

Cecil Edmund Yarwood, 1907-1981

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Cecil Edmund Yarwood, Emeritus Professor of plant pathology at the University of California at Berkeley, died of a heart attack in Brisbane, Australia, September 10, 1981, just 6 days short of his 74th birthday. His parents had lived in a little town just north of the U.S.-Canadian border, and because the town had no hospital, he was born in nearby Sumas, Washington. He obtained American citizenship when he became established at Berkeley.

He received his B.S. degree in agriculture from the University of British Columbia in 1929, the M.S. degree from Purdue in 1931, and the Ph.D. from Wisconsin in 1934. Dr. Yarwood began his career at Berkeley in 1934 as an instructor and junior plant pathologist, advanced through the academic ranks, and was appointed professor of plant pathology in 1949.

At Berkeley, he met Evangeline Alderman, who received the Ph.D. in zoology soon after their marriage in 1936. They shared an interest in hiking and observing wildlife and natural vegetation. Throughout the youth of their four daughters and one son, a favorite family pursuit was weekend and vacation backpacking excursions to the seashore, mountains, or redwood forests. This continuing contact with natural vegetation was important in shaping Cecil's research, because he detected host-parasite phenomena, which he investigated in the laboratory and greenhouse.

His approach to research combined awesome energy and endurance, eyes unclouded by accepted authority or preconceptions in observing phenomena or interpreting their significance, and capacity for devising simple experiments, using or improvising the simplest equipment. His work hours were so highly organized that he knew the exact number of steps required by slightly different routes from his office to the laboratory-greenhouse. Habitually he was at work by about 6 in the morning, walked to the gymnasium at noon, ran a fixed number of laps around the track, swam a fixed number of laps in the pool, ate lunch, chatted briefly with fellow physical fitness enthusiasts, and was back at work within a few minutes of 1:00. As an experiment required, he might be making observations at 2 or 3 in the morning.

Cecil's flow of publications was torrential and wide-ranging, but the pattern reflects continuing interest in environmental influences on the interactions of plants and their (mostly obligate) parasites. Factors such as temperature, light duration, timing or intensity, humidity or free water, and coincident infection by other pathogens are recurring themes in his studies. These, in turn, reflect his intense and wide-ranging interest in ecological relationships.

Most of Dr. Yarwood's publications were entirely based on his own work. He was reluctant to exploit graduate students and accepted either no or only minimal credit for their work. He read, digested, kept files on, and remembered a vast range of scientific

literature, which principally provided for scholarly introductions and discussions in his research papers and were the basis for his many review publications.

Yarwood's research accomplishments are so numerous and still so widely referred to that it is impossible in this space to do more than cite examples: Within two years of obtaining his Ph.D., he published the first paper on heterothallism in the powdery mildews, demonstrated that some of them are highly xerophytic, and showed that in some species of powdery mildew the development and release of conidia follow a diurnal cycle. His report that the conidia of a powdery mildew could germinate on a dry microscope slide challenged accepted beliefs and attracted skepticism to the point of hostility, but this and his other reports that initially seemed controversial were later proved to be correct. Yarwood was continuously interested in environmental factors that affect infection by pathogens, especially those he designated as "predisposing." He published many reports on the effects of light, temperature, humidity, and prior infection by other pathogens, and these reports demonstrated his talent in developing ingenious quantitative measures of environmental factors and infection effects. Using methods that seemed simple and obvious only after he developed and applied them, he demonstrated the existence of acquired immunity, enhanced sensitivity, and subtle relationships between rust spores and growing rust colonies.

Yarwood disclaimed being a virologist, but his reports threw light on many interactions of viruses and their plant hosts. Though many could be characterized as dealing with the physiology of the interactions, his report on the juice transmissions of the Tulare strain of apple mosaic to vegetative plant hosts demonstrated that so-called tree viruses were not fundamentally distinct from viruses infecting other plants and stimulated research on virus characterization.

Commitment to teaching and to student welfare was as strong in Cecil as his commitment to research. He always carried his full share of classroom responsibilities, and his reputation in research attracted graduate and postdoctoral students from many parts of the world. He always had time for students, and many, whether formally assigned to him or not, sought his advice on technical problems. The large number of invitations he received from former students and associates to visit their laboratories all over the world attest to the respect and admiration he generated.

Yarwood received many invitations to lecture at universities and before international and national congresses dealing with botany, plant pathology, mycology, microbiology, and crop protection. He served on the editorial boards of *PHYTOPATHOLOGY* and *Virology*. His bibliography includes 190 technical publications and 21 important book chapters and reviews. Among the many honors he received, the most noteworthy were the Presidency of the APS Pacific Division in 1946, a John Simon Guggenheim award in 1957, his appointment as Miller Research Professor (1963-1964) in the Miller Research Institute at Berkeley, Fellowship in APS in 1965, and an honorary D.Sc. in 1979 from the University of British Columbia.