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THE SCIENCE OF HUMAN RELATIONSHIPS

"IF civilization is to survive," wrote President Roosevelt in a speech to have been delivered in Washington at the Jefferson Day Dinner on April 12, "we must cultivate the science of human relationships, the ability of all peoples of all kinds to live together and to work together in the same world at peace." That last message shows that President Roosevelt was looking to the San Francisco Conference, of which he was to have been chairman, as a great essay in the science of human relationships; and it may indeed be true that an end to wars will only be in sight when we develop that science and perfect our understanding of human relationships in organizations that satisfy their needs more perfectly. This point of view was well put by Dr. J. T. MacCurdy in "The Structure of Morale"; and if there is to be in any true sense a science of peace its basis may be rather the development and application of biology and the social sciences, including psychology, as Prof. Anton J. Carlson suggested in his address "The Science of Biology and the Future of Man" (see *Science*, 100, 437; 1944), for example, than an approach from the economic side, the scientific study of history or the application of scientific method to disarmament.

This is not to say that the latter may not have their place, but attempts at the scientific study of international relations such as Prof. E. H. Carr set out to give in "The Twenty Years Crisis" have not yet led very far. Indeed, from his latest book*, Prof. Carr seems to have abandoned the effort to outline a science of international politics. His study of nationalism is too brief to be more than perfunctory, and roughly half the book is occupied by a discussion of the prospects of internationalism; this, although the scientific approach is abandoned, is highly pertinent to discussions on the Dumbarton Oaks proposals and the proceedings at San Francisco.

Prof. Carr's sketch of the rise of nationalism from the sixteenth and seventeenth centuries to its climax between 1914 and 1939 in the totalitarian State attributes the latter to three factors: the socialization of the nation, or the bringing of new social strata into the effective membership of the nation; the nationalization of economic policy; and the geographical extension of nationalism as seen in the increase in the number of nations. That last factor, especially in relation to the principle of self-determination, Prof. Carr has already closely analysed in "Conditions of Peace", and his discussion of the prospects of internationalism is no less realistic in the present volume. He challenges and rejects forthright the claim of nationalism to make the nation the sole rightful sovereign repository of political power and the ultimate constituent unit of world organization. He equally challenges the principle of "the sovereign equality of all peace-loving States" of the Moscow Declaration of October 1943, which although embedded in the Dumbarton Oaks proposals is, as was

* Nationalism and After. By Prof. Edward Hallett Carr. Pp. vi+74. (London: Macmillan and Co., Ltd., 1945.) 3s. 6d. net.

pointed out in the recent debate, by no means consistent with that scheme, apart altogether from the vexed question of the voting formula.

Within its limits, Prof. Carr's little sketch and analysis is a sound contribution to lucid thought about the Dumbarton Oaks scheme, and a number of his points were emphasized in the debate in the House of Commons on April 17. The right of equality, like the right of freedom, he holds, is one that can only be attributed to individuals, not to nations; the equality of nations is not only unattainable, but also neither equitable nor desirable. Like the Grotius Society and M. Lauterpecht in "The Law of Nations, the Law of Nature and the Rights of Man", Prof. Carr comes down firmly on the side of the individual. "The driving force behind any future international order," he writes, "must be a belief, however expressed, in the value of individual human beings irrespective of national affinities or allegiance and in a common and mutual obligation to promote their well-being."

Prof. Carr does not, however, visualize a supreme world directorate as an immediate objective; the sense of unity of mankind is not yet strong enough to sustain such an authority. While a world organization may be a necessary convenience and a valuable symbol, the intermediate unit is more likely to be the operative factor in the transition from nationalism to internationalism. The same caution is applied to schemes of world-wide economic organization. Nations have ceased to be convenient or even tolerable units for this purpose, and the world is not yet ready for a single comprehensive world unit. Meanwhile, the socially and internationally descriptive tendencies inherent in a multitude of planned national economies must be countered by multi-national and international planning.

