

## KRASNODAR RESEARCH INSTITUTE OF AGRICULTURE

Krasnodar-12, U.S.S.R.

The role of the male parent in the occurrence of matroclinous haploids — There exist some contradicting considerations concerning the genetic role of the male parent in the occurrence of matroclinous haploids in maize (MHM). Some students consider the effect of the pollen parent on the MHM frequency to be of a physiological nature (i.e., mostly the result of disturbances of the normal pollination and fertilization processes caused by different times of flowering of the ear and pollen parents and by delayed pollination); when studying this phenomenon it is therefore necessary to exclude this factor.

Two marker systems were utilized as male parents in this experiment: A B P1 C R-g (purple aleurone, purple seedling roots) and A C R-nj-cudu (red aleurone, purple embryo); line WF9 was used as the female parent.

In order to eliminate the possible influence of delayed pollination on the frequency of haploids produced, female inflorescences of the same age were pollinated on one and the same day, using both testers; some ears of the female parent were pollinated with a mixture (1:1) of pollen from both male parents. Such an experiment was possible because the alleles R-g and R-nj-cudu produce different kinds of aleurone coloring, and the seeds obtained from crosses with one marked parent are readily distinguishable from those obtained from crosses with the other.

According to the data in Table 1, we may conclude that the pollen parent influences the process of haploid formation even when the effect of delayed pollination is excluded (not only by means of pollinating the female flowers of

Table 1. Frequency of matroclinous haploids from WF9 depending on marked pollen parents.

<u>A B P1 C R-g</u>		<u>A C R-nj-cudu</u>		$\chi^2$
Number of seeds	Number of haploids	Number of seeds	Number of haploids	
<u>Separate pollen sources</u>				
18,300	178 (0.97%)	19,960	59 (0.30%)	63.4***
<u>Pollen mixture (1:1)</u>				
14,740	102 (0.70%)	16,910	46 (0.27%)	38.9***

the same age at the same time, but also by means of pollinating with a pollen mixture, which permits excluding the influence of separate female plants on the MHM frequency).

Thus, we are inclined to agree with those students who consider the genetical features of the male parent to influence the MHM frequency. We agree also on the necessity of screening for this feature when creating the marker strains.

M. V. Tchumak

A mutation interfering with the ear formation process — Among 32  $J_1$  progenies of the line Sg25 TRf in 1972 we have found a family clearly different from all others in having late silking and unusual ear shapes. During the harvest we found that all plants of this family produced mutant ears provisionally classified into three types. (Figure 1). (Ed. note: the expressions can be seen very well in two prints provided by the author; they will be loaned to interested cooperators on request).

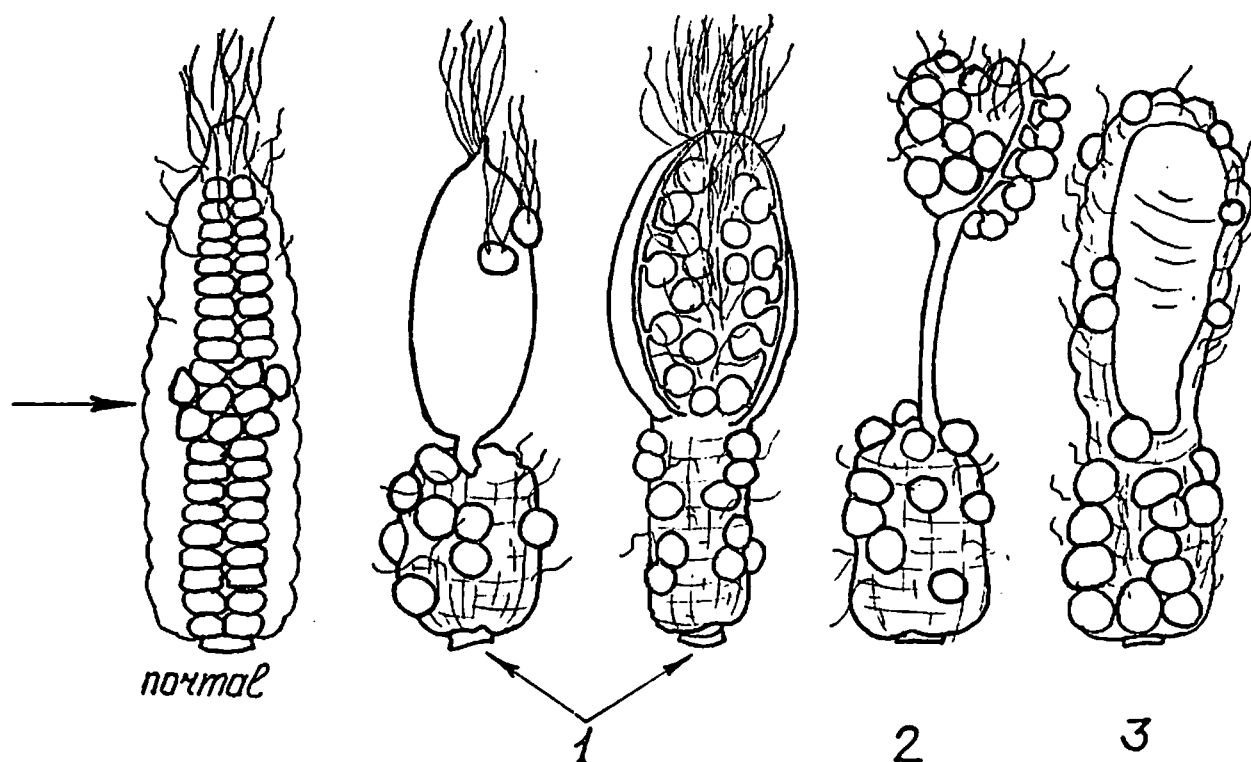


Fig. 1