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1. Crossover data for chromosome 3.

Three point backcross data were obtained from plants homozygous for In 3a. Since Rg is not included in the inverted segment the linear order in the inverted chromosome should be Rg A Lg instead of the usual Rg Lg A order.

<u>In 3a Rg A Lg</u>		X	rg lg a pollen						
In 3a rg a lg									
(0)	(0)	(1)	(1)	(2)	(2)	(1-2)	(1-2)	Total	
Rg	rg	Rg	rg	Rg	rg	Rg	rg		
A	a	a	A	A	a	a	A		
<u>Lg</u>	<u>lg</u>	<u>lg</u>	<u>Lg</u>	<u>lg</u>	<u>Lg</u>	<u>Lg</u>	<u>lg</u>		
317	279	123	126	191	195	52	52	1335	

Recombination: Rg-A = 26.4%
A-Lg = 36.7%

Sibling plants of the above tested individuals were heterozygous for the Gl₆ locus rather than Rg. Using these plants as pollen parents the following backcross data were obtained:

gl lg a		X	<u>In 3a gl A Lg</u>						
			In 3a Gl a lg						
(0)	(0)	(1)	(1)	(2)	(2)	(1-2)	(1-2)	Total	
gl	Gl	gl	Gl	gl	Gl	gl	Gl		
A	a	a	A	A	a	a	A		
<u>Lg</u>	<u>lg</u>	<u>lg</u>	<u>Lg</u>	<u>lg</u>	<u>Lg</u>	<u>Lg</u>	<u>lg</u>		
275	254	71	64	174	158	27	40	1063	

Recombination: Gl-A = 19.0%
A-Lg = 37.5%

Since the Rg-A recombination percentage was 26.4 and that for Gl-A was only 19 percent, the linear order in a structurally normal chromosome, starting from the centromere, appears to be Rg-Gl-Lg-A.

The probable correctness of this order is suggested by the following backcross data from structurally normal chromosomes 3:

<u>Rg gl lg a</u>		X	rg gl lg a			
rg Gl Lg A						