

GENERAL SCIENCE

Young Scientists Cited

Five outstanding Federal Government scientists and technologists, all under 40 years of age, have been recognized for their contributions with Arthur S. Flemming Awards.

➤ TEN OUTSTANDING young men in the Federal Government under age 40, half from scientific or technical fields, were named winners of the 17th annual Arthur S. Flemming Awards.

The five cited for their outstanding achievements in scientific or technical fields during the fiscal year, which ended June 30, 1964, are:

Dr. Eugene Braunwald, chief of the cardiology branch, National Heart Institute, for "major advances in the understanding of the basic physiology of the heart, in diagnosis of heart disease and in its treatment."

Leonard Jaffe, director, communication and navigation programs, National Aeronautics and Space Administration for "a significant contribution to the overall planning, coordination and execution of NASA's research and development program in communication satellites."

Dr. Robert Jastrow of the Goddard Institute for Space Studies in New York for "continuous research concerning various aspects of nuclear theory and in particular the concept that there exists a very short repulsive force between nucleons," a concept called the Jastrow hard-core potential.

Dr. Joseph Francis Shea, manager, Apollo

spacecraft Program Office, NASA Manned Spacecraft Center, Houston, Texas, for his "contribution as head of the study group charged with responsibility to decide which one of three possible approaches should be used for the U.S. manned lunar landing: lunar orbital rendezvous, earth orbital rendezvous and direct flight."

Dr. George Walter Sutton, scientific advisor, directorate of development plans, Headquarters, USAF, for "contribution in advising the director of Development Plans on the scientific quality and engineering merit of new research and development programs."

The panel of judges who chose the award recipients was headed by Associate Justice Arthur J. Goldberg of the U.S. Supreme Court, and included Dr. Leonard Carmichael, vice president for research and exploration, National Geographic Society and president of the board of trustees of SCIENCE SERVICE; C. R. Smith, chairman of the board of American Airlines; Dr. Emory Cook, president, Operations Research Incorporated; Louis C. Paladini, president, Madison National Bank of Washington, D.C., and Karl Haar, president, Aerospace Industries Association.

• Science News Letter, 87:116 February 20, 1965

BIOPHYSICS

Carbon Traces Changes

➤ FALLOUT from nuclear bomb tests is allowing University of California at Los Angeles scientists to develop a new method for tracing vital chemical and physical changes in the human body.

Radioactive carbon increased by "dirty" H-bombs of 1961-62 opens up a way for measuring the metabolic turnover rate of tissue in the brain, heart, liver and blood stream, without endangering the human subject or resorting to indirect animal tests.

The research was conducted by Dr. Willard F. Libby, who won the Nobel Prize for his radiocarbon development, and Dr. Rainer Berger of UCLA's Institute of Geophysics and Planetary Physics together with Dr. James F. Mead, George V. Alexander and Dr. Joseph F. Ross of the Laboratory of Nuclear Medicine.

For their investigations, the scientists relied on Dr. Libby's "atomic clock" or radiocarbon-dating technique, which accurately measures, with supersensitive instruments, even the tiniest amount of carbon 14 in all living, and formerly living, plants, animals or humans.

During the testing of atomic and nuclear bombs, the level of carbon 14 in the atmos-

phere's carbon dioxide rose steeply.

"The bomb tests had the same effect as if somebody with a gigantic global syringe had injected some radioactive carbon as a tracer in every plant, animal and person in the world," Dr. Berger explained.

Autopsies were made on four men who had lived in Los Angeles for over 20 years and who had died in their early seventies during January 1964. They showed that measurable, though far from dangerous, amounts of carbon 14 had been incorporated in the brain proteins and lipids, the liver and heart, but practically none in cartilage samples.

Blood samples taken from six healthy Los Angeles residents over a two-year period showed a rising carbon 14 intake in the plasma and red blood proteins, corresponding to the increase of carbon dioxide in the air from bomb tests.

While the group's pioneer study has barely scratched the surface, Dr. Berger believes that the new technique may give life scientists a new and simple way of studying the formation and decay of tissues and cells.

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Questions

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CONSERVATION—What is the most immediate contamination problem in the United States today? p. 117.

EDUCATION—In what type of speech therapy is music very helpful? p. 119.

GEOPHYSICS—How much is the Arabian peninsula drifting away from the African continent each year? p. 127.

SPACE—What is the purpose of Project EOLES? p. 115.

TECHNOLOGY—How do the Russians propose to straighten the leaning tower of Pisa? p. 120.

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