UNITED STATES SCIENCE OFFICES ABROAD

By DR. C. E. SUNDERLIN*

U.S. Office of Naval Research, American Embassy, London

PLANS for United States Science Offices at home and abroad are proposed in the extensive report entitled "Science and Foreign Relations" recently submitted to the State Department by Dr. L. V. Berkner, of the Carnegie Institution. Included in the principal recommendations of the report are proposals for the establishment of Science Offices in the capitals of various foreign countries; the creation of a Science Office in the State Department in Washington; the integration of scientific and technological points of view with planning in the fields of economics, politics and public affairs; and closer co-operation of United States science with foreign policy-making by the State Department.

Dr. Berkner was assisted in the preparation of his report by the State Department International Science Policy Survey Group, which consisted of members drawn from various governmental and non-governmental organisations such as the State Department, the Research and Development Board, the Department of the Navy, the Interdepartmental Committee on Scientific Research and Development, the National Research Council, etc. A special Advisory Committee on International Science of the National Academy of Sciences reviewed the report and unanimously approved it in principle before its final submission to the Secretary of State. This Advisory Committee on International Science consisted of Prof. Roger Adams (chairman), Dr. Vannevar Bush, Prof. I. I. Rabi, Dr. Alexander Wetmore, Dr. R. E. Wilson, Prof. D. W. Bronk and Dr. A. N. Richards. In addition to the individuals constituting the State Department Policy Survey Group and the Advisory Committee on International Science of the National Academy of Sciences, a large number of governmental agencies and individuals from both public and private life contributed in various ways to the preparation of the final report. It is estimated that more than one thousand individuals participated in the work of the survey group.

The establishment of a Science Office in the Department of State is one of the key recommendations in the Berkner report. This Science Office would have the following general functions: (a) to provide supporting operations for science staffs in United States scientific missions abroad; (b) to carry on liaison with domestic scientific activities; (c) to review and advise on policy and administration decisions as they relate to, or affect, science and technology; (d) to evaluate the effectiveness of programmes and policy in the light of progress and potentialities of science and technology. In order to accomplish these purposes it is proposed that the Science Office be established at the policy-level in the State Department.

The head of the proposed Science Office would be a "science adviser", appointed as special assistant to the Under Secretary of State. He would be assisted by a small staff consisting of a deputy and three other men of science representing, respectively, the physical, biological and engineering sciences. In addition, there would be a Scientific and Technological Information Branch of the Science Office in

order to co-ordinate scientific and technical information requirements. The war-time experience of the Office of Scientific Research and Development has indicated the necessity for such a central information office in Washington.

In order to integrate the activities of the Science Office with those of the political, economic and public affairs areas of the State Department, liaison members from these areas will be assigned to the Science Office. In like manner, because of the continued interest and participation in international scientific relations by other governmental agencies, liaison members from these other agencies will also be assigned to the Science Office. It is stated explicitly in the report that the Department of State should not interfere with the international scientific relations activities of other government agencies. However, the Department should be apprised of the general scope and nature of these activities so as to measure their effect on the overall conduct of United States foreign relations.

Sections in the National Science Foundation Act of 1950, which was recently enacted by Congress, provide that the Foundation shall be authorized to co-operate in any international scientific research activities consistent with the purposes of the Act, and to foster the interchange of scientific information among men of science in the United States and foreign countries. The Berkner Report recommends that a liaison officer from the National Science Foundation be permanently associated with the Science Office in order to ensure effective servicing of the Foundation's requirements.

The pattern suggested for Science Offices in other countries is unique. The fact is clearly recognized that certain functions of a Science Office must pertain to scientific relations with the particular country in which the Office is situated. Equally clearly the oft-repeated statement that science knows no geographical boundaries has been taken into consideration. In order to obtain the highest calibre of scientific worker for service in Science Offices abroad and to make maximum use of his abilities, certain functions should be on an area basis rather than on a country basis. A scientific worker in the pursuit of his special field of interest should not in general be restricted in his activities by the geographical boundaries of a single country. Important work in biology is in progress not only in Great Britain but also in France, Italy, Denmark and elsewhere. Fundamental metallurgical research is in progress in Britain, Belgium, Austria, Sweden, Germany, etc. Centres of research in cosmic ray physics are situated in Bristol, Manchester, Paris, Rome, Amsterdam, and at the Jungfrauoch. It is proposed, therefore, that two categories of Science Office be established. Offices in Category 1 will consist of staffs whose functions relate to general geographical areas such as Western Europe, the Middle East, South America, Australasia, etc. Science Offices in Category 2 will consist of staffs which are primarily concerned with functions relating to the particular country in which they are located. A Science Office in Paris, for example, might be concerned with those scientific relations which primarily concern the United States

* The statements made in this article are the responsibility of the author and not of the U.S. Navy or the U.S. Department of State.

and France: the Fulbright and Smith-Mundt programmes in France, the technical assistance programme of E.C.A., the Point IV programme as it might apply to under-developed areas in French colonial possessions. Because of the fact that the secretariat of Unesco is located in Paris, the Paris Science Office might be expected to establish close working relations with that Organisation.

