

AN EFFECTIVE METHOD FOR TRAPPING
ADULT FEMALE *CORETHRELLA* (DIP-
TERA: CHAOBORIDAE)

STURGIS MCKEEVER AND W. KEITH
HARTBERG

Institute of Arthropodology and Parasitology,
Department of Biology, Georgia Southern
College, Statesboro, Georgia 30458

The most commonly used apparatus for capturing adult *Corethrella* is a light trap (Lane and Aitken 1956, Miyagi 1974, Williams and Edman 1968). The last named authors also used resting boxes and vehicle-mounted traps. Most reports indicated that specimens of *Corethrella* were obtained incidental to collecting other Diptera, and that few individuals were obtained.

McKeever (1977) reported that female *Corethrella* were attracted to frog calls which were broadcast from a cassette player. This indicated that frog calls could be used to attract the flies to a trap, with the possibility that large samples could be collected. To test the hypothesis, a CDC miniature mosquito light trap (Hausherr's Machine Works) was modified by removing the cover and by replacing the collecting bag with one made of ladies' nylon hose stretched over a wire frame. The trap was placed with the intake directly in front of the speaker of a Realistic® cassette player (Fig. 1). Calls of 2 tree frogs, *Hyla versicolor* and *H. cinerea*, which were recorded under natural conditions, were broadcast from the player.

Eighteen tests were made at 3 localities within a 15 mile radius of Statesboro, Georgia, between 17 June and 30 September 1979. Two species, *Corethrella brakeleyi* and *C. wirthi*, were present at each collecting site. Each test period was of 30 min duration, beginning ca. 30 min after darkness. For some test periods the trap was operated with the light bulb in place, but during other periods the bulb was removed.

On 17 June, with the light bulb in place, 26 *Corethrella* were caught. On 18 June, at the same locality but with the bulb removed, 62 *Corethrella* were caught. Even though more than twice as many individuals were caught without the light than with it, no special significance should be attached to this result. The number of individuals trapped per period varied from 1 to 566, depending upon temperature, time since the last rain, water level in ponds or swamps at the time of collecting, and whether frogs were calling in the vicinity. However, a distinct advantage of using the trap

with the bulb removed was that usually more than 95% of the catch was *Corethrella*.

Trap success decreased in proportion to the number of frogs calling nearby. Thus, on 19 June at Ogeechee River Swamp, when it was clear and warm and many individuals of *Hyla versicolor*, *H. femoralis* and *H. avivoca* were calling, no *Corethrella* were attracted to the trap. While the trap was in operation, twelve *Corethrella* were captured with an aspirator when they alighted near or were feeding on frogs near the trap. On 21 June at the same locality, when it was cloudy and cool and no frogs were calling, 44 *Corethrella* were collected.

Trap success was much greater following periods of heavy precipitation. During 6 collecting periods throughout August and early September, the catch at 1 site varied between 7 and 41 *Corethrella* for a given period. Heavy rains from 23-28 September followed by over 3 in. of rain on 29 September, flooded large areas near the test site. On 30 September, 566 *Corethrella* and 9 mosquitoes were collected during one 30 min. test period. The light bulb was removed from the trap. This was by far the



Fig. 1 Modified CDC miniature light trap and cassette recorder in position for collecting female *Corethrella*.

most successful collecting period and illustrates the effect of rainfall on the catch as well as the possibility of obtaining a large sample of *Corethrella* virtually free of other insects.

Effectiveness of the combined cassette player and trap without the light bulb was compared with that of the light trap with no sound attractant. On 23 June, the light trap only was operated from 9:30–10:00 p.m. Two *Corethrella* and many other Diptera were collected. From 10:00–10:30 p.m. the trap with bulb removed was operated in conjunction with the cassette player and 28 *Corethrella* were collected. This demonstrates the superiority of using the sound attractant.

In summary, the apparatus described is relatively light, easily transported and highly efficient for capturing large samples of adult female *Corethrella*. Since males are not blood feeders they are not attracted to frog calls.

Only 1 male was caught during 18 collecting periods.

References Cited

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A SPECIAL LOCAL NEED REGISTRATION FOR GROUND-APPLIED MALATHION ULV CONCENTRATE AT TWENTY MILES PER HOUR

THOMAS O. FULTZ, JR., AND JOHN H.
CARTER¹

Chatham County Mosquito Control Commission,
1321 Eisenhower Drive,
Savannah, Georgia 31406

The Georgia Department of Agriculture issued a Special Local Need Registration (SLN Ga. No. 780023) on June 28, 1978. This supplemental Georgia labeling permits ground ultra-low-volume applications of malathion at a maximum vehicle speed of 20 mph. A corresponding insecticide flow rate of up to 4 gal. per hr. is designated for the control of adult mosquitoes. These modifications maintain the prescribed area concentrations of 0.05 pound malathion per acre assuming a 300-ft swath from the vehicle's path. Further, "all applicable directions, restrictions and precautions on the EPA registered label are to be followed with special emphasis on maintenance of specified particle size droplets at the increased speed." This action is the result of a petition to the State of Georgia Department of Agriculture by

the Chatham County Mosquito Control Commission on February 8, 1978.

The necessary preliminary equipment modifications were made, and data were obtained by the Mosquito Control Commission during the fall of 1977. A 2nd pesticide supply line, including filter, flowmeter, and solenoid valve, was added to one of the Commission's operational LECO (H.D.) ULV units. The unit was then calibrated with each line delivering 3 fluid oz. per min. (the minimum recommended rate) to the common nozzle. The gross flow rate was maintained at 4.5 lb. per in.² The droplets at 6 fl. oz. per min. were collected and were measured (Table 1). The droplet size distribution was virtually identical to the distribution of those units operating with a single 3-oz.-per-min. line. Late in October and again in November the droplet distributions at 6 fl. oz. per min. were rechecked. These results and 1 additional check at 8.6 fl. oz. per min. were identical to the earlier calibration.

¹ Present address: Glynn County Mosquito Control, 4145 Norwich Street Extension, Brunswick, Georgia 31520.