Myron Port Backus 1908-1988

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Myron Port Backus, Emeritus Professor of Botany and Plant Pathology at the University of Wisconsin-Madison, died on January 18, 1988, after a long illness. He is survived by a son, Bernard, of Union Grove, Wisconsin, and a brother, Edward, of Prescott, Arizona.

Myron was born on April 14, 1908, and grew up on the family farm on the west edge of Madison. The farm later became part of the University Experimental Farm and eventually the Hilldale residential area of Madison. He was valedictorian of his high school class. His higher degrees were all earned at the University of Wisconsin. He received a bachelor's degree in botany with election to Phi Beta Kappa in 1928, an M.S. in botany in 1929, and a Ph.D. in botany and plant pathology in 1931. During the summers of his graduate student years, he worked on the barberry eradication program and roomed with the Simley family in Black Earth. He later married their daughter, Ingrid Simley.

From 1931 to 1933, Myron was a National Research Council Postdoctoral Fellow at the New York Botanical Garden and at Columbia University, where he worked under the guidance of two of the country's leading mycologists, B. O. Dodge and R. A. Harper. During this time, he worked on the cytology of the sexual cycle of the cherry leaf spot fungus, *Coccomyces hiemalis*, and on *Diplocarpon rosae*. He spent an additional year as an associate in mycology with William Crocker at the Boyce Thompson Institute for Plant Research at Yonkers. He then returned to Madison to begin as an instructor in botany at the University of Wisconsin in the fall of 1934. He was promoted to assistant professor in 1937, to associate professor of botany and plant pathology in 1943, and to full professor in 1947. He became an emeritus professor in 1971.

Myron was a charter member of the Mycological Society of America and was also a member of the American Phytopathological Society, the British Mycological Society, and the Torrey Botanical Club. He served on the editorial board of the journal Mycologia for several years, and as chairman of the editorial board of Mycologia Memoirs from 1953 to 1956. His research covered a wide range of mycological subjects, including fungal cytology, sexuality in the Ascomycetes, and the interrelationships of parasitic fungi with their hosts. His demonstration of conidial fertilization in *Neurospora* in the 1930s provided a valuable tool in the development of biochemical genetics.

During World War II and for several years thereafter, Myron collaborated with Frederick Stauffer of the Botany Department of the University of Wisconsin on the highly successful effort on this campus to increase the production of penicillin, during a period of critical shortage of the antibiotic. Using *Penicillium chrysogenum* NRRL 1951, a high-yielding strain that had recently been isolated by Kenneth Raper, Stauffer, and Backus systemically exposed spores to ultra-violet radiation and eventually obtained the high-yielding pigmentless mutant Q176, the strain adopted generally by the pharmaceutical industry in the 1940s and 1950s. The improvement in penicillin production that this isolate made possible at a critical time undoubtedly saved the lives of thousands who would not otherwise have survived.

Although he continued his work on *Penicillium chrysogenum* into the 1950s, Backus, in the meantime, initiated a series of investigations into the identification and distribution of microfungi in forest soils, particularly in southern Wisconsin. During the 1960s, he and his students isolated and described from forest soils a number of new species belonging to several important genera, including *Penicillium* and *Aspergillus*.

At one time or another, Myron Backus taught a remarkably wide range of courses: Introductory Botany, Intermediate General Botany, Economic Botany, the Plant Kingdom, Microtechnique, Introductory Plant Pathology, Fungi, Advanced Mycology, and Seminar in Mycology. It was particularly through his extraordinary courses in mycology that he exerted his lasting influence as a teacher. These courses were generally considered by students and faculty alike as model demonstrations of scholarship and professionalism.

Myron's commitment of knowledge, time, and patience to ensure the excellence of his mycology courses was enormous. Since his course on Fungi was sometimes given both semesters and Advanced Mycology was a year-long course, he was usually teaching both courses at once. For his teaching material, he maintained about 800 cultures representing a wide variety of fungal genera and families, many requiring special media. In his morning lectures, Myron would illustrate the appropriate fungal life cycles beautifully on the blackboard without interrupting the continuity of his oral presentation; then in the highly structured yet open-ended afternoon laboratories, he would present the living forms which he had carefully cultured and coaxed into just the right stages of development. A few years ago, a number of his former students who had become professional mycologists and plant pathologists nominated him for the William H. Weston award for Teaching Excellence in Mycology. Many called his courses inspirational and looked back on them as the highlight of their graduate experience.

Myron Backus had a very special relationship with the Department of Plant Pathology. Although he did not have a formal appointment in Plant Pathology until 1943, his close relations with the Department started with his return to the campus from the east in 1934, when he participated with R. A. Brink and G. W. Keitt in the departmental seminar on variation in fungi. For several years, beginning in 1936, he served as the laboratory instructor for the Principles course for graduate students taught by J. C. Walker; Myron's expectations of accuracy and detail made this course a memorable experience. Each student wrote a paper a week from original literature on a particular classic disease, and drawings made from specimens or slides had to be perfect. From 1936 to 1970, most plant pathology students took his courses in mycology, and he was on their preliminary and final examination committees. For both students and staff, Myron was a very important source of guidance in identifying fungi and describing them for publication, especially the Latin descriptions.

Myron set very high standards of performance for his students, and it was remarkable how hard they worked to live up to his expectations. He never criticized poor work, but his look of disappointment made the student resolve to do better the next time. He used positive reinforcement to great effect. In his grading, he was supportive through praise, and by drawing on a graded range of comments he rewarded each student with encouragement and a bit of personal courtesy. The legacy of this scholarly, gentle, and considerate man remains with the hundreds of students in whom he instilled a love for the study of fungi and a desire to strive for excellence in their professional lives.