

What are Phages?

Antibiotics were discovered in 1928, and have been the treatment of choice against bacterial infections ever since. So much so, in fact, that one of the biggest problems faced by modern medicine is that many antibiotics are becoming ineffective as bacteria evolves into strains that are resistant to antibiotics. New antibiotics aren't the answer; they are only a temporary stop against a problem that continues to occur. You might think that scientists would have their eyes firmly fixed on the future to find a solution to this problem, but in fact, they are looking to the past. Before antibiotics, doctors treated bacterial infections with specialized viruses called phages, which kill disease-causing bacteria.

Doctors stopped using phages largely because of the scientific limitations of the time period. Any one particular phage attacks only one particular strain of bacteria. With hundreds of different strains of individual viruses, it was impossible, in the early 20th century, to determine which strain of phage to use, quickly enough, to help the patient. Another limitation was that phage must be grown in cultures of the same harmful bacteria it is intended to fight, meaning that the phage needed to be separated from the bacteria before being introduced into the patient. Early techniques for doing this filtered out the bacteria, but not toxins left behind in the culture by the bacteria, which could kill the patient.

Today, though, advanced techniques have been developed that allow scientists to identify and purify phage more efficiently, reducing the problems and risks that caused treatment with phage to fall out of favor. And a study in the late 1980's suggested that phage were actually more effective than several different antibiotics in fighting disease in animals.

1. What is the central idea of the passage?

2. Summarize the passage.
