

THE YEAR IN REVIEW

Publication of this report marks the end of the second year of operations of the National Science Foundation.

At the end of these 2 years the Foundation has made progress toward the fulfillment of its statutory responsibilities to the Nation and to science. In part these responsibilities are of an operational nature—supporting basic research in the sciences, encouraging young scientific talent through award of graduate fellowships, improving science teaching, broadening the flow of scientific information. In these cases the Foundation has had to devise suitable and effective operating techniques.

The second broad area of responsibility lies in the field of policy development. Here the goals are long range and must wait upon the gathering and analysis of facts—facts about the quantity and quality of present day scientific research, about the availability of and shortages in the supply of trained scientists and engineers, and about the many and complex ways in which science affects the national welfare. Once the basic information is in hand, the Foundation must develop methods for bringing informed opinion to bear on its analysis. Again definite progress can be reported in both the fact-gathering and analytical phases of policy development.

POLICY DEVELOPMENT

During the past year, the Foundation has started the first of a continuing series of fact-gathering studies under a newly established Program Analysis Office. Statistical information is being compiled on Federal obligations for research and development at nonprofit institutions. Other studies will be concerned with the organization of Federal agencies for research administration and with their budgets for research and development, the content of their research programs and the impact of Federal support of research upon industrial development and upon colleges and universities in the United States.

For certain types of information about the present state of science other study techniques are called for. In fiscal 1952 the American Physiological Society with Foundation support has begun to investigate

the content and scope of the physiological sciences, the role of physiology in the realm of education, the professional personnel in the field, the scientific contribution which may be expected of physiology over the next few years and present plans to achieve it. Similar studies are planned in the fields of psychology and applied mathematics.

SHORT RANGE STUDIES

During the year the Foundation has undertaken a number of short-range studies on scientific topics having immediate urgency from the standpoint of national defense, the national welfare, or scientific promise. Here the aim is to determine the extent and kind of Federal research support and the outline of basic research needed to make the most progress in the shortest possible time. For example, attention has been focused upon ascertaining the status, the need and the potentialities of basic research in high temperature physics, chemistry, and metallurgy, a field critically related to jet engines, rockets, and guided missiles. A study is under way on the utilization of solar energy from the point of view of both the biological and the physical sciences.

The Foundation is making a full inventory of existing scientific and technical knowledge and research on techniques and instruments for the exploration for minerals. This is being done in cooperation with the National Security Resources Board in implementing the recommendation of the President's Materials Policy Commission.

RESEARCH GRANTS, FELLOWSHIPS AND SCIENTIFIC MANPOWER

In the past 12 months good progress has been made in filling out the scientific staff of the Foundation. Working procedures for review, evaluation and selection of high quality research projects were developed and the research support program in the biological, medical, mathematical, physical and engineering sciences became a fact. The first National Science Foundation graduate fellowships were awarded under a procedure by which young Americans with scientific talent are encouraged to undertake or continue careers in scientific research. A broad program to encourage and facilitate dissemination of scientific information was begun. Initial steps were taken toward the development of a program for research education in the sciences aimed primarily at raising the level of science training for teaching and research.

During the year a careful review and study of the scientific manpower clearinghouse function of the Foundation was undertaken. Plans were made to utilize the personnel records and other facilities of the profes-

sional societies in making continuing statistical analyses of the number and location of scientific and technical personnel in the United States.

ORGANIZATIONAL CHANGES

During fiscal year 1952, eight members of the National Science Board were reappointed by the President for 6-year terms, ending May 10, 1958. Chester I. Barnard, formerly President of the Rockefeller Foundation, was elected chairman of the board to succeed James B. Conant. Lists of members of the board, members of divisional committees and program panels, and principal members of the director's staff are given in Appendix 1, p. 36.

The following sections of this report will describe in detail the major programs of the Foundation, the progress that has been made during the current year and the major plans and policies that have been developed in connection with them. These will be discussed under the headings, Development of National Science Policy, Scientific Research Support, Scientific Manpower and Education, and Dissemination of Scientific Information. Supporting statistical and documentary material is provided in the Appendices.