

Due to poor germination and dry weather, the conventional analysis yielded a total population of only 21,698. Of these 9 (41×10^{-5}) were apparently Wx, ae seeds. Of the nine apparent recombinants, 8 were carrying the bz marker and 1 Bz indicating a location for H21 distal to C contrary to earlier hypothesis.

Oliver Nelson

4. Location of miniature seed (mn) on chromosome 2.

Crosses were made between a series of translocation stocks in which waxy (wx) was used as a marker for the chromosomal interchanges and a miniature seed (mn) Wx stock. These F_1 plants were then selfed, and the miniature seeds checked with iodine solution for waxy endosperm.

Slightly lower than expected ratios (25%) of waxy were obtained with all translocations except T 2-9 b. Progenies involving T 2-9 b, which has break points on the short arm of chromosome 2 at .18 and on the long arm of chromosome 9 at .22, gave 1.2% waxy seeds. It is therefore apparent that miniature seed is located on Chromosome 2.

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1. Further studies on trivalent frequency in an array of maize chromosome 2-Tripsacum interchange chromosome constitutions.

An attempt was made to synthesize additional 21 chromosome constitutions combining the available primary and secondary maize chromosome 2-Tripsacum interchange chromosomes in various ways. A number of the plants derived repeated constitutions which have been reported earlier (Genetics 51: 23-40. 1965), and showed metaphase I trivalent frequencies very similar to those described before. Four previously unknown 21 chromosome constitutions were also derived. Metaphase I trivalent frequencies from microsporocyte samples of three of these four constitutions were approximately consistent with expectation from previous findings in that: 1. a constitution fitting into the general category

described as having maximum extent of homology in the short chromosome and no parts present in triplicate gave an average metaphase I trivalent frequency of 92 percent (as compared to 90, 93, and 95 percent in former findings); 2. two constitutions with approximately half maximum extent in the short chromosome and no parts present in triplicate gave average metaphase trivalent frequencies of 43 percent and 54 percent respectively (as compared to 48 percent for the previously known type of this category). However, a plant of a new constitution, in which the maximum extent of homology was present in the short chromosome with approximately half this region present in triplicate and half in duplicate, gave a metaphase I trivalent frequency of 83 percent in contrast to 67, 71, and 72 percent found earlier in comparable constitutions. More plants of this type will be sought to study whether this departure from expectation is consistent and meaningful. The constitution differs from the others of its category in that the chromosome region present only in duplicate is terminal and maize instead of *Tripsacum* in origin.

M. P. Maguire

2. Anaphase I distribution of an extra, interchange chromosome.

In certain 21 chromosome constitutions tests are possible for the frequency with which an extra chromosome disjoins from its partial homologue at anaphase I, both following its involvement in crossing over and following failure of such involvement. One such test depends upon estimation of chiasma frequency in the pertinent chromosome region in microsporocytes and determination of disjunctive versus non-disjunctive frequency of these elements from genetic tests in the progeny (Genetics 49: 69-80. 1964). Two such progenies are now available (with total plant numbers of 153 and 127 respectively). The total frequencies of non-disjunction of homologous elements in these were 29 and 46 percent suggesting a greater than expected tendency for the extra chromosome to accompany its partial homologue both following and not following chiasma formation. (Previous average non-disjunction frequency following chiasma formation in a different test designed to test this quantity genetically was 19 percent; trivalent frequency of parents was 90 percent). Thus preliminary results are in contrast to the reports of R. F. Grell on *Drosophila* where univalent single extra chromosomes were found to be distributed randomly. Additional progenies will be scored, and B chromosomes (which are