

News of Science

Federal Council for Science and Technology

An executive order, stemming from the recommendations of a panel drawn from the President's Science Advisory Committee, will establish a Federal Council for Science and Technology to improve the planning and management of Government research programs and to facilitate the resolution of problems common to all federal agencies engaged in scientific activities.

The advisory committee's report, titled "Strengthening American Science," examined the whole range of problems concerned with the interaction of government and science and the specific problem of the need for capital for science. Excerpts from the report follow.

Role of the Federal Government

"Of all the forces shaping and reshaping life in America, some of the most insistent and powerful spring from science and technology. The full power of these forces could scarcely have been envisaged by the framers of the Constitution however great their interest in science, and as a result, the Federal Government, over the years, has had to improvise—and has sometimes done so brilliantly—a variety of ways to undertake scientific research and development in areas of great national need. In the thirteen years since the end of World War II, science and technology have pushed to the forefront of national life with an urgency that no Congress or President serving in the first four decades of this century could have imagined. This year the U.S. Government will spend over \$5 billion on research, engineering, and development, substantially more than it spent in the entire four decades 1900–1939—and more than the total Federal budget of a generation ago. . . ."

"One of the clearest lessons to emerge from the history of science is that various scientific disciplines—seemingly unrelated—have a way of stimulating and fructifying each other in an unexpected manner. This complex back-and-forth interplay is the life and soul of science and technology—there can never be too much of it. The most impractical thing that can be done in designing and directing programs of scientific research is to

worry overmuch about how 'practical' they are. The secrets and treasures of Nature are hidden in the most obscure and unexpected places. It is clear, therefore, that the strongest scientific program is the program with the greatest breadth and scope. It is impossible to predict from which quarter the next scientific advance will come; but we can try to make sure that the Nation has able people at work across the whole scientific frontier. . . ."

What Route to Improvement?

"What is still lacking is an effective instrument of government made up of representative Government officers, that can promote closer cooperation among Federal agencies in planning and managing their programs in science and technology and in achieving their coordination. . . ."

"Such an instrumentality could serve as: (i) A means for considering the impact of Government research and development programs on nongovernmental programs and institutions for the purpose of furthering in every proper way the general advancement of American science and technology; (ii) A channel of communication and a source of policy recommendations to the Special Assistant and to the President from the Federal agencies and departments actually charged with the responsibility for planning and operating programs in science and technology. (iii) A means by which Government agencies could jointly consider proposed policies, plans, and programs and the impact of such proposals on their own programs or administrative policies and practices. (iv) A means for achieving common implementation of policy decisions in the fields of science and technology by promoting cooperative action among the Government agencies concerned.

Meeting the Need

"After studying this complex problem, the President's Science Advisory Committee recommends the creation of a new group composed of policy-making representatives drawn from those Government agencies which spend substantial sums for research and development. This new group, which might be known as the 'Federal Council for Science and Tech-

nology,' would have broad responsibilities for advising the Special Assistant to the President as to policies which would facilitate the resolution of common problems and would help promote interagency cooperation in developing plans and programs designed to strengthen the national effort in science and technology. It would seem appropriate that the Chairman of the Council for Science and Technology be the President's Special Assistant for Science and Technology. In addition to being the President's principal science adviser, he sits in on meetings of the Cabinet and the National Security Council. When appropriate, policy matters growing out of the deliberations of the Council could be brought before the President, the Cabinet, the President's Science Advisory Committee, or all three, by the Special Assistant. For it is, indeed, his responsibility to see that public policy benefits from whatever contributions science and scientists may be in a position to make.

"In recommending policies and other measures that will promote more effective planning of Federal programs in science and technology, the Council should prepare a projection of the program costs needed to meet the scientific and technological needs of the Federal Government. In preparing the projection, the Council should carefully examine the plans of individual agencies, and seek to promote full cooperation among them in developing programs that will meet their common scientific and technological needs, but which will eliminate unnecessary overlap and duplication. The projection should include estimates of new capital requirements and take into account the proper utilization and balance of the scientific and engineering resources the Government requires. It should also consider the level and type of research financed by the private sector of the economy, and see, so far as possible, that public and private efforts are complementary. In evolving a long-range projection the Council should act with detachment and responsibility so as not to encroach upon the prerogatives of departmental secretaries, agency heads, or the Bureau of the Budget in the annual budget process. The long-range projection should be submitted to the President or the Cabinet after appropriate review by the Special Assistant in consultation with the Science Advisory Committee.

"For the Federal Council for Science and Technology to discharge its large responsibilities effectively, it will need able members with adequate authority. The Secretary of each Government department with scattered research and development activities should delegate general policy responsibility to a single individual who will be able to represent effectively all the technical activities of his depart-

ment as a whole. In such cases, the position of the Director of Defense Research and Engineering in the Department of Defense exemplifies the type of representation the Council needs. Other agencies that are primarily scientific should be represented by their directors or agency heads. The Bureau of the Budget might also advantageously assign an observer in view of the Bureau's overall responsibilities in Government planning and management.

"It also will be necessary to meet the Council's staff requirements. Staff support could be furnished by the office of the Chairman with assistance from personnel in the National Science Foundation and in other departments and agencies. The National Science Foundation makes numerous basic surveys in science both inside and outside of Government, and good liaison between the Foundation and the Council would be helpful and productive. The Bureau of the Budget also could be helpful to the Council in evolving its plans for meeting long-range needs in science and technology and in determining capital requirements. Nowhere in Government today, for example, is the total research and development budget adequately reviewed as a whole distinct from the program of an individual agency. Nowhere is it reviewed in terms of its technical content and objectives apart from budgetary examination. Nor is there a current procedure for separately reviewing the research portion of the total budget. The uncoupling of research from development in the budget process would be of considerable assistance in determining the appropriate level of support of each of the several categories of research and development as well as the soundness of the total allocation.

