

F. A. S. NEWSLETTER

FEDERATION OF AMERICAN SCIENTISTS
Jules Halpern, Chairman

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DEFENSE RESEARCH and BASIC SCIENCE

In a speech early this month which received too little notice, Alan T. Waterman, Director of the National Science Foundation, drew attention to "the growing imbalance between basic and applied research in the United States" and warned of dangers to our colleges and universities if the trend long continues. Speaking on "Research for National Defense," in San Antonio, Texas on February 5, Waterman noted that "87% of the Federal basic research program in non-profit institutions" in fiscal 1952 was administered by the Dept. of Defense and the AEC. "Only 1.5% of the program, \$1,075,000, was administered by the National Science Foundation. Thus we have the paradoxical situation of the Foundation, which its founders expected to become a principal agency of the Government for the support of basic research, receiving only an insignificant fraction of the funds available for that purpose."

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UNIVERSITY ROLE THREATENED

The NSF Director went on to say that "military problems are occupying an increasing share of the universities' research scientists and facilities. This brings us to a situation which has become a matter of national concern. In recent months a number of educators and scientists have begun to assay the effects of large-scale research and development programs upon the universities and are asking whether the university's traditional roles of research and teaching are being threatened. Having myself been concerned with the military research picture during the war and before the National Science Foundation was established, I should be the first to admit that there are indeed a number of complex problems in military research for which university cooperation is highly necessary. Still, I believe that the time has come when we should consider very carefully the degree to which our educational institutions are called upon to contribute to practical problems of science."

Waterman called on the academic community and the government for joint efforts to find "alternative solutions." He urged that "funds for basic research and for teaching...be materially increased in order to make it possible for the universities to carry on their traditional functions without having to carry defense research which is inappropriate to their facilities."

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MORE TROUBLE AHEAD ?

Waterman's remarks, inclusion of which would have increased materially the value of NSF's second annual report submitted to Congress on January 15, came appropriately as the executive branch and the Congress were beginning to come seriously to grips with the national budget. In the next several months, appropriations subcommittees in the House, and then in the Senate, will be very busy considering executive requests for financing the various government agencies. Included will be the vast Federal contribution to support of science -- estimated by the Research and Development Board to be well over half of the \$3.5 billion from all sources spent in 1952.

With determined efforts being made to fundamentally alter US fiscal policies as a whole, it is not easy to estimate what changes may be made on our national science budget. Particularly is this true for basic research which, under the policy of expediency adopted since the war, is largely financed as a by-product of "more urgent" activities of the Defense Department and the AEC. Unbalanced though our efforts now are toward military and applied research, the situation may become still worse if tightening purse strings force government agencies to hew even

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SECURITY OF THOUGHT ?

The rising tide of attitudes and actions which have been lumped under the catch phrase "anti-intellectualism" has been advancing visibly in the last few weeks. In the forefront are the many investigations now being started in Congress; in the background are the decisions and actions of a host of minor public and private officials too frequently frightened into sacrifice of freedom of thought to false concepts of national security. Slowly growing, but still desperately needing additional vocal recruits, is the mass of scientists, educators, and other uneasy national leaders, who are counselling slower and more considered action.

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EDUCATION UNDER FIRE

Two Congressional committees have begun to probe for subversive influences in education -- the House Un-American Activities Committee headed by Rep. Velde (R, Ill.) and the Senate Internal Security subcommittee under Sen. Jenner (R, Ind.). The extent of the two investigations has been variously defined and their activities will certainly overlap if not actually conflict. Rep. Velde has indicated that "no individual school, college or university will be investigated as such...The plan is to investigate the general field of education." Potent party leader Taft, however, has emphatically stated that he does not favor investigation of Communism unless there are definite indications of "organized activities."

Speaking in Chicago on February 21, Taft defended congressional high-lighting of individuals as communists but said that he saw no point "in examining the views of a few individual professors if they are not part of an organization promoting the spread of communism." The Senator, who is a director of the Yale Corporation, added, "I must say as a member of the board of trustees of a university, I would not favor firing anyone for being a communist unless I was certain that he was teaching communism and having some effect on the development of the thought of students." He emphasized that "very much [depends] on the particular case."

