sets out to meet them. The shortest working day in the industrial world is planned in the interests of health; and as life centres, in the main, around work, the factory is equipped with its own libraries, clubrooms and other amenities for health-giving activities.

Health is sought in athletics. Russia enrols 8,700,000 members in its sport clubs, while probably twenty-four millions receive, in some form or other, systematic athletic training. Rest homes are numerous and increase.

Health clinics multiply. Factories employing more than 250 workers must have their own resident doctor. Medical staffs at large factories are immense: the Labour Polytechnic at Kharkov, which serves 90,000 operatives, employs 214 physicians with a total medical personnel of 664.

3. Positive health is every man's concern and the direction of health is placed in Russia under one central control which mobilises the whole people in war against disease and on behalf of national fitness. The body of medically trained men and women are, like officers in military life, cadres working for health; its general staff, its officers and non-commissioned officers. They do not attempt to fight single-handed; they direct the fight. The military cadre would be useless without its rank and file.

The doctor, too, is relatively feeble if regarded as the sole agent in the battle for health. His powers are multiplied when he has an army to mobilize and a campaign to direct. All this demands and receives wide-scale, large-visioned and amply financed planning for health.

4. Medical science and research are fostered, co-ordinated and financed with a scope and generosity unknown in other lands. Three thousand research scientists operate in the Academy of Science and 3,000 in the Institute of Experimental Medicine.

5. The Soviet doctor, wholly freed from commercialism, acquires a new dignity. Liberated from economic worries he throws himself whole-heartedly into his proper task. He receives encouragement to keep abreast of medical research. Refresher courses are compulsory and accompanied with pay; and what English doctor would not covet the Soviet physician's power to meet the real needs of his patient, knowing that the special food, special treatment or special holiday which he prescribes can always be procured?

The Soviet doctor sets out with a good heart to conquer disease, to carry his methods and teachings into the home, the school and the factory, to take his share in building up a healthy and happy community, that he may help to leave the world better than he found it.

6. ROADS TO CULTURE

RUSSIA is literate. No nation on earth shows an output of books equal to Russia's output. New editions cause queues at the shops: six hundred copies of a new edition of Pushkin were sold in three hours.

In 1939 more books were published in the U.S.S.R. than

in any other country in the world—43,000 titles in editions totalling 701 million copies. And of these 117 million copies were in languages other than Russian.

The new Lenin Library in Moscow, standing near the Kremlin, contains shelves which, end to end, would stretch from London to Cambridge.

Russia's famous writers are always popular: from 1917-1937 Gorky's works appeared in thirty-two million copies; Pushkin's in nineteen millions; Tolstoy's in fourteen; Chekhov in eleven and Turgenev in nearly eight million copies. Books of political writers reach astronomical figures, works on Marxism-Leninism total 350 millions in twenty years.

One Moscow Book House alone publishes, in eighty-five languages, books on a vast variety of subjects from fairy tales to technical treatises. Nine million volumes were published in the Ukraine. Tolstoy's works are in demand among the national minorities as well as in Russia proper: 61,000 copies were sold in a single year in Armenia. Remember this in estimating the place of religion in Russia.

Newspapers have advanced from three to thirty-six millions a day.

1. The new wealth and leisure have given new opportunities. The seven-hour day and the lengthening of the annual holiday, with pay, have widened the outlook on life. Insurance against sickness, infirmity and old age have reduced the strain on nerves and brain.

2. The ban on profits has directed incentive into cultural rather than acquisitive channels.

3. The new magnificent education has awakened the masses to their own deprivations of the finer cultural and artistic expressions of life.

4. The facilities provided for the encouragement and

fulfilment of these desires and aspirations have been multitudinous.

The mass of the people have, from the outset, felt that they had been cheated of so much that was rightly theirs, because—as we know from our own society—more often than not it is not the wealthy classes or even the intelligentsia who have the deepest longings, or are prepared to make the greatest sacrifices for the enjoyment of the things that enrich and embellish and creatively fulfil life. Often it is the workers, the shop assistants, the bench hands or the office clerks who forego meals and stand in queues that they may enjoy fine music or noble drama. The very fact of doing the world's solid work is an aid rather than a hindrance to artistic taste and culture.

Judged by pre-war performance, England was lamentably behind the Soviet Union in the arts, so far at least as the masses are concerned; perhaps the same is true even of the wealthy also, if we may judge from the plays they insisted on seeing. The magnificent outbursts of Soviet dramatic art, her superb opera and ballet, made our own productions, even at Sadler's Wells, good as these were, resemble the performance of village amateur dramatic societies. The drama here has been starved of public support and financial backing. The perfect presentation of the Moscow Art Theatre contrasts painfully with even the best that our commercial theatres can produce. Lack in England of real interest and real taste in drama has been pitiful. This country, which had produced in Shakespeare the greatest, grandest, loveliest, the most poetic and penetrating of all dramatists, from whose genius so many others in these isles have drawn their inspiration, ignored his 325th anniversary. The Soviet Union held a whole week in his honour with some 800 professional theatres producing his plays. It issued special editions of his books,

and organised lectures and wireless talks which united the finest Soviet writers and dramatic and literary critics in rivalry to sing his praise. It was humiliating to listen to the Moscow radio broadcasting the anniversary in Shakespeare's honour whilst our own B.B.C. passed the occasion in almost blank silence.

Soviet audiences demand pulsating life in their dramatic art, just such things as Shakespeare can give. Sceptical scholastic themes, loved by the intelligentsia here, are banned by popular taste in Russia, and the old farce and comedy, so eagerly sought by men whose vitality is exhausted by drudgery, and whose life work lacks the thrill of a mighty purpose, finds no place on the Russian stage. Vital men seek serious plays based on the rebirth of mankind and on themes such as friendship, honour, labour, love and faith. Shakespeare meets these needs and his work is eagerly sought.

