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VOL. 7

The
Modern
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EDITOR: DR. JOHN LEWIS

SUMMER, 1952

THE GREAT CONSTRUCTION SCHEMES

THE CALIFORNIA OATH

ARAGON—LES COMMUNISTES

THE SOVIET CHEMICAL CONTROVERSY

THE MODERN QUARTERLY

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The Great Construction Schemes

BY CHRIS FREEMAN

I

INDUSTRIAL production in the U.S.S.R. is now more than double the level of 1940,¹ in spite of the fact that the devastation caused by the war was greater than in any other country. This extraordinary rate of industrial development has set a number of economic problems, which are of outstanding importance for the all-round development of the Soviet economy. Moreover, it throws a flood of light on the question of Soviet rearmament which has been one of the alleged reasons for rearmament in the West.

First, there is the need for a rapid increase in the supply of electric power. Throughout the period of industrialisation the output of electrical energy grew faster, relatively, than other branches of the economy, and must continue to do so. The electrification of many sectors of industry; the introduction of fully automatic production lines, and of complete automatic factories; the rapid development of the non-ferrous metal industry and the chemical industry, all require abundant supplies of cheap electric power. The expanding sale of household electrical appliances of all kinds is leading to a considerable growth of domestic demand. Finally, the electrification of many agricultural processes will add to the need for a steep increase in power production.

Secondly, there is the problem of securing a substantial and stable increase in food production, and in the output of certain agricultural raw materials for industry. This is necessary because of the rising standards of consumption, the requirements of international trade, and the steady growth of the urban population.

Thirdly, there is the problem of improving the transport network, to cope with the rapidly increasing output of industry and agriculture, and to reduce transport costs for the economy as a whole. In a country of such enormous size as the U.S.S.R., this problem assumes particular importance.

The "Construction Schemes" are designed to contribute simultaneously to the solution of all these problems. They involve the construction of hydro-electric stations, irrigation canals, and inland waterways. All the schemes are closely inter-related and intimately connected with the 15-Year Afforestation Plan and

other changes in agriculture. Together they will make an immense contribution to the economic development of the U.S.S.R. But it would be quite wrong to see the schemes as a series of makeshift improvisations to deal with particular bottlenecks that have arisen in the course of Soviet industrial expansion. They have a far greater significance. They are an integral part of a vast plan to create the material foundations of a communist society in the U.S.S.R. The fundamental aim of the Bolsheviks has always been to create an economy of abundance, where each will receive according to his needs. The "Construction Schemes" are the key projects in the present stage of this general advance, and are therefore frequently referred to in the Soviet Union as "the Construction Sites of Communism".

This does not mean that the Soviet people and their Government have any illusions as to the magnitude of this task. They do not imagine that the completion of this or that power station, or indeed of all the present schemes will usher in the millennium. On the contrary, they have a very sober and practical understanding of what is involved. As Molotov said at the 18th Congress of the C.P.S.U.(B.) in March, 1939: "We have still a lot of work, a tremendous amount of work to do before we can really provide the U.S.S.R. with all it needs. . . . We have entered a new period of development, the period of gradual transition from socialism to communism. But this transition to communism implies an abundance of all commodities from which we are still far removed. It implies so high a level of technical and economic development in our country as will exceed by far the present level of any capitalist country, even the economically most developed." He estimated that it would take "ten or fifteen years at least" to overtake the leading capitalist countries in *per capita* output.²

In February, 1946, after the tragic losses of the war years, when Soviet production was below the 1939 level, Stalin estimated that it would take: "perhaps three new 5-Year Plans, if not more," to raise the output of oil and steel to 60 million tons *per annum*, and the output of coal to 500 million tons *per annum*.³ Even after the achievement of these targets, the U.S.S.R. would still be behind the U.S.A. in *per capita* output in these key branches of industry. It now seems highly probable that if war can be prevented, the Soviet Union will in fact reach the targets set by Stalin before 1960.

But the Soviet Government and people have always been capable of relating their immediate tasks to the long-term trends of history.

Great vision and majestic sweep are characteristic features of their planning. They understand that they have undertaken the most grandiose economic effort in the history of humanity, and they are not deterred by the difficulties. Looking back on their past achievements in the transformation of a backward country, and the incredible obstacles which they overcame, they are confident in their capacity to reach their goal. They realise that the road to communism, with its economy of abundance, will not be short or easy. But they also know that the fulfilment of the "Construction Projects" will take them a big step forward along this road. It is this which inspires them to complete the schemes ahead of schedule, and hasten the achievement of their vision of the future, and which gives them such a vital interest in the preservation of peace.

When Mr. Attlee, at that time still Prime Minister, asserted in the House of Commons that the Soviet Union had never demobilised after the second world war but had on the contrary constantly increased its armed forces, Stalin replied:¹⁶

". . . No state, the Soviet state included, can develop to the utmost civilian industry, launch great construction projects such as the hydro-electric stations on the Volga, the Dnieper and the Amu-Darya requiring budget expenditures of tens of thousands of millions, continue a policy of systematic reduction of prices of consumer goods, likewise requiring budget expenditures of tens of thousands of millions, invest hundreds of thousands of millions in the restoration of the national economy destroyed by the German occupationists, and, together with this, simultaneously with this, increase its armed forces and expand war industry. It is not difficult to understand that such a reckless policy would lead to the bankruptcy of the State. Premier Attlee should know from his own experience, as well as from the experiences of the United States, that an increase of the armed forces of a country and an armaments drive lead to expansion of the war industry, to curtailment of civilian industry, to the suspension of big civilian construction projects, to an increase in taxes, to a rise in the prices of consumer goods. It is clear that the Soviet Union does not reduce but on the contrary expands civilian industry, does not curtail but on the contrary develops the construction of immense new hydro-electric stations and irrigation systems, does not discontinue but on the contrary continues the policy of reducing prices—it cannot simultaneously with this expand war industry and increase its armed forces without taking the risk of going bankrupt. And if

Premier Attlee, notwithstanding all these facts and scientific considerations, still finds it possible openly to slander the Soviet Union and its peaceful policy, this can be explained only by the fact that by slander against the Soviet Union he thinks to justify the armaments drive in Britain now being effected by the Labour Government."

Mr. Attlee and Mr. Churchill have been able to deceive the British public about the Soviet Union's allegedly aggressive policy, only because the people have never heard the facts about the construction schemes, and their significance. Once these facts are widely known, this deception will no longer be possible. It would be ridiculous of course to deny that the Soviet Union has powerful armed forces, and that these also benefit from the high level of Soviet science and technique. If the Soviet Union had not been prepared to defend itself, it would have long since ceased to exist. It is true also that since the time of Stalin's statement, the Soviet Union has been obliged to increase its expenditure on defence, in face of the frantic armaments drive in the U.S.A. and the preparations to re-arm Western Germany and Japan.¹⁷ Nevertheless any fair-minded person will recognise the essential truth of Stalin's statement: that great civil engineering schemes, expanding social services and increased output of consumer goods¹⁷ at reduced prices are incompatible with vast preparations for an aggressive war. Everyone in Britain now knows from bitter experience that a big arms programme means cuts in the social services, rising prices, reduction in capital investments for civilian projects, and a decline in the output of consumer goods. If the main aim of Soviet policy had really been a military attack on Western Europe, then the construction schemes could never have been launched.

II

It is not possible in an article of this scope to deal in detail with each one of the schemes.⁴ The table opposite gives some important statistical data in summarised form, and here it is intended only to outline some of the main features of the projects, and indicate their combined contribution to the development of the Soviet economy.

The hydro-electric stations will add over 20% to the present annual electricity output of the Soviet Union.⁵ Most of this will be produced by the two giant stations on the Volga, at Stalingrad

River	Annual flow (cubic Kms.) ¹	Power stations	Capacity (million Kwh.) ²	Annual output billion Kwh. ³	Main canals ⁴	Annual flow (cubic Kms.)	Length ⁵ (miles)	Area to be irrigated (millions of acres)	Area to be watered (millions of acres)	Projected date of completion
Volga	256	Kuibyshev Stalingrad	2 1.7	10 10	Stalingrad Irrigation Canal	12	370	2.5 3.7	28.7	1955 1956
Don	28	Tsimlyans- kaya	0.16	0.75	Volga-Don Transport Canal Don Irriga- tion Canal	7	63 118	1.8	4.9	1952 ⁷ 1957
Dnieper	53	Kakhovka	0.25	1.2	South Ukrainian and North Crimean Irrigation Canals	340	340	3.7	4.2	1956
Amu-Darya	42	Takhia-Tash (and 2 others)	0.10		Turkmenian	13	683	3.2	17.3	1957

¹ For comparison, the annual flow of the River Thames is about 2½ cubic kms.

² The capacity of the first Dnieper hydro-electric station was 0.31 kw.

³ The Annual output of hydro-electric power in Switzerland in 1950 (a good year) was 10.3 billion Kwh.

⁴ The Annual output of hydro-electric power in Britain in 1950 was 1.5 billion Kwh. (output of thermo-electric power was 58.5 billion Kwh.).

⁵ In addition there are thousands of miles of branch canals, some of which are equal in size to big rivers.

⁶ The Suez Canal is 101 miles long. The Yusuf Irrigation Canal in Egypt is 262 miles long.

⁷ The schemes provide for intensive irrigation of some land by gravity-feed canals and pumping, and for irrigation of a much larger area by "watering" with sprinklers, by periodical flooding, etc.

⁸ These projects have already been completed ahead of schedule.

and Kuibyshev, which will be the largest in the world. Together they will generate in normal years about as much power as all the hydro-electric stations in Italy—about 20 billion KwH. Just over half of this will be transmitted to the Moscow industrial region, about 500 miles away, by special transmission lines with a tension of 400,000 volts. A further 6% will be transmitted to the Kursk-Voronezh area, while the remainder will be utilised in the Volga region itself. The linking of the power network of the Volga with that of Moscow will bring many economic advantages, and permit great flexibility in electricity supply. A smaller power reserve is required for such a unified system than for separate systems with the same total capacity. The output of the giant hydro-electric stations can be more completely utilised over a very large region. Variations in the flow of water will mean that they will sometimes produce more than the annual average, and sometimes less. In bad years, the thermo-electric stations will be able to produce more power to compensate for the fall in hydro-electric output, while in good years they will be able to economise in fuel and build up reserves. Since Soviet economists reckon that the hydro-electric power will be seven times as cheap as thermo-electric power, these economies will be of great importance. The annual load factor of the power stations will be balanced by pumping for irrigation in the Summer months, when there is a fall in the demand for heat and light in the cities.

A characteristic feature of the schemes is the compound utilisation of water resources for power, irrigation and transport. Each scheme is designed to serve several purposes. For example, the construction of great dams on the Volga, while providing an immense source of hydro-electric power, will simultaneously provide a huge volume of water for irrigation of the dry trans-Volga region. As much as 17% of all the power produced will be used for irrigation purposes. At present two-thirds of the annual flow of the Volga comes down in the flood period. The reservoirs will retain a considerable part of these spring floods and the water will be used in the summer for irrigation. A great irrigation canal will flow eastwards from the Stalingrad reservoir, with an annual flow of water four times as great as that of the river Thames.

This and all the other irrigation schemes are closely connected with the 15-Year Afforestation Plan which was commenced in 1948. Together they will change the climate of a vast area stretch-

ing from the Southern Ukraine to the river Ural, larger than the whole of Western Europe. Throughout this region the rainfall is low, the rate of evaporation is high, and droughts occur about one year in three. Since the Revolution, a good deal has been done to mitigate the effects of drought, but now it is no longer a question of weakening the effects of drought, but of eliminating them altogether. The re-distribution of the flow of the Volga, the Don and the Dnieper, both seasonally and spatially, will greatly reduce the waste of water in the Spring floods, and will bring the water at the right time to the right places. The main forest shelter belts are being planted along the river valleys, and on the watersheds between the valleys. They will help to conserve the moisture, especially from melting snows, and together with the belts of trees planted round collective farm fields, ponds, and reservoirs, and along the gullies, they will reduce evaporation by acting as wind-breaks to interrupt the dry winds just above ground level. The growth of a rich vegetation and the new methods of crop rotation will still further reduce the loss of moisture.

The combination of all these measures will finally check soil erosion, and ultimately change the climate throughout this enormous area, creating conditions for high and stable agricultural yields. The long-term effects on food production are incalculable, but L. P. Beria has estimated that the irrigated land alone will yield the following additional crops: eight million tons of wheat (more than the total Canadian wheat crop); six million tons of sugar-beet (more than the total output of the U.K.); three million tons of cotton (more than the combined crop of Egypt and Pakistan); and half a million tons of rice.⁶ In addition there will be large quantities of fruit and vegetables and of livestock products. Altogether these schemes will add one-third to the world total of irrigated land, equivalent to the total area of Britain, Belgium, Holland, Switzerland and Denmark.

One of the biggest and most interesting schemes is the Turkmenian Canal, which will divert a large part of the flow of the Amu Darya across the Kara Kum desert to the Caspian Sea. The entire economy of the Turkmenian Republic will be transformed by this project. At present more than 80% of the country is desert and the total crop area in 1950 was only just over a million acres.⁷ The addition of more than 3 million acres of rich irrigated land will increase agricultural output several times over, not to mention the extra 17 million acres which will be watered by the scheme.⁸ In

Turkmenia, there is more sunshine than in any other part of the U.S.S.R., and once the problem of water supply is solved, the soil is extremely fertile. The Republic will become a great cotton-producing area, with an annual crop greater than that of Egypt. Soviet agricultural experts confidently expect very high yields of cotton—as high as 4 tons per hectare,⁹—with two harvests every year. In addition there will be a substantial output of dates, figs, grapes, olives, pomegranates and other fruits. The scheme will lead to a considerable growth of industry and will solve the problem of an adequate fresh water supply for the city of Krasnovodsk and other industrial centres. Electric power output will be more than doubled and plans have already been made for new cotton mills, cotton-oil plants and other factories.

