Table 2. Collection between December 23 - 27, 1971.

	Collecting Sites				
	Mauna Loa Strip Road			Kilauea Forest	
Species	4000'	5100'	6700'	5300'	Total
D. immigrans*	463	110	3	38	614
D. simulans*	71	5			76
D. mimica	13		1		14
D. imparisetae	4				4
D. fungiperda	1				1
D. reducta	1	1			2
D. silvestris				3	3
D. undulata				2	2
S. (Trogloscapto.) sp.		11	3	3	17
S. (Tantalia) sp.		1			1
Total	553	128	7	46	734

The most noticeable feature from the tables is that among the cosmopolitan species collected, D. immigrans occurs as a majority and its ecological tolerance appears to be the widest at the high elevations. This is plausible evidence of a great colonizing ability of this species. The data further show the success of this species in the endemic niches of mountain sides on the island. Another interesting point of this collection is the abundant occurrence of D. busckii, known as domestic species, in the first collection at the high elevations between 5000 and 6000 feet. Whether or not the populations were temporary ones is not clear.

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The test of antimorphic action of w mutations in D. melanogaster x D. simulans hybrids.

It had been described (DIS 46:72) that the drastic difference in antimorphic action of two pseudo-allelic w mutations (w^{10gA} and w^{69gA}) was manifested in twelve different lineal hybrids of D. melanogaster. The further analysis of action of these w mutations in D. melanogaster x D. simulans hybrids was undertaken. Hybrids from crosses of w^{10gA} or w^{69gA} homozygous females of D. melanogaster to wild-type males of D. simulans were obtained. The quantities of red eye pigments in hybrid females were estimated by spectrophotometric method, described previously (DIS loc. cit.). In addition, the determinations of red eye pigments in w^+/w^+ females of D. simulans of the same origin as the males were made. The quantities of red pigments were expressed as the extinction (E) per 10 heads extracted per 1 ml of 30% AEA.

The results of these analyses listed in the table below are essentially self-explanatory.

Genotype of females	E*	Conf. limits at $P_{0.05}$
1. D. simulans (w^+/w^+)	1.195	1.243 - 1.147
2. Hybrids (w^+/w^{10gA})	1.028	1.050 - 1.006
3. Hybrids (w^+/w^{69gA})	0.874	0.898 - 0.850

*Means of at least 12 repetitions

The mean E values for both hybrids differ significantly from one another as well as from the E value for w^+/w^+ females of D. simulans. These data appear to confirm our early assumption that the influence of w mutations studied is a locus-specific rather than a genotypic one. The data suppose the functional homology of w^+ locus in both species.