

BACTERIOLOGY

"Phage" Found to Cure With Antitoxin, Not by "Eating"

Famous Bacteria-Dissolving Power Secondary, Apparently Not Important to Conquering Disease, Report Declares

BACTERIOPHAGE, popularly known as the "germ eater," cures disease not by "eating" or dissolving the causative bacteria but by producing antitoxins in the body. The famous bacteria-dissolving power is merely a side-issue, apparently of no importance in curing or preventing disease, as has long been suspected by some investigators.

This explanation of how the potent but mysterious phage acts to cure or to prevent disease was given by Dr. N. W. Larkum of the Michigan Department of Health at the Indianapolis meeting of the American Public Health Association. Dr. Larkum reported studies supporting this theory.

Hopes Not Entirely Fulfilled

When Dr. F. d'Herelle, formerly of the Pasteur Institute and Yale University, announced his discovery of bacteriophage, it gave rise to great hopes that here at last was a way to wipe out disease. All that would be necessary to stop an epidemic of cholera, for instance, would be to pour a tube of the proper bacteriophage into the drinking water supply. These hopes were not entirely fulfilled, but results were sufficiently good to encourage a number of physicians in continuing to use the phage and to investigate its mode of action. Among them has been Dr. Larkum.

If it is true, as he now strongly suspects, that all bacteriophages are capable of producing antitoxins, scientists now have the means to fight specifically most if not all known diseases caused by bacteria. This may be done from the preventive standpoint, by immunizing well persons with bacteriophage; or sick persons may be treated by injecting serums prepared by immunizing animals with bacteriophage.

Poisons Are Real Causes

Dr. Larkum pointed out that in most if not all infectious diseases, the serious illness is caused not by the bacteria themselves but by the toxins or poisons

they produce in the body. Bacterial or infectious diseases have only been successfully treated when soluble toxins could be obtained from the causal organisms and antitoxins developed.

For example, success in the treatment of diphtheria followed the development of diphtheria antitoxin. Prevention of this disease now is possible by injecting substances known as toxin-antitoxin or toxoid. These stimulate the body to produce enough antitoxin on its own to neutralize the poison from any diphtheria germs that invade it.

Typhoid Patients Not Sick

The effect of bacteriophage when used to treat disease suggested that this was also the way it acted. When typhoid bacteriophage was injected into typhoid fever patients, it was particularly noticed that the symptoms of poisoning subsided. The bacteria did not disappear any sooner than usual, but the patients were not sick.

Earlier investigators, among them Dr. d'Herelle, considered this possibility but their studies led them to believe that bacteriophage did not produce antitoxin. Dr. Larkum and his associate, Ruth



BEAUTY FROM THE DESERT

Centuries, perhaps millenia, since the cacti have boasted of "progress" in the perfection of their flowers; yet the big blossoms of this huge relative of the common night-blooming cereus were miracle enough to attract the fascinated attention of many visitors at the Chicago exposition, Century of Progress

Corpron, however, conducted experiments with exactly opposite results. Their work showed that bacteriophage is not a toxin, is not itself an antitoxin, but produces or stimulates the production of antitoxin in the body.

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ARCHAEOLOGY

String of Beads 37 Feet Long Dug Up in Indian Home

A CLUMP of tiny beads which placed end to end make a bead string over 37 feet long is the prize discovery of archaeologists who have been excavating Indian ruins near Allentown, Arizona. The longest string of Indian beads previously found in the Southwest measured 32 feet.

The beads are of red and white shell, said Dr. Frank H. H. Roberts, Jr., who directed the excavations for the Laboratory of Anthropology at Santa Fe, and who has just returned to his

post at the Bureau of American Ethnology, Washington. So small are the hand-made beads that 20 would be required to the inch. Sifting out the thousands of tiny specks from the earth required more than two days of labor.

Dr. Roberts suggests that the beads and some fragments of turquoise with them lay, perhaps, in the pouch of an important medicine man of the village. If so, the pouch and the sinew string that held the beads in place have long since disintegrated.