But drama is only one way in which the Soviet people learn how to express themselves.

Turn to the immense storehouse of Russian literature. If we have our Shakespeare they have their Tolstoy and Turgenev and Dostoievski, and they treat them, as they have treated everything connected with their writers, poets and musicians, with eager welcome. Hundreds of thousands of copies of these writers are published. Museums are built to house their memorials. Have we not read of German desecration of the Tolstoy and Tchaikovsky Museums? The centenary of their great poet, Pushkin, of whom, alas, we know but little in this country, was celebrated quite recently with an extraordinary outburst of enthusiasm. I examined in Kiev a wonderful collection of children's drawings which had seized upon and illustrated all periods and aspects of his life.

And what is true of the purely Russian heritage of art

is not less true of all the treasures of national culture of the other peoples which make up the Soviet Union. The Tsar, in his efforts to "Russify" his subject peoples, tried to stamp out their poets. The Soviet Union rescues them, digs out their writings from dusty museums and revivifies all the great heritage of the past. National bards and poets, old folk-songs, handed down through centuries, national dances and national melodies played on national instruments, all are now eagerly sought and brought to a second birth.

A striking example is that of the Uzbek bard, now one of the Soviet Union's most honoured figures.

And where no cultural heritage exists steps have been taken to create one. Unlettered languages are given literary form and the rudiments of art implanted.

From all the richly varied parts of the Soviet Union, young Mongols, Kirghiz, Uzbeks, Armenians and others, have come to the schools of the West to win a culture they can graft on to their own national heritage or to find inspiration to produce new forms for their artistic expression. A thrilling spot is the Leningrad Institute of the North where northern peoples come to learn to read, to write, to draw, to play or to sing, and return to transform the lives of their own nomadic peoples.

Not that these northern folk have a culture to be despised. Their spirited bone carvings, their delightfully designed costumes already add colour and richness to northern life. The Soviet Union not only deliberately avoids destroying these native things; it seeks to give them wider ranges of expression and a wider field of action. The past is treated tenderly as a spring-board for the future.

A magnificent efflorescence of culture springs forth from all this, a renaissance of joy and love of life akin to that which stirred our own great Elizabethans, when soldiers,

explorers and adventurers felt no shame in writing poems, composing music or loving the things of the mind. When men could find inspiration in themselves and in their national life with no need to copy barbaric strains and crude rhythms and insipid versifyings of savage African tribes as their modes of expression for the joy of life.

From the Five-Year Plans came the great theatres, the art galleries, and the concert halls where the masses of the people can enjoy the best that the past or present has to provide. In the palaces of culture and palaces of pioneers, in the conservatories of music, in dramatic schools and art schools the means were provided for young and old to express their own latent talents and native genius. Is it surprising, therefore, that not only great executants but also great creators have sprung forth in music and literature, or in the plastic and dramatic arts?

One expression of this can be seen in that film recently shown in London of an ordinary aspect of Soviet life, but one that seems strange to an English audience. I mean *A Musical Story,* in which a chauffeur cannot only go to hear the finest music and opera, and find expression for his own talents in his workers' dramatic circle, but can receive from his Trade Union the funds to enable him to go to the conservatory of music to secure that training which will make him one of the great singers of today. That simple story, in that beautiful and charming film, with its own magnificent singer who seems destined to become the greatest tenor of our day, as Caruso was thirty years ago, is the most ordinary story of what happens to a boy with talent or ability in the Soviet Union. Children are not hindered from becoming great artists because their parents lack money for their education. People who show talent have lavished upon them all the thought and care that the country can provide. For

them are reserved the titles of honour which in this country go to the successful business man.

How well this is repaid is shown in this testing time, when writers, poets, musicians play their part in sustaining, inspiring and expressing the effort of the heroic Soviet peoples. Shostakovich composed, even in besieged and beleaguered Leningrad itself, that symphony which we eagerly awaited and which, according to all reports, expressed the nobility of the people under their trial and their confidence in victory and a future peace.

So outstanding is the record of the Soviet Union in the realms of art and culture that those who had believed they could find no place in their native land have now returned to add their contribution to their country's wealth. Prokofiev, whose music in the great film, *Alexander Nevsky*, and whose musical fairy tale, *Peter and the Wolf*, provide some of the finest musical expressions of recent days, is a case in point.

The thrill of a new order, of building Socialism, naturally reflects itself in Soviet art. Russian writing, for instance, since the Revolution, shows a change of subject matter. It was the intelligentsia with their unbelief and pessimism which concerned Tsarist authors. The "small" man, humble in the social scale, of whom and for whom Tsarist authors wrote, was not encouraged to fight; he was told that the principal human virtue was patience, submission, docility. Pre-revolution writers turned inwards to the isolated mind rather than outward to the world of reality.

Soviet literature, on the contrary, is concerned with the thrill of daily life and big movement. The Revolution gave power to a new class of men, strong enterprising workers, peasants, intelligentsia; men who believed in an harmonious world and worked for it. Soviet novelists nat-

urally concentrated on the sweep of the new industrialism, the dominant agriculture, the emergence of a new intelligentsia; their heroes were those men who made the change and forced its pace. Sholokhov's great work *The Silent Don* and Alexei Tolstoy's *Bread* have the civil war for their theme: forceful leaders and humble workers constitute their heroes.

