

and transposition of tr-Mp in very light variegateds. This relatively high frequency of occurrence, together with the observation that occasional medium variegated ears have a sizeable patch of mutant P^W tissue, leads to the tentative conclusion that these colorless pericarp types do not involve a detectable transposition event. This conclusion is supported by Brink's observations that a P^W mutant derived in a single step from P^{VV} produced the same Ds chromosome breakage pattern as the parent medium variegated.

Several additional points may be noted about the rarer mutants in the mutation spectrum here reported for P^{VV}: (1) two phenotypes, very light variegated and colorless pericarp and cob, were recorded among the offspring of variegated plants which were not expected as primary mutant types (Brink, Genetics 39: 724-740, 1954), (2) two phenotypically distinct classes of reds were obvious, but as yet the relationship of near-selfs to self reds is not clearly understood, and (3) a consideration of all the data indicates that orange variegated is the rarest of the P^{VV} mutational spectrum yet recognized.

Finally, one ear in this study had a large patch of dark variegated pericarp, a phenotype not previously reported in the pericarp work. This phenotype is transmissible, and is being studied further.

2. Transallelic change at the C locus.

An invariable transallelic change of the kind reported by Brink for Rst and R^{mb} in heterozygotes with R^r was not found at the C^I - C locus when a particular C^I allele was used in a mating scheme similar to that developed by Brink (see Genetics 41: 872-889, 1956).

The C^I allele used has been in the genetic cultures at Macdonald College for many years. It is distinguished from the typical C^I allele by the phenotypes it produces in C^IC^IC and C^ICC aleurones. Selfed ears on C^IC plants carrying the Macdonald C^I allele contain four equal and rather distinct phenotypes: (1) entirely colorless, (2) near colorless background (?) but with a few spots of deep pigment, (3) heavily flushed with pigment over the entire kernel and with numerous distinct small spots of deep pigment clearly visible through the flush of pigment, and (4) deeply pigmented overall.

It was thought that the apparent mutable nature of this C^I allele might be affected by the C allele in heterozygotes. However, C^I alleles from C^IC^I homozygotes and C^I alleles from C^IC heterozygotes produce the same phenotype when placed on homozygous A C R pr silks in Wisconsin inbred 22 background.

The effect of this C^I allele on various C alleles extracted from heterozygotes with it remains to be tested.

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