

The above practise is, in essence, the selecting of fluctuating variations which, if continued, results in raising the "mean" of the ordinary strain to a higher plain. Some authorities such as Johannsen, Pearson and DeVries contend that the selecting of fluctuating characters can do little by way of improving the race. They admit, in part at least, that the average or "mean" of the race or strain may be raised by this means, but claim that once selection ceases the erst-while improved strain will return to its original condition. Of this contention Plate says: "This theory is based on forms which have been highly modified within a few years, so that there has not been a sufficient time to modify the original hereditary tendency established by centuries. Many facts indicate that the intensity of heredity depends upon the number of generations during which selection has been practised. Long inherited characters are difficult to eradicate; recent ones easy. Many gradually selected races of doves are now almost entirely constant. A race developed artificially by slow, persistent selection for a great number of years would show the same relative fixity of types as do our natural species." The results realized thus far by the Association through this method of selection strongly show that a definite improvement has been made in the original strain. This improvement has taken the form of increased yields, better quality, greater uniformity and purity, greater vigor and greater ability to resist disease. Though it may be necessary to continue the selection from year to year in order to maintain the standard yet such seems to be justified by the results accruing therefrom.

In the past certain specially progressive and observant growers have found heads of grain in their fields which were so distinctly different from any others that they kept them separate and sowed the seed secured therefrom in their garden with the result that in many cases new varieties have been developed. These strange plants were undoubtedly mutations. As examples of these we have the Dawson's Golden Chaff wheat, Goldthorpe barley and many other well known varieties. This is a line of work which should be encouraged as much as possible.

Other members of the Association have found time to follow the more complicated system of selecting and propagating individual plants separately, and by a process of elimination finally isolating pure so-called "elementary" types. This latter method which is based on the DeVriesian theory, is probably the quickest and safest to follow, but on account of the amount of careful work and detail which is involved it is not a system which the Association is strongly recommending at present for the average farmer in the improvement of his smaller grain crops.