

it has also the horse-shoe shaped base so characteristic of *A. fatua*. Thus it resembles in colour, shape and size the variety from which it originated and in other respects the wild species, excepting that the basal hairs are absent or nearly so.

The growing plant is also an exact counterpart of its parent. Those selected from "Banner" oats have the spreading head, while the "Storm King" sports are side oats and show the strong stems and massive grains of that variety so that they could not be separated by the plants if it were not for the long awns sticking out of the head. I have not been able to examine many different kinds of oats but what I have gone over carefully—"Banner," "New Market," "Abundance," "Storm King" and "Bumper King"—have all contained some proportion of sports, "New Market" and "Storm King" showing the most.

It is interesting to note that these sports breed true to type apparently without exception, and further that absolutely pure seed is always liable to produce them, the parent from which they spring being easily recognizable in the offspring. There is one other feature of importance from an agricultural point of view, namely the retarded germination so characteristic of *A. fatua* is not a character of these sports, the germination being so far as experiments have shown in exactly the same proportion as the parent variety, so that the apprehension that they might become a bad weed seems to be groundless. Whether they will prove troublesome on account of their awns remains to be seen, but the chances are against this being the case, as sports have probably occurred for ages past in oats but have been overlooked.

It is difficult to arrive at a satisfactory theory as to the cause of these sports; but, granting that the original type, from which cultivated oats were first selected, was heavily awned and had the basal characters of *Avena fatua*, we might surmise that they are retrogressions in the features noted to the original progenitors of present day oats.

It seems strange, however, that this probable form of atavism should be active in all, or nearly all, breeds of oats and that both types—*A. sativa* and *A. orientalis*—should be equally active in producing sports.

I have not attempted to go into the matter of the true nature or cause of what I have termed sports in this paper, as to whether they have relation to the De Vries mutations, or whether any other facts or hypotheses are able to explain them. This is outside my province and may be safely left to men more capable of looking into such matters.