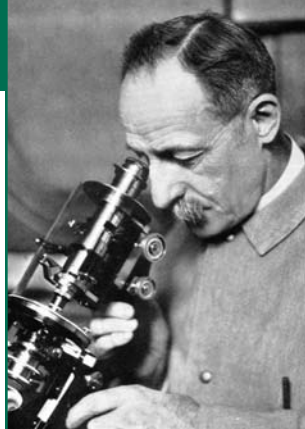


## Nathan Augustus Cobb, 1859–1932

N. A. Cobb's fundamental and applied research, the training of the first generation of nematologists in the United States, and his enhancing the awareness of nematodes brought him the name "Father of Nematology in the U.S.A." Born in 1859 (Spencer, MA), Cobb earned his doctorate (on marine nematodes) at the University of Jena in Germany in 1889. His first described genus was a marine nematode: *Tricoma*. He identified and described more than 1,000 nematode species; one paper included "100 new nematodes." He named numerous nematode structures, including *amphids*, *deirids*, and *phasmids*, and developed a classification system with a separate phylum and two subphyla. Cobb advanced our knowledge of nematode morphology, function, classification, ecology, economic losses, and needed methodologies, and his exceptional artistic depictions of nematodes remain unmatched.



After a short time at the Zoological Research Station in Naples, Italy, Cobb and his family moved to Australia, where he worked for a year as an artist in commercial advertising. In 1890, he became the first full-time vegetable pathologist in Australia. While training himself as a pathologist, Cobb published his first paper on plant-parasitic nematodes, "*Tylenchus* and root galls" (now

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*Meloidogyne*). He also discovered *Tylenchus similis* (now *Radopholus similis*) on banana and observed nematode problems on other crops. In addition to his publications on nematodes and parasites of farm animals (and humans), he published extensively on fungal diseases of plants, including wheat rust and fruit diseases. Among his 25 articles on wheat alone, he addressed storage problems, hot-air treatments of bunt, rust-enduring wheats (disease tolerance), and improving wheat by selection. Sugarcane problems such as bacterial “gumming disease” also received his attention.

Cobb’s Australian research attracted the attention of E. F. Smith, who in 1905 recommended Cobb for a USDA position. He then spent 2 years in Hawaii as the first chief of an experiment station, studying sugarcane diseases. In 1906, he opened the door to nematode biocontrol through his observation of unique protozoan parasites attacking a nematode: *Dorylaimus*.

In 1907, Cobb finally arrived in Washington, DC, but worked largely on cotton until 1915. In a secondary assignment, he inspected a 1909 Japanese gift of 2,000 cherry trees to the United States and found severe insect and nematode problems. He then recommended that the trees be destroyed. That situation and Cobb’s input led to the first U.S. quarantine act in 1912. He developed the USDA cotton grades for the standardization of fiber quality. During that time (1913), he described three species of ectoparasitic nematodes, the importance of which was not discovered until decades later. Cobb’s insistence and his 1914 proposal that a separate branch of science was necessary for the study of nematodes attested to his vision for nematology. Because of a 1915 USDA directive, he then devoted all efforts to nematodes. His commitment to the discipline was restated by his starting *Contributions to a Science of Nematology*, a periodical he published himself. In 1918, the USDA established the Division of Nematology and named Cobb as its head. Through his research and the building of a staff of superbly talented scientists, trained and motivated under his tutelage, N. A. Cobb uniquely advanced nematology—and plant pathology.

*Prepared by Kenneth Barker, David Chitwood, and Jonathan Eisenback*