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PENDING LEGISLATION FOR FEDERAL AID TO SCIENCE

ON November 14, 1945, a number of persons met at the call of President Isaiah Bowman, of the Johns Hopkins University, to discuss pending legislation for federal aid to science, particularly as represented in the two bills proposed respectively by Senator Magnuson (S. 1285) and Senator Kilgore (S. 1297). Both bills propose a national research or science foundation for federal aid to science, but the two bills start from wholly different premises with respect to the purpose of such a foundation and therefore they present widely divergent points of view and completely different organizations. Senator Magnuson's bill is based upon Dr. Vannevar Bush's report to President Truman, entitled "Science, the Endless Frontier."

Those present at the above meeting moved to bring into existence a *Committee Supporting the Bush Report,* one purpose of this committee being to restate the fundamental principles emphasized in Dr. Bush's report, since it is believed that observance of these principles is of paramount importance to the whole future of scientific research. It has seemed appropriate to make this statement in an open letter signed by members of the committee and addressed to President Truman. A copy of this letter follows:

The President of the United States,
The White House,
Washington, D. C.

DEAR MR. PRESIDENT:

We, the undersigned members of the newly organized Committee Supporting the Bush Report, respectfully address you on the subject of pending science legislation, as follows:

Subsequent to the publication of the Bush Report, "Science, the Endless Frontier" (July 19), you stated to the Congress that you were in favor of federal support for scientific research, fellowships and scholarships. Bills designed to provide such support have been introduced by Senators Kilgore and Magnuson. Most of the scientists called to testify at hearings on these bills stated that they were in favor of the form of organization and other features provided in the Magnuson Bill. We understand that in your name certain government

officials have recently disapproved the plan favored by the scientists.

For the reasons stated in the Bush Report, we are in favor of federal support for scientific research and education. We are in favor of the Magnuson Bill, which was designed to implement the plan outlined by Dr. Bush and approved by his advisory committees. We are opposed to the Kilgore Bill.

We take this means of bringing our views to your attention, of stating the principles on which we think sound legislation must be established, and of bespeaking your further, favorable consideration of the Bush-Magnuson plan which the scientists desire and will support.

1. Our experience leads us to believe that responsibility for the program should be placed in the hands of a national science or research board composed of laymen and scientists appointed by the President without reference to political affiliation and solely on the basis of interest in and capacity to promote scientific research and education. Nothing should preclude the President from appointing any qualified person, scientist or layman, but in making appointments it would be desirable to seek the advice of scientists and scientific organizations. Ordinarily board members should be persons having no other official connection with government. The board should be made up of persons who would regard appointment as an opportunity to perform a national service of the highest importance and in whom the scientists called on to give professional and other assistance would have confidence. These principles are fully recognized in the Magnuson Bill.

2. In our opinion it would be most unwise to subordinate the board to a single director appointed by the President, as is done in the Kilgore Bill. No single person, however eminent or competent, could, except in a great emergency, command the confidence and support of all branches of science and of the many organizations and agencies, private and public, whose cooperation will be required. This is an adventure in government for which there is no peacetime precedent; there will be risks and difficulties and responsibilities far beyond the capacity of any individual. A subordinated board—a board without ultimate responsibility—would be, or would tend to become, a weak board, especially if it consists in part of *ex-officio* members, that is, members employed by, and therefore responsible to, other agencies of government. We favor a responsible board as provided in the Magnuson Bill.

3. The board should be responsible for the appointment and supervision of the chief administrative officer, who should look after internal affairs, as provided in the Magnuson Bill. The administrator should not be in a position to dictate or interfere with the activities either of the board itself or of the professional committees appointed by the board; he should be the agent—not the master—of the board.

4. We are strongly in favor of the distribution of professional responsibility among divisions or committees made up of professional scientists selected by a responsible board on recommendation of the National Academy of Sciences and other qualified organizations, as specified in the Magnuson Bill.

