

MEDICINE

Polio Immunity Temporary

Contracting the disease does not leave a permanent immunity, epidemiologist suggests, basing his theory on study of Guam polio-outbreak.

► IMMUNITY to polio, acquired by contracting the infection, may be temporary rather than permanent, as has been supposed.

This is the conclusion of a study made with March of Dimes funds by Dr. W. McD. Hammon, noted epidemiologist in the University of California's Hooper Foundation.

Polio has been classed with the measles and mumps so far as immunity is concerned, the infection in each case bestowing permanent immunity. Dr. Hammon suggests instead that polio may be in the same immunological class as diphtheria and streptococcal infections, in which immunity is transitory.

The scientist bases his theory on accumulating evidence, including his study of a polio outbreak on Guam less than a year ago. At that time polio appeared among the white children of American dependents,

but did not show up among the native Guamanians.

There had never been evidence of polio among the Guamanians, Dr. Hammon said. Why, then, did it not appear among the Guamanian children, who would be presumed to have no immunity?

Tests of the blood of Guamanian children gave the answer when they showed that every child from one to four years of age had been infected with polio at one time or another!

Dr. Hammon's reconstruction of this strange situation is something as follows: In very young children, polio is seldom crippling and usually not severe. So it is probable that polio has always lived underground on Guam. Immunity is acquired very young, the disease passing as a bad cold or similar infection, and is bolstered from time to time by reinfection from the

underground reservoir. So when the disease appeared among the whites, the Guamanians were unaffected.

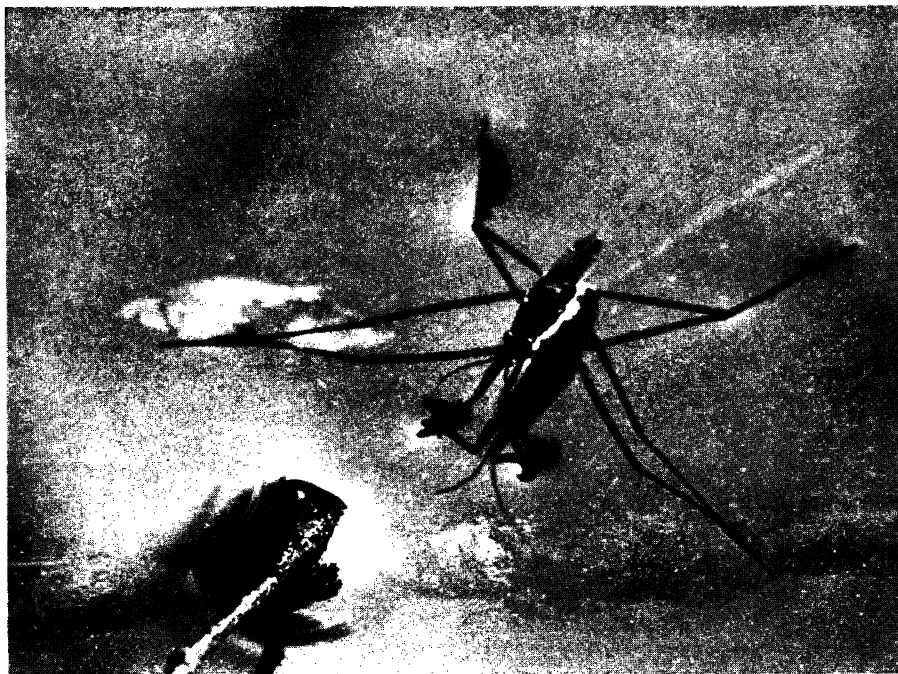
The pattern of polio in this case, Dr. Hammon said, was similar to that of diphtheria and streptococcal infections.

On the other hand, when measles and mumps were reintroduced to the island, all natives—children and adults alike—who had not had the disease were afflicted. Measles and mumps then burned themselves out when everyone had contracted the disease, unlike polio which lives on.

If further evidence proves Dr. Hammon's theory to be true, there will be important public health implications. At the present time persons who are known to have come into contact with polio are not subject to quarantine if blood tests indicate they have previously contracted the disease. If the new theory is true, the "healthy carrier" states will be recognized, and all such persons will be quarantined. This is already recognized in diphtheria and scarlet fever.

The scientist also reported preliminary results of a world-wide survey of ages at which polio is contracted in various parts of the world. Early results indicate that climate influences the age of contraction, the disease appearing earlier in hot climates. On Guam 50% of the children of one year of age had been infected, while in San Francisco 50% were not infected until the age of 11.

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WOLF OF THE WATER'S SURFACE—This insect belongs to one of the species of water striders which feasts on dead or living insects which fall on the waters of streams or ponds where he lives. The ripples made on the water by a struggling insect instantly attract him. The water strider can skate along the water without breaking the surface film because his hairy legs are not wetted, just as a greased needle will float on water. He goes about on his two hind pairs of legs, pushing with the middle pair, steering with the last, and holding the front pair up so as to be ready to grasp his prey.

GEOLOGY

Ocean Water Penetrating Underground in California

► SALT-water contamination appearing underground in the deep soil in coastal parts of Orange County, Calif., is the subject of a brief report issued by the U. S. Geological Survey. The below-surface infiltration of the ocean water is due to heavy pumping of normal underground fresh water for domestic and irrigation purposes.

Subnormal ground-water recharge also is in part responsible, the report indicates, in producing a continued inland advance of ocean water into the Recent and, to a lesser extent, into the Pleistocene deposits underlying the coastal lands, especially those in Santa Ana Gap. Since 1944 several irrigation and public-supply wells in this area have been abandoned because the pumped water became too brackish.

The report as yet is only in typewritten form but is to be duplicated soon for release to the public. Typed copies, however, are available for examination in Washington and at Geological Survey offices in Sacramento and Long Beach, Calif. They are also at the Santa Ana office of the Orange County Water District and that of the County Flood Control District, two agencies which cooperated with the government in the saline contamination survey.

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