It is expected that the first meeting of the council will be held in September.

It has already been stated that cordial desire to cooperate has been encountered on every hand. Special reference may now be made to certain striking cases. The first of these illustrates how the council, taking advantage of the increased appreciation of the value of science and the spirit of national service which have resulted from the war, may obtain the cooperation of educational institutions and assist them in adding to their endowments for scientific research. Throop College of Technology, in Pasadena, California, is a small institution of high standards which gives special attention to research. President Scherer, hearing of the plans of the research council, offered the assistance and cooperation of the recently endowed research laboratory of chemistry and secured at once an additional endowment of one hundred thousand dollars for scientific research. Under somewhat similar circumstances, a gift of $500,000 has been made to the endowment of the Massachusetts Institute of Technology, with the expectation that much of the income will be used for research at that institution.

Another illustration of friendly cooperation, of special importance because it assures the support of the national engineering societies, is afforded by the following resolution of the Engineering Foundation of New York, adopted at the annual meeting of the foundation, on June 21, 1916:

WHEREAS, the National Academy of Sciences of the United States of America has taken the initiative in bringing into cooperation existing governmental, educational, industrial and other research organizations with the object of encouraging the investigation of natural phenomena, the application of scientific principles in American industries, the employment of science in the national defense, and such other objects as will promote the national welfare, and

WHEREAS, these objects are among the objects for which The Engineering Foundation was created,

Now, Therefore, be it Resolved, that The Engineering Foundation hereby registers its approval of the coordination and federation of the research agencies of the country undertaken by the National Academy of Sciences and expresses its willingness to join with and assist the National Academy in accomplishing the above federation.

The foundation also offered to devote its entire income for the coming year (including a special gift of $5,000 for this purpose from its founder, Mr. Ambrose Swasey) toward the expenses of organization, and to provide a New York office for the council in the Engineers Building.

The presidents of the American Philosophical Society, of the American Association of University Professors, and of Yale University have already expressed their intention of proposing the adoption of similar resolutions by the institutions which they represent and of recommending the appointment of committees to cooperate with the National Research Council; and it is expected that other societies and educational institutions will take similar action.

Respectfully submitted by the organizing committee.

GEORGE E. HALE (*chairman*),
EDWIN G. CONKLIN,
SIMON FLEXNER,
ROBERT A. MILLIKAN,
ARTHUR A. NOYES

GEORGE E. HALE

A BRITISH BOARD OF SCIENCE AND INDUSTRY[1]

WE have received for publication from the British Science Guild the following memorandum on the relations which should exist in future between the state and science, and suggesting that a national statutory board of science and industry should be formed. The memorandum, which has been forwarded to the government, is signed by some 220 of the most important representatives of industry, science and education:

The British Science Guild, which was founded in 1905 with the object of bringing home to all classes "the necessity of applying the methods of science to all branches of human endeavor, and thus to further the progress and increase the welfare of the empire,"

[1] From *Nature.*

is of opinion that the present European crisis affords a unique opportunity for impressing upon all who are engaged in the executive functions of government, as well as upon those who are concerned with industry and commerce, the paramount importance of scientific method and research in national affairs.

There has been much discussion upon these matters, and the following conclusions are submitted by the Guild as representing authoritative opinion:

A. The material prosperity of the civilized world during the past century is mainly due to the application of science to practical ends.

B. While we stand high among all nations in capacity for original research, as represented by the output of our scientific workers, this capacity has been comparatively little utilized in British industry.

C. The state has neglected to encourage and facilitate scientific investigation, or to promote that cooperation between science and industry which is essential to national development.

D. Modern conditions of existence demand that instruction in science, and training in scientific method, should be a fundamental part of education.

E. The present control of all stages of educational work, from the primary school to the university, mostly by men who have an inadequate appreciation of the meaning and power of science, is largely responsible for the unsatisfactory preparation commonly provided for the work of life.

Since its foundation the British Science Guild has urged that, in the interests of national welfare, serious attention should be given to these defects, and steps taken to remedy them. The establishment of the scheme for the development of scientific and industrial research, under a committee of the Privy Council, is a welcome recognition of the intimate relations between scientific investigation and industrial advance; and the advisory council which advises the committee as to the expenditure of the sums provided by Parliament, amounting for the year 1916–17 to £40,000, has already been responsible for the institution of researches which should lead to most valuable industrial results. The outlook of the council may, however, be extended profitably in several directions; for it should be even more comprehensive than that of the development commission, which provides for the development of rural industries, among other matters. This commission, with the Board of Agriculture and Fisheries, and the Imperial Institute, which has recently been transferred from the Board of Trade to the Colonial Office, is not concerned directly with manufacturing industries, upon which so large a part of the nation's prosperity depends.

