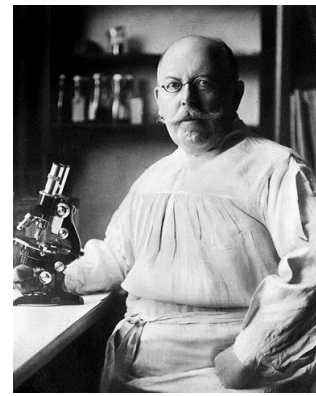


Friedrich Loeffler



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Friedrich August Johannes Loeffler (June 24, 1852 – April 9, 1915) was a pioneering microbiologist whose work significantly advanced the study of infectious diseases and the development of essential diagnostic tools. He served in the military during the Franco-Prussian War and, after his service, obtained a medical degree from the University of Berlin in 1874. Loeffler worked as an assistant to Robert Koch at the Imperial Health Office in Berlin from 1879 to 1884.

Loeffler's work on *Corynebacterium diphtheriae*, the bacterium responsible for diphtheria, built on the initial observations of Edwin Klebs, who first identified the bacterium. Loeffler demonstrated that this organism was consistently present in the mucous membranes of diphtheria patients. He successfully isolated and cultured the bacterium, reproduced the disease in susceptible animals, and recovered the organism from experimentally infected animals, as described in Koch's postulates.



This bacterium is now commonly referred to as the Klebs-Loeffler bacillus. Along with Émile Roux and Alexandre Yersin, Loeffler contributed to the discovery of diphtheria toxin and the identification of animals that were immune to the disease. These findings were crucial in the development of an antitoxin, which revolutionized diphtheria treatment. Additionally, Loeffler created Loeffler's serum, a coagulated blood serum used for detecting the bacterium.

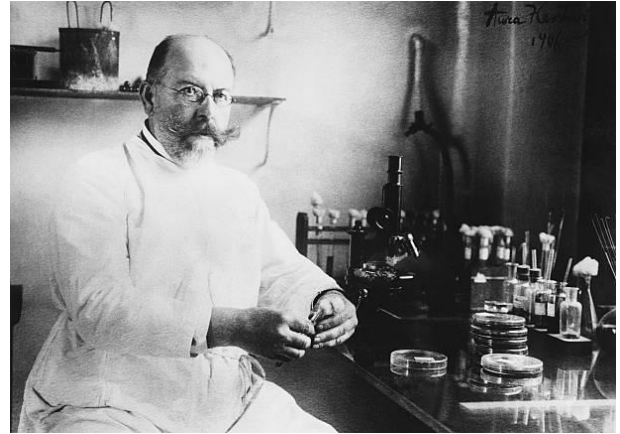


Computer image of *Corynebacterium diphtheria*.

Another significant achievement was Loeffler's discovery of *Aphthovirus*, the viral agent responsible for foot-and-mouth disease, which primarily affects even-toed ungulates, such as domestic and wild bovids. Using a Chamberland filter, Loeffler separated bacteria from infected animal blood and showed that the filtrate, free of bacteria, could still transmit foot-and-mouth disease, thereby confirming its viral nature.

Loeffler's additional contributions include, along with Wilhelm Schütz, reporting that *Bacillus mallei* (currently known as *Burkholderia mallei*) caused glanders disease in horses. He also discovered the organism responsible for swine erysipelas, *Bacillus rhusiopathiae suis*, a few years later. Loeffler

studied *Salmonella typhimurium* and suggested that this organism might be used for bacteriological control of disease. In 1892, the Greek government invited Loeffler to control a mouse plague in the Thessaly region, where they soaked bread with cultures of the organism and spread it throughout the fields. Within a month, the mouse population had significantly decreased.



Loeffler's contributions extended beyond his discoveries. In 1887, he founded the *International Journal of Medical Microbiology*. His legacy is further honored through institutions like the Friedrich Loeffler Institute on the Isle of Riems and the Friedrich Loeffler Institute of Medical Microbiology at the University of Greifswald. Loeffler's discoveries laid the foundation for modern diagnostic methods and treatments. His enduring impact is a testament to his scientific brilliance and determination.

References:

[1](#), [2](#), [3](#), [4](#)



The Friedrich Loeffler Institute on the Isle of Riems in Germany.