

generations of potatoes. In order to eliminate variations due to hybridization he sowed seeds taken from potato balls grown naturally, that is, no artificial crossing had been practised in producing this seed. After the first generation each succeeding one was produced from the tubers and not the true seeds of the preceding. Careful comparisons were made between the mothers and their respective progeny in different generations in order to observe and record any apparent deviation that might occur. Special attention was given to the colour of the skin and of the flesh of the tubers harvested, together with the size and shape of these. The variations in these features were very marked. Most of them were readily explainable by the principles of heredity, but in one case there were found in the second generation four plants which produced yellow-fleshed tubers, although the flesh of the mother sort was not yellow, but white. This form cannot be explained as recessive because yellow was dominant. No very satisfactory explanation was given for this occurrence. From the results of his investigation Fruwirth concludes "that it is possible to improve our present potato sorts by the continuous selection of desirable hills."

Mr. Newman then discussed briefly variations in pure lines of self-fertilizing plants. He stated that recent work indicates that in plants which are normally self-fertilizing there is practically no variation. While it seems certain that we must abandon the idea of the existence of continuous variation in certain classes of plants, yet we know from experience that strange forms do sometimes occur even in our so-called "pure" lines. While the appearance of many of these strange forms may be accounted for as crossing products, it has not been definitely proven that new forms cannot arise quite independently of intersexual combination. Forms appearing in this way have been termed "mutants" or "mutations" by DeVries, who believes that most new forms arise in this sudden independent fashion.

The speaker then reviewed an account published last year by Dr. Kiessling, of Bavaria, on an elaborate investigation into the origin of a form of two-rowed barley, which seems to show that this form is undoubtedly a mutation. In 1898, Dr. Kiessling obtained a sample of old Austrian barley from a farmer and tested it at the breeding station at Weihestephan. From the crop of 1900 a number of plants were selected for pure line work. One of these survived the test and came to be propagated in a pure condition from year to year. In 1908, eighteen plants were selected out of this line to prove its constancy. The progeny from each of these plants proved to be constant with one