

F. A. S. NEWSLETTER

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Charles C. Price, Chairman

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NAS RADIATION REPORT EMPHASIZES GENETIC DANGERS

On June 13, the National Academy of Sciences released a summary report of its exhaustive study on "The Biological Effects of Atomic Radiation." The study, made with the financial support of the Rockefeller Foundation, has been carried out by over a hundred scientists, organized in 6 committees devoted to the effects of atomic radiation with respect to genetics, pathology, meteorology, oceanography and fisheries, agriculture and food supplies, and disposal and dispersal of atomic wastes. A full report from each committee will be published at a later date.

GENETIC FINDINGS Of greatest significance was the report of the Committee on Genetic Effects of Atomic Radiation (reprinted in full in the *N. Y. Times*, June 13). They pointed out that, in addition to radiation-induced mutations resulting from man-made sources, there are also spontaneous and unavoidable mutations resulting from natural sources, heat, and certain chemicals. Since nearly all detectable mutations are harmful, and since genetic radiation damage is cumulative, the display of harmful genetic change depends upon the integral dose to the gonads received by an individual from his birth to the time of his offspring.

The Committee estimated that the average individual in the US now receives, in a 30-year period, between 4 and 5 roentgens (r) of total body exposure from background radiation, and about 3r of X-radiation. They further estimate that the 30-year radiation dose resulting from nuclear weapons testing at the present rate would be about 0.1r, within a factor of 5. In an attempt to assess the possible damage of a particular dosage, six of the committee members estimated that, if the whole population of the US received a radiation dose of 10r to the gonads, 5 million of the next total generation of 100 million children would have mutant genes, with an uncertainty of a factor of 10.

SUGGESTED ACTION The Genetics Committee recommended that: (a) records be kept of the total accumulated radiation dose received by every individual in the US; (b) radiation exposure be reduced to the "lowest limit consistent with medical necessity," particularly to the reproductive cells; (c) the total accumulated dose (except natural background) received by the general population up to age 30 shall be kept less than 10r, and that no individual should receive a dose to the reproductive cells of more than 50r up to the age of 30 and not more than 50r additional up to age 40 (at which time nine-tenths of their children will have been born); and (d) tasks involving higher radiation exposures be assigned to individuals unlikely to have additional offspring.

Compared to the report of the Genetics group, the other committee reports appear less vivid. The Pathol-

ogy Committee pointed out that radiologists have an average life of 60.5 years, compared to 65.6 years for the US population that has reached age 25, and 65.7 for physicians having no known contact with radiation. Most of the committee reports stress the inadequacy of our present knowledge, and call for further research and study. The complete summary report is available on request from the National Academy of Sciences, 2101 Constitution Ave., N.W., Washington 25, D.C.

LAPP WARNS ON STRONTIUM A strong challenge was issued by physicist-lecturer Ralph E. Lapp to the Academy committee's conclusion that 10r was a reasonable small dose over a 30-year period. Interviewed by INS reporter Darrell Garwood on July 5, Lapp maintained that the committee considered only external radiation, and neglected internal ingestion of radioactive material, chiefly strontium 90. If the "tests rates would slowly accelerate and double by 1970, [then] by 1962 there will be enough radioactive strontium committed to the stratosphere to produce a 100% 'maximum permissible amount' in every person on the planet," he said. Lapp added, however, that because of the slow fallout of radioactive particles, this strontium would not actually accumulate until the late 1970's.

In an article in the *Washington Post* of July 1, Lapp stated: "The strontium-90 being deposited in his bones is a radically new experience for man. We owe it to humanity that these experiments, now universal in impact, are kept within safe limits. And since we do not know precisely where the limit may be, it behooves us to proceed with caution lest radioactivity become a monstrous monkey-wrench thrown into the exquisite architecture of the human machine."

HOW THE WIND BLOWS In testimony before the Senate Armed Services Subcommittee on the Air Force, Lt. Gen. James M. Gavin estimated that the number of deaths resulting from an all-out H-bomb attack on the Soviet Union would run "of the order of several hundred million deaths," more or less, depending upon wind directions. Gavin's testimony was released June 28, after the record of the closed hearing had received security screening. A storm of comment arose, with Defense Secretary Wilson deploring release of the statement and claiming that it was "somewhat exaggerated." On the other hand, Lauriston S. Taylor, chief of the Nat. Bureau of Standards atomic physics division, said that, in a large-scale attack of the kind referred to by Gavin, aside from the number immediately killed, that attack would result in "such widespread contamination [from fallout] with its effects on human genetics so great, that I don't believe the human race could survive."

