

# 1949 - 1958



President 1949  
W. D. Valleau

- 1949 *Wound tumor virus* is demonstrated to replicate in its leafhopper vector. This is the first evidence that viruses can replicate in their insect vector.
- 1949 Delineation of major root-knot species and host races
- 1950 Air pollutants are recognized as causal agents of plant disease



President 1950  
C. M. Tucker

- 1950 The first edition of J. C. Walker's popular textbook "Plant Pathology" is published by McGraw Hill.
- 1951 The first rust is cultured—*Gymnosporangium juniperi-virginianae*
- 1951 Density gradient centrifugation is invented. This method allowed for the purification of virus particles. It became the most widely used procedure in biology over the next 30 years and set the stage for molecular and genetic analyses of viruses.



President 1951  
J. G. Horsfall

- 1951 Pathogenic effects of ectoparasitic nematodes described. *Trichodorus* and *Xiphinema* species were described by N. A. Cobb in 1913, but their pathogenic effects were overlooked.



President 1952  
G. L. McNew

- 1952 Phthalimide fungicides are discovered—captan
- 1952 Invention of the automated spore trap
- 1952 First bacterial toxin is isolated—wildfire toxin produced by *Pseudomonas syringae* pv. *tabaci*
- 1953 Soil fungistasis is described. This is a natural phenomenon in which the germination and growth of fungi is suppressed by the soil. The degree of suppression is dependent on the abundance of microbial activity in the soil as well as on the physical and chemical composition of the soil.
- 1953 Discovery of the first antibiotic resistance in a plant-pathogenic bacterium. *Erwinia amylovora* and *Xanthomonas vesicatoria* develop resistance to streptomycin after serial transfers in the lab. This followed a number of discoveries in medical microbiology indicating that bacteria could readily develop resistance to antibiotics and mixtures may be required for better disease control.
- 1953 The burrowing nematode (*Radopholus similis*) is implicated in causing the "spreading decline" of citrus in Florida. Losses up to 70% were observed.



President 1953  
J. G. Dickson

- 1953 The molecular structure of DNA is described. This is one of the single most important discoveries during the twentieth century and opens up the field of genetic biology.
- 1953 Student memberships are initiated by APS
- 1953 Crown rust (*Puccinia coronata*) epidemic causes substantial loss to 8–10 million acres of oats. Epidemic began in June following warmer and wetter-than-normal conditions. A flurry of tornado activity in Texas the previous month lofted vast quantities of crown rust spores that blew into northern Iowa.
- 1953 Specialized nematology courses and graduate programs at several universities are created over the next decade—University of California, Davis (M. W. Allen and D. J. Raski); North Carolina State University (J. N. Sasser and H. Hirschmann); Cornell University (W. F. Mai); University of Florida (J. R. Christie); University of Wisconsin (G. Thorne); and Rutgers University (W. R. Jenkins). Prior to these programs, interested scientists obtained training in nematology via special university short courses and workshops sponsored by Shell Chemical.



President 1954  
G. F. Weber

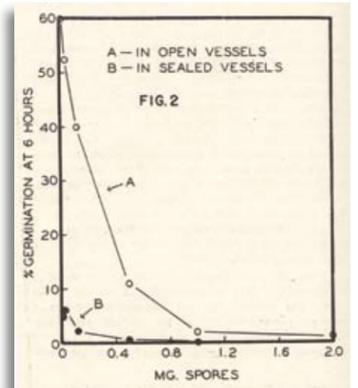
- 1954 Discovery of the soybean cyst nematode in the U.S.
- 1954 *Omphalia flavida* causes defoliation of coffee leaves by producing an activity subsequently identified as IAA oxidase. This work stimulates interest in the role of growth regulators in plant diseases.



