1. Tests for linkage of unplaced genes.

A. The bm_4 character has been tested for linkage with genetic markers in all the groups except 1 and 4 and no linkage found (Bothun News Letter 24, p. 58). Since then the B-translocations have been used, also with negative results: TB1a and b, TB3, TB4a, and TB7b. A set of translocation testers marking most of the chromosome arms has finally been resorted to. Preliminary trials with a partial set of these were run last summer. The T6-9 (C23) gave an indication of linkage: 16.5% recombination based on 97 backcross plants. Since no evidence of linkage had been obtained with ms, and su_2 in group 6, or with sh, wx, and W^c in group 9; bm_4 may prove to be in a region at a considerable distance from previously known markers; and not, as so frequently happens, in a region already well-marked.

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B. This was found by Dr. Stadler in the progeny of irradiated material, one of several characters he furnished us and on which linkage tests are being made. This sh_3 has been reported to be in group 5 (News Letters 18, p. 15; 20, p, 16). In those reports it was designated as sh_2. Since in a subsequent publication the sh linked with et has been designated sh_2 - (Journ. Hered. __), this one is now sh_3.

The following F_2 data have been obtained:

159 Sh Ys_d + 75 Sh ys + 29 sh ys = 45.7% recombination, and 189 A_2 Ys + 62 A_2 ys + 52 a_2 Ys + 42 a_2 ys = 38% recombination. Further tests are needed, since earlier tests indicated a closer linkage with a_2.

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C. Tests of gl_{11} vs midget (mi), nl_2 vs. C, and nl_2 vs. sh showed independence. Tests of crossing over in male vs. female in the region of chromosome 2 show a difference, that in the male being higher. In the test through the male, the crossover classes are unequal.

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D. The T-B translocations were used to test for the location of several new and unlinked genes. The only positive results were between yg S-3 (a yg from irradiated material from Stadler) and TB3; and between a new stripe and TB7b (a stripe found by Clark).

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