The Soviet literature of today is the epic narrative of events interesting and important to the whole people. The Revolution has imbued millions with a new creative spirit, after centuries of political and economic oppression; the developed personality of the worker is one of its most marked results and Soviet writers have seized upon it and depicted it in vivid pages.

Soviet literature, under this inspiration, has a vital, optimistic, joyous and buoyant ring, whose spirit infects the very lives of the writers themselves. The young Ostrovsky, blinded and paralysed as a result of the civil war, never ceased to feel that he was fighting for Socialism, and in that spirit wrote *The Making of a Hero*, a book of heroism and optimism widely popular with Soviet youth.

7. ROADS TO LIBERTY

LIBERTY is dear to Britons. Many think liberty is a British monopoly, and that what Britons do not know about liberty is hardly worth knowing. That is a mistake, and, quite contrary to the general opinion, we have much to learn from Russia in the matter of liberty, though Russia, too, has much to learn from us.

Intolerable to our Western thinking is the prohibition in the U.S.S.R. of any propaganda which advocates a return to capitalist profit making. Progress seems to us to

depend on entire freedom of thought and expression. Yet at the outset of this war two M.P.'s were imprisoned for expressing views contrary to the Government; the *Week* and the *Daily Worker* were suppressed; other newspapers warned; and *Picture Post* lost its subsidy for foreign circulation because of its critical articles.

Furthermore, when a country is threatened by invasion or civil upheaval the suppression of sects advocating disobedience to law is always accompanied by force. And Russia has never been free from the threat of war. The menace of attack has ever hung over her. Ringed by capitalist countries who sought in her earliest days to crush her, she knows that leopards do not change their spots, and through all these years of lull she knew that fascist countries and fascist-minded people in all countries were seeking in season and out to foment internal trouble. Restrictions on liberty in such situations are natural.

Weakness brings restriction. Strength brings freedom. And Russia's growing strength was accompanied by fresh instalments of liberty. In England the reverse is seen: her restrictions advance as her perils increase. Russia's years of growing stability were years of relaxing restrictions. Doubtless they will relax again when stability and security return.

The "purges" have troubled many. They are better understood today than in 1936, when they occurred and were used by an unscrupulous press to shock the world. Heralded here and in the United States as instances of ruthless suppression of internal revolt and independent political thought, they now appear as safeguards against the Quisling brood.

And never must we forget that Russia has been struggling through all these years to introduce a new order to a hostile world. There could be no question of swapping

horses in midstream. If you decide to build a cantilever bridge you must not change half-way through to a girder construction. Russia decided for good or ill to try a Socialist regime: the discussion of any other in midstream was futile and dangerous.

So much, then, for the criticism that Russia restricts the liberty of discussion on fundamental issues. When Russia is stable and secure she may learn much from us. We, in the meantime, may learn from her.

For Russia enjoys an *economic* freedom totally unknown here. Freedom for the British masses consists rather in words than realities. We are free to travel as we please, to eat and drink as we please, to attend spas and theatres and own fine houses as we please. No law prohibits it. But legal freedom counts less than nothing to Mr. E. P. of Aberdare who maintains his wife and four small children on an unemployment allowance of thirty-eight shillings a week, with a rental of eight shillings and sixpence. "Legal freedom" is mockery to him. We have the freedom of the vote, and very valuable it is, and may stand us in good stead one of these days, but a workless man cannot push a vote through the slot and draw out a job. Freedom to vote counts little to the unemployed. It is economic freedom they crave for, and it is economic freedom that the Russian workers possess.

Formal freedoms are valuable to the middle classes, worthless to the poor. Formal freedom has substance for the Russian worker, sure of a job, sure of a rising standard of life, and where privileged classes have ceased to draw off the cream.

Wage earners in this country—and they form ninety per cent. of the population—have indeed freedom to choose their work, but here again the freedom is legal rather than real. A worker can remain workless or refuse a job—

I speak of peacetime, of course—but the perpetual reservoir of the unemployed, retained largely for this very purpose, quickly supplies the place he vacates, and the only freedom left to him is freedom to starve.

One outstanding freedom the British worker possesses, the freedom to combine; freedom to band with others in a Trade Union and bargain with employers. But this very right, whilst it advanced life and conferred real liberty on the worker, was resented as restriction of liberty by the class who employed him. In 1820 men were free to work sixteen hours a day and start work at six years of age. Do we regret that loss of liberty? Women and children were free to work in mines fourteen hours a day dragging coal wagons through dark tunnels with harness round their shoulders. Do we deplore that lost liberty?

There is less liberty now than in 1820. Less "liberty" but more "life." Do we regret it? Some forms of liberty are illusory. Russia has bartered spurious liberties for life and real liberty.

Russia enjoys the liberty to procure a developed personality, through full and free education; the liberty of health, through a free and comprehensive health service; the liberty of security, through free insurance in sickness, incapacity and advancing years. Freedom from economic anxieties and haunting fears amidst the accidents of life are substantial liberties. If you doubt it, ask the next member of the forty-three million wage earners you meet.

Then there is freedom in the factory. Freedom to express on the wall newspaper your criticisms of the management, and the freedom possessed by all the personnel of your factory to scrutinize the Government's Five-Year Plan as it bears upon your own individual work. And then the further freedom for which we in our turn have yet to struggle: the freedom of being part owners with others

of the means of production and of having a real voice in the conduct of industry.

Russia has, furthermore, electoral liberties of exceptional range. All adult citizens in the Soviet Union, irrespective of nationality or race, have equal voting rights; restriction of which is punishable by law as a *crime*. Thirty-five different national peoples are represented by their deputies in the Soviet of the Union and fifty-four peoples of the Soviet Union in the Soviet of Nationalities.

