

known to be cannibalistic (MacGregor 1915, Reisen and Emory 1976). With *An. stephensi* the small larvae were seen to be caught in the currents created by the action of the mouth brushes of the older larvae. Reisen and Emory (1976) also observed that older *An. stephensi* larvae would seize one another with their mouth parts, but soon separated.

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THE OCCURRENCE OF *Aedes sollicitans* IN WESTERN NEW YORK

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Inland distribution records for *Aedes sollicitans* are rare. Breeding sites other than in coastal saltmarshes have been reported for this species by Fellton (1944). The collection of adult specimens of this saltmarsh mosquito in western New York led to an investigation which located a unique but not uncommon, breeding habitat for this species. A description of the mosquito breeding site, and the possible significance of this new habitat as a focus for a mosquito-borne disease outbreak are discussed.

The saltmarsh mosquito, *Ae. sollicitans*, is an important pest species and a potential vector of arboviruses. Its distribution is primarily confined to the coastal marshes of the southeastern counties of New York and Long Island. It has been collected upstate in Onondaga County by Barnes et al. (1950).

Adult specimens of *Ae. sollicitans* were collected with an aspirator on August 21, 1972 and again on August 31, 1972 at the Town of Amherst in Erie County. This constitutes a new distribution record in New York. The breeding site for this species was located following an extensive search in late 1972 and 1973. A prolific and versatile mosquito breeding site was found adjacent to a New York thruway exit ramp during the late summer of 1972. Larvae

of *Culex salinarius*, *Cx. restuans*, and *Cx. pipiens* were identified from this site in September of 1972. In the spring and early summer of 1973, larvae of *Ae. stimulans* and *Ae. dorsalis*, and adults of *Ae. dorsalis* were collected at this site. On July 19, 1973, 3rd and 4th stage larvae of *Ae. sollicitans* were found at the site.

This mosquito breeding site was a 100-ft. ditch with a sandy bottom located at the base of a grassy embankment leading up to a New York State thruway exit ramp. The slopes of the embankment showed visual evidence of road salt which remained from winter snow dispersal methods utilized during the previous winter. The ditch was about 3 ft wide, and the water depth never exceeded 2 ft. During the dry season about two-thirds of the ditch was dry. The water in the ditch was rich in organic matter, and was continually fed by an overflow of the septic tank and its corresponding sand filter from the toll station office.

Water samples were taken from the ditch biweekly from June 21, 1973 to September 27, 1973, and analyzed chemically and biologically. The pH ranged from 7.4-8.4. The salt content of the water was found to be elevated in the early summer when the *Ae. sollicitans* larvae were found. The salt levels were lower in the fall when the *Ae. stimulans* and *Ae. vexans* larvae were present. These salt levels ranged from 670-1700 ppm for sodium, 50-2750 ppm for chlorides, and 50-165 ppm for calcium. The B.O.D. ran from 2.2 to 35 ppm. The water contained many organisms including; algae, amoeba, copepods, diatoms, and euglena. Total coliform counts ranged from "overgrown" early in the summer to 90/100 ml of sample in the fall.

Drainage problems produced by construction and maintenance procedures used along many super highways have allowed the establishment of mosquito species which have not been previously associated with an area. Normal relief drainage of surface water in many areas has been blocked, thus creating uncontrolled ponding of water. Environmental progression of this water through the addition of chemical and physical pollutants produces overgrown swamplands and bogs which are ideal breeding sites for many of the mosquito species which transmit arboviruses. Construction of subdivisions, shopping plazas, and recreational areas adjacent to these super highways is exposing a greater proportion of the population to the vectors of the arboviruses. Breeding sites which have produced only *Ae. stimulans* and *Ae. vexans* in previous years are currently yielding *Ae. sollicitans*, *Ae. dorsalis*, *Cx. pipiens* and *Cx.*

restuans. The fusion of a habitat into both a fresh and salt water mosquito breeding site has been reported by Dorsey (1944). These widespread man-made ponds are not ecologically balanced, and therefore do not contain the normal predators and diseases which may help to keep the mosquito population under control.

