

F. A. S. NEWSLETTER

FEDERATION OF AMERICAN SCIENTISTS
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CAN SCIENCE REMAIN INTERNATIONAL?

Since the war, security and ideological "localism" have progressively clamped down on the main arteries of international science. Between US fear of subversion and jealousy of its scientific knowledge on one side, and USSR doctrinaire truculence on the other, science is being split asunder as it has not been since its pioneers relied on the most primitive means of communication. From atomic physics and electronics the pall

US SCIENTISTS PROMOTE INTERNATIONAL EXCHANGE

International exchange of scientists and science students is one of the major arteries of world science, and has long been an objective of private and governmental agencies. Of the many such programs, one in which the FAS played a part is described in the following report by Robert E. Marshak of the University of Rochester, a former FAS Chairman:

The Committee on Aid to Foreign Science was set up by the FAS at the University of Rochester in the fall of 1948. The Committee consisted of the chairmen of the departments of Biology (D. R. Charles), Chemistry (W. A. Noyes), Physics (G. B. Collins), and physicists J. Ashkin and myself. Chief purpose of the Committee was to inquire into the possibilities of training appreciable numbers of foreign predoctoral students in the natural sciences at American universities. The thought was that American science, in a particularly favorable position after World War II, should repay part of its long-standing debt to foreign science by training some of its future leaders.

The Committee wrote to over a hundred departmental chairmen in Biology, Chemistry, and Physics throughout the US. It was gratifying to find that many departments were prepared to grant teaching assistantships, research assistantships, and fellowships to properly qualified foreign students. The response was so favorable that negotiations were begun with the Institute of International Education for administering the entire program.

At the same time, one of the members of the Committee (Noyes) attended the UNESCO conference in Beirut (December, 1948) and attempted to obtain support for a number of UNESCO-sponsored fellowships for foreign students to study in American universities. This request was turned down, but the Institute of International Education agreed to undertake the placement program, with some assistance from the Committee at the start. By the time the IIE went into action with its screening committees locally and abroad, it was too late to carry out a full program for the academic year 1949-50. However, the program was fully under way for the academic year 1950-51.

There was some trouble initially because of the understandable reluctance of foreign scientists to release their good students for the training program in the US. This difficulty was ameliorated by requiring the applicants to sign statements that they would return to their countries of origin after the completion of their work. Progress of the program is indicated in the following table:

Field of Study	Number of Graduate Students, 1950 - 51	Number of Graduate Students, 1951 - 52
Astronomy	2	3
Bacteriology	3	6
Biology & Physiology	8	15
Botany & Horticulture	7	17
Chemistry	32	82
Mathematics	7	19
Physics	23	48
	82	180

Indications are that placements for 1952-53 will be at least as great as for 1951-52. The sizeable increase in the number of graduate student placements is encouraging and is a tribute to the fine work of the Institute of International Education.

has spread to biology, to chemistry, to scientific methodology itself. Possibly never has the unity of science been so threatened -- never on so wide a scale have the divisions in the "secular" world intruded into the "sacred" laboratory. The concept of One World of Science is withering away at its very roots. Scientists will have to bestir themselves if the universality of objective knowledge is not to degenerate again to the level of tribal lore.

INHIBITORY US POLICIES CRITICIZED

Growing alarm and resentment on the part of scientists over current US visa policies is expressed in a preliminary report to be presented to the FAS Council on May 3. Prepared by the Federation Committee on Passport and Visa Problems, established by the Council last fall, the report summarizes information compiled to date and documents foreign reaction in a series of letters received by the Committee from colleagues abroad.

On the basis of 60 cases of refused or indefinitely delayed visas known to the Committee, it is estimated that at least three times this number exist, and that approximately half of the foreign scientists seeking to visit the US have difficulties of some kind. The situation is particularly bad for applications from French scientists, approximately 3/4ths of whom are reported to have had difficulty. This arises from the apparent blanket refusal of visas to members of the "Association des Travailleurs Scientifiques," an organization affiliated with the World Association of Scientific Workers. This organization, of which F. Joliot-Curie was president for one year since the war, includes in its membership some 70% of French scientists of all shades of political opinion.

