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MONTHLY STATUS AND PROGRESS REPORTS

NOVEMBER 1974

Excerpt

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
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V - BIOLOGY AND MEDICINEAppointments

Professor Harry Lake Bowman, Professor of Civil Engineering of the Drexel Institute of Technology, has been appointed a consultant to the Division of Biology and Medicine for the purpose of studying disaster plans. Professor Bowman served as Director, Physical Damage Division, U. S. Strategic Bombing Survey, studying the effects of the atomic bomb at Hiroshima and Nagasaki.

Speeches

Dr. Shields Warren addressed two medical groups at Charleston, S. C. on November 4 at a luncheon and dinner meeting on "The Diagnostic and Therapeutic Use of Radioactive Isotopes" and the "Atomic Age in Medicine."

Dr. Warren delivered an address before the American Cancer Society in New York on November 6 on "What Can We Expect From Atomic Energy."

Dr. John Bowers presented a paper prepared by Dr. Shields Warren and himself at the 76th annual meeting of the American Public Health Association on November 10 in Boston on "Laboratory Handling of Radioisotopes in Cancer Research."

Dr. Bowers delivered an address before the Industrial Hygiene Foundation in Pittsburgh November 18 on "The Use of Radioactive Isotopes in the Field of Industrial Hygiene."

Dr. James Jensen delivered an address before the 40th meeting of the American Society of Animal Production in Chicago on November 27 on "The Use of Radioisotopes in Animal Research."

Waste Disposal

At a conference held with the Dep. General Manager, Director of Public and Technical Information Service, Director of the Division of Engineering and the Director of the Division of Biology and Medicine, it was proposed that a seminar on waste disposal will be held in Washington on January 24 and 25, 1949 with the major responsibility represented by the Engineering Division, by representation of, and coordination with the Director of Biology and Medicine in the development of the following program

1. That the report on waste disposal could contain a section on oncologic aspects which would be the responsibility of the Division of Biology and Medicine with regard to the plans for work on the Columbia River by the Public Health Service.
2. That on-site problems touching with health physics and biology be primarily under the management of Dr. H. M. Parker, Manager,

Health Instrument Division, Hanford Operations Office, and matters of aquatic biology under Dr. I. R. Donaldson, Director, Applied Fisheries Laboratory, University of Washington.

3. That the Public Health Service personnel engaged in the river contamination problems should not work independently in these fields but should coordinate with the above named.
4. That so far as any broad problems brought up by the Public Health Service working on the Columbia River were concerned, the judgment of the Division of Biological Medicine would be essential.

Biology Branch

Fish and Wildlife. Projects have been submitted from the Fish and Wildlife Service for consideration by the Director of the Division of Biology and Medicine on (1) The effects of radiation on the life processes and ecological relations of wild animals both terrestrial and aquatic (2) The hazards to wild animal populations of radiation which may be produced by the activities of the Commission (3) The useful application of radioactive substances and techniques to research on the physiology of organisms and the biology of wildlife populations.

Agriculture Department. Radioactive materials give crops no benefit, first tests indicate. Experiments with certain low level radioactive materials conducted during the 1948 crop year in 14 States and with 18 crops so far have not shown any beneficial effect upon either crop growth or quality. The detailed results of these comparative tests will be announced at an early date.

The experiments were the first to be made under a special 2-year study to be carried on by the U. S. Department of Agriculture and cooperating agricultural experiment stations. The studies were undertaken in March of this year at the request of the Atomic Energy Commission in order to determine the effects of radio-activity upon plant growth. The Atomic Energy Commission is financing the work.

The materials used to apply radio-activity were a commercial radioactive product and radium. The first of these was applied at three different rates with 10 replications (repeated 12 times) in the various field tests -- to insure dependable results. The other was applied in only one concentration, comparable to the medium concentration of the commercial material but with the same replication.

The States where the field experiments were conducted in cooperation with the State agricultural experiment stations mentioned below, with the crops on which the radioactive materials were tried:

Arkansas	South Carolina
Georgia	Utah

Illinois	Corn, soybeans, oats, and alfalfa
Kentucky	Tomatoes
Michigan	Navy beans, table beans, and spinach
Mississippi	Corn
Montana	Potatoes
North Carolina	Tobacco and peanuts
Ohio	Ladino clover
New York	Carrots and potatoes
North Dakota	Wheat and barley
Washington	Sugar beets, field beans, and wheat
West Virginia	Corn

In addition, experiments, with tomatoes and turnips were conducted at the Plant Industry Station, Beltsville, Md.

These widespread one-season field experiments indicate strongly that the farmer cannot expect increased yields from money invested in radioactive materials. The question of possible stimulation of crops through use of radioactive chemicals will be investigated for another year.

The scientists carrying on these tests caution against confusing this study with the use of radioactive isotopes as tracers in the study of soils, fertilizers, and the nutrition of plants. As a research tool, radioactive isotopes are proving valuable, they say, but they admit they still have to find any evidence that radioactive materials stimulate plant growth.

A conference was held at the Plant Industry Station, Beltsville, Maryland on November 29 with representatives from twenty or more States on the results of fertilizer "Tracer" experiments with radioactive phosphates.

#### Report on Support of Research

The following additional proposals of research on biological and medical problems have been approved by the Division of Biology and Medicine:

Washington University School of Medicine - Dr. Wendell Scott - "Experiments to Determine the Feasibility of Developing Equipment that will be Capable of Mapping the Outlines of Organs or Deposits of Metastatic Tumor within the Body" - \$15,500.

University of Florida - Dr. A. A. Bless - "Bioelectric Potentials of Plants and Animals as a Function of Radiation Injury" - \$15,250.

University of Michigan - Dr. Fred C. Hodges - "Radioautography" - \$5,000.

Amherst College - Dr. H. E. Brown - "Research in Radiobiology and Chemical Genetics" - \$7,900.

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University of Delaware - Dr. Mary A. Russell - "Comparison of the Effects of X-rays, Neutrons and Mustard Compounds of the Growth and Development of the Corn Seedling" - \$3,770.

Johns Hopkins University - Dr. Abel Wolman - "Proposed Investigation of Adsorption and Assimilation of Radioactive Waste by Bacterial Slimes" - \$12,204.

Mt. Sinai Hospital - Dr. R. Loevinger - "Measurement of Tissue Dose Due to Gamma and Beta Active Radioisotopes" - \$6,250.

Purdue University - Prof. Heinrich Goebler and Dr. P. A. Tetrault - "Use of Radioactive Isotopes in Studying Mammal Metabolism with Emphasis on the Assimilatory Mechanisms of Lenticular Myxogonium" - \$3,550.

University of Berkeley - Dr. John H. Lawrence - "Equipment for nine-bed metabolic research unit to be built onto Cowell Hospital - \$52,000.

Simpson Memorial Institute (Ann Arbor) - Dr. F. W. Hartman - "Survival of Red Blood Cells after Treatment with Nitrogen Mustard" - \$1,500.

University of North Carolina (Chapel Hill) - Dr. C. P. Van Cleave and Dr. C. T. Kaylor - "Radioautographic Study of Beryllium 7" - \$29,780.

University of North Carolina - Dr. J. D. Bruner - Additional funds for apparatus relative to the project "Flow of Blood in Kidney" - \$777.50 (Present grant - \$12,000).

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