

IMMUNOLOGY

Hepatitis Vaccine for Dogs

A new safer infectious hepatitis vaccine for dogs has been reported, although no vaccine for human hepatitis, caused by a different virus, has yet been developed.

► **DOGS ARE AHEAD** of humans on infectious hepatitis vaccine. But this is because they are infected by a different virus.

A new infectious hepatitis vaccine for dogs has been reported by researchers at the Sterling-Winthrop Research Institute, Rensselaer, N. Y., which is not only safer than previous canine hepatitis vaccines, but is the first to be combined with an already existing distemper vaccine. The combined vaccine is called Wincine d/h.

Previous infectious hepatitis vaccines for dogs have been mainly developed from swine or dog kidney culture with some resulting side effects such as "blue eye" or corneal opacity and kidney damage.

The new live weakened virus vaccine against hepatitis was developed from duck eggs by Dr. Ernest J. Froelich and his colleagues after more than four years of research. It has the added safety of not being excreted by dogs after they are vaccinated. Even though live virus is weakened it can be dangerous if it should ultimately revert to its original virulent state.

Dr. Allen Braemer, who assisted Dr. Froelich with the research, told *SCIENCE SERVICE* that although canine hepatitis is not nearly as common as distemper in dogs, it has become fairly frequent. It spreads through the urine and can be a severe if not fatal disease, especially in combination with distemper. Until about 15 years ago it was confused with distemper.

Human Hepatitis Research

Meantime research for a vaccine for human infectious hepatitis continues.

BIOLOGY

Antibiotics From Lichen

► **NEW TYPES** of antibiotics are foreseen from studies of a unique lichen, the first discovered capable of being cultured in a greenhouse.

The discovery opens the way for laboratory experiments on the lichen, previously impossible.

Although astronomers have suggested that any possible life on Mars would consist of lichens or other low forms of life, the studies to be made with lichens in earth laboratories are not expected to help in settling the problem of whether or not there is life on Mars. They are, however, expected to be very helpful in determining how growing conditions affect the production of chemicals by lichens. Some of these lichen chemicals are being used clinically in Russia as antibiotics.

The "perfect experimental" lichen is now

Dr. Joseph D. Boggs of Children's Memorial Hospital, Chicago, who isolated the infectious hepatitis virus, said he is still working toward a vaccine with prisoners at the Illinois State Penitentiary at Joliet, Ill., but he cannot predict when the work will be finished.

Asked if the research looks promising, he said, "if it looked too bad we would not be wasting all this time and money on it."

Research also continues for a vaccine for serum hepatitis, which has a 20 per cent death rate. Although believed to be caused by a virus, it is spread by the use of inadequately sterilized needles and syringes in doctors' offices. Dr. Joseph P. O'Malley, a virus researcher at the division of biologics standards, National Institutes of Health, Bethesda, Md., said that it would be the middle of 1963 before he had another report on his long-continued search for a definite virus causing serum hepatitis.

"A great number of people in the past 20 years have isolated agents from the serum of people with clinical hepatitis, but this is not necessarily the agent that is causing the disease," he said.

Both Dr. O'Malley and Dr. Vern Bolin of the Bolin Laboratories of Phoenix, Ariz., have recovered agents from an NIH icterogenic pool (contaminated by jaundice, which is related to hepatitis). Dr. Bolin believes he has found the guilty virus, but Dr. O'Malley is more cautious.

Tests have shown no relationship between the infectious hepatitis virus isolated by Dr. Boggs and the canine virus.

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growing in the two greenhouses devoted to culturing orchids in the Jardin des Plantes of the Museum National d'Histoire Naturelle in Paris.

The growth of the lichens is so vigorous and extensive that the lichens must be scraped off the surface of the material on which the orchids are cultured, about every six months.

The lichen has not yet been named, Dr. William Louis Culberson of Duke University told *SCIENCE SERVICE*, and may not be a new species at all but an imperfect specimen of an already known tropical lichen. Dr. Culberson reported discovery of the first species of lichen capable of tolerating greenhouse conditions in *Science*, 139: 40, 1963.

Lichens are a combination of algae and fungi growing together, an association from

which both seem to derive benefit. The combination may well now be obligatory for both partners, Dr. Culberson said.

Experiments in the biology of lichens have never progressed very far because most isolated fungal components are hard to culture. Attempts to grow the complete lichen in greenhouses and growth chambers have all failed.

Now, however, Dr. Culberson said, some "very interesting" experiments should be made, since lichens produce such a large number of chemical substances. The effects of environment on the qualitative and quantitative production of these compounds can now be studied.

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PHYSIOLOGY

Heredity Important in Capacity for Exertion

► **DISEASE** or physical conditioning are less important than heredity when it comes to an individual's capacity for physical exertion.

This was the consensus of authorities who participated in a conference on exercise fitness tests at the University of California, Los Angeles, Medical School.

A long-term study of the work capacity of the heart-lung system for a broad population sample has indicated that each person has a characteristic pattern that is modified little through the childhood years.

Temporary decreases in capacity following illnesses and transitory increases as a result of vigorous physical fitness programs were noted, but they were relatively slight and did not affect the pattern significantly.

There is danger of marked exertion at high altitudes without an adaptation period. Persons usually appear to respond initially to high altitude with a great increase in pulmonary blood pressure.

The cardiovascular system of residents of high altitudes appears to adjust in time but such adjustments may not occur in transients. Thus too much exertion can be dangerous for weekend skiers and hikers up from the "lowlands."

The conference concluded that physical fitness tests in diagnosis of heart and lung disease in children, which include the use of treadmills and stationary bicycles, should be improved and used more extensively.

The conference was sponsored by the UCLA department of pediatrics and was organized by Dr. Forrest Adams.

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RADIOLOGY

Device Measures Body Radioactivity Dosage

► **A NEUTRON MONITOR** which gives an approximation of total human body dosage for persons near reactors or accelerators has been developed. The new instrument produced by Texas Nuclear Corporation, Des Plaines, Ill., gives the neutron dose rate in a single reading.

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