

F. A. S. NEWSLETTER

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----- to provide information and to stimulate discussion. Not to be attributed as official FAS policy unless specifically so indicated.

THE CHAIRMAN WRITES FOR FAS

The following letters from the FAS Chairman were written following the January Executive Council Meeting. The FAS Resolution concerning the resumption of bombing in Vietnam is reprinted below the message to the President, although it will be noted that by the time the resolution was duplicated and ready for mailing to the news media, the decision to resume bombing had already gone into effect. The FAS Resolution concerning nonproliferation of nuclear weapons appeared in the February Newsletter.

February 14, 1966

Mr. William C. Foster
Director
Arms Control and Disarmament Agency

Dear Bill:

As you know, the primary interest of the Federation of American Scientists is arms control and Disarmament. The FAS Council meeting in New York on January 28 and 29 discussed the current status of disarmament and adopted two resolutions which are appended to this letter. I am sending them to you on behalf of the FAS Council with a few personal comments.

Early last December I attended The White House Conference on International Cooperation. Several FAS members were panel members. It was a very inspiring conference, but with the growing involvement in Viet Nam there would seem to be little likelihood that many of the excellent proposals for international cooperation will be implemented. In my opinion, the most imaginative and constructive report was the one on arms control and disarmament. In the action endorsing Senator Pastore's resolution, the FAS Council also endorsed warmly the recommendations of the ICY Panel. The Council, like the Committee, recognized that "the merit of specific recommendations is open to debate." The FAS Council did emphasize, however, the importance and the urgency of adopting such a bold approach to solving the problem of the arms race. I am sure you are familiar with the contents of this excellent document.

We adopted a resolution on the non-proliferation of nuclear weapons which strongly supports the resolution introduced by Senator Pastore. The text of our statement attempts to explain why we support the Pastore resolution and to indicate some related issues which appear to us to be important.

The Council also adopted a statement advocating that the moratorium on the bombing of North Viet Nam be continued. While the decision to resume the bombing had doubtless already been made by the time the statement was adopted on January 29, I feel that the sense of this appeal for restraint is still relevant: any escalation of the war in Viet Nam diminishes the chance for reaching agreement on arms control measures. We feel that too little attention is being paid to the effects of our actions in the Viet Nam theatre on the hope of ending the nuclear arms race.

Since our FAS meeting the Soviet Union has made one new proposal and reintroduced a second which they made previously; according to the *New York Times*. The new pro-

(Continued on Page 2)

Uranium Wastes Grow In Colorado River Basin

The following article is condensed from the March 5, 1966 issue of The New Republic.

A special report by the Public Health Service that suggests potential radium radiation hazards to human life in the Colorado River Basin languishes in Secretary John Gardner's office at the Department of Health, Education, and Welfare. The Atomic Energy Commission opposes its release, fearing "public hysteria" if its contents are revealed. Thus far, the fears of the AEC have prevailed.

The report shows photographs of a snow-like substance piled in huge dunes, some by the millions of tons, along the banks of the Colorado and some of its tributaries. Some of these piles drift restlessly near the towns of Grand Junction and Durango, Colorado, and nearby Indian reservations. These are piles of uranium tailings, containing quantities of radioactive radium and other by-products of the uranium mills under contract with the AEC. Over the years, these mills have dumped their wastes along the river banks after the U-235 has been processed out of the ore. What concerns the Public Health Service is that these wastes contain radium-226, with a half-life of 1,600 years, and to a lesser extent, thorium-230, with a half-life of 80,000 years. Their immediate effects on humans are not known for certain. The critical portions of the human body affected over time by this kind of radioactivity are the bones, according to specialists.