5. There should be no mandatory provision for *ex-officio* members. The board itself and the professional committees should establish and maintain close and effective relations with all scientific agencies within the government; representatives of other government scientific agencies should be encouraged, and perhaps required, to consult and advise, but should not be empowered to vote. *Ex-officio* professional committees, like an *ex-officio* board, would not be designed to formulate and carry out a well-considered, imaginative program; they would tend to encourage or permit the promotion of special interests and log-rolling. The Magnuson Bill is designed to avoid these evils.

6. While the board should know about and influence the scientific programs of the Army, Navy and other departments, we think that it should not undertake to control or coordinate all government scientific activities to the extent and in the manner required by the Kilgore Bill. Indeed, we think that—given high standards and sound practice in scientific education and research—proliferation of interests and activity, together with a high degree of institutional and individual freedom and responsibility, is desirable.

7. The legislation should not attempt to settle the government's patent policy. The subject of patent reform, formerly assigned to the National Patent Planning Commission, has now been placed by you in the hands of a committee headed by the Secretary of Commerce. We think that for the present it should be left in those hands—that partial solution of this important, complex problem should not be anticipated, as attempted by the Kilgore Bill, in legislation providing for a national research or science foundation.

8. In your recent message you stated that the social sciences, as well as the basic sciences, should receive support from the proposed national science or research foundation. With all respect, we think it would be a serious mistake to include the social sciences (sociology, political science, economics, law, etc.) at this time. In saying this we do not wish to be understood as suggesting that no such provision should be made for social studies. Rather we wish to emphasize that we do not believe that the group which will administer grants for research, scholarships, and fellowships in the basic sciences would be the appropriate group to allocate funds to the social sciences, or that they will be in a position to interpret the will of the Congress as to the proportion of the funds to be used among the many social sciences. We believe that the social sciences should be taken care of by a separate body. The Bush Report was based upon factual studies showing the need and outlining a program for federal support in the basic sciences; there are no comparable data and programs for the social sciences. Looking only at the scholarship and fellowship program, it is believed that the board proposed in the Bush Report and provided for in the Magnuson Bill could do an excellent job in the selection and support of scientific students; it would be faced with a very different sort of task—a task for which it would not be qualified—if it were required to make simi-

lar provision for students of sociology, political science, economics, law, etc. Our reasons for excluding the social sciences from this legislation apply with even greater force to the type of administration required by the Kilgore Bill.

To summarize: We are in favor of a responsible board composed of laymen and scientists appointed by the President on the basis of interest and capacity, with a full time administrator appointed by and responsible to the board. We are opposed to mandatory provision for *ex-officio* members either of the board or of the professional divisions. The board should not be empowered to control or coordinate other government scientific agencies, although effective liaison should be established and maintained. This legislation should contain no provision respecting patents or the social sciences.

In conclusion, Mr. President, the great majority of American scientists are in favor of federal aid to scientific research and education, and we are confident that, if legislation based on the principles stated above be enacted, the program sponsored by Dr. Bush and the many scientists and others associated with him can be made a great success. We hope that on further consideration you will support the Bush Report and the Magnuson Bill.

Respectfully yours,

NOVEMBER 24, 1945

ISAIAH BOWMAN, *Chairman of the Committee; President, The Johns Hopkins University*

ROGER ADAMS, *Professor of Organic Chemistry, University of Illinois*

CARL D. ANDERSON, *Nobel Laureate; Professor of Physics, California Institute of Technology*

BORIS A. BAKHMETEFF, *Professor of Civil Engineering, Columbia University; Chairman, Engineering Panel appointed by the Engineers Joint Council*

G. W. BEADLE, *Professor of Biology, Stanford University*

D. W. BRONK, *Director, Johnson Research Foundation*

GEORGE GRANGER BROWN, *Past-President, American Institute of Chemical Engineers*

R. E. BUCHANAN, *Professor of Bacteriology, Iowa State College; Director, Iowa State Experimental Station*

WILLIAM B. CASTLE, *Professor of Medicine, Harvard University*

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J. J. WARING, *Professor of Medicine, University of Colorado School of Medicine*