The Committee sees the situation as damaging to science in the US and Western Europe, and to the prestige and reputation of the US abroad (see Ringuet letter below). It notes that at least six of the central group which developed the A-bomb during the war would be refused visas if they now sought entry into the US.

The report, which will be summarized for the Committee by V. F. Weisskopf at the May 1 Washington meeting, is scheduled for publication, after approval by the Council, in a special Visa and Passport issue of the Bulletin of the Atomic Scientists.

Washington Chapter Presents - -

E. U. CONDON

V. F. WEISSKOPF

in a discussion of

NATIONAL REGULATION and INTERNATIONAL SCIENCE

Thursday --- May 1, 1952 --- 8:15 PM

American Newspaper Women's Club
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FAS members are invited to come and bring their friends. Refreshments following discussion.

FRENCH PHYSICIST REACTS

Typical of the troubled concern of foreign scientists is a statement received from M. Louis Leprince Ringuet, member of the Academie des Sciences:

"For the past months the requests for visas to go to the United States made by French physicists have not been granted in a reasonable length of time, that is, in a time compatible with a schedule organized reasonably in advance.

"Thus, a French physicist is to go to a scientific congress (Continued on Page 3, Column 2)

BW and PSYCHOLOGICAL WARFARE

The Chinese charge of a biological warfare (BW) attack by US forces on North Korea has developed into a major engagement in psychological warfare. Formally presented by J. Malik (Soviet delegate) to the UN Disarmament Commission and denied by the US, the charge has been extensively affirmed, analyzed, and scoffed at in the world press with major propaganda batteries wheeled into place on both sides.

Writing from the sessions of the World Peace Council in Prague, F. Joliot-Curie denounced the alleged use of BW by US forces. "This horrible deed," he said, "...is a sequel to the no less monstrous crime of the destruction of hundreds of thousands of civilians in a few seconds by the atom bomb at Hiroshima and Nagasaki." In a scathing reply, Warren Austin, US Ambassador to the UN, took Joliot-Curie to task for lending his scientific reputation to "a propaganda campaign based upon the tricks of charlatans who are afraid to submit their so-called evidence to impartial scientific scrutiny." He called on him to support US efforts, rejected by Malik, to obtain impartial scientific investigation of the charges.

What there is of evidence to support the Chinese charge appeared in the Peiping People's Daily of March 15. On April 3, the N. Y. Times gave a full page to analysis of the evidence by US authorities. Charitably interpreted, the analysis indicated that those making the charges are abysmally ignorant of entomology, bacteriology, epidemiology, and BW ordnance. Less charitably interpreted, deliberate distortion and fraud are implied. According to the N. Y. Times, its exposé was regarded by some as the effective answer to the Chinese propaganda effort.

To others, however, it seemed clear that the crux of the matter lies elsewhere. If it were the intention of the USSR to base its case on an actual, demonstrated use of BW by the US, the Korean incident, with its flimsy evidential support, would hardly have been selected. More likely, it seems, the Communist propaganda attempts to demonstrate intent or willingness on the part of the US to use BW, and uses the specific incident only to dramatize the admitted fact of US development of BW weapons. The UP, on March 24, reported that "American military strategists apparently rate germ warfare second only to the atomic bomb as a potential killer. And some seem none too sure it belongs behind the A-bomb." The UP said that "dribbles of information" available suggest that "military researchers have within reach relatively simple and inexpensive weapons capable of mass destruction of human life, crops, and livestock." And on April 3 the Washington Post disclosed that the Pentagon has asked for increased BW appropriations, including 17 million dollars to expand its BW research center at Camp Detrick, Maryland. Maj. Gen. E. T. Bullene, chief of the Army Chemical Corps, told the House Appropriations Committee that the need for additional funds is urgent. "We have been doing research for 10 years and we think it is time to catch up with some hardware." In military jargon, "hardware" means actual weapons, and the implication is clear that mass-production of BW agents is sought.