As to the size and nature of such intermediate units, Prof. Carr points out that they should be appropriate for the particular end in view; and accordingly he welcomes the functional principle and the development or extension wherever appropriate of the numerous agencies of this type set up to serve the war purposes of the United Nations. Moreover, he holds that bodies like the United Nations Relief and Rehabilitation Administration and the Food and Agriculture Organization, which have been conceived on a universal basis, will be effective only in so far as they create separate organs for specific purposes in different areas. Part of the value of such functional bodies lies in the fact that, operating on national territories with the tacit or explicit consent but not formally derived authority of the national governments concerned, operating without regard to divisions or distinctions between different countries, and without affecting the sovereign powers of the national governments, they foster that multiplicity of authorities and loyalties which is essential to the health both of an international and of a national community.

This view of a developing organism rather than of a created mechanism is reflected in American opinion quoted by Prof. Carr, and seemed to be the dominant attitude to the Dumbarton Oaks proposals as expressed in the recent debate in both Houses of

Parliament. It was very clear that the scheme for a Security Council was accepted only as the best that could be obtained at the moment. At the same time, as Sir George Schuster pointed out, we need not assume that there will always be disagreements between the Great Powers, though it would indeed be foolish to assume that Great Britain, the United States and the U.S.S.R. will always see eye to eye on international questions of every description. It should be remembered that the peace settlement will be made, not by the new organization proposed at Dumbarton Oaks, but by the victorious belligerents; and that, as Sir Arthur Salter pointed out, for about five years at least, the main interest in the international political sphere will be in the peace settlement organization of the United Nations, and above all in Britain, the United States and the U.S.S.R. If in those years they can, as Mr. Churchill has expressed the hope and conviction, work together for the establishment of world peace and order and demonstrate that they can use their power to serve all nations, an entirely different attitude may prevail towards the present proposals when the Security Council really becomes effective.

Sir Arthur Salter was urging that too much should not be expected of the new organization at the start, and that the limits of its responsibilities should be clearly and widely understood, so as to avoid disillusionment and loss of prestige when the new organization begins to function. For the same reason, the voting procedure may well be accepted as a temporary measure, provided it is open to review and modification in the light of experience.

Although there was clear realization that the deliberations at San Francisco are unlikely to lead directly to a new world State, to a world police force or a federal Europe, the importance of the Conference and of agreement was fully appreciated also. Prof. Carr's prediction that the world would have to accommodate itself to the emergence of a few great multi-national units in which power will be mainly concentrated—units, which culturally may best be called civilizations—was indeed tacitly assumed as correct, though the solution he suggests to the dilemma of national self-determination, namely, an attempt to divorce international security and the power to maintain it from frontiers and the national sovereignty which they represent, was not mentioned. Very clearly, however, it was hoped that the habit of co-operation and common action by the Great Powers would tend to remove a predisposing cause of war between them; but the whole sense of the debate was with Prof. Carr in his affirmation that no international organization of power will endure unless it rests on certain common principles and pursues certain common purposes, worthy of commanding the assent and loyalty of men and women throughout the world. The unifying power of the ideal of social justice in the contemporary world was well brought out by Sir George Schuster, who sensed the opportunity for leadership now awaiting Great Britain and the importance of a vigorous domestic policy in promoting understanding and *rapprochement* with Soviet Russia.

The conception of a balanced structure of international or multi-national groupings both for the maintenance of security and for the planned development of the economies of geographical areas and groups of nations, which Prof. Carr sees as the surest prospect of international advance, has thus a good deal of general support, and readers of his book should be able to follow the San Francisco proceedings the more intelligently for its discerning treatment of some of the fundamental issues. But, while Prof. Carr's impatience of nationalism makes him dismiss its claims a little too lightly, nationalism found a doughty champion in the House of Commons in Sir William Beveridge. Sir William rated public opinion as of no practical importance for the prevention of aggression, but after agreeing on the great difference in strength between nations and the necessity of winning the confidence of all nations in a world organization, defended the idea of sovereign equality and of collective security.

In doing so, Sir William essentially elaborated the argument of his book, "The Price of Peace"*, in emphasizing the importance of establishing the rule of law for all nations. The gist of his thesis is that the abolition of war depends on finding a positive alternative to war as a means of settling disputes between nations. The only alternative which can be world-wide is compulsory arbitration by an impartial tribunal, applied to all disputes and backed by overwhelming force.

