

Herschel Roman's TB-7a (7L.95) is probably no longer extant. If anyone has viable seed, I would appreciate getting a small supply.

In addition to the translocations listed here, Lin (MGCNL 48:182-184) has reported 36 more B-A translocations on 10L.

Several changes in existing chromosome maps are required to accommodate the B-A translocation data; these changes are summarized as follows:

1. Although wt on chromosome 2 at map position 60 is uncovered by TB-2S,3L(6270), gs2 (position 54) is not, so the order of these 2 loci should be reversed. Tentative results indicate that sk may be uncovered, but the hypoploids produced by this translocation are often too weak to classify for this trait.
2. As reported in MGCNL 44:154-155, c1 is uncovered by TB-3b, so the centromere must lie to the right of c1.
3. TB-3c uncovers ba (72) and y10(75), but not lg2(83), so lg2 must lie to the left of ba and y10.
4. As reported in MGCNL 47:145-147, tests with TB-10b and TB-10c place li in the long arm of chromosome 10. Lin's data (MGCNL 48:182-184) from TB-10(18), -(19) and -(26), establish that the order is centromere, zn, du; my data from TB-10b (MGCNL 47:145-147) establish that bf2, li and ms10 are next (the order within this group is still not known). Data from TB-10a and TB-10(32)(Lin) establish that g comes next, followed by r, as previously determined by ordinary linkage tests.

Although unlikely, it is possible that inversions on the translocated chromosomes may be present in some cases, giving an improper gene order. Therefore, appropriate linkage tests are needed to confirm the above conclusions.

I wish to thank R. H. Whalen for calling to my attention the need for bringing together my data on the genetic breakpoints of the B-A translocations.

J.B. Beckett

Knotted leaf mutants — Five new knotted leaf mutants have been identified. These mutants have been given the temporary designation of K-2, K-3, K-4, K-5 and K-6. K-2 and K-3 occurred as spontaneous mutations in the inbred line Mo14W. Both are similar in expression to the original knotted leaf mutant on chromosome 1 except that the severity of the knotting is much less. K-3 differs from K-2 by leaving large holes in the leaf surrounding the knotted areas.

K-4 knots only the ligule and occurred in a commercial hybrid. K-2, K-3 and K-4 behave as dominant genes. Allelism tests with the original knotted mutant so far have been inconclusive due in part to varying expressivity and penetrance.

The K-5 and K-6 mutants have small "cup like" intrusions parallel to the midrib on the upper leaves at about the time of tasseling. K-5 was found by

Dr. Grogan while he was at Mississippi State University, and he recently brought back the K-6 mutant from South Africa. K-5 behaves as a recessive gene, and Dr. Grogan observed K-6 to be partially dominant in some background genotypes.

We are converting seven inbred lines to the five new mutants along with the original knotted leaf mutant. Expressivity and penetrance of these mutants has been very unpredictable and appears to be highly affected by the environment. After we complete transferring these mutants into the same background genotypes, expressivity and penetrance studies are planned.

M.S. Zuber

Bz dosage effect on glucosyltransferase levels — In a previous note (MGNL 42:134) the presence of an enzyme uridine diphosphoglucose quercetin glucosyltransferase in maize pollen was reported. The enzyme catalyzes the addition of glucose to cyanidin or quercetin. In a second note enzymatic activity (MGNL 42:134) was found to depend on the presence of dominant Bz. Since that time the transferase has been extracted from mature seeds and seedlings of genotypes ranging from homozygous dominant to homozygous recessive. Table 1

Table 1. Glucosyltransferase activity.

Tissue and genotype	Specific activity <sup>1</sup>
Pollen Source	
Bz Bz	210
Bz bz	102
bz bz	0
Seedling <sup>2</sup>	
Bz Bz	308
Bz bz	157
bz Bz	151
bz bz	0
Embryo <sup>2,3</sup>	
Bz Bz	117
Bz bz	57
bz Bz	50
bz bz	0
Endosperm <sup>3,4</sup>	
Bz Bz Bz	2850
Bz Bz bz	921
bz bz Bz	484
bz bz bz	0

<sup>1</sup>Specific Activity =  $\mu$ gms. Isoquercitrin produced/hr/mg of protein.

<sup>2</sup>Heterozygotes derived from reciprocal crosses between homozygous strains; ♀ parent listed first.

<sup>3</sup>Endosperm and embryo samples derived from the same seeds.

<sup>4</sup>Heterozygotes derived from reciprocal crosses between homozygous strains; ♀ origin listed in first two symbols.