

cessful in other parts of the United States. The only equipment used in this survey was the same enameled drinking dippers used during the rest of the year to check other mosquito breeding.

Relatively little time was required to check a site. The men waded into the water to about knee depth out to the fringe of plants along the open water. Selecting one plant, they would force their dippers down into the muck near the roots of the plant, then under the roots scraping as close to the main stem as possible and along the roots themselves. This tended to disturb and loosen any larvae present. The dippers were then

carefully raised to the surface. As the mud settled out and the water in the dipper cleared, the larvae were quite visible.

This survey took place from the latter half of October to the middle of November. It seemed the best time to make it since by then the larvae were well-developed fourth instars. The densities of the larvae ranged from one larva in thirty dips to twelve in one dip. Two-man crews were used consuming eighteen man-days. Twenty-five positive breeding sites were found. The size of the sites ranged from two acres to six hundred and sixty-five acres.

#### DDVP AS A KILLING AGENT IN NEW JERSEY LIGHT TRAP

W. A. McDONALD,<sup>1</sup> A. NASIR,<sup>2</sup> A. C. FULMER,<sup>1</sup>  
AND J. M. RYAN<sup>3</sup>

For routine light trap catches in rural areas of northern West Pakistan we were hesitant to use cyanide as a killing agent owing to its toxicity. A test using DDVP (Vapona, Shell Corporation), which is safe to handle, reveals that this fumigant insecticide is satisfactory as a light trap killing agent. An advantage of using DDVP is the ease of recharging the killing jar.

A one pint jar containing potassium cyanide imbedded in plaster of paris was compared on alternate nights to an identical jar containing two 6 cm. discs of Vapona plastic dispenser cut to fit

into the bottom and covered with cardboard. The comparison was carried out in Garden Town, a suburb of the south edge of Lahore, during April, 1964. A standard New Jersey light trap with 25-watt bulb was used. Catches were relatively small since the trap was hung in a screened porch with only one door left open during the night.

Twenty consecutive catches (10 nights for each killing agent) yielded the following totals:

	Cyanide	DDVP
Culicidae <sup>4</sup>	15	32
<i>Phlebotomus</i> <sup>5</sup>	36	27
Other Nematocera	1869	1426
Calypterata	37	32
Acalypterata	95	88
Lepidoptera	103	99
Coleoptera	46	48
Hemiptera	472	368
	2673	2120

<sup>1</sup> Pakistan Medical Research Center (University of Maryland), Lahore, West Pakistan.

<sup>2</sup> Directorate of Health, Government of Pakistan.

<sup>3</sup> U. S. Peace Corps.

<sup>4</sup> Only *Culex pipiens quinquefasciatus* Say (= *C. fatigans* Wied.).

<sup>5</sup> *Ph. clydei*, *squamipleuris*, *antennatus*, *babu*, *bagdadis*.