

News of Science

International Atomic Energy Agency

Formal requirements for the establishment of the International Atomic Energy Agency were met on 29 July when the United Kingdom, the United States, France, Canada, Australia, and Brazil deposited ratification papers. Twenty other nations, including the Soviet Union, had previously ratified the agency's statute.

The first general conference of the agency will open in Vienna, Austria, on 1 Oct. This conference will bring the agency into operation by completing the selection of the board of governors. The two principal organs of the agency, the general conference and the board of governors, will decide on the budget, staff structure, and program of the agency as well as on its relationship with the United Nations and with other international organizations. They will also appoint a director general of the agency and determine its permanent seat, for which Vienna was recommended by the conference on the statute.

The Preparatory Commission of the agency, composed of representatives of 18 countries, which has been meeting in New York since October 1956, has prepared recommendations on the substantive issues to be considered by the first general conference and the first board of governors.

Although the United States has ratified the agreement, legislation authorizing monies for, and the appointment of, a representative to, the agency have been discussed extensively in committee, where an amendment proposed by Senator John W. Bricker of Ohio was considered and reconsidered. This amendment specified that the President must obtain the consent of Congress each time he wishes to make nuclear materials available to the agency. The amendment was adopted by the Joint Congressional Committee on 19 July and readopted by a smaller majority on 30 July. However, both Republican and Democratic members of the committee teamed up against it on the House floor, and on 8 Aug. the House voted to strike the restriction out by a vote of 298 to 99.

Oregon Museum of Science and Industry

Tomorrow, on a site in the Portland (Ore.) Zoological Gardens, an effort will be made to erect, in one day, the walls of a new building to house the Oregon Museum of Science and Industry. Several hundred members of the Unit Masonry Association will attempt to lay 100,000 units of masonry, including brick and block, in the "barn-raising bee." Members of Bricklayers Local No. 1, AFL-CIO, are contributing their time; the Mason Contractors Association is donating time and equipment; and the manufacturing and distributing members of the Unit Masonry Association are contributing material and equipment, in some cases at no cost to the museum.

Construction of the museum building follows a campaign, conducted for the past several months as "project science," to provide a new museum of science and industry for the state of Oregon.

Smoking and Cancer in Britain

The following excerpts are drawn from the British Medical Research Council's statement on "Tobacco smoking and cancer of the lung":

"In their annual report for 1948-50 the Council drew attention to the very great increase that had taken place in the death-rate from lung cancer over the previous twenty-five years. Since that time the death-rate has continued to rise, and in 1955 it reached a level more than double that recorded only ten years earlier (388 deaths per million of the population in 1955 compared with 188 in 1945). Among males the disease is now responsible for approximately 1 in 18 of all deaths. Although the death-rate for females is still comparatively low, it also has shown a considerable increase in recent years and the disease is now responsible for 1 in 103 of all female deaths.

"Three comments may be made on these figures. In the first place, the trend over the last few years indicates that the incidence has not yet reached its peak. Secondly, the figures are not to be ex-

plained as a mere reflection of the introduction and increasing use of improved methods of diagnosis but must be accepted as representing, in the main, a real rise in the incidence of the disease, to an extent which has occurred with no other form of cancer. Thirdly, only a small part of the rise can be attributed to the larger numbers of older persons now living in the population; in the last ten years the lung-cancer death-rates among both men and women have risen at all ages from early middle-life onwards. . . .

"From the nature of the disease attention has focused on two main environmental factors: (1) the smoking of tobacco, and (2) atmospheric pollution—whether from homes, factories, or the internal combustion engine. . . .

"The evidence that heavy and prolonged smoking of tobacco, particularly in the form of cigarettes, is associated with an increased risk of lung cancer is not based on the observation that the substantial increase in the national mortality followed an increase in the national consumption of cigarettes. It is derived from two types of special inquiry. In the first, patients with lung cancer have been interviewed and their previous histories in relation to smoking and other factors that might be relevant have been compared with those similarly obtained from patients without lung cancer. The results of nineteen such inquiries (in this country, the U.S.A., Finland, Germany, Holland, Norway, and Switzerland) have been published. They agree in showing more smokers and fewer non-smokers among the patients with lung cancer, and a steadily rising mortality as the amount of smoking increases. In the second type of inquiry, information has been obtained about the smoking habits of each member of a defined group in the population and the causes of the deaths occurring subsequently in the group have been ascertained. There have been two such investigations, one in the U.S.A. covering 190,000 men aged 50-69, and the other in this country covering over 40,000 men and women whose names appeared on the Medical Register of 1951. In both, the results have been essentially the same. The investigation in this country, which has now been in progress for more than five years, has shown with regard to lung cancer in men: (1) A higher mortality in smokers than in non-smokers. (2) A higher mortality in heavy smokers than in light smokers. (3) A higher mortality in cigarette smokers than in pipe smokers. (4) A higher mortality in those who continued to smoke than in those who gave it up. It follows that the highest mortalities were found among men who were continuing to smoke cigarettes, heavy smokers in this group having a death-

rate nearly 40 times the rate among non-smokers. Although no precise calculation can be made of the proportion of life-long heavy cigarette smokers who will die of lung cancer, the evidence suggests that, at current death-rates, it is likely to be of the order of 1 in 8, whereas the corresponding figure for non-smokers would be of the order of 1 in 300. The observation on the effect of giving up smoking is particularly important, since it indicates that men who cease to smoke, even in their early forties, may reduce their likelihood of developing the disease by at least one half. . . .