These are hard facts and no amount of disproof of US use of BW to date will effectively dispute the claim of US intent and willingness to employ BW at some later date. In the public mind, our willingness to develop BW weapons is hard to dissociate from willingness and intent to use them. Soviet propaganda is capitalizing on this and linking, as Joliot-Curie cleverly does, our attitude on BW with our past willingness to use the A-bomb. This is particularly effective because BW effects -- unlike those of the A-bomb -- are indistinguishable from "natural" events which, indeed, they are designed to simulate or intensify. It is thus exceedingly difficult in a particular case to prove that they are not being used, especially when the charge involves a disease endemic in the area.

Editorializing on April 19, the Washington Post epitomizes the US dilemma, "Manifestly it would be folly," the Post says, "for the Army to ignore the possibilities of bacteriological weapons or to be unprepared to make use of them in the grim event of war. We can only hope that American information services are doing all that they can to make the world recognize the vast distinction between preparedness to make use of a weapon, if necessary, in the future, and actual resort to it in the present."

The problem is not, however, for the US information services alone. They cannot do their job until a strong, unequivocal statement of our intentions respecting BW is forthcoming from our highest policy authorities. Possibly FAS should initiate a request for such a statement. The US cannot insist on preserving freedom of action and expect other nations not to be suspicious. It cannot afford to do it when such effective use can be made of BW in the psychological warfare for control of world opinion. -- C. G.

ELECTION RESULTS

Jules Halpern was elected FAS Chairman in last month's election. Victor F. Weisskopf is the new Vice Chairman. Halpern, professor of physics at the University of Pennsylvania, has been a member of the FAS executive committee for the past two years, serving as Secretary-Treasurer in 1950-51. Professor of physics at MIT, Weisskopf has long been active in FAS affairs and is a member of the Committee on Passports and Visas. Both will serve on the new Executive Committee, together with Lyle B. Borst (retiring chairman) and four others to be selected by the FAS Council next month.

Council delegates-at-large elected in the recent balloting are: Judith Bregman, Chemistry, MIT; Charles D. Coryell, Chemistry, MIT; Lloyd H. Donnell, Mechanics, Illinois Institute of Technology; Paul L. Hartman, Physics, Cornell Univ.; David Hawkins, Philosophy, Univ. of Colorado; David L. Hill, Physics, Vanderbilt Univ.; Edwin C. Kemble, Physics, Harvard; M. S. Livingston, Physics, MIT; Robert L. Platzman, Physics, Purdue Univ.; Henry C. Torrey, Physics, Rutgers Univ.; and Hugh C. Wolfe, Physics, Cooper Union.

TO REDUCE SECRECY

Influential voices have recently been raised in favor of reducing the secrecy surrounding US atomic operations. Sen. Blair Moody (D., Mich.) insists that "the enemy knows much that the American people do not know," and advocates a review of the classification of secret weapons to give the American people at least as much information about our huge atomic weapons program as the Russians have. We are developing weapons "so terrible that they bembom the imagination," says the Senator, and the "enemy has or presumably will have some of them too."

Harvard President James B. Conant was quoted by Science Service last week as saying that "the general public might just as well stop reading anything about atomic energy or atomic bombs. ... At times half truths and necessarily ambiguous reports by responsible officials 'leak' into newspaper columns -- these are the methods by which the public is informed of the progress of applied nuclear physics." Basing his statement on "12 years of experience behind the veil of secrecy," Conant declared that "it is impossible today or in the foreseeable future to have a frank, rational, searching discussion of the industrial uses of atomic energy."

LEAVES OF BRASS

Walter G. Whitman, chairman of the Research and Development Board of the Department of Defense, analyzed the problem of the tremendous expansion of military research spending in a talk to the Eleventh Annual Science Talent Search dinner on March 3. Whitman pointed to the serious consequences of the trend, noting that government funds are supporting some two-thirds of the research and development programs of the country, a preponderant fraction being on Defense Department problems.