The Turkmenian Canal will be navigable, and will become a vital water transport artery, linking Soviet Central Asia with the Caspian and the Volga for the first time. Together with the Volga-Don Canal it will transform the water communications network of the U.S.S.R. The Volga-Don Canal has already been completed, linking the Black Sea with the Caspian, the Baltic and the White Sea via the Volga and the White Sea Canal. Thus all the European seas of the U.S.S.R. are now connected with each other by major waterways, and with Moscow by the Moscow-Volga Canal. Timber from the Kama, oil from the Caucasus, cotton from Central Asia, coal from the Donets, metals from the Urals, fertilisers from the Far North, and minerals from Turkmenia, are among the many commodities which will be carried on the inland waterways in large quantities. Fresh fish from the Sea of Azov will be delivered to Moscow in refrigerator ships. Diesel ships, for 500 passengers, equipped with cabins, restaurants, and concert halls, will ply between Moscow and Rostov. As a result of the schemes, navigation on the Volga, the Don and the Dnieper will be much improved. The Volga will be transformed into a continuous chain of giant reservoirs, while the lower Don will become a deep-water trunk route for the first time. The advantages of water transport for bulky cargoes are well-known. There will be a great reduction in transport costs with consequent benefits for the whole economy. The construction schemes will also serve to improve the road and rail network. Hundreds of miles of new roads and railway track have been laid out to bring materials to the sites, and the great dams on the Volga and other rivers will be used for new major road and rail crossings. Plans have already been made for the

electrification of the railways in the Volga region, using the power from the new hydro-electric stations.

Thus it is clear that the combined contribution which the schemes will make to the development of industry, agriculture and transport, fully justifies the "super-priority" which they have been given. Those actually working on the schemes, are well aware of their significance, but so also is the rest of the population. Key factories all over the country are producing equipment for them, and the greatest enthusiasm is shown in fulfilling orders for the construction sites. News of the progress of the schemes is prominently featured in the Soviet press, and a number of leading Soviet writers are preparing books on this theme, after first-hand experience of the projects.¹⁰ The attention of the whole country is concentrated on this bold and creative plan.

III

The preparation and execution of such schemes involves a vast amount of detailed scientific investigation, experiment and control. Among the numerous problems which are being tackled by Soviet scientists are these: calculation of the water balance in the Aral and Caspian Seas, and of conditions in the projected reservoirs; detailed geological surveys for the construction of the canals and reservoirs; surveys to ensure that nothing of great archaeological value is lost when the river valleys are flooded; measures to prevent excessive loss of water by seepage through the canal beds; soil analysis in each district and experimental work to obtain the highest-yielding varieties of crop for each area; methods for increasing the salt resistance of the cotton plant and accelerating its ripening; survey of the flora and fauna throughout the area of the schemes including the marine fauna; measures to combat the pests which may multiply as a result of the changes in climate and vegetation; methods of preserving and increasing the stock of fish in seas, rivers and reservoirs (nine stations for fish-breeding are being established on the Kuibyshev and Stalingrad reservoirs);¹¹ problems connected with the transmission of electric power at very high voltages over long distances; methods of using wind as an auxiliary source of power for irrigation; the provision of medical services in the new towns and settlements, and measures to protect the health of those working on the schemes.

This gives some indication of the range and scale of the scientific

work which is being undertaken. In Turkmenia alone, there were 22 field expeditions of biologists at work in the summer of 1951.¹¹ Almost every Institute and Laboratory of the All-Union Academy of Sciences is working on some aspect of the schemes, and a special committee has been set up to co-ordinate the research. This committee includes some of the most outstanding scientists in the Soviet Union, together with representatives of the various ministries and building organisations concerned. Similar committees have been set up by the Academies of Science in those Union Republics which are directly involved. One of their most important functions is to deal with the flow of technical suggestions which are submitted by workers and collective farmers. This concentration of national scientific resources and personnel on great peaceful civil engineering schemes, is without parallel in the history of science.

A fascinating account of some of the engineering problems which have to be solved was given by Professor Bernal in a recent lecture.¹² "Most hydro-electric schemes in the past," he said, "have been planned on sites where natural advantages already existed, such as narrow gorges offering firm rock foundations. The idea of using great rivers with a relatively low gradient flowing in broad alluvial valleys seemed to offer insurmountable difficulties. Not only had the dams to be excessively long but there could be no hope of finding rock foundations, so that everything had to be built on shifting sands, silt or clay. In addition the turbines and electrical gear had to be particularly large to deal with vast volumes of water at low heads. To solve the problem posed in this way the Soviet engineers have adopted novel combinations of methods. In the first place they have restricted the concrete part of the structures to the minimum necessary for power stations, spillways and locks. All the rest are earth structures made watertight with clay and given the minimum revetting as protection against ice. The heavier parts are not fixed on solid foundations so much as floated on extensive concrete rafts. This gives the whole structure considerable flexibility, which will be of particular value in the eastern schemes where there is danger of earthquakes. In order to secure foundations in the first place the soil was frozen to depths of 50 feet, a method never before undertaken on such a large scale. One of the major problems to be faced was that a considerable portion of the river was bound to continue to flow under the structures and might wash away their foundations. To prevent this a series of deep baffles and deflectors was built at intervals up-stream, under, and

down-stream from the constructions, ensuring that the main flow of underground waters should pass to the side of or well under the concrete constructions. Another problem is that all the rivers concerned have particularly violent spring floods. The great lake reservoirs can only hope to store a third to a half of this water and provision has to be made for spillways to allow the rest to pass without damage. To resist the enormous pressure exerted by the mass of falling water a series of concrete aprons is constructed below the dam, containing at intervals deep patches which act as water cushions and dissipate the energy in eddies." It is hardly necessary to emphasise that the solution of such problems implies a very high level of engineering technique.

All the schemes are characterised by a high degree of mechanisation. The total amount of earth-work for the Stalingrad Dam and Irrigation canals will be 100 times as much as for the first Dnieper Dam, and 8 times as much as for the Suez Canal.¹³ The projects could not possibly be carried out in such a short space of time without an abundant supply of modern powerful machinery. Some of these machines are now becoming quite well-known. One of the leading journals in British civil engineering *The Muckshifter*, recently published a full-page photograph and detailed description of the 1000-ton drag-line excavator.¹⁴ Soviet engineers estimate that this machine with a crew of 15, can do the work of 7000 men using pick and shovel methods. For "wet" excavation, special suction dredges are used which suck up the "pulp" (earth and water) at the rate of 1000 cubic metres an hour, and pipe it anything up to 3 miles, for use in an earthwork dam or for dumping. A Stalin Prize was awarded to the engineers who designed and perfected this type of suction dredge. To provide the vast quantities of concrete needed for the dams, locks, spillways, and power stations, fully automatic concrete factories have been set up at the sites. A crew of eight control the whole unit and everything is regulated from the central control panel. Every hour the plant delivers 1000 cubic metres of concrete ready for use.¹⁵ The designer of this equipment was also awarded a Stalin Prize. Almost every process on the building sites has been mechanised: excavation and road construction; loading and unloading of materials at the site; delivery of materials to the places where they are to be used; the feeding of concrete mixture into the construction blocks; erection of supports for cables and transmission lines. Tower cranes, conveyor belts, mobile cranes, powerful scrapers, bulldozers and

rollers, and heavy 10-ton and 25-ton trucks are all widely used. Constant efforts are being made to improve still further the quality of the equipment.

A fundamental feature of the scientific work is the intimate connection between theory and practice. Every facility is given to the workers on the schemes to raise their qualifications and study those branches of science which would help them in their work. The scientists are obliged to test their theories and their inventions not only under laboratory conditions, but on the construction site itself. They have the powerful stimulus of requests, proposals and criticisms from the workers and farmers, with their wealth of practical experience. No less important than the transformation of the climate and the landscape is the transformation of the people who are at work on the schemes. In transforming their country they are transforming themselves. The new methods and equipment which are being used on the construction sites demand a new kind of worker, a worker who is more like a skilled engineer than an unskilled labourer. The farmers who are helping with the afforestation plans, and who are introducing the new methods of irrigation and the new electrical equipment will be more like skilled technicians than peasants. Gradually the distinction between mental and manual labour, between farmer and industrial worker, is being broken down. The schemes are preparing the way for a communist society, not only by their contribution towards an economy of abundance, but also by their transformation of its future citizens.

The execution of such immense projects in a relatively short space of time, under difficult geological conditions, would have been impossible 20 years ago in the U.S.S.R. Only a country with the most modern science and technique, with a powerful engineering industry, and a large number of highly skilled workers, could cope with schemes of this character, at this speed. But these would not suffice without the enthusiasm and unity of purpose generated by the elimination of class struggles and private profit. Only a country which has abolished the fetter of private ownership of land and the means of production, could plan on this scale, and bring about such a concentration of national resources as is necessary for these projects. They are the living proof of the high level of Soviet science and technique, and of the superiority of the socialist system of production. They are also convincing evidence that the major economic efforts of the Soviet Union have been directed

towards peaceful construction, and not to preparations for an aggressive war.

IV

As the contrast between the policies of the North Atlantic powers and that of the Soviet Union becomes more obvious, increasing numbers of people begin to doubt the hackneyed phrases about the "Russian threat to civilisation", and begin to wonder whether the threat to civilisation does not come from elsewhere. In the years of the Great Depression, from 1929 to 1933, workers and intellectuals were often attracted to communism by the contrast between two worlds. In the great industrial centres of the West, vast productive capacity lay idle and millions of fit and capable men were without employment. This unparalleled waste of human and material resources opened the eyes of many people to the necessity for a fundamental re-organisation of society. They came to realise that the social relations of men were no longer in harmony with the productive forces available to society. It was at this time that news of the astonishing successes of the First 5-Year Plan began to trickle through. Despite the flood of hostile misrepresentation and despite the efforts of a horde of "experts" to minimise the Soviet achievements, the 5-Year Plan gripped the imagination of many honest people in the West. The Webbs, disgusted with the moral and political bankruptcy of the second Labour Government, began to take an intense interest in the new Soviet civilisation which was growing up. Their change of attitude was typical of many others, who were impelled to re-examine their past beliefs in the light of this great contrast between two worlds. Metalworkers in Paris, dockers in Hamburg, unemployed miners in Fife and South Wales began to share in the pride of the builders of Magnitogorsk and the first great Dnieper Dam. This was something new in history. The constructive activities of the Soviet people became the hope of the world.

And as if to heighten the contrast, there arose in Germany as part of the death-throes of an obsolete social order, a new barbarism, pledged to the violent destruction of communism and all other progressive ideas, seeking a solution to its problems in armaments and war. The growth of political understanding and sympathy for the Soviet Union was not yet sufficiently widespread or well-organised to prevent the catastrophe of the second world war. But as a result of the military defeat of fascism, the forces of

social progress were immensely strengthened. Other peoples, including China, the most populous nation in the world, began to follow the Soviet example and to construct their social system on entirely new foundations. Today the contrast between the two worlds is exerting an even more powerful influence on the course of historical development, revolutionising the minds of men, changing the alignment of groups and parties, and the destinies of nations.

Those who have taken up the discredited banner of the anti-Comintern Pact are once again seeking a way out of their difficulties in the preparation of a new war. Authoritative spokesmen of the American business world issue solemn warnings that if "peace breaks out," it will mean economic disaster. The rulers of the most productive country on earth seek to avoid a major economic depression by a frantic armaments drive, costing more than the entire national income of Great Britain. In the wake of this insane Juggernaut are dragged the once proud and independent nations of Western Europe, lurching from crisis to crisis, in their vain efforts to keep up with the insatiable demand for more and more armaments. Unemployment and short-time make their appearance in the industries producing consumer goods, while the social services are slashed, and real wages reduced. Except in the case of certain strategic raw materials, the much-vaunted schemes for the "development of backward areas" are whittled down or pigeon-holed.

Elliott Roosevelt has described a conversation with his father during the war, in which FDR dwelt on the possibilities of irrigation schemes in North Africa:¹⁸

"We discussed the great salt flats in Southern Tunisia, which must have at one time been a vast inland sea. He reminded us of the rivers that spring up in the Atlas Mountains, to the South, and disappear under the Sahara, to become subterranean rivers. 'Divert this water flow for irrigation purposes? It'd make the Imperial Valley in California look like a cabbage patch!' And the salt flats: they were below the level of the Mediterranean; you could dig a canal straight back to re-create that lake—one hundred and fifty miles long, sixty miles wide. 'The Sahara would bloom for hundreds of miles!' . . . Father was having the time of his life, his active mind and quick intelligence working overtime as we all speculated on what intelligent planning could do for this land."

It is not irrigation schemes which the Americans are constructing in North Africa, but air bases for atom bombers. There is insufficient

capital for vast schemes of irrigation in Africa or the Middle East, but there is plenty of money to intimidate the peoples of Egypt and Tunisia by a show of military force. There is not enough capital to expand food production in Southern Asia although there is an acute food shortage. But there are millions of pounds to hunt down brave and patriotic men and women in the jungles of Malaya. There are billions of francs to expend in a hopeless war to impose a Japanese puppet and Riviera play-boy on the people of Viet-Nam.

These realities are reflected in the attitude of leading American experts to the problems of world population and world food resources. The most influential book on this subject, which has been a best-seller in this country as well as in the U.S.A., was *Road to Survival* by William Vogt, with an introduction by Bernard Baruch. The philosophy of this book can only be described as misanthropic. Vogt realises that the majority of the world's population do not get enough to eat but his solution is a reduction in the number of people.¹⁹ According to him, famine and disease are essential to decimate surplus population. "The greatest tragedy that China could suffer . . . would be a reduction in her death rate." The United States should not export food to promote "the unchecked spawning of other countries." Doctors are a menace. "The modern medical profession, still framing its ethics on the dubious statements of an ignorant man who lived 2000 years ago—ignorant that is in terms of the modern world—continues to believe it has a duty to keep alive as many people as possible." The two great advantages of Tanganyika are: "a low population and sleeping sickness." The main "problem" for Vogt is the "over-population" of Europe and Asia. That such a book could be published and highly praised is symptomatic of the advanced decay of capitalist civilisation. The great vogue of neo-Malthusian ideas is a clear indication that this system is utterly incapable of developing the productive resources of the world in the interests of the peoples, and has become a barrier to the progress of humanity.

It is not "western civilisation" but the Soviet Union which is making the deserts bloom. It is the Communists who are showing the way to solve the problem of world food supplies, in practice and not in empty declarations. The biggest drive against soil erosion, said Lord Boyd Orr in reviewing Vogt's book,²⁰ "is being made by the U.S.S.R. whose soil scientists lead the world. In addition to what has been done already, the U.S.S.R. has started a 15-Year Plan the magnitude of which dwarfs the T.V.A. scheme."

And even as they harness the Volga, they are already preparing an even more grandiose plan to use the still mightier rivers of Siberia to make fertile the deserts of Central Asia. The great construction schemes demonstrate the boundless potentialities of the planned transformation of nature for the welfare of the people. They are the clearest evidence that Communism represents the general interests of humanity and will be the renovation of the world. The more widely the knowledge of these schemes is spread, the more rapidly will multiply the forces of peace, and the sooner will be the victory of peaceful constructive labour over the forces of war and destruction.

