

1929 - 1938



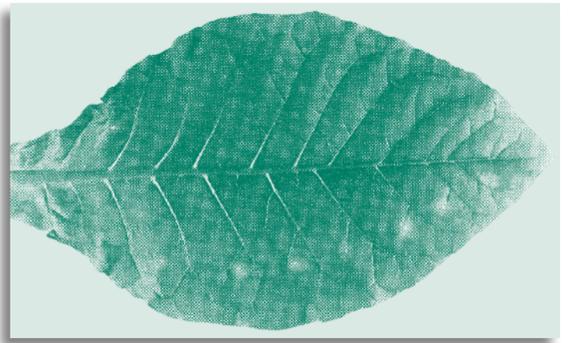
President 1929
R. J. Haskell



APS Annual Meeting group photo, 1929.



President 1934
N. E. Stevens



1929 Beech bark disease (*Nectria coccinea* var. *faginata*) is discovered in the beech trees of the eastern U.S.

1929 Local lesion response to TMV is discovered in *Nicotiana glutinosa*. This discovery led to the first reliable biological method to quantify infectivity of virus preparations.

1929 Cross protection is demonstrated with TMV—inoculation of plants with a mild strain of the virus protected against severe disease that would be caused by a highly virulent strain

1930 Canadian Division dissolved following the formation of the Canadian Phytopathological Society

1931 The Mycological Society of America (MSA) is founded

1931 Plant host ranges begin to be used to discriminate among different viruses. *Potato virus X* and *Potato virus Y* were reported to cause a disease complex in potato, but the presence of each virus could be sorted out by using differential indicator hosts and aphid vectors.

1931 First use of the term "biological control" and "suppressive effect" in plant pathology. Sanford and Broadfoot were describing the effect of soil microbes on the pathogen *Gaeumannomyces* (= *Ophiobolus*) *graminis*.

1932 TMV particles demonstrated to be rod shaped. TMV solutions were forced through narrow tubes and particle shape was determined using flow birefringence.

1933 Systemic acquired resistance is proposed

1933 Propagative transmission of viruses is discovered. *Rice dwarf virus* is found to be transmitted through the eggs of its leafhopper vector for many generations and it was later suggested that the virus multiplies in its vector.

1933 First textbook on plant-parasitic nematodes—*Plant Parasitic Nematodes and the Diseases They Cause* by T. Goodey (E. P. Dutton and Company, New York)

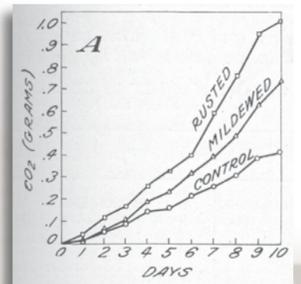
1933 Puccinia pathway is proposed. The idea that spores of *Puccinia graminis* var. *tritici* migrate from Texas to northern states each year. Spores were found at 10,000 ft by trapping with an airplane, indicating the ability to move long distances by air.

1934 Dithiocarbamates patented—the first synthetic organic fungicide, thiram. Discovery revolutionized the field of plant disease control. Two more notable dithiocarbamates were developed in 1950 (maneb) and 1956 (mancozeb).

1934 First biological control of plant pathogens by mycoparasitism. Discovery that *Trichoderma lignorum* would parasitize a number of soilborne fungi in culture and suggested controlling certain pathogenic fungi by augmenting soil with an abundance of this mycoparasite.

1934 First demonstration that bacterial toxins were responsible for symptom development in bacteria-free plant tissue—*Pseudomonas syringae* pv. *tabaci* (= *Bacterium tabacum*) causing wildfire disease of tobacco

1934 Plant diseases affect respiration. Studies of mildew and rust on red clover demonstrated increased respiration in the presence of the pathogens.



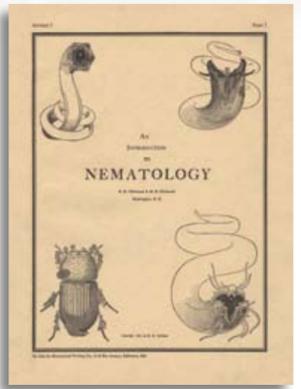
1935 TMV protein is crystallized. It was demonstrated that the virus consisted primarily of protein, although the fact that TMV also contained nucleic acids was overlooked. This work demonstrated that viruses could be analyzed chemically as well as biologically.

1935 Virus strains are shown to be distinguished serologically. This work leads to a better understanding of virus strain specificity and the ability of different strains to infect plants.

1936 TMV and *Tomato bushy stunt virus* are determined to be nucleoproteins—the presence of phosphorus led to the conclusion that nucleic acid was present. This discovery set the stage for nucleic acid analyses of viruses.

1937 Membership in APS reaches the 1,000 mark

1937 First comprehensive book on nematology published—*Introduction to Nematology* by B. G. Chitwood and M. B. Chitwood (Monumental Printing Co., Baltimore, MD)



1937 Using X-ray analysis, accurate estimates of the width of TMV rods were determined

1938 First biocontrol of nematodes. Reduced populations of *Heterodera marioni* were observed following decomposition of organic matter, which led to an increase in free-living predacious nematodes and fungal parasites.

1938 Development of first resistance to TMV in tobacco

1938 First report of X-disease of peach in the U.S. This phytoplasma disease is transmitted by leafhoppers and causes disease on peach, nectarine, sweet cherry, sour cherry, and Japanese plum. This disease is present in most areas where wild chokecherries occur, chokecherries serving as the primary reservoir for the phytoplasma.



President 1930
H. S. Faucett



President 1931
M. W. Gardner



President 1932
F. D. Heald



President 1933
J. C. Arthur



President 1935
H. T. Güssow



President 1936
G. H. Coons



President 1937
G. W. Keitt



President 1938
H. W. Anderson



Cyril G. Small, Ithaca New York's first practicing plant doctor, with his power-sprayer outfit, 1934.