

VIROLOGY

Antiviral Agent Stops Cold Virus in Test Tube

➤ AN ANTIVIRAL AGENT known only as 1758 has been found helpful in protecting cells against a common cold virus.

Although 1758 is derived from a penicillium mold, its action is quite different from that of penicillin, a research team from Indiana University Medical Center in Indianapolis reports in Utica, N.Y.

Penicillin acts chiefly by inhibiting the growth of bacteria. The 1758, however, protects the cells by making them more resistant to the attacking virus.

In experiments with Salisbury virus H.G.P., isolated from a human cold, the Indiana researchers found that monkey kidney cells grown in test tubes resisted the virus for at least 14 days, perhaps longer, when protected with 1758 in appropriate concentration. There was no damage to the cells from the virus during this time, but the virus itself was also apparently unharmed, Drs. H. M. Powell, D. N. Walcher and C. Mast report in the current Proceedings of the Society for Experimental Biology and Medicine, 107:55, 1961.

They said that other workers have found 1758 also protects cells against poliovirus in the test tube. Whether the agent can be used effectively in the human body is still unknown.

• Science News Letter, 80:47 July 15, 1961

GEOPHYSICS

Cosmic Ray Particles May Affect Heredity

➤ HIGH SPEED "visitors" from outer space—cosmic ray particles that rain down on earth continuously—may be playing a part in the evolution of life on earth, a California physicist believes.

Dr. H. V. Neher, professor at California Institute of Technology, said the few particles reaching earth may occasionally strike and alter a gene in a reproductive cell, causing new variations in plants and animals.

Dr. Neher pointed out, however, that clouds of matter from the sun form a huge protective "solar shield" that helps protect earth from these "bullets from space."

The earth has two additional shields of its own that further reduce the number of incoming particles. These are earth's magnetic field, which deflects particles away, and its atmosphere, where particles smash into atomic nuclei.

Collisions in the atmosphere between particles and nuclei release energy, which forms into bits of matter called pi mesons, which in turn quickly decay into mu mesons. Some of these mu mesons, or secondary cosmic rays, slam into the earth to penetrate a thousand feet or more.

Together with the few primary cosmic particles that get through without any collisions, they flash through you in groups of 30 to 40 every second at almost the speed of light, which is 186,000 miles a second.

They are the only known particles of matter to reach us from beyond the solar system.

Dr. Neher, who has studied these space visitors 27 years, is aided by balloons carry-

ing cosmic-ray counting devices to an altitude of more than 100,000 feet. His work is supported by the Office of Naval Research.

Most cosmic rays probably were born during the explosion of stars, and may have traveled as long as a million years through magnetic fields in the galaxy that includes the solar system. A few high-velocity particles may even have originated in distant galaxies.

• Science News Letter, 80:47 July 15, 1961

CHEMISTRY

Air Force Tests New Heat-Resistant Fiber

➤ AN ORGANIC FIBER that looks like nylon but is far more resistant to high temperature has been developed.

The fiber, called HT-1, could be used in tires for the B-70 Valkyrie bomber and other aircraft, decelerator parachutes for space capsules, personnel parachutes and packs, and military clothing.

HT-1 will not melt, fuse or burn as nylon does, and it will not support combustion when removed from a flame, as cotton does, the Air Force reports. The new fiber will withstand temperatures as high as 840 degrees Fahrenheit before it carbonizes, compared to a melting point of 482 degrees Fahrenheit for nylon.

The fiber was developed for the Air Force by the E. I. du Pont de Nemours & Company, Wilmington, Del. HT-1 is a wholly aromatic polyamide with remarkable toughness and resistance. Du Pont is testing it in both fiber form and a newer experimental paper form.

• Science News Letter, 80:47 July 15, 1961

SPACE

Space Chamber Built For Testing Satellites

See Front Cover

➤ A 55-TON satellite chamber has been designed to duplicate conditions 200 miles above the earth for testing space vehicles.

The chamber, seen on the cover of this week's SCIENCE NEWS LETTER, has been placed on top of a specially constructed building through which satellites will be raised for testing. The protrusions on the chamber, built for Lockheed Missiles and Space Company, Sunnyvale, Calif., are ducts that will lead to pumps creating a vacuum inside.

• Science News Letter, 80:47 July 15, 1961

Questions

ORNITHOLOGY—How are young albatrosses able to keep cool? p. 34.

SPACE—How far away is Transit IV-A satellite at the point farthest away from earth? p. 35.

Photographs: Cover, Lockheed Missiles and Space Company; p. 34, The Boeing Company; p. 35, U.S. Navy; Atomic Energy Commission; p. 39, Frederick E. Lederer; p. 42, Fremont Davis; p. 48, Eastman Chemical Products, Inc.

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