MEDICINE

New Virus Causes Polio-Like Disease

➤ DISCOVERY OF a new virus which apparently can cause a polio-like disease in humans is announced by Drs. Alex J. Steigman, U. Pentti Kokko and Rosalie J. Silverberg of the Kentucky Child Health Foundation Research Laboratory and the University of Louisville School of Medicine.

It is called, tentatively, Mack virus, because Mack is the last name of the little girl from whom it came. Back in 1947 this little girl, then five years old, got sick during a polio outbreak in Cincinnati. She had headache, pain, stiffness of the neck, temperature of 103 degrees Fahrenheit and increased white cells in her spinal fluid. She recovered completely in a few days.

Polio was suspected and a polio virus with very limited disease-causing ability for monkeys was isolated from the child's stools. But she did not develop increased amount of antibodies against poliomyelitis while she was recovering, as would be expected if she had had polio.

This was back in 1947, however. In 1952, scientists developed a new method of growing polio virus in tissue culture outside the body of a human or a monkey. Using this method with the Mack child's specimen which had been frozen and kept, the Louisville scientists found the new virus which they call Mack virus.

Mack virus is immunologically distinct from polio virus. It does not cause polio damage in monkeys. Antibodies that neutralize Mack virus were present in large amount in the child's blood during her recovery and they have been found in blood serum of adults and in a pool of human gamma globulin.

The virus might be a Coxsackie virus. Viruses of this group cause polio-like sickness. To determine the importance of the Mack virus as a cause of disease and the types of sickness it might produce would require further studies, the Louisville scientists point out in the *Proceedings of the Society for Experimental Biology and Medicine* (June).

Science News Letter, August 8, 1953

MEDICINE

Polio Nearing Peak as G.G. Evaluation Started

➤ BY MID-AUGUST the current polio epidemic may be at its peak. Health authorities hesitate to say the high point has been reached yet, even if there is a drop in reported cases during a week.

A drop in cases one week may be followed by a rise the next. This could be partly due to delayed reporting, or to actual changes in the course of the epidemic.

Meanwhile, an effort will be made to determine the results of the wide scale use of gamma globulin this summer. The research program to determine this was announced by Surgeon General Leonard A. Scheele of the Public Health Service, U. S. Department of Health, Education and Welfare.

No one will ever be able to say with certainty how many children escaped paralysis and crippling because they got gamma globulin this summer. That is because there were no controls, children who did not get gamma globulin, who could be used to make comparisons.

But the Public Health Service and cooperating agencies hope to get some idea by comparing the severity of paralysis in children within the same household where the first patient or two did not get g.g., and the later patient or patients did.

Mass prophylaxis by giving g.g. to all children in a community did not start until a certain number of cases had developed. So in those communities some comparisons could be made between the first cases and those developing after the children got g.g.

The plan is to have each patient in the study examined by a trained physical therapist from 50 to 70 days after the patient's illness started. Services of the physical therapists are being arranged by the American Physical Therapy Association aided by a grant from the National Foundation for Infantile Paralysis.

The Association of State and Territorial Health Officers and the D. T. Watson School of Physiatrics, affiliated with the University of Pittsburgh School of Medicine, also collaborating in the study.

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BOTONY

Plant Explorer Collects Seaweeds From Far East

➤ AFTER THREE months of dipping into exotic waters ranging from 39 degrees Fahrenheit near Hokkaido, Japan, to more than 100 degrees in the shallow Gulf of Siam, Dr. E. Yale Dawson has returned with a collection of 5,000 specimens of Far Eastern seaweeds, comprising about 500 species, many unknown to scientists.

Dr. Dawson, marine biologist with the Allan Hancock Foundation of the University of Southern California, spent most of this time collecting in the waters of Indo-China. Because of Communist guerrilla activities, he could search only in an area 20 miles on one side and five miles on the other of the Oceanographic Institute at Nhatrang.

Even so, Dr. Dawson gathered 240 species of seaweed from Indo-Chinese waters, several of them rare or undescribed. He is currently studying the Indo-Chinese collection microscopically, identifying and making illustrations of them. Herbarium specimens from the collection will be sent to museums the world over.

