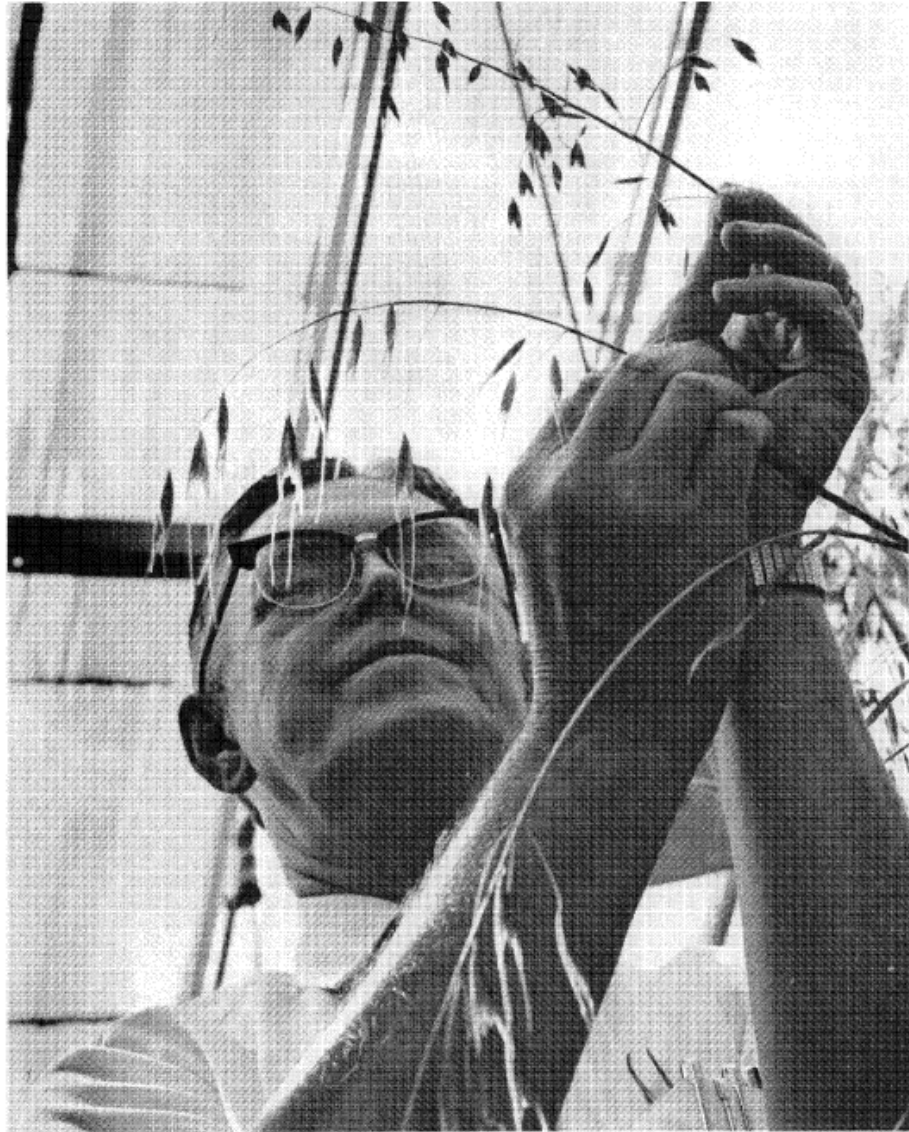


From the Oat Newsletter, volume 19, 1968:

DR. HICKMAN C. MURPHY, 1902 – 1968



Dr. H. C. (Pat) Murphy

"Oat Man of the Years"

IN MEMORIAM

Dr. Hickman C. (Pat) Murphy, internationally renowned oat authority, National Oat Conference chairman, and U.S.D.A. Oat Investigations Leader, died accidentally July 20, 1968, while on a field trip to the Idaho Branch Experiment Station, Aberdeen, Idaho. Volume 19 of the Oat Newsletter is dedicated to the memory of Dr. Pat Murphy, "Oat Man of the Years."

Dr. Murphy was born in Montrose, West Virginia, son of Stephen H. and Sarah Valentine Murphy, and completed his early schooling there. He earned his B.S. degree from the University of West Virginia, and continued his studies in the Graduate School of Iowa State College at Ames. He was awarded the M.S. degree in 1927, and began his outstanding career with the U. S. Department of Agriculture in 1928. Stationed at Ames, he began a long and fruitful period of close cooperation with personnel of the Iowa Agriculture Experiment Station. He also continued his graduate education and received the Ph.D. degree from Iowa State in 1930.

