

F. A. S. NEWSLETTER

FEDERATION OF AMERICAN SCIENTISTS
May 3, 1950

1749 L Street, N.W., Washington 6, D.C.
A - 810

NATIONAL SCIENCE FOUNDATION -- REALIZATION !

The signature of the President, momentarily expected, is all that is needed for final enactment of the National Science Foundation Act of 1950. Appointments to the new National Science Board, it is believed, will follow shortly the signing of the bill. The Foundation which will thus come into existence after 4 years of bitter struggle is a far cry from the hopes of many scientists. Successive compromises have weakened the original conception. The suspicions and distrust of the Cold War are woven through it. Budgetary limitations severely restrict the scope of its operations. Yet enough of value probably remains to earn a welcome from most scientists and to justify the hope that the Foundation may yet grow to fully fill the needs which originally suggested it.

The final version of the bill was worked out in a House-Senate conference committee, and agreed to on April 27-28 by both houses. Scientists, and certainly the Federation, as well as the many interested non-scientific organizations, can feel some pride in viewing the conference committee's work. An aggressive attack on scientific freedom and democratic practices in general was defeated -- the Smith Amendment attached in the House, calling for FBI-clearance of all fellows and employees of the Foundation (See A-775). The protest of scientists was so vigorous that at least one Congressman resorted to mimeographed acknowledgments because his correspondence on this subject became so heavy. This, together with a telling protest from the Justice Department, restored sanity. Congressman Smith, himself, confessed on the floor of the House that his amendment "was hastily drawn" and accepted the conference committee's language as adequately covering what he had in mind. Another case of successful political action by scientists can be chalked up.

Basically, the version of the bill reported by the conference committee and passed, is the Priest bill of the present Congress (H.R. 4846). It is the lineal descendent of the Smith bill of the 80th Congress and the Magnuson bill of the 79th Congress. Authority is vested in a part-time board of 24 eminent scientists and men of affairs, who are appointed by the President with the consent of the Senate. The chief executive officer is the Director, also appointed by the President with the consent of the Senate. The President receives the recommendations of the Board before appointing the Director. The Director executes policies laid down by the Board, which must review and approve all fellowships, grants, and contractual arrangements. The Foundation is charged with responsibility "to develop and encourage the pursuit of a national policy for the promotion of basic research and education in the sciences." It is authorized to give assistance to basic research in the form of grants, contracts, and other arrangements; to institute a program of scholarships and fellowships in the sciences; to foster exchange of scientific information.

Unfortunately, the Foundation is also authorized and directed "at the request of the Secretary of Defense, to initiate and support specific scientific activities in connection with matters relating to the national defense." This provision is a source of serious concern to those who had hoped that the Foundation could be kept free of military research and the security measures it brings with it. Coupled with the authorization for funds to be transferred from the Department of Defense to the Foundation, this could open the door to domination of the Foundation by military considerations. Fortunately, the history of the legislation (committee reports and floor debate) contains clear statements that it is not the intent of Congress that the Foundation should be involved primarily or even considerably with military research. Mr. William Webster, new Chairman of the Research and Development Board of the Defense Department, himself testified to this in a letter addressed to the conference committee on April 24. Said Mr. Webster, "It is our understanding that the National

Science Foundation would deal principally with basic research and other matters of a non-classified nature and that the authorization for it to engage in applied research in connection with matters relating to the national defense is designed primarily to enable the Foundation to assist the military effort in a small number of cases or in the event of an emergency." Nevertheless, the language of the Act grants broad authority to the Secretary of Defense and clearly leaves to circumstances and the character of the personnel involved the determination of the extent to which the authority will be used.

