

now. While Project Gemini is paving the way for the Apollo landing by providing practice time, a series of Surveyor spacecraft will soft-land on the lunar surface and radio data back to earth. The first two or three should be launched in 1966.

No planetary probes are planned, nor will any more spacecraft be sent to Mars until 1971.

The Communications Satellite Corporation may launch two more Early-Bird-style satellites, but they will be capable of carrying many more channels simultaneously.

• Science News Letter, 88:403 December 25, 1965

GENERAL SCIENCE

President Names 1965 Medal of Science Winners

► PRESIDENT LYNDON B. JOHNSON has named 11 scientists as recipients of the National Medal of Science. Among those selected is the late Dr. Hugh L. Dryden. It is the first time the award has been made posthumously.

The National Medal of Science, established in 1959 by the 86th Congress, is awarded by the President to persons "who in his judgment are deserving of special recognition by reason of their outstanding contributions to knowledge in the physical, biological, mathematical or engineering sciences."

The recipients were chosen on the basis of recommendations received from the President's Committee on the National Medal of Science, chaired by Dr. H. E. Carter of the University of Illinois. They are:

Dr. John Bardeen, professor of physics and electrical engineering at the University of Illinois and co-recipient of the Nobel Prize in Physics in 1956 for his "contributions to physics," especially in the "theory of electrical conductivity in solid materials."

Dr. Peter J. W. Debye, professor emeritus of chemistry at Cornell University and winner of the Nobel Prize in Chemistry in 1936, for "his contributions to the use of X-ray and light scattering analysis that have given man clear insight into the structure of complicated large molecules."

Dr. Hugh L. Dryden, deputy administrator of the National Aeronautics and Space Administration until his death on Dec. 2, for his work that contributed to the "fundamental understanding of boundary layer phenomena," and also for his outstanding efforts toward international scientific cooperation and understanding.

Dr. Clarence L. Johnson, vice president for advanced development projects at Lockheed Aircraft Corporation, for his designs of advanced aircraft, such as the A-11, that are "revolutionary and have opened up new domains in the possibility of flight."

Dr. Leon M. Lederman, professor of physics at Columbia University, for his studies on the properties and interactions of mesons, and "his participation in experiments involving asymmetry of beta decay and the discovery of two different kinds of neutrinos."

Dr. Warren Kendall Lewis, professor emeritus of chemical engineering at the Massachusetts Institute of Technology, who is generally regarded as the "father" of modern chemical engineering, for "his dis-

coveries in distillation and catalytic cracking which have been responsible for the modern development of the petroleum industry."

Dr. Peyton Rous, Rockefeller Institute, the world's foremost proponent of the virus theory of cancer for his work that led to the "first observation that a virus was responsible for the development of cancer in a mammal."

Dr. William W. Rubey, professor of geology and geophysics at the University of California, Los Angeles, for his contributions to the "discovery and definition of basic geological principles to an extent equaled by few others."

Dr. George Gaylord Simpson, Agassiz professor of vertebrate paleontology at Harvard University, for his pioneering work in "synthesizing the findings of genetics and paleontology to the end of approaching the 'how' rather than the 'what' of evolution."

Dr. D. D. Van Slyke, research chemist at the Brookhaven National Laboratory, for his development of "a large number of analytical methods which have been fundamental to the practice of modern biochemistry."

Dr. O. Zariski, professor of mathematics at Harvard University, for the very difficult task of "organizing algebraic geometry on a solid basis."

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ECOLOGY

Some Alaskan Reindeer Unfit for Santa's Sleigh

See Front Cover

► A HERD of 200 reindeer that arrived in Hagemeister Island, Alaska, last month are unlikely to find themselves assigned to Santa Claus' sleigh, since they had to be flown most of the way by the Air National Guard.

Everyone is familiar with Santa's rare flying reindeer (of which only eight—nine, including Rudolph—are known to exist), but for many years even the conventional variety have been scarce.

Introduced from Siberia in 1890, reindeer numbered 600,000 by 1936, only to have indiscriminate hunting and poor management deplete their number to 19,000 by 1952. The Bureau of Indian Affairs of the U.S. Department of the Interior then stepped in and has managed to roughly double the count since that time.

The Hagemeister Island group, seen on this week's front cover, came from a herd maintained by the Bureau on Nunivak Island. They were given as a loan to three Eskimos, who will care for the herd and pay back the loan, in reindeer, as the herd grows.

If the experiment is successful, judging next June by the number of fawns, similar projects will be started in other areas.

The purpose of the reindeer loan is not only to preserve the reindeer, but also to boost the Alaskan economy, which the Interior Department estimates could handle three times the present reindeer production. No one hunts the reindeer—they are considered livestock, not big game—and only Alaskan Eskimos may own them.

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GENERAL SCIENCE—Why is quartz more suitable for telescope mirrors than glass? p. 403.

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In what two ways may vitamin E deficiency occur? p. 402.

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ZOOLOGY—From what area were the Hagemeister Island reindeer imported? p. 404.

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