GENERAL SCIENCE

Scientists Pushed Around

They are urged to "get busy" in order to assure well-conceived National Science Foundation, broader research programs and greater funds for science.

➤ SCIENTISTS have "let themselves be pushed around" when it comes to getting legislation to give them "favorable working conditions" and "security," an officer of the nation's largest general science society believes.

Dr. Howard A. Meyerhoff, administrative secretary of the American Association for the Advancement of Science, urged his fellow scientists to "get busy" if they want the creation of a National Science Foundation. Bills to establish the civilian foundation for the direction of government support of research have been killed three times since the war.

"We can be more powerful than we know, and we might try throwing our weight around—just once, in the interest of a well-conceived National Science Foundation, that will bring even greater benefit to the nation than it will to individual scientists," Dr. Meyerhoff suggested in the BULLETIN OF THE ATOMIC SCIENTISTS (Jan.).

He called on scientists to tell Congress if they want broader research programs and greater funds for science.

"Representatives and senators respond to pressure, not to indifference," scientists were advised.

Dr. Meyerhoff compared the scientists' position with labor, industry and the military. The special needs of scientists he termed "mental security." This consists of independence in scientific work, facilities for work and assured support to guarantee completion of research projects, the AAAS official said.

Dr. Meyerhoff declared that these conditions could be provided by a foundation.

A bill to establish the foundation which has been introduced in the Senate came under attack in the same publication from the Washington Association of Scientists, an organization affiliated with the Federation of American Scientists.

The bill, identical with one which passed the Senate but failed in the House of Representatives during the last Congress, has been re-introduced by a bi-partisan group of senators.

Terming the bill "the weak version of the foundation," the statement by a group from the local Association charges that the legislation does not provide enough authority for the foundation.

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BACTERIOLOGY-PUBLIC HEALTH

Atomic Waste Disposal

Germs may prove to be inexpensive and safe agents for purifying radioactive liquid wastes. Sludge of modern sewage disposal plant tested.

➤ BACTERIA, germs to the layman, may in future be used to take care of dangerous, radioactive liquid wastes from atomic energy plants, piles and the like.

Use of them for this purpose would provide safe disposal of these wastes at less cost than chemical methods, Dr. C. C. Ruchhoft of the U. S. Public Health Service's Environmental Health Center at Cincinnati, Ohio, told an Atomic Energy Commission meeting in Washington.

The bacteria would be used much as they are now to purify wastes in modern sewage disposal plants.

Experiments at Los Alamos, Dr. Ruchhoft reported, suggest that a two-stage activated sludge process can be expected to remove 99% of plutonium from wastes. The fluid remaining should then approach the tolerance, or safe, limit of plutonium that can be discharged into a stream.

The activated sludge is made up of massive colonies of bacteria embedded in a jelly-like substance. When the bacteria swell through absorbing water they present an enormous surface area that can hold radioactive materials.

Questions still to be answered are: 1. Will the bacteria absorb and concentrate other types of radioactive material besides plutonium and uranium? (The Los Alamos experiments showed the bacteria took up uranium as well as plutonium.) 2. What can be used to feed the bacteria in the sludge? Normally they feed on organic sewage material being treated. But in many areas where radioactive wastes are found, adequate sewage is not available.

Studies to bring the answers are now under way at Oak Ridge, Los Alamos and Cincinnati.

Present methods of radioactive waste disposal are safe, AEC experts stated at the Conference. The Clinch River, which receives radioactive wastes from the Oak Ridge plant, has less radioactivity than many mineral waters widely used in the United States for drinking. The amount of radiation from all Oak Ridge operations that gets into the air is less than the extra cosmic radiation a person gets in going from sea level to Denver at 5,000 feet altitude. These examples were given by Dr. Karl Z. Morgan, director of the health physics division at Oak Ridge.

But AEC scientists and state and national health and sanitation authorities are working now toward safe and cheaper disposal of radioactive wastes in the future when there are many more atomic energy plants in many parts of the country.

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AGRICULTURE

"Tagged" Atoms Show Plants' Phosphate Use

➤ RADIOACTIVE phosphorus, used in the phosphate fertilizer supplied to plants in experimental plots in many parts of the country, has taught agricultural scientists a lot they didn't know a year ago. They gathered at the Beltsville experiment station of the U. S. Department of Agriculture, and told each other what they have learned by tracing the "tagged" element through plant bodies.

Plants with large, deep root systems, like corn, don't make as much use of fertilizer phosphorus as plants with more limited root systems, like potatoes, stated Dr. W. L. Nelson of the North Carolina Agricultural Experiment Station. Deep-rooted plants depend more on phosphorus already present in the soil.

Weather influences the uptake of phosphate fertilizer, Dr. N. S. Hall, also of the North Carolina station, told the meeting. "Tagged" phosphate placed as a side dressing during a drought in his state was not utilized at all, whereas the same fertilizer similarly placed in other states enjoying normal rainfall did get taken up by the plants.

The first cooperative fertilizer research program concentrated its efforts on phosphorus, stated Dr. F. W. Parker of the U. S. Department of Agriculture. Next radioactive elements to be utilized in similar researches will probably be calcium and sulfur.

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Palmetto growth is one of the worst pests on Florida farm and grazing lands and, where relatively dense, is hard to clear out with man or horse power because of its sharp-bladed leaves; tractors now are clearing many acres.