

2. The 'asynaptic' factor in the multiple tester.

The 'asynaptic' condition reported in the multiple tester of maize (MNL 1957) has been studied as to possible consequences on crossing-over values. In heterozygous condition such a genetic factor does not decrease the crossing-over percent in the tested yg-sh region on chromosome 9. On the contrary the recombination value seems higher, although not statistically determined, as yet.

In spite of the fact that data are available only in heterozygotes for the asynaptic condition, the results agree with the conclusions obtained by Rhoades in the study of the asynaptic factor identified by Beadle. In our material the fertility is apparently normal.

Some data on the tested region follow:

Row No.	Family	Sh Yg	Sh yg	sh Yg	sh yg	Recombination % ± prob. error	Map units
57-427	F <sub>2</sub>	55	7	9	5	31.0 ± 4.4	
-428	"	245	39	41	58	23.5 ± 1.7	
-429	"	286	45	57	46	29.0 ± 1.8	
-431	"	412	70	77	107	24.5 ± 1.3	
-432	"	217	41	43	45	28.0 ± 2.0	
Total		1215	202	227	261	26.0 ± .8	29
control							
56-506	F <sub>2</sub>	1024	150	120	153	26.0 ± .9	
57-406	"	624	65	65	61	23.5 ± 1.2	
-407	"	1542	256	211	362	22.0 ± .7	
-408	"	1330	212	246	311	24.5 ± .7	
-433A	"	594	113	74	130	23.0 ± 1.1	
-433B	"	459	50	32	98	14.5 ± 1.0	
-434A	"	615	85	96	137	22.0 ± 1.1	
-434B	"	534	59	62	148	16.0 ± 1.0	
Total	F <sub>2</sub>	6722	990	906	1400	22.0 ± .3	24.1
56-507/506	B	253	64	56	197	21. ± 1.1	23

Additional control data on the regions wx-yg and sh-wx give, in the same control stock, distances in map units quite comparable to the standard ones.

Family (pooled data)	Wx Yg	Wx yg	wx Yg	wx yg	Recombination % ± prob. error	Map units
F <sub>2</sub>	5514	1142	1833	892	41.5 ± .5	56
B	192	100	117	161	38.1 ± 1.4	48

  

	Sh Wx	Sh wx	sh Wx	sh wx		
F <sub>2</sub>	11750	2228	1933	2722	25.0 ± .2	28
B	254	83	55	235	22.0 ± 1.1	24

It will be noted that in all cases the recombination value calculated from backcross data is slightly lower than that from the pooled F<sub>2</sub> data. Since backcrosses were made on the multiple recessive this may suggest that the amount of recombination is lower in microsporogenesis than in megasporogenesis.

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### 3. The translocation point in TB-8a.

Plants msg j<sub>1</sub> have been crossed by the TB-8a stock obtained by Dr. H. Roman. In a progeny of 18 plants, 7 showed the japonica character; 5 of these were ms, too. The japonica plants were, moreover, shorter than the normal J plants, confirming their hypoploid nature. The results suggest that the j<sub>1</sub> factor is distal to the translocation point in chromosome 8. Previously by means of deficiencies it was shown by McClintock (1933) that the j<sub>1</sub> factor is in the distal portion of the long arm of chromosome 8.

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### 1. Differential pollination in maize.

An attempt has been made to change the flowering times in a maize population by the method of separating seeds from the middle, bottom and top part of a single ear, which represent the earliest, medium and latest silks to emerge. The hypothesis is that a shift may take place through the differential timing of pollination. Isolation plots of each group whose seeds were separated each year were grown for three years and then the lines were combined in one large field experiment comprising three