terested in the improvement of mathematics instruction were all working quite independently. With the aid of a special grant from the Carnegie Corporation, two conferences of representatives of these organizations were held to discuss the problems in which all were interested.

Inclusion in the major education bills before Congress of provisions for assistance to the states on programs of student testing and guidance led to two simultaneous conferences in May 1958 of experts in testing and experts in student counseling. The purpose was to prepare recommendations that might be transmitted to state school officials for the improvement of their testing and guidance programs or the institution of such programs. The reports of the two groups are now available. The conferences were financed by a grant from the Carnegie Corporation and were planned with the cooperation of the American Personnel and Guidance Association and the American Psychological Association.

The large amount of interest in activities intended to interest children and high-school age youth in science led to the holding of a national conference of representatives of academies of science and junior academies of science. The conference provided an opportunity for exchange of information and ideas, and has resulted in the stimulation of increased activity on the part of state academies of science in providing programs of interest to elementary and high-school pupils. The national conference was supported by funds from the Oak Ridge Institute of Nuclear Studies and the National Science Foundation.

STIP has worked with a committee of teachers and parents in the Washington area during 1957–58 on planning for a course in science for grades 5 and 6, which is being offered by open-circuit television during this school year. The course has become a part of the science offerings for these grades in 16 school systems.

Information Newsletter

To help meet the need for exchange of information among the many organizations and agencies interested in the improvement of science and mathematics education, the Association's Science Teaching Improvement Program has prepared and circulated a semiannual newsletter reporting the science education activities of scientific societies and of a few government and industrial agencies.

Some Disappointments

Various things that those responsible for the Science Teaching Improvement Program and the Association's Cooperative Committee on the Teaching of Science and Mathematics had hoped to accomplish have not been done.

There was initially some hope that it would be possible to develop material that would be useful in interesting students in careers in science. After hundreds of samples of the literature already available for this purpose had been examined, it was decided not to enter this field.

We had hoped to make some direct contribution to the improvement of teachers' salaries and the betterment of their working conditions. Particularly disappointing has been inability to work effectively on our own or with other groups toward this goal.

When the Science Teaching Improvement Program was originally planned, it was hoped that one of its aspects could be a substantial national program of awards to outstanding high-school teachers of science and mathematics. The Association's officers were quite aware of the difficulties involved, but still believed that such an award program would constitute a useful part of the effort to enhance the prestige of competent teachers. Apparent success in securing financial support for such a program turned out to be illusory, and nothing more has been done on this aspect of the original Science Teaching Improvement Program.

News of Science

Evolution of the Organization of the Federal Government for Scientific Activities: the Beginning to 1947

In 1956 the Office of Special Studies of the National Science Foundation published a report which was titled *Organization of the Federal Government for Scientific Activities*. Part 1 of this report offers a brief examination of the history of the relationship between government and scientific activity in this country. Excerpts from this study are presented here. A second article will cover the period from 1947 to the present.

Early Organization

The Federal Government's organization for science began to take shape soon after the founding of the republic. It evolved slowly for the first hundred years, the pace quickening during the first part of the 20th century. Beginning in World War II, and continuing into the postwar period, there was a spectacular growth in the number and size of scientific agencies and in the scope and significance of their work.

This process of development has been paralleled by the growth of scientific activities in the nation at large. A phenomenal increase in the magnitude of the industrial scientific effort has occurred as industries which depend on technological progress have added to their scientific work, and as others which never before supported research have begun to do so. Basic research, too, has received increasing attention in industry.

The scientific activities of the Federal Government in the years before the Civil War consisted principally of the observation and collection of data about natural phenomena. The Naval Observatory, the Coast Survey, and the Army's Topographical Engineers were busily engaged in accumulating information to aid the nation's commerce and defense, and its westward expansion. The Smithsonian Institution, established in 1846, supported several important scientific activities which were later taken over

and conducted on a larger scale by other federal agencies.

The Civil War saw the creation of a quasi-governmental organization, the National Academy of Sciences, as a self-perpetuating body of distinguished scientists which was directed by law to study and report upon "any subject of science or art" when called upon by a government department. However, while some important new devices came into use during this conflict, relatively few civilian scientists undertook work on military equipment and weapons.

Post-Civil War Activity

In the half century following the Civil War, there was a steady growth in the Government's scientific effort, characterized by the expansion of data-gathering services undertaken in the public interest, such as the work of the Coast & Geodetic Survey, the Weather Bureau, and the Census Bureau. In addition a number of new scientific activities appeared which were designed to provide agencies with the data and materials needed in carrying out their responsibilities, such as the experimental work of the medical and signal activities of the Army and the analysis and testing work of the bureau of chemistry in the Department of Agriculture and at the National Bureau of Standards. The National Academy of Sciences was frequently called on to advise on the scientific problems faced by various departments.

