

the same clones was also obtained. All three lots of seed were sown at the same time, and when the resultant seedlings were a year old both they and their parent plant were broken down into clones, each clonal plant consisting of a single tiller.

In a typical case there are forty-seven rows, each row a clone, and every clone given the same start in its present location. There are four rows of the parent plant; three rows, each of which is a clone of a plant sprung from a self-fertilized seed; twenty rows similarly produced from shelter-fertilized seed; and twenty rows of open-fertilized seed. If shelter fertilization is a useful practical procedure, then the twenty shelter rows ought to be nearly as similar to the parent rows as the self-fertilized rows are, and much more nearly similar to the selfed rows than the open-fertilized rows are. Unfortunately, the plants are not sufficiently far advanced to make measurements of particular characters, but inspection makes it clear that the above-demanded similarities

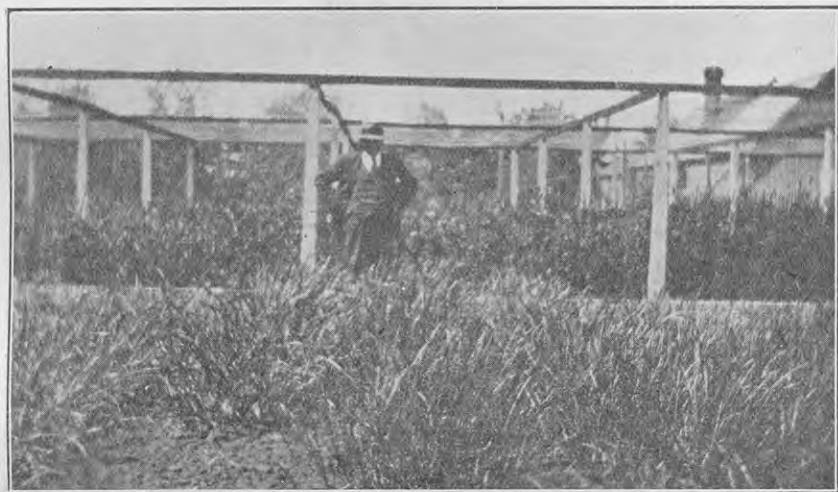


FIG. 3. SHOWING DIFFERENCE BETWEEN TWO ROWS OF RYE-GRASS SEEDLINGS.

and differences do indeed exist. Most of the shelter-fertilized rows have at present the same growth-form as the parent, and can be easily recognized as that parent's offspring, while among the open-fertilized rows there are all the differences that would be ordinarily expected among an equal number of chance selections. It is clear that this assumes that the parent plant was homozygous for many outstanding characters, and that this is so is proved by the similarity *inter se* of the three rows of selfed plants obtained.

In other cases the character of the selfed plants shows that the parent plant was heterozygous for the most obvious characters, but as far as we are yet able to judge the proportion of plants homozygous for outstanding characters is by no means small.

One further piece of evidence of the efficacy of shelter fertilization is available. In two cases we have rye-grass clones of parent and their shelter-fertilized offspring, and as these plants are further advanced