Though the PHS is most concerned about this cumulative impact, some of the piles have been eroded to the point that as far downstream as 30 miles radium-226 has been found in quantities estimated to be twice the maximum permissible concentration recommended by the government for human consumption. In the Lake Powell and Lake Mead reservoirs downstream from the mills, the concentrations of radium-226 have been shown to be as much as three times the maximum permissible levels. Of this radioactive radium-226 that enters the river, the report says: "There is evidence that once they [the tailings] become part of the stream environment the tailings constitute a relatively long-term source of dissolved radium-226." Crops on farms irrigated by the Animas River, for instance, were shown to contain twice as much radium-226 as did similar crops upstream above the mills.

Since the early 1940's uranium-ore production has been a major industry in the Colorado River Basin area. There have been as many as a dozen processing mills and five concentrators at one time or another in operation. One problem in the mid-1950's was the substantial amount of surface water radiocativity in the area. The state of Colorado, the AEC, the PHS and industry have combated that threat. Nevertheless, the uranium tailings piles have continued to grow, and while some of the plants have ceased operations the piles remain there, exposed to the elements.

THE CHAIRMAN WRITES FOR FAS

(Continued from Page 1)

posal is a ban on the use of nuclear weapons against countries without such weapons, and the other is a joint, no-first-use pledge with the other nuclear powers. The FAS has long been on record for the latter and would certainly feel that the former was also desirable. A few months ago Ambassador Goldberg said that it was "unimaginable" that nuclear weapons might be used in Viet Nam. I feel that it would be morally, politically and strategically wrong for the United States to be the first to employ nuclear weapons in Asia now or in any other situation that I can imagine. The Federation would hope that the United States Government could be persuaded of this. If the United States does not subscribe to these two proposals, it seems to us that other nations will be reluctant to sign a non-proliferation treaty and that some may take this as a sign that the United States wishes to reserve the option to use nuclear weapons first in the present conflict.

We cannot hope to achieve agreements on arms control measures which leave the United States free to do whatever it wants. For this reason the FAS has taken a dim view of the MLF. We feel that a non-proliferation treaty should give assurance that the nuclear powers will not use such weapons to threaten or to attack non-nuclear powers and that a no-first-use pledge is a logical step toward limiting the race among the nuclear powers.

The Federation believes, as did The White House Committee on Arms Control and Disarmament, that progress in the disarmament negotiations is of paramount importance for the security of the United States and of everyone else. I personally feel that the United States could safely hold some of its nuclear warheads out of the European theatre if that would help to achieve agreement on the non-proliferation treaty, and that such an agreement might open the door to an acceptable solution of the crisis in Viet Nam.

In any event, we are all rooting for you and are anxious to do anything we can that might increase your chances for success.

Very sincerely yours,
W. A. Higinbotham

February 15, 1966

The President
The White House

Dear Mr. President:

The attached statement was passed by the Council of the Federation of American Scientists after considerable discussion during the evening of January 28 and the afternoon of the 29th. The FAS, which is concerned with science in relation to society and especially with arms control and disarmament, was formed in late 1945 to work for international control of atomic energy and for civilian control in

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Chairman.....Dr. W. A. Higinbotham
The FAS Newsletter is prepared in Washington.
Editor: Judith Eckerson.

The FAS, founded in 1946, is a national organization of scientists and engineers concerned with the impact of science on national and world affairs.

Sources of information (given at the end of articles in parentheses) are for further reference. Items reprinted directly from other publications are designated as such in an introductory paragraph.

the United States. You may recall that I was one of those you invited to attend the signing of the Act which extended the existence of the Arms Control and Disarmament Agency last year. A considerable fraction of our membership worked on armaments during the last war and many of our members are still working or consulting on military research and development.

The Council of the Federation did not feel it was within its competence to speak on the political issues involved in the Viet Nam war. Our membership has ample opportunity to express its views on such matters personally or through a variety of other organizations. But we are concerned as an organization with the relationship between the war in Viet Nam and the hope of achieving disarmament.

The decision to resume bombing of North Viet Nam had been made before this resolution could be delivered to you. Nevertheless, I am sure that the Council of the Federation of American Scientists would want me to present it to you. We are sure that you and the American Government are sincere in striving to achieve a just peace in Viet Nam. The moratorium on bombing was helpful in convincing other nations of this fact. In our opinion, a continuation of that moratorium would have enhanced the chances of peace negotiations, even though it might have made conduct of the war in the south more difficult. This is, of course, debatable.

