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FURTHER COMMENTS ON THE SUSCEPTIBILITY OF *Aedes aegypti* TO DDT IN THE MIAMI, FLORIDA, AREA

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An earlier paper by Evans *et al.* (1960) presented evidence suggesting that *Aedes aegypti* (Linn.) from the Miami, Florida, area are somewhat tolerant or resistant to DDT. The tests reported therein showed that 7.0 percent of the *aegypti* larval mosquito population survived 0.5 p.p.m. of DDT.

More recent tests, performed in the same manner, using the WHO test kit and method of testing, show a broad range of reaction to DDT as is indicated in Table 1. The larvae tested are the F₁ generation of field-collected larvae and adults from four different areas of Miami. These are des-

ignated as area "A" for the Miami River front; area "B" for larvae found in a coconut stump in a residential section of the city nearly two and one half miles from the river; area "C" for specimens from the Miami International Airport; and area "D" for specimens recovered from tree-holes in the southeastern section of the city.

Larvae of *aegypti* from these four areas show a significant degree of natural variation in their reaction when exposed to DDT. They range from areas "A" and "D" which are relatively susceptible to DDT with an LD-50 of .029 and .028, respectively, to larvae from area "B" which show indications of resistance to DDT with an LD-50 of .22. Populations showing intermediate degrees of susceptibility were those from area "C" having an LD-50 of .138.

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TABLE 1.—Susceptibility levels of *Aedes aegypti* larvae from Miami, Florida, to DDT after 24 hours

Concentration of insecticide in test suspensions	Total no. of larvae used				Percent mortality			
	A	B	C	D	A	B	C	D
.004 p.p.m.	...	158	..	50	0	0
.02 p.p.m.	154	158	29	49	0	.63	10.3	0
.1 p.p.m.	153	158	30	50	55.6	13.3	30.0	56.0
.5 p.p.m.	141	158	30	50	99.3	89.2	90.0	98.0
Control	153	158	28	50	0	0	0	0

TABLE 2.—Comparison of past and present LD-50 levels for *Aedes aegypti* larvae from Miami, Florida, to DDT after 24 hours

1959 LD-50 (Evans <i>et al.</i> 1960)	1960 LD-50			
	A	B	C	D
.07	.029	.22	.138	.028

Examination of Table 2 shows that it may now take 3 times the amount of insecticide to get an LD-50 as it did in the tests reported upon by Evans *et al.* (1960).

The spotty, but evident development of populations of *Aedes aegypti* in Miami, Florida, which are resistant to DDT made it advisable to change our method of treating breeding receptacles. Since July 1960 it has been observed in the field operations for *Aedes aegypti* control that paris green remains effective for several months as a

larvicide where, previously, DDT was unable to prevent the re-establishment of *aegypti*. Although the use of paris green was not of a controlled nature, it tends to support the new data regarding the resistance or tolerance of *Aedes aegypti* larvae in the Miami, Florida, area to DDT.

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