

20mg/100cc food; 3) thioridazine hydrochloride 10mg/100cc food versus thioridazine hydrochloride 20mg/100cc food. The results of statistical analysis are presented in Table 2.

Table 2. Chi square values for the difference in sex-linked recessive lethals for the groups compared.

Group	Brood A	Brood B	Brood C	Brood D	Brood E	Brood F
1. Control vs 10mg	3.97	4.71	14.87	14.37	-	10.54
2. Control vs 20mg	2.09	0.03	8.90	15.90	-	15.84
3. 10mg vs 20mg	0.37	4.33	0.45	0.37	0.087	0.26

The statistical analysis of the data presented in Table 2 clearly established that the chemical thioridazine hydrochloride is mutagenic more particularly in the pre-meiotic stages of the germ plasm.

Paik, Y.K. and K.C. Sung. University of Hawaii, Honolulu, Hawaii. Altitudinal survey of "cosmopolitan" species of *Drosophila* on the island of Hawaii.

An extensive effort is being made by Professors Carson and Hardy of the University of Hawaii and their collaborators toward understanding the evolutionary process of endemic Hawaiian drosophilids, which represents one of the most striking examples of "explosive" evolution known in

the animal kingdom. Parallel study of cosmopolitan species on the islands is highly desirable. For this reason, a pilot survey on the distribution of introduced species with elevations was attempted in 1971 on the island of Hawaii. The bait used for trapping was yeasted banana and collection was done twice at the same testing sites as shown in Tables 1 and 2.

Table 1. *Drosophilid* species and relative abundance collected at different altitudes in the vicinity of Hawaii Volcanoes National Park between April 7 to 11, 1971

Collecting Sites

Species	Mauna Loa Strip Road					Kilauea Forest	Main Road	Total
	4000'	4300'	5100'	6100'	6700'	5300'*	3000'	
<i>D. immigrans</i> *	301	138	164	13	22	11	36	685
<i>D. simulans</i> *	73	45	127	1			38	284
<i>D. busckii</i> *			107	21				128
<i>D. mercatorum</i> *			1					1
<i>D. kikkawai</i> *							3	3
<i>D. engychoracea</i>	5	4						9
<i>D. mimica</i>		29						29
<i>D. imparisetae</i>		18	2					20
<i>D. pectinitarsus</i>		1			3			4
<i>D. basisetosa</i>		1						1
<i>D. silvestris</i>						1		1
<i>D. murphyi</i>						1		1
<i>D. fungiperda</i>		1						1
Fungus feeder spp.	1	1						2
<i>D. reducta</i>	1		10					11
<i>Antopocerus</i> sp.							1	1
<i>S. cuspidata</i>		10	46	7	8	2		73
<i>S. (Tantalia)</i> sp.		6						6
<i>D. trichaetosa</i>						2		2
<i>D. sp. (mitchell?)</i>							1	1
Total	381	254	457	42	33	17	79	1263

\*Denotes introduced species; † A virgin rain forest

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

Species	Mauna Loa Strip Road			Kilauea Forest	Total
	4000'	5100'	6700'	5300'	
<i>D. immigrans</i> *	463	110	3	38	614
<i>D. simulans</i> *	71	5			76
<i>D. mimica</i>	13		1		14
<i>D. imparisetae</i>	4				4
<i>D. fungiperda</i>	1				1
<i>D. reducta</i>	1	1			2
<i>D. silvestris</i>				3	3
<i>D. undulata</i>				2	2
<i>S. (Trogloscapto.) sp.</i>		11	3	3	17
<i>S. (Tantalia) sp.</i>		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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Alexandrov, I.D. Research Institute of Medical Radiology, Academy of Medical Sciences of U.S.S.R., Obninsk, U.S.S.R. 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*<sup>10gA</sup> and *w*<sup>69gA</sup>) 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*<sup>10gA</sup> or *w*<sup>69gA</sup> 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*<sup>+</sup>/*w*<sup>+</sup> 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 <sub>0.05</sub>
1. <i>D. simulans</i> ( <i>w</i> <sup>+</sup> / <i>w</i> <sup>+</sup> )	1.195	1.243 - 1.147
2. Hybrids ( <i>w</i> <sup>+</sup> / <i>w</i> <sup>10gA</sup> )	1.028	1.050 - 1.006
3. Hybrids ( <i>w</i> <sup>+</sup> / <i>w</i> <sup>69gA</sup> )	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*<sup>+</sup>/*w*<sup>+</sup> 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*<sup>+</sup> locus in both species.