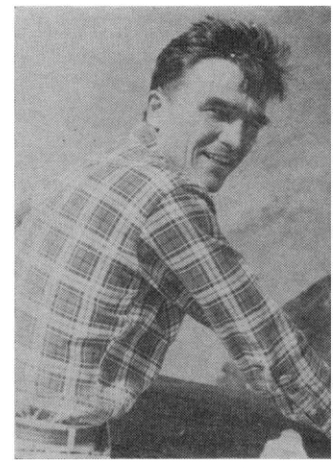
Hazards of Iodine-131 Fallout in Utah

AAAS Annual Meeting
26–31 December 1967
New York City



Norman Bauer

Several years ago, the effects of low-level radiation on human health were hotly debated by scientists. As Barry Commoner points out in his book, *Science and Survival,* "Controversy is nothing new to science; it is common when the available data are insufficient to decide between conflicting points of view. The remedy is more data. . . ." Thanks to cooperative efforts between individuals and government agencies there is now a very large amount of data on the controversial problem of the effects of radioactive fallout. One area where intensive research has been and is being carried on is that part of southern Utah which lies adjacent to the Nevada test site. In 1953, the Atomic Energy Commission stated, ". . . these explosives created no immediate or long-range hazard to human health outside the proving ground." However, in 1965 an official of the Utah State Department of Health testified at a congressional hearing: "With respect to our past experiences following the start of Nevada testing in 1953, we are now involved in a cooperative study with the U.S. Public Health Service and the Nevada State Department of Health to determine whether past exposures to fallout radiation have affected Utah residents."

Reports on these studies and on research in related fields will be made at the Norman Bauer Memorial Symposium on the Hazards of Iodine-131 Fallout in Utah, to be held 27 December during the AAAS annual meeting in New York City. The symposium has been organized under the sponsorship of the AAAS Committee on Science in the Promotion of Human Welfare, the Scientists' Institute for Public Information, and the Norman Bauer Memorial Fund, Utah State University. Lytt I. Gardner (Department of Pediatrics, Upstate Medical Center, State University of New York) is chairman. Another purpose of the symposium is to emphasize the role that independent scientists can play in carrying out the obligations summarized by the AAAS Committee on Science in the Promotion of Human Welfare:

> . . . We conclude that the scientific community should on its own initiative assume an obligation to call to public attention those issues of public policy which relate to science, and to provide for the general public the facts and estimates of the effects of alternative policies which the citizen must have if he is to participate intelligently in the solution of these problems.

During the fallout controversy many independent scientists made important contributions toward public understanding of the problem. Norman Bauer, a physical chemist at Utah State University, pioneered in developing evidence of high local concentrations of fallout in regions near the Nevada test site. In a paper presented to the Utah Academy of Sciences in 1958, he summarized the available data on iodine-131 in southern Utah and concluded, "Research on this problem is urgently needed. At present there are insufficient data to make a quantitative statement about the radioiodine hazards from local fallout." Editorializing on his paper, the Salt Lake *Tribune* stated, "Dr. Bauer's proposed program, utilizing a laboratory in southern Utah, could be an important first step toward bringing the radiation problem into proper focus." In 1960 Bauer died unexpectedly at the age of 45, but the proposal that he first made is now a reality. It seems entirely appropriate, therefore, that the symposium be named in honor of this outstanding scientist who exemplified so well the activities that the AAAS Committee has called upon scientists to carry out.

To open the symposium, Barry Commoner (Center for the Biology of Natural Systems, Washington University) will discuss the significance of the fallout controversy for our present and future concerns with environmental contamination and with the role of science in the development of public policy. Arthur R. Tamplin (Biomedical Research Division, Lawrence Radiation Laboratory) will then present estimates of the thyroid dosage accumulated by children in Utah—estimates which suggest that the dosage to the average child (2 to 5 years of age during 1952–55) may have been 50 rad and to the average child in St. George may have been as high as 120 rad. Edward S. Weiss (National Center for Radiological Health, U.S. Public Health Service) and Marvin L. Rallison (Department of Pediatrics, University of Utah Medical Center) will describe a continuing study during which children from 10 to 18 years of age have been screened annually by Public Health Service survey teams and examined by a panel of thyroid experts.

Robert A. Conard (Medical Department, Brookhaven National Laboratory) is in charge of the annual medical surveys of the Marshallese people who were accidentally exposed to fallout radiation in 1954. He will review briefly the acute effects and then discuss in more detail the late effects of exposure, particularly the development of thyroid abnormalities.

The afternoon session will begin

with remarks on the life of Norman Bauer by Oliver Johnson (Shell Development Company), his long-time friend and professional associate.

Martin Sonenberg (Endocrinology Division, Sloan Kettering Institute for Cancer Research) will review radiation effects on the thyroid based on information from animals and from radioiodine treatment for hyperthyroidism and thyroid cancers. He will explore the possible relation between experimental findings and the effects of fallout radioiodine on thyroid growth and function.

The effects of radiation on the aging process will be presented by Herman T. Blumenthal (Department of Psychology, Washington University); the implications of research in this field for those exposed to radioactive fallout will be discussed.

In concluding the formal presentations, Yook C. Ng (Biomedical Research Division, Lawrence Radiation Laboratory) will discuss the implications of the Utah situation for future uses of nuclear energy. The Utah situation indicates that subsequent to testing of nuclear devices at the Nevada test site both pre-shot prediction and post-shot documentation of the dosage to humans from internal emitters were inadequate. An approach has now been developed for pre-shot prediction of dosages which is intended to insure public health and safety.

The symposium will close with a round-table discussion by the participants, followed by questions from the floor.

The public has long been concerned about the effects of radioactivity from nuclear explosions. The AAAS Committee on Science in the Promotion of Human Welfare and the Scientists' Institute for Public Information, through their sponsorship of the Bauer Memorial Symposium, will provide some of the hard facts with which to answer old questions and settle new controversies.

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See Science, *22 September 1967, for details about registration and hotel reservations for the AAAS Annual Meeting. Additional reports on events or symposia taking place during the AAAS Annual Meeting appear in the following issues of* Science: *22 September, "Evolution of the Earth's Atmosphere"; 29 September, "Terrestrial Adaptation of Crustacea"; 6 October, "Behavioral Research–New York Zoological Park"; and 13 October, "Weather Modification."*

Placement Service

The New York State Employment Service, in cooperation with the United States Employment Service, will provide a Convention Placement Center at the 1967 Annual Meeting of the American Association for the Advancement of Science at the Americana Hotel, New York City.

Facilities will be provided for reviewing job orders and applications, exchanging messages, and conducting interviews from 1:00 p.m. to 5:00 p.m., 26 December; from 9:00 a.m. to 5:00 p.m., 27–29 December.

Pre-convention registration will be conducted until 1 December.

Orders and applications will be reproduced and filed in binders by categories for review by interested employers and applicants. Exact details on the procedure for using the convention placement service facilities at the hotel will be presented in an instruction sheet available at the AAAS Registration Desk or the Convention Placement Center.

To register for this service, applicants and employers may request applications and order forms by writing to:

Mr. Irving Smith
Professional Placement Center
New York State Employment Service
444 Madison Avenue
New York, New York 10022