

5. Modulator activity of dark variegated.

Plants with dark variegated and medium variegated pericarp were used as males on a C Ds-tester. It would appear that the "mutations" at Ds are earlier and fewer in number (i.e., a coarser pattern of coloured and colourless areas is observed) when a Modulator from dark variegated activates Ds, than when a Mp from medium variegated is used. This would suggest that the difference between dark and medium variegated pericarp is a function of Mp. McClintock and Brink have both reported that increasing the dose of Ac or Mp delays and/or partially inhibits the changes at Ds and P resulting in a finer grade of mottling or more widely spaced red stripes. On this model of Ac-Mp action the dark variegated phenotype would result from a change of state of Mp in the direction of a lower dosage than that of the standard Mp of medium variegated.

This is at most a tentative hypothesis for the number of ears involved is small (5 and 4 respectively) and the C Ds-testers were different, although related, for the two categories of crosses.

Robert I. Brawn

MARQUETTE UNIVERSITY
Milwaukee, Wisconsin

1. The etched phenotype in the endosperm.

The etched allele (et) discovered by Dr. L. J. Stadler in an irradiated progeny has recently been examined for phenotypic detail in sectioned endosperm of et/et individuals. The following observations have been made:

1. The irregularly placed and irregularly shaped depressed areas on the surface of the kernel are not due to death of cells at these sites as one might presume from superficial observation.
2. Both the pericarp and aleurone layers at the depressed sites appear not to differ from Et/Et material. The pericarp is separated from the aleurone at these sites on the kernel leaving an air space which conceals the aleurone below (the detection of the etched spot is thus facilitated in a stock of colored aleurone).
3. The cells in the endosperm proper, underlying these depressed areas, are of a distinctly different type than the cells in the surrounding areas. They differ in that they are completely void of starch grains whereas the surrounding cells are normally packed with starch.
4. These starchless cells occur as well defined sectors in the endosperm, i.e., narrower toward the center of the kernel and broader toward the periphery.
5. The depression at the surface of the kernel results then from the starchless cell sectors occupying less space in the mature kernel than the adjacent areas filled with starch.