With a wedge thus driven into the concept of a secrecy-free Foundation dedicated to fundamental research, Section 15 of the bill is devoted in entirety to security measures. Activity in the field of nuclear energy must have the concurrence of the Atomic Energy Commission, and is subject to the security procedures set down in the Atomic Energy Act of 1946. Research relating to the national defense, if supported by Defense Department funds, is subject to security regulations laid down by the Secretary of Defense. Such research supported by the Foundation's own funds is covered by regulations to be established by the Foundation. "Any agency of the government, exercising investigatory functions" may be called upon to assist the Foundation in maintaining proper security. Employees having access to secret information are to be investigated by the FBI and cleared by the Foundation. A fellow or scholar must file an affidavit that "he does not believe in, and is not a member of and does not support any organization that believes in or teaches, the overthrow of the U.S. Government by force or violence or by any illegal or unconstitutional methods." Such fellows and scholars must also take the following oath: "I do solemnly swear (or affirm) that I will bear true faith and allegiance to the United States of America and will support and defend the Constitution and laws of the U.S. against all its enemies, foreign and domestic." Obviously, though scientific protest succeeded in deleting the Smith amendment, the Foundation is hardly free of security and secrecy.

The scope of Foundation activities is limited by an appropriations authorization "not to exceed \$500,000 for the fiscal year ending June 30, 1951, and not to exceed \$15,000,000 for each fiscal year thereafter." Though this limitation can be lifted at any time by Congressional action, and though authorization for transfer of funds from other agencies will increase the total actually available to the Foundation, the \$15 million limit is alarming in its indication of Congressional intentions for the new agency. When it is realized that the National Cancer Institute, a single component of the Public Health Service, is allotted over \$20 million for the coming year, that the Office of Naval Research has made grants in a single year totaling over \$85 million, the limited size of the Foundation is brought into sobering perspective.

The result of four years of effort is thus an NSF limited budget-wise, open to military distortion, shot through with security provisions, under part-time management -- but still preserving the original emphasis on basic research, and responsibility for overall policy formulation. Is it worth having? In spite of shortcomings, most observers with their eye on the long future, believe that it is. In the next few years, the Foundation cannot be expected to be a major factor in direct support of research. It cannot be expected to solve many of the immediately pressing problems. But it can, even in this early period, make valuable contributions. It is three years since the Steelman report, five years since "Science, the Endless Frontier," nearly twenty years since the last really comprehensive study of the scientific resources of the U.S. by the National Resources Planning Board. The Foundation can, and should undertake as its first objective the

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"KEEP YOUR TRAP SHUT"

The existence of a tight lid of secrecy imposed by the Atomic Energy Commission on discussion of unclassified information pertaining to hydrogen bombs became public knowledge in late March. Quite a flurry of excitement ensued as the action of the AEC and some of its results became known: a brace of telegrams to AEC laboratories and contractors, one harsh, the other mollifying; dramatic censorship of an article by Bethe for the Scientific American; a speech Zacharias did not give and one that Bacher did; by-play between AEC and the press and between Editor Piel and Commissioner Smyth. The reasons for the excitement were summarized by Pathfinder magazine as follows: "It seemed to (scientists) that the AEC, unwilling to tackle the prickly job of differentiating between secret and unrestricted subject-matter, was barring the public from any significant information at all. On the ultimate question of national survival, the American citizen and his legislators would be left to make up their minds unprejudiced by any acquaintance with the facts."

The first telegram -- March 14 -- to AEC laboratories and contractors was blunt. As one reporter put it, the AEC scientists (including consultants) were directed, in effect, to "keep your trap shut" on all matters related to thermonuclear reactions and weapons -- whether classified or unclassified. Unfavorable reaction to the substance and tone of this directive impelled AEC General Manager Carroll Wilson to send a second, conciliatory telegram three days later which specified that there was to be no discussion of thermonuclear weapons regardless of whether or not the material in question was unclassified, but permitting "unclassified discussion of what might be called the classical thermonuclear reaction." The gist of this message was later described by Commissioner Gordon Dean as "please keep your trap shut."

Meanwhile, the day after the first telegram, the Scientific American was asked to withhold from publication in its April issue the second of a series of 4 articles on the hydrogen bomb. This article, which discussed political and moral, as well as unclassified technical aspects of the problem, was written by Professor Hans A. Bethe of Cornell. Well in advance of publication, Bethe had circulated his article for criticism to some sixty scientific colleagues, including AEC Commissioner Henry Smyth (who happened to be away from Washington at the time). The journal was already on the press when the AEC finally got in touch with its editors. The AEC objections were finally satisfied by the deletion of certain statements from the technical section in which Bethe had discussed the use of heavy hydrogen in making the bomb and had speculated on the time the project might require. There followed the dramatic burning under AEC supervision of 3,000 copies already printed with the Bethe article intact, destruction of all proofs, plates, etc., and the issuing of the slightly shortened version with the editors taking responsibility for technical data in the illustrations. The deleted material included some statements which had been widely quoted in the press and others which were later made by former AEC Commissioner Bacher with AEC approval, the magazine maintained.