The field of the Privy Council committee and its advisory council is thus distinct from that of any existing state department; and it should embrace all progressive industry and science. It is suggested that a board or ministry is necessary to discharge the functions indicated in Clause I. of the recommendations subjoined, in such a way as to fulfil modern requirements.

I. A national statutory board of science and industry, the permanent staff of which should consist mainly of persons of wide scientific knowledge and business experience, should be established to:

1. Promote the coordination of industrial effort.

2. Secure cooperation between manufacturers and all available laboratories of research.

3. Coordinate, and be the executive center of such joint scientific committees as have been formed by the Royal Society, the Chemical Society and various trade and educational associations.

4. Undertake inquiries as to products and materials, and generally to serve as a national bureau of scientific and industrial intelligence.

5. Collect and publish information of a scientific and technical character; and provide so far as possible for the solution of important problems bearing upon industry.

6. Institute a number of paid advisory committees consisting of men of wide scientific knowledge assisted by expert investigators and technologists who should receive reasonable fees for their services.

7. Organize scientific effort on the manufacturing side and in commercial relations with other countries.

8. Arrange measures for the mobilization of the scientific, industrial and educational activities of the nation so as to ensure ready response to national needs and emergencies.

9. Encourage investigation, and, where necessary, give financial aid towards the synthesis and artificial production of natural products and for other researches.

Such a board would naturally administer the scheme of the Privy Council committee, as well as take over certain functions of existing departments and boards.

The functions of the board would be much the same as regards the promotion of scientific and industrial research and training, the cooperation of universities with industries through trade associations, and the maintenance of a record of scientific and technical experts, as outlined in the report on "British Trade after the War," by a subcommittee of the Board of Trade.

II. In all departments of state in which scientific work is carried on, adequate provision should be made for the periodical publication and wide distribution of bulletins, leaflets and reports, so that increased public interest and attention may be encouraged in the results.

III. Every industrial undertaking, subsidized or otherwise assisted by the state, should have upon its board of directors men who possess expert scientific knowledge of the business in which they are engaged.

IV. In order to develop industries which especially require the services of scientific workers, adequate remuneration and improved prospects should be offered by the government, by municipal corporations, and by manufacturers to men who have received an effective scientific training. Means should be found of compensating and rewarding persons whose researches have proved of decided national or public advantage without being profitable to themselves.

V. A knowledge of science should be regarded as an essential qualification for future appointments in the departments of the public service concerned with industrial, scientific and technical developments. The Royal Commission on the Civil Service recommended in 1914 that a committee should be appointed to consider the present syllabus of subjects of examination for clerkships (Class I.). This committee should be constituted without delay, and science as well as other branches of modern learning should be adequately represented upon it, and upon the Civil Service Commission itself.

VI. Measures should be taken to revise the educational courses now followed in the public schools and the universities of Oxford and Cambridge.

VII. In elementary and secondary schools supervised by the Board of Education, more attention should be given to scientific method, observation and experiment, and to educational handwork.

NEW YORK MEETING OF THE AMERICAN CHEMICAL SOCIETY

Official announcement of the meeting of the American Chemical Society, to be held in New York September 25 to 30, in conjunction with the Second National Exposition of Chemical Industries, was issued to the members by Dr. Charles L. Parsons, secretary, on August 15. Dr. Charles H. Herty, of the University of North Carolina, president of the American Chemical Society, will open the exposition on Monday, September 25, at 2 o'clock in the afternoon, with an address reviewing the history of chemistry and the chemical industries in this country, and outlining developments since the outbreak of war in Europe. The presidents of cooperating societies, such as the American Electrochemical Society, the American Institute of Mining Engineers, and the American Paper and Pulp Association, will follow Dr. Herty with speeches of welcome and reviewing the progress made in the industries represented by them.

The first general session of the American Chemical Society will open at Columbia University on Tuesday morning, September 26, and arrangements are being perfected for a public meeting in the large hall of the College of the City of New York on Tuesday afternoon, when addresses will be made of general public interest pertaining to the interesting developments in the field of applied chemistry during recent years.

The program of the week's meetings will provide for general conferences on subjects in which the chemists of the country are now interested, and it is intended that the lecture hall of the Grand Central Palace and Rumford Hall in the Chemists' Club building will be occupied each afternoon at the same time by one or other of the different divisions of the society for the discussion of such industrial topics as the production of dyestuffs, medicinal chemicals, industrial alcohol, the manufacture