

Martinus Willem Beijerinck Biography

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Biography

Born in Amsterdam, Beijerinck was the son of a tobacco dealer who went bankrupt. In response to his father's misfortune, Beijerinck devoted most of his scientific career to the tobacco mosaic virus, a pathogen causing an economically devastating disease that dwarfs tobacco plants and mottles their leaves.

Beijerinck, who graduated from the Delft Polytechnic School, began his research under the assumption that the tobacco mosaic disease was caused by an unidentifiable bacterium. He based this assumption on the work of a German scientist, A. Mayer, who discovered in 1883 that tobacco mosaic disease could be transmitted from one plant to another when he sprayed the sap from an infected plant onto healthy plants. Mayer concluded that tobacco mosaic disease was caused by a small bacteria, but Dmitri Ivanowsky, a Russian scientist, was unable to capture the bacterium when he filtered the juice of the infected plant. Beijerinck carried the tobacco mosaic disease through generations of tobacco plants. Because its virulence never diminished, he decided that the infectious organisms were reproducing. The organisms reproduced in the host, but unlike bacteria, could not be cultured in test tubes or petri dishes. Beijerinck pictured infectious particles that were smaller than bacteria. He gave them the name unfilterable viruses. His hypothesis was confirmed in 1935 when Wendell Stanley crystallized the tobacco mosaic virus. Although he did not discover the actual viruses, Beijerinck, nevertheless, set the stage for twentieth century virology. This branch of science deals with viral diseases of plants and animals. Human viral diseases include the common cold and AIDS.