

producing combinations with fewer interchanges. Ghobrial (Ph.D. thesis, 1968) reported for the 5-7-1-9-10 ring, that 24% of the progeny from N x ring of 10 crosses had smaller rings ranging from a ring of 4 to a ring of 8. It would be helpful in planning the backcrosses if similar information were available for the other rings of 10.

Thus far, not enough fertile descendants from the backcrosses have been tested to insure including one that has all the interchanges that are present in the 2 rings of 10. Tests of another group of normals will be made this coming summer.

Another approach, that of adding a T8-10 interchange to T6-3-2-4-8, has not been completed. When and if it can be completed, the cross of T6-3-2-4-8-10 with 5-7-1-9-10-8 (the T8-10 here is the same one I am trying to add to T6-3-2-4-8) should produce an F₁ with 2 rings of 10, in which random segregation should include a viable combination that has all the interchanges. Again, there is the problem of undesired crossovers as well as the problem of increasing the spore with the desired combination when it does occur.

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6. Interchanges not in the ARS, 1961 list, and changes needed in certain of the information in that list.

<u>Translocation</u>	<u>Symbol</u>	<u>Listed (Longley 1961)</u>		<u>New information,</u>	
		<u>ratio</u>	<u>ratio</u>	<u>breakage points,</u>	<u>etc.</u>
*1-2	a			1L.5	2L.4
1-5	8347	1S.84	5L.51	1	2
1-5	018-5	1S.53	5L.52	1	2
1-5	6899	1S.32	5S.20	1S.37	5L.11
1-5	055-4	1S.32	5L.31	1	8
1-5	040-3	1S.17	5L.61	1	2
1-5	024-5	1S.09	5L.98	1	2
1-5	8782	1 ctr.	5 ctr.	1S.02	5L.01
1-5	4331	1L.03	5S.02	7	10
1-5	e	1L.03	5L.09	1S.08	5S.16
1-5	6178	1L.04	5L.05	1	2
1-5	7219	1L.15	5S.19	1S.15	5L.33
1-5	48-34-2	1L.19	5L.76	1	4
1-5	8388	1L.30	5S.25	1	2
1-5	a	1L.52	5S.42	1L.58	5L.45
1-5	8041	1L.80	5L.15	1L.80	5S.10
1-6	e	1S.37	6L.21		6S
1-6 (with 1-2)	5537	1S.31	6L.22		ring of 6 only

*Stocks only at Minnesota, not in Longley, 1961 list.

<u>Translocation</u>	<u>Symbol</u>	<u>Listed (Longley (1961) breakage points</u>		<u>New information, breakage points, etc.</u>	
		<u>ratio</u>	<u>ratio</u>		
1-6	6189	1S.23	6L.17		6S
*1-6	b			1L.25	6 sat
1-7	b	1L.53	7S.12		7L (Gopinath and B.)
*2-3	a			2S.9	3L.6
2-4	b	2L.59	4S.40		
There are two listed as 2-4b. This one should be 2-4L, see 1958 report.					
2-6	4394	2S.91	6L.12	4	6
2-6	2786	2S.90	6S.77		6S Org.
2-6	001-15	2S.72	6S.87		6S sat.
2-6	6671	2S.22	6L.22	5S.49	6L.35
2-6	e	2L.18	6L.20	2S	6S
2-6	5648	2L.25	6L.19	1	6
2-6	a	2L.28	6L.20	2L.4	6S.5
2-6	c	2L.37	6L.25	2(S?)	
2-6	9002	2L.57	6L.50	1	6
2-6	f	2L.79	6L.87	1	6
2-6	014-11	2L.81	6L.20	inseparable from an version in 6	
2-6	5419	2L.82	6S.79		6S Org.
2-6	8441	2L.94	6S.79		6S Org.
*2-6	Burnham #6049			2S.15	6L.06
*2-6	" #6052			2S.6	6L.6
3-6	b	3S.73	6S.82		6S sat.
3-6	6566	3L.41	6L.35		6S (Ibrahim)
*3-6	Roberts (Conn.)	3	6	2	3
3-9	c	3L.09	9L.12	3S.15	9S.20(E. Clark)
*4-5				4L.7	5L.7
4-6	025-12	4S.44	6L.34		6S
4-6	011-16	4S.31	6L.33		6S
4-6	8591	4L.17	6L.24		6S
4-6	Li	4S.7	6S.2	1	6S (org.tip)
5-6	5622			5S.87	6L.47 Philli
5-6	8818			5L.91	6L.93 "
5-6	d	5S.64	6S.89	5S.58	6 sat "
5-6	8590	5S.29	6L.25	5S.25	6L.61 "
5-6	5685	5L.27	6L.20	5S.24	6L.23 "
5-6	8665	5L.58	6L.25 (independent of chrom. 5 genes)		"
5-6	8219	5L.76	6S.84	5L.69	6 sat. "
5-6	c	5L.81	6L.08	5L.89	6S.00 Burnhar
Others:					
*5-6	b (McClintock)**	5L.72	6L.21	5S.1	6S sat. "
5-6	Burnham (5786)			5L or S.2	6L.2 "
*5-9	a	5L.69	9S.17	5L.86	9S.38 "
6-7	5181	6S.79	7L.86	6S Org.	7L.86 Philli

**this is the one published in Genetics, 1950.
another one is listed as 5-6b.

<u>Translocation</u>	<u>Symbol</u>	<u>Listed (Longley 1961)</u> <u>breakage points</u>		<u>New information,</u> <u>breakage points,</u> <u>etc.</u>
		<u>ratio</u>	<u>ratio</u>	
6-7	4964	6S.76	7L.72	6S Org. 7L.63 Phillips
6-7	6498	6L.16	7S.48	6L.23 7S near cent.
6-7	4545	6L.25	7S.73	6L.07 7S near cent.
6-7	013-8	6L.31	7L.22	6L.27 7L.63
6-7	8143	6L.35	7L.36	6L.18 7L.16
6-9	a	6S.79	9L.40	6S Org.
*6-10	McClintock			6S.5 10L.58
5-10	6061	5S.60	10L.57	2 10
*2-3	Clark (r-tester)			2 3

General Notes

1. The 1-5 interchanges: 058-2, 004-14, 4832, 5537, 5512, and 5813 were not received from the Coop or from Ames according to my records. All the others not in the list of changes have been tested enough to know they are 1-5 interchanges. The breakpoints of most have been verified cytologically, many genetically as to arm (Burnham et al. 1972, Genetics 71:111-126).
2. The 1-6 interchanges: For the following, the breakpoints are in the long arm of 6 as listed: 5013, c, and h.
3. The 4-6 interchanges: For the following, the breakpoints are in the long arm of 6 as listed: b, 6623, 8428 and 8927.
4. The 5-6 interchanges (Phillips, 1969, Genetics 61:107-116): For the following, the breakpoints are as listed: 6522, 4933, and only slightly different for 5906.
5. The 6-7 interchanges (Phillips, 1969): The breakpoints are only slightly different for: 4573, 7380, 6885, 4337.

Chas. R. Burnham
(assisted by many over
the past years)

7. Progress report on the all-arms single interchange marker series after at least 8 backcrosses.

T2-9c	is shown to be T1-6
T4-7(7108)	is shown to be T3-4
T5-8a	is shown to be T3-4
T6-9(5454)	which gives low sterility: probably an inversion.