

# NATURE

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## INTERNATIONAL CO-OPERATION

THE speech which Sir John Boyd Orr delivered in the debate in the House of Commons on the world food shortage on April 4 is important in that it sets the problem in its true perspective and indicates the contribution to be expected from the Food and Agricultural Organisation. Sir John was concerned neither to attack nor defend the Government ; indeed, he is of opinion that any Government in power and any Food Minister would have been faced with the same difficulties and with much of the same criticism. The over-riding fact is the world food shortage and the inequitable distribution of available food ; and the temporary crisis, with which the United Nations Relief and Rehabilitation Administration and the Combined Food Board are dealing, and the long-term planning necessary to relieve the world for ever from hunger and malnutrition are clearly related.

Sir John said that the Food and Agricultural Organisation is already well advanced in its first task of bringing together all existing information on the pre-war position and the distortion of that position by the War, considering the measures which had been taken between the two World Wars to deal with food, their success or failure ; and, on the basis of that information, of working out a more permanent world food plan. He hoped that by the end of the summer the Organisation would be able to submit for the consideration of Governments and of the United Nations organisations concerned a plan which would go far to relieve the world of hunger and malnutrition and to bring about a rise in the standard of living of primary producers. It is important to formulate such a plan so that temporary measures at present being taken may dovetail smoothly into long-term measures. In the meantime, in view of the sudden deterioration in the food situation, the Food and Agricultural Organisation is holding a conference in Washington of bodies dealing with the food situation, with responsible Ministers from countries which may be able to contribute to the solution of the world food problem. Among the preparations for that conference is an assessment of the food position and of the prospects for 1946-47 and 1947-48. Sir John hopes for agreement on measures which can be taken to increase production, and he is also certain that measures can be taken to make better use and distribution of the available food. Agreement should also be reached as to measures which the Food and Agricultural Organisation could take to keep the whole position under continuous review so that Governments and peoples received adequate warning of any future crisis.

Sir John Orr did not minimize the difficulties which confront the Food and Agricultural Organisation or the conflicting interests that would have to be reconciled. He was able none the less to point to some encouraging signs, and his indication of ways in which the Organisation has been able to enlist the help of the best brains of the world was particularly welcome to a House which showed itself alive to the importance of exact scientific knowledge as a basis for action. Dr. Haden Guest, in particular, suggested

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the possibility of using the methods of operational research, and urged the need for action based on an exact scientific appreciation, in the military sense of the word, of the problems of each country. Little could be gathered from the debate, however, as to how far the Government could count on support from all political parties in support of, for example, the difficult, unpleasant and unpopular measures which have since been taken to reduce British consumption of wheat—a further increase in the rate of extraction; reduced use of cereals for brewing and curtailed use of flour for cakes and biscuits. The consequences of these measures, namely, still darker bread and smaller supplies of feeding-stuffs for livestock, universal shortages of beer, and grave harm to a confectionery industry that has already suffered severely, must be serious. Yet the price is small if it will promote the world co-operation for which Sir John Orr pleaded. As he pointed out, the Food and Agricultural Organisation is a means whereby the nations may commence to operate something which will do none of them harm and all of them good, and thus merits every support. The food policy of Britain during the War was the admiration of all countries, and this is a further reason for showing the world that we intend to give all possible support to the Food and Agricultural Organisation. Sir John believes that in this crisis we can lay the foundation of permanent collaboration among the nations in a plan which would bring about a world food scheme based on human needs and would initiate a really benevolent revolution.

Sir John Orr's speech was of particular interest, for it came at a time when the meetings at Geneva to wind up the League of Nations and the hesitant start of the United Nations Organisation directed fresh thought to the causes of the failure of the League and aroused some misgivings regarding the new organisation. In the third Montague Burton Lecture on International Relations, "Victory and After", delivered at Leeds last June<sup>1</sup>, Prof. Gilbert Murray based his hope of the future on two forces, both having power to penetrate unconsciously minds that may seem bitterly closed against them—the spread of truth and the awakening of the conscience of mankind. The main cause of all the crimes and miseries of the last ten years, he urged, was the dominance of the organised lie. If we could establish, for example, some system of world broadcasting of objective and well-attested facts, we could prevent whole nations being imprisoned in ignorance and fed on deliberate and organised myths. Secondly, by means of the Assembly of the Organisation, when facing problems of peace and war and all the greatest moral issues, we could give a voice to the conscience of the world.

