

PUBLIC HEALTH

Animal-Borne Viruses

Encephalitis virus has been discovered among Seminole Indians, natural "sentinels" of animal-borne disease in the south Florida habitat—By Faye Marley

➤ A HEALTH THREAT to man and to some domestic animals is seen in the movement north of animal-borne Venezuelan encephalitis viruses, called arboviruses. The viruses have already infected Seminole Indians of south Florida and persons in the state of Veracruz, Mexico.

Seminoles are virtual "sentinels" for the detection of arbovirus infections, reported Dr. Telford H. Work, chief, virology section, U. S. Public Health Service's Communicable Disease Center, Atlanta, Ga., in *Science*, 145:270, 1964.

The Venezuelan equine encephalitis virus (VEE) had been found only south of Panama, but Dr. Work and his collaborators recently found Seminoles infected by it. Previously, St. Louis encephalitis had been found among these Indians. Fever and chills are caused by both viruses, but the Venezuelan type causes fewer deaths.

"These Indians are lifelong residents of palmetto, sawgrass, hammock, swamp and everglade habitats characteristic of south Florida, the area of most extensive and variable tropical attributes in the continental United States," Dr. Work said.

"Just as military sentries are posted to signal unusual or significant enemy activity, indigenous residents such as the Seminole Indians may serve as sentinels for the detection of arbovirus infections which occur in particular habitats."

The Indians in this area were previously remote from comprehensive medical care, Dr. Work pointed out, so that any clinical disease they may contract as a result of arbovirus infection is as yet undefined.

This area is rapidly becoming a popular recreational and residential spot for persons who have always lived in temperate en-

vironments and who have not become immune to infections that many Indians can tolerate.

Dr. Work first began his Florida study in the Lake Okeechobee area in 1960, after working with Dr. R. M. Taylor in the Nile Delta of Egypt where they isolated a number of tick viruses. Now he is extending his study farther south to the Florida Everglades.

The report from Mexico, also made to the American Association for the Advancement of Science, posed the question of future harm to inhabitants of the United States should VEE virus be carried farther north by migrating birds.

Drs. W. F. Scherer, R. W. Dickerman, C. Wong Chia, A. Ventura, A. Moorhouse and R. Geiger of Cornell University Medical College, department of microbiology, New York, and Dr. A. Diaz Najera of Mexico City reported the study.

The areas in Mexico where these strains of VEE virus were found include secondary forest, mangrove and a small patch of rain forest dominated by canopy-forming trees, all bordering a lagoon off the Gulf of Mexico coast at the village of Sontecomapan, Veracruz.

These areas are in a narrow strip of coastal lowland, the researchers said.

Future studies must be made to determine whether the Venezuelan encephalitis virus has a wider geographic distribution extending into the more populated parts of the eastern coastal lowlands of Mexico, the investigators explained. Also it is yet to be determined whether this VEE virus has only recently moved to Mexico, or has been there for many years.

• *Science News Letter*, 86:69 August 1, 1964

The full significance of the current research is so far unknown.

Although it is now apparent that white cells and platelets, as well as red cells, do cross the placental barrier, the researchers point out, the life, function and fate of these cells is as yet undetermined.

The baby girl's progress will be followed in the hope of gaining further knowledge concerning the possible relationship of leukemia in the mother to the baby.

Capt. Perry G. Rigby, Maj. Thomas A. Hanson and Capt. Richard S. Smith of William Beaumont General Hospital, El Paso, Texas, reported the findings in the *New England Journal of Medicine*, 271:124, 1964.

• *Science News Letter*, 86:69 August 1, 1964

TECHNOLOGY

Manikin's 'Nerves' Measure Auto Comfort

➤ A CERTAIN automobile passenger has a case of nerves—97 of them, to be exact.

The passenger is a manikin that works for Ford Motor Company, Ltd. of England at their research center in Dagenham. Recently it was fitted with 97 special "nerve cells," little metal sandwiches that send small electric currents, when pressed, to a sensitive measuring instrument.

Its job is to ride in a test vehicle and evaluate the comfort of new auto seats. It is driven about by a wide range of drivers and its complaints registered through its "nerves," are analyzed for strain and fatigue. Its "nerves" can be set to respond to discomfort either during short journeys or on long trips of hundreds of miles.

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Bell Telephone Laboratories

CRYSTAL LASER—A one-inch crystal of yttrium aluminum garnet, shown mounted in an elliptical housing with a tungsten lamp used as an optical pump, is a solid state optical maser developed by Bell Telephone Laboratories that can operate continuously at room temperature with only a small fraction of the pumping power previously needed.

MEDICINE

Cancer Immunity Possible

➤ BABIES of leukemia-stricken women can be born immune to this cancerous disease, a recent case indicates. A baby girl born in El Paso, Texas, may have had cancer immunity bestowed upon her by her mother, who was a victim of acute leukemia, or "blood cancer," a team of U.S. Army physicians believes.

Normal babies have been born numerous times to mothers with leukemia, but penetration of malignant cells through the placenta has not been understood. A barrier to the passage of blood cells was believed to exist but recent investigations have shown this barrier to be incomplete.

The baby was born at William Beaumont General Hospital, El Paso, where the mother died of bronchopneumonia about a week after the child's birth.

The Army doctors used a combination of one molecule of the drug quinacrine with four molecules of DNA (deoxyribonucleic acid) to follow the course in the mother's and baby's circulation systems.

The drug combination "labeled" the white cells. In this way the doctors saw the passage of white blood cells from the pregnant mother with acute myelogenous leukemia to the fetal circulation. The malignant material in the blood did pass through the placenta. Tolerance is believed to have been given the baby in some way not fully understood.

The placenta, an organ that develops in the mother's womb during pregnancy, acts as a pump, a selective filter and factory, transmitting glucose, urea, bilirubin, antibodies and drugs.