The guide line for this gargantuan program hammered home by Whitman was "selective emphasis." Money and talent can be dissipated indiscriminately if all possible developments which are technically feasible are prospected. Instead, the military advantage to be expected from each must be carefully estimated, and support given only to those which will promise large increases in military effectiveness. Such selection is mandatory if our scientific resources are not to be squandered.

COX COMBS

The many investigating committees of the 82nd Congress were increased by one this month when the House approved a resolution introduced by Rep. E. E. Cox (D., Ga.) to comb the activities of tax-exempt "educational and philanthropic" organizations. Passed by a roll call vote of 193 to 158, the resolution specifically calls for determining which of such organizations "are using their resources for un-American and subversive activities or for purposes not in the interest or tradition of the United States." The 7-man committee, not yet appointed, is to report by January 1, 1953.

Although Cox stated that it was not his purpose to "punish anything or anybody," according to the UP he has in the past specifically accused several well-known foundations of giving financial aid to alleged Communists or Communist fronts. Opposition to the resolution came from two sources: some Congressmen thought it was aimed at certain funds which have aided minorities with which Rep. Cox is not in sympathy; some others feared the new committee would infringe on the jurisdiction of existing committees. Several of the foundations slated for investigation are large contributors to basic research and science fellowships.

NSF -- SENATE TEST DUE

With the Senate committee hearings expected early in May, the 1953 appropriation for the yearling National Science Foundation continues its tortuous path through the congressional maze. Last month the House shrugged off the President's recommendation of \$15 million and NSF's presentation of accomplishments and plans -- and renewed last year's figure of \$3.5 million, saying NSF "is unlikely to provide assistance to the country in the immediate emergency." The Senate appropriation subcommittee, headed by Sen. O'Mahoney (D., Wyo.), will now hear the NSF story from Director Waterman, Chairman Barnard, and any scientists at large who will put their views on paper.

The Senate's perspective on the role of NSF in the national scene has in the past been broader than that of the House, especially when the interest and concern of scientists have been made known. Scientists must again communicate their views to Senate committee members (see NL, 52-3) or NSF will receive a near-paralyzing setback.

House Sum Pitifully Inadequate. The incongruity of the House recommendation of \$3.5 million is particularly apparent when set against the Steelman Report estimates of \$200 million annually needed for basic research to keep development and application fueled at the proper rate. A major part of this sum should be expended through civilian science agencies. Even \$15 million, which is the maximum allowed under the statutory limitation insisted upon by the House when it approved the legislation, is sadly insufficient to meet the need. The proposed \$3.5 million is ridiculous.

Scientist Pressure Needed. In this election year, Congress is slashing budgets with gusto and almost all appropriation requests have been severely cut by the House. Even the AEC, previously almost untouchable, had \$174 million lopped off its request. When an established agency like AEC, with obvious military relationship, cannot buck the economy trend, the need for vigorous activity in support of NSF's new programs is obvious.

A timely tip in this connection is provided in a section of the comprehensive and penetrating analysis of "Some Administrative Problems in Governmental Research" (Syracuse University, Nov. 1951), by C. D. Ahlberg and J. C. Honey. Congress, they point out, is rather less interested in the technical program itself than "the relative strength of economic and political groups whose needs and interests are served by the technical program." In this regard, NSF so far is in a poor position, being without the specific backing of politically important groups. It is difficult at this stage for NSF to develop before Congress the "relationship of their...programs to the needs of public groups which command congressional support" because of the inevitable time lag between basic researches and obvious application.

In contrast to a year ago, however, NSF and scientists supporting it can now point, in addition to plans for the future, to substantial actions taken even under the present small budget. Fellowship awards, and research and travel grants -- while yet totally inadequate -- give evidence that at least some of the machinery for progressing to NSF objectives has been created. Lack of funds is one important reason for the present low rate of progress. All hope of increasing it now rests on the Senate subcommittee.

