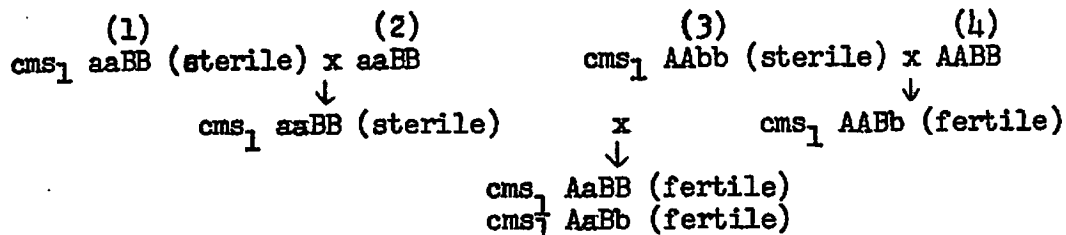


fore, it is presumably of the constitution AAbb. This line will be used to study gene "B" and its possible interactions with the various partial fertility-restoring genes.

It is interesting to note that the use of inbreds of the constitution AAbb would permit, without detasseling at any stage, the production of double crosses giving only fertile plants in the farmer's field:



Even if inbred (1) above were replaced by the commonly used seed parent WF9, the proportion of fertiles to steriles in the double cross would be 3:1.

## 2. Employment of Vestigial-glume in screening for sources of smut resistance.

In the process of backcrossing material carrying the gene Vg to a series of inbred lines, vestigial-glume plants were noted to be strikingly more susceptible to corn smut, and often to ear rots, than normal sibs. If this observation holds generally true, Vg should prove a useful tool to screen for better sources of resistance to smut and perhaps ear rots, as was done by LaRue, using Cg to screen for rust resistance.

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## 1. Preliminary biochemical studies on the action of a gene controlling meiosis in maize.

In maize a recessive gene called "ameiotic" has been found (Rhoades, MNL 30) which prevents meiosis and leads to almost complete sterility. Occasionally a few kernels may be produced, but these result from unreduced diploid eggs. Plants of the constitution Am Am and Am am (both called normal plants throughout this discussion) are phenotypically completely indistinguishable from those of the constitution am am (called "ameiotic" throughout) except at the late reproductive stage. In the ameiotic plants tassels and ears appear normal, but the anthers fail to