Culex (Culex) barraudi Edwards 1922 and Culex (Culex) edwardsi Barraud 1923.*

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Bram (1967) synonymised C. edwardsi with C. barraudi. He found that the holotype male of barraudi from Mahdopur, India, had longitudinal stripes on the mid and hind femora and tibiae, which occur also in the holotype female of edwardsi from Shillong, Assam, India, and he found male terminalia of the two species identical.

Bram identified specimens from Minj, T.P.N.G., as barraudi and indicated that this was a new record for New Guinea; however C. edwardsi was recorded from Minj by Peters and Christian (1963, p. 41).

Occurrence in Queensland of a Culex species with longitudinal stripes on the mid and hind femora has been recognised since 1943. In 1949 I examined at the British Museum (Nat. Hist.) the holotype of edwardsi, a topotypical male (terminalia unmounted), and two males with terminalia mounts from Amol Nullah, Rewa State, India. No distinctive differences were found for Queensland specimens, but some doubts were felt about positive identification, since at that time C. edwardsi had not been reported between Assam and south-east Queensland. More recently this species has been recorded from Queensland as C. edwardsi (e.g. Marks 1968). I have not examined specimens of C. barraudi.

Bram (l.c.) states that barraudi has scutal scales golden brown and silver, all dorsal wing scales dark brown, terga dark with broad basal white bands.

Barraud (1934) states that edwardsi has scutal scales dark brown and yellowish brown, wings dark scaled.

In 1949 I noted that the holotype female of edwardsi had broad white scales all along the posterior edge of C, along Sc, and as lateral squame scales on the distal half of R_1, median squame scales being dark; scutal scaling and sterna did not differ from Queensland specimens; bands on terga III-V were curved and there was some white scaling at apex on terga V-VII.

Examination of 30 specimens from 10 Queensland localities and 15 specimens from two New Guinea localities (Minj and Aiyura) shows that scutal scales are as described by Barraud. The white scaling on C, Sc and R_1 is variable, usually as extensive as in the holotype of edwardsi in larger females, occasionally reduced to a few white scales near base of C in small females and in males. Almost always there are pale scales apically on tergum VII, sometimes on V and VI. Sternal scaling varies from almost all dark in some males to almost all pale in some females, but usually the sterna are pale with indefinite apical or preapical dark bands interrupted in the midline. Male proboscis and palps are as described for edwardsi by Barraud.

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Barraud (l.c) and Bram (l.c) describe and figure the larva of barraudi, which has eight siphonal hairs (three pairs ventrolateral, one pair dorsolateral) and saddle hair (1-X) 2-branched. Larvae of the species identified as edwardsi from Minj and from Queensland localities consistently have 11 or 12 siphonal hairs (usually 3 1/2 or 4 pairs ventrolateral, 2 pairs dorsolateral) and 1-X single. I conclude that specimens from New Guinea and Queensland are conspecific with one another but not with barraudi.

Carter and Wijesundara (1948) describe and figure a larva from Ceylon which they attribute to C. edwardsi. This has 14 siphonal hairs (4 pairs ventrolateral, 3 pairs dorsolateral) and 1-X single; head hair 5-C has 5-6 branches (3-4, rarely 5, in Queensland, 4-5 in Minj larvae). This Ceylon larva may or may not represent a third species in the complex, but in any case is unlikely to be conspecific with barraudi.

The foregoing appear to be the distinctive differences between the three larvae in this complex, judging from the descriptions and figures cited. Bram (l.c.) describes a proximal prolongation of the stirrup-shaped piece of the siphon which he considers diagnostic for barraudi. This has not been seen in Minj or Queensland larvae, although this region of the stirrup-shaped piece appears somewhat variable in shape.

Thus in this species complex there are at least two, possibly three, species separable on larval characters but apparently not at present separable as adults (wing scaling of barraudi needs checking). There are two names available, barraudi and edwardsi. Identity of the larva of barraudi appears well established. Edwardsi may indeed be a synonym of barraudi as Bram considers it to be, but this cannot be established until a link-bred topotypical series of edwardsi is obtained or until reliable characters for separating the adults are found. Until such evidence is forthcoming, I believe that mosquito systematics will be best served by continuing to identify the species found in New Guinea and Queensland as edwardsi, rather than add another name to the literature. This species, incidentally, has been taken in chicken-baited, light, and truck traps but is not known to bite man.

References

Barraud, P. J. 1934. Family Culicidae. Tribes Megarhinini and Culicini. The Fauna of British India, including Ceylon and Burma. Diptera. Vol. V, 463 pp., illus. London.

Bram, R. A. 1967. Contributions to the mosquito fauna of Southeast Asia (Diptera, Culicidae) II. The genus Culex in Thailand. Contr. Amer. ent. Inst. 2(1): 1-296, illus.

Carter, H. F. and D. P. Wijesundara. 1948. Notes on some Ceylon culicine mosquitoes. Ceylon J. Sci. (B). 23: 135-151.

Marks, E. N. 1968. Mosquitoes (Culicidae) of Fraser Island. Qd Nat. 19:47-60.

Peters, W. and S. H. Christian. 1963. The bionomics, ecology and distribution of some mosquitoes (Diptera:Culicidae) in the Territory of Papua and New Guinea. Acta trop. 20: 35-79.