

VIROLOGY

Virus Infection Kills

► SEVERE VIRUS infection such as causes polio can rapidly kill the cells of the patient and cripple or kill him, Dr. Richard Franklin of Rockefeller Institute, New York, told at the 27th Cold Spring Harbor symposium on quantitative biology held at Cold Spring Harbor, N. Y., sponsored by the Long Island Biological Association.

How viruses behave in mice and men was shown in a series of slides depicting the giant molecules of deoxyribonucleic (DNA) and ribonucleic (RNA) acids. Step by step, Dr. Franklin explained how animal virus is surrounded by RNA, how viruses make protein and how they appear to devour cells to reproduce themselves and destroy healthy tissue. His studies were made with an electron microscope.

Human virus diseases include the common cold, influenza, measles, mumps and smallpox, as well as polio, he said. Severe virus infections interfere with normal synthesis of RNA and protein, and the cell is killed.

Dr. Andre Lwoff of the Pasteur Institute, Paris, warned the public against expecting a vaccine against cancer from one virus. In work on immunity, he reported, skin transplants of mice have been accepted by inbred specimens, although usually such transplants do not "take." In other cases, tumors would grow at certain temperatures and the mice would die because of antigenic reactions.

Dr. Renato Dulbecco of the California

Institute of Technology, Pasadena, said virologists were learning to fight cancer more effectively as they studied cancer development in animals.

He demonstrated how viruses were used to produce malignant tumors in mice, hamsters and chickens.

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Virus Biology Aids Man

► STEPS TOWARD the cause and cure of diseases, such as cancer, will be made as the result of basic researches on animal viruses in laboratories throughout the world, Dr. Roger Weil, Swiss-born scientist, now at the California Institute of Technology, Pasadena, told SCIENCE SERVICE.

Dr. Weil is convinced that the long way around is the road to ultimate success.

"We are getting the tools," he said, explaining that the descriptive biology of scientists such as Darwin, before the turn of the century, has been vastly improved upon in modern "quantitative" biology in which the chemical approach is now possible and measurements can be made accurately. The electron-microscope has added greatly to the possibilities of present day research.

Dr. Weil believes there may be a common mechanism in all the DNA (deoxyribonucleic acid) viruses that may have important implications for preventive medicine.

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MEDICINE

Doctors Are Reading—

Hypnosis by Untrained Dangerous

► USE OF HYPNOSIS by the untrained in treating psychiatric patients can be dangerous in many cases, a survey of more than 400 California psychiatrists has shown.

Results from hypnosis are unpredictable, and often do not last, physicians will be reading in the *Journal of the American Medical Association*, 180:917, 1962. The survey on hypnosis use by 429 California psychiatrists was made by Dr. Alfred Auerback of San Francisco.

Physicians will also be reading:

Food Allergy Not Canker Cause

Persons suffering from repeated occurrence of canker sores do not have to restrict their diets, the *AMA Journal* states editorially. Allergy to food is not a primary factor in causing canker sores, although the cause is unknown (p. 966).

New Respiratory Stimulant

Patients with severe difficulty in breathing can be effectively treated with a new respiratory stimulant, ethamivan or vanillic acid diethylamide. This chemical, which has few side effects, is valuable in treating persons with severe lung diseases, four Dallas

physicians found in a study of 119 patients (p. 905).

The physicians are Drs. William F. Miller, Richard K. Archer, Harold F. Taylor and William F. Ossenfort of the University of Texas Southwestern Medical School and Parkland Memorial Hospital, Dallas.

Aid to Asthmatic Children

Asthmatic children have improved appetites and gain weight in two-thirds of the cases treated with cyproheptadine, which has an antihistamine and antiserotonin activity. Chemically, the drug is 1-methyl-4-(5-dibenzo-(a,e)-cycloheptatrienylidene)-piperidine (p. 912).

The reason for the appetite increase is not known, Drs. Arnold F. Lavenstein, Eleanor P. Dacaney, Louis Lasagna and Thomas E. Van Metre of the Johns Hopkins Hospital and School of Medicine, Baltimore, reported.

Procaine No Help for Senility

The "song is ended" for treating senility by injections of procaine, the American Medical Association's Council on Drugs has concluded. Clinical studies by three groups of British scientists on more than 100 normal or ailing aged persons proved conclusively that procaine injections are "of no

value." There was no evidence that the patients benefited, and the use of procaine "as a rejuvenating agent is unjustified," the British teams reported (p. 965).

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Virus Brain Damage Results in Cerebral Palsy

► A GROUP of viruses only recently recognized can cause brain damage in unborn babies, resulting in mental retardation and cerebral palsy.

The viruses are responsible for a condition known as cytomegalic inclusion disease, which is a generalized salivary gland disease. They were first isolated only seven years ago by scientists in Boston, Bethesda, Md., and St. Louis. Although less than two dozen non-fatal cases have been reported, the disease is likened to a form of German measles and toxoplasmosis in its "broad social significance."

Dr. Thomas H. Weller of the Harvard School of Public Health, Cambridge, Mass., and Dr. James B. Hanshaw of the University of Rochester School of Medicine, Rochester, N. Y., therefore studied affected children for many months to determine the late consequences of infection.

The observations, made during a five-year period on 17 children, are reported in the *New England Journal of Medicine*, 266:1233, 1962. Of the 17 children, 14 suffered from a variety of disorders indicating brain damage, ranging from severe mental retardation requiring institutional care to a mild form evidenced only by slight difficulties in muscular coordination.

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PLANT PATHOLOGY

Virus-Inhibiting Spray From Succulent Plants

► NATURAL JUICES squeezed from succulent plants have been found to protect other plants from viruses. They work against disease that is transmitted by insects or wind.

Plants suffer from a variety of ailments similar to man. Viruses are one of the most common problems, seldom killing the plants but stunting growth and reducing fruit yields.

The juices of several varieties of plants have been extracted and concentrated by Drs. John N. Simons and Ronald Swidler of the Stanford Research Institute's Agricultural Research Center in Menlo Park, Calif., and tested for virus-inhibiting effectiveness. The sprays were found effective against tobacco mosaic virus, potato virus Y and several other viruses carried by pesky aphids by their mouth parts. The compounds do not kill the viruses, the scientists said, but change the plant so it is not susceptible.

Chemicals such as these are believed possible for use in preventing transmission of virus in the field. The material is not harmful to plants, as opposed to other types of chemicals, and is probably nontoxic to animals and man.

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