Citizens reaching eighteen years of age have the right to vote, and youth of both sexes are encouraged to share in State work. Upwards of twenty-six per cent. of the members of rural Soviets and approximately eighty per cent. of the members of city Soviets are young people under twenty-five. No property qualification, no lodging qualification, and no qualification of domicile debars electoral rights.

And, to express one of the largest of all instalments of freedom into a single sentence: women possess precisely the same rights as men.

Who, then, can deny that Russia, who fights with us for ancient liberties, has found roads to new liberties of her own?

8. ROADS TO MORALITY

THE material results of an economy where co-operation replaces competition, and plan succeeds the riot of disorder, are obviously great and now apparent to all on the vast stretches where Russian armies are flinging the Germans back.

The moral results are greater still. The emphasis of life is changed. The community, rather than the self-seeking

individual, stands in the centre of the picture. The welfare of the whole and of each within the whole replaces the welfare of any class or classes. The motive of service replaces the motive of profit.

A new attitude towards human life is the natural outcome of the new economy. Individuals become ends, not means. A motor car factory has its eye on the promotion of human qualities as well as the production of motor cars. An industrial factory is a place where human lives can be made or marred; and in the Soviet Union the stress is on the making. Each individual receives opportunity and encouragement in self-development. A new humanism emerges. A creative life opens and culture receives new stimulation.

A programme which organises all productive processes in order that every individual, irrespective of age, sex, language or race should share according to need, has planted the seed of a moral principle deep in its soil and may rightly expect to reap the reward of a moral harvest.

The "good life" is a not unnatural result, and I would tabulate the harvest of the "good life" under the following heads:

1. The tap-root of selfish acquisition has been cut at one blow. Hard work may increase the wage and hard study the rate of wage, but the all-absorbing quest for wealth has gone for ever in the Soviet Union. It shrivels up through lack of opportunity.

2. The struggle between major instincts ceases. The instinct that fights for the self can be satisfied to the full, with no clash against the instinct that fights for the other man. My more strenuous work, where the other man and I both own what we make and the tools we make it with, enriches others as well as, or more than, myself. The clash between the lessons of Sunday and the practice of Monday

is resolved. Stakhanov reaped an immediate harvest for himself and his family when, by exercise of his brains, he doubled his output on the coal face. He benefited his comrades, and all the world as well, when he proceeded to teach others how to apply the same methods with no haunting fear of unemployment for himself or them, and with the certainty that coal would be cheaper for all and men released from hard and dangerous tasks to do other and better work.

When Philip Jordan visited the Stalin Motor Works in Moscow in August, 1941, he wrote the tale of the "pressing mill, which stamps crankshafts, frames, spring-leaves and all the multiplicities of simplified mass production for steel, is the same pressing mill you may see at Dearborn or Cowley. But with this intangible difference, I think: that the visitor can sense something different in the air, some sense of shared possession that makes the urgency greater and the interest in the job profounder."

3. The fears which bind and devitalise men—fear of dismissal, fear of unemployment, fear of trade depression, fear of sickness, fear of impoverished age, and all the other economic fears for oneself, for one's wife, one's children—depart at a stroke. Energy is released. Men can work more strenuously and walk more proudly with fears dethroned. Support in sickness, incapacity and old age is assured in the Soviet Union.

4. Creative work opens doors for all. Booms and slumps have gone. The nightmare of unemployment fled a dozen years ago. Prospects of leisure open out, but it is leisure for all, as well as work for all. Idle classes are not tolerated, neither is overwork countenanced.

5. Ownership increases, private ownership of goods by which a man expresses himself, and public ownership of machines which make the goods. With the sense of own-

ership comes the sense of responsibility. In the Soviet Union men work on their own property and pay heed to it. They speak of "our" factory, "our" store, "our" Metro, as we speak of our home or our motor car.

6. Lies, deceit, secrecy make life in capitalistic industry a distress to men with sensitive moral consciences. It is not easy to speak strict and generous truth in many branches of competitive industry. Nor is it possible for scientists to be completely frank about their discoveries in a commercial laboratory. Science and industry alike are freed in the Soviet Union from these occasions for deceit. And in a factory where no man's speed at work is another man's undoing but where skill, speed and invention augment the pool of goods in which all share, the main incentive to ca'canny has departed. It becomes wholly *social* for a good comrade to do abundant work.

7. Creative tasks, open to all, make possible the true pursuit of vocation. A boy or girl can cultivate his or her own peculiar gift and receive positive encouragement to do it. Zest is added to life when a boy follows his bent and never needs, in order to gain a livelihood, to undertake tasks which he knows to be futile and believes to be unsocial.

8. With the drive for profit gone, much that is vile in public life has gone with it. In five Republics and nine great cities of Russia, I wandered by myself, at all hours of day and night; in front streets and back streets, in theatres, operas and picture shows, on the seashore and in suburban lanes; I looked in bookstalls and magazines. I do not recollect once having observed anything I should be ashamed of a girl of seventeen seeing with me. It is the only country in the world of which I could say it. To pander to base instincts is a short cut to profit, and to cut out profit proves in Russia to be a swift road to the cleaner life.

9. Not for one section or one colour, race or language are these benefits planned. They are planned for all. When industry was redistributed it was not with an eye merely to greater security or greater wealth. It was done because humanity demanded it. All men are brothers and all nationalities must share the benefits. Soviet morality extends its benefits to individuals of all languages and races and colours in a very far-flung union of peoples.

9. ROADS TO RELIGION

RUSSIA'S achievements rest on moral foundations. Russia's beliefs have affinity with religion.

