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RELATION OF SCIENCE TO POLITICS

THE value of the Conference on Science and World Order in London last September lies largely in its emphasis on the increasingly close relation between science and government. For all its demonstration of the contribution which science could offer to the solution of the many problems of human welfare involved in the realization of the four freedoms, the Conference is more significant for the evidence it affords that the fundamental problem is that of securing the right relations between science and government. The full resources of science must be brought to bear on the problems of human welfare without impairing the freedom of thought, investigation and teaching upon which the very existence of science depends. While the independence of science is thus safeguarded, means must be found for securing the effective application of the knowledge acquired by disinterested and impartial research to the solution of social and economic problems and the service of human needs. The problem of the relation of knowledge and action is once again demanding an answer in terms of the needs of to-day and not the traditions of yesterday.

The discussions which have taken place since the Conference, and centring to some extent around the presidential address of Sir Henry Dale at the recent anniversary meeting of the Royal Society, on the relation of science to politics, like the conferences on science and the war effort convened by the Association of Scientific Workers, attest that the Declaration of Scientific Principles has been taken to heart by scientific workers. Conscious of the dangers to science and society inherent in the relations between science and politics, they are seeking to determine the conditions of advance. That much at least lies behind the various proposals regarding the organization of research in the social sciences and the establishment of a central institution for that purpose.

The address on Science and International Politics which was delivered by Sir Richard Gregory at the Royal Institute of International Affairs on February 2 (see p. 261 of this issue) should go far to clarify thought on this subject, which certainly must not be shunned because it bristles with difficulties and dangers. Admittedly there are departments of civil life which could with advantage make fuller and more systematic use of the scientific methods of inquiry into the factors which determine human conditions and potentialities to-day. To turn our back deliberately on such possibilities and to make no attempt to use that scientific knowledge which is our greatest power for social and political action is to deprive the Atlantic Charter of meaning, if not indeed to endanger the winning of the War itself.

Once we admit, as Sir Richard points out, that there are political leaders who can scarcely be said to take account of the changing conditions of life due to the applications of new scientific knowledge, either in the present or for the future, scientific workers

can not rest content as citizens. They must make some effort to influence those in charge of the forces of science and who carry the responsibility of seeing that these are used effectively for the progressive welfare of the community. They must at least attempt to secure that the strength and disposition of the forces of science are given full consideration in all social and political campaigns. The fact that, as Sir Richard points out, few men of science feel able to transfer their trained habits of thought, does not absolve the body of scientific workers, either corporately or individually, from the responsibility of attempting to transfer to the consideration of social and political problems their training to face facts before arriving at judgments.

This, of course, is exactly what General Smuts urged in his Sidgwick Lecture on Democracy. It is only by applying to political problems the principles of independent inquiry and impartial judgment demanded of investigators in all branches of natural knowledge that politics can become a science and scientific workers as such can contribute to its advancement. Without this spirit and purpose, science and politics are best placed in different categories.

What has marked numerous discussions on social and economic questions of recent years is, however, the extent to which by making action possible on the basis of ascertained facts, science has taken problems out of the purview of party politics. Nutrition is an outstanding example of this kind. Political action is still required, but the question is no longer a party issue, and the power to be applied is that required to overcome vested or private interests as opposed to those of the community.

The natural extension of the boundaries of knowledge by the application of scientific method may thus, it is true, gradually extend the field within which action free from political prejudice is possible. We can not, however, rely on that process alone if effective action is to be taken to deal with many of our more urgent social problems before they bring worse in their train, any more than we should imagine that the scientific method alone will provide a solution. The effective implementation of this process involves three desiderata, with each of which the scientific worker is concerned: leaders and administrators competent to assess the results of scientific work and ready to apply them to the solution of the problems of to-day; a body of active younger scientific workers not merely extending the boundaries of knowledge but also able to formulate the questions to be asked, the problems to be attacked; and a body of public opinion sufficiently informed and powerful to overcome the opposition of any sectional interest to policies or action initiated in the general interest.

Prof. A. V. Hill's address last year to the annual general meeting of the Parliamentary and Scientific Committee contained specific proposals for forwarding the second of these needs, and the Scientific Advisory Committee, of which Lord Hankey is chairman, may yet do much to implement the first. It is the third condition, with the implied task of educating public opinion, that is possibly the most fundamental of all and which has yet to receive the attention it deserves from public opinion. Sir Richard Gregory's address is a contribution in this field which once again should earn him the gratitude of scientific workers.

There is, however, a further point to which Sir Richard directs attention. Repeatedly observers have noted the difference between the success of the League of Nations in its non-political work such as that of the International Health Organis tion or the Opium Commission where technical considerations were the dominant factor, and its failure in those dominated by politics. Sir Richard suggests that international politics in which the world is a unit, of which all men are citizens with rights and duties to be adjusted wisely with the object of ensuring progressive development everywhere, is the field into which the international spirit of science can enter without being regarded as an intruder or becoming involved in controversial national politics. National boundaries have little relation to the distribution of national resources and less to the needs of modern life. All communities can share in the achievements of scientific discovery and invention, and the tendency towards larger political units gives promise of further expansion into a commonwealth of the chief free peoples of the world.

