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1. Interchromosomal effects of deficiencies in chromosome 1 on association.

Homozygotes for  $zb_1$   $P^{WW}$   $As$   $br_1$  in chromosome 1 were crossed with X-rayed pollen carrying  $Zb_1$   $P^{WF}$   $As$   $Br_1$ . Forty-four plants hemizygous for one or more of the three recessive genes were amenable to analysis at diakinesis or metaphase I. Fifteen of the deficient plants, including three monosomics showing loss of all dominant morphological markers, were variably asynaptic. Syncytes, curved spindles, and fragmentation--characteristic of asynaptic homozygotes--occurred in the deficient plants exhibiting failure of association. It seems likely that  $As$  was deleted along with linked dominant markers in the  $X_1$  asynaptic plants. The single dose of  $As$ , contributed by the female parent, was insufficient to control normal first division association, thereby simulating the homozygous recessive.

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1. Genetic correspondence of *Tripsacum* chromosomes to their homeologs from corn.

Further progress has been made during the year in identifying *Tripsacum* chromosomes both genetically and cytologically. When a *Tripsacum* chromosome in a  $2n+1$  stock substitutes in physiological function for a dominant gene in corn by covering its recessive marker allele present in the maize chromosome complement, we can locate a *Tripsacum* gene on a particular *Tripsacum* chromosome. Thus we can map the *Tripsacum* chromosomes, not by their own recessive genes, but by the ability of their dominant genes to prevent the expression