

# New Weapon Against Germs Studied

Equipped with a brand new weapon against disease, scientists have failed to get the hoped-for results with it because they have not known exactly how to use it. Bacteriophage, potent germ killer discovered by the French-Canadian, Dr. F. d'Herelle, now a Yale professor, gave promise of being the world's greatest disease conqueror. It has fallen short of fulfilling this promise because the men who had to use it have not understood it well enough to get uniformly good results.

The age of the material, the method of administration, and the amount of the dosage are points that must be settled in order to get the most successful results with this new weapon, according to one of its advocates, Dr. N. W. Larkum of the Michigan Department of Health.

Bacteriophage kills germs in a test tube and actually dissolves them. The hope of its discoverer and sponsors is that it will do the same thing to germs in the human body. In some cases it has killed the germs that were attacking the body, in others it failed to do so. Dr. Larkum feels that the failures occur when the phage is used incorrectly, through ignorance of the best conditions for it to do its work.

Possibly the phage is potent only at a certain stage of its development. Up to now, the age of the material has not been given any consideration, Dr. Larkum pointed out. The method of administration has been chosen with a view to getting the stuff into contact with the bacteria. Dr. Larkum suggested that it may be better to bring the material into contact with

the susceptible tissues of the body, in order to make them immune to attacks of the disease germs, and thus check the spread of the germs through the body. The matter of how large a dose to give also needs to be determined scientifically.

"At present the selection of the dosage is entirely arbitrary, based upon some success attending a given dose. It is entirely logical to conclude that as many failures have been due to excessive dosage as have been due to an insufficient amount. Until further light has been shed upon these various factors in bacteriophage therapy, one is scarcely justified in condemning the method," Dr. Larkum concluded.

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## Emotions Cause Disease

Nobody really overworks as far as mind and body go, but we live at such a high emotional tension that we become tired and jaded and require violent stimulation to keep us going. Also, this high emotional tension is the cause of a number of diseases, Dr. Charles P. Emerson of the Indiana University School of Medicine said in a communication to the New York Academy of Medicine.

"Under certain conditions a strong emotion can inflict a physical injury just as truly as can a knife," Dr. Emerson said. "The injurious effect of a long maintained depressing emotion has never, we feel, been appreciated. We endure well the effects of strong emotions, if only their duration is brief or their qualities varied. That the depressing, contractile, paralyzing emotions called fear, apprehension, worry, etc., weigh heavily in the bal-

ance against a patient during the course of an infection has long been suspected, but since these phenomena cannot be weighed, measured nor rendered objective, we cannot at this point consider them seriously. The effect of these emotions on the glucose tolerance of a previously well standardized case of diabetes mellitus can, on the other hand, be measured in terms of sugar in the urine, in milligrams of glucose in the blood stream, and of units of insulin necessary to restore the sugar-free condition."

Dr. Emerson urged physicians to consider more the emotional, psychological aspects of disease than has been done in the past. This new phase is just as much a part of regular medicine as are the physical and biochemical aspects with which physicians have long since become familiar.

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## "False Mummies" Explained

A plausible explanation of the strange "false mummies" of Egypt has at last been offered.

Almost every collection of Egyptian antiquities contains these false mummies. A bundle may be shaped like a cat, crocodile, bird or other sacred creature, but when the package is opened or examined by X-ray it reveals only a few scraps of skin, an isolated head, or some oddly assorted bones.

The solution of the mystery appears to be that Egyptian embalmers were not scrupulously particular about pre-

serving each sacred bird or beast intact. When the attendants cleaned up the salt tanks in which the animals were soaked in the process of mummification, they would find in odd corners the head of a cat or bird, a few stray bones or feathers. Embalming was supposed to prepare the bodies for eternal life, but no incomplete creature could attain such an end. So the embalmers dared not throw away the spare parts, but bundled them together to save the animals for eternity.

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## Deposits in Ocean

Sea water contains 1,500 tons of solid matter per cubic mile, and since the waters of the deep sea cover 115,000,000 square miles, with an average depth of two miles, they must contain about 234,000,000 tons of solid matter in suspension. These figures were obtained by Prof. W. H. Twenhofel of the University of Wisconsin as a result of his research in deep-sea oceanography.

Prof. Twenhofel believes that the deposits of this sediment under the deep sea are very much deeper than geologists have thought they were in the past. He estimates that there is an annual deposit of 20 tons of mineral matter over each square mile of ocean basin. This means, if current estimates of geologic time are correct, that the total deposit reaches the stupendous sum of 80,000,000 cubic miles.

Some of this solid matter is contributed to the sea by the atmosphere in the form of dust. The dust fall from the atmosphere in Europe amounts to 266 tons per square mile each year, and this falls on the sea as well as the land.

Another important contribution to the sediment at the sea bottom is from calcareous organisms. There is also a great deal of material of volcanic origin.

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An authority on population problems has said that it is unusual for a race that has no knowledge of agriculture to reach a greater density than one person to a square mile.