

the horns of the rams. Their civilization, Dr. Chaney stated, is literally a culture of the sheep.

CLAIMS INVISIBLE GERM KILLER IS LIVING, BREEDING ORGANISM

"The bacteriophage is alive." So maintains Dr. F. d'Herelle, its discoverer, fronting the skeptical criticism of many other men of science, in his new book on the subject. The bacteriophage is alive, and no more chemical phenomenon; and it maintains itself, he says, as a parasite of parasites, a deadly submicroscopic germ that kills other germs. No culture of bacteria can be "pure", as far as the bacteriophage is concerned; it is harder to find a germ without its bacteriophage accompaniment than it is to find a woolly dog without fleas in summer.

But the bacteriophage is not a mere annoyance to the germs it infests, according to Dr. d'Herelle. It kills them, just as some germs kill men and animals and plants, and then it dissolves their corpses. And just as there are special germs that attack men and not horses, and others that attack horses and not sheep, so there are special breeds of bacteriophage, each of which has its favorite germ which it attacks. But just as some germs, for example anthrax, will attack men, horses and sheep indiscriminately, so there are some varieties of bacteriophage whose appetites are equally indiscriminate, permitting them to devour several different species of bacteria. Dr. d'Herelle claims that he has succeeded in isolating single bacteriophage "corpuscles", and in breeding up pure cultures of these different strains.

According to the author, these "super-germs" are almost unimaginably small, having diameters of 20 thousandths of a thousandth of a millimeter -- and a millimeter is about a twenty-fifth of an inch. They pass readily through the pores of a very fine porcelain filter, that will stop ordinary germs as though they were marble in a colander. But one of these tiny organisms, he says, will penetrate into the body of a bacterium, and there will divide and divide again, just as a germ does in the body of a man; until the bacteriophage "family" becomes so numerous as to burst the unfortunate bacterium asunder and so cause its death.

Man and all other animal organisms habitually infested with bacteria carry about with them all the time one or more strains of bacteriophage that make war on their commonest germ enemies. When the germs get the upper hand of the bacteriophage, we are sick; when we are convalescent, Dr. d'Herelle says, our private bacteriophage strains are in a state of especial virulence against their special germ victims.

Dr. d'Herelle made his discovery of the bacteriophage while he was at the Pasteur Institute in Paris. He is now at Alexandria, Egypt, working on problems of the control of tropical diseases. The use of the bacteriophage for combating tropical plagues was forecast in literature before it was actually attempted in practice, for the hero in Sinclair Lewis' novel "Arrowsmith", is sent on an expedition to a Caribbean country to put down an epidemic.