Seaweeds are widely used for food in the Far East. At one meal in Japan, Dr. Dawson had five kinds of seaweed—one in soup, two in salads and the others wrapped around fish and rice.

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IN SCIEN

MEDICINE

Gamma Globulin Supply Will Last Polio Season

➤ ALMOST ONE-HALF of the nation's total pool of gamma globulin for polio fighting had been put out by the end of July. But children who have not yet gotten any, and their parents, need not worry.

The supply is expected to last out the polio season. One thing helping toward that is that allocation figures were worked out on the basis of number of polio cases in past years. Cases this year are running lower than last year.

Helpful also toward making the gamma globulin supply cover all needs is the fact that some communities given additional amounts for mass prophylaxis have returned some unused portions. Montgomery, Ala., for example, turned back a substantial amount.

The allocation for mass inoculations there was figured on the basis of all children under 13 years. But the local health authorities gave it only to children under 10 years, since the older age group was not being much hit by the epidemic.

Total amount of gamma globulin expected to have been available for polio fighting by the end of this year is figured at about 7,100,000 cubic centimeters. So far, about 3,000,000 cubic centimeters has been dispensed.

Cases are still mounting and health authorities do not expect the number to reach its peak before the second week in August.

Science News Letter, August 8, 1953

INVENTION

Better Weather Balloons Coated With Plasticizer

➤ NEOPRENE WEATHER balloons cannot climb as high in the sky at night as they can during the day because the plastic-like skin freezes at a lower altitude. Thus as the gas inside tries to expand, the neoprene balloon bursts and weather instruments plunge to the ground prematurely.

Eric Nelson of Madison, N.J., has rereceived patent No. 2,646,370 on a method of making balloons that can soar at night as high as they can during the day. Mr. Nelson treats the neoprene film with a plasticizer after the balloon fabric has been fully cured and vulcanized.

The balloon is inflated and coated with a solution of dibutyl sebacate dissolved in ethyl alcohol. As the solution dries, the plasticizer is absorbed by the neoprene and thus becomes better fortified against cold. The patent was assigned to the Army.

Science News Letter, August 8, 1953

CE FIELDS

GENERAL SCIENCE

Cosmic Ray Observatory Flown to 14,000 Feet

➤ A NEW observing station for gathering information on cosmic rays and atmospheric conditions in northern latitudes has been established on Mt. Wrangell, a 14,006-foot peak some 150 miles northeast of Anchorage.

So far over three dozen landings and take-offs on the summit have been made, Dr. Serge A. Korff, scientific leader of the expedition, reports. The station, a joint venture of New York University and the University of Alaska, is located only 200 feet from the peak of the dormant volcano.

The expedition is considering using the volcanic steam that issues constantly from vents near the top to heat its two Jamesway huts, one of which is used for housing and one as a laboratory.

All equipment and personnel have been landed by air, using a plane equipped with a ski-wheel combination landing gear. The supply flights were pioneered by Dr. Terris Moore, president of the University of Alaska, and Dr. Korff.

Observations made at the peak this summer are aimed at finding the connection, if any, between cosmic rays and other radiation bombarding the earth to produce the aurora borealis, radio static or magnetic storms.

Although the station is primarily for the study of cosmic rays, it is also available for other research. Meteorologists, biologists and physiologists are expected to make use of the research facilities when they require high altitudes, far northern latitudes and low temperatures for their studies.

Science News Letter, August 8, 1953

PHYSICS

Probe Air Above Geomagnetic Pole

➤ BALLOONS AND rockets are being used this summer to make high altitude observations of atmospheric pressure, temperature and density as well as to gather data on cosmic rays near the north geomagnetic pole.

An expedition, known as Project Mushrat, is being made on the Navy icebreaker, USS Staten Island, to northern Greenland. There scientists will attempt to measure cosmic ray intensity above the earth's atmosphere, using both Geiger counters and ionization chambers. These instruments will be carried in "Deacon" rockets, which will be launched from balloons at an altitude of approximately 70,000 feet.

The balloon-rocket technique, commonly referred to as Balloon Assisted Take-Off or Rockoon, was developed by Dr. James A. Van Allen, head of the State University of Iowa physics department. This method makes possible the reaching of high altitudes by small, relatively inexpensive rockets.

