

## Harry William Schroeder, 1916–1983

Norman E. Borlaug and Maria de los Angeles Schroeder



Harry William Schroeder, plant pathologist, was born 31 August 1916 in Linn, Kansas, and died 10 May 1983, in College Station, Texas.

He retired 10 January 1980 as Supervisory Plant Pathologist (Research Leader) of the United States Department of Agriculture, Agricultural Research Service, Transportation and Marketing Quality Research Unit, Southern Region, and as a member of the graduate faculty, Texas A&M University, College Station.

He grew up in Topeka, Kansas, where he first joined the National Guard cavalry and then volunteered for duty as a member of the United States Army Air Force, and served from 1939 through 1948 when he retired with the rank of staff sergeant.

His academic career began at Mankato State University in Minnesota in 1948. The following year he transferred to the University of Minnesota and was awarded the Van Dusen-Harrington Undergraduate Scholarship in 1950. He was granted the B.S. degree with distinction in 1951. He continued studies in the Department of Plant Pathology at Minnesota under Dr. J. J. Christensen and earned the M.S. degree in 1954 and the Ph.D. degree in 1955. His thesis dealt with the identification of sources of resistance to loose smut, bunt, scab, and root rot in spring wheat.

In January 1956, Dr. Schroeder accepted a position as Chief of the Section of Plant Pathology at the Instituto de Investigaciones Agrícolas, Secretaria de Agricultura y Ganadería. Then, at the request of a group of farm workers, ranchers, and industrialists from Irapuato, Guanajuato, Mexico, Dr. Schroeder was appointed Director of the Strawberry Program of the El Bajío region of Mexico. He found that high salt concentrations in irrigation water and root knot nematodes were causing the decline of what had been the primary cash crop in that region. Largely from his efforts, strawberry production regained its position as the export crop in that area. To further ensure the success of the crop, he organized a crossbreeding research program for improving strawberries by crossing native and introduced cultivars.

In September 1957, he accepted a joint position as Plant Pathologist with the USDA Biological branch, Agricultural Marketing Service, and the Texas Agricultural Experiment Station, in College Station. Here, he planned, conducted, and supervised research on the drying of rough rice with infrared radiation to increase its milling quality, yield, and subsequent market value. He also demonstrated the role of fungi in the deterioration of rough rice during handling, conditioning, and storage, which led to a reduction in losses during storage.

Dr. Schroeder then investigated the factors that predispose

peanuts to invasion by *Aspergillus flavus* and the subsequent development of aflatoxins. The study of this and related mycotoxins subsequently became the main focus of his research. The effects of environmental factors on the production of aflatoxin in culture by *A. flavus* and *A. parasiticus* claimed his attention. He pioneered in developing new methods for the prevention and control of aflatoxin contamination in the handling, conditioning, and storage of peanuts. Further investigation in this field led to the discovery, isolation, and crystallization of two new mycotoxins produced by *A. flavus* and *A. caespitosus*. The work with peanuts led to work on similar problems in pecans in which he showed that aflatoxin contamination could be reduced substantially by selecting cultivars that resist shell breakage and that also prevent penetration by fungi.

From 1960 to 1977, Dr. Schroeder was Sponsoring Scientist and Technical Adviser on several Public Law 480 research projects in Spain, Israel, Japan, and India. He served as representative of the USDA for marketing research from 1967 to 1980. In 1968, he served as a member of the organizing Committee of the first United States-Japan Conference on Toxic Microorganisms, held in Honolulu, Hawaii. At this conference, he chaired a section and spoke on "Aflatoxins in Rice in the United States."

From 1969 through 1980, Harry was secretary of the U.S. Toxic Microorganism Panel, Joint U.S.-Japan Cooperation on Development of Natural Resources (UJNR). During this time, he attended nine joint meetings of UJNR, four of which were in Japan, and presented further papers on his research with mycotoxins. Dr. Schroeder was instrumental in fostering good relations among panel members as well as in organizing and planning four international symposia and publishing monographs of the joint program. The published works were: Proceedings of the First U.S.-Japan Conference on Toxic Microorganism Mycotoxins—Botulism, Honolulu, 1968; International Symposium on *Vibrio parahemolyticus*, 1974; Mycotoxins in Human and Animal Health, 1977; and the Symposium on Microbiology in International Trade, 1982. These works not only contributed significantly to progress in knowledge of mycotoxins, but also fostered close cooperation between scientists in both United States and Japan.

Dr. Schroeder published more than 100 papers. He was a member of Gamma Sigma Delta, Sigma Xi, American Phytopathological Society, American Society for Microbiology, American Association for the Advancement of Science, and several civic organizations. He is listed in World Who's Who in Science and American Men and Women of Science.

He is survived by his wife Maria de los Angeles Schroeder; his children Harry W. Schroeder, Jr. (M.D., Ph.D.), and Christine Louise Matyear; his grandchildren Laure Elaine and Jennifer Kay Matyear, and Harry W. Schroeder III; three brothers and one sister; and many friends and associates who also miss him greatly.