THE 624 NSF FELLOWS FOR 1952-53

NSF has awarded 569 predoctoral and 55 postdoctoral fellowships in the natural sciences for the academic year 1952-53. The fields of interest of the fellows were: biological sciences (158), chemistry (140), physics (137), engineering (75), mathematics (62), and earth sciences (36). The remaining 16 plan to study agriculture, anthropology, and astronomy. The predoctoral fellowships were approximately equally distributed according to year of study, 169 being awarded to first year graduate students, 170 to second year students, and 230 to advanced students. The 3000 applicants and the 624 recipients were distributed geographically roughly as the total population and the population attending college in the various regions, according to the NSF announcement.

ADDITIONAL NSF RESEARCH GRANTS

A second batch of 41 research grants, totaling \$406,660 has been announced by NSF. Both physical and biological sciences are included. The grants ranged from \$600 to \$31,700. More than half of them are for periods of two or more years. NSF has now approved grants totaling \$817,000 for basic research at universities well distributed throughout the country.

French Physicist Reacts (Continued from Page 1).

in the US which meets at a specific date; he starts making preparations several months ahead and requests a visa, reserves a place on a boat and makes all the necessary arrangements, but his visa does not arrive on time, and he must cancel everything.

"Another example: A physicist is invited to visit an American university for several months or a year; this visit can occur conveniently at one particular time determined by the various commitments imposed by the work or teaching in France and also by the nature of the academic year in the US. The visa does not arrive, although requested some months ahead.

"Hence, many French physicists who would like to have contact with their colleagues in the US are no longer willing to make the request, since the resulting formalities will complicate their lives with a problematical result for the desired date.

"We are often ignorant, moreover, of the reasons for these delays; in general they are not indicated to us. If it were a question of a very long delay, but a sure outcome, one could, if absolutely necessary, take the appropriate measures despite the difficulties of planning a very long time ahead.

"But this is not the case: Conversations with the American officials often raise hopes that visas will be granted after a short period, and this impression is repeated at each request for a complete inquiry. The result is quite disagreeable, and the applicant has the real feeling of being a suspect who is put off from week to week; the more so because he receives a long interrogation as if before a police magistrate. This state of affairs seriously impedes the possibilities of contact with scholars in the US and is most detrimental for science.

"One can specify that among the well-known physicists the Professors Jean Lecompte (infrared), Kastler (magnetic resonance), and Mademoiselle Perey (discoverer of Francium) were not able to go to the US last year. It seems, in particular, that the fact of membership in the Association des Travailleurs Scientifiques is a serious obstacle; but I can say that the very great majority of French physicists belong to this group, quite irrespective of their political opinions.

"M. Lecompte, for example, was personally invited to participate in the congress held in Columbus (Ohio) in June, 1951, by its president (Professor H. H. Nielsen) and was to give a series of lectures which were anticipated by American scientists.

"Lastly, the multiplicity of instances of delay produces a deplorable effect on French opinion: There is talk of it in the newspapers and the substance of the comments can only be injurious to the opinion that the great majority of French people hold of American democracy. I have even had occasion to see the expression 'iron curtain of the West' quite widely applied to the US, although 'semi-permeable wall' might be more appropriate when speaking of physicists."

FAS COUNCIL MEETS MAY 3 - 4

The newly elected Council of the Federation will have its first meeting in Washington on May 3 and 4, at Science Service, 1719 N Street, N.W. The Saturday session will begin at 7:30 PM and the Sunday continuation at 9:30 AM. Observers are welcome.

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US ARMS COUNT PROPOSAL

On April 5 the United States, through its delegate, B. V. Cohen, submitted to the UN Disarmament Commission a fairly detailed proposal for a step-by-step census of armed forces and armaments, including atomic armaments. Perhaps the most hopeful aspect of the proposal is the fact that it was submitted as a working paper, with an explicit invitation for suggested changes and none of the "take-it-or-leave-it" attitude that has characterized some of the earlier stages of the atomic negotiations. Drastic alterations, particularly along the lines of integration with other aspects of a control plan, appear to be necessary before there can be any hope of progress toward acceptance of its major features as part of an effective system of treaties.

