strains with higher amylose contents will be found in this or in later generations. The amylose was determined by potentiometric titration with iodine at the Northern Regional Utilization Branch, Peoria, Illinois.

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1. Distribution of transposed Modulator.

Modulator (Mp), the element postulated by Brink and Nilan as responsible for the suppression of P^{rr} (red pericarp, red cob) action to give the P^{vv} (variegated pericarp, variegated cob) allele, frequently undergoes transpostion from the P locus. A transposed-Modulator (tr-Mp) when present in the genome with an unaltered P^{vv} allele ($\overline{P^{rr}Mp}$) gives the light variegated phenotype.

An experiment was designed to study the distribution of these transposed Modulators. Independent transpositions of Mp (new mutations from medium variegated to light variegated) were collected, and the linkage relations of tr-Mp then studied.

It was found that tr-Mp could occupy positions both linked and non-linked to the P locus. Cases were observed in which tr-Mp showed linkage to reciprocal translocations marking chromosomes 4 and 5, and 5 and 9. In the majority of cases, however, tr-Mp shows some degree of linkage with the P locus on the first chromosome. Among 67 independent transpositions of Mp from the P locus, 64 per cent of the new positions were linked to the P locus. This percentage is much higher than would be expected if moves were at random. The frequency with which tr-Mp occupies any given position on chromosome 1 increases sharply as the distance from the P locus decreases. Modulator, after becoming transposed from the P locus, often undergoes further transposition. Limited data were obtained suggesting that tr-Mp is less likely to undergo secondary moves if the position first held is close to the P locus.

2. Cytological positions of reciprocal translocations involving chromosome 1 and linkage with the P locus.

During the course of an experiment in which various reciprocal translocations were used as markers, the data given below were collected showing the linkage between the P locus and several reciprocal

translocations involving chromosome 1. The cytological designations are those given by Anderson and Longley in the 1956 Maize Genetics Co-op. News Letter.

Trans-location	Total indiv.	Cytological determination	% c.o. with P
1-2b	767	1S.43 2S.36	5.0
1-2c	384	1S.77 2L.33	33.9
1-2d	822	1S.78 2L.56	20.9
1-3a	839	1S.19 3L.14	10.1
1-3d	235	1L.67 3S.81	11.1
1-3i	152	1L.68 3S.30	39.5
1-4a	248	1L.51 4S.69	41.5
1-4b	2103	1S.55 4L.83	7.3
1-4h	460	1S.94 4L.52	35.9
1-5b	6150	1S.17 5L.10	21.8
1-5i	7248	1S.71 5S.74	17.2
1-6c	649	1S.25 6L.27	7.7
1-8b	1209	1L.59 8L.82	45.3
1-10g	859	1S.80 10L.21	19.1

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3. The neutral effect of a heterochromatic knob on variegated pericarp.

A variegated pericarp stock was crossed to a strain heterozygous for a large heterochromatic knob (K) closely linked with R on chromosome 10, as shown below. (The knobbed stock was obtained from M. M. Rhoades.)

$$P^{vv}P^{vv}\ rk/rk \times P^{ww}P^{ww}\ RK/rk \longrightarrow \begin{cases} P^{vv}P^{ww}\ RK/rk & \text{(purple, knobbed)} \\ P^{vv}P^{ww}\ rk/rk & \text{(colorless, no knob)} \end{cases}$$

The plants reared from the kernels with colored aleurone were hand pollinated with II pollen to inhibit aleurone pigmentation in order to facilitate scoring for variegated pericarp, and the colorless kernels were allowed to open pollinate.

The pattern of variegation on the two classes of ears was then compared. The ears were lined up side by side and examined for any gross differences in the variegation pattern. A detailed examination of individual kernels was not made. There were 83 variegated ears carrying