

between the lower Tuckahoe and Great Egg Harbor Rivers adjacent to Great Egg Harbor. Both areas contain valuable oyster beds. It is possible that the cost of ditching and draining of these marshes may be in part compensated by an appreciable return through better and fatter oysters, wholly distinct from the benefits of mosquito destruction.

Cyanide Versus Paradichlorobenzene As  
A Killing Agent in Mosquito Light Traps

H. H. Stage

U. S. Dept. of Agriculture  
Agricultural Research

Administration

Bureau of Entomology and  
Plant Quarantine

The ever-present danger of hydrogen cyanide in light traps and the need of a killing agent more easily managed than cyanide in the newly designed automatic traps prompted comparison of this poison with paradichlorobenzene during the summer of 1939. Accordingly, two traps were set up 60 feet apart near a typical breeding area on Lotus Island in the lower Columbia River, near Portland, Oregon, where satisfactory samples of the mosquito population had been taken in former years. The east trap was somewhat more protected by surrounding brush than was the west trap, and because they were placed on opposite sides of a bridge each trap was out of range of the other's light.

The two poisons were alternated in the traps six times. Hydrogen cyanide was used a total of 62 nights, 35 nights in the east trap and 27 nights in the west trap, and paradichlorobenzene was used a total of 64 nights, 28 nights in the east trap and 36 nights in the west trap. Each trap was operated a total of 83 nights. Comparisons of nightly collections were then made both between the two positions and between the two poisons. The results are summarized in the accompanying table.

## COMPARISON BETWEEN POISONS

Species	Cyanide		Paradichlorobenzene	
	Total Insects Caught	Nightly Mean	Total Insects Caught	Nightly Mean
<u>Aedes vexans</u> (Meig.)	164	2.6	195	3.0
<u>Aedes lateralis</u> (Meig.)	26	0.4	43	0.7
<u>Culex pipiens</u> L.	632	10.7	722	11.3
<u>Culex tarsalis</u> Coq.	277	4.5	321	5.0
<u>Anopheles punctipennis</u> (Say)	66	1.1	51	0.8
<u>Anopheles maculipennis</u> Meig.	45	0.7	44	0.7
<u>Theobaldia spp.</u>	9	0.1	8	0.1
Males	229	3.7	305	4.8
Females	1020	16.5	1079	16.9
Total	1249	20.1	1384	21.6

## COMPARISON BETWEEN TRAPS

Species	East Trap		West Trap	
	Total Insects Caught	Nightly Mean	Total Insects Caught	Nightly Mean
<u>Aedes vexans</u> (Meig.)	170	2.7	189	3.0
<u>Aedes lateralis</u> (Meig.)	38	0.6	51	0.5
<u>Culex pipiens</u> L.	742	11.8	642	10.2
<u>Culex tarsalis</u> Coq.	285	4.5	313	8.0
<u>Anopheles punctipennis</u> (Say)	48	0.8	69	1.1
<u>Anopheles maculipennis</u> Meig	27	0.4	62	1.0
<u>Theobaldia spp.</u>	7	0.1	10	0.2
Males	229	3.6	305	4.6
Females	1088	17.3	1011	16.0
Total	1317	20.9	1316	20.6

It appears from the table that little difference existed in the use of the poisons or in the position of the traps. For example 20.9 mosquitoes (mean number) were collected nightly in the east trap, compared with a mean of 20.8 mosquitoes collected nightly in the west trap. Also, 21.6 mosquitoes (mean number) were collected nightly when paradichlorobenzene was used, as against a mean of 20.1 mosquitoes nightly when cyanide was used. It is also apparent that the sex ratio as well as the species ratio is reasonably comparable for both poisons and both traps.

In localities where large numbers of night-flying insects occur, cyanide, however, may be the preferred poison because of its comparatively fast-killing properties.