60%. One of the samples had the same wilt reaction as Ranger, whereas 41 samples had a wilt reaction of 18 to 94% of Ranger as determined by the controlled wilt test. The range in wilt reaction from 18 to 100% of Ranger was 82%. A sample of South Dakota origin had the same wilt reaction and essentially the same cold reaction as Ranger. Field observation notes indicated that this sample resembled Ranger very closely.

Field notes were taken in 1954 on the two-replicate observation planting made in 1953. Winterkilling was negligible in Dakota 12 samples and in the entire test. In the same test, India and Argentina samples had a stand of 92 to 97%. Spring habit-of-growth, rate-of-recovery after second cutting, and fall habit-of-growth were observed and rated on a basis of 1 to 9, with 1 being erect in growth-habit and fastest to recover and 9 being prostrate in growth-habit and slowest to recover. Averages observed for the various samples of Dakota 12 lots were as follows: spring habit-of-growth scores varied from 3.0 to 5.0; fall habit-of-growth from 3.0 to 5.5; rate-of-recovery from 4.0 to 5.5. Summer drought probably prevented maximum expression of differences in rate-of-recovery. Although the ranges for growth-habit and rate-of-recovery scores reported above were small, the extremes of the ranges nearly represent the differences found between Buffalo and Grimm.

Simple correlations between field notes and data obtained in controlled tests were initially studied by means of scatter diagrams. It was apparent from the diagrams that no correlations of sufficient magnitude for predictive purposes existed. Therefore, no computations were made. Correlation between cold and wilt reaction in independent controlled tests of short duration would not be expected. Field notes taken in one year, which perhaps was atypical, were not expected to be highly correlated with controlled tests. It is of interest in the case of cold reaction in controlled tests vs. fall growth-habit that 6 of the 7 lots with a fall growth score of either 3.0 or 3.5 were less hardy than Ranger with an average score of 4.8.

Thirteen of the samples studied were produced in Nebraska and 21 were produced in South Dakota. Variability among samples from each of these states is very nearly the same as the total variability observed for all states. Thus Dakota 12 as produced in South Dakota and Nebraska would most likely give highly variable farm results.

Cold and wilt tests have been conducted periodically to determine the range in reaction within lots of the same variety produced under the certification program. Slight differences have been found that are not associated with region of production, seed class, or any known factor. The range of differences between lots within a seed class and within a given variety has been small. Twenty-eight lots of

STOLONIFEROUS CRESTED WHEATGRASS

SOME species of the Agropyron genus normally without rhizomes may rarely produce them, according to Hitchcock. Such a rhizomatous strain, P.I. 109102, closely related to, or within the normally non-rhizomatous crested wheatgrass, was collected by the Westover Enlow

1 Received March 2, 1955.

FIG. 1.—A new crown formed on an outside culm of a crested wheatgrass plant. It may have arisen by proliferation of an anomalous spikelet below the spike.