Failure to realise these two facts has been responsible for widespread hostility to Russia and a contributory cause of war. Deliberate falsification has mobilised the churches against the Soviet Union and they are suffering now from the recoil.

Religion, in relation to Russian Communism, can best be discussed under three heads:

(I) *Communism, and Religion as an External Institution.*

Religion in Russia has a bad record from any moral standpoint. Liberal and progressive thinkers, long before the Revolution, distrusted it. And not without reason, for the Orthodox Church condoned a serfdom which differed but little from slavery, and working hand in glove with Tsarist tyranny and brutality professed itself the foe of education and science.

Lenin and Stalin became anti-religious precisely because they saw that institutional religion had consistently sided with organised injustice. England has small conception to-

day of a church acting openly and consciously as the ally of the State in the harsh exploitation of the common people.

After the Revolution the Russian Orthodox Churches, as was natural from their Tsarist connexions, became in many places centres of plotting against the new regime and in particular served as footholds for intrigue of the White Russians and their foreign allies against the Soviets. The Patriarch's message to the Church when the Revolution took place was to pronounce an anathema upon any Christian associating with the Revolution. Bishops and priests assisted, some even fought with, the armies of intervention. Small wonder that popular feeling ran high and deplorable outrages took place.

No revolution is free from such things, though the foreign reports, like every item of news from Russia, as we now are learning, were greatly exaggerated. (It is illuminating now to re-read in *The Times* newspaper over a period of years the news coming regularly "from our own correspondent in Riga.") Cruel deeds were perpetuated in our own Revolution: the Long Parliament, which was the turning point in the political history of the English-speaking races, leading to our present and valued liberties, was the Parliament which beheaded its King.

Despite all this provocation, and though religion, regarded as an anti-social force, was officially and ideologically discouraged, it was never officially suppressed; and Soviet Russia recognises what seems to her to be the genuine element in religion, makes a place for it and sternly enacts that its observance should be treated with respect. Statute 124 of the Stalin Constitution of 1936 reads as follows:

"In order to ensure freedom of conscience, the Church in the U.S.S.R. is separated from the State, and the school

from the Church. Freedom of religious worship and freedom of anti-religious propaganda is recognised for all citizens."

The closing words of this Statute sound odd and ominous to Western ears: anti-religious propaganda is free; religious propaganda not free. It is not permitted to practise religious propaganda amongst children, for instance. Sunday schools are prohibited, though all children may be taught religion at home and religion may be taught in theological seminaries.

This sounds more harsh to us than it would to a Russian Communist or even to a communicant of the Orthodox Church. And there is an element of support for it from the past history of Russian religion, which differs radically from the history of religion in the West. Western Christianity lays stress on teaching; Eastern Christianity on acts of worship. Western Christianity elaborates theology and doctrine and formulates moral principles and rules for social behaviour, especially in the Protestant Churches. The Orthodox Church emphasises worship. Ritual, symbolism and emotion are central in Eastern Christianity. To attend worship resembles participating in a drama; with left-wing Protestantism it resembles attending a lecture. The Eucharist is the emotional exercise in the East; the Sermon as instruction in doctrine and exhortation to morality is the intellectual exercise in the West.

The Orthodox Church would agree with the Soviets in saying that worship was the central, if not the exclusive element, in religion.

To that element the Soviets grant full freedom. They deny it to other elements and do not realise that they are, from a Western point of view, thereby causing exceptional hardship. Teaching and propaganda were not of the essence of the Orthodox Church. Under the Orthodox

cloak, propaganda subversive to the Soviet regime had crept in. Therefore propaganda was disallowed.

This restriction presses specially heavily upon those forms of religion, like the Baptists, which concentrate upon elements the very opposite of those valued by the Church of the masses.

But even here restriction is not rigidly enforced. My friend, Mr. Pat Sloan, taken to hospital whilst serving in Moscow, was himself the subject of such propaganda from his Baptist Russian nurse.

Furthermore, Britishers and Churchmen must bear their own share of blame for the restriction. It was the menace of the capitalist war of intervention after the Revolution which was a contributory cause of the restrictions, for religious organisations had become centres of "fifth column" activities. Had English Christians understood and welcomed the moral elements of the new order, Russian religion would the more speedily have gained liberty.

If denial of propaganda is especially irksome to Protestants, denial of the right of a Church to own its own property is especially irksome to Roman Catholics. The Russian Church can own no property. Revenue from land or capital is denied to all groups or individuals in the U.S.S.R. There is doubtless an especial reason why the Roman Church presses for it, and why the U.S.S.R. resists the pressure. If a Church holds property in buildings and receives revenue which can be administered from an external centre it is able to keep alive a languishing Christian communion in any locality, or reinstate one which has died. Without that right organised religion in any locality might permanently cease.

In summary Russian institutional religion enjoys the following liberties:

1. The Soviet Government does not interfere with the convictions of believers or meddle in the private concerns of religious bodies. Ecclesiastical and Sectarian Communities enjoy the rights of full self-government. Freedom of conscience is fundamental in the Soviet State. Nor is any one Church, as in Spain or Italy today, allowed to dominate the rest.

2. Religious communities in the U.S.S.R. number 30,000, and places of worship 8,338. In these, believers freely practise religious worship, baptise children, marry, perform funeral ceremonies, celebrate festivals and fasts, keep icons in their houses and elect office holders in their own religious community.

3. Premises are provided for worship free of charge or tax. Attempts to infringe these rights are penalised by law.

4. Clergy enjoy equal rights with other citizens. They may elect, or be elected, as members of the supreme organs of the Soviet Government. Children of ministers are admitted to full privileges in the economic and cultural life.

