MEDICINE

Immunity to Encephalitis Achieved in Mice

Protection Given Animals For at Least Five Weeks By Death-Dealing Injection Not Yet Extended to Humans

A METHOD of giving protection against encephalitis, popularly called "sleeping sickness" and recently epidemic in St. Louis, was reported by Drs. Leslie T. Webster and George L. Fite of the Rockefeller Institute for Medical Research to the American Association of Pathologists and Bacteriologists meeting in Toronto. During last year's St. Louis epidemic, physicians had no method of protection against the disease.

The method made mice resistant to the disease within seven days. So far no results on human cases have been reported, but the research seems to be a step in that direction.

The discovery of the protective method depended on the previous discovery of these scientists that the causative virus of the disease, like the infantile paralysis virus, invades the body through the nose, travelling to the brain along the nerves of smell rather than via the blood stream.

Protective resistance to the disease or immunity, to use the scientific term, may be established by injecting a small amount of the causative virus into some other part of the body than the nose, whence it will travel along a route relatively insensitive to the infection, Drs. Webster and Fite found.

They injected 1,000 death-dealing or lethal doses of the virus under the skin or into the abdomen of mice. The animals did not get encephalitis but remained well. Within seven days they were immune to 1,000 intranasal or 1,000,000 intracerebral lethal doses. In fact, a single injection of one millionth of a gram of the virus brings about this high grade immunity, they reported. The immunity lasts five weeks and doubtless much longer.

These investigators also developed a test which distinguishes the virus that caused the disease in the St. Louis epidemic from other types of the disease. They reported that the type prevalent in St. Louis last summer also occurred in Kansas City, Mo., and New York City in the summer of 1933 and in Paris, Ill., in 1932. It was not the same type, serologically, as that which broke out in Japan some years ago, nor is it the same as the type known as epidemic or lethargic encephalitis. It was from this latter type that the disease acquired its popular name of sleeping or sleepy sickness.

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ARCHAEOLOGY

World War Trenches Reveal Ancient Battle Lines

ROMAN emperors and modern World War generals both had the same ideas as to where to place battle lines, archaeologists have discovered.

An expedition from the Fogg Art Museum of Harvard, led by Dr. Vladimir J. Fewkes, has spent several months exploring World War trenches and shell holes in Yugoslavia. Results of the expedition, just announced at Cambridge, Mass., show that a single site was sometimes used for fortifications by early Macedonians, then Roman legions, then armies of the Byzantine Empire, soldiers of the Old Serbian kingdom, Turks, modern Serbians, and finally World War troops.

A string of Roman forts built by the Emperor Trajan in the second century A.D. was one discovery. The forts, inferred from Roman sources, but never identified, are today a series of mounds south of the Danube. For 150 years, ten Roman legions were stationed in these Danube forts from Bavaria to the Black Sea. A Roman military road was also discovered.

Roman sites are present throughout this region and the rest of Old Serbia, and especially Macedonia, it is reported. Some of the emperors were natives of what is now Yugoslavia, and large and important cities of Roman times are today being identified, some at the sites of modern cities.

Other discoveries of the expedition included a mound in Macedonia containing relics of New Stone Age habitation. Painted pottery discovered there shows cultural relations with the Aegean coast, and is believed to be the most northern extension of that culture yet known. The newly found site may help in determining routes by which later civilizations were to spread. Five unclothed female figurines of baked clay used as religious objects by the Stone Age people of 3000 B.C. were found.

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CHEMISTRY

Yes, There's Gold in the Sea; But Just Try to Get it Out

THE CRY "Gold!" which stirs emotions mightily has been raised as a sequel to the successful extraction of the chemical, bromine, from sea water by a chemical plant at Wilmington, N. C., which swallows a third of a billion pounds of sea water daily and snatches bromine out of it in exchange for cheaper and more plentiful chlorine.

That there is gold in the sea there is no doubt. But the difficulty is to extract it profitably.

The most serious gold rush to the sea occurred in the years following the World War when the chemist, Fritz Haber, saw a chance of making Father Neptune give up gold with which to pay the reparations which the Allies were trying to extract from Germany. This great chemist was the father of Germany's poison war gases but he found scientific refuge in England from the Nazi regime just a few months before his death early this year.

Haber checked carefully the gold contents of sea water reported by other scientists. Their estimates were that the sea contained on the average about a tenth of a grain of gold per ton of water. So Haber made artificial gold-containing sea water and found that he could recover the gold with the right kinds of precipitating agent, filter and coagulation. Since 1890 many had tried