THE OCCURRENCE OF DWARFNESS IN OATS. 1

C. W. WARBURTON.

In the course of studies of selections from certain oat varieties grown in head rows on irrigated land at the Aberdeen (Idaho) sub-station in 1916, one row of Victory oats was found in which 8 of the 20 plants were of an entirely distinct type. While 12 of the 20 were normal plants of the variety, maturing at the usual time and reaching the same height as those in adjoining rows, these 8 plants were simply dense tufts of basal leaves with occasional culms not over 9 inches in height, bearing very small panicles. At the time these plants were found, early August, the normal plants were nearing maturity, while the upper portions of the panicles on the dwarf plants were just emerging from the sheaths. In most cases only 3 or 4 spikelets emerged, tho a few additional ones remained enclosed within the sheaths. These dwarf plants for the most part failed to mature seeds before frost, tho they were watered and protected from injury. The few seeds which were produced were saved, as were also the seeds from the tall plants in the same row. A tall and a dwarf plant from this row are shown in Plate 2, figure 1, while figure 2 shows the entire row.

The few seeds matured by the dwarf plants of the previous year were sown in 1917, and all those which were viable produced dwarf plants exactly like the parents. About 40 seeds from each of 10 of the 12 tall plants were sown in individual plant rows. Of these 10 plants, 4 produced all tall plants and 6 produced both tall and dwarf plants like those in the original row. In all, 168 tall plants and 66 dwarfs were produced, a ratio of 2.55 to 1. Some of the rows, however, showed an exact 3 to 1 ratio.

In 1918, a part of the seed produced in 1917 from the individual tall plants in four of these segregating rows was sown again at Aberdeen. Seed from the dwarfs was also sown, as was some from the rows showing all tall plants the previous year. All of the seed produced by both tall and dwarf plants in one of the segregating rows was sent to Dr. H. H. Love at Cornell University and all from the remaining one to Prof. H. K. Hayes at the Minnesota station.

At Aberdeen, seed from the rows producing all tall plants in 1917

---

1 Contribution from the Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C. Published by permission of the Secretary of Agriculture. Received for publication December 17, 1918.