Events during the past few months suggest that we have still far to travel along that road; but Sir John Orr is clearly in line with the thought of Prof. Gilbert Murray, and with ideas which have found forcible expression by scientific workers themselves, for example, in the Bush Report in the United States and Sir Edward Appleton's plea for freedom of publication at the recent Federation of British Industries Conference. If, in fact, either the Food and Agricultural

Organisation or the Emergency Conference on European Cereals Supplies can secure the lifting of the 'iron curtain' which cuts off the grain-producing countries of Eastern Europe from the rest of the world and open the way to provision of information and supplies, real steps will have been taken not merely to lift the shadow of famine from Europe but also towards the functioning of genuine world co-operation. At least it should be clear to all that something more than tepid approval will be required if the United Nations Organisation is to prove a more effective instrument than the League of Nations. The latter failed, Lord Cecil urged, in his speech to the Assembly at Geneva on April 9, not because of any weaknesses in the terms of the Covenant, but solely because the member States did not accept the obligation to use and support its provisions.

In his final report on the work of the League during the War<sup>2</sup>, the Acting Secretary-General takes a like view. Besides an admirable survey of the way in which the League maintained, throughout those terrible years, the machinery and technical services it had established in such fields as health, the drug traffic, economic, financial and transit questions, preventing serious gaps in international records which have become the backbone of the statistics of all nations, he goes on to speak of the larger lessons of the League's experience and their bearing on the success of the new Organisation. Any interruption in the series of scientific observations conducted by the League, particularly regarding epidemics and famines, might well mean fresh disasters. It is in the interests of all nations that these should continue without a break, and the United Nations Organisation has already recognized that these services of documentation, special inquiries and studies are essential to national and international reconstruction. Tribute has been paid to the work of the technical sections of the League, notably the economic, social health and opium sections, which together with the library and archives of the League are to be taken over by the United Nations Organisation; and the latter is equally indisposed to see the experienced personnel of the League simply disbanded and will take over many of those who have carried on these services so that continuity may not be lost.

Even more important, however, than the transfer of such material or even human assets to the United Nations Organisation is the continuity of the spiritual assets and tradition to which the Acting Secretary-General directs attention. Whether the new Organisation is in many respects better than the machine which is being discarded is not the most important thing. Success will depend on how it is used, on the justice, wisdom and courage of leaders, and, above all, on the vision and determination of the common people. The first great experiment in international co-operation for peace and human progress has been made, and its lessons must now contribute to the success of the second experiment. The problems remain the same, the objects are unchanged and methods cannot greatly differ. While the United Nations Organisation begins its work with the superlative advantage of the co-operation of all the world

Powers, the lessons of the past must be fully appreciated and the new instrument shaped and used in the light of all the experience gained with the old, the technical organs of which have so largely survived to provide a basis for the new Organisation.

The formal dissolution of the League of Nations should thus give a fresh stimulus to the essential task of educating public opinion as to what the United Nations Organisation really represents and how far it follows on the old League. A useful contribution to that end is an account of "The United Nations Charter"<sup>3</sup>, including the text and a general commentary by Prof. David Mitrany, one on the Covenant and Charter by Prof. Gilbert Murray, on the Economic and Social Council by Prof. G. D. H. Cole, on the International Court of Justice by Prof. Norman Bentwich and on Colonies and the Trusteeship System by Dr. Rita Hinden. Prof. Mitrany emphasizes the new departures represented by the autonomous powers of decision and autonomous means of action given to the Security Council, but points out that political and technical factors aside, the main issue is the conception of security on which the whole scheme rests. Here we have made little progress beyond the League Covenant, but he urges that the readiness to pool economic resources and to join in their use is the road which leads both to international security and social security. Prof. Gilbert Murray urges that it is only through co-operation that nations learn to co-operate and thereby to understand and trust each other. Far more even than the League itself, the success or failure of the United Nations Organisation, he holds, depends on the public opinion, the interest, the conscience and active co-operation of intelligent persons throughout the more advanced nations, while Prof. Cole concludes that the economic and social articles hang on the success achieved in following common international policies by countries which agree to differ about such matters as public versus private enterprise, the range of economic and social planning, and the meaning of democracy in terms of institutions and the relation of the citizen to the State.