5. Each nationality may perform religious ceremonies in its own language, a privilege denied in Tsarist days. The Metropolitan Boretsky, of the Ukrainian Orthodox Church, declared with pleasure on January 28th, 1930: "The Soviet power has given legal opportunity for Ukrainian religious believers to restore their own native Ukrainian autocephalous free Greek Orthodox Church—that very church which for about 300 years was held in bondage by the official government Greek Orthodox Church."

The Greek Orthodox Church has thrown itself behind the war against fascism in an appeal which contains these words: "It is difficult to imagine such an assault could be launched at a country which pursued the object of peaceful upbuilding, which openly declared that it does not

appeals.

It is pertinent to note that Metropolitan Sergius, of Moscow, supreme head of the Russian Orthodox Church, has denounced and excommunicated in the sternest and most trenchant terms a certain Polikarp, a bishop of the Ukrainian Orthodox Church, who had urged his flock in the German occupied territory to pray for a German victory. This denunciation, which adds that Polikarp had always been a worldly priest, was issued on February 5th, 1942. No word of it, though cabled *in extenso* to England, has appeared in the English religious press.

(II) *The Inner Meaning of Communism and Religion.*

In its positive aspect, in what it does and what it strives to do, Communism is no enemy to religion, certainly not to the Christian religion. It treads a path which true religion must tread, but sometimes neglects. It recovers some of the things that are or should be central in religion.

1. It provides a moral basis for society. It kills the immoral order in which too long we have acquiesced. It has achieved those things which we profess with our lips but deny in our lives. And it is by our acts, not by our words, that we shall be judged: "Not every one that saith unto Me, Lord, Lord, shall enter into the Kingdom of Heaven; but he that *doeth the will* of my Father which is in Heaven."

2. It saves us from selfish isolation and re-orientates life.

We shall do well to remember that a passionate assertion of atheism no more means that a man is fundamentally irreligious than a passionate profession of belief in God necessarily stamps a man as religious. As Tolstoy

being tells me that you believe in God. The orientation of our entire life tells the truth about our belief. Our life prays more sincerely than our lips.

Is not a real belief in God the power to live as part of the whole of things? Is it not that which lifts us out of our self-centredness, and frees us from our fears?

Apply that searching test to ourselves. Many of us who profess belief in God really distrust the world and men and prove our lack of confidence in the supreme power by hedging ourselves around in our isolation and building up our own security. To put it vulgarly: we say we trust in God but we take no chances. In a word, we are self-centred. We lack enthusiastic belief in the possibilities of the world or man, or in the providence which orders both.

Apply that test to the Communist.

The disinterested Communist has recaptured much of the power of living as part of the whole of things. He sees (as the materialism against which Lenin fought and won, does not) purpose running as a golden thread through the whole story of life as it evolves on this planet. He has faith in the power which determines the destiny of mankind. He feels himself to be an instrument in the hands of a power which is not unfriendly, and which is here and now achieving its purpose of creating a universal brotherhood of mankind, a classless society.

To believe that and to live by it is to have recovered much of the core of a real belief in God. That may not be, and certainly is not, the whole of religion. It is a very vital element of religion. It is a great contribution. Russian Communism does, in a deep sense, provide a road to religion.

(III) *Christian Practice and Communist Practice in Relation to Social Life*

To the Communist, as to the Christian, community is paramount. Man realises himself in society. The Communist puts the Christian to shame in the thoroughness of his quest for a harmonious society.

If reliance upon the whole of things comes near to loving the Lord thy God with all thy heart, so also the Communist Charter: "From each according to his ability; to each according to his need" is a near approach to "Love your neighbour as yourself."

And Communist and Christian alike are, in this respect, in line with all the teachings of geologist and biologist, who point out that every successive upward step in the march of life has been a fresh advance in organisation. The single cell, the lowly creeping thing, the mammal, man—through it all we observe a growth in the number, complexity and inter-relation of parts in a whole. That is the line of growth. Then, from that highest complex creature which we call man, we pass on to a new complexity, a group of men.

The building up of the group is a hard task. It requires give and take. But the game is worth the candle. We can give up much when we join a group. We stand to gain more than we give. An Alpine climber, when he joins a group, gives up his own undisputed will and way. A rope ties him to his fellows: but he reaches heights impossible alone. The engineer, seaman or officer who crosses the seas in a liner yields much. He yields the kind of freedom the lone sailor possesses. He gains a new freedom in speed and safety of transit.

Science knows this thing and calls it "renunciation of the dominant impulses." Life has practised it since the

free-living independent cell, out of which all bodies are built up, gave up the lesser freedom and found the greater in animals whose bodies consist of cells.

Religion knows it and calls it "renunciation," and says "he that would save his life must lose it."

Today we confront disorder. Chaos reigns. The chaos of sovereign states unrestricted by any moral law. The chaos of a world of slumps and booms, where natural resources and machinery of production are retained as private property by men who can bar the approach of the masses to their only means of livelihood. Chaos, where vast monopolies war with one another and profit-making rules production.

Science says if any force is at work which resolves this chaos, which unites the world of men as a whole, limited indeed by the renunciation of economic independence, but otherwise set free to develop gifts of customs, language, art and literature, then that force is in the line of life.

Christianity demands it.

Communism lifts us on the road to its achievement as the whole story of this book declares, and if Communism cannot be regarded by religious men as the end of the whole life process, it marks a most significant step in religious development.

10. THE MEN WHO DID IT

RUSSIA'S achievement is confessedly great. With human material far from promising—a small but compact body of factory workers amidst an overwhelming mass of backward peasantry—there has been steady advance, appearing, as we look back upon it, both logical and consistent.