By this time, the nation's press had become sufficiently concerned over the matter that an AEC press conference on Mar. 29 was devoted primarily to this subject. The Commission's justification of its position in the Bethe episode was that it makes a difference who does the talking. The stated purpose was "to avoid release of technical information which, even though itself unclassified, might be interpreted by virtue of the project connection of the speaker as reflecting the Commission's program with respect to thermonuclear weapons." Asked by a reporter whether the Commission felt it had such power over unclassified information, Acting Chairman Pike acknowledged, "I would suppose not." In response to another question, Commissioner Smyth said that the AEC's work would not be crippled by refusal on the part of universities to accept AEC contracts. (The University of Syracuse had so stated their future policy.) He felt this research could be adequately handled by government and industrial laboratories, and added that it might actually be better for the country's scientific development if universities were not engaged in this type of work.

Gerard Piel, publisher of Scientific American, argued against the AEC's new policy in a speech before the American Association of Newspaper Editors April 21st. His plea evoked sympathetic response in many editorial pages. Commissioner Smyth, in another address to the newspaper editors, presented the AEC's dilemma: secrecy is necessary to defense, yet secrecy is subversive of both democracy and science; without pat answers to

many of the more perplexing problems, the AEC has to improvise solutions to some of them as they arise.

The Council of the FAS, meeting April 30, took a serious view of the AEC's new security policy and issued the following statement:

"It is hard for any American to take an order from some one in Washington to 'keep his trap shut,' even when there is a belated please attached. Many American scientists had such an order last month, asking them to remain silent about certain non-secret and already published information. Most of them didn't like it. American scientists have proved their discretion in acts through more than a decade of secret work, work which helped bring American victory and the first atomic bomb. Neither Members of Congress nor high commissioners have a better security record. Idle and careless talk has not been the habit of scientists.

"The Federation of American Scientists believes not only that scientists have the right to speak up, but that they have the duty of explanation. They need to talk, when no military security is involved, but when great decisions are made without adequate accounting to the people.

"This responsibility, shared by all men and women of special training, is never easy to fulfill. It has been made many-fold harder the last weeks. The first printed version of a serious and important article, written by a prudent and careful scientist, has been burned by order of the Atomic Energy Commission. We have heard of no one of the scores of reputable readers of that original article who found in it any appreciable amount of information still properly to be kept secret, or not widely known to specialists all over the world. It was not secrets which were thus protected; it was the raw material for public understanding which went up in smoke. These are not times in which ignorance and misinformation can be the basis of public opinion. Every thoughtlessly erected barrier between Americans and their right to know and to speak is a threat to the welfare and security of the nation. We cannot fall for the easy fallacy that security lies in blind secrecy.

"Above all, we know that it is the job of those who speak and write, who edit and publish, to see that the essential non-secret information on which large issues of national security rest does not remain the private property of a small group in Washington, but becomes the widely discussed basis for the thinking of millions of American citizens concerned.

"The events of the last month, the burning of magazine copies, the sharp telegraphic commands from Washington for silence, are not isolated events. They seem to be the visible signs of a policy, secretly conceived and never justified to the American public. We urge that any policy which presses into silence both individual scientists, and the newspapers and other organs of information, be sharply and promptly revised."

