

OCCURRENCE OF *CULEX (CULICIOMYIA) SPATHIFURCA* (EDWARDS) (DIPTERA: CULICIDAE) IN INDIA—NEW COUNTRY RECORD

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ABSTRACT. *Culex (Culiciomyia) spathifurca* (Edwards) is recorded for the 1st time in India. Immature specimens of this species were collected from tree holes in a mangrove forest. Notes on the larval habitat are given.

KEY WORDS *Culex spathifurca*, India, first record, mangrove forest, tree hole, *Avicennia* spp.

Culex (Culiciomyia) spathifurca (Edwards) is known to occur in Borneo, Java, New Guinea, Singapore, Malaysia, Thailand, the Philippines, Taiwan, Sri Lanka, and Maldiv Islands (Bram 1967). This species has not been recorded from India until now, although its known distribution lies between 10°S and 25°N and 75°E and 150°E. This communication reports the 1st record of *Cx. spathifurca* in India. Specimens were obtained during a mosquito faunistic study in a mangrove forest ecosystem at Pichavaram (11°27'N, 79°47'E), Tamil Nadu State, southern India. The mangrove forest located at sea level is traversed by a very large number of channels and creeks that connect the Coleroon estuary in the south to the Vellar estuary in the north (12 km apart).

All the specimens were collected as larvae from tree holes: collection no. PV4 collected on September 25, 1997, from a single tree hole and reared, 6 males, 13 females, 6 associated larval and pupal skins, 1 male terminalia; PV5 collected on October 14, 1997, from 2 tree holes and reared, 22 males, 43 females, 17 associated larval and pupal skins, 3 male terminalia; PV6 collected on November 19, 1997, from 11 tree holes and reared, 56 males, 46 females, 11 associated larval and pupal skins, 3 male terminalia. From these collections, 2 males, 1 male genitalia, 2 females, 1 pupal skin, and 1 larval skin were deposited in the USNM, Washington, DC; 1 male, 1 male genitalia, and 1 female were deposited in the museum of Centre for Research in Medical Entomology, Madurai, India. Remaining specimens were retained in the Taxonomic Reference Centre of the Vector Control Research Centre, Pondicherry, India.

The species was identified by the unique male terminalia with bifurcate gonostylus and 4th-instar larval characters of head hairs 5,6-C with 3 or 4 branches and the subventral tufts of the siphon single. Other morphological details of adults, pupae,

and 4th-instar larvae conform to descriptions of the species by Bram (1967). Setae 5,6-C with 6-7 branches and siphon setae all double, as described by Delfinado (1966), were not found in any of the specimens collected in this region. It is probable that variations exist among the different populations of this species.

Tree holes found in *Avicennia officianalis* Linnaeus and *Avicennia marina* Vierh., which are typical mangrove flora, constituted the only habitat for immatures. Associated mosquito species found in these tree holes were *Culex brevipalpis* (Giles), *Aedes reginae* Edwards, and *Aedes krombeini* Huang. The presence of *Cx. spathifurca* commenced when salinity level of water in tree holes dropped below 10,000 mg/liter after the start of the northeast monsoon rainfall. The number of positive tree holes increased as salinity levels declined. The greatest number of tree holes with immatures of *Cx. spathifurca* occurred when salinity levels ranged between 325 and 1,100 mg/liter.

Extensive sampling of swamp pools and crab holes did not yield any larvae of this species. Previously, larvae of *Cx. spathifurca* have been collected from crab holes (Carter and Wijesundara 1948), elephant tracks, puddles, brackish water in nipa palm leaves, rock pools, ditches, and bamboo stumps (Bram 1967). More recently, Samarawickrema et al. (1982) found breeding of this species in coconut husk pits in Sri Lanka. Breeding of *Cx. spathifurca* in tree holes as reported here adds one more larval habitat of this species to those already known.

We are grateful to P. K. Das, Director, Vector Control Research Centre, Pondicherry, for his support and encouragement. Thanks are due to K. Vaidyanathan for his assistance in the field work.

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