"I Might Do a Little Experimenting With You, Too"



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Court Rules on Security Dismissals

On June 11, the Supreme Court ruled 6 to 3 that only those Government employees holding sensitive jobs could be dismissed as security risks. This ruling, made in the case of dismissed Food and Drug inspector Kendrick M. Cole, is having far-reaching effects on the Eisenhower security program. The Justice Dept. has already directed all agencies to comply with the Court's ruling, and a number of security suspensions have been halted. A handful of Congressmen have protested the ruling, and bills to circumvent it have been introduced. The Justice Dept. and the Civil Service Commission, apparently representing the Administration position, are supporting these bills.

In its majority opinion, written by Justice Harlan, the Court held that Public Law 733, a 1950 statute on which the Eisenhower program is based, was clearly intended to apply only to a limited number of sensitive agencies. In May, 1953, the President's famed executive order #10450 had extended the act's provisions to employees in all Government agencies. The Court held that "it is difficult to justify summary suspensions and unreviewable dismissals on loyalty grounds of employees who are not in 'sensitive' positions and who are thus not situated where they could bring about any discernible adverse effects on the nation's security. In the absence of an immediate threat of harm to the 'national security' the normal dismissal procedures seem fully adequate and the justification for summary powers disappears." The dissenting opinion, written by Justice Clark, asserted that the Court had "stricken down the most effective weapon against subversive activity available to the Government."

JUSTICE COMPLIES Three days after the Court ruling, the Justice Dept. announced it had directed Government agencies to restore to duty any employees now suspended on security grounds from non-sensitive positions, and not to use security procedures on employees in non-sensitive jobs in the future. The Dept.'s Internal Security Division is studying possible changes in executive order #10450. Attorney Gen. Brownell promptly announced that 17 suspended employees in various branches of the Government were being restored to duty.

The significance of the Court's ruling can be seen from the fact that about half the security dismissals occurring under the Eisenhower program were, so far as can be ascertained, from non-sensitive jobs. A major criticism of the program was its seemingly indiscriminate application to all employees, regardless of the sensitivity of their work. The Court ruling was praised editorially in many papers, and by the Amer. Civil Liberties Union, former Sen. Cain, and others. It was attacked by Sens. Eastland, McCarthy and Mundt, and by Rep. Walter.

LEGISLATION PROPOSED Bills to extend the 1950 law to all agencies have been introduced by each of the above Congressmen. A differently oriented bill, by Rep. Rees (R, Kan.), would separate loyalty and security dismissals and set up a system for handling the loyalty cases. The Rees bill provides for a 3-man loyalty review board, similar in many respects to that which served under the Truman program, but it adds some provisions for the benefit of accused persons, including: (1) extension to job applicants of all the procedural rights of regular employees, (2) more discretion for agency heads in deciding whether it was really necessary to suspend an employee pending a review of his case, (3) a provision for appeal to the courts, (4) power for hearing boards to subpoena witnesses.

In letters to the House Civil Service Committee, which is considering the Walter and Rees bills, Attorney Gen. Brownell and Civil Service Commissioner Young asked enactment of the Walter bill. Young contended that the Court's decision "limits drastically the operation of the present security program." But Brownell's letter was less emphatic and it was reported that some Justice Dept. specialists believed the security program could still function if regular Civil Service removal procedures were used when necessary to protect non-sensitive work. The White House is believed to favor the stronger position taken by Young. Brownell advocated passage of the Walter bill as an interim measure, pending report of the 12-member Commission on Government Security.

The full significance of the Supreme Court ruling has not yet emerged. The door is apparently open for many employees

DISARMAMENT DEBATE DEVELOPMENTS

A new session of the UN Disarmament Commission began in New York on July 2, but has not produced any hopeful developments so far. The US, Britain, France and Canada introduced a resolution to endorse their 6-point declaration of principles made at the London disarmament sessions last spring. The western resolution calls for disarmament in stages, with progress from one stage to the next depending on "satisfactory execution of the preceding stage and upon the development of confidence through the settlement of major political problems." Other features of the proposal include reduction of nuclear stockpiles, and rigid control and inspection procedures, including aerial reconnaissance.