Discussion Continues. The speech by former AEC Commissioner Bacher on March 27 (cited above) was rewritten for the May 1950 issue of Scientific American. Here he stresses the importance of providing adequate information to serve as a basis for public discussion of the policy issues involved in the decision to make the H-bomb. Bacher goes on to decry the lack of information which has led the layman to grossly over-rate the military effectiveness of the weapon and believe it will save us when it is not even a good addition to our military potential, saying, "While most of the pertinent information is not at all secret, some of the information the citizen should have in order to judge whether our national policy is sound is being kept secret. One of the most important facts the citizen should have to make a reasonable judgment is the approximate number of atomic bombs in our stockpile. ... Another item of information that would help the citizen appreciate the relative cost of hydrogen bombs and atomic bombs is the amount of fissionable material needed to get the hydrogen reaction started and the plutonium equivalent of the tritium to be used in a hydrogen bomb. Since neutrons are required to produce either plutonium or tritium, the neutron cost of a hydrogen bomb may be larger than first appears. The diversion of neutrons from the manufacture of plutonium to make tritium would mean a very real sacrifice of potential atomic bombs in order to obtain the ingredients for hydrogen bombs. As for the money cost of the hydrogen bomb, there have been such wide discrepancies in the estimates that the citizen can reach no sensible conclusion about it all."

Concerning the excessive secrecy, Dr. Bacher had this to
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SECURITY LEGISLATION

The headlined investigations of congressional committees have further confused the fine but clear distinction between loyalty clearance and security clearance as concerns federal employees. In the past few years, security safeguards have been principally the concern of the military agencies and the Atomic Energy Commission. (The State Department can be considered a special case.) In the civilian domain, security was largely applied to scientific and technical activities, and accordingly scientists and the FAS had a legitimate concern and some special competence regarding the procedures in security clearance.

The current trend, however, in some areas of official Washington, is to call all government jobs "sensitive" and thus to want to require all federal employees to pass not only a loyalty but also a security test. If the trend develops and this policy is embodied in legislation, then the whole issue will no longer be the unique concern of scientists' organizations. Thus the effort to give authority to the Department of Commerce to dismiss "security risks" concerns the FAS because the record indicates that the legislation is specifically directed against agencies such as the Coast and Geodetic Survey and the National Bureau of Standards, which employ large numbers of scientists. It would furthermore not apply only to those engaged in classified work. However, the proposed legislation would affect fifteen times as many non-scientists as scientists and accordingly the FAS would be acting outside its competence, were it to establish itself as the focus of opinion.

One principle seems equally applicable to security safeguards in both scientific and non-scientific activities, and derives from the experience of scientists. It was enunciated by the FAS Council at its April 30th meeting: "Security measures should be applied to particular individuals or particular projects which deal with information classified in the interests of national security and should not be applied to agencies as a whole." This the FAS is trying to get across to other organized groups who have a numerically larger stake in keeping security measures both effective and sensible.

The legal basis for security safeguards as applied to civilians lies in a number of separate laws. In the Department of Defense, the authority to enforce security regulations stems from Public Law 808 of the 77th Congress. This permits summary removal of employees in the interest of national security, but provides for a hearing within 30 days at the request of the employee. The Atomic Energy Act of 1946 is even less explicit, stating: "... The Commission shall make adequate provisions for administrative review of any determination to dismiss any employee" and that the FBI must have checked all persons having access to restricted data. The State Department derives its authority from a section in its appropriation act in 1947, 1948, 1949, and 1950 giving the Secretary the power "in his absolute discretion" to dismiss any employee when he deems it advisable in the interests of the United States. A similar provision was tied to the State Department appropriations for 1951 and also, for the first time, to the Commerce Department's 1951 appropriation.

These appropriation amendments have run into trouble. Being legislative provisions in an appropriation bill, they must be unanimously agreed to by the House and by the Senate. On April 21 during consideration of the State Department appropriations in the House, Rep. Marcantonio objected to the summary-dismissal section. His objection was sustained by the presiding officer, because there is a long precedent for such situations. On April 21, Marcantonio objected to the similar section (the Rooney rider) applying to the Commerce Department. Thus both are at least temporarily out of the omnibus appropriation bill. Rep. Rooney expressed regret that this provision had been deleted on a technicality and said he would take steps to see the security situation was taken care of. This might be by the Senate's reinserting the provision or by separate legislation.

Security safeguards in the State Department would be spelled out in detail if the pending Tydings-Murray bill were passed. This measure would apply as well to the various military agencies, the AEC, the National Advisory Committee for Aeronautics, and the National Security Resources Board. As presently written it would not cover the Commerce Department (National Bureau of Standards, Census Bureau, Weather Bureau, Coast and Geodetic Survey, etc.). Continuing hearings on the Tydings-Murray bill before a House Committee have dealt largely with the procedures for divulging charges, holding hearings, etc.,

detailed in the bill. It is reported that some members of the committee as well as representatives of interested organizations are urging amendments to the bill to give accused employees the right of appeal to an impartial board. There is no announced time schedule for the bill. The responsible Senate committee thus far has not started hearings.

