of the collection. The dust was collected by sweeping or dusting in the sickroom or from the household vacuum cleaner.

No poliomyelitis virus was detected in any of the dust samples.

Next the scientists tried drying polio virus in various ways. The results show that all forms of drying have a marked inactivating effect on the virus, whether it is in water, nose and throat washings or stool specimens. Inactivation, meaning the virus becomes non-infectious, seems to go on swiftly and becomes complete with total drying of the infected material.

The drying experiments, the scientists state, show that with adequate drying, such as might be expected with airborne infected particles under ordinary indoor conditions of temperature and humidity leading to dust formation, the period in which the virus remains active is much less than two weeks.

Details of the experiments, aided by a grant from the National Foundation for Infantile Paralysis, are reported in the JOURNAL OF INFECTIOUS DISEASES (March-April).

Science News Letter, June 9, 1951

AERONAUTICS

Airless Flight Duplicated

➤ SCIENTISTS NOW can make their first laboratory studies of supersonic flight conditions in the region from 50 to 70 miles above the earth, where the big rockets zoom.

A group of University of California engineers in Berkeley have just completed a unique wind tunnel which has no wind in it, in the usual sense of the word.

Conventional wind tunnels have big blowers which generate howling gales that beat against small aerodynamic models. The new wind tunnel at Berkeley is actually a vacuum chamber, with an atmospheric pressure about one ten-millionth that found at sea level. In other words it duplicates the atmospheric conditions—more accurately, the vacuum—found from 50 to 70 miles above the earth.

Supersonic speed is simulated by a molecular beam similar to the type used for atomic and nuclear research. This beam is fired from a "gun" with a bore only one ten-thousandth of an inch in diameter —too small to be seen by the naked eye.

The molecules fired are generated in a small furnace, the temperature of which determines the speed with which they emerge. At 1,000 degrees Centigrade the speed is 1,800 miles per hour.

Focused and controlled by a system of slits, the beam strikes varied model surfaces mounted in the evacuated chamber. This roughly duplicates the fluid mechanics of supersonic speeds at extreme altitude.

To measure these unique effects, the scientists have had to develop methods of measuring infinitely minute differences in pressure. One electronic gauge they have developed can detect pressure changes of one ten-billionth of the atmospheric pressure existing at sea level.

So far it has simulated speeds up to 950 miles per hour, one-fourth more than the speed of sound. It has already demonstrated that it can go to 1,800 miles per hour, and its upper range is limited only by the heat that can be generated in the furnace.

The purpose of the instrument is to develop information on superaerodynamics in the relatively unexplored area high above the earth. Conventional areodynamic concepts break down at about 50 miles, and experimental data on flight in the near-vacuum are practically non-existent.

The scientists hope to provide a body of experimental data of vital importance in the unknown region which may be a well-traveled route of rockets in the future.

The scientists are R. G. Folsom, S. A. Schaaf, G. J. Maslach, and F. C. Hurlbut.

Science News Letter, June 9, 1951

Crabgrass is seldom found in shady places on the lawn.

Question Box

Photographs: Cover, General Electric; p. 355, United States Steel; p. 357, Cerebral Palsy Society; p. 359, National Geographic Soc.; p. 363, Lad J. Erzen; p. 365, Yale University.

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