

## II. FREDERICK DAVID RICHEY 1884-1955

F. D. Richey, born in St. Louis, Missouri, was the son of an eminent lawyer. He graduated from the University of Missouri in 1909, and in 1949 the honorary degree of D. Sc. was conferred upon him by his Alma Mater. He joined the U. S. Department of Agriculture in 1911, and in 1922 was appointed Agronomist in Charge of Corn Investigations in the Bureau of Plant Industry. He was promoted to the position of Associate Chief of the Bureau in 1933 and held the post of Bureau Chief from 1934 to 1938. He resigned in 1938 to develop his own business of supplying single cross seed stocks of corn to seedsmen throughout the Midwest. In 1943 he returned to the Department of Agriculture as leader of the U. S. D. A. cooperative corn breeding work in the Southern Region, a position he held for eleven years. From 1954 until his retirement, he was Agronomist at the University of Tennessee Agricultural Experiment Station.

Richey was a Fellow of the AAAS and of the American Society of Agronomy, President of the Agronomy Society in 1937, and was elected Vice-President of the Genetics Society of America in 1932.

On taking charge of the Federal corn research program in 1922 he led in developing cooperative research between the State Experiment Stations and the U. S. D. A. He promoted cooperation between corn breeders, including both those who had formal cooperation with the Federal corn research program and others not formally cooperating with this program.

Richey's enthusiasm and leadership are well known to all with whom he came in contact. The informal cooperation previously mentioned led to the placing of hybrid corn research on a cooperative basis in 1925 under the Purnell Act by the Experiment Station Directors of the North Central Region. Richey was a member of the committee that drew up a plan for cooperation.

It was always a pleasure to attend a meeting of corn breeding research workers when Richey was present. He had very unusual ability to stimulate discussion of basic principles of corn breeding, and of problems of genetics, and he seems to the writer to have had an excellent grasp of plant breeding methodologies with sound basic viewpoints.

To review in a few words his many accomplishments in corn breeding is no easy task. A paper in 1922 was a masterly review of early studies of corn breeding prior to the days of hybrid corn. In 1925 he presented one of the first proofs of the fact that some inbreds had high combining ability in crosses with most other inbreds. This seems a new idea. His

paper with Garrison on the effect of continuous selection for ear type was almost a classic. Any close selection to ear type led to a reduction in yield. Richey developed the moving average as a means of correcting for soil heterogeneity and contributed in various ways to the development of sound methods of field experimentation prior to the present-day knowledge of methods of experimental design. In 1927 he proposed convergent improvement as a means of testing the Mendelian explanation of heterosis on the basis of dominant linked growth factors and presented further studies relating to similar methods. His clear presentation of the results of backcrossing, with mathematical expectations, helped materially to crystallize the idea of the backcross method. In 1945 he emphasized the correctness of Bruce's 1910 explanation of heterosis on a Mendelian basis. Also in 1945 and later Richey presented a reanalysis of Jenkins' (1935) data on combining ability after successive generations of inbreeding. He questioned the stability of combining ability in early generations of selfing. It may be of some interest that the late F. R. Immer, at the writer's suggestion, made a similar unpublished analysis and reached similar conclusions. It is apparent today that early testing is a valuable tool for many corn breeding problems; however, the writer is in agreement with the viewpoint of Richey that combining ability in early generations often is only relatively stable and by no means is as stable as one might be led to conclude from Jenkins' early conclusion. The discussion is presented here as an indication of Richey's methods of analysis. In another research paper Richey reanalyzed evidence, using data of Jenkins and Brunson, showing that the characters of inbreds are about as closely related to combining ability of their crosses as are different methods of testing for the character of combining ability. Several papers of Richey of a more popular nature helped materially in an understanding of the basic principles and great potentialities of hybrid corn.

It seems evident to the writer that Richey was an outstanding leader, and as Dr. Eckhardt has said in reference to Richey, he, "encouraged a whole generation of plant research men, especially those in corn breeding, to strive for greater heights in productive research."

Richey had definite viewpoints on controversial problems and often expressed his ideas in a definite and often in a blunt manner. To his friends these characteristics were appreciated and enjoyed. His somewhat dogmatic viewpoints were not so pleasing to those who disagreed with him. At the time that Richey received the distinguished service award from the United States Department of Agriculture, Dr. Robert M. Salter, at that time Chief of the Bureau of Plant Industry, Soils and Agricultural Engineering, made the following statement, "Because of the vast economic benefits that have derived from this (Federal-State Cooperative Research) program, and the part Dr. Richey played in it, I believe it safe to say that his contribution to the economic welfare of American Agriculture exceeds that of any other individual past or present."

H. K. Hayes