The method by which *Ae. sollicitans* reached and established itself in this new habitat has not been determined. However, it is important to note that similar habitats for this species are present at nearly all of the 100 exit ramps of the New York State thruway.

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OBSERVATIONS OF CORETHRELLA FEEDING ON TREE FROGS (HYLA)

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The genus *Corethrella* frequently is placed in the family Chaoboridae which are referred to as non-biting mosquitoes. *C. brakeleyi* and *C. wirthi* have been found with blood in their digestive tract; some individuals contained mammalian blood and others avian blood (Williams and Edman 1968). This is the only report that *Corethrella* feeds on blood. During the last 3 years I have observed and photographed *Corethrella* spp. feeding on 3 species of tree frog—*Hyla avivoca*, *H. cinerea*, and *H. gratiosa*—in Bulloch Co., Ga. Four of these flies were collected on April 17, 1977 and were identified by David G. Young, University of Florida, as 2 *Corethrella brakeleyi* and 2 *C. wirthi*, all females.

On June 26, 1975, *Corethrella* sp. were photographed while they were feeding on *H. gratiosa* and *H. cinerea* which were calling in a grassy, temporary pond near Statesboro, Ga. On June 14, 1975, *Corethrella* sp. were photographed while they were feeding on *H. avivoca* in a hardwood swamp on the Ogeechee River flood

plain where Ga. Highway 24 crosses the river 15 miles east of Statesboro. The specimens on *H. avivoca* and *H. cinerea* had a single wing bar. The 2 species of *Corethrella* with a single wing bar which are native to eastern U.S.A. are *C. wirthi* and *C. appendiculata* (A. Stone, 1968).

On June 14 and 28, 1976, other specimens of *Corethrella* were photographed while feeding on *H. avivoca* at the Ogeechee River locality. Their feeding habits also were observed. Most individuals came when the frogs were calling, alighted on leaves or branches on which the frogs were sitting, and then attempted to walk on to the frogs. Feeding usually took place on the legs, but two were observed on the head of their host. The frogs repeatedly moved their legs in an effort to dislodge the flies. Some frogs extended their legs full length and rubbed them against each other to remove the flies. In capturing feeding specimens with an aspirator, some flies had to be scraped from their host.

In July, 1976, while collecting specimens for identification, a spotlight was focused on individual *H. avivoca* at the Ogeechee River. When the frogs called, several *Corethrella* would come to their immediate vicinity and some would alight nearby. Those that did not alight would disperse as soon as the frogs ceased calling. The same phenomenon was observed on April 17, 1977. This indicated that the flies were attracted to the calls of their host.

As a test of whether the flies were attracted to frog calls, the calls of *H. cinerea* and *B. terrestris* were broadcast from a Realistic cassette player in Ogeechee River swamp on May 7, 1977. The site was the locality of a temporary pool where *Corethrella* were collected on April 17. No rain had fallen for over 3 weeks; no water was present in the pond and no frogs were calling when the test was made. Broadcasting took place intermittently from 9:00 to 9:45 p.m. The player was placed horizontally on a fallen tree, 1.5 m above the ground, with a white paper towel over the speaker. A spotlight was focused on the paper towel. Three separate calls of *H. cinerea*, with a combined duration of 55 sec, and calls of *B. terrestris* with a combined duration of 35 sec, were broadcast repeatedly. *H. cinerea* is common in the swamp; *B. terrestris* is rare or absent.

The spotlight remained on continuously for the first 15 min. and less than 5 *Corethrella* were observed. During the next 30 min. the spotlight was turned off while the calls were broadcast and then turned on. After 40 sec. of broadcasting calls of *H. cinerea* with no light, 3 to approximately 15 *Corethrella* were observed within 30 cm of the speaker each time the light was turned