Dr. Murphy's initial interest was in oat diseases which he recognized to be limiting factors in oat production. His interest in diseases motivated a highly successful breeding program that encompassed disease resistance and necessary agronomic attributes. Early in his career, he ran experiments that made plant pathologists, agronomists, and farmers in general aware of the destructive potential of the oat crown rust disease. He was the first to screen the world oat collection for crown rust resistance and to establish a standard set of crown rust differentials for identifying pathogenic races of Puccinia coronata avenae.

He made operational a crossing program that, in cooperation with U.S.D.A. agronomists T. R. Stanton and Frank Coffman, made Ames a focus from which oat germ plasm was sent around the world. Within this program were developed the first important commercial varieties of hybrid origin, the "Victoria-Richlands." Released in the early 1940's, they replaced the previously-grown pure line selections in Iowa more rapidly than open-pollinated corn had been replaced by hybrid corn. These varieties combined resistance to crown rust, stem rust, and smut races prevalent at that time. This resistance was to prove ephemeral, but Dr. Murphy's program of early detection of new races and discovery of new resistance genes provided a continuing source of improved, disease resistant varieties. More than 30 such varieties were released from this program. For a period of years, they occupied the majority of the oat acreage of the United States. Some are grown widely in the United States, Brazil, and other countries, even today, and they appear in the ancestry of most oats grown in the United States.

While the majority of Dr. Murphy's time as a research scientist was devoted to crown rust, and led to elucidation of various aspects of the relationship of the crown rust fungus to its host, he also made important contributions to the understanding of other oat diseases. From the beginning of his career, he worked toward combining resistance to all diseases into improved oat varieties. He was among the first to recognize Septoria avenae and the barley yellow dwarf virus as important pathogens on oats. He and students working under his direction investigated these and less well-known oat diseases, such as halo blight, Pythium root rot, anthracnose, and manganese deficiency. His leadership in the discovery and study of Victoria blight led to the description of the pathogen as Helminthosporium victoriae Meehan and Murphy, and the prompt suppression of this devastating oat disease. Victoria blight still stands as one of the all-too-rare examples of a major field crop disease being controlled successfully and, apparently, permanently by breeding resistant varieties, a real tribute to a scientist who successfully combined the disciplines of plant pathology and plant breeding in a

program-matic project. H. victoriae, the toxin it produces, and the action of loci which condition resistance to it are the objects of major research projects in several universities today.

Dr. Murphy's program of oat hybridization opened the door for a general improvement of the oat crop in all aspects. Not only did his new varieties have disease resistance, they gave higher yields, improved quality, and stiffer straw. It may be unfair to name anyone of his varieties as most outstanding, but Clinton, which set a new standard for straw strength, became best known. Clinton, a Bond derivative, occupied 5.6 million acres in Iowa in 1948 (95% of the total oat acreage) and by 1950 was grown on over 75% of the total oat acreage of the U.S.A. The Clinton type was perpetuated in a series of backcross varieties from Indiana (Clintland, Clintland 60, Clintland 64, and Clintford) and a Clinton type is the recurrent parent in Iowa's midseason multiline series from which Multiline M68 and Multiline M69 have been released.

While stationed at Ames, Dr. Murphy was active in the affairs of the University. He held a joint professorship in the Department of Botany and Plant Pathology and the Department of Agronomy, and he was a member of the Graduate Faculty. His broad knowledge, patience, and willingness and ability to give of himself made him a highly effective counselor of students. Several undergraduate students were motivated by him to become professional plant scientists, and a number of graduate students obtained advanced degrees under his direction.

In 1952, Dr. Murphy became Leader of Oat Investigations for the U.S.D.A., and in 1958 he was transferred to Beltsville, Maryland. During the period of his vigorous leadership, the Oat Investigations section underwent its greatest growth with the addition of personnel to study oat viruses, foliar pathogens other than rusts, cytogenetics, and winter hardiness. He gave valuable leadership to these young investigators, providing financial support, advice, suggestions and encouragement as needed but always within a framework of freedom for each to proceed with an original and independent program. He also found time for a research program of his own and for domestic and foreign travel. Much of the travel followed from the tremendous interest in oat breeding around the world stimulated by his own research, publications, and contagious enthusiasm for oats.