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SMEAR BY ERROR

The fears of cooler heads were realized even in preliminary skirmishes over the education probe. The American Assoc. of School Administrators heard Mrs. Agnes E. Meyer vigorously attack both of the planned Congressional investigations and their expected leaders. She declared that "the independence of our whole educational system will be jeopardized if Velde, Jenner and McCarthy are not stopped in their tracks before they get under full sail." In rebuttal, Velde charged that "Mrs. Meyer had been reported by a 1947 issue of the official Communist international publication, *Pravda*, as being a friend of the Soviet Union." Faced with indisputable evidence that the charge was totally without foundation and based on an error of identification, Velde belatedly retracted calling his mistake a "natural one" due to "the complexity of the Russian language." Meanwhile, the School officials said in a resolution that they "welcome constructive, sincere and well-intentioned criticism," but noted that "some charges are inspired by deliberate intent to injure, if not destroy American public education. We condemn such tactics and those who indulge in them."

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NO U.S. MONOPOLY

As noted by speakers at the FAS open meeting in Cambridge January 22, anti-intellectual and anti-scientific tendencies are by no means confined to

(Continued on Page 4, Column 2)

Public or Private Atom?

There are mounting indications that serious efforts to make major changes in the Atomic Energy Act of 1946 may soon be forthcoming. At issue is nuclear power -- and the question as to the mechanisms and the auspices under which nuclear power can be most effectively and efficiently developed. The whole concept of public ownership, and the relation of domestic atomic policy to the international scene, particularly atomic disarmament, is at stake. The problem is in part technical, in part profoundly political. Recognizing these facts the FAS Council, at its Cambridge meeting, authorized formation of a new committee to evaluate such changes in the Atomic Energy Act as may be proposed. The Council made clear its firm belief that any proposed changes should be examined in full open hearings.

To promote FAS discussion, the somewhat opposed views of two informed members were sought. Their comments follow:

ONE VIEW Numerous references in the daily press predict Joint Atomic Energy Committee discussions of industrial development of atomic energy. The primary questions of patents and private ownership of facilities are raised. Under the present law, private ownership is of course prohibited.

The present Act does, however, empower the AEC to report and recommend to the President arrangements for industrial utilization when peacetime uses have developed. There is no public record of the Commission's considering the implementation of this provision. There is also no public evidence of the Commission's seriously considering the erection of a uranium power plant at the site of any of its major installations. Nearly two years ago the AEC authorized four power utility groups to study the economic feasibility of simultaneous plutonium and power production. No action has been taken on the reports submitted, beyond arrangements for continuing study and the authorization of a fifth group. Statements made in the public press by industrialists show varying degrees of enthusiasm for uranium power under government subsidy, or independent of government subsidy, if private ownership of plants and patents should be permitted.

It seems probable that simultaneous production of plutonium and power is economically feasible at the present time. Self-supporting power, however, is a more difficult matter, and no categorical statement can be made. While it is not commonly appreciated, plutonium plus power is feasible within the framework of the present Act. This would require government ownership of the reactor, but would permit private ownership of the remainder of the plant. Financial arrangements would be made to protect against plant shutdown in the event plutonium production were no longer required.

Power without plutonium is difficult to arrange within the present Act. If this is the exclusive goal, private ownership is very nearly necessary. Only in the event that Congress and the nation feel the goal justifies the subsidy would a government-owned reactor be possible in a utility network.

Numerous industrial interests will press for changes in the Act during the present session of Congress. While these changes must be made before widespread application of industrial power becomes a reality, it is not easy to decide whether the Act should be seriously amended at this time. Industrial experience on a limited scale must necessarily precede large-scale application, and it is quite probable that the limited experience can be gained within the framework of the present Act.

The problem is therefore not one of legal prohibition, but rather of political indecision. Aside from a few outspoken industrialists, there has been no strong and continuous political pressure exerted by the people on the government. There is likewise no strong pressure within the government except by the military for propulsion of military craft. The lack of public pressure may be partially due to a lack of realization of technical and economic feasibility, but more probably results primarily from a desire to push Atomic Energy and all its implications out of mind.

- - L.B.B.

ANOTHER VIEW One of the reasons for a government atomic monopoly given in the McMahon Act was the hoped-for transition to international control. In this hope there has been little real change. Then, as now, it was an ardent

THE NEW FORCE, by Ralph Lapp; 238 pp., Harper's; \$3.00.

