From the Oat Newsletter, volume 27, 1976:

Ralph M. Caldwell
In memory

Ralph M. Caldwell, Professor Emeritus of Botany and Plant Pathology at Purdue University and Consultant, DEKALB AgResearch, Inc., was born June 27, 1903 at Brookings, South Dakota. He obtained a B.S. degree from South Dakota State University in 1925, and was awarded the M.S. and Ph.D. degrees at the University of Wisconsin in 1927 and 1929, respectively. He served as Leader for Barberry Eradication in Wisconsin from 1928 to 1930 when he joined the Purdue University staff as a USDA Plant Pathologist and took charge of the Small Grain Disease Control Project. He headed the Department of Botany and Plant Pathology from 1937 to 1954 when he returned to full time research in small grain improvement until his retirement in 1971. In 1971 he joined the Wheat Research Department of DEKALB AgResearch, Inc., as Wheat Consultant and served in this capacity until his death on November 2, 1976.

Dr. Caldwell was co-developer of two winter oat varieties and 13 spring oat varieties at Purdue University. In the winter varieties, spring oat by winter oat crosses were utilized to improve the straw strength, disease resistance, and winter hardiness of winter types. In the spring oat varieties, improvements were made for disease resistance, strong and shorter straw, plump grain and adaptation.

Dr. Caldwell's research with crown rust of oats established the concept of tolerance to rusts and the relative economic importance of tolerance, and called world-wide attention to the phenomenon. His research with crown rust also formed the basis for recognition

of the "slow rusting" phenomenon and its value as a type of general resistance to disease. His interest in general (non-specific) resistance to disease occupied his last several years of research. His previous work with "slow mildewing" in wheat and "slow rusting" with crown rust of oats and leaf and stem rust of wheat led him to ascertain that the same phenomena explained the high level resistance in maize to Puccinia sorghi. Data demonstrating his conclusions had been collected and a paper was in the process of being written at the time of his death.

Dr. Caldwell directed the research of many outstanding graduate students and was the author of numerous research papers and station bulletins. He was a member of Alpha Zeta, Gamma Alpha and Sigma Xi honorary societies. He was honored as a Fellow of three societies: The American Society of Agronomy, The American Phytopathological Society and The American Association for the Advancement of Science. In 1970 he was recognized for "Distinguished Service to Oat Improvement" by the National Oat Conference. In 1973, he was awarded the "Distinguished Alumnus Award" by South Dakota State University.