1939 -1948

President 1939
C. R. Orton

1939 The beginning of extensive taxonomic studies of bacterial plant pathogens and separation of the two genera in *Bergey's Manual* into five genera. Plant-pathogenic bacteria remained restricted to two genera until the publication of the 6th edition of *Bergey's Manual* in 1948, which listed *Agrobacterium*, *Corynebacterium*, *Erwinia*, *Pseudomonas*, and *Xanthomonas*.

1939 Virus particles seen with an electron microscope for the first time. The rod-shaped nature of TMV is verified.

1939 Citrus tristeza (quick decline) is discovered in California. In 1946, the aphid-borne *Citrus tristeza virus* was identified as the causal agent of this disease. Losses can be great, with rapid death to citrus on sour orange rootstock.

President 1940
C. Chupp

1940 Methyl bromide is shown to control nematodes and have biocidal effects to plants. Populations of *Heterodera marioni* were reduced in soils planted to cucumber. Virtually complete elimination of the nematodes was achieved by tarping the soil prior to fumigation as demonstrated in further studies.

1940 First halogenated organic pesticide—D,D (1,3-dichloropropene and 1,2-dichloropropane mix). In 1943, it was demonstrated to be an effective soil fumigant for nematode control.

President 1941
J. G. Leach

1941 New England Division formed and renamed the Northeastern Division in 1946

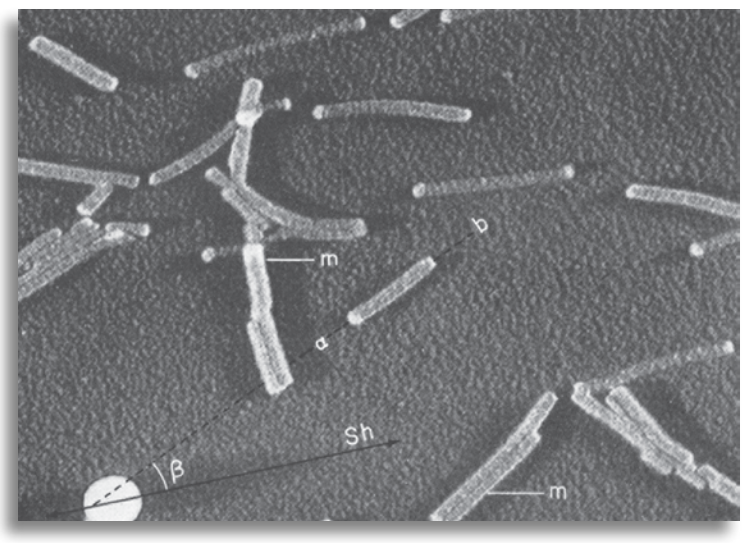
1941 One gene codes for one enzyme concept proposed. *Neurospora* and mutants used as a genetic model to understand biochemical pathways. This has considerable impact on plant pathology, extending the hypothesis of gene-for-gene to enzyme production.

1941 Bees are shown to be involved in the transmission of fire blight

1941 The War Emergency Committee of APS is formed. The goal of this committee was "…to provide a coordinated effort in research, experimentation, and extension work designed to control destructive diseases of plants." Efforts were directed toward preventing the introduction of new pathogens and preventing the spread of key pathogen with the U.S. This meant focusing on plant quarantines, conducting coordinated plant disease surveys, improved extension, seed certification, and management of fungicides.

1941 Discovery of the potato cyst nematode-golden cyst nematode, *Globodera* (*Heterodera*) *rostochiensis*, in Long Island in New York. This was the first occurrence of this nematode in the U.S. More recently, the pale cyst nematode, *Globodera pallida*, was discovered in Idaho in 2006. These pests are one of the greatest threats to the potato industry in the U.S., partly due to the difficulty in controlling them and the massive crop losses that can ensue if they are not controlled.

President 1942
L. M. Hutchins



1942 A technique known as shadow casting is developed to improve estimates of size and shape of virus particles.

1942 Gene-for-gene concept is advanced. A single gene for pathogenicity in *Melampsora lini* corresponds to a single gene for resistance in flax.