The reference to political settlements as a condition for disarmament was attacked by Soviet delegate Gromyko. He also attacked President Eisenhower's "open skies" proposal, saying it was a "notorious" proposal and will do "no good to anybody." The Soviets introduced a resolution of their own in the Commission, calling for renunciation of "the use or the threat of force and [a ban on the employment of] atomic and hydrogen weapons." The Indian Government has asked to speak at a Commission session, and V. Krishna Menon is expected to appear this week.

NEW PROPOSALS There was no lull in debate on disarmament issues in the recess between the London meetings of the UN Commission last spring and the current sessions in New York. Not only is a thorough policy reassessment being made by Stassen's staff, but new proposals have come from non-government sources. The Senate Foreign Relations Disarmament Subcommittee, headed by Sen. Humphrey (D, Minn.), heard testimony June 9 in Washington and June 16 in Minneapolis from a total of 56 witnesses. An editorial by Eugene Rabinowitch and articles by Col. Richard S. Leghorn and physicist D. R. Inglis (*Bulletin of the Atomic Scientists*, June) and the FAS testimony before the Senate Subcommittee covered much the same ground and have attracted considerable attention.

The FAS statement, presented by Chairman Charles C. Price, is designed as "a preliminary step" toward an absolute ultimate necessity of "complete and universal disarmament." Two basic steps are urged upon the US government: first, "international agreement be sought for the banning of any further nuclear weapons tests," and, second, a similar international ban on the testing of intercontinental ballistic missiles (ICBM) be instituted, "provided that competent authorities verify the feasibility of monitoring ICBM's." Price's complete statement is reprinted on page 3 of this Newsletter.

TRENDS The FAS proposals were launched against a background of "radiation neurosis" in Japan, British atom tests on the Australian range, the Twining visit to Moscow, and a series of Bulganin disarmament propaganda letters to Eisenhower and Eden, urging armed forces reductions in the US and Britain paralleling Russia's 1,200,000-man cut. In the clouded crystal ball, there are (or were) hints of increasing future pressure against atom testing and possible divorcing of the German unity problem from disarmament. Whether these trends will improve the prospect for disarmament cannot be guessed, but meanwhile, H-bomb tests are continuing and, as the *Washington Post* remarks (June 17), "the clock moves inexorably closer to the time when these fiendish instruments of annihilation will be beyond any known means of control."

A symposium on **IMMIGRATION**, containing articles on the history and various aspects of US policies in this area, is available at \$2 from the Duke Univ. School of Law, Durham, N.C. * * * * The Educational Policies Commission of the Nat. Education Association has published an informative volume entitled **MANPOWER & EDUCATION**, \$1.25 from the NEA, 1201 16th Street, N.W., Washington 6, D.C.

who have been dismissed from non-sensitive jobs in the last 3 years to take legal action for reinstatement and back pay. Judging from the events of the past three years, the ruling is expected to bring a sharp drop in future security suspensions, and it should go a long way to diminish the criticisms which have been aimed at the Eisenhower program in the past.

CAIN SEES IKE

Former Senator Harry F. Cain's long campaign to convince the President of injustices resulting from operation of the Federal security program culminated in a 40-minute private interview with Eisenhower on June 7. According to Cain, the President reacted with indignation to some of the cases of individual injustice, and asked him to put his views in writing and to confer further with Gerald D. Morgan, Eisenhower's legal adviser. Cain also reported "the President had thought that a clear distinction was being made between loyalty cases and security cases." This confusion is especially curious because it was Eisenhower's executive order #10450 which abolished this distinction.

Cain was a strong McCarthy supporter during his Senate term (1947-53), and was appointed to the Subversive Activities Control Board after his defeat for reelection. His sharp criticisms of security abuses occasioned considerable surprise when they started in early 1955. Recently, he has taken the position that the President has been kept in ignorance on this issue by his staff. Cain has interested himself in several individual cases, and has produced spectacularly speedy resolution of some.

