

Editorial & Publishing Offices :

MACMILLAN & Co., LTD.
ST. MARTIN'S STREET
LONDON, W.C.2



Telegraphic Address :
PHUSIS, LESQUARE, LONDON

Telephone Number :
WHITEHALL 8831

Vol. 144

SATURDAY, SEPTEMBER 16, 1939

No. 3646

THE FUTURE OF CIVILIZATION

THE supreme need for concentrating national effort upon the successful prosecution of the war, and securing the overthrow of the forces which threaten good faith and understanding among the nations, should not be allowed to blind us to the necessity of preparing the foundations upon which a just and enduring peace can be based. It is, indeed, to defend the moral and spiritual realities upon which civilization itself depends that we have been driven to enter this conflict. To keep those moral issues clearly defined is essential if we are to sustain the sacrifices and effort which the task to which we have addressed ourselves will demand. We should not forget that it is possible to win a war and lose the peace.

There is, indeed, no reason for those who recognize that the future of civilization depends upon effective co-operation between governments and nations either to be dismayed even at the present moment or to relax their efforts to achieve co-operation. They must, indeed, seek rather to be ready to seize the opportunity for constructive statesmanship, when it has been won from the aggressor and respect for the rights of others re-established. Apart from the moral issues upon which the conflict has been joined there is, indeed, welcome evidence to be found of the success of efforts in this direction in certain fields.

Among such evidence may be cited the encouraging report of the special committee which was recently appointed by the Council of the League of Nations to consider how best international co-operation could be developed in economic and social affairs. The pre-occupation of public interest with the League's efforts to abolish war, and disappointment over its failure to create an effective system of collective security, have led to

failure to appreciate its success in other directions. Even those who are aware that most of the League's activity has been concerned with social and economic problems have little idea of the varied character of this activity, and how beneficial have been its results.

The report of this special committee should redress the balance. The progress of civilization is dependent to a growing extent on economic and human values, and in such diverse problems as the prevention of unemployment or of wide fluctuations in economic activity, the provision of better housing, or the suppression and cure of disease, purely national action cannot find a complete solution. The mechanism of international co-operation which has been built up by the League is rendering invaluable service to the world as a whole in meeting these needs. Moreover, the way in which the world is becoming closer knit, in spite of political severance, and the growing similarity of the form of economic structure in different countries and of the difficulties for which they must find solutions, are powerful factors even at the present time in stimulating the expansion and development of the League's work in such fields, and in the scientific approach to such questions as nutrition, housing and health on an international scale.

International discussion offers a further advantage in affording a safeguard against the effect on governments of sectional influences at the expense of the general welfare. The growing material and intellectual demands which men make on life, the consciousness that a better use of the scientific and productive resources of the world could improve their living conditions out of all knowledge, the impatience for some real

and concerted effort to raise the standard of living near to what it might become, are yet further factors reinforcing the tendency towards international co-operation. Indeed, it may well be expected that the very sacrifices and renunciation which citizens in Great Britain have so willingly made of the advantages which modern science had placed in their hands, whether in the domain of communications and transport, lighting, entertainments, which within a couple of decades or so we had come to take for granted, will stimulate a further and more determined effort after the war both to extend such advantages and by international co-operation to make them secure from interruption again.

The picture which this report gives of the variety and success of the League's work in the checking of epidemics, the control of disease, the suppression of the traffic in opium and other narcotics, and in women and children, or the regulation of international communications or the pooling of experience and investigations in such problems as nutrition or the causes of economic depressions, is not altogether unfamiliar to many scientific workers. The present report, however, gives a concise summary of the real advantages of the League's organization and the way in which it is able to make a uniquely economic contribution. Its resources enable it to collect and sift evidence drawn from all over the world, to obtain the services of the best experts and arrange meetings between them, and to provide the essential links between experts and those responsible for policy, as well as opportunities for statesmen to meet and discuss their policy, and machinery for the conclusion of international agreements. As Mr. Cordell Hull recently wrote to the Secretary-General: "The League of Nations has been responsible for the development of mutual exchange and discussion of ideas and methods to a greater extent and in more fields of humanitarian and scientific endeavour than any other organization in history."

Considerations such as these have led the Special Committee, of which the Right Hon. S. M. Bruce was chairman, to its proposals for extending the work of the League in this field and increasing its efficiency. It recommends that a Central Committee for Social and Economic Questions should be created to supervise the work and co-ordinate the efforts of the many different agencies engaged in it. This committee would

direct and supervise the work of the League committees dealing with social and economic questions, and appoint the members of the standing technical committees so far as possible. It is further proposed that, to give States which are not members of the League the opportunity of the fullest co-operation in the work itself as well as in its direction, non-members of the League should be represented on the committee on the same footing as the member States, and that the committee should have power to co-opt non-official members experienced in economic and social affairs.