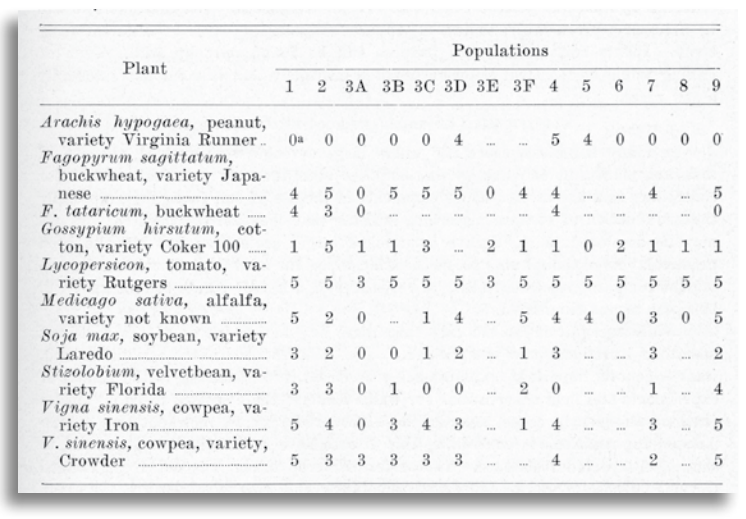
President 1943
J. C. Walker

1944 *Phytophthora cinnamomi* is identified as the causal agent of avocado root rot (avocado decline) in California. This disease posed a major threat to the avocado industry in California. The pathogen was found to attack the feeder roots of avocados in the presence of excess moisture, causing a decline of the tree and eventually death. Lacking a robust means of disease control, this remains the most limiting disease for avocado production in California.

President 1944
J. J. Christensen

1944 *Fungicide and Nematicide Tests* is initiated as a supplement to *Plant Disease Reporter*. After the USDA stopped publishing the reports in 1952, Agricultural Chemicals published them from 1953 to 1956. Starting with the 1957 report, APS began publishing the reports.

1944 Potomac Division formed



Plant	Populations												
	1	2	3A	3B	3C	3D	3E	3F	4	5	6	7	8	9
Arachis hypogaea, peanut, variety Virginia Runner	0[a]	0	0	0	0	4	...	...	5	4	0	0	0	0
Fagopyrum sagittatum, buckwheat, variety Japanese	4	5	0	5	5	5	0	4	4	...	...	4	...	5
F. tataricum, buckwheat	4	3	0	...	...	...	...	...	4	...	...	...	...	0
Gossypium hirsutum, cotton, variety Coker 100	1	5	1	1	3	...	2	1	1	0	2	1	1	1
Lycopersicon, tomato, variety Rutgers	5	5	3	5	5	5	3	5	5	5	5	5	5	5
Medicago sativa, alfalfa, variety not known	5	2	0	...	1	4	...	5	4	4	0	3	0	5
Soja max, soybean, variety Laredo	3	2	0	0	1	2	...	1	3	...	...	3	...	2
Stizolobium, velvetbean, variety Florida	3	3	0	1	0	0	...	2	0	...	...	1	...	4
Vigna sinensis, cowpea, variety Iron	5	4	0	3	4	3	...	1	4	...	...	3	...	5
V. sinensis, cowpea, variety, Crowder	5	3	3	3	3	3	...	...	4	...	...	2	...	5

1944 Discovery of "races" of root-knot nematodes

1944 First use of antibiotics for control of plant disease—crude extracts of penicillin were used to inhibit the growth of *Pectobacterium carnegieana* (=*Erwinia carnegieana*) and *Clavibacter michiganensis* subsp. *sepedonicus* (=*Corynebacterium sepedonicum*) in vitro. Application of this extract to galls caused by *Agrobacterium tumefaciens* arrested the growth of the galls.

1944 Inhibition of fungi by chelators. It was discovered that 8-hydroxyquinoline precipitated metals by forming complex salts, making them unavailable for enzymatic activity of the vascular pathogens *Fusarium oxysporum* f. sp. *lycopersici* and *Ophiostoma* (=*Ceratostomella*) *ulmi*.