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 2. *Land of Socialism Today and Tomorrow*, p. 113.
 3. Speech of February 9th, 1946.
 4. For full details of the schemes see S.C.R. pamphlet, *Man Conquers Nature and Russia Today* News Letters, Nos. 318 and 319. See also the article in *Planovoye Khozhaistvo*, No. 4, 1951.
 5. Speech of November 6th, 1951, by L. P. Beria. He estimated that total 1951 production would be 104 billion KwH., as compared with 8 billion KwH. in 1930, and 48 billion KwH. in 1940.
 6. *Ibid.*
 7. W. P. and Z. K. Coates, *Soviets in Central Asia*, p. 225.
 8. See note 6 to the Table.
 9. Professor T. L. Zolotaryov *The Great Construction Works of the Soviet Union*, p. 26 (A.U.C.C.T.U. Publishing House).
 10. Cf. "The Writer and the Construction Schemes," by A. Surkov, in *Anglo-Soviet Journal*, Vol. XIII, No. 1.
 11. Dr. S. M. Manton, "Biology and the Construction Schemes" in S.C.R. pamphlet *Man Conquers Nature*.
 12. Professor J. D. Bernal, "The Engineer and Nature" in S.C.R. pamphlet. See also his article in *Anglo-Soviet Journal*, Vol. XII, No. 3.
 13. *Russia Today News Letter*, No. 319.
 14. *The Muckshifter*, March, 1952.
 15. Professor P. L. Zolotaryov, *op. cit.*, p. 38.
 16. Interview with *Pravda* correspondent, February, 1951.
 17. Military expenditure in 1950 was 82.8 billion roubles (20% of the Budget); in 1951 it rose to 96.3 billion roubles (21%) and in 1952 to 113.8 billion roubles (24%). Retail sales in 1951 were 80% greater in quantity than in 1948. Social service expenditure in 1951 was more than double 1945.
 18. Elliott Roosevelt, *As He Saw It*, p. 86 (Duell, Sloan and Pearce).
 19. Cf. "The Earth and Man," by M. Ilyin, *New Times*, No. 22, 1950, and review of Vogt's book by G. Matthews in *Daily Worker* of March 18th, 1949.
 20. Lord Boyd Orr, "The Spectre of Malthus," in the *Observer* of March 13th, 1949.
- A "Billion" is used to connote one thousand million throughout.

BY H. F. W. TAYLOR

A CONFERENCE of organic chemists was held in the U.S.S.R. in June 1951, to discuss the validity of the so-called Theory of Resonance in chemistry. The discussion at, and prior to, the conference affords an instructive example of the power of dialectical materialism as a guide to the most fruitful lines of development in scientific research, and also of the way in which its application occurs in practice. It may not, therefore, be considered out of place to give a brief account of the matter in this journal. This will be done in as non-technical a way as possible, although, for reasons of space, the use of some technical terms has proved unavoidable.

The discussions were concentrated on organic chemistry, i.e., the chemistry of substances derived from living matter, or in varying degrees related to these. Such substances are characterised by the fact that they contain the element carbon as an essential constituent. The conclusions reached from the conference are, however, of equal importance in relation to inorganic substances.

The Theory of Structural Organic Chemistry

During the latter half of the nineteenth century, the basic facts regarding the nature of the simpler organic substances became well established. The atoms of most organic substances are bound together into small, discrete groups called molecules. This is true whether the substance is in the state of a solid, liquid or gas: these differ essentially in the way the molecules are packed together. In all three cases, subdivision can be carried out, at least in theory, until the limit of one molecule is reached, without altering the chemical nature of the substance. If, however, subdivision is carried further, so that the molecule is split wholly or partially into its constituent atoms, chemical change is said to occur and a new substance results.

A pure, chemical compound is one in which all the molecules are of the same kind. Each individual compound, such as glucose, or benzene, or camphor is therefore characterised by the nature, numbers, and arrangement of the atoms within its molecule.

Molecules can be represented by structural formulae such as that shown (Fig. 1) for alcohol. In this formula, C, H, and O denote

atoms of carbon, hydrogen and oxygen respectively, and each dash represents a chemical bond, i.e., the existence of powerful attractive forces between a pair of atoms. Further, it has been shown that a chemical bond is associated with the presence of a pair of electrons.

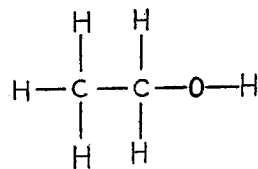


FIG. 1

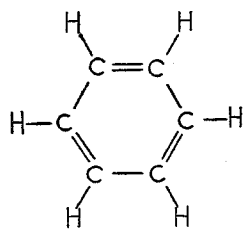


FIG. 2

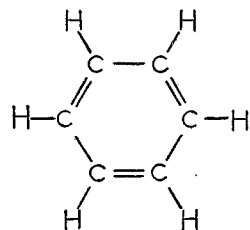


FIG. 3

In some cases two atoms are linked by a double bond. This is associated with the presence of four electrons.

It was established, by a mass of experimental evidence, that when an atom of any particular element is incorporated into the molecule of an organic compound, it manifests a definite valency, or combining power, characteristic of the element in question.

Thus the carbon atom always forms four chemical bonds, in organic molecules, irrespective of the atoms to which it is linked; the oxygen atom forms two, and the hydrogen atom only one. Formulae like those in Figs. 1-3, in which all the atoms have their correct valencies, are known as classical structural formulas.

The theory of structural organic chemistry gave an excellent account of the properties of a vast number of compounds. The best proof of its essential correctness lies in the successes in practice to which it led. New substances were discovered, new processes evolved, and whole industries, such as the coal-tar industries, founded as a direct consequence of the acceptance of the theory.

Nevertheless, difficulties arose in the case of certain compounds. In that of benzene, for example, almost the only way in which the molecule can be represented classically is that shown in Fig. 2, with alternate double and single bonds. However, all the evidence goes to show that the six bonds which constitute the ring are identical in all respects. Similar difficulties arise, to varying degrees, with a large number of compounds.

Attempts to account for this breakdown of classical, structural theory were made in the nineteenth century by Kekulé, Thiele, and others, and later, following the introduction of the electronic

theory of the chemical bond, by Ingold, Robinson, and other English chemists. The ideas of this school became largely merged into the so-called Theory of Resonance, which was developed chiefly in the U.S.A. by Pauling and his associates, beginning in the early 1930's.

The Theory of Resonance

Qualitatively, the theory of resonance regards a molecule which cannot adequately be described by one classical structural formula as a hybrid between two or more forms which can so be represented. Thus benzene is represented as a hybrid between the form shown in Fig. 2 and a second one (Fig. 3) in which the double and single bonds linking adjacent carbon atoms in the ring are interchanged. In certain respects, the true state of the molecule is regarded as being intermediate between those of the classical structures, but in others it is not. In particular, the molecule is more stable than would be expected for any of the classical structures. This means that its potential energy is lower than that calculated for any of the latter. The extent to which it is lower than the estimated value for the most stable of the classical structures is then called the resonance energy.

The theory attempts further to describe the distribution of the electrons which constitute the chemical bonds, in terms of quantum mechanics. The latter method describes the electronic distribution in terms of a mathematical formula which indicates the probability of finding an electron at any point in the molecule. This is related to the wave function ψ , which has a definite value for each point in the molecule, and has been calculated in certain simple cases.

The resonance theory postulates that the wave function of a molecule such as benzene can be approximately calculated by superimposing those of the selected classical structures, giving a definite weight to each, and adding up the values of ψ at each point in the molecule.

The classical structures are therefore also called contributing, or resonating structures, because it is assumed that their wave functions each contribute, in varying proportions, to the actual wave function of the molecule. The name resonance actually arose out of a formal, mathematical analogy with the theory of coupled pendulums. No attempt will be made in this article to deal with the mathematical superstructure of the theory, as this might only confuse the physical issues.

The theory of resonance has been widely accepted, as a means of representing experimental data. It is, nevertheless, probably true to say that in this country, though not in the U.S.A., it has been accepted by the majority of chemists only with certain misgivings. While certain limited criticisms have been raised, however, no serious, fundamental criticism of the theory has been reported prior to that made by the Soviet chemists.

The Controversy in the U.S.S.R.

This seems to have started in 1948 or 1949. The chief defenders of the resonance theory were Volkenstein, and Syrkin and Dyatkina, whose book,¹ written in 1946, has been translated into English. Among the opponents were Sokolov, Kursanov, and Terenin. Sokolov published a paper in 1949² attacking the resonance theory, and later two committees were set up by the Academy of Sciences to discuss and report on the question. One of these, organised by the Institute of Organic Chemistry, was headed by Kursanov, and published its report in 1950.³ The other was organised by the Chemical Sciences section of the Academy, and headed by Terenin. Its report formed the basis of discussion at the subsequent conference. This report is not yet available, but references to it from other papers suggest that it is very similar in content to the first. Both reports arrived at the same conclusion: that the resonance theory is incorrect, has become an obstacle to the development of chemistry, and ought therefore to be abandoned. This view was upheld by the Conference, which was held in June 1951. The resolution adopted at this conference has been translated.⁴ Pending a full report of the proceedings, summaries were published by Sokolov⁵ and by Reutov.⁶

The Arguments against Resonance

1. *The Objectivisation of the Contributing Structures.* Sokolov² pointed out that the contributing structures had no physical reality, but were purely imaginary concepts that were used in a certain method of treatment in order to arrive at an estimate of the true distribution of electrons in the molecule. The latter was something that possessed objective reality; the contributing structures, and their respective wave functions, existed only on paper or in the mind. In spite of the fact that these conclusions are obvious, writes Sokolov, Pauling and his followers continually speak of resonance as though it has an objective existence.

The contradiction arising in the resonance theory is discussed further in Kursanov's report.³ This points out that the more thoughtful exponents of the resonance theory, such as Pauling,⁷ Wheland, and Volkenstein, usually begin by admitting the non-reality of the contributing structures. But when they come to apply the method, they always betray that their whole mode of thought is quite different. Thus, resonance "causes", "determines", and "explains" the properties of the molecule, which, moreover, "resonates between" the contributing structures. Pauling⁹ discusses whether there is any possibility of detecting individual contributing structures, and concludes that there would be, if an experimental method could be devised that operated sufficiently quickly to "catch" the molecule in one or the other of these extreme states. He postulated that the frequency of this transition, in cycles per second, is equal to the resonance energy divided by Planck's constant.

Syrkin and Dyatkina are criticised for carrying to excess some of the worst faults of the resonance theory in relation to the objectivisation of the contributing structures.

2. *The Idealist Nature of the Resonance Theory.* The Soviet chemists concluded that the resonance theory inevitably led away from the task of elucidating the structures of real molecules, including the details of their electronic distributions, into the fruitless field of investigation into the supposed properties of hypothetical contributing structures. The theory is therefore characterised as idealist, because it directs investigation away from the actual substance on to the imaginary, contributing structures, and thereby in practice assumes that the ultimate reality resides in the latter.

3. *The Relevance of Quantum Mechanics.* The conference discussed, among other things, the question as to how far the theoretical method of quantum mechanics was valid in chemistry.

Quantum mechanics deals with the motions of elementary particles, and especially of the electron. It makes it possible, given a knowledge of the particles and forces concerned, to calculate the distribution of electrons throughout an atom or molecule. The mathematical difficulties of the method are so formidable that the method has so far been applied rigorously only to very simple cases, such as the hydrogen atom. By making certain assumptions and approximations, it has been found possible to extend the method to more complex cases, such as the hydrogen molecule. However,

these are still very simple by chemical standards, and all real attempts to apply the method to complex molecules have been quite unsuccessful.

Certain participants in the conference wished to reject quantum mechanics altogether as a method in chemistry. They received little support, it being pointed out that the method had proved its validity by the success with which it accounted for observed data in cases where it had been possible to apply it. Criticism was also levelled against the opposite view, which maintained that the discovery of quantum mechanics reduced the whole of chemistry to a branch of applied mathematics. It was pointed out that chemistry contained phenomena far too complex to be treated in this way, and that the basic methods of chemistry would always be the study of chemical processes themselves.

The conference thus accepted, and indeed stressed the value and importance of quantum mechanics in cases where it could be genuinely applied. The theory of resonance, however, was regarded as a spurious application of the method, which, because it assumed a greater knowledge of the wave functions of complex molecules than actually existed, led to fruitless theorising and idealist distortions.

Butlerov's Investigations and their Contemporary Significance

The Soviet chemists considered that the only correct approach was to take as the starting point the properties of the real, objectively existing molecule. The approach must be based on the view that the molecule had a single, definite structure, which could be elucidated by experiment and which, in turn, determined its properties. This is the fundamental standpoint of classical, structural organic chemistry, which was generally accepted until the advent of the theory of resonance.

The conference drew attention to the key part which was played in the development of classical structural theory by the Russian chemist Butlerov (1828-1886). Until the early 1860's, no clear ideas existed regarding the way in which the atoms were arranged in the molecule. According to the reports,^{5, 6} Butlerov, at a lecture given in Berlin in 1861, was the first person to express clearly the ideas of structural organic chemistry, which within a few years came to be widely accepted. The Soviet chemists, however, point out that these ideas came to be accepted only as a result of the fight which Butlerov and others waged against the old ideas, which had

by then outlived their usefulness and had become a hindrance to further advance. Butlerov proved the correctness of his views by a classic series of experiments in the early 1860's in which he demonstrated the existence of some groups of isomers (compounds having the same number of atoms of each element in their molecules, but differently arranged) and the non-existence of others.

The resolution pointed out that the significance of Butlerov's work has not been adequately recognised, either in the U.S.S.R. or elsewhere. Butlerov, it states, started structural organic chemistry on correct, materialist lines, from which the theory of resonance represents a departure. The task of organic chemists today is to continue the development of the subject along these lines, using all the tools of modern experimental and theoretical research.

Proposals Accepted by the Conference

The conference defined the question which faces modern structural organic chemistry as being that of finding out in what ways the mutual interaction of atoms within the molecule gives rise to distributions of electrons that differ from those implied by classical formulae. The resonance theory was rejected as incapable of assisting in this task. The existence of at least two such ways was already recognised: the inductive and tautomeric effects of the British chemist, Ingold. The first of these describes the distortions of the electronic distributions in chemical bonds, which are brought about by the presence of certain atoms or groups of atoms elsewhere in the molecule; a chlorine atom, for example, causes a general shift of the electrons within each bond in its own direction. The second describes the tendency towards a levelling out of the electron distributions between double and single bonds, especially when these occur alternately, as in benzene. The conference pointed out that there may very well be other such effects. The task was to discover them, and to develop adequate means of theoretical representation.

This is a much more valuable, and certainly a more onerous task, than concocting glib "explanations" on the basis of the resonance theory. The conference, naturally, did not offer any ready made solutions, for this would have been to make the same mistakes as were inherent in the theory that was attacked. What it did do, was to place the emphasis on the study of substances as opposed to speculations, and to indicate lines of research that were likely to be profitable. These included experimental methods, both

chemical and physical, and the development of genuine quantum mechanical theoretical methods.

