

Viruses Cause Epidemics

► **VIRUSES** both old and new require constant vigilance to prevent unforeseen epidemics, noted virologist Dr. Albert B. Sabin has warned.

Dr. Sabin, who developed the live polio sugar-cube vaccine that has saved children all over the world from crippling polio, said experience of the past 10 years has shown how viruses "not definitely associated with disease suddenly appeared as the cause of epidemics.

"In the case of the unpredictable appearance of new antigenic variants of Influenza A virus one can be faced with a pandemic of the proportion of the 1957 Asian influenza," Dr. Sabin said.

The severe hemorrhagic disease of children in the Philippines and Thailand may be caused by the old dengue viruses. Extensive epidemics of familiar or somewhat different manifestations may be caused suddenly by new viruses such as the Junin virus in Argentina and Bolivia, the Chikungunya virus (a native term for "doubled-up") in Africa, and the Kyasanur Forest disease of the Mysore State in India.

The major advances in preventing the miseries of childhood viral diseases have been in poliomyelitis and measles, with current work offering promise for useful vaccines against rubella and mumps.

Dr. Sabin said the prospect for control of the major portion of viral disease of childhood by vaccination does not seem to him very good, although "continued efforts are indicated" for the development of effective vaccines against the small number of viruses responsible for the more severe respiratory illnesses during the first two years of life.

Also important is a need for continuing studies on the possible role of viruses in childhood leukemia, or cancer of the blood-forming organs, and malignant solid tumors.

"This type of research is in turn intimately dependent on the progress that is made in parallel studies on the naturally occurring leukemia of known viral etiology in lower animals and on the cancers experimentally produced by DNA (deoxyribonucleic acid) viruses," he said.

Dr. Sabin's report on recent advances and future perspectives on childhood diseases of virus etiology was read at the Symposium on the Child at the University of Chicago by his cousin, Dr. Saul Krugman, chairman and professor of pediatrics, New York University College of Medicine, who also made a report on viral infections.

Nature Note

Electric Eel

► A **NINE-FOOT** long South American eel, *Electrophorus electricus*, can discharge more than 550 volts of electricity in one incredible shock.

This gray-colored, smooth and scaleless member of the fish family is actually a sluggish creature, spending most of its time lazing in the soft warm mud of tropical rivers.

Yet the energy it can dispell is strong enough to kill a man swimming 20 feet away.

The laws and principles of electricity that apply to these eels are the same as those of electricity generated by machines, scientists are finding out.

About four-fifths of the eel's body has cells capable of producing and storing electricity, according to C. W. Coates of the New York Aquarium and Dr. Robert T. Cox of New York University, who have been studying these strange fish for 25 years.

The electrical organs are really modified muscular tissue, composed of several thousand cells and arranged in parallel columns within the eel's long body. Each of these cells is capable of producing about one-tenth of a volt. The columns are insulated from each other by means of nonconducting tissue, but are connected in parallel series by means of conducting nerves in the eel's spinal column. These columns of cells act as batteries, storing up the accumulating electricity until the eel wishes to discharge it.

The burst of electricity is extremely fast, occurring in about two-thousandths of a second. The electrical impulse, traveling along the eel's body, can move about 15 times faster than those traveling along human nerves to and from the brain.

MEDICINE

Cold Enhances Drug Action

► **THE ABILITY** of a drug to kill animal cancer has been enhanced by cooling hamsters' bodies while keeping their tumors at normal temperatures.

Application to humans could be possible if the length of time necessary for body cooling can be kept to a minimum, the American Physiological Society meeting was told in Houston.

Only one hour was required for the body cooling in experiments with 75 hamsters reported by two scientists from the Emory University School of Medicine, Atlanta, Ga. In an earlier experiment, body cooling had to last 10 hours—too long for human toleration.

Drs. Vojin Popovic and Roberto Masioni cooled the hamsters' bodies to 40

degrees F. and kept their tumors uncooled at 96 degrees F. before injecting 5-fluorouracil a single time.

All the animals survived the treatment (they were re-warmed after one hour) and 20 days later their tumors disappeared. During an observation period of 100 days from the time of injection, the tumors did not resume growth.

Additional animal studies are needed before similar treatment is considered for cancer patients, the researchers said. Grants from the National Institute of General Medical Sciences, Bethesda, Md., supported the investigation.

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