Sir William's speech in the House of Commons showed more clearly than his book the difficulties into which his legalistic rather than realist approach leads him. That alone can account for his sponsoring the nationalism which, at the outset of his book, he firmly rejects in so far as it is expressed in sovereignty. Indeed, his real starting point is that from which Lionel Curtis starts in his "World War: its Cause and Cure"†—to which, incidentally, Sir William contributes a foreword—Lord Lothian's Burge Memorial Lecture and his subsequent speech to the House of Delegates and Senate of Virginia on February 17, 1940, as British Ambassador. "To-day in anarchy of sovereign States cannot escape chronic war or preserve individual liberty or create the conditions of prosperity or employment within their own boundaries unless, in some way, they can bring themselves collectively under the reign of a single constitutional law."

With that text, Mr. Curtis has put together the substance of his earlier pamphlets: "Action", "Decision", "Faith and Works" and "The Way to Peace"; but it cannot be said that the work has been skilfully done. There is some repetition, and the argument has scarcely been improved in the process or by his diversions into history and other subjects. Mr. Curtis's sincerity and conviction cannot be mistaken; but they, like his argument, stand out better in the pamphlet form in which they were first given to us. That is unfortunate, for Mr. Curtis's point regarding imperial defence, on which his pro-

posed federal scheme is based, remains unanswered; and there is no indication as yet that that issue was really faced at the recent British Commonwealth Relations conference. If it must be recognized that there are limitations to what can be achieved at San Francisco, the very arguments regarding flexibility and an experimental and provisional approach, which were heard in Parliament, are the more reason why the British Commonwealth should make a further attempt to deal with its own problem and give the world a demonstration of the way in which a solution may be found to the larger problem.

Sir William Beveridge's legalistic approach was severely handled by Mr. Richard Law in concluding the debate in the House of Commons, but Sir William's view that the world order of to-morrow must be built on compulsory arbitration of all disputes does not constitute the sole feature of his book. Apart from the merits or demerits of his own suggestion, for which he himself disclaims any idea of novelty, pointing out that it was the basis of the Geneva Protocol, the first part of his book is a well-documented account of the experience of the last thirty years, which in itself should help many to form an independent and objective opinion on the Dumbarton Oaks scheme. It is when he passes on to discuss the conditions and methods of peace, and the scope and nature of a supernational authority, that Sir William becomes too formal and tends to overlook the necessity for a process of adjustment, compromise and agreement between those in whose hands power at present resides.

Mr. Law rightly pointed out that such processes and the establishment of confidence go to the building up of a real system of international law as well as of one of security, and he was able to some extent to reassure the House as to the qualifications which were attached to the right of veto of the Great Powers in the Yalta agreement. Mr. Law concealed no difficulties, but like Sir George Schuster he looked rather to the opportunities opening before us at San Francisco and at the inescapable fact that the only alternative to agreement and success is international anarchy, with all the implications which the closing stages of the War gave to that situation. As Lord Cranborne put it: "To-day we have another chance—it may be the last—to lift humanity out of the pit into which it has fallen. We must not, we dare not fail."

On the success of that effort depend not merely the material welfare of mankind but also the continued advance of science and every other cultural and creative activity. Moreover, though few will entertain false hopes as to the outcome of the deliberations at San Francisco or as to the immediate possibilities of whatever international organization may be set up as an outcome of that Conference, we may well reflect that we may be witnessing the approach to a science of international relationships. It is not merely that we may use organizations set up during the War for peace-time purposes, and thus promote the good will and understanding upon which international co-operation in any field, technical or political,

* *The Price of Peace*. By Sir William Beveridge. Pp. 104. London: Pilot Press, 1945.) 6s. net.

† *World War: its Cause and Cure*. By Lionel Curtis. Pp. xx+274. London: Oxford University Press, 1945.) 7s. 6d. net.

depends. Sir Arthur Salter has strongly urged the value of the wise use, for example, of the United Nations Relief and Rehabilitation Administration under the direction of a Supreme Reconstruction Council, and others besides him pointed out how relief work could stimulate the integration of the cultural and spiritual as well as the material side of European life. Viscount Hinchinbrooke saw in the problem which Germany itself presents a unique opportunity for an experiment in international government, and there is much in the general attitude to the San Francisco Conference which justifies the belief that something of the method and spirit of science is penetrating into international affairs.

