

breakpoints either in the short arm of 1 and the long arm of 5, i.e. SL, or in LS. Linkage tests with markers show that the break in chromosome 1 was in the long arm, indicating it is an LS interchange. The breakpoint in 5 is close to the centromere. A linkage test in a stock homozygous for the interchange shows that bm₁ and pr are now independent. Hence, bm₁ is not as close to the centromere as we had formerly believed or hoped, and is not absolutely reliable as a centromere marker. We list the breakpoints as being at 1L.80-5S.10. The break was in 5L in Longley's original list.

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4. A 3-chromosome triple interchange stock.

The interchange stocks T8-9b (8S.67-9L.75), T8-10 (5944) (8L.75-10L.40), and T9-10b (9S.13-10S.40) were used for the three possible intercrosses. In each intercross, the breakpoints in the common chromosome were in opposite arms in the two parents. The permanent @ 6 that arose by crossing over in the differential segment to produce a tripartite chromosome was established from each of the three intercrosses. The studies of chromosome pairing in intercrosses between the @ 6 stocks will be reported elsewhere.

By intercrossing two of the permanent @ 6 stocks, backcrossing to one of the parent @ 6 stocks, followed by selection of plants whose sterility suggested they carried the three different tripartite chromosomes, a stock has been selected which is homozygous for those three chromosomes. The following testcross results verify this conclusion:

1. cross with standard normal = @ 6 + 7II
2. cross with each of the 3 permanent @ 6 = @ 4 + 8II.

In this stock in which the three interchanges are combined, chromosomes 8, 9, and 10 are marked by an interchange breakpoint in each arm. The efficiency of this 3-chromosome, triple interchange stock remains to be tested.

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