

PUBLIC HEALTH

Vaccine Against Horse Plague To Prevent Future Deaths

Four Stricken in Research on This Disease of Horses, Men and Perhaps Birds; Few Human Cases This Year

TRAGEDIES such as the death from horse "sleeping sickness" of Dr. Charles E. Salsbery, Kansas City, Mo., veterinary biologist who acquired the illness in the course of his scientific work, will probably be prevented in future.

A vaccine against the disease will be the means of preventing these tragedies. Such a vaccine already has been used successfully in protecting horses and a modified vaccine has been developed for human use. From 50 to 100 men and women who handle the dangerous virus in disease-fighting laboratories have already been vaccinated, according to information received by the U. S. Public Health Service.

The federal health service, when asked, has advised firms manufacturing the horse protective vaccine that they would be justified in using the horse vaccine to protect their employees so long as nothing better was available. Within the last month (June 9) the development of a vaccine suitable for human use was reported by Dr. Ralph W. G. Wyckoff of the Lederle Laboratories at Pearl River, N. Y. (See *SNL*, June 24)

Dr. Salsbery was the fourth to be stricken with the disease in the course of work on it. One other of the four, a girl laboratory technician, also died of it, the U. S. Public Health Service has learned. The name of the girl martyr and the laboratory where she was employed is withheld as being "confidential information."

Scientists and laymen alike were shocked at the announcement last fall of the first proved human cases of this horse ailment, which has the technical name of equine encephalomyelitis. Widespread outbreaks of the disease have occurred among horses. Cause of the sickness is a virus, and there are two different viruses, one the Eastern and one the Western type. The Eastern type is more fatal among horses and according to present knowledge is apparently more fatal among humans also.

A total of 38 human cases of the horse plague were reported in Massachusetts last year of which 20 were fatal. There were six cases with one death reported

from Minnesota and one fatal case in a child reported from California.

How the disease spreads from horses to humans is still a mystery. According to one theory, the virus is spread by mosquitoes or other insects, some scientists believe that birds, rather than horses, constitute a reservoir of the disease from which it spreads to both horses and humans. None of these theories has been proved as yet.

So far this year there have been only a few cases of the disease reported among horses and none among humans except for the laboratory-acquired infections. Department of Agriculture officials point out that the disease among horses does not usually appear in epidemic form until the end of July, and so it is not possible to predict yet whether or not there will be any human cases. If there should be a bad outbreak among humans it is likely that one of the vaccines will be tried in the hope of preventing more cases and controlling the outbreak. At present, however, the federal health service is unwilling to make any recommendations on this point. The number of human cases reported last year are considered too few to warrant advising widespread vaccination of the human population.

Dr. Salsbery, latest victim of the horse plague, is said to have been in good health on June 7 when he was visiting scientists at the Department of Agriculture in Washington. It is believed that he had already acquired the infection before this visit, because he is said not to have been in any laboratories where cultures of the virus are grown but only in offices of scientists in Washington.

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PHYSICS

New Berkeley Cyclotron Passes Its First Tests

THE world's most powerful beam of atomic "bullets" for bombarding atoms has been generated in the new 60-inch cyclotron of the University of California.

In its first official test the new instrument, whose magnets alone weigh 250 tons, generated deuterons of 16,000,000 electron-volts energy. When the nuclei of helium are used for the "bullets" it will be possible to produce a beam of alpha particles having an energy of 38,000,000 electron-volts.

In a report to the *Physical Review* (July 1), an eight-man research team headed by Prof. Ernest O. Lawrence describe their success in the first test of the newest and most powerful atom smasher in any physical laboratory. Nor is the present energy the limit, for the scientists add:

"We . . . see no difficulties in the way of producing with the present equipment 25 million volt deuterons and 50 million volt alpha-particles, and moreover we are convinced that much higher energies could be obtained from a cyclotron of larger dimensions."

Prof. Lawrence has already suggested that a 1,000-ton cyclotron could be constructed to go to even greater energies. The present test substantiates in real performance his previous hopes.

So potent is the beam from the new cyclotron that its particles can be observed emerging in air from the target window for a distance of over a meter and a half, or about five feet.

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ENGINEERING

New Quick Freezing Method To Create New Industry

AN OPPORTUNITY for a new industry using the immersion process of quick freezing was described by John P. Ferris and R. Brooks Taylor, of the Tennessee Valley Authority, to the American Society of Mechanical Engineers meeting at San Francisco.

The process, which has been applied to fruits and berries in an experimental plant at Cleveland, Tenn., brings about very rapid freezing at zero Fahrenheit. A continuously operating unit, consisting of an endless, stainless steel belt running through a low temperature sugar solution and a centrifuge to remove the clinging particles of the solution, was designed and is in operation. Strawberries are frozen in six minutes and smaller products in less time.

A refrigerated barge was built in connection with the project. The paper states that the costs based upon a load of frozen fruit shipped from Chattanooga, Tenn., to St. Louis, Mo., in 1938, indicate astonishing economies.

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