It is interesting to note that firm support for these views of Mr. Sean Lester and Prof. Gilbert Murray was given in a series of addresses to the American Academy of Arts and Sciences some four years ago on the ways in which learning derived from the systematic study of arts and sciences can profitably influence the re-organisation of civilization after the War. These addresses, concerned to close the gap between statesmanship and learning, have only now become available in the *Proceedings* of the Academy<sup>4</sup>. Mr. Z. Chafee, jun., for example, reviewing under the title "International Utopias" the experience of the League of Nations and such proposals as those of Clarence Streit for Federal Union, stresses the need in any new international organisation for a spirit determined to make it work, and also remarks on the importance of avoiding strains during its early years, emphasizing in this connexion the value of immediately freeing economic life as far as possible.

While there is much in this series of addresses which the man of science as well as others could ponder with profit—C. S. Coon's address on "Technology and

Human Relations", C. M. Arensberg's on "The Nature of World Equilibrium" and E. D. Chapple's on "How a World Equilibrium Can be Organised and Administered" may be mentioned here—possibly the most fundamental is Prof. A. N. Whitehead's contribution on "Statesmanship and Specialized Learning". Prof. Whitehead stresses first the importance of the arts for the understanding of human life, and then, turning to the functions of a scientific association, points out that a simple-minded approach to practical politics is disastrous, although the large generalizations of science, founded upon wide abstractions and only partly relevant to any particular issue, provide the essential basis for all sociological reconstruction. To-day, the adventure of ideas is the rediscovery of opportunity, but the first requisite is that order be imposed. There can be no civilization apart from a well-organised system of inter-related activities, within which the intimacies of family life can be developed. The essence of the world-wide sociological problem is the study of the modes of grouping mankind subject to some co-ordination of the various groups.

But a stable order, though necessary, is not enough. There must be satisfaction for the purposes which are inherent in human life, and in this Prof. Whitehead's thought runs on similar lines to that of Sir John Orr. Suggesting further that beyond this the experiences which form the distinction between mankind and the animal world demand a social structure supplying freedom and opportunity for the realization of objectives beyond the simple bodily cravings, Prof. Whitehead thinks we are in the first phase of a third enlargement of opportunity through the introduction of new techniques, and the new crisis of civilization promises more fundamental change than any preceding advance. The whole human practical activity is in process of immediate transformation by novelties of organised knowledge, and the whole extent of learned thought is transforming every activity of mankind. Urging the importance of scientific men and historians working together, and stressing the danger of simple-minded generalizations of those going beyond their own limits of specialized knowledge, Prof. Whitehead distrusts any extreme abstract plan of universal social construction. Every successful advance is a compromise, and the general ideal is the wide diffusion of opportunity.

In the four years since Prof. Whitehead's paper was presented many things have happened to justify his argument; and while there is much in the United Nations Organisation that embodies the bitter experience and the hard lessons of the League of Nations, his warning against extremism and his insistence on the necessity of compromise should be heeded. A new instrument has been forged, but whether it is more effective than the old will depend on the wisdom and the spirit and the determination with which it is used. If the nations, and above all the great Powers, are sincere in their professions of a desire to co-operate, if they seek to understand one another's point of view, if there is full and free exchange of information, then it may well be hoped that the pursuit of such tasks as those to which the Food and Agricultural Organisation, the United

Nations Relief and Rehabilitation Administration and the Emergency Conference on European Cereals Supplies are addressing themselves equally with the Economic and Social Council, will strengthen the common interest in prosperity, the recognition that economic prosperity, like peace, is indivisible, and render more tractable the animosities and political problems which have already caused such concern to the new Organisation. But while it must be remembered that conceptions of democracies and of other political systems may vary widely in different countries, and no one political system is likely to serve the needs of all nations, there are certain principles which must be observed if any international association is to be possible. The United Nations Organisation is not, and cannot be made, a world government: it is at best an instrument of international co-operation. Even so, it cannot function except on a basis of mutual trust and the abandonment of the claim to be a judge in one's own cause. Full confidence can only come as the new instrument proves its worth, but the way forward lies in the full and public understanding of the way it functions and what it can and cannot do. There is no more urgent or more important step towards that end than full and free discussion in all countries by those who realize the importance of this new venture and the catastrophe which will overwhelm mankind if it fails.

<sup>1</sup> Third Montague Burton Lecture on International Relations: Victory and After. By Prof. Gilbert Murray. Pp. 16. (University of Leeds, 1945.) 6d.

<sup>2</sup> League of Nations. Report on the Work of the League during the War. (Official No. A.6. 1946.) Pp. 167. (Geneva: League of Nations. London: George Allen and Unwin, Ltd., 1945.) 2s.

