the 'essential native humus' which guaranteed more than a precarious foothold. Though 'deeply engraved on his memory' was the bursting springtime of his boyhood home, he came to appreciate no less the beauties of a slower year's awakening. So it is suitable to leave him—engrossed in the study of the tiny Mayflower and vigorously championing its right to survive.

A HISTORY OF THE NATIONAL RESEARCH COUNCIL 1919--1933

V. DIVISION OF GEOLOGY AND GEOGRAPHY[1]

By Professor W. H. TWENHOFEL
CHAIRMAN

THE Division of Geology and Geography was organized in 1918 for the purpose of assisting in the prosecution of the war and was reorganized in 1919 to serve the interests of the sciences in time of peace. The membership of the division at first was placed at twenty-six and later twenty-seven, of which nine members were to be elected at large, one as the representative of the Division of Federal Relations of the National Research Council, and the others chosen by the national societies of geology and geography. Experience soon demonstrated that a large membership was too expensive for the work of the division and also too large for efficient work, and in 1928 steps were taken to reduce the membership gradually to nineteen, which was completely effected by 1932. Since this reduction it has seemed that still greater efficiency and less expense would be attained by further reduction, and this view coincided with the recommendations of the Committee on Policies of the National Research Council, which urged that the executive members of the divisions be reduced to a number not greater than twelve. This reduction in membership is now in process and it is planned, beginning July 1, 1933, to have three members-at-large and nine members chosen by the national societies. It is felt that this reduction will permit centering more responsibility upon the members of the division and thus, in turn, lead to greater interest on the part of the membership.

The division does its work very largely through committees, but there is also much work done through personal contacts of the officers and members of the division with other geologists and geographers. The committees are concerned with a wide range of objectives. The number has varied through the years and at the present time there are twenty-four, the membership of a committee ranging from four to twenty. The motive prompting the appointment of a committee is one of hope of development of a neglected or backward branch of geology or geography through having a group of students interest itself with the branch of geology or geography concerned. In this way advance to a notable degree has been made in several fields of geology and geography, among which are: batholithic problems, studies of the clay minerals, isostasy, measurement of geologic time, micropaleontology, oceanography, paleobotany, petroleum geology, processes of ore deposition, sedimentation, shore-line investigations and tectonic geology. Two recently appointed committees are those on stratigraphy and the accessory minerals of crystalline rocks, and it is confidently expected that substantial advances will be made in those fields. At the present time over 200 geologists and geographers are centering attention on the work of the twenty-four committees, and great credit is due to the chairmen and members who give time and energy to the work of the division.

The roster of chairmen since the organization of the division is as follows:

1918 —John C. Merriam
1919–1922—E. B. Mathews
1922–1923—Nevin M. Fenneman
1923–1924—Andrew C. Lawson
1924–1927—David White
1927–1928—Waldemar Lindren
1928–1931—Arthur Keith
1931–1933—W. H. Twenhofel

The extent of the advance in the work of a committee rests on several factors, among which are, first and most important, the initiative, leadership and industry of the chairman, and, second, the nature of the problem. A committee is discontinued when its work has been concluded through solution of the problems upon which its attention was centered or through development of interest on the part of another organization prepared to assume responsibility for continuation of the work. The division does not attempt duplication of work, and when it is found that a competent organization is prepared to assume responsibility for further development of a project the division willingly retires from the field.

[1] This is the fifth of a series of ten articles prepared to describe briefly the nature of the activities with which the National Research Council has been engaged during the past fourteen years.

Some years ago the division found that not a great deal was being done in oceanography and a committee was appointed in 1922 to develop this field. This committee studied the problems for a decade and through excellent annual reports of progress stimulated interest in oceanographic problems. Ultimately the work carried on by the committee was undertaken by other organizations that had entered this field both in the United States and abroad, and in June, 1932, the committee brought its activities to an end. A committee on state geological surveys was appointed in 1928 and was discontinued in June, 1932, on the completion of a résumé of the activities since 1910 of the state and federal surveys. A committee to assist in the study of pioneer belts was appointed in 1925 and discontinued in 1928, at which time support for the project was assumed by other organizations and the work has continued under their auspices.

The work of the division may be classified as that of research, education and organization, and its various committees direct attention to one or more of these activities. Some committees, as those on measurement of geological time, clay minerals, tectonics and micropaleontology, are concerned almost entirely with research. Others, as the committees on sedimentation and paleobotany, are concerned with research pertaining to sediments or paleobotany and to education in these fields. The work of the committee on the state geological surveys may be considered essentially educational, and the work of the committees on bibliography of economic geology, conservation of the scientific results of drilling, field data of earthquakes, and the International Geographical Union as that of organization.

The research work of the division has resulted in the publication of several bibliographies, of numerous reports which appear in whole or in part in the annual reports of the division, of bulletins published by the National Research Council, of articles published in geological or geographical journals, and of books published by commercial concerns. Research work carried out on grants made by or through the division is usually published in various scientific journals, and in some instances in the publications of a geological survey.

In addition to the work of committees, the division has assisted in the preparation of bibliographies, in the compilation of maps, in surveys of the fields of work of geology and geography, in cooperative work with other research organizations, and it has served as a liaison body between the scientists of the United States and some of the international geographical and geological congresses.

The division has no direct funds of its own other than an annual allotment from the Research Council to take care of its administrative expenses. Some of the committees, as those on measurement of geologic time, studies in petroleum geology, and sedimentation, through their own efforts have acquired funds for aiding research in the fields concerned. These funds have been derived from various sources and from them, from time to time, small grants have been made to individual workers to assist in the solution of particular problems.