Much clear thinking will yet be required as to the nature and meaning of nationalism; and further study must be made of its problems and the ways and means of mitigating its dangers. But while more than public opinion is clearly required to prevent aggression, Sir William Beveridge is wrong to dismiss it as of no importance. Any world authority must rest upon the support of an informed public opinion, aware of the limitations as well as the possibilities of world organizations, and understanding the restraints which must be accepted as the alternative to anarchy. Part of the task of building a science of peace must be the creation by education of such a world opinion clearly understanding the price of peace. Out of such efforts, reinforced by the scientific investigation of human relationships, designed to encourage the development in due course of an intelligence system comparable with that of the human body, there may be slowly evolved a real science of international relations. Only then can we expect to shape more precisely the large regional and international organizations adapted to serve the needs of men of all nations. Until that time comes, it behoves all men of good will to attempt to appreciate the nature of the problem of international co-operation and its bearing on their own interest and activities both as citizens and professionally; and understanding, to lend their moral support to the efforts of those who at San Francisco or elsewhere are seeking to pave the way to a better and enduring world order.

OCEANOGRAPHIC INVESTIGATIONS

The Oceans

Their Physics, Chemistry and General Biology. By Profs. H. U. Sverdrup, Martin W. Johnson, and Richard H. Fleming. Pp. x+1,087. (New York: Prentice and Hall, Inc.; London: George Allen and Unwin, Ltd., 1944.) 63s. net.

SVERDRUP, Johnson and Fleming have answered the demand for an up-to-date manual of oceanography with a comprehensive work, "The Oceans: Their Physics, Chemistry and General Biology". It is a large book with 1,087 pages, amply illustrated by text-figures and charts. It was published two years ago in the United States, but circulation to Great Britain was restricted until the end of last year.

Progress in oceanographical research has been exceptionally rapid during the past twenty years, and the reader is warned in the preface that such recent information must sometimes be coloured in its presentation by the authors' own views. At the risk of premature generalizations, they have preferred definite statements to the enumeration of uncorrelated observations, though without failing to make proper reference to alternative explanations. The success of the book is unmistakable: it will be invaluable to both specialist and beginner. In its treatment of difficult problems it does not take too much for granted, though tiresome over-simplification is avoided.

The authors insist on the close inter-relation of the different aspects of oceanography, and at the Scripps Institution, where the book was written, each aspect is represented by at least one good authority. It is fortunate for the future of oceanographical research that there was such a team, working in sufficiently close co-operation to cover the whole field and achieve successful joint authorship. The Scripps Institution is on the Pacific coast near La Jolla, sixteen miles north of San Diego; it is a department of the University of California. It was founded and equipped by the Scripps family, who have been great benefactors in La Jolla, and derives its funds half from the State of California and half from the Scripps family. Research in all branches of oceanography is encouraged; each section has great freedom, and its own grant for equipment and library. The excellent situation, facilities and atmosphere make it an ideal place for research. Prof. Sverdrup has been the director since 1936, and Johnson and Fleming are assistant professors.

The rapid progress made during the past twenty years is attributed partly to improved technique, and partly to the application of theoretical studies and laboratory research, though the frequent insistence in the book on the need for additional observations shows that theoretical treatment is now often ahead of the work at sea. There are problems which need intensive work by several vessels, and there is still scope for extensive exploration. Where measurements have been made synoptically, over a dense network of observation points, the irregularities in physical properties and water movements have proved much greater than was expected, and they show that great caution must be exercised in drawing conclusions from scattered observations.

The biological chapters make a detailed survey of the factors which control distribution and fertility. It is maintained that animal and plant distributions are not haphazard, but result from orderly events, some historical and some in continual operation. Apparent lack of order is attributed to lack of information. It is emphasized that the distribution and fertility of any species cannot be studied satisfactorily without investigating the whole life-history from egg to spawning adult; each stage may have its own particular requirements.

One of the themes of the biological section is the excellent adaptation of the animals and plants to their environment, and the advantages of sea water as a medium for supporting life. Everything needed for the maintenance of life is carried in solution—the necessary gases as well as the mineral substances—and, except in estuaries, the stability of the physical characteristics makes highly specialized integuments or regulatory systems unnecessary. With few exceptions the marine animals from groups with fresh-