What master-mind engineered this achievement? Such things as these do not just "happen."

They certainly did not just happen in Russia. The Soviet Union has been guided, led, inspired by a Party, the Communist Party, brought into being by master minds, founded upon definite principles, working along clear-cut lines, steadied by rigid and self-imposed discipline and aiming at a well-defined goal.

The Communist Party is akin to a religious order, composed of men of single mind, inspired by profound and essential truths, aglow with purpose, men prepared to die for their ideal. The unanimity with which men, women and children willingly burned their farms, homes and factories on the eastern front reflects the spirit which has animated the Communist Party throughout forty years of struggle.

The Communist Party has been the spear-head of the Revolution, the vanguard of the advancing army of workers. It remains today the conscious, disciplined, organised body which guides the development and directs the activities of the masses; not in the sense of lording it over them, but in the sense of revealing to them the nature of their power and bidding them arise and work. Lenin's desire that every cook must be able to govern the country is a neat summary of its aim.

The Communist Party itself sprang from tiny circles who met in the eighteen-nineties to study Marx. They were taught as they studied that something new had happened when the method of making food, clothing and other necessary goods changed from the home scale to the factory scale of production. Large-scale factory production meant division of labour. That was new. It meant co-operation within the factory. That was new. Steam-power issuing from a single mighty unit, evolving the vast highly

organised human network which we call the factory, involved social co-operation on a giant scale. All that was new and it was bound in the long run to spell the end of the capitalism which gave it birth. For if things are co-operatively made, and made so much more efficiently and speedily by men who are forced by circumstances into this factory life, and who indeed alone make factory life possible, why then should not the factory be co-operatively *owned* by those whose labours have made and worked it?

That is logical, just, inevitable. But it will come the more swiftly and smoothly and give its benefits the more fairly and generously, if those whose life and condition call aloud for it, and on whose will its coming ultimately depends, can be made themselves to understand the whole process of which they form the all-essential and the one indispensable part, and if they grow consciously aware of the goal whither they are unconsciously tending. When consciousness dawns on the whole, the goal can be reached with speed and ease.

Marx and Engels saw this in the middle of last century and, in addition to expounding it in their more learned treatises, stated it in the simplest language for the workers themselves in the famous *Communist Manifesto,* written now nearly a century ago. Marx proceeded at once to teach the factory workers to understand their goal and perceive their strength. He knew what they were up against. Capitalism would fight. Fortresses must be stormed. To do this effectively the factory workers must have their own class-conscious party, which he called the Communist Party. The challenge was taken up by the groups.

Through many vicissitudes, and under varying names these groups of men and women who perceived the scien-

tific principles under which men lived and worked, began the fight towards their goal. First through the formation of groups for the spread of knowledge, such as, in the Russian field with which we are now concerned, the Emancipation of Labour Group, and then the more virile St. Petersburg League, which aimed at doing, as well as teaching, and was founded by Lenin in the 1890's.

Lenin's genius gave new direction to the movement and new strength to the Party. Reared in the middle class, but steeled in adversity through the persecution which followed the execution of his brother, his massive intellect, dominant will and iron purpose, which no obstacles or dangers could daunt, were wedded to a warmth of sympathy and tenderness which made him enter into the minds and problems of burdened men, women and children. Lenin stands out as one of the world's greatest men and lived to see a mighty nation pioneering triumphantly in the establishment among men of the new "Good Life." Rooted and grounded in the theory and principles of the working class movement, his strategy of large-scale and long-distance operations was matched by his tactical skill. Lenin knew when to advance and when to retreat.

Lenin's personality matched his purpose. He was singularly lovable. He commanded affection and inspired confidence. He gathered around him powerful men, and the right kind of men. Young Joseph Stalin, born in Georgia and trained in a seminary for priests, chafing at the economic enslavement of his people, leading a strike at Baku, "running the gauntlet" with head erect and book in hand whilst two lines of soldiers rained blows on head and back, was the kind of man naturally drawn to Lenin, as Lenin to him: "Here with us," writes Lenin to Gorky, "is a wonderful young Georgian."

These were the type of men with whom Lenin built up the Communist Party, making it a mighty instrument of human emancipation. They were men of purpose, men whose disciplined lives engendered discipline; men to whom compromise was alien, who suffered without yielding, who knew the brutalities of ruthless capitalism, and had absolute belief in the beneficence and inevitability of the order which was to replace it. If their methods were not ours, we must remember that their circumstances were wholly different from ours, with our stabilized population, and our unwritten constitution permitting the establishment, if need be, of a new social order without violent upheaval against a government so despotic as that of the Tsarist regime.

The history of the stages by which the Communist Party moved to its present triumph makes a fascinating study. Some chapters grieve us. Bred in a hard school themselves, it is more than we could expect to find their methods gentle, though for the first nine months their regime was strikingly mild and only changed after Lenin had been struck by an assassin's bullet. Then they were ruthless. Our own Long Parliament, to which we owe some of our most cherished liberties, was also ruthless. And even today, in the interests of freedom, we bomb helpless workers, our former Allies, in French engineering factories. The ultimate test in all these respects, however, is whether the brutality is part of a principle or merely an expedient in times of peril when the people's cause hangs in the balance. Does brutality depart as security comes? The ruthlessness of Russia passes as our ruthlessness passed; and though it mars the picture it should be judged in the light of the oppressions which engendered it and constrained its use.