RECENT SECURITY DEVELOPMENTS

In addition to the Army action in May to rule out "guilt by kinship" (see NL 56-5), Defense Secretary Wilson ordered on June 20 that DRAFTEES REJECTED ON SECURITY GROUNDS be given a hearing "if the registrant so requests." Wilson also instructed the service Secretaries to issue a uniform code for such proceedings. * * * * The CONTEMPT-OF-CONGRESS indictment against Harvard physics professor Wendell H. Furry for his refusal to testify before a McCarthy Subcommittee was dismissed on June 13. Furry and Leon J. Kamin, former Harvard research associate, refused to answer Sen. McCarthy's questions in January, 1954, about former Communist associates. When Kamen was acquitted last January (NL 56-1), the US Attorney concluded that the evidence against Furry was also insufficient and moved to drop the prosecution.

The principal news about the COMMISSION ON GOVERNMENT SECURITY is the lack of news; in fact, slow progress is reported to be causing some discontent within the group. So far, the Commission has acquired offices and some staff (the general counsel is former St. Louis City Counselor S. H. Liberman, and 3 top posts are filled by former FBI men), and asked Congress for more time and more money. The Commission will be concerned primarily with security procedures, and will study individual cases only as they bear on procedures.

SWEEPING DEFENSE CHANGES ASKED BY KILLIAN

"Organizational patterns" within the Defense Department must be drastically changed to deal with such advanced weapons systems as intercontinental ballistic missiles, MIT President James R. Killian, Jr. warned in testimony before the Senate Armed Services Subcommittee on Air Power on June 20. "The military task no longer divides up neatly into 3 mission areas, defined by the vehicle the fighting man rides in," he said. "New, functional-type military organizations" are required for the job.

To win the present arms race with Russia, he urged the US to double its expenditures for education, noting that about \$2 million spent "boldly" now to correct present educational deficiencies, particularly in the sciences, could infuse new life and great teaching art into thousands of schools. For survival in the technological age, he suggested a "thorough, objective, non-political study" of future technological progress, including the utilization of scientific and engineering manpower in the US; a search for neglected areas in research and development activities important to defense; and an exploration of ways to move more rapidly from discoveries in basic science to production.

Killian urged that overall military research funds should be increased, and he stressed the importance of flexible management of the research development budget to "encourage further innovation, to pick up the new bright ideas." He said that spending should be put more in the hands of scientists and less in those of military "financial managers," the Washington Post reported on June 21.

POOLING THE ATOM ABROAD

Representatives of the member-nations of the European Coal and Steel Community met in Brussels on June 26 to draft a treaty for the organization of Euratom, a supra-national atomic agency for the six countries. The agency would act to centralize research, security procedures and marketing of nuclear materials, and would build and run installations for joint use of all members. Such an organization was proposed in a report accepted as a basis for the current Brussels talks when the 6 foreign ministers of the member-nations met in Venice at the end of May.

An earlier report presented to the Coal and Steel Community in April had proposed a stronger role for Euratom, including ownership of all material and equipment used solely by the nuclear industry. It appears, however, that even the weaker proposals will face strong opposition as the issue is debated in the French Assembly, particularly if limitations on French weapons development are involved.

Some competition for Euratom is offered by a plan of the Organization for European Economic Cooperation, calling for a weaker organization without supra-national powers. Such a plan would tread on fewer nationalist toes, and might enlist Britain, Europe's major atomic power. Proponents of Euratom favor both plans, and maintain that Euratom could eventually function as a member of the OEEC group.

UN AGENCY PROGRESSES Invitations are being sent to the 87 UN-affiliated nations to meet in New York on Sept. 20 to set up the new International Atomic Energy Agency. A draft charter for the IAEA was agreed upon in Washington on Apr. 18 by a 12-nation committee (NL 56-4). Arrangements for the Sept. conference have been delayed by the insistence of the Russian, Czech and Indian delegates that Red China be included. On June 28, however, agreement was reached to issue the invitations, which are to indicate there is opposition by these countries to the idea of inviting Nationalist China.

ASIAN NUCLEAR RESEARCH CENTER A 250-acre site near Manila was selected June 2 by a 10-man US survey team for an Asian nuclear research and training center, under the President's "atoms-for-peace" program. The center will have one or two research reactors, possibly an experimental power reactor, and facilities for botanical experimentation. Marvin Fox, of Brookhaven Nat. Lab., and a group of experts touring Asia found that most Colombo Plan nations welcomed the proposed nuclear center. In India, however, sentiment was lukewarm. The team's recommendations will be presented to the US government and formally proposed at a meeting of the Colombo Plan nations at Wellington, New Zealand, next October.