Comments

One may doubt whether the theory of resonance necessarily involves attributing objective reality to the classical structures. In the case of benzene, for example, the superposition of the electron distributions implied by the classical structures give a reasonably good approximation to the true distribution, which is now known qualitatively, with fair certainty, from both experimental data and approximate quantum mechanical calculations.¹⁰ There seems to be no compelling reason to attribute objective reality to the classical structures in this particular case. In such a case, therefore, the method appears to be adequate as a way of describing the observed phenomena.

What is certain, however, is that in practice the resonance theory has very often led to the view that the contributing structures have a real existence, and furthermore, to a great deal of facile and therefore profitless speculation. This has tended to increase, rather than decrease with the passage of time. It would appear that the Soviet chemists have performed a service by laying stress on the fact that real advances can only come as the result of serious experimental and theoretical research. This can be done in many ways, of which the further development of X-ray and electron diffraction is perhaps one of the most important.

The conference did not deal directly with problems of inorganic chemistry. This was, in a sense, unfortunate, since the weaknesses of the resonance theory become most apparent precisely in the field of inorganic compounds. This is due to the fact that a much wider variety of types of chemical bond is found here than in the field of organic chemistry. The resonance theory fails entirely in the task of providing a means of visualising the distribution of electrons in such compounds as carbon monoxide, or the oxy-acids, such as sulphuric and phosphoric acids, and their salts. It only provides in each case an assembly of structural formulae, the physical significance of which is quite obscure.

The failure of the resonance theory in such cases may well be the result of a fundamental weakness. The theory can only describe the discrepancy between the actual distribution of electrons in a molecule, and that implied by the classical formula, by postulating a deviation in the direction of another classical formula. This

happens to be satisfactory in the case of benzene. It may not be satisfactory in such cases as carbon monoxide or sulphuric acid. Altogether, it seems to be a case of making the molecule fit into an assembly of formulae, and not vice versa. The resonance theory thus becomes a kind of idealist strait-jacket, which, by forcing the molecule into a complex of postulated classical structures, the implied physical significance of each of which is already understood, precludes the possibility of ever discovering anything new.

This point is not made explicitly in any of the Soviet papers so far available, although it probably follows from the arguments contained in them. It would appear to be a particularly serious objection to the resonance theory.

Conclusion

The criticisms which the Soviet chemists have levelled against the theory of resonance may seem to be obvious, when once they have been explained. None the less, the resonance theory passed without fundamental criticism for twenty years. It is possible that the development of its internal contradictions would have led chemists who did not consciously accept the ideas of dialectical materialism to an eventual rejection of the theory. It is, however, a fact that the rejection has actually come first from Soviet chemists, very many of whom have approached the problem with a conscious background of dialectical materialism. The usefulness of the latter, as a means of challenging doubtful theories, thus receives practical demonstration. It is particularly to be contrasted with the growing acceptance of various forms of idealism among scientists in capitalist countries. This can only reduce the ability to detect errors, and thereby impede the development of science. The ousting of idealism in all its forms, and replacement of it by a consistent materialist approach, is necessary if science is to continue to advance.

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The California Oath

BY JOHN SMITH

I

ALTHOUGH largely eclipsed in the commercial press by the more sensational antics of the McCarthys and MacArthurs, a not unrelated conflict of major significance has been in progress for nearly three years at the University of California at Berkeley, where members of the teaching staff have been resisting a concerted attack on academic freedom. As the ultimate outcome of this controversy may have a profound influence on the orientation of formal education in America, and perhaps other western nations, British teachers have watched its progress with increasing concern. A familiarity with the details¹ may be of value to those who are determined that the pattern of repression developing in California shall not be imported with other dubious benefits of Marshal Aid.

Prior to the outbreak of the "oath controversy" in the spring of 1949, the University of California was widely recognised as one of the foremost American Universities. It remains large: enrolment totals more than 50,000 students, teaching staff nearly 2,500. Instruction is carried out at eight separate branches throughout the State, the principal ones being at Berkeley and Los Angeles. The University is supported by annual grants from the State legislature; the students are for the most part middle class; the teaching staff, like its British counter-parts, is predominantly conservative.

Control of the University's affairs is vested in three separate organisations. The purse strings, and hence the ultimate control in all matters of policy, are held by the Board of Regents, a group of twenty-four industrialists, lawyers and financiers, of whom sixteen are *ex-officio* members, such as the governor, the speaker of the state legislature, the president of the University. The class character of the governor's political appointees to the Board of Regents may be judged by such examples as L. M. Giannini, president of the Bank of America, one of the richest banks in the world, and J. F. Neylan, attorney for the interests of the late William Randolph Hearst.

The second controlling authority, the University Administration,

¹ *The Year of the Oath*, by G. R. Stewart et al., Doubleday and Co., Inc., New York, 1950. *Report of the Committee on Academic Freedom*, University of California, February 1st, 1951.

The California Oath

is a large bureaucratic organisation which carries out the tremendous number of purely mechanical tasks incident to the operation of a huge university. The President of the University, Robert Gordon Sproul, is the head of the Administration.

The third and least powerful member of the triumvirate is the Academic Senate, made up of all members of the teaching staff of permanent faculty rating, that is, the ranks corresponding to the British professors, readers and lecturers. Of the 950 members of the Berkeley section of the Senate, normally fewer than 200 attend meetings. Through its committees it determines what lecture courses shall be offered, who shall be appointed to vacant posts or promoted to higher ranks, what each department's budget shall be. The California teaching staff has thus acquired a reasonable degree of self-government, which, although it is common among European universities, is relatively unusual in America. The winning of these "privileges" is the direct result of the staff's forming, in the face of considerable Administrative opposition, of the Academic Senate. Between the Senate and the Regents there normally is little intercourse, any liaison required being accomplished by the University president, who is a member of both bodies.

Such were the chief participants in the struggle which started in the spring of 1949. The political climate prevailing in the state of California, as in the entire nation, was one of growing tension; the Cold War foreign policy was already in full swing, and the chief enterprise of press and government on the home front was anti-Communist witch hunting—coercion and intimidation in the trade unions, the film industry, the civil service. Publicity-seeking demagogues in the State Legislature, eager for new victims, were turning to the schools and professions.

II

In January of 1949 the University representative of the State legislature recommended to President Sproul that to forestall possible embarrassing action by the legislature, the University should require an anti-Communist oath of all its staff members. Accordingly, the President proposed such an oath at the Regents' meeting of March 25, and it was unanimously approved. No mention of this move was made for several months, however, and for a definite purpose. The oath was to be incorporated in the staff contracts, which the University Administration sends out by post

each June, near the end of the academic year. If the text of the new oath could be kept secret until the dispersal of the staff for the summer vacation, as was intended, the possibilities of organised opposition would be greatly reduced. The device succeeded, but not completely. The last Senate meeting of the year was scheduled for June 7, and on the basis of an obscure statement in the regular report of the Regents' meeting, to the effect that a new oath, of unspecified text, would be included in the appointment contracts for 1949-50, wary staff members requested that the oath be made a special order of business. On June 11 the President's office released the text to the press. To the usual oath that members of the University teaching staff, like all other State officials, had signed annually pledging support to the State and National constitutions, was to be appended the following sentence: "I do not *believe in* and am not a member of nor do I support any party or organisation that *believes in*, advocates or teaches the overthrow of the United States Government by force or violence."

At the special meeting of the Academic Senate convened on June 14 to consider the new oath, an unprecedented number of staff members were in attendance. Specific objections to the oath voiced at this meeting were that it was ambiguous, that it involved a political test, implied guilt by association and threatened academic freedom; a resolution was passed, with only three or four dissenting votes, requesting that the addition to the usual oath be "*deleted or revised in a manner mutually acceptable to the Regents and the members of the Academic Senate.*" In addition, an Advisory Committee was appointed to consult with the President "with a view to working out such a solution." The italicized portion of this first Senate resolution was included only as a last-minute amendment, a concession to "liberal" opportunists and Senate supporters of the Regents' policies. This "mutually acceptable" clause effectively undermined the spirit of the staff and shifted the leadership of the fight into the hands of those who supported appeasement and compromise. Henceforth, the "negotiators" were in complete control.

During the week following the Senate meeting, the Advisory Committee, in conjunction with a similar committee set up by the Los Angeles section of the Senate, conferred with the President and suggested *revisions* to the new oath. These were accordingly proposed by President Sproul at the Regents' meeting of June 24 and approved in the main, but with one important insertion. The

new oath to be appended to the constitutional oath was to read, "that I am not a member of the Communist Party, or under any oath, or a party to any agreement, or under any commitment that is in conflict with my obligations under this oath." The insertion by the Regents was the explicit abjuration of Communist Party membership, which had not been included in the Advisory Committee's suggestion.

Despite the summer recess, some sixty members of the Senate met informally at the Faculty Club on June 27. The general feeling at this gathering was that the new oath was no more acceptable than the previous one, that the Advisory Committees had not had the authority to accept specific proposals without first consulting the Senate, and that individual Senate members were not therefore bound to honour the revised oath. This group of "non-signers" soon numbered more than 250 members and was the major centre of opposition to the oath. Another group of junior teaching fellows, calling themselves the "non-Senate academic employees," was also forming at this time; this body, because its members did not have permanent staff rating, had less prestige than the Faculty Club group, but was for the most part firmer and more consistent in its opposition.

While these two resistance groups were forming, the Regents' strategy of timing was beginning to take effect. Many staff members were leaving the University community on holiday or to take summer teaching posts at other universities. The possibility of further Senate action was ended until September, and the Administration hoped that most of the staff members, being out-of-touch with each other, would be inclined to regard the matter as settled. To encourage this inclination, a policy was adopted of withholding salary cheques from those who had not signed the revised oath, even though the new contracts incorporating it suggested that the deadline for acceptance was October 1. This inept move, however, produced immediate and widespread indignation; vigorous protest was made by individual staff members, with the result that the Administration hastily changed its tactics and dispatched the delinquent salary cheques. The peremptory nature of the policy had actually threatened to unify the entire staff, exactly what the Regents and the Administration were most anxious to avoid. The general strategy of the Regents was undoubtedly directed to achieve precisely the opposite effect, the dividing of the staff, as is shown by their insertion of the specifically anti-Communist clause

in the revised oath. The oath was never, either at the time the revised version was approved by the Regents or at any subsequent time, really designed to exclude any supposed Communist from the University employment. None of the staff members who were later to be dismissed was charged with having at any time had any connection with the Communist Party. By inserting the anti-Communist clause the Regents masked their real purpose, of converting the University from a centre of study and research to a centre of indoctrination, and laid the groundwork for effecting a major split in the ranks of the teaching staff. The temper of the times in America, they rightly calculated, was such that anyone who opposed a specifically anti-Communist oath could be isolated from his colleagues. To achieve this split was their first major objective.

At the beginning of the new academic year the Senate convened again, on September 19, and nearly 700 staff members attended. The first act of President Sproul, in effect pursuing the strategy of the Regents, was to state that the revised oath was "aimed at the Communist Party alone," and that no non-Communist non-signer would be "deemed to have severed his connection with the University." It was also revealed at this time that approximately half the 11,000 employees had not signed. How many of these were teaching staff and how many were caretakers, secretaries, clerks, etc., was not indicated. In a vain gesture of conciliation a resolution was passed supporting a long-standing University regulation prohibiting "employment of persons whose commitments or obligations to any organisation, Communist or other, prejudice impartial scholarship and the free pursuit of truth." This declaration effectively paved the way for more explicitly anti-Communist statements which the appeasers and collaborators among the staff ranks would shortly manoeuvre the Senate into passing. A second resolution, to the effect that *Senate* non-signers need only subscribe to the constitutional oath, reflected the anxiety of the Senate regarding the apparently firm stand of the Faculty Club group in the face of the Administration's suggested deadline of October 1, twelve days away. In addition it constituted the first official Senate action indicating readiness to leave the non-Senate academic and other employees to their fate if a separate peace for Senate members could thereby be gained. It should be remembered that the Senate at this time was led by men who either supported the principle for which the Regents were working or opposed it only on grounds of the disruption it might cause within the university.

During the ensuing three months the Senate Conference Committee met several times directly with the Regents in an effort to work out a formula which would be "mutually acceptable." The October deadline had come and gone, and many staff members had signed in desperation before the deadline, or in discouragement during the succeeding weeks of fruitless discussion and wrangling. Those who did not sign remained in anxiety, not knowing how long they would continue to receive their salaries. In the numerous Senate meetings during this period, the teaching staff maintained a fairly consistent position. Various resolutions were passed affirming agreement with the "impartial scholarship" objectives of the anti-Communist employment policy, but there was a marked aversion to the sanction of a "guilt by association" doctrine that Communist Party members by virtue of their affiliation were undesirable. A typical resolution agreed upon "the objectives of the University policy excluding members of the Communist Party from employment," but emphasised that it was "impartial scholarship and the free pursuit of truth" which was supported rather than the Regents' policies barring individuals from employment solely on grounds of membership in a particular political party.

Slowly, however, the pressure on the staff was increased. Anti-staff editorials were appearing in the press with increasing frequency, and the number of signers was announced by the Administration as more than 75%. The non-signers, nevertheless, were still not making any concerted effort to publicise their point of view, chiefly because of the steady beguilement by their own Chamberlains not to "rock the boat." This timorous policy, which its exponents justified on the grounds that several "moderate" regents had begun to side with the staff, was to prove disastrous. The majority of the Regents was in fact becoming increasingly antagonistic and at a meeting on February 24, 1950, voted twelve to six to issue an ultimatum that those not signing by April 30 would be "deemed to have severed their connection with the University as of June 30."

This show of force by the Regents had little effect on the non-signers, who resolved to face dismissal rather than surrender. In the Senate, however, it gave the appeasers and supporters of the Regents a means of manoeuvring the staff into an even more untenable position than the dubious one of accepting something in principle but not as an explicit policy. Spurred by the Regents' promises that an amicable compromise could be speedily achieved

if only the Senate would itself go on record against the employment of Communist teachers, the Senate majority finally succumbed. After allowing itself the momentary solace of unanimously rejecting both the Regents' special oath and ultimatum, it proceeded to do for itself what it would not permit the Regents to do for it. A secret ballot was held on two propositions: firstly, that staff members should in addition to taking the Constitutional oath indicate in their future contracts "acceptance" of the Regents' anti-Communist policy; and, secondly, that the staff itself adopt a policy "that proved members of the Communist Party, by reason of such commitments to that party, are not acceptable as members of the faculty." These resolutions, which passed by majorities of 89 and 77%, represented a complete abandonment by the Senate of its previous stand. By endorsing an explicitly anti-Communist policy immediately after having unanimously rejected what the Regents claimed to be a logical implementation of that policy, the Senate adopted the weakest possible position. In addition the Senate had now officially isolated the non-signers as a dissident group. The "mutually acceptable" amendment to the Senate's first resolution had produced its inevitable result.

