

Karl Martin Silberschmidt, 1903-1973

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Karl Martin Silberschmidt, Head of the Plant Virology Department of the Instituto Biológico, São Paulo, Brazil, died on April 2, 1973 after a long illness.

Silberschmidt, son of Wilhelm and Ida Silberschmidt, was born on August 30, 1903 in Aschaffenburg, Germany. He studied Natural Sciences and especially Botany in the Ludovica Maximiliana

University, München and in the University of Berlin for one year. As a post-graduate student he published a paper on plant growth and development which was presented as a doctoral thesis in 1927 and received the attribute of *Magna cum laude*. Printed as a monograph, the thesis was entitled: "Untersuchungen über die Abhängigkeit des Pflanzlichen Wachstumsverlaufes und der Erreichten Endlänge von Konstanten Temperaturgraden."

After graduating, Silberschmidt received a fellowship to work in Plant Physiology and Forestry in the University of Munchen. During the period 1928-1935, he published many works related to plant development. Because he was interested in the problem of natural and obtained immunity in plants, he was invited to speak on this subject at the VI International Congress of Botany in Amsterdam. When he returned from Holland in 1935, Silberschmidt was invited by Dr. Rocha Lima, general director of Instituto Biológico in São Paulo, to come to Brazil and become the Head of a new Section, Plant Physiology. He was well prepared for this, not only by his extensive plant research work, but also by his collaboration with H. M. Quanjer, one of the best phytopathologists of his time.

Silberschmidt became interested in plant pathology in 1935 and entered immediately upon a productive research career, publishing as author or co-author, approximately 180 articles, in Brazilian and foreign periodicals. His many contributions made him one of the leading authorities on virus diseases. His research, together with that of assistants under his direction, made a significant contribution to the field of virology.

His interests also covered the field of plant physiology in which he published almost 40 articles. In the last 15 years he was interested in seed germination and received a five-year grant from the U.S.A. Department of Agriculture to study the germination of crop seeds at different levels of water content in the substrate.

In 1938, he published, together with J. Reis, a book on

the methods used in studying virus diseases of plants which became a part of the scientific Encyclopedia "Adderhaldens Handbuch der Biologischen Arbeitsmethoden".

He worked on the identification of many viruses and host. He was the first to describe the symptoms of infectious chlorosis in many malvaceous host species, demonstrated that this disease was transmitted by grafting and proved, together with A. Orlando, that the virus is vectored by the whitefly *Bemisia tabaci*.

With the idea of finding an efficient way to control virus diseases of plants he made many studies on immunity, working with different viruses and different host plants of a same virus. Whatever other viruses he worked with, Silberschmidt never neglected his studies on potato virus diseases. On the occasion of the World War II, when the importation of potato-seed could be interrupted at any moment, he organized a certification service which enabled farmers to plant tubers from their own crops. This work on potato viruses began many years ago and still continues under the direction of his Department. In recent years he became interested in soil-borne viruses which were the subject of his last papers.

He thoroughly enjoyed contact with young people. Every year he taught courses in the Instituto Biológico for university students of Biology and Agronomy. He taught virology in many research institutes of Brasil, in Colombia (Chinchina), Germany (Tubingen), Italy (Bari) and other countries. Many students worked in his laboratory. He gave many classes as Research Conferencier of the National Research Council and was a member of the board of examiners in many counours and for doctoral theses.

Silberschmidt was a member of: Academia Brasileira de Ciencias, Washington Academy of Sciences, New-York Academy of Sciences, Sociedade Brasileira para o Progresso da Ciencia, American Association for the Advancement of Science, The American Phytopathological Society, the Torrey Botanical Club, Potato Association of America, Sociedade Latino-Americana de Fitotecnia, European Association for Potato Research, Sociedade de Botânica do Brasil, Sociedade Brasileira de Fitopatologia, Sociedade de Biologia do Brasil and Associação Brasileira de Tecnologia de Sementes.

He received a Certificate of Merit from The Potato Association of America and the Certificate of Appreciation from the U.S. Department of Agriculture.

He is survived by his brother Benno Silberschmidt, who is now living in Germany.