

## A NOTE ON *CULEX (LOPHOCERAOMYIA) INFANTULUS* EDWARDS AND ITS OCCURRENCE IN MALAYA (DIPTERA: CULICIDAE)

By Donald H. Colless<sup>1</sup>

**Abstract:** *Culex infantulus* Edwards, not previously known from Malaya, has now been collected in Segambut, Selangor. The probable phylogeny is discussed briefly, and characters for separating it from other Malayan species are given.

In a recent review of the genus *Culex*, subgenus *Lophoceraomyia*, in Malaya (Colless 1965), I did not include *Culex infantulus* Edw. which had up till then not been found in that country. I have now received a series of adults and immature stages collected in Segambut, Selangor, from water in an earthenware jar and tentatively identified as *C. infantulus* by A. Ganapathipillai of the Institute for Medical Research, Kuala Lumpur. Detailed comparison with published descriptions leaves no doubt that the identification is correct. Since the species is widely distributed in surrounding countries, the record from Malaya is hardly surprising, but by no means trivial, in view of the many insect species with anomalous distributions that skip the Malayan Peninsula.

In my published keys to the subgenus (op. cit.), the male of *C. infantulus* will run to *C. cinctellus* Edw. because of its banded abdomen but is readily distinguished by the greatly reduced scale tufts on the antennae; a short, internal tuft of several pointed scales on segment 9; a similar, but much longer, tuft of about 4-6 scales on segment 10; and no tufts on other segments. Both tufts are inconspicuous and easily overlooked. The terminalia, and particularly the reticulate pattern on the phallosome processes, are also highly characteristic (Delfinado 1966).

The female could also be mistaken for *C. cinctellus*, but the narrow wing scales on R2 and R3 and presence of about 4 ventral setae at the base of the proboscis key it out with the *mammilifer* group from which it is separated by the banded abdomen. It also differs from *cinctellus* in having only 3-5 pleural hairs, instead of about 10.

The larva runs to couplet 21. of my key, where it does not agree precisely with either alternative, having 8-9 siphon tufts, but the basal ones are short

and inconspicuous. This alone is sufficient to identify it, but, in addition, prothoracic hair No. 7 is 3-branched, a condition rarely seen in the *mammilifer* group to which the larva of *infantulus* otherwise conforms.

The systematic relationships of *C. infantulus* are rather perplexing. It fits into neither group A (*fraudatrix* group) nor group B (*mammilifer* group) of my classification (op. cit.) and has other attributes, such as the male terminalia, that justify placing it in a third group, possibly including also *C. minutissimus* (Theo.). Such a group corresponds to the "Group A" of Edwards (1932), excluding *C. chaetovenralis* (Theo.) which is a *Neoculex* and *C. cylindricus* Theo. which belongs in the *fraudatrix* group. The female of *infantulus* most closely resembles those of group B, as does the larva, which has prothoracic hair No. 13<sup>2</sup> branched and pentad hair No. 2<sup>2</sup> unbranched. The latter attribute is found in some non-Malayan members of group A (Belkin 1962), but, as far as I am aware, not the former. The male however, has a small, but distinct, external basal process on the palp and a rudimentary internal one<sup>3</sup>; this is an apomorphic attribute of group A. The extraordinary terminalia show no clear relationship to either group, though structurally there is perhaps more resemblance to those of group A. A further distinctive feature is provided by the "joint" of the proboscis, which is situated near the center and well distal to the usual position.

If, as I have suggested elsewhere (op. cit.), the ancestor of the subgenus was of group B-type, the resemblances of *infantulus* to group B are plesiomorphic. It seems therefore most credible that it represents a very early, and now highly specialized, offshoot of the group A stock that branched off soon after the origin of that line; it may well have been a very early colonist of the more western areas. Such a phylogeny would imply that the lack of scale tufts on antennal segments 7 and 8 of the male

<sup>2</sup>Respectively, prothoracic hair No. 14 and hair No. 2 of seg. VIII in the terminology of Belkin 1962.

<sup>3</sup>Both processes are very inconspicuous, but visible in cleared preparations; the latter suggest that these processes represent fused tufts of setae.

<sup>1</sup>Division of Entomology, Commonwealth Scientific & Industrial Research Organization (CSIRO), Canberra, A.C.T., Australia.

is due to loss, rather than non-development. Alternative phylogenies would imply parallel developments of either the basal processes of the palp, or the *Culiciomyia*-type of phallosome, both of which seem far less credible.

*Acknowledgment:* I am indebted to A. Ganapathipillai and Cheong Weng Hooi for the opportunity to examine the Malayan specimens of *C. infantulus*.

## REFERENCES

- Belkin, J. R.** 1962. The mosquitoes of the South Pacific (Diptera, Culicidae). Univ. of California Press, Los Angeles.
- Colless, D. H.** 1965. The genus *Culex*, subgenus *Lophoceraomyia* in Malaya, (Diptera, Culicidae). *J. Med. Ent.* 2: 261-307.
- Delfinado, M. D.** 1966. The Culicine mosquitoes of the Philippines, tribe Culicini (Diptera, Culicidae). *Mem. Amer. Ent. Inst.* 7: 1-252.
- Edwards, F. W.** 1932. *Gen. Ins. Diptera. Fam. Culicidae.* 194: 1-258.