Oats became a major crop in Mexico primarily because of the disease-resistant material supplied by Dr. Murphy for testing in areas where oats were adapted, and advice he offered during three visits to that country. He figured prominently in the development of disease-resistant oats in South America, particularly Colombia and Brazil. When virulent races of stem rust prevented growing oats in Colombia, he provided the initiative to obtain a U.S.D.A. P.L.-480 grant to investigate the entire problem in cooperation with the Rockefeller Foundation, the Quaker Oats Co., and the Instituto Colombiano Agropecuario. His motive was dual: to help the people of Colombia grow oats needed for human consumption, and to minimize the threat of virulent Andean inoculum reaching oat growing areas of North America. In Brazil, Dr. Murphy supplied crown rust resistant material for testing, and supervised a hybridization program to develop grain

and forage varieties suitable for the livestock producing area of Rio Grande do Sul. An important grain variety in Brazil is Amisade (C.I. 5871) which was a sister selection to Burnett, the last variety released from Dr. Murphy's program in Iowa.

His constant search for new rust resistance took Dr. Murphy to Israel and other Mediterranean countries to observe and collect, particularly, the wild species Avena sterilis. This developed into another P.L.-480 program and one of his most fruitful ventures. Always alert to any avenue that might lead to oat improvement, he had strains of A. sterilis tested for protein content and found some that were greatly superior to any cultivated oats. Realizing the significance of this finding in a protein-hungry world, he immediately began extensive testing and crossing, and generously shared the promising germ plasm with plant breeders everywhere. The discovery of the promising, new solid-strawed, tetraploid oat species, Avena magna Murphy and Terrell, also was a product of the Mediterranean venture by Dr. Murphy and his colleagues.

Dr. Murphy was a guiding force in the establishment and operation of the oat testing program in Puerto Rico. Under his leadership, uniform nurseries, breeding material, and promising sources of resistance have been tested for the past 13 years with crown and stem rust races too virulent to be released safely in continental North America. He personally evaluated material in these nurseries most years.

Since he observed the same material growing in the nurseries of state and federal experiment stations in the States, as well as in Puerto Rico, he served as liaison scientist among breeders, and between them and their material being tested at other stations. His tradition of visiting most oat research projects each year, studying their advanced material, reviewing experiments, discussing recent research data, and encouraging graduate students and project leaders alike with his constructive criticism and enthusiasm made his visit the highlight of the year.

It was on his annual visit to the Idaho Branch Experiment Station that Dr. Murphy met his tragic and untimely death. Because of the superior growth of small grains under irrigation and disease-free conditions at Aberdeen, Dr. Murphy and others had long grown F1's and other valuable material at that location, and had gone there during July to make crosses and take notes. The group of small grain workers who usually assembled had come to enjoy an annual fishing outing in the trout streams of Idaho. Although he seldom fished elsewhere, Dr. Murphy especially enjoyed these outings and spoke of them often. It was on such an expedition to the Lost River, near Aberdeen, Idaho, that Dr. Murphy was accidentally drowned in fast water on Saturday, July 20, 1968.

Dr. Murphy was a member of the American Society of Agronomy, the Crop Science Society of America, and the American Phytopathology Society. He was, of course, active in the National Oat Conference from its inception and was its chairman at the time of his death. He had looked forward to its meeting in 1970 at Raleigh, North Carolina, with himself as chairman and his son as host. He helped establish the Oat Newsletter in 1950 and was a frequent contributor to it. His research led to the

publication of more than 90 scientific papers and 33 semi-technical articles. Due to his great success in developing disease resistant varieties, which were of untold value to the farmers of America and other countries, his training of graduate students as future plant pathologists and plant breeders, his willingness to share material and knowledge with co-workers in all countries, and his advancement of scientific knowledge to people everywhere, he was given many honors and awards. Most notable of these were: Chairman, Iowa State College's Osborn Research Club; President, Iowa State College Chapter of Sigma Xi; Fellow, American Society of Agronomy; and Iowa State College Alumni Merit Award. Also he was granted the U.S.D.A. Superior Service Award in 1967 in recognition of his truly significant contributions to American agriculture.

