

MEMORIAL RESOLUTION OF THE FACULTY OF THE
UNIVERSITY OF WISCONSIN-MADISON

ON THE DEATH OF EMERITUS PROFESSOR CHAMP BEAN TANNER

Champ Bean Tanner, Emeritus Professor of Soil Science and Meteorology, died on September 22, 1990. He is survived by his wife, Katherine, and sons, Bertrand and Myron, and daughters, Terry and Taffy.

Champ Tanner was born on November 16, 1920 in Idaho Falls, Idaho. He grew up in the state of Utah and graduated from Provo High School in 1938. He received his undergraduate degree from Brigham Young University in 1942. After four years of military service, he entered graduate school at the University of Wisconsin-Madison. He earned his Ph.D. in 1950 and joined the Department of Soil Science as the first agricultural physicist employed since F. H. King's retirement in 1901. Tanner developed an exceptional research and teaching program that bridged the disciplines of soil physics, plant science and meteorology. His work strengthened each discipline and fostered an integrated approach to studies of the physical environment. He was lauded by his peers for his scientific integrity and his energetic approach to research and was in demand for major addresses to conferences and symposia worldwide.

In the realm of soil physics, he focused his attention on the classification of the phenomena of water flux in unsaturated soils, description of the thermal regimes in soils, and soil aeration and redox potentials. He was the first to make *in situ* measurements of oxygen tension in the field. As a pioneer in micrometeorology, he dedicated much of his research effort to near ground measurement of heat and water vapor transport from soil, water and plant surfaces. He was first to apply approaches of energy balance and Bowen ratio to agronomic crops and the development of instrumentation for field monitoring of the different parameters. Another major area of his research included studies of the physical environment of crop plants in relation to plant growth and development. He pioneered the measurement of net radiation absorbance in crop foliar canopies and estimated soil evaporation and plant evaporation as functions of plant density and row spacing.

In the area of plant/water relations, Tanner provided much fundamental information on the relationship between water availability and plant growth response especially as influenced by water conductance through plants. He devised original instruments and techniques for estimating plant physiological responses, including the use of pressure chambers to measure water potential in plant storage organs and *in situ* water potential measurements for potato tubers and other root crops.

In addition to his enormous research effort, Tanner had a serious commitment to good teaching. He directed the research for some 25 Ph.D. and 19 M.S. students and trained several postdoctoral scientists. Initially, he taught a course in soil physics and later focused his attention on teaching of micrometeorology. This course combined his expertise in physics and meteorology, and attracted students from several departments, including soil science, agronomy, horticulture and meteorology.

Tanner was the first soil scientist to be elected to the National Academy of Science (1981), he received the American Meteorological Society's Outstanding Achievement in Micrometeorology Award in 1980 and the Soil Science Society of America's Soil Science Research Award in 1978. He was awarded the Emil Truog named professorship at the University of Wisconsin-Madison in 1979. He served as visiting professor at Cornell University, University of Guelph, Canada, and in New Zealand and Australia. He also served as a Fulbright lecturer in Australia and Papua New Guinea. He served as editor for the American Meteorological Society, the Soil Science Society of America, the American Society of Agronomy, and Plant Physiology Society of America.

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Tanner served as Chair of the Department of Soil Science from 1984 until his retirement in 1988. Throughout his 40-year soil science career, Tanner used his interest in physics and agriculture to tackle farming problems, especially those connected with weather and irrigation in Wisconsin. Tanner developed means to measure water vapor transport between soil plant canopy and the atmosphere. Today these measurements help farmers to irrigate more efficiently and protect our groundwater. "When farmers used less water, fewer chemicals leached into the groundwater" state Tanner. Agriculture has the responsibility to provide food and fiber for a growing world and to do it in an environmentally sound fashion" Tanner commented only last year.

Tanner had some outstanding personal characteristics among which were his integrity, candor and fairness when dealing with others. His fine sense of humor belied his direct approach to problems. When called upon by colleagues, he provided assistance and devoted his talents to hydrology, hydrogeology, plant pathology and animal husbandry, always recognizing the basic principles involved and applying these principles to the opportunities at hand. Tanner was ready and willing to meet and discuss ideas with students and staff. Everyone that knew Champ will remember him as a kind and generous person. He will be deeply missed.

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