News and views

SCIENCE AND FOREIGN RELATIONS

THE BERKNER REPORT

Necessarily articulate and international by its nature, science has lost ground in both departments by having become a recognized national resource. Restrictions placed upon the flow of scientific information across political frontiers, while accepted quite generally as being needed to safeguard the scientific secrets of nations, have at the same time dealt a crippling blow to the communication channels upon which science must depend for progress.

In May the Department of State took formal note of this and related problems by releasing a 170-page report prepared by physicist Lloyd V. Berkner of the Carnegie Institution's department of terrestrial magnetism, who as a special consultant to the Secretary of State had been asked last October to review the Department's responsibilities in international science. Dr. Berkner was aided in his task by a survey group headed by J. W. Joyce whose services were loaned by the Navy Department. Reports and suggestions from the National Research Council of the Academy of Sciences, from a representative list of American scientists who were asked to express themselves individually, and from several government agencies were assembled and evaluated by the group under Dr. Joyce and were incorporated by Dr. Berkner in the final report.

Its major recommendations are that the State Department establish within its organization a Science Office at a policy-making level (headed by a scientist appointed as a special assistant to the Under Secretary) and that science staffs be appointed to a number of specified diplomatic missions abroad. Since the object would be to formulate and carry out an American foreign scientific policy, it was suggested strongly that persons assigned to these tasks be outstanding scientists. The need for this kind of representation is not peculiar to the United States Government, the report is careful to state, for a number of scientifically advanced nations have already adopted the practice of including scientific officers in their foreign diplomatic missions as a practical means of facilitating their national science programs at home.

Press accounts of the Berkner report reflected almost uniformly the attitude that the State Department's proposed activities would approximate those of an "intelligence agency" whose primary function would be to ferret out scientific discoveries made abroad and to communicate these to the American scientific community. The report itself makes clear that no such restrictive meaning was intended. "Particular emphasis," it says, "should be placed by the science staffs on the encouragement of two-way exchanges. Experience clearly shows that the flow of information must be a cooperative enterprise. If the attempt is made to get without giving, the sources dry up. If the attempt is made to operate on a bargaining basis, the cooperation deteriorates." Furthermore, the report adds, "science staffs should concern themselves only with unclassified and legitimately available classified information."

As outlined, the proposed new function of the State Department would be to contribute to the scientific progress of this country and of the rest of the world as well by encouraging the free international exchange of scientific and technical information, materials, and personnel by any available and appropriate means. These would include: encouraging existing channels of communication and, where necessary, implementing them by the actual collection and transmittal of information; supporting international scientific and technological conferences and cooperating with international scientific organizations in all possible ways; arranging, when appropriate and desirable, for collaborative research projects by U. S. and foreign scientists; facilitating two-way exchanges of scientific personnel and materials; and cooperating generally with private individuals and with scientific organizations in providing access to the most direct channels of interchange.

A special problem is posed by the National Science Foundation, which by law is directly charged with responsibility for fostering the interchange of scientific information among scientists in the United States and foreign countries. To function effectively in this regard, the report suggests, the Foundation must be adequately informed concerning world science and technology and thus will be an important user of the services and facilities which the State Department should be prepared to provide. In this connection it is recommended that a liaison officer of the Foundation be permanently associated with the Department's science office.

With particular reference to visits made to the United States by foreign scientists, the Berkner report emphasizes the need for the most careful consideration of all relevant factors before denying entry to visitors on the grounds of past or present associations held to be politically undesirable. In some cases, and the report cites a few from the past, it is in the national interest to permit exceptions when such individuals have been invited to visit the United States for the genuine purpose of contributing to the progress of international science. A converse aspect of the problem, the report holds, has to do with the importance of officially encouraging opportunities for personal contact between scientists from the United States and from countries behind the Iron Curtain. It is unreasonable, says the report, to expect that our scientists will be admitted to Iron Curtain countries if those countries can accuse the United States of maintaining similar restrictions against the entrance for purely scientific purposes of their scientists into this country.

The Berkner report has a great deal to say about the need for effective State Department support of international scientific organizations and conferences, fundamental to which is more effective liaison between the Department and American science than exists at the present time. In this connection it is remarked that the majority of scientists involved in international meetings and organizations are bewildered by their contacts with the Department of State, and in consequence often appear to

deal awkwardly with the Department and seem ineffective or inadequate in their international dealings. The present "lack of confidence in the Department of State on the part of wide areas of science" might be overcome, it is suggested, by better contact between the Department and the National Research Council. Such liaison might be effected by a more adequate organization of the NRC's Division of International Relations, and Dr. Berkner points out that the NRC's report on studies for the science policy survey (written by Douglas Whitaker and included as an appendix to the Berkner report) impies its willingness to take positive action if the State Department is prepared to cooperate.