The "dissident minority," as it came to be called, had by this time shrunk to approximately 150 members of "permanent" staff rating. The group had never represented a single point of view, but rather was made up of individuals who opposed the oath for a wide variety of reasons, encompassing such diverse considerations as academic freedom and tenure; the application of a political test or a doctrine of "guilt by association"; the upholding of personal and professional dignity; and the maintenance of staff autonomy and self government. By manœuvring the Senate into accepting an explicitly anti-Communist policy, the Regents widened the split between the Senate majority and the non-signers. More important, they cut the ground from under those non-signers whose opposition to the oath was contingent on the Senate's initial stand rejecting a purely political test and a doctrine of guilt by association. As a direct result of the Senate's ballot in favour of a political test, the non-signer group was further whittled down, this time to some eighty or ninety staff members.

Some naïve staff members, who hoped that the Senate ballot would placate the Regents, were quickly disillusioned; shortly after the results were announced, the Regents reaffirmed their ultimatum at a meeting on March 31. As the April 30 deadline

approached, the situation became increasingly tense. Newspapers throughout the country were carrying daily reports on the controversy, and for the first time a strong response was stimulated at other universities. Letters, telegrams, donations, exhorting the staff to stand firm, poured in from all over the country. The University of Chicago staff voted a two-per-cent voluntary contribution of its salary to support any staff members who might be dismissed for not signing. A score of other universities, including Harvard, Yale, Princeton, Columbia, Stanford, sent similar indications of support.

By this time, however, it was too late. The Regents' strategy was in its final stage. On April 15th it was announced that the California Alumni Association, a highly conservative organisation of the University's older and wealthier graduates, had become "interested" in the controversy and was negotiating with the Regents and a committee of prominent Senate members. A week later the Regents met and voted almost unanimously to accept what was called the "Alumni Compromise," postponing the deadline to May 15 and allowing non-signers the alternative of submission to individual hearings before the Senate Committee on Privilege and Tenure, whose findings would in turn be reviewed by the President and the Regents.

A more humiliating ordeal than to face an inquisition conducted by their own colleagues could scarcely have been devised. Nevertheless, rather than sign the oath, sixty-two of the Faculty Club non-signers and an even larger number of the non-Senate academic employees preferred this alternative. These hearings were carried out in Berkeley and Los Angeles during the ensuing six weeks; some of the interrogations were moderately restrained, but others were reminiscent of hearings conducted by "Un-American Activities" committees elsewhere in the country, with rapid-fire questions relating to all aspects of the non-signers' political convictions. Several women staff members were reduced to tears; "unsatisfactory witnesses" were called back for more hours of questioning. Ultimately the President and the Senate Committee recommended the retention of all but six "non-co-operative" Faculty Club non-signers, but made no recommendations regarding the non-Senate employees who had had hearings.

For a month the Regents temporized. At the beginning of this same month the Korean War had broken out, and in the growing hysteria seventeen more of the Faculty Club group signed the oath,

even though they had already gone through hearings. Against the remaining forty-five, and all of the 157 non-Senate employees who had accepted the inquisition, the Regents now moved with an arrogant duplicity that they would not have dared to show before. The entire hearing procedure was repudiated and all 202 remaining non-signers were discharged. The official reason given for the dismissals was "disobedience."

At this point the Regents' purpose was fully exposed. They had carried out a far-reaching purge of those teachers who were prepared to risk their professional careers in the defence of fundamental democratic rights. One of the victims was the eminent historian Kantorowicz, who had previously taken part in the suppression of the Spartacus Communist uprisings in Germany in 1918 and had lived to learn that by his actions he had helped put Hitler into power. He was purged in Germany in the 1930's. Now he had been purged in America.

The mass dismissals did not end the fight, however. Eighteen of the most prominent staff members who had been discharged took their case to the courts. The suit against the Regents was based on violation of tenure, but the issue of academic freedom was inseparable from it and played a prominent part both in the proceedings and in the verdict. In the Academic Senate, meanwhile, the clique of vacillating and conservative professors who had thus far led the Senate was voted out of office, to be replaced by younger men of more apparent loyalty to the staff. In addition, a committee was set up to investigate the total damage to the University accruing from the controversy. On Feb. 1, 1951, this "Committee on Academic Freedom" issued a report stating that as of that date 26 staff members and 157 non-Senate academic employees had been ejected; 37 more had resigned in protest; 47 professors at other universities had refused appointments in protest; 55 courses had been dropped from the curriculum; 1200 signed protests had been received from colleagues at other universities; 20 professional societies had passed condemnatory resolutions, some of which blacklisted the University and recommended that their members refuse any offers of appointment from the University of California. How many other staff members have taken posts at other universities without advising the Administration of their reasons cannot be ascertained. In addition to these clearly apparent losses, the general demoralisation and disruption of research and teaching can scarcely be exaggerated.

Although it was not part of the original oath controversy, an event occurred in the Autumn of 1950 which was quite revealing of the state of mind of the University of California staff at that time. In October, 1950, the State legislature prescribed a new oath, the "Levering Act," for all State employees. This oath, which required employees to list all "subversive" organisations of which they had been members at any time during the preceding five years, was taken by almost the entire California staff without protest, even though it was onerous enough to evoke strong opposition from various teachers and civil employees in other parts of the State. It should of course be noted that the two or three hundred employees who might have been most inclined to object to the State oath had already been purged from the University. The almost complete lack of resistance by the California staff to this new imposition reflects the demoralisation and intimidation produced by the initial oath controversy.

In the Spring of 1951 the Regents received a blow. The Third Appellate District Court of Appeal issued a verdict in favour of the eighteen dismissed professors, ordering the University to reinstate them immediately with back pay. The ruling, an exceptional one in recent American judicial history, contained strong statements in support of both professorial tenure and academic freedom. Indirectly it implied that the majority of the Academic Senate had voted in the preceding year to impose upon itself a curtailment of academic freedom which was unconstitutional.

The Regents, faced with the alternative of reinstating the eighteen or appealing the decision to the State Supreme Court, voted in favour of reinstatement. Then, using a parliamentary trick which the anti-staff regents had employed numerous times during the controversy, chiefly to gain time on the assumption that the accelerating war drive would create a domestic situation increasingly favourable to their purposes, one regent who had voted for appealing the verdict switched his vote to support reinstatement, so that the matter could be reconsidered at the next meeting. Pending the final decision by the Regents, no new contracts were issued to the eighteen. At this point the State Supreme Court, on its own initiative, took up the question of both the Regents' oath and the Levering Act, which teachers from other schools and universities were challenging in the lower courts. The fact that decisions on these two test cases were considered by the State Supreme Court to be important to the public interest was

evidently taken as an ill omen by the Regents; further, when the Administration officials had collected and sorted the new contracts for the academic year 1951-52, it was found that 48 more staff members who had not previously been involved in the controversy, and who had signed the Levering oath, had now refused to sign the Regents' oath, in protest against the failure of the University to reinstate the eighteen. The Regents were finally at an impasse. Accordingly on November 16, 1951, after the usual month's delay tactic of vote-switch and reconsideration, the Regents voted to remove the oath and reinstate the eighteen. At this meeting one regent remarked that the Levering Act would henceforth be relied on to keep Communists off the teaching staff.

Such is the present status of the oath controversy at the University of California. The Regents' special oath has been defeated, but the University still lies under the blanket State Levering oath. Only if in the months ahead the State Supreme Court rules the Levering oath unconstitutional will a substantial victory for civil liberties and academic freedom have been won. Meanwhile, the damage remains: the University has suffered serious loss of academic standing, and several hundred of its ablest teachers have been harassed and driven from their posts. But these teachers *will go on teaching*, many at other universities. And they will teach with a new and deeper understanding of the real dangers that threaten American democratic rights.

III

The story of the oath fight at the University of California embodies several important lessons for democratic teachers elsewhere in the world. The attack against the California teaching staff is merely one engagement of the larger conflict now developing in America as extremist leaders strive to force the people on toward fascism and war. It is no coincidence, for example, that J. F. Neylan, chief strategist and most virulently anti-staff regent, was the chairman of the committee to organise the San Francisco demonstration welcoming General MacArthur on his lengthy retreat from the Yalu River.

The extent to which men of this character are prepared to go to destroy democratic institutions and constitutional government in order to achieve their aims was made quite clear by L. M. Giannini when he resigned from the Board of Regents in protest against the

“softness” of the Alumni Compromise. He stated publicly at that time, “I want to organise 20th century vigilantes, who will unearth Communists and Communism . . . and I will, if necessary.”

While it would have been remarkable if at this period in history the University of California's middle class staff had succeeded in completely frustrating the purposes of the Neylans and Gianninis, nevertheless the extent, the vigour and the duration of the resistance indicates that this might well have happened had the staff been better prepared for the attack. It must be remembered that the non-signers were thoroughly isolated from any external support throughout most of the controversy, with almost the entire commercial press, the majority of public opinion, the majority of their own colleagues, and even various reactionary trade unions arrayed vociferously against them. By the time sympathisers in other universities and elsewhere came to their defence, it was too late and in too disorganised a fashion. The machinery for effective protest simply did not exist. Having no apparent alternative the non-signers were forced to place their faith in the majority of their middle class colleagues in the Senate, who betrayed them at each step as the pressure increased. The failure of the non-signers to take their case to the people, and especially to their professional associates at other universities, proved to be a fatal mistake. The responsibility for this lay squarely with the social democratic leaders among the non-signers, whose fear of an open conflict and unpleasant publicity drove them to impose on the group, as the price of their co-operation, a policy of appeasement and isolation from potential allies.

The favourable decision handed down by the Court of Appeal cannot be viewed as anything more than a temporary respite. Constitutional guarantees of traditional liberties have in the course of history frequently impeded the forces of tyranny; it is not in fact actually surprising to find that in the United States at the present time the national and state constitutions are occasionally providing more effective opposition to encroaching fascism than a propaganda-dazed populace. This is an essentially dangerous condition, for sooner or later the reactionaries find quasi-legal means to accomplish their ends, as for example in the conviction of the Communist leaders by the U.S. Supreme Court. The ultimate defence of basic human rights, as always, must lie with the people themselves, with an enlightened and mobilised public opinion, for

only this can create an atmosphere in which courts will consistently respect the spirit of laws guaranteeing civil rights.

One of the outstanding facts that emerges from a study of the California controversy is that the staff at no time discovered a completely satisfactory weapon to back up its negotiations. A prompt appeal for support from professional societies would undoubtedly have encouraged the Senate majority to keep faith with the non-signers, and the utilisation of outside mediators representing a national teachers' organisation would have faced the Regents with a far more formidable sort of opposition; but even this would not have ensured success unless the Regents had been genuinely concerned about the maintenance of the University's prestige, which they did not appear to be at any time during the controversy. To bargain effectively it would have been essential to convince the Regents that the staff was prepared if necessary to take strong concerted action. Legal proceedings, mass resignation and a strike of staff members were in fact all discussed informally at various stages by small groups of non-signers. That only one of these expedients, legal action, was ever undertaken, and then only when too late to be of value to the vast majority of non-signers, emphasises the lack of co-ordination.

If the experience of the California staff is to profit teachers at other universities, it is essential not only that the full details of the struggle be widely known, as well as the various reasons for the defeat of the staff, but that some of the questions raised be thoroughly considered. Certainly one of the foremost of these would be the investigation of possible types of concerted action for making negotiations effective. No less important is the problem of organising prompt support, either through a network of professional societies or through a single national association of teachers, to aid any university staff which might come under attack. The organisation of British universities of course differs in many fundamental respects from the American pattern, as does the general social and economic situation. The class background of teachers, and to a lesser extent students, is however very similar in the two countries. It is for this reason that the California oath controversy has much the same potential significance for both Britain and America.

BY ROY PASCAL

IN 1941 Aragon published a volume of poems, *Le Crève-Cœur*, in which he spoke with bitter realism of the futile illusions and horrors of the disastrous campaign against Hitler. Readers in France and abroad recognised the significance of these poems, for they not only presented the truth of a soldier's experience, but also, in their anger and bitterness, revealed the potential energy of the coming resistance. Now, in his long novel, *Les Communistes*, Aragon reconstructs the social world and movement from which his lyrics grew, and which gave them their meaning and power. The six volumes now completed form a "first series" covering the period 1939 to 1940, from the collapse of the Spanish Republic to the capitulation of France. It is the intention of the author to continue the novel through two further series.

It is a historical novel of our own day, that is, a political novel. The events with which it deals have not been "canonised" by history, given a (relatively) fixed place in the story of the past, they are not accepted as "epochal" as for instance Waterloo, Sedan, the October Revolution. Their issue has not been finally decided, they are still being fought out, and their significance, even their character, are differently interpreted according to differing attitudes and activities. What may, to one writer, appear as a mass of trivial fatuities, to another may reveal a pattern and purpose; or pattern and purpose may be limited within the confines of a particular exploit, without reference to the wider social issues. The horror and despair of Norman Mailer's *The Naked and the Dead* is in no sense incompatible with the thrill of stories of individual exploits. By contrast, Aragon seeks to embrace the totality of significant events in France, and to reveal their function in a social process which is part of the whole development of humanity. A Communist, he sees events not as fortuitous but as the products of a social process, he can order them in a scale of importance, and thus, as an artist, he can find the point from which they can be organised in an artistic unity. The variety of individual fates is welded together in the tragic collapse of a nation, which itself issues out of the inner contradictions of the class-struggle. Thus, too, we read the novel not out of historical curiosity but because we need to absorb its truth more fully in our consciousness.

