

Carlos O. Miller

Professor Carlos Miller was born on February 19, 1923, in the southern Ohio town of Jackson. With his retirement Indiana University loses the formal services of one of the world's most prominent plant physiologists. All of his degrees were received from the Ohio State University. His earlier education had been interrupted by service in the United States Army as a meteorologist from 1943 to 1946. During this period he had received training in mathematics, physics, and electronics at Denison and Harvard universities. After the war he rapidly completed the requirements for the B.Sc., M.A., and Ph.D. degrees. The B.Sc. in agriculture was granted *cum laude* in 1948, the M.A. in 1949, and the Ph.D. degree in 1951. Upon graduation Dr. Miller moved to the University of Wisconsin at Madison, where he was associated with the noted biologist Folke Skoog. From 1951 to 1958 he was associate investigator on a project sponsored by the American Cancer Society. During this time Dr. Miller played the major role in the discovery, isolation, and identification of kinetin, an important hormone which has been shown to exert manifold influences on plant growth and development. The precise mechanism by which this hormone acts is still not fully understood, but much of our knowledge of the action of cytokinins comes from the research carried out by Dr. Miller and his students. He has attacked this problem with a zeal and devotion rarely seen these days.

In 1955 Dr. Miller was appointed assistant professor in the Department of Botany at Wisconsin; he remained there until 1957, when he accepted the position of assistant professor in the Department of Botany at Indiana University. He became associate professor in 1960 and attained the rank of professor in 1963. He has a strong loyalty to Indiana University, and has resisted numerous attempts by other institutions to attract him with offers of appointments to department chairmanships, deanships, and endowed chairs.

Dr. Miller is a highly valued faculty member in the Department of Biology and is one of the outstanding scholars in the University. He derives genuine satisfaction from scientific inquiry and challenge. The excitement and pleasure that he receives from his work is conveyed to his students and colleagues. Nor is anyone more devoted to his research than Dr. Miller. He can be found working in his laboratory from early morning until late at night, on weekends as well as weekdays. This zest for research has resulted in a large number of excellent publications and international recognition as one of the world's foremost plant investigators.

In addition to the isolation, identification, and synthesis of the kinetin hormone, Dr. Miller was the first to show the diversity of its effects, and also its interaction with the other major plant hormone, auxin. He showed that these adenine cytokinins occur in all sorts of plant species, ranging from maize to mycorrhizal fungi. A most important scientific contribution was his finding that crown gall tumors produce zeatin, the same cytokinin present in maize kernels. In his studies on the molecular action of cytokinins, he was the first to demonstrate the capability of free-base cytokinins to form complexes with copper and thereby influence various biological interactions. He demonstrated that cytokinins can promote the formation of deoxyisoflavonoids, modify the oxidation of certain phenolic compounds, and inhibit oxygen uptake by cells and mitochondria. This last-named work enabled him to pinpoint the action of cytokinin in the electron transport system of mitochondria. He is presently engaged in another most important and challenging problem, one which has long fascinated him—the induction of flowering in plants.

Carlos Miller has been a member of the board of trustees of the American Society of Plant Physiologists and has also held the offices of secretary and vice-president of that organization. He was a member of the editorial board of the journal *Plant Physiology* for two terms. He has been secretary, vice-chairman, and chairman of the Midwest Section of the American Society of Plant Physiology. Over the years he has also served on numerous university and departmental committees.

Carlos is a very warm and friendly individual. His office/laboratory complex adjoins the departmental office, and during their daily trips to the mailboxes many of his colleagues find it difficult to pass by his open door without dropping in to discuss diverse world, university, and departmental affairs, or just plain chat. He is a very sensitive and considerate person. For many years he has also successfully played the stock market, and this has enabled him to contribute generous financial support to the University as well as to projects unrelated to IU. These contributions have been made anonymously, with no publicity. A project close to his heart is the support of his high-school alma mater. He recently set up a fund to be used for assisting promising students in furthering their education. He is the first inductee into the "Hall of Honor," established by the public school system in Jackson, Ohio.

Indiana University is fortunate to have attracted and kept a scientist as distinguished as Carlos Miller. His exceptional abilities have earned him widespread admiration and respect.

Drew Schwartz