Lenin's skilful hand guided the Party till incapacitated

by the bullet which led to his death in 1924. Very early he perceived the need of a journal on the All-Russian scale to link up the scattered Marxian groups. *Iskra* ("the spark" that kindled the flame) appeared in 1900, and when that was commandeered by the Mensheviks, the compromising section of the Russian Social Democratic Labour Party, against whom he resolutely and at length successfully fought, it was followed by *Pravda* (Truth), which welded the Party ideologically and through its network of distributive agencies united the workers in one organisation.

In the Social Democratic Labour Party, Congress followed Congress. The second of the series was held in secret in London in 1903 and created the Party, which was the forerunner of the great Communist Party, and gave it a programme which sufficed until the Revolution itself.

Lenin's output of literature was immense; his pamphlets and books form a veritable library. One of them, written in 1904, under the title *One Step Forward, Two Steps Back* drew up the following principles which were adopted by the Party.

1. The Marxist Party is a vanguard detachment of the working classes: a class-conscious Marxist detachment.
2. The Party is an organised department of the working class, with its own binding discipline.
3. The Party is the highest form of organisation of the working class, a guide to all its other organisations, manned by the finest members of the class and armed with an advanced theory and equipped with knowledge of the laws of the class struggle.
4. The Party links the vanguard of the working class with the millions of the working class.

5. The Party is organised around a centre, with one set of rules and one discipline.
6. In the Party no select few, such as the intellectuals, are permitted to stand outside the mass organisation and mass discipline of the Party.

This programme and these rules mark the Party through the years of the Russo-Japanese war and the Revolution of 1905 to which it led, and then through the years of reaction when Lenin perceived the necessity for bringing the peasants into alliance with the workers and the added need of educating worker and peasant alike in the principles on which society is founded and by which its advance is controlled.

Lenin knew when "to go underground"; when to bide his time and when to strike. Just because the Communist Party saw the principles which made revolution inevitable they were undisturbed by the receding tide after the 1905 failure, and fully prepared for the timid middle-class Revolution of spring, 1917. "Not for nothing," Lenin said, "do they say that we are firm as a rock." The Communist Party knew where it stood.

Lenin saw the Bolshevik Party, in 1917, with its small membership steeled with past struggles, and full of fight. Stalin had returned from Siberian exile soon after the overthrow of Tsarism. Lenin had returned from European exile in April, 1917, and had been received by workers, soldiers and sailors with incredible enthusiasm at the Finland Railway Station. Lifted shoulder high and mounted on an armoured car, he called upon the masses to fight for the victory of the Socialist Revolution.

Through all the vicissitudes of struggle against the nine armies of intervention seeking, as they did, to crush the Revolution from without, and against the civil revolt

of the White Guards attacking it from within, the Party fought stubbornly and successfully on. Through the no less difficult period of transition to peaceful work, Lenin still led it skilfully until stricken down at the end of 1922 by the after-effects of the assassin's bullet of 1918.

Masterly statesmanship was needed to solve the clash with the peasants, to whose aid, bought by the promise of land, the Revolution owed so much of its successful achievement. Peasant ownership left no surplus of foodstuff to feed the towns. Small-scale farming could not make use of machinery and left the farmer no time for science or experiment. The small farm must of very necessity be replaced by the larger and more scientifically directed unit. A terrific struggle arose from this necessity, but the Party surmounted it. Lenin's statesmanship enabled him to reinstate a number of capitalists in what was called the New Economic Policy, whilst however retaining the key positions of banks and large-scale production.

Lenin passed away on January 21st, 1924, in the village of Gorki, near Moscow. The international proletariat proclaimed a five-minute stoppage of work. Railways, mills and factories came to a standstill as the great working class leader was borne to his grave.

That the Communist Party, however, was a reality and not a façade behind which one man operated, was shown by Russia's steady line of progress since Lenin's death. Stalin and his comrades could also lead. The Communist Party *created* leaders. Stalin's words at Lenin's funeral are memorable and worth recalling:

"Departing from us, Comrade Lenin adjured us to hold high the purity of the great title of member of the Party . . .

"To guard the unity of our Party as the apple of the eye . . .

"To guard and strengthen the dictatorship of the proletariat . . .

"To strengthen with all our might the alliance of the workers and peasants . . .

"To maintain the voluntary union of the nations of our country . . .

"To strengthen the Red Army . . .

"We vow to you, Comrade Lenin, that we will fulfil your behest with credit."

Hundreds of thousands of workers flocked into the Party, prepared to give their lives to the cause. In May, 1924, the membership had reached 735,881 and the work proceeded even more vigorously than before. The Five-Year Plans were evolved and perfected and the cultural standard raised. The difficult transition to collective agriculture was effected and Socialism saved.

The history of the Communist Party shows that the victory of the common people is impossible without a disciplined party working within it, a party free from opportunism and irreconcilable to compromise and capitulation; a party of the working class which has mastered the laws of social life and is able to find the right orientation in any given situation; a party able to prevent the lower middle class from pushing the backward sections of the working class into the arms of private owners of industry; a party removing the opportunists, preserving unity and discipline within its ranks, acknowledging its mistakes and correcting them, whilst ever maintaining the widest possible connection with the masses, apt to learn and able to teach.

Without such a party Russia could never have borne the shock and maintained its cohesion of will and purpose throughout the terrible five and a half months of defeat and retreat which followed Hitler's initial attack. It was

the iron core of unity and determination that made possible what is probably the greatest feat in military history and turned an ordered retreat of eight hundred miles, without pause or hesitation, into the long and effective counter-offence.

Other countries, as we have seen, disintegrated through infinitely less pressure and reverses. It was Russia's will, manifested through the Communist Party, which saved Russia and the world in 1941 and 1942.

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