

includes both trisomics and Wx-Gl crossovers. Additional evidence of trisomics comes from a comparison of the c Wx gl and C wx Gl classes from these translocations. The c Wx gl class could arise as a tertiary trisomic following a single crossover between C and Wx. This would account for the greater size of this class as compared to the C wx Gl class which comes from double crossovers. Progeny tests were made on a few suspected trisomics. In the T 5-9c backcross, 10 C Wx gl plants with pollen classified as normal or low sterile proved to be trisomic. When these plants were used as pollen parents on c wx silks, the transmission of C was 13.0% and of Wx, 3.4%. A few c wx Gl plants with intermediate pollen sterility from both the T 5-9c and T 1-9⁴⁹⁹⁵⁻⁵ populations also were trisomic. Three c wx Gl plants from the T 1-9 backcross progeny were self-pollinated and gave 63 Gl: 46 gl, indicating a Gl/gl/gl constitution. Thus, two of the four possible kinds of trisomics have been identified. The genetic data indicate that gametes with $5 + 9 + 9^5$ are more frequent than those with $5 + 9 + 5^9$, and $1 + 9 + 1^9$ more frequent than $1 + 9 + 9^1$.

The identification of trisomics of C Wx gl phenotype in the T 5-9c backcross indicates that Wx and Gl are in different arms of the translocation and that Gl must lie beyond 9L .1. Thus, the order in chromosome 9 is Wx-centromere-Gl.

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2. Linkage of du and oy.

A backcross of plants heterozygous for the du and oy mutants on chromosome 10 gave 488 individuals distributed as follows:

<u>Du Oy</u>	<u>Du oy</u>	<u>du Oy</u>	<u>du oy</u>
48	219	165	56

The du-oy recombination value is 21.3%, which agrees well with the value of 18-19% obtained from F₂ data (MNL 37). Since oy does not show linkage with R and R-du is about 20% (Kramer), oy is probably located in the short arm of chromosome 10.

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3. Linkage studies with the Ms factor of KYS sterility.

An attempt was made to locate the Ms factor of KYS sterility. The F₁ of Mangelsdorf tester (ms ms S S) and a pale green stock (Ms Ms S S) was crossed with a KYS male parent (ms ms s s). The progeny consisted of 39 plants with normal pollen (ms ms S s) and 22 plants with partly filled pollen grains (Ms ms S s) and no completely male sterile plants. All were selfed and tested for segregation of bm₂, lg₁, su, y, gl₁, wx, and g. If ms is linked with one of the genes in the Mangelsdorf tester, most of the plants with normal pollen should segregate for that particular factor, while most of the plants with partially filled grains should