The FAS is a national organization of scientists and engineers concerned with the impact of science on national and world affairs. The Newsletter is edited by members of the FAS Washington Chapter. Contributors to this issue were:

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POWER REACTOR BILL TO SENATE

The latest development in the peacetime atomic power controversy came on June 29 with authorization by the Joint Atomic Energy Committee of a \$400 million program for Government construction of A-power plants. The bills, approved by a 14-0 vote in the Committee but expected to encounter strong opposition on the floors of both House and Senate, would direct the Atomic Energy Commission to build 3 large-scale nuclear reactors as well as design and construct smaller reactor prototypes of less than 50,000 kw.

The legislation, according to Sen. Anderson, Committee chairman, meets most of the objections by private power spokesmen to the original bill introduced by Sen. Gore (see NL 56-5), in that the approved bill restricts reactor construction to AEC installations. Gore held that private industry had failed to perform satisfactorily in the peacetime atomic development field. Accordingly, he proposed the erection of six power plants in industrial areas to test their commercial value. Representatives for the utilities denied the need for such a program. The Edison Electric Inst., trade association for the electric utilities, had reported earlier that 113 utility companies were active in the nuclear power field and that atomic plants now planned by private enterprise will have a capacity of more than 1 million kilowatts.

SHARE-THE-ATOM The legislation, in addition, would direct the AEC to promote "international cooperation and assistance" in the design, construction and operation of A-power plants. The share-the-atom feature of the legislation is presumably intended to implement proposals made last May by Anderson and Robert McKinney, Santa Fe publisher, to develop atomic power facilities abroad where shortages of conventional fuel would make such installations comparatively cheap power sources. The Senator emphasized that such a program would cost "only a small part" of contemplated military aid and would "pay far greater dividends both in security and satisfaction." A similar plea was heard from J. J. Hopkins, head of General Dynamics Corp., builder of the Nautilus, on the grounds that unless the US ships nuclear reactors abroad, this country will miss the international atomic energy market.

BROADEN DATA EXCHANGE On June 14, a joint statement by the AEC and the State Dept. announced that the 1955 Anglo-American nuclear information exchange agreement, designed to promote peaceful uses of atomic energy, was extended to include certain military information. Officials of both countries emphasized exchange of data on "package power" reactors for aircraft, naval vessels and land vehicles. Greater standardization of equipment among NATO nations was also ex-

INTERNATIONAL EXCHANGE ENCOURAGED

President Eisenhower on June 29 approved a recommendation of the National Security Council for increasing exchange of persons and information with Soviet bloc countries. His approval was accompanied by 17 specific proposals presented by the western foreign ministers at Geneva but rejected by the Soviet Union. These included proposals for elimination of censorship and radio jammings; establishment of information centers; exchange of books, official publications, broadcasts, films, exhibitions, students, scholars and sports figures; increase of tourism; removal of travel restrictions on diplomatic missions; and exchange of direct air transport services. Point #13 provides that "meetings of outstanding scientists and scholars of the four countries at reputable international congresses should be facilitated."

FINGERPRINTING REQUIREMENT Point #11, providing for encouraging the increase of tourism by "more liberal procedures as regards travel restrictions and other administrative practices," was running into trouble in this country, specifically into objections of Rep. Walter (D, Pa.) to elimination of the fingerprinting requirement for foreign visitors.

In response to President Eisenhower's special immigration message of February 8, requesting removal of fingerprinting and other travel obstacles, Rep. Walter agreed to drop the requirement. He did this by attaching a rider to his bill (see NL 56-5) to give the State Dept. authority to deny passports on the basis of "confidential information." Apparently he intended to attract support from the liberal forces in Congress for the much more controversial passport measure (N. Y. Times, May 29). Initially, Walter's proposal went only so far as to drop the fingerprinting requirement for visitors from non-Soviet bloc countries, but the Times reported on June 28 that, according to Congressional sources, Walter would comply fully with the White House request when his bill is considered by the full House Judiciary Committee.

pected to result.

On June 20, the Senate passed a bill authorizing the construction of a "nuclear-powered prototype merchant ship capable of providing shipping services on routes essential for maintaining the flow of the foreign commerce of the US." A similar bill passed the House last year. Construction and manning of the ship would be by joint direction of the AEC and the Maritime Administration. The ship, which could be ready in 2½ years, would serve as a substitute for President Eisenhower's proposed "peace-ship," characterized by some members of Congress as an atomic "showboat."

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