From the list of titles for this program, the addresses which have preceded this paper, and from informal discussions of corn improvement which have been held at various meetings of this Society, it is apparent that present-day problems of corn improvement are concerned largely with the reactions of selfed lines and of crosses between them.

The development of the practice of breeding cross-pollinated plants by some method of controlled pollination has been gradual. The method originated as a result of intensive studies of the effects of self-fertilization in cross-pollinated species and throughout this study the work with corn has been of fundamental importance. The studies which were initiated over 15 years ago by Dr. E. M. East at the Connecticut station, at Cold Spring Harbor by Dr. G. H. Shull, and by various workers of the Bureau of Plant Industry and others had as their aim the development of a more intensive knowledge of the physiology of inheritance of the corn plant, with the belief that such studies were essential to the development of better methods of breeding. In 1910, Dr. Shull emphasized the value of isolating pure lines and of using F1 crosses between pure lines for maximum pro-

1Paper read as a part of the symposium on “The Present Status of Corn Improvement” at the meeting of the Society held in Chicago, Ill., November 17, 1925. Published with the approval of the Director as Paper No. 570 of the Journal Series of the Minnesota Agricultural Experiment Station.

2Professor and Head of the Section of Plant Breeding, Division of Agronomy and Farm Management, University of Minnesota, University Farm, St. Paul, Minn.