The historical or social novel is not a mere variety of historical research or political analysis; it is not merely the "inside" story of a period, telling us of thoughts and feelings, of personal life, as well as major social events. It is a form of art, and the specific function of the artist is to present the truth of the world in such a way that we cease being mere observers and become imaginative participants. The artist makes us feel that his events are our events; we are moved by them in a

peculiar and powerful manner, we refer them to ourselves, unconsciously as well as consciously, we are moulded by the work in our inward self. If this inward change is to occur, we must be led to see with a new intensity, our thoughts must acquire body and substance, we must be shaken emotively, "purified", as we are, for instance, when we see Shakespeare's historical plays. Historians themselves are too closely tied to the multiplicity—and to some extent the fortuity—of events and motives to be able to achieve this effect, and if they aim at it, they tend to romanticise history. The historical novelist, whose aim is to penetrate to the reality of the social movement in time, cannot achieve his artistic purpose simply by the direct reproduction of actuality. He can and must create representative "symbolic" figures, in whom the great issues of a period meet in intimate encounter, take on flesh and blood, and make claims on our feelings. Walter Scott established the characteristic form of the historical novel in using imaginary (or semi-imaginary) figures for his foreground, while real historical persons and events constitute the framework. Aragon has adopted the same method. At the centre of his novel are the imaginary, focal figures, in whom the conflicting forces of the time are crystallised; round them cluster the real figures, institutions, and events—politicians and generals, parliaments and political parties, factories and trade unions, battles, bombings, and retreats. Thus his realism has different shades, from the direct reproduction of parliamentary debates and Government communiqués, the detailed description of political and military actions, to that more general realism in which the essential elements of the whole process are fused in imaginary, representative figures.

It is a specially difficult problem for the writer of a novel dealing with contemporary history to limit the scope of his work, and in particular to find a fitting conclusion. We are not concerned merely with the life or death of his characters. The events which give them their significance go on: the solution of one historical problem, as Goethe said, only gives rise to a new problem that demands to be solved. The cycle of experiences of the central characters must have an artistic unity and be complete in itself, but it must also open up a new vista. But this problem is not peculiar to the political novelist. Goethe's *Wilhelm Meister*; the theme of which is the development of a young man to practical, useful activity, ends with the prospect of emigration to America. Tolstoy's *War and Peace* traces the movement and inward growth of the Russian people to its self-realisation in the war against Napoleon; but in the last chapter he foreshadows new struggles (Waterloo is for him, as for Stendhal, a beginning as well as end). Zola's *La Débâcle* deals with the Franco-German war and the Commune, and we feel dissatisfied when he kills off his hero at the end, for he thus puts an arbitrary conclusion to a situation still full of tension. Sholokhov's *Quiet Flows the Don* culminates in

the defeat of the Counter-Revolution, but its artistic unity is not impaired by the fact that the new tasks of the new society are already emerging at the end. Though Aragon's novel is far from completed, it is clear that he conceives its form in this way. The individual characters are not the be-all and end-all of the story, but represent and merge in an actual historical reality (we shall have to judge whether, at the same time, he has been able to achieve an artistic result). This historical reality is made up of a double process. On the one side is a ruling class which in its disintegration drags down with it the nation to the nadir of the Capitulation; on the other a movement of national integration, led by the Communist Party, thwarted and suppressed, but acquiring substance through national disaster, for which the Capitulation is a new beginning.

Through the characters of a large number of persons, financiers, industrialists, politicians, generals, artists, their families and friends, Aragon shows a ruling class which, the head of a democracy, is desperately struggling to limit or suppress democracy; a national leadership which thwarts and undermines patriotism, obsessed with fear for its possessions and power. From this standpoint its incompetence, its futility and fear, its cynicism and self-deception, its trivial concerns, become significant. Thus the episode on the Franco-Spanish frontier, with which the book opens, has a symbolic meaning. Spanish Republicans and their French supporters are treated with brutal violence by the French military and civil authorities as they seek to flee from Franco's advancing troops; the Republic of France flouts the principles of democracy and national security. The response to the Soviet-German Non-Aggression Pact brings into full clarity what is already foreshadowed. Though it means the effective isolation of France, the news is received in ruling circles with savage relief; it leads to the outlawry of the Communist Party, a step which deals a decisive blow at French unity and at the same time removes all possibility of a democratic purpose in the struggle against Hitler. The war against Germany therefore takes on the appearance of a sham. Re-armament is primarily an opportunity for making profits, strategic preparation for a real war against a real foe is replaced by idiotic notions of landing in Finland or bombing Baku, the soldiers become "browned off" by idleness, fatuous manoeuvres, and moral confusion, politicians are pre-occupied with intrigues for ministerial places; in these circumstances, simple patriotism appears foolish, old-fashioned, cranky. Hence the utter incapacity to fight the war when Hitler attacks. And from stage to stage the cynics and "realists", the authoritarians and Fascists, the admirers of Hitler and Franco, move into the political foreground. From the cover of pacifism they prepare the moral situation in which Pétain emerges more and more openly as the mediator, the peace-maker, until he takes charge at the Capitulation with which the novel ends.

The deception, intrigue, and confusion in the ruling circles is reflected in the mass of the people, who are tossed about by specious propaganda and contradictory orders until, in the disasters of defeat, fleeing from bombs and armies, they are filled with bitter contempt and hatred of their leaders. They undergo experiences, and to some extent behave, like the people in *La Débâcle*; but in two major respects Aragon's novel goes deeper than Zola's. Zola only lightly touches on the effete and intrigues in the Government and high military circles, and the glimpses he gives of Napoleon III win our sympathy for him as a lonely and pathetic figure. Aragon gives a much fuller account of the public acts and private life of the upper class, for it is here that the secret of the military collapse is to be found; and for this reason he does not allow the dismay and misfortunes of the leaders sentimentally to distract our attention from their responsibility for the national disaster. At the same time, Zola shows only confusion in the masses; and the Commune, which issued out of the war, is shown as the product of bewilderment, thwarted idealism, and base greed in the mass of the people. His ideal characters are those simple folk who, in spite of the failure of their rulers, continue to do their "duty" in the narrow limits of military discipline or civilian occupation. Yet he had already shown the inadequacy of such an interpretation and such principles in earlier novels, particularly in *Germinal*, and we feel that *La Débâcle* is rounded off with a sentimental idealism that in no way does justice to the reality he has unfolded. From such a contradiction Aragon is free. Though he too shows bewilderment in the mass of the people, he also portrays a working-class movement which both understands the course of events and can shape, within this chaos, a consistent purpose and a moral power.

This movement is not of sudden or instinctive growth. Its core is the Communist Party, schooled and disciplined by years of struggle, and with a consciousness of national responsibility. It cannot in this period control events, but its members are not abashed or outwitted by events; they understand their causes and act intelligently and consistently. Its actions, its existence, is the organising centre of the whole novel, just as it is the main object of the Government's policy and the phony war.

The Party is declared illegal, its members are dispersed by mobilisation, threatened, put under surveillance, arrested, beaten up, killed. The Government's policy of isolating the Party is largely successful, for the Socialist leadership and the mass of the people become anti-Communist, anti-Soviet. There are fights even within factories. A number of Party members succumb to pressure—Aragon shows typical instances among intellectuals, Parliamentary leaders, and the rank and file. As a whole the Party stands firm, but Aragon does not over-simplify the difficulties. The more experienced swiftly understand that the attack on the Party and the Soviet Union is not an incident in a war against

Germany, but the main purpose of the Government—Fajon's speech in the Chamber of Deputies on January 11, 1940, gives the policy of the leadership with impressive simplicity. Others, like the lorrydriver Prache or the metal-worker Blanchard, are at first puzzled as to the why and wherefore of the Soviet-German pact, but in arguing with a Socialist they come to detect the insincerity of the other side, the class-interests involved, and on the basis of their own class-consciousness come to understand the situation. Marie Corvisart, a lawyer's secretary, is full of perplexities and doubts, and feels she needs the help of an experienced comrade. But when she attends her Branch meeting, and takes her part in planning the new daily tasks, she finds that the tasks themselves clarify and define the situation.

In the army, the Party men cautiously seek out one another, make contact with local Communists, keep a watchful eye on those in the most endangered positions, like the officer Barbentane, a prominent member of the staff of *Humanité*. In small ways they influence their associates, building up confidence and goodwill. Their places at home are often taken by their wives, who join up again the broken links of the organisation. It is a small and persecuted band, and remains so till the end of the novel; but because of this it is the prototype of the patriotic resistance which will be built up after the collapse of France. Thus, while the novel closes with the Capitulation, it closes too with the beginning of the Resistance, the organisation for which has already been forged.

This is, abstractly put, the theme of the novel. The novelist has of course to present his theme in the individuality of actual persons, and Aragon describes a large number of characters, not merely in their opinions and political attitude, but in their private life, their relations with family, friends, and associates, their personal interests and activities. The historical crisis with which he deals is moral as well as political in character, and the disintegration of family and friendship in the upper sections of society is contrasted to the substantiality of personal relations that arises from comradely co-operation among the men and women in the working-class movement.

The fundamental movement and tensions of the novel are provided by the dramatic historical events, in which all characters are engulfed, in their private as well as public life. As these events unfold, the characters reveal their inner qualities, their strength and weakness, the logic of their character and situation. But Aragon has conceived his task as much deeper than the description of the inevitable collapse of the ruling class into defeat and fascism, and the description of the Communist resistance. He is concerned with the people as a whole, with their response to the changing situation, for it is the people that finally determine events. He has therefore put into the forefront of his novel a number of characters who belong, at the beginning, neither to one

political side nor the other, but who change under the impact of events. These characters are of decisive importance, for they symbolise the forces that made France's revival a reality; they are the touchstone of the truth and effectiveness of the Communist Party's work. Technically, the novel is organised largely round them; to a considerable extent (though by no means completely) the various sections of society meet in them or are seen through their eyes.

This group is linked by personal ties. It is composed of Gaillard, who keeps a jeweller's shop, his wife Yvonne, her brother Jean de Moncey, and the latter's friend, Cécile Wisner, the wife of a big industrialist. They are by no means ideal characters, nor is their personal fate of particular significance in the movement of events. But it is for these persons, particularly for Jean and Cécile, that Aragon claims our especial sympathy and interest, for them we tremble. In them we see most closely the interweaving of social relations and personal life, and their struggle for love, self-respect, decency, candour leads them away from a rotten society into the workers' movement.

Gaillard has once visited the Soviet Union and is chairman of his local Friends of the Soviet Union. But, though an admirer of the Soviet Union and of individual French Communists, he is hostile to the more militant, "dogmatic" aspects of Party policy. He would bring up his family in the traditional petty-bourgeois fashion, and does not want his wife to get mixed up in "unwomanly" things like politics. The Soviet-German Pact throws him into acute distress, and, on being called up, he is extremely nervous lest he should be considered a Communist. "Innocent" as he is, he finds that he is suspect to the military authorities and secret police, and almost goes to pieces. But the extreme provocation of the behaviour of the military authorities, coupled with the example of his wife, leads him at the end boldly and somewhat desperately to identify himself with the views of the Party.

His wife, Yvonne, comes from an impoverished aristocratic-catholic family, and her marriage with the free-thinking shopkeeper is a social and ideological revolt against her family's class. But she becomes more than a wife. Her quality of simple loyalty to what she thinks right leads her to urge her husband to hide documents of the FSU in their home (though he actually sinks some of the incriminating material in the Seine). When her husband is called up, she harbours Communists sought by the police, and then begins to take an active part in the illegal women's organisation. Her activity is discovered, and she is arrested on a charge that carries the death-penalty. Gaillard is amazed and horrified when he hears of her being involved in such affairs, but it is her example which makes him, in the end, clear and courageous.

The story of Jean de Moncey and Cécile Wisner leads us more deeply into the "problematic" of the bourgeoisie. The daughter of a banker,

and wife of an armament manufacturer, Cécile is brought up among the cultural refinements of the wealthy, unconscious of the realities of the business and politics of the men. Charmed by the sceptical, disillusioned egocentricity of this culture, she is at the same time vaguely unhappy with the purposelessness of everything; she cannot be content with the limited domesticity of some of her friends, nor the feverish social life of others. In Jean de Moncey she finds a young naïve idealist who attracts her by his "cleanness", but she holds back from what would be a normal liaison with him. Her own circles more and more repel her, as she discovers the semi-Fascist gangsterism in which her husband is involved. It is a relief to her to find her services are needed as nurse to a blinded, mutilated soldier, and from this man, a Communist, she begins to learn. The character and activities of her own circle, which formerly had bored her, now begin to acquire a meaning for her that fills her with hostility, and she starts to understand the character of the war. Jean now begins to appear to her as a principle as well as a person, and with complex motives she decides to look up Jean's sister, Yvonne, about whose political leanings she knows. From a telephone call she gathers that the police are at Yvonne's, and she arrives there just in time to promise Yvonne she will look after her children. Thus she both gives herself a real job, and at the same time links up with the political opposition; though, even at the end of the novel, she still has a long way to go before these impulsive acts and trends can acquire solidity and permanence.

Jean goes through a similar development. From childhood, his successive enthusiasms—for religion, scouting, botany—have brought him into conflict with the timid conformism of his parents. From the Gaillards he begins to learn of a society and movement that is worthy of devotion, but the Soviet-German Pact shakes his belief in the Soviet Union, and he finds refuge in a simple-minded patriotism. A good-natured, decent lad, he sees something of Fascists and Communists, and fumbles along like many a student. Then he gets innocently mixed up in a sordid affair, and is told by the authorities that he can make good by joining the Army Medical Corps. Here his true education begins. He sees the contrast between the actual military confusion and the professions of the Government, and resents what he considers to be false propaganda. The driver of his ambulance, Blanchard, is a Communist, and the two strike up a friendship. When he learns of his sister's arrest he speaks openly to Blanchard, and the latter can explain to him how things hang together. His unit moves up to the front and he experiences to the full the effects of his Government's policy, in the confusions and disasters of the retreat. As a student his love for Cécile had distracted him from his work; now he longs for her as someone with whom he can share his thoughts and come to clearer understanding of the tasks that

have to be shouldered. After Dunkirk they meet as lovers. It is the moment of complete national collapse, of the Capitulation; but in their meeting is the beginning of new effort, new hope, which arises from their contact with the workers' movement. Thus their personal story links up, not only through direct personal contact, with that of so many other individuals in the novel who make up the workers' Party—who make this movement and themselves are made by it, who through it win the stature that puts them into the forefront of their times and of the novel.

In *Les Communistes*, Aragon sketches many characters and milieux in this year, 1939-40, which have little direct connexion, or no connexion, with the fate of this little group of central characters. The action of history in no way turns upon the latter. They are important, and his method is artistically justified, because in them we see symbolised the transformation of the French nation from a people of defeat to a people of resistance: or rather, more correctly, the seeds of this transformation. The whole novel is consistently composed round this theme, presented in many brilliant and deft scenes, often bearing the stamp of authentic experience. But I finished this six-volume novel with a sense of dissatisfaction, not only because its length and complexity of incident and character taxed my attention to the uttermost, but also because I felt I had not got to know enough.