"Knowledge of the causation of lung cancer is still incomplete. Many factors other than tobacco smoking are undoubtedly capable of producing the disease; for example, at least five industrial causes have been recognized. Nevertheless, the evidence for an association between lung cancer and tobacco smoking has been steadily mounting throughout the past eight years and it is significant that, during the whole of this period, the most critical examination has failed to invalidate the main conclusions drawn from it. . . . The epidemiological evidence is now extensive and very detailed, and it follows a classical pattern upon which many advances in preventive medicine have been made in the past. . . ."

PIRATE

The Pacific Science Board of the National Academy of Sciences-National Research Council is sponsoring a 3-year study of the biology and ecology of rats on Pacific islands. Rats occur on most of these islands, where they play a dominant, and often disruptive, part in the ecology of the biotic community. The scientific literature indicates, however, that no fundamental research on island rat populations has been carried out in recent years. The few local studies of rat biology have been of brief duration and restricted in scope.

Field work was started in the summer of 1955 at Ponape in the U.S. Trust Territory, a tropical island of 130 square miles that has mountains rising 2500 feet and a population of about 6000. The civil administrator has made available the facilities of the Agricultural Station as well as housing and other forms of assistance.

The investigation, known as the PIRATE (Pacific Island Rat Ecology) Project, is designed to gather data on the normal activities of rats on both high islands and atolls. The common local species are the black rat (*Rattus rattus*) and the Polynesian rat (*Rattus exulans*), while about the buildings there are Norway rat (*Rattus norvegicus*) and the house mouse (*Mus musculus*).

The principal investigator of this project is Tracy I. Storer of the University of California at Davis, who is assisted by ten project consultants. The field research team, which has a changing membership, includes Joe T. Marshall, Jr., University of Arizona (1955-56); William B. Jackson, formerly with the U.S. Public Health Service (1955-57); Robert L. Strecker of Miami University (1956-58); and Kyle R. Barbehenn, formerly with the Army Chemical Center (1957-58).

The PIRATE program is made possible as a result of generous assistance from the Administration of the Trust Territory of the Pacific Islands, logistic support from the Office of Naval Research, and financial assistance from the National Science Foundation and National Institutes of Health. Storer would appreciate receiving any information on Pacific Island rats that might be helpful to the research team or that might be evaluated in the preparation of the final report of the project.

National Foundation for Infantile Paralysis Fellowships

The National Foundation for Infantile Paralysis offers postdoctoral fellowships in research, academic medicine, or the clinical fields of psychiatry, rehabilitation, orthopedics, the management of poliomyelitis, and preventive medicine and also in the medical associate fields of social science, health education, physical therapy teaching, and occupational therapy teaching.

Financial support of the fellow varies according to his previous education, professional experience, marital status, and number of dependents. Compensation to the institution is arranged according to the program undertaken. For a full academic program, tuition and fees are allowed; for other programs, a sum not to exceed \$1250 per year (includes tuition) is provided.

All awards are made upon recommendation of the appropriate National Foundation Fellowship Committee. U.S. citizenship is required, but those who have filed a petition for naturalization will be considered. Partial fellowships are available for qualified veterans to supplement G.I. educational benefits.

The National Foundation has authorized the expenditure of \$26,500,000 since 1938 for scholarships and fellowships, and for aid to educational institutions, professional organizations, and related activities. Current deadlines for applications in the medical and medical associate fields are 1 Sept. and 1 Dec. for consideration in November and February, respectively. For further information write to: Division of Professional Edu-

cation, National Foundation for Infantile Paralysis, 301 E. 42 St., New York 17, N.Y.

Los Alamos Group on Nuclear Tests

The Los Alamos Chapter of the Federation of American Scientists, which has about 50 members who are employed at the Los Alamos Scientific Laboratory, has released a statement entitled "Putting nuclear weapons testing in perspective." The statement expresses concern about the arguments presented to President Eisenhower recently by E. O. Lawrence, Edward Teller, and Mark Mills in favor of continuation of nuclear tests to develop "cleaner" bombs. In the company of Atomic Energy Commission Chairman Lewis L. Strauss, the three physicists from the University of California Radiation Laboratory are reported to have said to the President: "Give us four or five years to test each step of our development and we will produce an absolutely clean bomb."

The FAS Los Alamos group says:

"We are encouraged by some recent improvements in the prospects for agreement in the London disarmament talks. At the same time we regret that recent highly publicized views of Drs. Ernest O. Lawrence, Edward Teller, and Mark M. Mills were subject to interpretation as an oblique attack on initial forms of the U.S. disarmament proposals.

"The dominant concern of U.S. policy must be to seek out and to take all equitable steps in disarmament and in international relations which can be expected to diminish the risk of war. When placed in contrast with this objective, technical improvements in the means of waging war are insignificant. Therefore, it is urgent that the technical reasons recently publicized for continuing nuclear weapons tests be put in proper perspective. . . . The choice which faces us now is not so much between 'clean' and 'dirty' bombs, but rather between a world in which war and, therefore, nuclear bombing will occur, and a world in which we shall be free of their scourge.

"A secondary technical reason offered for continuing weapons testing is the hope that such testing may contribute to the development of peacetime uses of atomic energy. To the extent that there is a basis for this hope, we stress that the appropriate auspices for such a program would be provided by the inspection and supervision of a U.N. Commission, rather than by the competitive concealment of secret weapons programs. . . .

"We are reassured by President Eisenhower's firm statement that this country will not be deflected from its offers to ban, under appropriate conditions, the