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

Sir K. S. Krishnan *Prof. Rabi* *Prof. Francketti*
Prof. Cacciapuoti *Prof. Mandó*

I. I. Rabi, U. S. Delegate to the Fifth General Conference of Unesco, who was guest speaker at a lecture held at the University of Florence in conjunction with the conference, paused after his address to talk with the scientists shown here. Sir K. S. Krishnan is professor of physics at New Delhi University; Prof. Cacciapuoti heads the University of Trieste's institute of physics; Prof. Mandó and Prof. Franchetti are both of the University of Florence, the latter heading the University's institute of physics. In the background is the University's observatory located on the site where Galileo conducted many of his studies in astronomy.

of a number of European centers for pure research that Unesco might help in establishing. Ideally, he said, the laboratory should be equipped with a large accelerator, perhaps similar to cyclotrons now in operation at MIT, Columbia University, and Cornell University. The actual construction and maintenance of the laboratory should not be financed by Unesco, Dr. Rabi emphasized, but by joint action of the nations taking part in the project.

While the proposal was supported strongly by a number of the delegates from member nations, Unesco's program committee did not specify the physics laboratory as necessarily being a pilot project but called more generally for the creation of regional laboratories to promote the international collaboration of scientists. Several other suggestions have been made from time to time for Unesco-sponsored international laboratories—notably a European computing laboratory to act as a central agency for tackling problems requiring mathematical analysis, a center for research on the medical, psychological, and psychiatric problems relating to the brain, and a social science research center.

ELECTROMAGNETIC WAVES
SYMPOSIUM AT WASHINGTON SQUARE

A symposium on the theory of electromagnetic waves was held at New York University at Washington Square under the joint sponsorship of NYU and the Geophysical Research Directorate of the Air Force Cambridge Research Laboratory on June 6, 7, and 8, 1950.

Extensive applications in recent years in the fields of communications and radar and as a tool of physical research have resulted in widespread interest in electromagnetic theory. Because of the complexity of formulating the laws of electromagnetics very few problems are amenable to exact solution. Even approximate solutions suitable for applications are in many cases difficult to obtain. As the applications have grown more intricate, mathematical difficulties have become greater and correspondingly the complexity of the problems has aroused mathematical interest.

The particular interest of the Air Force in electromagnetic theory was discussed in one of the papers presented at the symposium by N. C. Gerson of the Geophysical Research Directorate. The approach of the Air Force to the problems of fundamental research and the various programs being sponsored in mathematical aspects of electromagnetics were outlined.

The purpose of this symposium was to bring together research workers representing a wide range of current research in various fields. The technical program consisted of 21 papers in applied mathematics, physics, engineering, and mathematical interpretation of experimental work. Over 200 people registered for the sessions, representing 24 universities, 18 industrial organizations, and 20 government laboratories. Three foreign countries were represented among the speakers: O. E. H. Rydbeck of the Chalmers Institute of Technology, Gothenberg, Sweden; H. Bremmer of the Philips' Research Laboratory of Eindhoven, Netherlands; and J. W. Cox of the Defence Research Board of Canada.

A number of social functions were arranged to provide opportunities for personal discussion among the registrants. Teas were held after the Tuesday and Thursday afternoon sessions and a dinner session was held on Wednesday night at the Fifth Avenue Hotel. Paul P. Ewald, of Polytechnic Institute of Brooklyn, was the after dinner speaker and presented an interesting talk on concepts,