THE INEQUALITY OF RECIPROCAL CORN CROSSES.

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INTRODUCTION.

Although reciprocal crosses are in general practically indistinguishable, there are well recognized exceptions to this rule. For example, reciprocal crosses between Digitalis purpurea and D. lutea constantly produce hybrids that resemble the female parent, whereas reciprocal crosses between Oenothera biennis and O. muricata give hybrids that strongly resemble the male parent. Reciprocal crosses between varieties or strains of corn (Zea mays L.) have been compared by several investigators and different results obtained.

Shull (13) concluded from the results of his investigations that “The reciprocals between two distinct, self-fertilized families are equal,” and East and Hayes (4) note the agreement of their results with those of Shull. Burtt-Davy (2) states with reference to the crosses between breeds with 8 and 18 rows, “The ears produced by the cross and the reciprocal cross are indistinguishable,” and (3) observes in general, “It appears to be immaterial which breed furnishes the male and which the female parent; the results in the F2 generation are usually the same in either case.” Williams and Welton (15) note without comment the equality of two reciprocal crosses, both in yield and in moisture content. As to the inheritance of individual qualitative factors, it seems sufficient to say that no report has

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2 Reference is by number to “Literature cited,” p. 195.