"Establishment of a Federal Council for Science and Technology will not automatically solve all the management problems of the Government's research. But if the Council acts wisely and boldly, and if it is supported enthusiastically by the various agencies concerned, it can play a profound role in underwriting the United States' scientific leadership in the years ahead."

Membership of the Panel

Robert F. Bacher, professor of physics, California Institute of Technology; William O. Baker, vice president (research), Bell Telephone Laboratories; Caryl P. Haskins, president, Carnegie Institution of Washington; George B. Kistiakowsky, professor of chemistry, Harvard University; Alan T. Waterman, director, National Science Foundation; Paul A. Weiss, Rockefeller Institute for Medical Research; and Emanuel R. Piore, chairman, director of research, International Business Machines Corporation.

Arnold Arboretum Controversy

A test suit of the Arnold Arboretum controversy has at last been filed. In 1953 the Corporation of Harvard University announced a plan to transfer the library and herbarium of the Arnold Arboretum in Jamaica Plain, Mass., to the university's new herbarium in Cambridge. A group of interested persons, the Association for the Arnold Arboretum, accused Harvard of a breach of trust in its administration of the Arboretum and tried unsuccessfully to obtain a judicial hearing [*Science* 119, 369 (19 Mar. 1954); 119, 459 (19 Apr. 1954); 121, 835 (10 June 1955)].

On 15 December 1958 John T. Hemenway, president of the Association for the Arnold Arboretum, announced the test suit in the following statement, delivered at the association's annual meeting.

"On December 4, 1958 a test suit was filed in the Supreme Judicial Court of Massachusetts to determine whether the Corporation of Harvard University has committed a breach of trust in its administration of the Arnold Arboretum. This suit was begun in accordance with a decision of Attorney General Edward J. McCormack, Jr. which permitted the suit in his name by a group of 'relators.' This group includes: John S. Ames, former President of the Massachusetts Horticultural Society; Mrs. Oakes Ames, widow of Professor Oakes Ames, former head of the Arnold Arboretum; John T. Hemenway and Francis Blake, respectively President and Treasurer of the Association for the Arnold Arboretum, Inc.; Samuel Eliot Morison, Professor Emeritus of History at Harvard; Dr. Lewis Perry, former Principal of Phillips Exeter Academy; and Silas B. McKinley, prominent lawyer of St. Louis. The suit was filed by Thomas V. Rankin, of Boston, counsel for the relators. It is expected that this group will be later enlarged by the addition of other well-known persons both from Massachusetts and other States.

"This suit is the result of six years of persistent effort during which access to the courts was denied to those who claimed breach of trust on the part of the Harvard Corporation. Substantial doubts were raised by responsible persons on the advice of competent counsel as to the legality of the Corporation's administration of the Arnold Arboretum trust, and the Corporation was repeatedly requested to obtain a judicial ruling on the legal questions. Contrary, however, to the established practice of responsible trustees in these circumstances, the Corporation refused any co-operation in obtaining a judicial ruling; and the present suit is the result of action by an independent Attorney General acting in the interests of justice.

"The trust establishing the Arnold Arboretum was created in 1872 by an agreement between trustees of James Arnold of New Bedford and the Harvard Corporation, which was made trustee. Early in 1953 the Corporation adopted a plan which called for the removal from Jamaica Plain to Cambridge of most of the Arboretum's fine library and herbarium and which also involved the transfer of Arboretum personnel and the diversion of Arboretum income.

"This 1953 plan was protested by various friends and benefactors of the Arboretum who, on the advice of counsel, claimed a breach of trust on the ground that the plan sacrificed the objectives and public usefulness of the Arboretum. They asked the Harvard Corporation, as trustees, to take the usual course of applying to the courts for a ruling. When Harvard refused, there followed the long effort to obtain a judicial hearing which now, after nearly six years, has culminated in the present suit.

"This long effort has been supported by the Association for the Arnold Arboretum, Inc., a nonprofit Massachusetts corporation organized in 1953 "to protect and support the Arnold Arboretum in the public interest." The Association has some 1200 members from about 40 States, including many well-known horticulturists and Harvard alumni.

"By proving that justice cannot be indefinitely denied, a major objective of the Association has been achieved. The filing of this suit demonstrates that no board of trustees, however influential, is so far above the law that it can permanently prevent a judicial ruling as to whether a trust is being legally administered when serious doubts as to the legality are raised by responsible persons. For this reason, the suit has a wide significance, not entirely confined to the Arnold Arboretum or to Harvard University."

NSF Science Information Service

The National Science Foundation announced on 11 December the establishment of a Science Information Service, in accordance with the provisions of the National Defense Education Act of 1958 and as directed by President Eisenhower on recommendation of his Science Advisory Committee [See *Science* 128, 1616 (26 Dec. 1958)]. The Science Information Service is designed to make scientific literature in all languages more readily available in order to shorten the time spent by scientists and engineers in searching for needed information. The new service, which is headed by Burton W. Adkinson, will carry out NSF's responsibility to take the leadership in bringing about effective coordination of