MEDICINE

Steps To Control Polio

Find polio virus is in blood stream for a few days before hitting nerves, giving hope of protection if suitable vaccinating material can be made.

➤ THE DAY when children can be protected from the paralysis and crippling of poliomyelitis seems much closer as a result of almost revolutionary findings presented to the Federation of American Societies for Experimental Biology meeting in New York.

This good news comes from the discovery, by Dr. David Bodian of Johns Hopkins University and independently by Dr. Dorothy M. Horstmann of Yale University, that the polio virus gets into the blood stream for a few days before it attacks the brain and nerves.

For a quarter of a century scientists have held that the polio virus went directly from the back of the nose and throat or from the digestive tract to the nerves. This led to a dim view of the prospects of vaccination or drug treatment or prophylaxis, because there seemed no way of getting either vaccine or drugs to the virus in the nerves.

With the virus present in the blood for even a few days, however, a chemical or a vaccine, if a suitable one can be made, can be shot right into the blood where the virus is lingering before it reaches the nerves and brain.

The virus is in the blood before paralysis or any symptoms appear. This, Dr. Bodian and Dr. Horstmann pointed out, is at least one reason why its presence there has not been detected before. It was not looked for early enough in the incubation period of the disease before the patient was sick.

Dr. Bodian and Dr. Horstmann made their findings on monkeys and chimpanzees. But the course of infection in the chimpanzee fed the polio virus is very much like that in humans during polio epidemics, Dr. Bodian stated.

It is while the virus is in the blood that the body sets up antibodies to it. If enough of these are produced, the virus is stopped before it gets to the brain and nerves, and there is no paralysis. If not enough are produced, paralysis develops.

Protecting children from paralysis during epidemic periods should be possible by giving them extra antibodies to the virus. At least two sources of such antibodies exist. One is the gamma globulin fraction of pooled blood plasma which is now used to protect against measles or modify its course. Another is the globulin fraction of placental blood from women in childbirth.

Vaccination against polio seems more promising now in view of both of these findings and of those reported by Dr. Howard A. Howe of Johns Hopkins University. He vaccinated chimpanzees with a polio virus from monkeys after the virus had been treated with formalin to destroy its disease-producing properties. The chimps did not get paralysis when active virus was given them after the vaccination and again 19 months later.

Attempts to vaccinate children with inactivated virus, made years ago, failed. It may be that the new knowledge reported here may lead to better success in the future.

Science News Letter, April 26, 1952

MARINE BIOLOGY

Animal and Bacterial Life Found in Ocean's Depths

➤ PROOF THAT both animal and bacterial life forms exist at the greatest ocean depths has been brought back to San Francisco by the Royal Danish ship, GALATHEA, after 18 months at sea.

Probing for the first time in history that part of the ocean depths that lies between 18,000 and 34,000 feet, the ship's scientists brought to the surface eyeless fishes, hundreds of new species of marine life. Thus they succeeded in establishing definite proof that animal life exists in the deepest parts of the ocean.

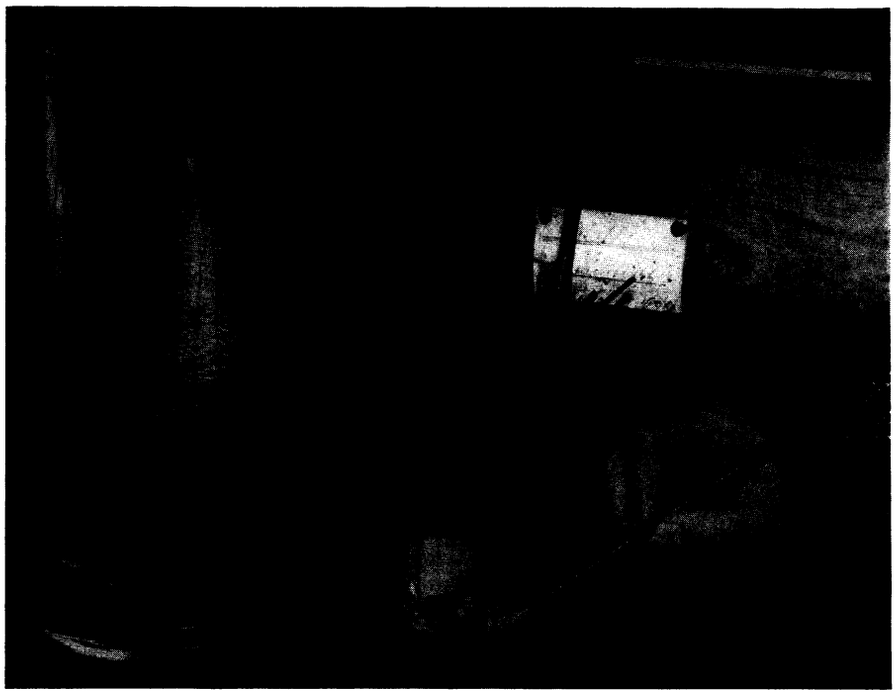
The animals that managed to survive the tremendous pressures at such depths, 1,000 times that on the earth's surface, were all small, none measuring more than one inch. Their size is determined, according to Dr. Anton F. Bruun, scientific head of the expedition, by the availability of food.

Forms of animal life found at 34,000 feet included sea cucumbers or a species of marine worm, mussels, sea anemones and crustaceans.

No fish were found at depths greater than 23,000 feet. Those that were found between 18,000 and 23,000 feet were either completely eyeless or had underdeveloped, useless eyes. They were pale of color and very feeble.

Dredging ooze from the ocean floor, a sort of pale tannish color, the scientists found it contained a kind of bacteria which they were able to keep alive in the ship's laboratory under great pressures.

The bacteria seemed not to suffer when brought out in surface pressures but they did not multiply until returned to the pressures to which they were accustomed.



DEEP SEA SPECIMENS—Two unusual specimens dredged from the deep by scientists on board the GALATHEA. In the large container is a species of Typhlone, an eyeless fish taken from a depth of about three miles. The small bottle contains a new species of sea anemone, scraped from the deepest part of the ocean, 34,000 feet in the Philippine Deep.