Election Results. The new Chairman of the FAS is W. A. Higinbotham, Associate Head of Electronics at Brookhaven National Laboratory. Higinbotham, who worked at Los Alamos during the war and in 1945 was one of the founders of the FAS, is also associate chairman of the FAS' Scientists Committee on Loyalty Problems. Elected Vice-chairman was H. C. Wolfe, Professor of Physics and Chairman of the Department, Cooper Union, New York, and Secretary-Treasurer, Jules Halpern, Associate Professor of Physics, University of Pennsylvania.

The following were elected as Council Delegates-at-Large: Bernard T. Feld, Professor of Physics at M.I.T.; Halpern; David Hawkins, Associate Professor of Philosophy, University of Colo.; Lindsay Helmholtz, Associate Professor of Chemistry, Washington University (St. Louis); Walter C. Michels, Professor of Physics and Head of Department, Bryn Mawr College; Robert L. Platzman, Associate Professor of Physical Chemistry, Purdue University; Leonard I. Schiff, Professor of Physics and Executive Head of Department, Stanford University.

The Executive Committee, elected by the Council on April 30, is made up of Gerhart Friedlander of Brookhaven National Laboratory, Clifford Grobstein of the National Institute of Health, Bethesda, Md., Arthur Roberts, Associate Professor of Physics at the State University of Iowa, Iowa City, Halpern, and Chairman Higinbotham and Vice-chairman Wolfe, ex officio.

Minutes to Midnight, a 96-page book on the international control of atomic energy, has been announced for early publication by the **Bulletin of the Atomic Scientists**. Composed of selected excerpts from the pages of the **Bulletin** since 1945, the book has an introduction and commentary by Dr. Eugene Rabinowitch, the **Bulletin's** editor. According to the pre-publication announcement, the purpose of **Minutes to Midnight** is to acquaint people with the actual course of the negotiations, with the large areas of agreement already reached, and with the true character of the disagreements which have obstructed this search for sanity. Copies are priced at \$1.00 and may be ordered from 53 W. Jackson Blvd., Chicago 37, Illinois.

Membership Campaign Progress. Some 350 members-at-large have been added to the dues-paying rolls of the FAS since the inception of the membership campaign last fall. Several of the dozen chapters have also reported membership increases. However, it was reported to the Council on April 30 both that 200 more members must be added this year to meet the minimum operating budget, and that decentralization of the "housekeeping chores" to lighten the load on the Washington volunteers would make it difficult for the FAS to keep expenses below this modest minimum.

Several hundred scientists receive this **Newsletter** because they are on a temporary "free" list. They are urged to transfer to the regular list by making application for membership on the form provided. Alternatively a contribution of \$3.00 or more will ensure regular receipt of current information about the FAS and the issues within its purview.

MEMBERSHIP APPLICATION

Name _____

Mailing Address _____

Highest Degree _____ Institution _____ Major Field _____
Received _____

Present Position _____

Annual Dues for Members-at-Large:

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* Regular members with more than \$2500 annual income pay \$5.

Chapters at: Berkeley, Brookhaven, Chicago, Ithaca, Los Alamos, Madison, New York, Oak Ridge, Princeton, Rochester, Schenectady, and Washington, D.C. Informal branches in other communities.

Broader NCAI ? The FAS Council, at its Washington meeting, returned to the vexed question of the atomic arms race and possible measures to slow or halt it. Though no new decisions were reached, there was general agreement that previous Federation statements in this field, while in the right direction, require amplification. Further positive, concrete action obviously is needed. A motion to support the declaration of the twelve scientists urging that the U.S. renounce use of the H-bomb unless attacked by it (see A-771) was tabled after the discussion suggested that the proposal could be significant only if incorporated into a broader policy. The H-bomb was not seen as separable from the A-bomb, atomic weapons from armaments in general, disarmament from general accommodation in the international sphere. A bold demarche was seen as offering the only hope of altering the present dangerous trend.