The scientifically-minded reader, who knows that sometimes you can tell a book by its cover, will find in Dr. Lapp's book some sober thinking of which the cover gives no hint. The front of the book-jacket shows the author contemplating a molecular model in his left hand, while with the pen and paper at his right hand he is evidently prepared to instantaneously record any calculations which may be necessary. Perhaps he is waiting for an electron to begin to spin -- or perhaps the model is about to tell him the answer to some of the questions which are listed on the back of the jacket. These include "How was the A-bomb made, of what?", "Was the A-bomb an American invention?", and "Can the A-bomb stockpile be converted to peaceful use?"

Once inside the cover, however, the most sober and careful observer of 'atomic history' will find little to quarrel with, and much to admire in this chronicle of the first decade since Stagg Field. Subtitled, "The Story of Atoms and People," the book sets out to be a political and social 'Smyth Report' of what has happened in 'atomic affairs,' the latter being perhaps as good a name as any to distinguish Dr. Lapp's subject-matter from the technical affairs which were outlined in Smyth's book. 'Atomic history' has something to do with science, to be sure, but has more to do with partisan and agency politics.

Stewart-Alsop, the columnist, writes an introduction to the book, and it may be surmised from this and other associations in print that Lapp has been partially responsible for some of the Alsop brothers' cogent reasoning on the hydrogen bomb. The chapters dealing with this subject are excellent surveys of the known facts and policy questions. Like the book as a whole, they are worthwhile for telling an accurate and fairly complete story in one place, though offering little new to the informed.

The chapter on "Secrecy and the Atom" is very well and persuasively put together -- Lapp believes "atomic secrecy has had a paralyzing effect in the development of atomic power... the real story behind our laggardly development of guided missiles would reveal the insidious effects of secrecy."

- - Michael Amrine

but small-chance hope, with obvious political difficulties in the way, but a goal so greatly to be desired as to justify some sacrifice to nurture the small probability of attaining it. The Russian recalcitrance was largely to be anticipated, and the fact that the Kremlin has not yet looked with favor on proposed alternatives to an uncontrolled atomic armament race does not mean that it never will see the enormous mutual advantage which lies in agreement.

The motivations for the proposed modification of the Atomic Energy Act to permit industrial participation in the production of plutonium -- with power as a by-product -- are partially hidden in the never-never land of secret information. To what extent industry can do things not already being done -- or which could not with a change of emphasis be undertaken by the AEC -- is unclear. To what extent industry could reduce costs without dangerously reducing standards of personnel safety or using up a unique natural resource with unwise inefficiency is not known.

One thing is clear, however -- the profit is to come from selling the plutonium to one customer, the government. This creates a vested interest in the continued production of plutonium which, like the farmers' interest in price supports, is apt to be politically vocal. The people through their government have borne the development costs of the atomic industry. The danger of a vested interest in continued military production has thus so far been avoided in this unique and critical field. Our statesmen are free to offer international agreements contemplating a smooth transition to international control, while we remain strong in the short-range by continued atomic production under the contract arrangements possible with the present law.

The FAS has recognized the necessity of increasing our short-range security by strengthening the threat of atomic reprisal against a potential aggressor, but has emphasized that this is only short-range security and that some sacrifices may have to be made to gain the long-range security of international atomic limitations and eventual disarmament. Until it becomes very clear that a change of the Act would materially strengthen short-range security, such a change should be opposed on the grounds that it weakens our chances of attaining long-range security.

- - D.R.I.

Disarmament and Atomic Control

DISARMAMENT WORKSHOP The whole question of disarmament was explored thoroughly at an excellent Workshop on World Disarmament in Washington January 16-17, attended by more than 150 representatives or observers from a wide variety of religious, educational, scientific, farm, labor and other civic groups. Addresses were given by several national figures, and disarmament was examined from the viewpoints of the historian, congressman, economist, scientist, diplomat, and political scientist.

ATOMIC DISARMAMENT Although most Workshop speakers did not consider atomic control specifically, there seemed to be substantial agreement that (1) attempts at control would be meaningless without parallel reductions in conventional armaments; (2) in view of the Russian possession of the bomb, any international ownership demand is more than ever an impossible hurdle; and (3) the disarmament question is seriously entwined with political questions of extreme complexity.

The present status of the negotiations in the UN Disarmament Commission was pictured as one of absolute stalemate due primarily to Russian intransigence and lack of desire to negotiate, but perhaps aided also by US inflexibility.

