The Most Influential Scientists in the Development of Biomedicine: Carlos Juan Finlay (1833-1915)

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Review, Received: Nov 10, 2020, Accepted: Dec 15, 2020, doi: 10.5455/ijbh.2020.8.144-144, Int J Biomed Healthc. 2020; 8(2): 144-144

Carlos Juan Finlay (1833 -1915) was a Spanish-Cuban epidemiologist recognized as a pioneer in the research of yellow fever, determining that it was transmitted through mosquitoes (1, 2). He attended school in France in 1844, but was forced to return to Cuba after two years because he contracted cholera. After recovering, he returned to Europe in 1848. Then he enrolled at Jefferson Medical College in Philadelphia, Pennsylvania, and graduated in 1855. There he met John Kearsley Mitchell, a proponent of the germ theory of disease. He then returned to Havana and set up an ophthalmology practice in 1857, and then studied in Paris from 1860 to 1861. Finlay's work, carried out during the 1870s, finally came to prominence in 1900. He was the first to theorize, in 1881, that a mosquito was a carrier, now known as a disease vector, of the organism causing yellow fever: a mosquito that bites a victim of the disease could subsequently bite and thereby infect a healthy person. He presented this theory at the 1881 International Sanitary Conference, where it was well received. A year later Finlay identified a mosquito of the genus Aedes as the organism transmitting yellow fever. His theory was followed by the recommendation to control the mosquito population as a way to control the spread of the disease. His hypothesis and exhaustive proofs were confirmed nearly twenty years later by the Walter Reed Commission of 1900. Finlay went on to become the chief health officer of Cuba from 1902 to 1909. Although Dr. Reed received much of the credit in history books for "beating" yellow fever, Reed himself credited Dr. Finlay with the discovery of the yellow fever vector, and thus how it might be controlled. The confirmation of Dr. Finlay's doctrine had been considered the greatest step forward made in medical science since Jenner's discovery of the vaccination for smallpox. This discovery helped, from 1903 onwards, to construct the Panama Canal. The UNESCO Carlos J. Finlay Prize for Microbiology is named in his honor. Finlay was a member of Havana's Royal Academy of Medical, Physical and Natural Sciences. He was fluent in French, German, Spanish, and English and could read Latin. His interests were widespread and he wrote articles on subjects as varied as leprosy, cholera, gravity, and plant diseases. His main interest, however, was yellow fever, and he was the author of 40 articles on this disease. His theory that an intermediary host was responsible for the spread of the disease was treated with ridicule for years. A humane man, he often took on patients who could not afford medical care. As a result of his work, Finlay was nominated seven times for the Nobel Prize in Physiology or Medicine, although he was never awarded the prize (1). He received the National Order of the Legion of Honour of France in 1908. In 1928, President Gerardo Machado established the National Order of Merit Carlos J. Finlay, rewarding contributions to healthcare and medicine. Finlay was honoured with a Google Doodle on December 3, 2013, on the 180th anniversary of his birth.

- **Author's contribution***: Author was involved in all steps of preparation this article including final proofreading.*
- **Conflict of interest***: None declared.*
- **Financial support and sponsorship***: Nil*

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