It is a weakness of the novel that the central "problematic" group belongs only to the petty and upper bourgeoisie. The movement towards a new national unity, which they symbolise, entailed primarily a consolidation in the working class and rural population; but Aragon fails to bring into prominence the spiritual struggles and development of characteristic figures from the Radical, Socialist, or non-political industrial working class or peasantry. He does not ignore this problem, but he fails to make it a central, engrossing theme, attached to prominent characters of the novel—in the strongest contrast to Anna Seghers, for instance, in whose novels this is the main theme. Cécile Wisner, in particular, is the odd-man-out of her class, not a typical figure, and because of this our attachment to her tends to be sentimental, personal. One might say, she could really win our sympathy only by taking a back-place in the novel, by being a slight incident instead of a leading theme.

Though in one sense Jean and Cécile are leading figures, since much greater attention and sympathy is lavished on them than on other characters, in another sense the novel lacks the artistic unity which is usually provided through its central group of figures. Its form is kaleidoscopic. We pass through many milieux, each of which develops through events, and many of which are only indirectly connected with one another. For long periods the characters I have called the "leading

figures" do not appear. Aragon has sought to give a cross-section of French society; but though some of these scenes and characters are vividly presented, there is a constant blurring of focus, a relaxation of attention. Valuable as a social picture, the novel is aesthetically faulty. For instance, the last two volumes give an account of the military campaign which is packed full of interest and, authentic as it is, must remain of great interest for the historian. But the different situations and personal attitudes are in essence repetitive, and the complex movement of troops very confusing to the reader. As an artistic achievement one must contrast these two volumes unfavourably with the simplicity and wholeness of Barbusse's *Le Feu*.

In its general form, Aragon's novel presents us with the besetting problem of the socio-political novel. He knows that at any moment, and particularly in a period such as he describes, the fate of each individual is entangled in the whole of society; he has therefore sought to put before us representative scenes and characters from all social sections. One can compare his method with that of Dos Passos. But the result is that nearly all these many characters appear in a sketchy, even parodied form; we do not get right inside them, so that they seem to have the quality of puppets. The author simplifies like a cartoonist, and however intelligent his point of view is, it appears as a shrewd comment rather than an artistic creation. We therefore tend to appreciate his work in so far as we already share his point of view; but Aragon rarely gets down to those inner regions of experience which the artist must plumb if he is to seize and transform his readers. If the characters from the upper classes tend to be two-dimensional like the shadows of a phantasmagoria, those from the working class, particularly the Communists, seem also to be over-simplified and undifferentiated in their inner security and moral balance. This is not a criticism of Aragon's sociological analysis; it is a criticism of an aesthetic procedure. It gives rise to the question how can the artist bring us to Aragon's conclusions, but through the medium of imaginative experience which takes us right into characters and persuades us, without the possibility of theoretical disagreement, of the reality of their being, their triviality or depth, their diseasedness or health?

It seems to me that the kaleidoscopic form, the social "cross-section" method, almost inevitably fails to give that aesthetic totality that art demands. It is bound up usually, and certainly with Aragon, with a certain impressionism of technique which, brilliant in detail, is unsatisfying in general. We see characters on the surface, we hear their conversation, we know of external things in the form in which they are reflected in the characters' words and behaviour. We see a host of incidents as they are present in the general consciousness of the people. Many of these phenomena are presented with extreme skill by Aragon—

a dinner-party in high circles, the conversation of soldiers, the retreat of lost military groups, and many other incidents, are sparkling writing. But we need to know more about men and things than these surface-phenomena, we should like to be taken inside people's minds more, and know all their secrets. Art must speak to the sensuous imagination; but the novelist, in particular, can in a variety of ways uncover all the "heart and mind of man".

I would mention one final point of criticism of Aragon's conception of his work which, like the foregoing, is a general problem for the social-realist novelist. His novel is very long, six volumes, and is to be continued through two further series. But how is it to be brought to an end? As it is planned, it is co-terminous with history, that is, it can never end. Aristotle said, tritely enough it seems, that a play must have a beginning, a middle, and an end; and it is scarcely worth saying that this is true of the novel too. But it means that the framework and conception of a work of art must be more distinct from actual life than Aragon's conception is. However representative of historical actuality the work is, it must be reduced in proportions and given a completeness which life never has; the limited field of the characters must lead to a completion and fulfilment on their level, even though on our level it is a symbol of an unending process. Art is not the fullest possible reproduction of reality, but a sifting and condensing of reality, without which a work does not enable us to see and feel life differently. I feel that Aragon has rushed too quickly to put a mass of experiences into his novel, without taking the time to digest it all and reproduce it in a more concentrated form.

I have dwelt on these criticisms of Aragon's novel because they seem to me to illustrate important problems for the political or historical novelist. They are not intended to be reasons for dismissing this work. On historical grounds alone the novel is immensely interesting, reconstructing the events of a most dramatic year, and taking us into social regions which we could not know. There is brilliant writing in it, bitter, satirical, witty, racy, and tender, and always subtle and suggestive. There is consistency of purpose and a broad humanity, and certain of the characters emerge from the pages and live on in their own self-sufficiency. In more than one sense, one learns from the book.

Reviews

Käthe Kollwitz. By GERHARD STRAUSS. Sachsen Verlag, Dresden. With 128 offset plates and illustrations. (Collet's). 27s. 6d.

OCCASIONALLY there arises among artists, one whose work is so imbued with the spirit of their time as to seem the very essence of it; where theme, mood and technique are so blended as to form an indivisible entity, evoking irresistible and moving images of our time. This new monograph, from the German Democratic Republic, establishes Käthe Kollwitz as being one of those artists.

Käthe Kollwitz, who was born in 1867, died in 1945 in Nazi-imposed provincial exile in her native Germany. She had fought reaction and injustice all her life and her unrelenting opposition to the Hitler régime resulted in her expulsion from the Academy of Arts: her works were excluded and banned from public exhibition. Her graphic work, which after an interval of many years is receiving a wide circulation in Eastern Europe, establishes her unquestionably as one of the greatest graphic artists since Rembrandt. There are few figures in the art of the last half-century whom one can so unhesitatingly qualify for such praise. There would be few in Britain who would deny this to her, if they were familiar with her achievement. Alas, there are few indeed who know of her work here. Although she was represented in the 1949 Arts Council exhibition of Modern German prints and drawings, her real stature was concealed under the phrase "mainly concerned with social problems". A stigma which covers a multitude of sins ranging from humanism to being a Socialist and being guilty of the most unforgivable sin of all—the use of one's art as a means of propagating those beliefs.

In Britain, Käthe Kollwitz has been consistently represented for many years as a semi-obscure and second-rate expressionist. With the result that the majority of our artists under forty have no knowledge and therefore little appreciation of her work. It is for this reason that I ask the reader's indulgence to digress in order to place her achievement in some sort of perspective. For it is an increased familiarity with the outstanding figures of nineteenth and early twentieth century Social Realism that is urgently needed to assist the efforts of progressive artists in creating appropriate forms to express the experience of our time.

In the closing decades of the last century, there emerged a group of artists whose work introduced a new and revolutionary content. Their works showed, for the first time in a bourgeois society, an intimate association with the political and economic aspirations of the industrial proletariat. This trend was most pronounced in Britain, France, Belgium and Germany, where the development of capitalism and the working-class movement was at its highest. Aesthetically, it was an art created by painters, sculptors and draughtsmen who had developed their

work not only as a means of drawing attention to social problems but also as an art which depicted the positive aspects and forces in the struggle against war and for socialism.

In the 60's of the last century, such journals as the *Graphic*, *Illustrated London News*, *Le Monde Illustré*, *Deutsche Illustrierte Zeitung*, and *Harper's Weekly*, to name but a handful, were the means whereby an entire generation of painters and graphic artists were brought face to face with the social problems and the class struggle attendant on the growth of capitalism. In Britain, under the paternal influence of the Pre-Raphaelite Ford Madox-Brown, a group of young artists which included Arthur Boyd-Houghton, George Pinwell, Frederick Sandys, William Bell Scott and Frederick Shields were painting social themes, which had as their subject-matter the life of the industrial working-class. As Klingender has already pointed out,¹ the above and other artists who, he notes "contributed to the *Graphic*, founded in December, 1869, and their full-page drawings of factories, mines, refuges for the homeless, emigrant ships, and of individual workers . . . was a . . . contribution to this rapidly growing volume of social reporting."

This new approach to contemporary subject-matter by this realist group among the Pre-Raphaelites and the satellite draughtsmen of *Graphic*, undoubtedly exerted a direct influence on a number of socially-conscious artists striving to reduce the gap between themselves and the working-class. This interesting evidence together with the fact that both the *Graphic* and the *Illustrated London News* had an international circulation and prestige relative to *Picture Post* and *Life* makes it more than likely that these drawings were known by artists throughout Europe.

It was in Britain that the first pictorial weekly newspaper appeared; this was the *Illustrated London News* founded in 1842. It was not however until the 1860's that artists began to contribute drawings of an industrial or social nature of a character which was decidedly above the rather ephemeral pictorial journalism of the time. Not all of this kind of graphic art was of course socialist in spirit. The best of it was created by such artists as Arthur Boyd-Houghton, who journeyed to the U.S.A. in the '70's for the *Graphic*, contributing the remarkable and critical series "Graphic America" whose publication aroused a storm of protest from the other side of the Atlantic and resulted in many cancelled subscriptions; and Josef Israels, the Dutch painter who portrayed the poverty of peasants and factory workers in many countries. Israels' largely forgotten *Spain: The Story of a Journey* is a remarkable collection of drawings, both compassionate and critical of the barbarous régime of Alfonso XIII. Also the Belgians Eugene Laermans, and Constantin Meunier, who depicted the stark social scene of the Borinage and Flanders with grim realism.

¹ F. D. Klingender, *Art and the Industrial Revolution*, 1947, p. 150.



Thorn

Man with Hat. Pen Drawing (1891)

In France itself, the tradition of Courbet, Millet and Daumier was continued and developed by Dalou, Lepere, Steinlen and Forain. In Russia, Repin was producing comparable work. His art achieves a new interest for us, in the series of lithographs of working-class life in St. Petersburg, drawn for the American *Scribner's Magazine*.¹

In America too, a group of artists, sustained by their contact with the American scene through drawing for such journals as *Harper's Weekly*, *Scribner's Magazine*, *McLure's Magazine* and others, created a robust realism that was independent of the Europeanised bourgeois art of the time. John Sloan, George Bellows and William Glackens were contemptuously called the "Ashcan School" because of their preference for subject-matter of working-class life in the slums and factories of New York. All contributed drawings to the early issues of *The Masses*.

These artists kept throughout their lives a contact with the people, a factor which kept their art alive in a society which was bringing about an ever-widening gulf between the artist and his fellow-men.

By 1890, the introduction of process-engraving, the invention of the Linotype machine and the almost constant improvement in printing machinery made possible the illustrated *daily* newspaper. These technical innovations, hand-in-hand with a rapid tendency toward single ownership of whole groups of periodicals, brought about a degeneration of "social-reporting" into the more superficial "artist-reporting," in which the artist was nothing more than a recorder of colonial wars, industrial progress and ceremonial pomp. The published graphic work of socially-conscious painters and illustrators decreased as this situation crystallised the editorial attitude against a critical viewpoint of society. Although this was partially compensated by the growth of a socialist and progressive pictorial press which published the work of these artists, the impetus which had previously characterised this kind of graphic art was largely lost, and a new stage of development began. This new stage, reflecting the growth of organised socialism was characterised by a closer identification of the artist with the life of the people. The artist ceased to be merely an onlooker who disclosed social evils but became also a participant.

It is not surprising therefore, to find that a great deal of the social and critical art of the later decades of the nineteenth century reached the point where it sought expression not so much in the easel picture, but rather in the lithograph, the etching and the newspaper drawing. Mediums which facilitated a franker and more direct statement.

Although some success had been achieved by Courbet, Meunier and Liebermann in the teeth of fierce opposition from the pundits of bourgeois academic art and its patrons, the *salons* and the fashionable exhibitions were hardly the places which workers could afford to frequent, in order to see the new realism.

¹ *Khudozhestvennoye Nasledstvo Repin*, 1949, Volumes I and II, in which are reproduced a number of these lithographs (available in the S.C.R. Library).

Berenson has said of the early Renaissance¹ "that people began to feel the need of painting as something that entered their everyday lives almost as much as we nowadays feel the need of the newspaper . . . until the invention of printing, painting was the only way, apart from direct speech, of conveying ideas to the masses."

The development of the pictorial press and with it the revival of the print in a variety of forms, also made possible a revival of the influence visual art had always exercised on the minds of the people. Käthe Kollwitz, an artist whose technical prowess would have endowed her with a brilliant career as a bourgeois painter, realised this. In doing so, she was among the first of the socially-conscious artists of our time to consciously develop those forms of art which can be made most accessible to the working-class.

Between 1895 and 1898, Käthe Kollwitz created her cycle of aquatint-etchings—"The Weavers' Revolt," most of which are admirably reproduced. This work, a most moving and profound document of working-class life was largely motivated by the social-political themes which appear in German literature from the early '90's. Under Zola's influence the German social scene both in its historical and contemporary aspects, was a rich source which inspired the plays and novels of the Naturalists—particularly Gerhard Hauptmann. But this work was not merely a derivation from Hauptmann. It was a drama of working-class life, to which she herself was witness, having lived with her doctor husband in a community of weavers for several years.

The cycle commences with an interior of a weaver's cottage wherein an unemployed family face starvation. A mother with her head in her hands keeps vigil over her puny white-faced child. An idle loom is silhouetted against a darkening afternoon sky, seen through a small window. In the second print, the child is dead and Death touches both parents to remind them that he is waiting. The third print shows the desperate weavers conspiring in a darkened cottage which leads to action, illustrated in the fourth print—in which a deputation, followed by their families march on the palatial mansion of the Wool Merchant. The fifth print which is entitled "Attack" depicts the storming of the mansion gates—the police fire and in the last print the casualties are brought in before the weeping wives of the dead demonstrators.

"The Weavers' Revolt" is a dramatic and tense portrayal of the class struggle which aroused widespread interest on the continent at the time. Another cycle, this time inspired by Gerhard Hauptmann's play *Florian Geyer*, appeared between 1905 and 1908. The theme of this series is a medieval peasant revolt in Silesia. The spectacle of the class struggle clearly absorbed her whole creative effort during these years. The power of this series is extraordinary. As a chronicle of history in which the

¹ Bernhard Berenson, *The Italian Painters of the Renaissance*, 1930.

people are fighting tooth and nail for survival, they rank with Goya's *Disasters of War*. All the bitterness and ferocity of the feudal class struggle are portrayed with superb artistry.

These two masterly series launched a spate of drawings, lithographs, etchings, aquatints, woodcuts and paintings which went on unabated until the advent of Hitler. Wars, revolutionary struggle, demonstrations, industrial disasters, strikes, pregnancy, starvations—in short pictures of everyday life as she herself encountered it in the practice of her husband Dr Hans Kollwitz—in one of Berlin's largest working-class districts.

