

$$\frac{Gl_{17} a_2^{B1Mex} Bt V_2}{g_{17} a_2^{St} bt V_2} \quad y \quad y \quad X \quad \frac{g_{17} a_2^{St} bt Pr v_2}{y \delta}$$

The egg parents were detasselled and a block of tetraploid corn decreased chances of contaminating pollen grains on one side. Nine colored seeds were obtained (1 $\underline{A_2 Bt Y}$, 5 $\underline{A_2 Bt y}$, and 3 $\underline{A_2 bt y}$) in a total population of 179,500. These plants will be tested next summer.

-- Ellen Dempsey

16. The occurrence of pg_{11} and pg_{12} in various lines.

The lines listed below were crossed with a $pg_{11} pg_{12} y wx$ stock and the F_1 's were selfed to test for the presence of one or the other of the duplicate factors. Five of the 8 lines are homozygous for one of the pg genes, four of them possessing pg_{11} on chromosome 6 and one having pg_{12} on chromosome 9. Apparently homozygosity for one member of the duplicate factor pair is common.

	Ratio in F_2	Homozygous for
Black Mexican	15:1	
a_2 bt pr tester	15:1	
M14	3:1	pg_{11}
Iowa B14	3:1	pg_{11}
Oh45	3:1	pg_{11}
a_1 sh ₂ tester	15:1	
Oh43	3:1	pg_{11}
KYS	3:1	pg_{12}

-- Ellen Dempsey

17. A case of normal functioning of hyperploid pollen.

In previous work with plants carrying a normal 9 and a 9 with a piece of 3L transposed into the short arm between the Sh and Wx loci, the pollen grains with a normal 9 had a marked superiority in achieving fertilization over the grains with the transposed piece of 3L which were hyperploid for this segment when a normal chromosome 3 was present. The advantage of the euploid pollen varied in different crosses but there was always a marked difference in the percentage of functioning pollen between the two types of pollen. This past summer a different result was obtained when plants heterozygous for N9 Dp 9 and the C Sh Wx loci were used as the male parent on a c sh wx g₁₅ tester. When sister Dp9 N9 Df3 N3 and Dp9 N9 N3 N3 plants (see 1959 News Letter for description of this aberration) were used as the female parent in test crosses the results were in close agreement with those found in extensive previous experiments -- namely, a marked reduction in crossing over and an approximate 2:1 ratio of Dp9:N9 ovules from the Dp9 N9 Df3 N3 class and a 1:1 ratio of Dp9:N9 ovules from the Dp9 N9 N3 N3 plants. It is clear that the Dp9 chromosome was present. Wholly unexpected results were found in the reciprocal crosses where Dp9 N3 pollen was just as effective in fertilization as N9 N3 grains. It should be noted that the present experiment involved a tester strain which had not been used before and it is possible that the genotype of the female parent plays a significant role in pollen competition. A somewhat similar situation was reported by Singleton (1940 P.N.A.S.) who found that sp pollen from Sp sp heterozygotes functioned with a much higher percentage on certain female tester lines than on others. This summer a duplicate planting will be made and pollen from individual plants will be applied to a number of tester strains in order to ascertain if the nature of the egg parent influenced