WARREN WEAVER, *Director, The Natural Sciences, Rockefeller Foundation*
BETHUEL M. WEBSTER, *Webster and Garside, New York*
LEWIS H. WEED, *Director of the School of Medicine, The Johns Hopkins University; Chairman, Division of Medical Sciences, National Research Council*
F. C. WHITMORE, *Past-President, American Chemical Society*
ROBERT E. WILSON, *Chairman of Board, Standard Oil Company of Indiana*

On behalf of the combined executive committees of the Union of American Biological Societies, comprising 38 national societies, and of the American Biological Society, dealing with cooperative functions of biologists; we heartily endorse the viewpoint, expressed by the Committee called by President Bowman, as supporting the Bush Report of which the principles are being incorporated in an impending bill, sponsored by Senator Magnuson.

In the formation of the National Science or Research Foundation, the three main proposals are: first, that the responsibility be in the hands of a board composed of laymen and scientists to be appointed by President Truman solely on the basis of interest in promoting scientific research and education; second, that no *ex-officio* members from other Government agencies serve as active members on the board, and third, that the board be responsible for the appointment of the chief administrative officer of the foundation.

As biologists we are also keenly interested in having realized the contemplated plans to include the biological sciences in a division of basic science separate from medical research and public welfare.

ROBERT CHAMBERS, *President, Union of American Biological Societies*
J. S. NICHOLAS, *President, American Biological Society*

NOVEMBER 24, 1945

ORGANIZATION AND SUPPORT OF SCIENCE IN THE UNITED STATES[1]

By Dr. L. C. DUNN

PROFESSOR OF ZOOLOGY, FACULTY OF PURE SCIENCE, COLUMBIA UNIVERSITY; CHAIRMAN, AMERICAN-SOVIET SCIENCE SOCIETY, NATIONAL COUNCIL OF AMERICAN SOVIET FRIENDSHIP

THE war and the sudden need to improve means for supporting and directing war research have brought into high relief an important fact which has been dimly recognized for many years: there has been in the United States no orderly means for the continuous support of fundamental scientific research, and no policy or method for the deliberate utilization of science by our society. Science has been a hardy plant which grew where and how it could, thriving in the comfortable greenhouse of a research institute, or turning ample fertilizer into real fruit in an industrial laboratory, or in the more usual case struggling for sustenance in the thin soil of colleges and universities, occasionally enriched by temporary growth stimulants from a foundation or private donor. Except in the case of certain industrial developments and in a few government departments, the support of science in the United States has not been the result of decision but of chance, operating in a milieu which contained good scientists and a good deal of fluid wealth.

The most blunt and truthful statement we can make about the reason for the lack of continuity and of public policy regarding science is that, as Americans, we did not want either continuous support or direction or planned application of science. The detailed causes of this attitude trace in part to reasoned premises and in part to prejudice; and from these there has resulted a confusion of thought which the war has now revealed.

The contradictions come out most clearly in the views of scientists concerning the support of science after the war. Most of them hope for release from the capricious and precarious methods by which fundamental research was chiefly supported before the war, namely, by periodic begging from donors, such as foundations who chose the researches to be supported. Scientists generally hope for a more orderly and stable means of support than this, yet most of them would not turn to the Federal Government as the source of more continuous support. They profess to fear infringements on their freedom more when support comes from their government than when it comes from private sources.

There is no sense in dodging or belittling the dilemma in which this places science. On the one hand, the war agencies which have guided and financed a large segment of scientific research propose to withdraw from this function. If they do, the public investment in scientific research will drop to

[1] An address given on May 3, 1945, before the chapter of the Society of Sigma Xi of the University of Rochester. This address will form one chapter in a forthcoming book "Currents in Biochemistry" Edited by Dr. David Greene, to be published by Interscience Publishers, Inc.