Immediately before World War I, the establishment of the National Advisory Committee for Aeronautics (NACA) marked the beginning of a research program that was destined to pave the way for the development of new commercial and military aircraft in the years to come.

World Wars I and II

During World War I a new quasi-governmental organization, the National Research Council, was established by the National Academy of Sciences with the cooperation of national scientific and technical societies to make the nation's scientific resources more fully available to the Government.

In the period between the first and second World Wars, the Government's scientific activities expanded at an accelerated pace. Various Institutes of Health were created as part of the Public Health Service, and the federal medical research program grew rapidly. The War and Navy departments built a number of important new research installations. The social sciences began to play a role in the departments of Commerce, Labor, and Agriculture, and statistical and data collection activities and services were considerably expanded.

In World War II, several new organizational arrangements carried out the great bulk of all military research and development. These were principally the Office of Scientific Research and Development (OSRD) and its two major constituents, the National Defense Research Committee (NRDC) and the Committee on Medical Research; and the Manhattan Engineering District of the War Department's Corps of Engineers, which took over the research and development program on nuclear fission begun by NDRC. Each of these entities relied heavily upon contractual arrangements, primarily with university-based organizations, for the actual conduct of the wartime research and development projects which applied the scientific discoveries of recent years to military use. Military research and development in aeronautics was handled by an expanded National Advisory Committee for Aeronautics. This agency, whose former chairman, Vannevar Bush, became head of OSRD, provided a model for many aspects of the organization and operation of OSRD.

1945 to 1947

The termination of World War II was a critical occasion for the Federal Government's scientific activities. Popular understanding and acceptance of science stood at an all-time high, and scientists, as a result of their wartime accomplishments, enjoyed an unprecedented prestige. However, two important problems had to be faced.

Many of the civilian scientists in the Office of Scientific Research and Development were anxious to return to their peacetime pursuits, and the office began disbanding in 1945. The national security, nevertheless, required the continuance of some of the OSRD's major projects into the postwar period. Consequently, the military departments faced the problem of preserving the facilities, and at least a core of the personnel, engaged in these projects.

The status of basic research in the nation posed the other problem. It was widely recognized that wartime weapon developments had drawn heavily on the basic knowledge produced by the research of earlier years. European science, which had contributed much of our basic knowledge in the past, had suffered severely during the war. The Government's obligation to expand greatly its support of basic research was stressed in statements by key officials of the executive branch, and by scientists, businessmen, and others in congressional hearings.

The first problem was met in the postwar period by the transfer of a number of OSRD projects to the military department. For instance, the Air Force integrated personnel and equipment of the radiation laboratory at the Massachusetts Institute of Technology into its Cambridge Research Center.

Achievement of an adequate level of support for basic research proved to be a more difficult problem. In 1945 Vannevar Bush, the wartime director of the OSRD, submitted a report at the request of President Franklin D. Roosevelt on the steps needed to continue the nation's scientific advance. In his widely publicized report, *Science—The Endless Frontier,* Bush proposed the establishment of a National Research Foundation to support research and education in the sciences and dissemination of scientific information.

The principal federal support for basic research in the years immediately following the war came from the Navy Department, which set up the Office of Research and Inventions in 1945. In 1946, by act of Congress, this became the Office of Naval Research which supports basic research in the many scientific fields of interest to the Navy.

Another major source of support for such research was the National Institutes of Health. From the Atomic Energy Commission, an agency also established in 1946, came other funds for the support of basic research. In 1947, President Truman, recognizing the need for a full examination of the nation's scientific research effort, established an *ad hoc* body, the President's Scientific Research Board, under the chairmanship of his adviser, John R. Steelman.

Archeology in the Upper Nile

When the Aswan dam in Egypt is completed—and the Soviet Union has promised the United Arab Republic that it will help finance the project—a storage basin more than 300 miles long will engulf the temples and burial grounds of the early rulers of Nubia dating back to 4000 years before Christ. Six thousand years of recorded history of the life of man along the upper Nile in Egypt and the Sudan will be deep under water in 4 or 5 years.

To save as much as possible of the record, the Department of Antiquities of the Egyptian Government this spring asked all governments and acheological groups that had shown an interest in Egypt to concentrate their efforts for the next few years in the upper Nile Valley. The response has not been very encouraging, for there have been only five affirmative replies. These came from the United States, Italy, West Germany, Poland, and the Soviet Union. The American response came from Brown University. Brown is sending an expedition, under Ricardo Caminos, to take