But we are more concerned for the long view. We believe, and I think you will agree, that the nuclear arms race is a great danger to our own country and to the world as a whole. It was scientists and scientists only during the war who urged careful consideration of how the use of atomic weapons against Japan might affect the chances for achieving international control of atomic energy. It was the Federation of American Scientists that urged the Government right after the war to try to reach agreement with the Soviet Union. But short term considerations prevailed, the bombs were used (perhaps properly so) and the United States was very slow to develop a policy for international control of atomic energy. Perhaps a vital opportunity was lost to prevent the arms race from taking place.

The Federation has followed the course of the negotiations on arms control closely ever since then. Our members were active in initiating the Pugwash meetings. We started advocating the test ban in 1954. We lobbied for the Arms Control and Disarmament Agency. The Soviet Union, the United States and other countries seem now to be seriously interested in a treaty to limit the spread of nuclear weapons. We believe this to be of the utmost importance.

We earnestly hope that the impact of our actions in Viet Nam on the possibility of such a treaty be given the most serious attention. Further escalation would surely threaten the chances of achieving arms limiting agreements. If a stable world is to be achieved, the major powers will have to exercise restraint on occasion. Such restraint is not a sign of weakness, but a sign of true strength. The impression we are making on Moscow is of critical importance with regard to the non-proliferation treaty negotiations in Geneva, and possibly with regard to the chances for a cease-fire in South-east Asia.

We deeply appreciate your dedication to the cause of disarmament and to a just and peaceful world.

Respectfully yours,
William A. Higinbotham

F.A.S. RESOLUTION ON

RESUMPTION OF BOMBING IN NORTH VIET NAM

While sharing the general concern about the war in Viet Nam, the Federation of American Scientists is particularly concerned about its implications for arms control, disarmament, and measures against proliferation of nuclear weapons. Nuclear annihilation remains the gravest threat facing the world. Disarmament, coupled with peaceful means for re-

solving international conflicts, is properly a major goal of American policy.

Resumption of bombing in North Viet Nam would run counter to these goals. It would greatly weaken the moral leadership of the United States in non-proliferation and disarmament. Resumed bombing would increase the possibility of direct confrontation of major powers, and thus of the danger of total war.

We must not allow preoccupation with immediate military operations and short-term political goals to divert our attention from the long-range moral and political aims of creating a peaceful world community.

February 16, 1966

Hon. John O. Pastore
United States Senate

Dear Senator Pastore:

At a recent meeting, the Council of the Federation of American Scientists passed a resolution which "supports with enthusiasm" S. Res. 179. A copy of the Council resolution and Explanatory Statement is enclosed. As you know, the Federation, like yourself, has been concerned about the arms race since FAS was organized just twenty years ago. It would appear that there may be some chance at this time to achieve agreement with the Soviet Union and other powers on a treaty to prevent the spread of nuclear weapons, a step which you justifiably consider to be most urgent. We applaud your initiative in presenting your resolution and are heartened by the strong support that it has received in the Senate.

I would also like to compliment you on the excellent speech you made when you introduced the resolution. Your continued interest in and support of the International Atomic Energy Agency is most inspiring. The Federation strongly supports your efforts to bring more nuclear plants and chemical processing facilities under IAEA control. We agree with you that, "we must search for additional ways of discouraging non-nuclear nations from becoming nuclear powers. We must explore ways in which those nations who voluntarily deny themselves nuclear weapons are not subject to nuclear blackmail by those that possess these weapons." We would suggest that the recent Soviet suggestions—that the nuclear powers pledge not to be the first to use such weapons or pledge not to use nuclear weapons against nations which do not have nuclear weapons on their territory—deserve serious consideration from this point of view. As the enclosed statement says, the Federation agrees with you that the United States should make every effort to try to bring the Red Chinese into the disarmament talks.

