

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

knobs on the long arms of chromosomes 1 and 3 were small. Large knobs each on the long arms of chromosomes 4 and 7 and on the short arm of chromosome 5 were present. The knob on the first knob position of the long arm of chromosome 6 was also large. However, the two knobs on the long arm of chromosome 8 and the one on the second knob position of the long arm of chromosome 6 were medium-sized. All of these knobs were intercalary.

There was a second type of chromosome 4 in which two large terminally located knobs were observed. This was found in only one plant.

A paracentric inversion on the short arm of chromosome 8 was identified. It was designated as In 8 of Guanajuato teosinte. The average length of four separate measurements of the inverted segment was 8.0 u. It occupied about 60 per cent of the short arm of this chromosome, and it is the same In 8 as that found in maize and the other teosintes. Bridges and fragments were observed at anaphases I and II. No duplication on the short arm of chromosome 8 was found.

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2. The effect of EMS on haploid and diploid maize.

Since last summer the well-known mutagen EMS (ethyl methane sulfonate), an alkylating agent, has been employed to treat haploid and diploid maize seeds. In order to break dormancy the seeds were presoaked in tap water one day before treatment and kept on a moistened filter paper in a petri dish. Two strengths of the aqueous mutagen solution were prepared; one was 0.5 per cent, the other 0.25 per cent. For each treatment, 100 ml of the solution was applied. The seeds were soaked in the solutions for four hours. Then they were rinsed in tap water seven times and placed on a filter paper overnight. These seeds were again rinsed seven times and planted.

Last summer, 50 diploid and 50 haploid maize seeds were treated with 0.5 per cent EMS, and a duplicate sample was treated with 0.25 per cent of this mutagen. At the same time, 50 diploid and 50 haploid maize seeds were selected as control. The control seeds were subjected to the same treatment procedures except that the EMS solutions were substituted