CORRELATIONS BETWEEN EAR CHARACTERS AND YIELD IN CORN.1

H. H. LOVE AND J. B. WENTZ.

INTRODUCTION.

In the early history of the corn show as an element in our agricultural education, the judges were confronted with the problem as to what points should be taken into consideration and the relative weight which should be given each point in placing one sample of corn above another. In 1886 the judges at the corn exposition in Chicago prepared a scale of points to be used at that exposition and from this the score card, based upon an ideal type, was developed. After the score card had come into general use a few experimenters conducted tests in which they compared the yields obtained from selected seed ears varying in the characters emphasized in the score card. In some of these tests the seed ears were selected for several generations for the two extremes in each character studied and the yields of the selected ears were compared.

The data in this paper deal with the correlation of seed-ear characters and yield when the seed ears are not selected for extremes in the particular characters studied, but are nearer the average ear type. The purpose of the paper is to throw some light on the question as to whether a grower should select seed ears that have, for example, a certain number of rows of kernels, or a certain length of ear, or a cylindrical or tapering ear.

EARLIER WORK.

Williams2 of the Ohio station has conducted rather extensive and interesting experiments in which he selected seed ears for a number of years for the extremes in such characters as length of ear, shape of ear, filling of tip, indentation of kernel, weight of ear, and percentage of grain. In selecting long and short ears he obtained a difference of only 1.39 bushels per acre in 10-year average yield in favor of the long ears. In selection for shape of ear the tapering ears

1 Paper No. 63, Department of Plant Breeding, Cornell University, Ithaca, N. Y. Received for publication May 21, 1917.