INTRODUCTION.

The increased vigor of F₁ hybrids has been frequently noted from the time of the early hybridists, Gärtnert and Köelreuter, until the present. The utilization of the vigor of an F₁ cross as a means of increasing the yield of corn was suggested by Beal (1) of Michigan in 1876. The plan which he suggested was to import seed of a variety from various localities and to plant mixtures of these importations. In a report made in 1878, Beal (3) outlines the method which is commonly used today for the production of F₁ hybrid corn seed where quantity is desired. Yellow Dent corn was secured from each of two different counties and the two strains planted in alternate rows. All of one strain was detasseled before its pollen was shed and seed was selected from the detasseled rows. Beal held the Darwinian conception that the value from hybridization was due to the fact that the two strains entering the cross had been exposed to different conditions.

In 1880 (4), Ingersoll of Indiana, Henry of Wisconsin, Georgeson of Texas, and Gulley of Mississippi met with Beal at Michigan. All agreed to carry on an experiment testing the value of using hybrid seed. The fact that, excepting for a brief report by Ingersoll, Beal was the only one to report indicates clearly that little enthusiasm had been aroused for this method of increasing production.

Morrow and Gardner (17, 18) in 1892 and 1893 published the results of experiments in which the F₁ hybrids were definitely compared with their parents. Renewed interest was aroused by the publications of East (8) in 1908 and Shull (19, 20) in 1908 and 1909 on the effects of inbreeding and crossbreeding in corn.