The working paper is entitled "Proposals for the Progressive and Continuing Disclosure and Verification of Armed Forces and Armaments." It reveals nothing really new in US policy toward atomic disarmament. It merely provides further detail of a sort anticipated in the instructions to the Disarmament Commission in a resolution of the General Assembly, introduced by the US, Britain, and France.

Features of Proposal. The proposal anticipates that the carrying out of the early and less sensitive stages of disclosure and verification alone (without limitation or control) will help to establish international good faith as a basis for progressing to the later, more sensitive, stages. It is proposed that permanent machinery be established under a competent international authority for carrying out the stages of verification, and it is suggested that this would be a useful instrument for an "overall program of regulation, limitation, and balanced reduction of armed forces and armaments" which is presumably to be developed at a later date.

General access for inspection, including aerial surveys and "on the spot" inspection, is contemplated at all stages, with the UN Disarmament Commission playing an important role in the machinery, receiving disclosure reports and deciding on the need for inspection of specific facilities.

An "escape clause" is provided to the effect that if any state fails to provide the necessary cooperation at any stage, the whole thing may be called off by the others.

Five successive stages of disclosure and verification, which treat atomic and non-atomic armaments entirely symmetrically, are described. We here sketch the atomic aspects of each stage, it being understood that armed forces and non-atomic armaments are to be simultaneously revealed in a similar degree of detail at each stage.

Stage 1. Disclosure of producing installations, location, manpower, size, power input. Verification by direct inspection as far as possible outside the plants, by inspectors having access to all territory sufficient to locate all plants.

Stage 2. Disclosure of details of design, operation, present and past output of mines, metallurgical installations, etc., preparing material for use in reactors and isotope separation plants.

Stage 3. Disclosure of design and operation, present and past production of plants and laboratories producing concentrated fissionable or fusionable materials, and inventory of stocks of these materials. Verification by direct inspection and access to records.

Stage 4. Disclosure of the same for establishments producing atomic weapons.

Stage 5. Disclosure and verification by direct inspection of the location, number, and types of atomic and radioactive weapons on hand, including their storage sites.

Some Implications. It seems clearer than at Paris last fall that there has been some constructive thinking on atomic control going on in the State Department recently. It is by no means clear that there has been enough thinking. This proposal is not the plan toward which the FAS has been aspiring, though it may be a first step. Alone, it looks like a mere propaganda move for it provides no incentives for its acceptance. But it was submitted for further discussion. May constructive suggestions be forthcoming from all delegations!

In one sense, the proposal includes all of the disadvantages of an effective plan and none of the advantages. An attractive control plan would require the participants to give up coveted information to inspectors only in exchange for the improvement of security that comes from limitations of threatening atomic stockpiles. The US proposal, as it stands, requires agreement on the complete price to be paid before starting to talk in detail about value to be received. What more is in the minds of the members of the State Department, if indeed they have any further intentions, is not clear. This may be proper at this stage in the negotiations -- if they really do have something additional in mind and do not intend to wait for the actual acceptance of an arms count before revealing it. That it would be desirable, before writing a limitations plan, to have the information sought in the arms count proposal, if it could be gained, is obvious.

It is much easier to write a conservative proposal of this sort, which is in itself almost surely unacceptable, than it would be to decide on a more farsighted policy that weighs the necessity of some short-range disadvantages against the demands of the longer-range problem of national survival, and reconciles them in a mutually acceptable and mutually advantageous atomic limitations plan. In view of the importance and difficulty of this problem, it has been the policy of the FAS for the past half year to urge, through appropriate channels, the formation of a high-level commission to give the problem more sustained and devoted attention than is likely through regular departmental assignment.

The arms count proposal is far better than no negotiation at all, and hence deserves our wholehearted support so far as it goes. But the leisurely pace of the negotiations of which it is a part -- in comparison with the intensity of the atomic armament race -- suggests that the FAS should continue to urge a special commission to accelerate efforts to head off the dreaded climactic ending to the arms race.

-- D. R. Inglis, Chairman,
FAS Atomic Control Committee

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