Essential to the development of a State Department policy of support of international scientific unions, conferences, and congresses, Dr. Berkner emphasizes, is the need for competence to make wise decisions, and this should reside immediately within the Department. Equally important, he continues, is the need for full-time scientific personnel in our missions abroad to provide assistance and advice on the conduct of international meetings.

The science staffs assigned to United States diplomatic missions would serve primarily as representatives of American scientists abroad and as a connective link between American and other scientific groups rather than simply as listening posts designed to direct a one-way flow of information to the United States. As recommended, the staffs should be composed of specially qualified scientists, selected on the basis of recognized competence and appointed as foreign service reserve officers, while each staff should be headed by a chief science officer enjoying diplomatic status with the rank of attaché.

Geographically, according to the Berkner report, the posts to be given science staff representation should initially include London, Ottawa, Paris, Berne, Rome, The Hague, Brussels, Oslo (or Copenhagen), Stockholm, Lima, Johannesburg, Rio de Janeiro, and Sidney (or Canberra). Western Germany and Japan would be assigned analogous representation, although because of their occupied status special consideration would be required.

HIPPOCRATIC OATH FOR THE SCIENCES?

ETHICAL CODE SUGGESTED

A plea for a formal code of professional scientific ethics has been advanced in an article appearing in the June 16th issue of the AAAS journal *Science*. Written by Ward Pigman and Emmett B. Carmichael of the University of Alabama, the article holds that the "unwritten code" of scientific ethics (a complex of tradition and of the scientific method) should be defined in writing by scientists, who have until now passed their traditions on simply by example and by word of mouth as an informal part of the graduate student's training.

The changing conditions of scientific work are reflected, the authors suggest, by the emergence of science from a period of individual research to a period dominated by large research groups, including those doing research for profit. The planning of an ethical code, they remark, should recognize the scientist's obligations to the whole of his society. The code, which should preserve the ethical traditions of science and incorporate the scientific method, should also, the authors feel, clarify the scientist's attitude towards such matters as warfare, the health and general well-being of mankind, nationalism versus internationalism, patent questions, and secrecy restrictions.

Pigman and Carmichael provide no answers. They outline the problem and some of the conflicting obligations with which a scientist can be faced today, going into particulars, for instance, in one area (the authorship of scientific papers) where the substitution of team for solo work has led to numerous thorny problems. The considerations involved here, they say, include the quality of papers, the direct responsibility of authors towards prior work, and criticism and disagreement by and among researchers in particular fields. Also discussed are such limiting elements and obligations as the property rights of a scientist with respect to his own work, senior authorship, the proper ordering of names, and the recognition of contributions by administrators, financial supporters, graduate students, and technical assistants.

Discussed briefly is the question of what the scientist's attitude should be towards publicity and popularization of his work. The article suggests that a firm stand on this issue by scientists along the lines taken by the medical profession towards self-advertising might be helpful in establishing the professional status of the scientist in the public mind.

Concluding with a plea for some means to curtail violations of professional ethics on the part of scientists, the article suggests that the scientific organizations, or perhaps an agency of Unesco, consider the manner of applying scientific traditions to the newly developed conditions of research on the grounds that "establishment of a definite code of professional ethics and conduct by our major scientific groups would have profound and favorable effects, for science, society, and the scientist".

INTERNATIONAL LABORATORY URGED

EUROPEAN PHYSICS INSTITUTE

Last December it was proposed at the European Cultural Conference in Lausanne, Switzerland that a nuclear physics institute be established as a joint enterprise of the countries of Europe. Raoul Dautry of the French Atomic Energy Commission was quoted at the time as arguing that need for such an effort is urgently felt in Europe because no single country is large enough or can mobilize enough resources to compete with the United States in atomic research. The recommendation was adopted by the 150 delegates to the conference as one of several resolutions aimed at replacing competing national outlooks with a more unified European point of view.

Some six months later, during the Fifth General Conference of the United Nations Educational, Scientific, and Cultural Organization held in June at Florence, Italy, I. I. Rabi, professor of physics at Columbia University and a member of the United States delegation, made a similar proposal. A nuclear physics laboratory should be built in Western Europe, Dr. Rabi suggested, as the first