TECHNICAL ASPECTS In the only paper dealing with the technical aspects of atomic control, David R. Inglis (chairman, FAS Atomic Control Committee) favored the usual step-wise scheme of progressive disclosure, verification, and disarmament, and made two observations of particular interest to FAS: (1) From a study of nuclear piles, it might be possible to deduce how much nuclear fuel had been processed therein and hence have a check on declared stockpiles. (2) The amount of fuel now stockpiled in bombs is presumably large enough to provide for all industrial uses for a long period and hence atomic plants could be closed entirely during the working out of suitable control and inspection procedures.

A 26-page summary of the Workshop is available from the Friends' Committee on National Legislation, 104 C Street, N.E., Washington 2, D.C. (25¢). Additional information on disarmament and technical assistance is available from the Committee for World Development and World Disarmament, 2006 Walnut Street, Philadelphia 3, Pa.

POLICY REVIEW On January 9, the State Department announced that the panel of consultants headed by J. R. Oppenheimer, appointed last April by the Department "to advise and assist...in connection with the work of the UN Disarmament Commission," had concluded its work and had submitted a report. Its contents were not disclosed, but the possibility exists that a more detailed release may be issued after the new Secretary has had opportunity to study the findings of the panel. In this connection the FAS Council, at its meeting in Cambridge January 24, reaffirmed the need for a high-level review of the whole atomic control and disarmament problem and the desirability of bringing this need to the attention of the new President.

In his Inaugural Address, Eisenhower indicated willingness to engage in joint efforts "to remove the causes of mutual fear and distrust among nations, so as to make possible drastic reduction of armaments," saying that "the sole requisites for undertaking such effort are that...they be aimed logically and honestly toward secure peace for all."

DEFENSE RESEARCH (Cont. from Page 1). closer to the line of immediate, short-range objectives.

This is a danger to which both NSF and the scientific community must give close attention if our basic research laboratories, already sadly at a disadvantage for support and personnel, are not to bear more than their share of the brunt of any budgetary retrenchment. The possibility makes it doubly necessary in the coming year to give to NSF at least the full \$15 million allowable by the Act, and to lift the statutory limit to permit rapid future expansion. Both these steps were recommended by the Budget Bureau under the out-going Administration and no new instructions to the contrary have yet been forthcoming from President Eisenhower.

FAS UPS PRIORITY ON U.N. SCIENTIFIC ACTIVITIES

The Council in January directed that tacit FAS support for the scientific activities of United Nations specialized agencies -- namely UNESCO, WHO, and FAO -- should be changed to specific study and action. Responsibility was assigned to a new committee on UN affairs. In taking this action the Council tabled as unnecessary proposed amendments to the FAS Constitution preamble, and decided that support of UN activities in general, though desirable, is not possible under present FAS objectives and limitations.

NEW COMMITTEE The personnel and activities of the new committee remain to be spelled out by the interests and desires of the FAS membership. Those who would like to participate, or who have suggestions or projects, are invited to address the committee via the Washington office. The special experience and competence of FAS might be particularly applicable in evaluation of the interrelations and effectiveness of the sometimes overlapping technical aid programs under the aegis of the US alone, of NATO, of UN generally and of UNESCO. FAS might also follow more closely the work of the US National Commission and the science phases of UNESCO itself, summarized recently by E. C. Stakman in News Report, a publication of the National Academy of Sciences, for January-February 1953.

Some questions which deserve analysis are: What are the differences in objectives or orientation of the various programs? Who is responsible for US policies and how is US participation decided and effected? What has been the relative success so far? Is there sufficient coordination and unity of purpose among the separate US agencies actively involved? Is the US scientific community contributing effectively to formulation and execution of these policies and evaluation of results?

UN PROGRAM ABRIDGED The UN technical assistance program faces a slow-down because contributions from participating countries lag behind expectations, according to the UN last week. Thus far only 58% of the 1953 goal of \$25 million has been pledged, and only 90% of the 1952 goal. More than 70 countries participate in helping underdeveloped countries by teaching modern technical methods and financing study fellowships. This number includes many non-UN nations such as Italy, Switzerland and Eire, but Soviet bloc countries have generally held aloof. US policy is to pay up to 60% of the fund and it has made payments in that proportion as money from other countries has come in.

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McCarran Act Changes Uncertain

Changes in the McCarran Immigration Act during this session of Congress are being widely suggested, but whether they will be significant -- or will include remedies for the damaging and embarrassing situation as regards temporary visitors' visas -- remains to be seen. President Eisenhower has called the Act "discriminatory" and asked Congress to revise it. Immigration, however, is not on the White House February 9 list of 11 legislative measures of high priority in the next several months.

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MORE WORK NEEDED Few of the critics, of course -- including Eisenhower -- have uppermost in their minds the inhibiting effects of the law on scientific interchange, and consequent damage to scientific progress and national security. Cited in the Perlman report and widely publicized in the special Visa issue of the Bulletin of the Atomic Scientists, the matter will need continued efforts by scientists if it is not to be lost in competition with more spectacular problems. Congratulations go to the FAS Stanford Chapter whose efforts in distributing copies of the Bulletin led to a favorable feature story and an excellent editorial in Bay Area newspapers. A good discussion of this aspect of the visa problem is in the December Bulletin of the American Committee for Cultural Freedom (35 W. 53rd Street, N.Y. 19, N.Y.). The Committee, headed by George S. Counts, covers the inadequacies of the law and its administration, and makes specific proposals for changes in each.

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PHILOSOPHY OF FEAR In his retiring presidential address before the American Physical Society, J. H. Van Vleck charged that our present visa policy operates on a "philosophy...of fear, at variance with American tradition." He urged that our security efforts be spent where they count -- zealously guarding classified information -- and not dissipated on less essential matters. "The moment we start guarding our toothbrushes and diamond rings with equal zeal, we usually lose fewer toothbrushes but more diamond rings," the retiring APS president warned.

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NO PASSPORT APPEALS On the related matter of passports for US citizens, the appeals procedures established last fall for cases of passport denial have yet to be utilized. State's Passport Division told the FAS that while there have been many refusals, no case has been appealed -- pointing out that the new procedures, which have the effect of law, give to the Division the discretion to require a non-Communist oath. It is known, however, that a number of cases are now active, including some scientists of repute, and early test of the appeals procedure seems probable. What the attitude of the new Administration may be, and whether it will alter existing regulations, has not yet been made clear.

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SECURITY OF THOUGHT ? (Cont. from Page 1).

the US. The Hitlerite therapy by book-burning has been replaced by the prophylactic approach -- excision of dangerous thoughts from the minds that write the books. Russian jitters are reaching new heights with Soviet scientists being continually warned against anti-Marxist thought and "bourgeois pseudo-science." Pravda recently called for even greater vigil against security violations, citing the case of a leading scientist whose scientific reports had exposed top-secret information. "Alien elements" are being ruthlessly attacked by both government and press as the source of anti-Soviet thought and activity. As tension mounts, those who think -- i.e., consider alternatives to prevalent ideas -- are subject to suspicion everywhere.

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TALKING SENSE Thoughtful words on this subject were spoken February 14 by Adlai Stevenson at the Eastern States Jefferson-Jackson Day dinner. Recalling Jefferson's "eternal hostility to any form of tyranny over the mind of man," he warned that "some in America today...in the name of unity... would impose a narrow uniformity of mind and opinion." He called for application of "much more than epithets, smears and witch hunts to the solution of our problems."

Still uncertain, despite many rumors as to his proposed actions, is the official attitude of President Eisenhower. His approach to the key matter of government security and loyalty problems cannot help but have important influence on the entire intellectual climate. Policy discussions are known to have been in progress for weeks, but original sanguine views seem to be undergoing revision as the knottiness of the problem emerges.

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COUNCIL ACTION Taking note of current pressures and trends, the FAS Council has authorized two new committees in the general area of loyalty and freedom of thought: one on restrictions of scientific inquiry, and the second a study group in the more general area of anti-intellectual trends at home and abroad, both within and outside the scientific community. The Council also directed the Executive Committee to explore the possibility of stimulating formation of a broad "inter-society committee" to spearhead scientists' defense against unwarranted attacks upon them or their organizations.

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SCLS REPORTS The Council heard a report from the newly re-formed Scientists' Committee on Loyalty and Security. Located at Yale, under the chairmanship of E. C. Pollard, the Committee is ready to assist individuals with loyalty and clearance problems. On February 16, in a telegram to Attorney General Brownell, the Committee pointed to problems it believes must be kept in mind in the Administration-contemplated revision of the loyalty program. It warned of the price involved "if security risk becomes the criterion of suitability for all Federal employees" and called for "criteria firmly spelled out and... scaled realistically to the security requirements."

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