The division participates in the allocation of the funds administered by the Committee on Grants-in-Aid of the National Research Council, the committee being composed of the chairman of the Council and the chairmen of the seven technologic divisions. To date sixty grants for geologic and geographic projects, totalling $36,913.50, have been made to fifty-one individuals by this committee. Through these grants three seismographs have been erected in three different places in the United States, aid has been given to paleontologic and stratigraphic studies over many parts of the country, ranging from the Atlantic to the Pacific and from Canada to the Gulf, and aid for studies in these fields has been extended to include territory in several foreign countries. Mineralogy and petrography have received aid for both field and laboratory studies, and work in geography has been made possible in the United States, Greenland, Mexico, Brazil, Japan, and elsewhere. Applications for grants have been numerous and many have been denied because of insufficient funds, or because the projects presented were of such a nature that they did not come within the bounds of the policies under which the grants-in-aid are administered. It is felt that the two fields of learning represented by the Division of Geology and Geography have been greatly benefited through support derived from these funds, and the records of results are extremely creditable.

For the past three years the division has had the administration of from four to six pre-doctorate fellowships, known as the Storrow fellowships, a fund of $5,000 having been given annually to the division for this purpose. These are granted to students of geology and geography, and the allotment per student per annum has been from $800 to $1,000. For the fellowships given for the year 1932–1933 there were sixty-five applicants, or thirteen applicants for each one chosen, thus clearly showing the needs for fellowship support for geology and geography. The fellows study in any institution approved by the fellowship committee of the division. The division is greatly in need of post-doctorate fellowships in order that students of marked ability in research need not be compelled to accept minor commercial or educational positions to have an income necessary for subsistence.

With several well-supported post-doctorate fellowships the most gifted of the younger geologists or geographers of the country could be retained for one or more years in study and research before settling down to some permanent position. It is believed that in this way very great advance could be made.

During the period 1926–1931 the division, together with the Divisions of Physics and Chemistry, cooperated through the Central Petroleum Committee of the Research Council with the American Petroleum Institute in organizing the work and selecting the personnel for the projects financed by the institute under its five-year program of fundamental research in petroleum. Descriptions of these projects and lists of papers which resulted from these studies have been published in the bulletins of the institute.

One of the bibliographic projects now in progress under the auspices of the division is that of the "Annotated Bibliography of Economic Geology." Sufficient funds were raised by the committee to cover the editorial expenses for a period of about seven years, after which it is hoped that the bibliography will have sufficiently demonstrated its usefulness to enlist further financial support.

As noted in a previous paragraph, records of the work of the division are given in numerous publications. In the annual report of the division for 1931–1932, a history is given which includes an annotated list of some 64 projects undertaken by the division since its permanent organization in 1919. In this history are given details and results of the work of the division not possible of presentation in this short paper. These are tangible results that are possible of measurement. In addition there are the intangible results which are difficult of discovery and equally difficult of evaluation. The several division chairmen, the many different members of the division and the personnel of the committees have stimulated research as they have been brought in contact with their colleagues through membership in the National Research Council or its committees, and they themselves in turn have been stimulated by such contacts. To those familiar with the results of the work accomplished, the record seems an enviable one.

The future of the division is of course unknown, but everything seems favorable for continued development along the paths it has already opened. In the early days there was no doubt much uncertainty as to what the division might do, but, measured by its past record, it has more than justified its founding, and, basing itself on its accomplishments, it may look confidently to the future. As in the past there will be required devoted and loyal workers. The division in part can provide for these in the election of members-at-large and the selection of its committee chairmen, but for the greater part of the membership it must rely upon the societies by which these members are chosen.

SCIENTIFIC EVENTS

ESTABLISHMENT OF THE OFFICE OF NATIONAL PARKS, BUILDINGS AND RESERVATIONS

THE reorganization order of President Roosevelt, establishing the Office of National Parks, Buildings and Reservations, will take effect sixty days from June 10, the date of issue. It is as follows:

All functions of administration of public buildings, reservations, national parks, national monuments and national cemeteries are consolidated in an office of national parks, buildings and reservations in the Department of the Interior, at the head of which shall be a director of national parks, buildings and reservations; except that where deemed desirable there may be excluded from this provision any public building or reservation which is chiefly employed as a facility in the work of a particular agency. This transfer and consolidation of functions shall include, among others, those of the National Park Service of the Department of the Interior, and the national cemeteries and parks of the War Department which are located within the continental limits of the United States. National cemeteries located in foreign countries shall be transferred to the Department of State, and those located in insular possessions under the jurisdiction of the War Department shall be administered by the Bureau of Insular Affairs of the War Department.

The functions of the following agencies are transferred to the office of national parks, buildings and reservations of the Department of the Interior and the agencies are abolished:

The Arlington Memorial Bridge Commission, the Public Buildings Commission, the Public Buildings and Public Parks of the National Capital, the National Memorial Commission and the Rock Creek and Potomac Parkway Commission.

Expenditures by the Federal Government for the purposes of the Commission of Fine Arts, the George Rogers Clark Sesquicentennial Commission and the Rushmore Commission shall be administered by the Department of the Interior.

THE BRITISH ACADEMIC ASSISTANCE COUNCIL

THE formation of the Academic Assistance Council, with Lord Rutherford as president, has been reported in SCIENCE. The official announcement of its objects, issued from the rooms of the Royal Society at Burlington House, London, is as follows: