In the following columns of Table 1 the number and classes of gametes produced by the female as well as their total number are indicated. It is obvious that crossing over is nearly completely suppressed in double heterozygous females between the two independent inversion systems O_{3+4} and O_1, O_{3+4} and O_7, O_{3+4} and O_{12}.

This suppression is not due to suppressor genes because in O_{3+4+22}/O_{3+4} females the Lap gene at a distance of 6 units from T.B. O_{3+4} is at a distance of 45.5 units from the F.B. O_{22} (and O_{3+4+22} resembles O_{3+4+1}: we never found O_{22} alone).

The cause of crossing over suppression is probably asynapsis of the whole region of the chromosome comprising the O_{3+4+1}, O_{3+4+7}, and O_{3+4+12} arrangements in heterozygote females with O_{ST}. Inversion system O_{3+4+8} (O_8 over O_{3+4}) probably restores some synapsis with O_{ST} as some data of Sperlich (1963) and Götz (1965) indicate.

This situation resembles the one described by Levitan in D. robusta, as well as the interpretation of the data of Terzaghi & Knapp in D. pseudoobscura (1960 Evolution 14:347).

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The genus Drosophila in New Guinea.

During 1967 the genus Drosophila was sampled at five stations in New Guinea from heaps of fermenting banana. The primary sorting of the flies yielded the results shown in Table 1. The results in Table 2 were obtained from samples of melanogaster group females individually bred out and identified by their male progeny.

Cytogenetical studies and an investigation of isolating mechanisms in the species listed is proceeding.

Table 1

Primary Sorting

	Port Moresby (Bisianumu) (May)		Rabaul (May)		Bulolo (Aug.)		Popondetta (Sept.)		Awala (Sept.)	
		%		%		%		%		%
D. rubida	12	1.4	116	7.6	59	3.6	18	1.1	91	10.7
D. setifemur	69	8.2	218	14.2	202	12.5	171	10.2	196	23.1
D. pararubida	26	3.1	258	16.8	226	14.0	57	3.4	12	1.4
D. tetrachaeta	2	0.2	30	2.0	62	3.8	22	1.4	1	0.1
D. argentostriata	8	1.0	-		-		-		-	
D. silvistriata	9	1.1	-		-		18	1.1	39	4.6
melanogaster group	714	84.8	756	49.3	1062	65.9	1395	8.3	510	60.1
Pholadoris	2	0.2	155	10.1	-		-		-	
	842		1533		1611		1681		849	

Table 2

Melanogaster group samples

	Port Moresby (Bisianumu) (May)		Rabaul (May)		Bulolo (Aug.)		Popondetta (Sept.)		Awala (Sept.)	
		%		%		%		%		%
D. ananassae	22	7.4	21	17.5	53	19.0	31	14.4	18	12.3
"Pseudoananassae"	5	1.7	20	16.7	105	37.6	66	30.6	15	10.3
D. szentivanii	1	0.3	1	0.8	7	2.5	8	3.7	11	7.5
D. mayri	1	0.3	1	0.8	25	9.0	56	25.9	36	24.7
D. gracilis	270	90.3	3	2.5	1	0.4	1	0.5	2	1.4
D. serrata	-		4	3.3	-		-		-	
D. birchii	-		70	58.3	88	31.5	54	25.0	4	43.8
	299		120		279		216		146	