

1. Patterns of recombination suppression in heterozygous translocations involving chromosomes 4, 6, and 10.

A list of pre-Bikini and Eniwetok translocations with their cytological positions was given in the 1952 newsletter. Summaries of linkage studies have recently been completed on those involving chromosomes 4, 6, and 10. Table I presents the summary for chromosome 4 with the translocations listed in approximate order of their position from left to right. Recombinations in adjacent regions are included to indicate the pattern of suppression due to the translocation. The number on which each recombination value is based is in parentheses.

The centromere on chromosome 4 is between su and Tu. Translocations in the short arm, proximal to su apparently do not reduce either Ts<sub>5</sub>-su or su-Tu recombinations but those in the long arm proximal to Tu reduce the su-Tu values. There must be an appreciable region to the left of the centromere in which little crossing-over normally occurs and interchanges in this region appear to have little effect on the normal values.

Table 2 presents similar data for chromosome 6. In this chromosome, although the map distance is 31 units between Y and Pl, any translocation occurring in an area extending from the centromere region to the Pl locus greatly reduces the Y-Pl recombination.

In chromosome 10, (table 3), T-g and T-R recombinations exhibit an approximately linear relationship with the cytological position in the long arm ( $r = -.85$ , 11 DF, for T-R). In addition, g-R recombinations are homogeneous ( $.3 < P < .5$ ) for all translocations in the long arm to the left of g which show more than 2% recombination with g.

Table 1. Translocations involving chromosome 4.

Translocation	Linkage relationship								Position
T4-6b	Ts <sub>5</sub>	1.6(320)	T	8.6(580)	su	29.6(260)	Tu		4S.71
T1-4a	Ts <sub>5</sub>	0.0(42.4)	T	3.5(832)	su	32.4(265)	Tu	1.5(67)	gl <sub>3</sub> 4S.66
T2-4i	Ts <sub>5</sub>		T	4.4(294)	su	33.5(182)	Tu		4S.37
T4-8a	Ts <sub>5</sub>	4.0(630)	T	1.6(1770)	su	22.6(190)	Tu		4S.54
T2-4g	Ts <sub>5</sub>	7.1(255)	T	2.7(997)	su	28.3(99)	Tu		4S.26
T4-7a	Ts <sub>5</sub>	10.6(255)	T	0.6(519)	su	33.3(42)	Tu		4S.27
T4-10c	Ts <sub>5</sub>	13.1(175)	su	1.1(3420)	T	24.8(951)	Tu		4S.70
T4-5c	Ts <sub>5</sub>	10.3(642)	su	1.1(1667)	T	26.4(413)	Tu		4S.45
T4-9g	Ts <sub>5</sub>	11.6(103)	su	3.3(1348)	T	22.1(516)	Tu		4S.35
T4-5d	Ts <sub>5</sub>	13.9(208)	su	3.4(385)	T	21.5(177)	Tu	17.5(103)	gl <sub>3</sub> 4S.21
T4-8b	Ts <sub>5</sub>	18.0(679)	su	5.7(859)	T				4S.54
T4-6c			su	8.6(839)	T	31.2(455)	Tu		4S.13
T2-4c	Ts <sub>5</sub>	19.3(710)	su	9.2(1561)	T	30.8(130)	Tu	8.5(130)	gl <sub>3</sub> 4S.09
T2-4a			su	3.3(361)	T	14.0(361)	Tu	16.0(187)	gl <sub>3</sub> 4L.16
T4-9d	Ts <sub>5</sub>	22.6(1043)	su	3.8(1326)	T	21.2(283)	Tu		4L.14
T4-10b	Ts <sub>5</sub>	15.0(361)	su	4.0(500)	T				4L.14
T2-4f			su	6.1(900)	T	19.3(378)	Tu		4L.13
T4-6a	Ts <sub>5</sub>	14.9(429)	su	4.9(1390)	T	14.6(219)	Tu		4L.33