<sup>3</sup> The United Nations Charter. (Peace Aims Pamphlet 31.) Pp. 56. (National Peace Council, 144 Southampton Row, London, W.C.1, 1946.) 1s.

<sup>4</sup> *Proceedings of the American Academy of Arts and Sciences*, 75, No. 1. Papers on Post-War Problems. Pp. 54. (Boston, Mass.: Amer. Acad. Arts and Sci., 1942.) 1.25 dollars.

## ADVANCES IN CARBOHYDRATE CHEMISTRY

Advances in Carbohydrate Chemistry  
 Edited by W. W. Pigman and M. L. Wolfrom.  
 Vol. 1. Pp. xii+374. (New York: Academic Press, Inc., 1945.) 6 dollars.

THE rapid increase in the volume of scientific publications makes it ever more difficult for those interested, specialists and non-specialists alike, to keep abreast of recent developments in any particular field. Many attempts have been made to solve this problem, one of the most recent taking the form of a series of volumes devoted to articles on specialist topics in one field of inquiry. In the circumstances, these serve a useful purpose, but it must be admitted that their acquisition is rapidly becoming a formidable financial problem both for libraries and for private individuals. The latest comer in this group is "Advances in Carbohydrate Chemistry", the first volume of which has just appeared under the supervision of an editorial board which includes both American and British representatives. The present volume, however, is entirely American in authorship, this being clearly a reflexion of war-time difficulties of writing and communication, and not an indication of the relative interest in carbohydrate chemistry in the two countries.

The eleven articles are in the main detailed reviews of the type made familiar to all chemists by *Chemical Reviews*. They are admirable of their kind, lucidly written and well illustrated by formulae and equations. They are a veritable storehouse of historical and factual information, much of which is not readily accessible otherwise, and is in any event difficult to assemble. We can be grateful, therefore, to the experts who have given us these authoritative accounts of the historical development and the present position of knowledge in these special branches of carbohydrate chemistry.

It is very appropriate that the first article in this new venture should come from the pen of C. S. Hudson, whose contribution on "The Fischer Cyanohydrin Synthesis and Configurations of Higher Carbon Sugars and Alcohols" is one of the most interesting in the volume. To most readers it will be a surprise to realize how much detailed effort and skill have been devoted in the past half-century to the elucidation of the structures of the higher sugars and their derivatives, and how many problems still remain to be solved.

N. K. Richtmyer writes on "The Altriose Group of Substances". Until recently little was known about this group, which is of special interest because of its configurational relationship to ribose. Rapid progress is, however, being made in methods of preparation and in the detailed investigation of individual members of the group, which includes the naturally occurring ketose sedo-heptulose.

The interesting, and in many ways puzzling, group of "The Carbohydrate Orthoesters" is described in detail by E. Pacsu, who makes a gallant, but to the reviewer not altogether convincing, attempt to 'explain' the peculiar properties of these esters in terms of modern electronic theories of valency.

A. L. Raymond discusses the thio- and seleno-sugars, an interesting but comparatively little investigated group of substances concerning which much more is likely to be heard in the future. This article is followed by one on the "Carbohydrate Components of the Cardiac Glycosides" by R. C. Elderfield, who describes the occurrence, preparation and constitution of all the known simple sugars and of one of the disaccharides in this rare and complex but fascinating group of substances. A detailed account of the "Metabolism of the Sugar Alcohols and their Derivatives" is contributed by C. J. Carr and J. C. Krautz, and a masterly and readable article on the "Chemistry of the Nucleic Acids" is given by R. S. Tipson. In it he discusses the difficulties met with in the investigation of the deoxyribosylpurines and the isolation of 2-desoxyribose, and shows how the structures of the various nucleosides and nucleotides have been elucidated.

An article by T. J. Schoch on the "Fractionation of Starch" is particularly welcome in view of the prominent part this author has taken in recent work on the separation of the amylose and amylopectin components of starch, through which an entirely new chapter has been opened up in starch chemistry. There are articles on starch esters by R. L. Whistler and on "Cellulose Organic Esters" by C. R. Fordyce—mainly dealing with a summary account of methods of preparation and physical properties. The concluding section is by E. Anderson and Lila Sands on "A Discussion of Methods of Value in Research on Plant Polyuronides". These substances are among the most complex natural products known, and in this useful article a critical account is given of the