In the years that followed the 1914–18 War, her work began to reflect the growing militancy of the German working-class movement. Her drawings became more direct. She hit out unmercifully at the military leaders whilst making the most compassionate and moving drawings of working-class children and their mothers. She contributed to Social-Democrat and Communist weeklies. An interesting synthesis of her earlier and more literary style with this new mood, is to be found in the monumental drawing of a group of workers paying their last respects at the grave of Karl Liebknecht (page 93). In the early twenties another series brought home the horror and absolute misery of prolonged unemployment. In 1923–24 she revived her print cycles and published the series "War"—reminiscent of Holbein's "Dance of Death" in their macabre but nevertheless highly effective imagery. She also designed posters for both the Social-Democrats and the Communist Party. Her personal attitude toward the working-class disunity so rife at the time, is powerfully depicted in the lithograph "Solidarity" (p. 139), in which Communist and Social Democrat link hands on the occasion of a demonstration of friendship with the Soviet Union. In 1927, on the occasion of the anniversary of the October Revolution, she visited the Soviet Union. A beautiful drawing of a group of children absorbed at a Moscow theatre (p. 135) is from this all too short visit.

The influence of Käthe Kollwitz on the development of Social Realism has been considerable throughout the world. The majority of her prints were published or exhibited in America shortly after their appearance in Germany. Their effect on a large group of Communist and progressive painters and graphic artists was immediate. This group included such artists as William Gropper, Rockwell Kent, Joe Hirsch, Hugo Gellert and Fred Ellis. Her influence was seen later, in the mid 1930's in the murals, paintings and prints of the WPA Federal Art Project.

No art in history has been closer to the purpose of the struggle of the people, than the contemporary Chinese woodcut. This medium, which was originally developed in Shanghai in the early 1930's not by artists but by writers, who found by the means of the simple imagery of the woodcut, they could communicate directly with the largely illiterate working people of the police-controlled city. During the period in which



BREAD! from the *Hunger Cycle* (1924)

the writers were familiarising themselves with the medium, Lu Hsun the eminent Chinese novelist, arranged for an exhibition of the lithographs and woodcuts of Käthe Kollwitz. In an introduction to this first exhibition Lu Hsun saw in her work a means for: "bringing to the struggling Chinese people the consciousness that they were not alone, . . . the works of Käthe Kollwitz show that the injured and insulted, the friends and allies of the people, exist in very many other places on earth and have among them artists who mourn, protest and fight on our common behalf. . . ."¹

¹ See Israel Epstein: the Chinese woodcut, *Masses and Mainstream*, March, 1949.

In Britain immediately before and after the 1914-18 War, her work was placed in high regard by such distinguished contemporaries as A. S. Hartrick, Spencer Pryse, F. E. Jackson, Joseph Pennell, Sickert, Will Dyson and W. P. Robins, whose work also had a firm foundation in its close relation to the life of the people. Those of our contemporaries who studied under any of the above artists were also influenced, and the rich albeit short-lived crop of graphic work created by James Boswell, James Fitton and James Holland,¹ owes much of its strength to her.

Throughout history the artist's style and the content of his art has been influenced and conditioned by the powerful minority who ruled. The visual force which the artist is capable of giving humanity was from early times, channelled into translating the ideological concepts and religious ideals of a dominant class. There were then few exceptions to this, only apparent when Society was in periods of change. One can cite any number of artists who seemed to rise to the occasion in reflecting the spirit of that change. The more prominent of that number would include Giotto, Rembrandt, Hogarth, Goya, David and Daumier. To this elect band we must now add the name of Käthe Kollwitz, for her achievement more consistently than that of Meunier or Dalou reflects the emergence of the working-class for the first time as a political force capable of inspiring great and permanent works of art. Her art reflects not only the suffering and poverty of the people, but a faith in a future socialist society.

This book is a powerful weapon against the formalists who would relegate Realism to the magazine-photographer. The words remain in their throats however when they begin to label Käthe Kollwitz as a "Naturalist." It is to be hoped that this monograph will contribute to the restoration of her inspiring example to the post-war generation of our artists who are not fully acquainted with her genius.

PAUL HOGARTH.

Soviet Genetics. By ALAN G. MORTON. Lawrence and Wishart Ltd. 15s.

THE ignorance in this country of the basis of T. D. Lysenko's criticism of Mendelism had the unfortunate consequence that when his well-known polemical address on "The Situation in Biological Science" appeared in English translation it was virtually incomprehensible to many biologists, even to those anxious to understand it. It was not difficult in such circumstances to turn it into propaganda against Soviet science, and this was quickly done, against shaky opposi-

¹ To be found in *Left Review* from 1936-1948.

tion. Dr. Morton's book, and the new translation of Lysenko's "Heredity and its Variability," help considerably to put the discussion of the problem back on to a scientific plane. Dr. C. D. Darlington, however, apparently finds it impossible, or undesirable, to take the opportunity offered.¹

Among the factors preventing a proper evaluation of Lysenko's position were first, a lack of knowledge of the experimental basis of his views; secondly, a lack of any detailed information on the attitude of the Michurinists to the data assembled by the Mendelian school; and thirdly, perhaps less important, the intrusion of Lysenko's views on intra-specific competition into the main discussion. Dr. Morton has succeeded admirably in remedying the first deficiency. His references to the Russian literature go back as far as 1938, and review a considerable body of research, in some cases on a very extensive scale. His descriptions of experiments in themselves go part of the way towards remedying the second deficiency; in many cases the orthodox Mendelian segregations of dominant and recessive characters are used as "controls." It would appear that the Michurinists do not reject the experimental facts, but only the conclusions drawn from them, regarding the Mendelian laws as applicable under limited circumstances.²

When this much is said, however, there remain difficulties that are not adequately met by Dr. Morton, nor by Lysenko himself. The latter states categorically,³ "the different elements of an organism, its organs, cells, and separate parts in cells, possess the property of reproducing themselves" and⁴ "the molecules of the protoplasm and the molecules of the chromosome . . . reproduce themselves both by means of growth and by means of development", but Dr. Morton (p. 52) says "to speak of the self-reproduction of the gene betrays an extraordinary confusion of thought. For a molecule of nucleoprotein can no more reproduce itself than can a molecule of water." Morton further implies (p. 127) that changes in the chromosomes merely reflect changes in the heredity of the cell, while Lysenko⁵ envisages that "changes in separate parts of a cell, such as, for instance, separate chromosomes, should (and this is frequently proved experimentally) bring about a change in the various organs, characters and properties of the organism obtained from this cell. . . ." It would seem that Dr. Morton's derogatory remarks about the chromosomes, and his treatment of Mendelian segregation (p. 125), which appears more unsatisfactory, perhaps, than even he himself admits, are not a true indication of the Michurinist position. Even if, as he suggests, the chromosomes do not persist in the resting nucleus, it remains to be explained why they appear at cell division; in fact, their appearance at this stage becomes all the more significant, implying that

¹ Darlington, C. D., *The Literary Guide*, March, 1952, p. 51.

² Cf. Lysenko, *The Situation in Biological Science*, 1948, p. 610.

³ *Heredity and Its Variability*, 1951, p. 18.

⁵ *Ibid.*, p. 28.

⁴ *Ibid.*, p. 27.

they are not simply "internal organs of the cell" (p. 54), but have a particular function in cell division. Unfortunately, although Lysenko states¹ that heredity is transmitted through the chromosomes in the sexual process, he precedes this remark by a passage in which he says that "any particle of a living body, even the plastic substances . . . possesses hereditary qualities."

It must therefore be said that the author has failed, in this respect, to clarify the situation.

The questions of natural selection, and of adaptation, which necessarily arise in any discussion of heredity, are not treated very fully, so that again we are left in some doubt as to the Michurinist position. Selection is to be regarded as "creative," in the sense that the environment alters heredity, but whether selection is also to operate in the Darwinian sense, i.e. by preserving the better adapted, is not made clear. The most relevant experimental contribution would appear to be the evidence for "shaken" heredity, but the importance of this phenomenon is difficult to assess, since very considerable adaptive changes are conceived as having no effect on heredity, unless they affect the "norm" of metabolism. Very drastic, or peculiarly specific, environmental changes appear to be called for to produce any hereditary changes, and even then must persist for several generations.

It is perhaps characteristic of the new genetical theory that it appears vague in dealing with these and other matters which were treated by the Mendelians with great precision. However, as Dr. Morton points out, it is significant of the fundamental philosophical errors of their theory that recent developments are forcing the Mendelians to become more vague in their formulations.

These criticisms are not intended to indicate any general weakness in Dr. Morton's treatment of his subject. His book answers extremely effectively the political and personal attacks on Lysenko which have been made in Western countries. In addition he has revealed the nature of the Soviet research bearing on the problem. If this is accepted at its face value, as I believe it should be, many British biologists will be obliged to revise their attitude to the controversy, and to begin, at the very least, to judge each fresh piece of evidence² from the standpoints of both theories.

If there is any general criticism to be made, it is that the style deteriorates in places, particularly where the exposition is most attenuated, into the expression of vague and optimistic platitudes. These could well be replaced by a closer documentation of, for instance, the critique of the theory of the gene.

J. S. D. BACON.

¹ *The Situation in Biological Science*, p. 609.

² Cf. Waddington, C. H., *Nature*, London, 1952, 169, 278.

Review of Foreign Publications

POLAND

The first number of an important new quarterly, *Myśl Filozoficzna* (*Philosophical Thought*) has just appeared in Poland (Jan., 1952). The aim, as explained by the editors, is "to imbue all of Polish science with the Marxist-Leninist viewpoint, to develop Marxist philosophy creatively in close connection with practical needs, to popularise the foundations of Marxist scientific thought and activity among the masses, and to conduct a struggle against the remnants of idealism which hold back social progress and also against bourgeois philosophy and that of degenerating imperialism." As Adam Schaff says in his broad introductory article, the recent Congress of Polish Science opened up many of the avenues of discussion for specific disciplines, and the magazine now offers a means for continuing them in a scholarly fashion.

Examples of reevaluation are to be found in the articles by Józef Chalasiński and Julian Hochfeld concerning the social sciences. The former indicates the generally evasive character of so-called detached "field" studies carried out by bourgeois sociologists who, for all their show of completeness, carefully avoid the basic problems arising out of class conflict and capitalist exploitation. Among the topics thus evasively handled he mentions industrial sociology, interpersonal and interracial relations, "culture patterns" and culture contacts (as presented by Margaret Mead and others). Retrospectively, Chalasiński re-examines his own pre-war work, *The Young Generation of Peasants*, and submits it to self-criticism, partly with the aid of a recent Soviet book, E. A. Kosminski's *Researches on the Agrarian History of 13th-Century England* (1947), which he finds instructive for his purposes though it deals with a different time and place. Hochfeld's article, "The Opposition of Historical Materialism and Bourgeois Sociology," supplements Chalasiński's on the errors of pre-war Polish sociologists, and traces the historical origins of modern bourgeois sociology from the time of the 18th-century materialists onwards. Karol Martel's article, "The Worker-Peasant Alliance as a Basis of Socialist Construction," written à propos of two volumes of Stalin's works now

available in Polish, shows the valuable aid to be derived from a study of these sources as they bear on a social problem of primary importance for People's Poland today.

An inspiring figure of the last century is appreciatively sketched in G. S. Wasiecki's "Alexander Herten [Russian: Gertsen]—a Great Russian Materialist and Democratic Revolutionary." The author shows a fine sense of historical balance in estimating both the positive contributions made by Herten and the theoretical origins of his shortcomings. Though subject to idealist influences in certain aspects of his thinking (for instance, in his discussion of the individual's role in history), Herten was a champion of the natural sciences, and in treating of them he stood on a materialist position. He argued for the knowability of the external objective world and rejected the view of philosophical agnosticism. He, like the dialectical materialists, stressed the problem of change in nature, and his theory of knowledge represented a long step towards Marxism.

Among other matters, Herten concerned himself with aesthetics and ethics. His writings illuminate the progressive role played by 19th-century Russian realism both at home and abroad. In this connection it may be noted that aesthetics and ethics are, according to Schaff, two domains of historical materialism which, having been neglected in Poland during the interwar years, call for pioneer study and discussion today.

A long and penetrating article by Bronislaw Baczko is devoted to "The Philosophical and Socio-Political Views of Tadeusz Kotarbiński." In the 1930's Professor Kotarbiński was well known as a progressive thinker, a materialist, who voiced courageous opposition to clerical domination and obscurantism, to fascist intimidations and persecutions which marked academic life under the Pilsudski régime. For these aspects of his intellectual activity he deserves and receives a tribute of hearty praise. However, the analysis of Kotarbiński's system reveals that its reism—its demand that meaningful sentences must deal only with concrete, corporeal things, never with abstractions—offers support to idealism under the guise of combating

it. Kotarbiński thinks, apparently, that the origin of idealism is purely linguistic; that it lies in the use of abstract nouns which, being hypostasised, produce the scholastic absolutes of an idealist universe. His solution is, consequently, a linguistic one: the elimination of absolutes by a mere operation on language. (It may be remarked in passing that this type of reasoning is paralleled on a lower plane by the vulgar "semanticists" in America—Stuart Chase, Alfred Korzybski and their disciples—who urge us to solve social problems by reforming our definitions of words.) "Such an extreme semantic tendency is especially popular today among the neo-positivists." After his critique of these tenets, Baczko shows the similarity between reism and the views of Mach which Lenin attacked. Kotarbiński's "pansomatism," which grants real existence only to corporeal substances and ignores or denies qualities, is the kind of materialism which leads, through its incompleteness and neutrality, to a strengthening of the very idealism it opposes. Baczko demonstrates how this comes about, drawing on Lenin's *Materialism and Empirio-Criticism* to do so.

In her article "Against Idealist and Mechanist Theories of the Phoneme," Halina Lewicka neatly clarifies a very special linguistic problem by means of historical-materialist principles. "Phoneme" is the term used to designate a unit of sound in a given language: it is not a purely acoustical nor yet a purely psychological unit, but combines both aspects. Mechanists try to avoid problems of meaning in relation to the sound systems of language, in their anxiety to dispense with the factor of human consciousness; idealists concentrate on meaning and ignore the physical basis. A well-known group called the structuralist school of linguists has proposed that we treat of phonemes simply as ensembles of contrasting relationships, in order to avoid both pitfalls; but, as Lewicka shows, this approach eventually leads to idealism also. She suggests a dialectical treatment of the physico-semantic complex constituting a phoneme. All in all, the journal is as stimulating as it is many-sided. It has well begun the ambitious function that it proposes to fulfil.

M. S.

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