Dr. Murphy is survived by his wife, the former Greta Hanmer; one son, Charles F., Associate Professor of Crop Science and small grain breeder at the University of North Carolina, Raleigh; and one grandson.

He is survived also by a host of personal friends. A genius has been defined as one whose death is mourned by a discerning portion of the population. We do not know, nor can we imagine, anyone's death being more genuinely mourned by such a vast majority of those who knew him than was that of Dr. Murphy. Many of his professional associates, in the United States and around the world, also were his personal friends. A man of even temperament and charitable, considerate personality, he never made a derogatory remark about anyone but, to the contrary, could find a sincere word of praise and encouragement for every individual. He had disappointments, naturally--for he was human--but his only remark would be, "Well, I'll swear!" But he never did.

It probably can be said truthfully that his family and his work were both his hobbies and his raison d'être. He was an especially devoted family man. Many personal friends enjoyed the hospitality of the Murphy home, and there they experienced the depth of graciousness and devotion that permeated that home. Surely, more so than even his devotion to his friends and his work, this was the measure of this man, Pat Murphy. To the larger "oat family," the Oat Newsletter recipients, we can summarize his biography in the single sentence, "One man's life with Greta and Avena." We believe that, if he could read this one-sentence biography, it would please him very much. Certainly, his great devotion to his family, friends, and work shall never be forgotten.

ANNOUNCEMENTS

H. C. (PAT) MURPHY MEMORIAL LIBRARY

The family and friends of Dr. H. C. (Pat) Murphy, in seeking a suitable memorial, have decided to establish a memorial library of plant pathology journals and books for graduate students in the Department of Botany and Plant Pathology at Iowa State University. Dr. Murphy's personal set of *Phytopathology and Review of Applied Mycology*, both complete and bound, with other books on plant pathology, will form the nucleus of the library. It is hoped that contributions by friends will provide an

endowment, the interest from which will continue Dr. Murphy's journals in perpetuity, subscribe to additional plant pathology journals, and purchase additional works on plant diseases as they are published.

Room 434 in Iowa State's new Bessey Hall has "been designated to house the Murphy Memorial Library, and will include a portrait of Dr. Murphy, volumes donated or purchased in his memory, and a book of remembrance listing contributors to the memorial fund.

The establishment of the H. C. (Pat) Murphy Memorial Library will be announced May 10, 1969, by Dr. F. G. Smith, Head, Department of Botany and Plant Pathology, at a luncheon and open house commemorating the opening of Bessey Hall. Friends and alumni of the department, including many of Dr. Murphy's former classmates, associates and friends will be present. Contributions credited to the H. C. (Pat) Murphy Memorial Library can be made payable to the Alumni Achievement Fund, and mailed to the Alumni Achievement Fund, 242 Memorial Union, Ames, Iowa 50010. All contributions are, of course, tax deductible.

H. C. (PAT) MURPHY ASSISTANTSHIP IN AGRICULTURE

The establishment of the H. C. (Pat) Murphy Assistantship in Agriculture in the Department of Botany and Plant Pathology at Iowa State University will be announced May 10, 1969. The graduate student assistantship, in recognition of Dr. Murphy's contribution to agriculture, will be financed by the Quaker Oats Company. It will support research for the purpose of improving the oats crop and its production through improved breeding, disease control, and related investigations and practices. The establishment of the assistantship will be announced at a luncheon commemorating the opening of Bessey Hall. The announcement will be made by Mr. Dallas E. Western, representing the Quaker Oats Company and Dr. Murphy's long-time friend, associate, and traveling companion. Many other friends, classmates, and associates of Dr. Murphy will be in attendance at the luncheon.

From the Oat Newsletter, volume 20, 1969:

ANNOUNCEMENTS

It is with deep regret we announce the death 12 April 1970 of Mrs. Greta Murphy, wife of the late Dr. H. C. (Pat) Murphy and friend of many oat workers in the U.S.A. and around the world. Mrs. Murphy suffered a stroke early in the year and, after her release from the hospital in Silver Spring, Maryland, she was taken to a nursing home in Raleigh, N. C., to be near her son and his family. Committal services were held 14 April at Silver Spring, Md., where her late husband was buried in July, 1968. She is survived by her son, Charles F., Associate Professor of Crop Science and small grain breeder at the University of North Carolina, Raleigh, and one grandson.