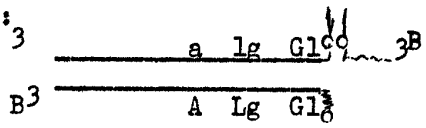
3. Location of glossy-6 in the long arm of chromosome 3

The data presented below come from crosses in which the pollen parents were heterozygous for Roman's TB-3a translocation and for the genes lg_2 and a_1 which lie distal to the break in 3L.

Constitution of pollen parents:



The fact that glossy plants occurred in the progeny indicates that gl_6 is also located distal to the break in 3L. Glossy plants are produced following non-disjunction of the B^3 chromosome when the sperm fertilizing the egg nucleus carries no B^3 and the sperm fertilizing the polar nuclei carries two B^3 chromosomes. Thus the aleurone would be colored due to the A gene while the plant should be both liguleless and glossy. The glossy plants arising from kernels with colorless aleurone are due to crossovers between a_1 and gl_6 which place the a_1 allele on the B^3 chromosome. The frequency of glossy plants should be approximately half of the frequency of non-disjunction.

	Gl A	Gl *a*	gl A	gl *a*	% gl
gl_6 a_1 x 16367-22	32	73	16	5	16.7
gl_6 a_1 x 17265-12	122	155	29	18	14.5
gl_6 lg_2 x 16367-22	19	24	0	7	14.0
gl_6 lg_2 x 17265-12	36	29	0	14	17.7

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