President 1955  
J. H. Jensen

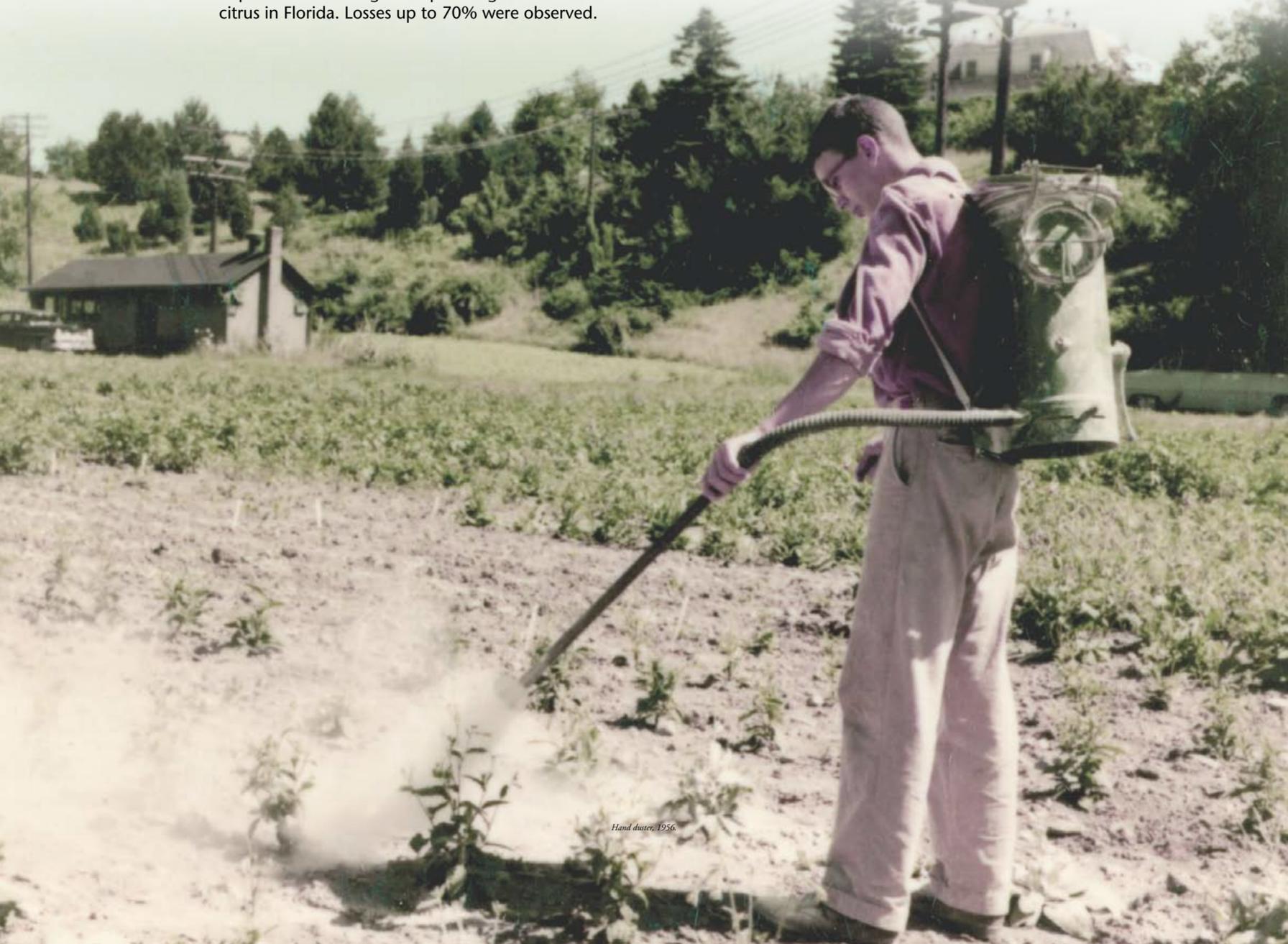
- 1954 First department of nematology in the United States—University of California, Davis
- 1955 Definitive proof of pathogenic effects of lesion nematodes under monoxenic conditions. *Pratylenchus penetrans* invaded roots and caused disease on peach.
- 1955 Protein and RNA from TMV could be disassembled and reassembled to produce infectious virus particles

- 1955 Rust spores produce self-inhibitors—germination rate of *Puccinia graminis* f. sp. *tritici* spores was inversely related to the quantity of spores
- 1956 A lesion nematode, *Pratylenchus penetrans*, is proven to be the primary pathogen in cherry-replant disease. This nematode was also shown to contribute to the apple-replant disease in 1974.



President 1956  
H. Hart

- 1956 Demonstration of antibiotic production in soil. When applied to seeds, *Trichoderma viride* produces protection against *Pythium* via antibiosis.
- 1956 Principles of soilborne diseases are summarized in *Biology of Root-Infecting Fungi* by S. D. Garrett (Cambridge University Press). This publication stimulated research on root pathology and ecology of soil microorganisms.



Hand duster, 1956.