T4-9a	Ts <sub>5</sub>	13.6(516)	su	9.8(1615)	T	14.1(468)	Tu	28.3(99)	gl <sub>3</sub>	4L.18
T2-4d			su	28.4(496)	Tu	0.2(496)	T	5.4(496)	gl <sub>3</sub>	4L.25
T4-5b			su	42.4(165)	Tu	3.6(165)	gl <sub>3</sub>	3.0(165)	T	4L.66
T2-4b			su	40.5(215)	Tu	5.0(99)	gl <sub>3</sub>	15.2(99)	T	4L.54
T4-9b	Ts <sub>5</sub>	10.0(170)	su	34.2(556)	Tu	8.8(556)	gl <sub>3</sub>	21.9(556)	T	4L.84

Table 2. Translocations involving chromosome 6.

Translocation		Linkage relationship					Position	
T3-6b	T	15.6(231)	Y					6S.75
T4-6c	T	8.4(479)	Y	23.0(152)	Pl	6.9(390)	sm	6S.86
T5-6c	T			9.7(207)	Pl			6S.11
T2-6a	T			9.6(188)	Pl			6S.09
T4-6b	T	5.6(1098)	Y	9.3(290)	Pl	10.3(290)	sm	6L.25
T1-6h	T	3.5(258)	Y					6L.15
T6-10b	T			8.2(417)	Pl	3.6(138)	sm	6L.17
T2-6e	T	4.7(170)	y	5.2(345)	Pl	4.2(189)	sm	6L.22
T6-9e	Y	0.0(269)	T					6L.17
T6-9b	Y	1.4(515)	T	5.5(2218)	Pl	4.3(507)	sm	6L.13
T2-6c			T	5.0(281)	Pl	6.0(281)	sm	6L.20
T6-9c	Y	0.4(542)	T	4.5(286)	Pl	4.2(189)	sm	6L.22
T1-6c	Y	1.0(605)	T	5.7(1043)	Pl	1.8(439)	sm	6L.39
T4-6a	Y	1.3(389)	T	5.3(1025)	Pl	5.5(325)	sm	6L.44
T3-6a	Y	6.7(345)	T	3.1(1007)	Pl	5.5(219)	sm	6L.19
T6-8a	Y	11.3(789)	T	4.9(427)	Pl	2.6(189)	sm	6L.50
T2-6d			T	5.2(309)	Pl	6.9(101)	sm	6L.57
T5-6a			Pl	0.0(113)	T			6L.45
T1-6a	Y	39.8(98)	Pl	802(98)			T	6L.49
T2-6b			Pl	7.7(753)	sm	3.7(753)	T	6L.49
T1-6g			Pl	23.4(154)			T	6L.88
T6-10a	Pl	9.5(493)	sm	17.0(100)	py	3.0(134)	T	6L.68

Table 3. Translocations involving chromosome 10.

Translocation	Results of 3-point test			No.	Position
	T-g	T-R	g-R		
T5-10b	27.4	35.3	17.7	186	10S.24
T8-10c	22.8	33.1	14.4	535	10S.51
T9-10b	16.3	23.7	8.9	135	10S.28
T3-10b	18.9	22.1*	12.2	196	10S.25
T1-10a	15.3	34.3	20.4	137	10L.21
T3-10a	15.7*	27.7	12.6	372	10L.12
T6-10a	9.6*	23.7	14.2	274	10L.19
T8-10b	9.5	23.2	14.5	461	10L.14
T4-10e	-	22.8*	-	386*	10L.01
T4-10c	8.3	19.8*	13.5	828	10L.11
T3-10c	6.5*	22.8	15.9	346	10L.31
T6-10b	2.5*	18.6	15.8	291	10L.14
T1-10e	2.9	17.3	14.4	139	10L.30
T2-10a	1.8	9.6	8.1	542	10L.53

T4-10b	1.6*	8.6	8.3	324	10L.57
T1-10f	0.0	4.4	4.4	113	10L.65
TI-10c	-	0.0*	-	65*	10L.67

\*Includes additional two point data.

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