The conflict in Viet Nam poses most serious problems for the American Government and people. But it must not distract us from the vital importance of preventing nuclear proliferation and of bringing the nuclear arms race to a halt before it is too late. The Federation will continue to support vigorously your efforts to achieve this aim.

Very sincerely yours,

William A. Higinbotham

RECENT PUBLICATIONS

WORLD POPULATION PROBLEMS, by Philip M. Hauser. New York: Foreign Policy Association, 1965. 48 pp. \$75.

This concise booklet relates the problem of population growth to the formulation and effectiveness of United States foreign policy. The facts of population growth and the problems it presents to economic progress are not novel, but the pointlessness of foreign aid, and conferences on technological and agricultural development, is more plainly argued here than in other publications. This booklet is the source of some basic facts and many basic questions. It would serve as the point of departure for group discussions, but does not provide answers.

(Continued on Page 4)

OF INTEREST . . .

According to a survey of patients at the Hiroshima Atomic Bomb Hospital, the incidence of malignant tumors is increasing among atomic bomb blast survivors. Of 285 patients admitted between January and November 1965, 60 showed malignancies (although they were admitted for a variety of ailments). Dr. Fumio Shigeto, director of the hospital and chief of internal medicine, said that the number of malignancies among blast survivors was the highest in 20 years. (*Medical Tribune*, 8 March 1966)

The United States apparently has under consideration a plan to head off a nuclear arms race between Israel and Egypt by offering both countries help in building atomic reactors for desalination of sea water. Part of the plan would include international inspection systems for nuclear facilities in the Middle East. Both Egypt and Israel have subscribed in principle to International Atomic Energy safeguards, but neither has signed the specific agreement on inspection of facilities. The cost of the proposed plan to the U.S. would be about \$100 million. (*N.Y. Times*, 28 February 1966)

Economists predict that South Vietnam, which three years ago exported 300,000 tons of rice, may have to import 400,000 tons from the United States this year. Last year the U.S. shipped 200,000 tons to Vietnam under the aid program. Since 1963, rice harvests have been at a record low. Production is down because of fighting, and economists believe that farmers are also hoarding rice in hopes that the price will go up. (*N.Y. Times*, 26 February 1966)

See January Newsletter for description of methods used by U.S. Army to destroy rice.

The United States successfully tested its first prototype nuclear rocket engine on the Nevada desert on February 3. Harold B. Finger, manager of the Space Nuclear Propulsion Office, said that the engine performed "better than expected." The nuclear rocket is being developed for advanced space missions. Finger said, however, that a "useful" nuclear engine was not expected to fly for several more years, perhaps a decade. (*N.Y. Times*, 4 February 1966)

Government entomologists, speaking at a Department of Agriculture news conference, have said that at least five more years of research, and more money, will be needed in order that present types of pesticides may be replaced by "narrow spectrum" types that would harm only single species of pests. Dr. E. F. Knipping, director of entomology research, said that present levels of pesticide residue are not directly harmful to man, but do kill beneficial organisms, fish, and wildlife, thereby adversely affecting the environment. The Department is at work on mass cultures of a number of viruses known to infect about a dozen major agricultural pests. (*N.Y. Times*, 4 February 1966)

The director of the Chicago Air Pollution Control Department, William J. Stanley, has announced that his department will install a remote control television camera atop a tall city building, and will watch directly for violations of air pollution regulations. Incineration of solid waste materials is a major source of pollution in Chicago. Eventually Stanley hopes to have three such cameras. Patrol cars will respond to violations immediately. (*N.Y. Times*, 21 February 1966)

A film banned from the British Broadcasting Corporation's television outlet has created controversy in London. A documentary purporting to show what might happen to the County of Kent after devastation by Soviet bombs, the film was first banned because it was "too horrifying." Later, British newspapers concurred with the decision, but on different grounds. They commented that the film was political propaganda and served the interest of those opposed to Britain's having a nuclear deterrent. Members of Parliament objected that it failed to make the balancing point that deterrence might prevent such scenes as shown. (*N.Y. Times*, 10 February 1966)

THE POPULATION CRISIS, by Larry K. Y. Ng (ed.) and Stuart Mudd (co-ed.). Bloomington, Indiana: University of Indiana, 1965. 364 pp. \$2.95 paperback.