A small rocket is lifted to altitudes of 50,000 feet or higher by a 55-foot diameter Skyhook balloon, and at a fixed altitude or time the rocket is fired in an almost vertical direction.

With the aerodynamic drag of the lower altitudes eliminated, the rocket achieves an almost perfect vacuum ballistic trajectory. It can thus attain altitudes greatly in excess of those that could be reached from a sea-level firing of the same rocket.

The physicists will also attempt to measure atmospheric pressure, density and temperature at altitudes above 100,000 by means of balloon-launched rockets. Similar experiments have been conducted at White Sands, N. M., but not in the Arctic regions.

The trip is sponsored by the Office of Naval Research with the assistance of the Bureau of Aeronautics and the Naval Research Laboratory.

Science News Letter, August 8, 1953

ANTHROPOLOGY

Discover 68 Village Sites Of Extinct Seafood Eaters

➤ SIXTY-EIGHT PREHISTORIC village sites of an extinct Indian tribe that existed principally on seafood have been uncovered on lonely San Nicolas island, 55 miles off the California coast.

Dr. Clement Meighan and Hal Eberhart, University of California at Los Angeles anthropologists, recently completed a survey of the island.

At its peak the population may have been well over 1,000 persons on the 32-square mile island, extremely dense by aboriginal standards.

An abundance of marine animals insured an ample food supply. The Indians seemed to have lived well on a diet of abalone, meat from huge sea elephants, smaller sea lions and birds, all of which still exist in great numbers on the island. They made fish hooks and ornaments from the abalone shells.

Little if any plant food was included in the diet. Plant life was sparse on the island.

This group of Indians is known as the Nicolenos. It is thought that they originally came from Shoshone stock and settled on the island some time before 1000 A.D.

Disease apparently greatly reduced their numbers before the Spaniards came. All but a lone female survivor died in Spanish missions on the mainland. She had somehow been left behind when the Spaniards took the group to the missions and lived alone on the island for 18 years. In 1835 she was found and taken to Santa Barbara, where she died soon afterward.

Science News Letter, August 8, 1953

TECHNOLOGY

Press Gives 2,500-Ton Squeeze for Tube Shapes

➤ A NEW 2,500-ton hydraulic press and related equipment at U. S. Steel Corporation's tube plant, Gary, Ind., now is squeezing out unusual tube shapes that cannot be worked by conventional means because of their unbalanced design.

The press also can produce tubing from red-hot stainless steel billets of a quality that forbids piercing, an elementary step in tube-making. Molten glass lubricates the billets as they scrape through the unusually shaped dies.

The whole system solves a problem of long standing, a company spokesman said. Odd-shaped tubes that heretofore could not be produced satisfactorily by existing methods now can be made.

Tubes from one and one-half to six and one-quarter inches in outside diameter can be made on the equipment. A sheet of glass fiber is wrapped around the hot billet before it is rammed through the die. The glass melts and lubricates the die as the red-hot billet is pushed through by a water-and-compressed-air power system capable of exerting almost a ton and a half of force to the square inch.

Billets too small to be pierced instead are drilled in one end to provide the hole needed by the "plunger" of the giant machine which pushes them through the dies.

Science News Letter, August 8, 1953

ECOLOGY

Forest Clearings Retain Snow for Summer Days

➤ THIRSTY VALLEY land can have more water by proper cutting of forests on the snowcapped mountains around it. This is the conclusion from a seven-year investigation made by Prof. Joseph Kittredge, forest ecologist at the University of California Experiment Station, Berkeley.

Prof. Kittredge discovered that, by cutting openings in forests along the west slope of the Sierra Nevada mountains around the water-hungry San Joaquin valley, more snow remains longer through the summer to provide water for the valley's streams.

Reasoning that more snow is found in openings in a forest than under the crowns of the trees or in deforested areas, Prof. Kittredge measured snow retention in cleared areas from one to two times the height of the trees in width. He found that, if these cleared areas are made over a third of the forest acreage, storage of snow should be increased by more than five inches water equivalent, when an average of 15.7 inches water equivalent of snow falls.

Besides providing more water through the summer months, this planned cutting of mountain forest areas, by reducing rate of melting of the snow, may reduce spring-time flood crests, Prof. Kittredge said.

Science News Letter, August 8, 1953