Along these lines a proposal was discussed to attempt the formation of a new citizens' committee to lay emphasis on development of the positive constructive aspects of American foreign policy, e.g. Point IV, support of the UN, international exchange of information. It was suggested that the formation of such a committee be stimulated by the FAS and set up somewhat along the lines of the National Committee on Atomic Information. Church groups, labor unions, progressively minded citizens' associations, were envisioned as possible members of the committee. Advantages in such a move were seen (1) in its consistency with an earlier rejected Federation proposal for an official special commission to study implications of the H-bomb for American foreign policy, (2) in its possible counterbalancing of current isolationist attacks on State Department policies, and (3) in its combination in one organization of mechanisms for study and policy-formulation and for political education and action. The simple establishment of such a committee, it was argued, would lay emphasis on the lagging pace of positive measures for peace in contrast to the accelerating rate of preparations for war. Disadvantages were seen in the undoubted strain of such a major effort on the Federation's limited resources, and the possibility that a half-hearted attempt would do more harm than good.

The Council felt that the proposal had sufficient merit to be explored by the Washington office and offered for consideration to the Federation as a whole. Action was deferred pending decision by the Executive Committee or by a subsequent meeting of the Council. Comments and suggestions are invited by the Washington office to assist it in evaluating the proposal and determining its advisability and feasibility.

Discussion Continues (cont. from Page 2).

say, "It is most important in our democracy that our government be frank and open with the citizens. In a democracy it is possible to have good government only when the citizens are well informed. It is difficult enough for them to become well informed when the information is not easily available. When that information is not available, it is impossible. While it may well be that some of the information the citizen needs to make an intelligent judgment of national policy must be kept secret for military reasons, the pre-

sent use of secrecy far exceeds this minimum. These are the methods of an authoritarian government and should be vigorously opposed in our democracy. ... The U.S. has grown strong under a Constitution that wisely has laid great emphasis upon the importance of free and open discussion. Under the influence of a large number of people who have fallen for the fallacy that there is security in secrecy, and of many, including, I regret to say, eminent scientists, who prophesy doom just around the corner, we are dangerously close to abandoning those principles of free speech and open discussion that have made our country great. The democratic system depends on intelligent decisions by the electorate. Our heritage can only be carried on if the citizen has the information with which to make an intelligent decision."

NSF -- Realization (cont. from Page 1).

comprehensive study of the organization, activities, economics, and limitations of post-war science in the U.S. It should particularly concentrate on the effects of the Cold War -- the emphasis on secrecy and military technology. It should seek to establish, once and for all, standards by which the small amounts of information vital to national security can be protected without inhibiting vigorous inquiry.

With the results of such a study illuminating and guiding its path, the Foundation can fill gaps and create new areas of activity if it carefully husband its meager resources and directs them only to vital areas insufficiently nourished by other agencies. By discovering and calling attention to over-stressed areas, it may be able to persuade private and public agencies to shift funds elsewhere. Its fellowship program can stimulate a new flow of scientific talent through the colleges and graduate schools of the country. In these ways, it can give healthy new balance and guidance to the entire national science effort and particularly to government scientific agencies.

All further estimates of the future of the Foundation are hazardous in view of the broad language of the Act on many matters. The character of the Foundation largely will be determined by administrative decisions in its early years. It is of the utmost importance that scientists give their personal attention to the new agency's problems and activities from the outset. Every effort should be made to have scientists and their organizations participate fully in policy decisions. Particularly is this true in the selection of the Foundation staff. The Board should be completely representative and yet above partisanship, whether on a geographic or subject basis. Every effort should be made to include social scientists and a few non-scientists of broad perspective on the Board.

The U.S. is launching an experiment in the encouragement and support of experimentation. It is not an untried experiment; there are a few instructive precedents to consult. Nevertheless, there is sufficient of the novel to make the result uncertain. No experiment ever succeeds untended and unwatched. It will be up to scientists and the Federation in particular to watch, analyze, and make suggestions. The Foundation has been born after long labor. Its successful development depends upon intelligent administration and sympathetic guidance by the scientific community.

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