This book is, in a way, a sequel to the one previously reviewed. It is a large collection of papers on the subject of the population explosion, and a fair number of these papers propose an approach or solution to the problem. There is no tendency to view population as a simple one-dimensional crisis—in fact there is a recognition that our western (particularly American) assumption that progress is inevitable is a block to serious consideration of the problem. Of course, the thesis that disaster is inevitable is just as destructive to the formulation of an approach to population control. The admission that the population crisis does not manifest itself similarly in all countries, and the diversity of views on its eventual control, give a complex picture, comprehensive enough for serious perusal by those already acquainted with the subject.

MAJOR ACTIVITIES IN THE ATOMIC ENERGY PROGRAM, by the United States Atomic Energy Commission. Washington: U.S. Government Printing Office, 1966. 442 p. \$1.50.

The report of the AEC (to the President) of its activities during 1965 is a reasonably short and comprehensive guide to all the areas with which the commission has concerned itself. Compared to 90 percent of what is produced by the Government Printing Office, it is well-organized and readable.

A partial list of the contents:

- The Nuclear Defense Effort
- Civilian Nuclear Power
- Nuclear Space Applications
- Auxiliary Electrical Power for Land and Sea
- Military Reactors
- Advanced Reactor Technology and Nuclear Safety Research
- The Plowshare Program
- Facilities and Projects for Basic Research
- International Cooperation
- Nuclear Education and Information
- Licensing and Regulating the Atom
- Control of Radioactive Materials
- Adjudicatory Activities

This report contains an exhaustive index, and several helpful appendices, including reference to a number of technical source-books, a summary of the AEC budget, and a list of institutions at which research is being conducted. The volume is of use to all but the specialist.

MORE RESEARCH IN SOCIAL SCIENCE?

The House Committee on Science and Astronautics was told by Roger Revelle, an oceanographer, that government support for research in the social sciences was inadequate. He said that knowledge of human beings and their behavior might be mankind's only real hope for dealing with revolutionary problems arising from man's use of technology and the fruits of the nonbehavioral branches of science. Dr. Revelle said that these sciences must be strengthened because the problems now arising profoundly involve the mysteries of the human mind and spirit, the values, emotions, and behavior of human beings.

He listed six revolutions now under way, all bringing grave problems as well as potential benefits. The poorer nations have the continuing problem of hunger and malnutrition, likely to get worse. This crisis is linked to the next, the medicine and public health that have reduced the death rate and brought lengthened lifespans now lived in hunger. The capacity of the U.S. to produce surpluses may be called upon to alleviate the food shortage in the world (most of the stockpiled surpluses are gone). World population control also requires much study in the social sciences, he said, since such control must be voluntary and clearly understood.

What Revelle called "the military revolution" has changed the basis of the economy from a mixed to a permanent war-based system. This has produced "an unholy alliance between partly hidden government and advanced industry." Other problems cited were the lack of knowledge of the psychological and cultural roots of conflict between societies, urbanization, and the rising expectations of the poorer nations who are the more bitter at the prospect of men of other nations reaching the moon.

The greatest revolution threatening man's freedom, he said, was the centralization of information possible with communications and computers. The government is potentially all-knowing, and therefore infallible. "The fallibility of Government is the safeguard of the citizen . . . here we need some research in political science of scope and imaginative direction. . . ." All these problems, in his estimation, warranted greater effort and support for the social sciences. Dr. Revelle is a member of the House Committee's panel of advisors on science and technology. (*N.Y. Times*, 27 January 1966)

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