Such a commonwealth can only be secured by consent, and as Sir Richard reminds us, no new world order can be stable unless each nation is free to follow its own lines of cultural development, and does not seek to deprive others of the same liberty. With such a co-operative alliance in mind—already embryonic in the fourth point of the Atlantic Charter—the services of science can be used to shape the course of international politics. As already noted, advancing knowledge is taking welfare policy out of the field of party politics both in the national and in the international spheres. Knowledge of natural objects and phenomena is the foundation upon which modern civilization is based. It is continually revealing new sources of supply of materials and power to expand this structure. Applied science has provided the means of making the world's abundance available to all men, and the aim of international politics should be to see that the supply is adjusted according to the need for its use.

Such an outlook on world order is as implicit in the Atlantic Charter as in the four freedoms of President Roosevelt, and it should already be clear that its realization depends very really on the co-operation of men of science. While, however, what exists in the world, and what uses can be made of it, are discovered by scientific inquiry, what action is taken on this basis depends upon communities and their governments. For this reason the view that the sole function of men of science is to study and discover natural facts and principles without regard to their social implications is no longer tenable. Not only have they special responsibility for recording their opinion in matters in which their pursuits affect the welfare of the community, but also the obligation as citizens to assist in the establishment of a rational and harmonious social order out of the welter of human conflict into which the world has been thrown

because the powers they have rel ased have not been rightly used in the service of mankind as a whole.

It is at this point that Sir Richard's address is linked up with an article "Science to Re-build" in the November issue of *Current Science* (India). Admittedly the Atlantic Charter gives new hope for the establishment of a world order in which the fundamental rights of men and communities will be defined and acknowledged and in which science will be able to serve more effectively the needs of mankind. Such rights and principles must, however, be formulated more clearly than has yet been done if reconstruction is to prove effective, and science can well combine with politics, as Sir Richard suggests, in the determination of such principles and in arriving at a sound basis for the constitution and judgments of a court of international politics.

The article in *Current Science* indicates further steps to be taken, notably in the extension of scientific knowledge in those fields where it would assist man to acquire control over his own nature corresponding with his control over material resources. Besides, it is essential that even such declarations as the Atlantic Charter should be submitted to careful and scientific scrutiny. Already there have been some differences of interpretation of, or at least of emphasis on, the various clauses and if misunderstandings are to be avoided certain of these points must be elucidated in the near future.

In the modern world to-day not even an Anglo-American declaration of policy can avoid facing the colour question, and the article in *Current Science* is on firm ground in directing attention to the omission of any reference to such countries as India, and again in insisting that the first axiom in world planning is that the prime motive force of life is hunger, which knows no distinction of colour. No world order which does not take into account the needs of coloured as well as of the white races can be regarded as either scientific or durable.

On other specific points of the Atlantic Charter this article is equally searching. In regard to territorial settlements it points out that an expert body of economists, demographers and other specialists will be required to furnish the necessary advice on particular settlements if such settlements are to be free from any sense of unfairness. It challenges the durability of any settlement respecting the right of all peoples to choose the form of government under which they will live, unless in practice that government is some form of democracy. It raises the question of the responsibility of scientific men in respect of disarmament with reference to work likely to be useful for military purposes, and suggests that such researches should be submitted for examination and their report on results for control by an international agency.

In the field of economic development some of the implications of the Charter are indicated, such as open markets, the supply of technical knowledge and skill and industrial machinery, and an international bank or finance corporation to lend money for development purposes, free from political, military or trading obligations.

It is abundantly clear that there is an immense field in which fundamental thinking is required before we can implement many of the principles of the Atlantic Charter or assess rightly the schemes of reconstruction which must be worked out in readiness even in the dark and exacting days of war. To that thinking science has much to contribute. Corporately and individually scientific workers can also do much to forward the task of reconstruction in fields where they bear special responsibility, as has already been recognized by engineers, physicists, medical men and architects in the formation of special planning committees or commissions. There are, however, many sections of scientific workers who have shown little sign of recognition of their responsibility in this field and it may well be hoped that Sir Richard Gregory's address will not only stimulate such to action, but also scientific workers generally, to consider more carefully the appropriateness and effectiveness of the machinery which already exists for integrating the relations of science and politics, whether at the top in the Scientific Advisory Committee, in the arrangements for widening the outlook and experience of the active young minds engaged in scientific work, to which Prof. A. V. Hill has specially referred, or in that fundamental task of educating the public mind so that it can reach sound decisions and supply the power to overcome private interests which hold up action demanded by the public interest. As these lines are explored with the world vision and perspective which Sir Richard emphasizes, the relations between science and politics will become more clearly delineated, while the claims of science to be free from any form of pressure in pursuing her work are established beyond challenge.

SKILLED MAN-POWER IN THE SERVICES

THE importance of wise utilization of skilled man-power if we are to develop the maximum production and war effort has been emphasized by recent events, and its realization has been implicit throughout recent debates and discussions in Parliament and elsewhere. If the second report of the Beveridge Committee on Skilled Men in the Services* will not altogether dispel misgivings on that ground, there are certain points on which it gives welcome reassurance.

The Committee is able to answer unhesitatingly that the Navy is using the skilled man-power at its disposal with due economy and effect, except in regard to naval reservists, where the measures already taken for transfer of qualified men to skilled work need to be repeated and reinforced until they achieve success. Better use is being made of skilled engineers in the Navy than in either the Army or Air Force. Although the problems in the Navy are simpler, they would not be solved as completely as they are, unless the Navy possessed, as it does, good

* Committee on Skilled Men in the Services: Second Report and a Memorandum by the War Office. Pp. 74. (London: H. M. Stationery Office, 1942.) 1*s.* 3*d.* net.