These proposals should facilitate a clearer separation between the political and non-political work of the League, and provide a permanent basis for the development of the economic and social work of the League. Apart from this development, such separation may be of value in retaining the structure of the organization if, after the war, it is expedient to make a fresh start to secure the goodwill and co-operation of Germany and other nations.

Nor is it only on the social and economic side that we have been reminded of the forces still working for international co-operation. Two papers prepared for presentation before the Division for the Social and International Relations of Science at the Dundee meeting of the British Association deal with the question of international intellectual co-operation. Prof. Gilbert Murray describes the purpose and organization of the Committee of Intellectual Co-operation and the various types of conference organized under its auspices or in association with other bodies, such as the International Labour Office. He refers, for example, to the study of science and social relations, such as the effect of scientific invention on industrial conditions, and the proposal of the International Labour Office to include men of science in its conferences.

Prof. Gunnar Dahlberg's paper is mainly concerned with the question of translation of scientific papers. Organization of the facilities of translation would, he considers, facilitate international co-operation for the smaller countries, and Prof. Dahlberg supports the idea of a world language in science. He also stresses the value of informal conferences on special problems between leading men of science from different countries.

If the possibilities of international conference on any scale are remote at the moment, the move-

ments and tendencies in the field of intellectual co-operation, no less than in the economic and social sphere, should remind us of the hard thinking and preparation which are yet to be done if opportunities are to be seized as they present themselves.

We have entered on this struggle to prevent further encroachments on freedom of thought and speech and investigation; but freedom can be endangered even in such a cause as that for which we contend. If the fruits of victory are ultimately to be reaped, we must bring to the struggle not merely the full force of our moral and material resources, but also constructive and imaginative

statesmanship ready to build on whatever remains from the present wreckage of our hopes. Science, at least, has given men a vision of the world that might be when man's moral and spiritual development is in keeping with his material advance. If that world is ever to be realized, scientific workers, amid the stress of the present emergency, must guard zealously their loyalty to truth, not less than their belief that science transcends national frontiers, and that mankind will only enter on its full heritage through international co-operation and understanding, and the mutual respect and good faith upon which alone such co-operation and understanding are possible.

AN ENCYCLOPÆDIA OF CHEMISTRY

Thorpe's Dictionary of Applied Chemistry Vol. 3. Chemical Calculations—Diffusion. By Prof. J. F. Thorpe and Dr. M. A. Whiteley. Fourth edition. Pp. xxiv + 608. (London, New York and Toronto: Longmans, Green and Co., 1939.) 63s. net.

THE third volume of Thorpe's "Dictionary" opens with a short sermon by Dr. Johnson intended especially for adverse critics. To one who has not, perhaps, been too complimentary in the past, it is indeed gratifying to find that a few chance words have deserved so much attention, for the reviewer of an encyclopædic work such as the present, not being omniscient and having no collaborators, must needs confine himself to general aspects, although, on occasion, he may be permitted to indicate an error. He can but put forward what he believes to be the views of a section of readers and make suggestions which he considers will improve the later volumes.

It was mentioned that, to justify the issue of a new serial which might become a millstone around librarians' necks, matter of exceptional character would have to be provided, and this condition appeared scarcely satisfied by the first two volumes. Another ground for complaint was that, in spite of the title and the crying need for an up-to-date book on industrial processes, the general impression of these volumes was that of a text-book on organic chemistry.

It seems too much to hope that these remarks have borne fruit, but the fact remains that the third volume is something different. It is possible to turn over page after page without seeing an organic formula, and references dated 1936, 1937 and even 1938 abound, while, when preparing a

list of the more important contributions, it is necessary to write "new" with almost monotonous regularity.

The volume opens with an excellent article on chemical calculations, a title which unfortunately does not indicate the scope of the contents. It includes triangular co-ordinates, nomograms and graphical methods of calculation in general, or, as the author puts it, "methods of saving time in calculating". It should be read by all chemists, and physicists too. Other general articles include "Chemical Warfare", beginning with the words: "Chemical warfare is prohibited by the Geneva Protocol of 1925," but none the less doubled in length since the issue of the supplement and containing a concise account of the subject with good bibliography; "Colloids", a brief but clear survey; "Colorimeters", a lucid treatise on modern instruments, their uses and the theory of colour measurement, which should be in the hands of all those who have to deal with the subject; "Condensers", in which the author has shown his ability to condense matter other than vapours by discussing in eight pages, largely occupied by illustrations, the history of commercial and laboratory condensers, types for special purposes, condensers used in industry, the corrosion of condenser tubes and the theory of condensation, the whole being interspersed with more than one hundred references; "Co-ordination Compounds", extended from the supplement and brought up to date to form a comprehensive review; "Corrosion and Protective Measures", occupying thirty-two pages, which must perhaps receive a prize for the admirable way in which it deals with the many aspects of this controversial but important subject; "Crystallisation", a good article with adequate diagrams,