The initial proposals for the establishment of Science Offices in both Categories are as follows.

Category 1 (Area Offices): Western Europe, London; South Africa, Johannesburg; South America, Rio de Janeiro; Australasia, Sydney (or Canberra).

Category 2 (Single Country Offices): Paris, Brussels, The Hague, Rome, Berne, Stockholm, Oslo and/or Copenhagen, Lima, Ottawa.

The area office in London would have the dual function of geographical coverage of Western Europe in the various special disciplines of science and also the Category 2 functions as they pertain to matters of direct concern between the United States and the United Kingdom. The early establishment of area offices in Cairo and New Delhi is to be considered. The establishment of other Category 2 offices may be anticipated in South America, Africa, etc., after the area offices have been set up.

The establishment of Category 2 offices in Germany and Japan poses special problems which will be worked out in consultation with the United States High Commissioner for Germany and the Supreme Commander, Allied Powers in Japan.

The Category 2 offices which are to be established in capitals of various countries will, in general, consist of scientific staffs comprising one to three scientific workers. No general recommendation is made as to the size of the Category 1 or area offices; the present arrangement in the American Embassy, London, may give some clue as to the eventual size of these offices. At the present time the London Science Staff of the State Department consists of two men of science whose activities are essentially those of a Category 2 office. The Office of Naval Research, London, comprising ten to twelve men of science, exercises Category 1 or area office functions in its activities in Western Europe. The combined activities of the London Science Staff and U.S. Office of Naval Research, London, might furnish a pattern for the other area offices which are proposed in the report.

The functions to be performed by science staffs of both Categories 1 and 2 would cover the following: "reporting on significant trends and developments in foreign science; encouragement of collection and transmittal of foreign scientific and technical information to the United States by private individuals and organisations (public and private); actual collection and transmittal where the situation does not readily permit of direct access between such United States individuals and the foreign sources; advice to the chief of the United States mission and his staff on scientific matters; representation and maintenance of the interest of United States science and scientists abroad; response to the scientific requirements of all United States Government agencies; assistance to both United States and foreign scientists in the procurement of scientific apparatus, chemicals, biologicals, and other scientific tools and materials; arrangement, when appropriate and desirable, for collaborative research projects between United States and foreign scientists; the

implementation of the flow of scientific information on a two-way basis; and the facilitation of arrangements for visits of United States scientists who may be travelling abroad".

It is fully realized by those who participated in the formulation of the report that the science staffs must encourage in every way two-way exchanges of scientific information and of scientific workers. As it states in the report, "experience clearly shows that the flow of information must be a cooperative enterprise".

The importance of science and technology in national affairs and international relations, particularly during the present period of rehabilitation, has been indicated in various ways. On the national scale one might point to the establishment of high-level scientific advisory groups in Great Britain, such as the Advisory Council on Scientific Policy, the Defence Research Policy Board, and the Committee on Industrial Productivity. On the international scale one could cite in the United States the work of the Division of International Relations of the National Research Council, the National Commission for Unesco, and the various educational exchange and technical assistance activities, such as the Fulbright, Smith-Mundt, Point IV, and E.C.A. programmes. The proposed Science Offices which would be established in various countries of the world could assist the agencies of the United States Government in such international programmes as are listed above.

The active participation of the National Academy of Sciences and the National Research Council in the work of the Science Office is expected after the last-named has been established. It is recommended in the Report that the State Department urge the National Academy of Sciences to appoint a committee of eminent United States men of science which would act as a top-level board in advising the Department concerning scientific and technological questions. The National Research Council has indicated that it would be glad to assist, through its Division of International Relations, and through appropriate organisational changes, in strengthening co-operation between the State Department and the scientific workers of the nation.

The Report submitted by Dr. Berkner has been accepted by the State Department. The selection and appointment of a science adviser may be expected in the very near future. Following his appointment, the establishment of the Science Office in the State Department and of the Category 1 and Category 2 Science Offices in other countries will follow in due course.

PHYSICAL CHEMISTRY OF DRUG ACTION

A SYMPOSIUM on "Physical Chemistry of Drug Action" was arranged jointly by the Royal Institute of Chemistry and the Society of Chemical Industry, and held in University College, London, on April 19.

In opening the symposium, Sir Cyril Hinshelwood pointed out that two distinct fields had to be explored: how the drug reaches the seat of action and what it does when it gets there. Various physico-chemical principles have been shown to govern the action of various drugs. The laws of physical