

and male-sterile and fertile plants counted. Table 1 presents the observed frequency and expected ratio of sterile and fertile plants.

It will be noted from Table 1 that the observed frequency of fertile and sterile plants showed a good fit to the expected ratio. From the various segregation ratios we presume that male-sterility in Llera III is caused by a dominant gene, \underline{Ms} , whose action is modified by two modifiers, \underline{M}_1 and \underline{M}_2 . Sterility will be produced if the gene, \underline{Ms} , is present in homozygous dominant or heterozygous condition and the two modifiers, \underline{M}_1 and \underline{M}_2 , in homozygous recessive condition. Therefore the genetic constitution of male-sterile plants will be $\underline{m}_1\underline{m}_1 \underline{m}_2\underline{m}_2 \underline{Ms} \underline{Ms}$ or $\underline{m}_1\underline{m}_1 \underline{m}_2\underline{m}_2 \underline{Ms} \underline{ms}$. Any other alternative form of any one of these three genes will result in a fertile plant. On the basis of this hypothesis the genetic constitution of the ten plants is also presented in Table 1.

Further studies are in progress to determine the linkage relationship of the three genes reported above.

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2. "Notched leaf" a new trait in maize.

In a population of about 200 plants of Caribbean Flint Composite, grown during summer 1967, two plants were observed which very slightly resembled "knotted leaf". The two plants were selfed and also crossed with another variety not having the trait. The S_1 generation of both the plants segregated into the "so called knotted" and normal leaf types whereas the F_1 generation did not (S_1 and F_1 generations were grown during summer 1968). On closer comparison of those plants showing the trait with the description of the knotted leaf in the literature (Bryan, A.A. and J.E. Sass (1941), J. Hered 32:343-346) it was presumed that the trait was different from the knotted leaf and therefore it was designated as "notched leaf". The characteristics of this trait were:

- (i) only the top leaves (9th leaf and above) developed notch like structures about 1.0 cm on either side of the mid-rib and at about 11.5 cm from the leaf base (in three plants, out of a

population of 139 plants, notch had been noticed right at the leaf base and in one plant at a distance of 26.0 cm from the leaf base);

- (ii) notched leaf appeared only on those plants having a total of thirteen or more than thirteen leaves;
- (iii) after the 9th leaf any one leaf or two to five consecutive leaves developed the notch;
- (iv) invariably two notches per leaf appeared on either side of the mid-rib at about an equal distance from the leaf base;
- (v) unlike the knotted leaf each notch was a distinct structure against a smooth and clear background of the leaf surface;
- (vi) the number of notches per plant varied from one to ten depending upon the number of leaves bearing the notch;
- (vii) the expressivity of the concerned gene or genes varied from mild streaking to a big and prominent notch extending to about 2.5 cm;
- (viii) the segregation of S_1 plants into notched and normal leaf types might have been due to incomplete penetrance of the gene or genes.

The exact mode of inheritance of notched leaf is not yet known but our preliminary results indicate that it is due to a recessive gene with varying expressivity and incomplete penetrance. Studies are in progress to find out its exact mode of inheritance and the position on the linkage map. A more detailed paper including photographs will be reported very soon.

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1. Chromosomes of Guanajuato teosinte from Mexico.

Nine F_1 hybrid plants of maize X Guanajuato teosinte were cytologically examined. At pachytene, nine chromosome knobs were observed. The