

A new *Anopheles* (Dipt., Culicidae) from Nigeria together with a note on *An. brohieri* Edwards

By M.W.SERVICE

Department of Medical Entomology, Liverpool School of Tropical Medicine,
Pembroke Place, Liverpool L3 5QA

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While in Nigeria I was presented by Dr. Y. Bang of the Arbovirus Vector Research Unit, World Health Organization, Enugu, with some mosquitoes which had been caught in human bait catches. Among the collection were five female *Anopheles* which belong to a new species and are described here.

Anopheles Meigen

Meigen 1818, p. 10. Logotype, *Anopheles maculipennis* Meigen (by designation 1959, *Int. Comm. Zool. Nomencl., Opinion* 547).

Subgenus *Cellia* Theobald

Theobald 1902, p. 183, 1903, p. 107. Orthotype, *Anopheles pharoensis* Theobald, by original designation.

Anopheles cristipalpis sp. nov. (Fig. 1)

Described from five female adults caught in human bait catches in northern Nigeria. In general the specimens resemble *Anopheles pharoensis* Theobald and in some characters *An. squamosus* Theobald and clearly belong to section I of the key to the African adult

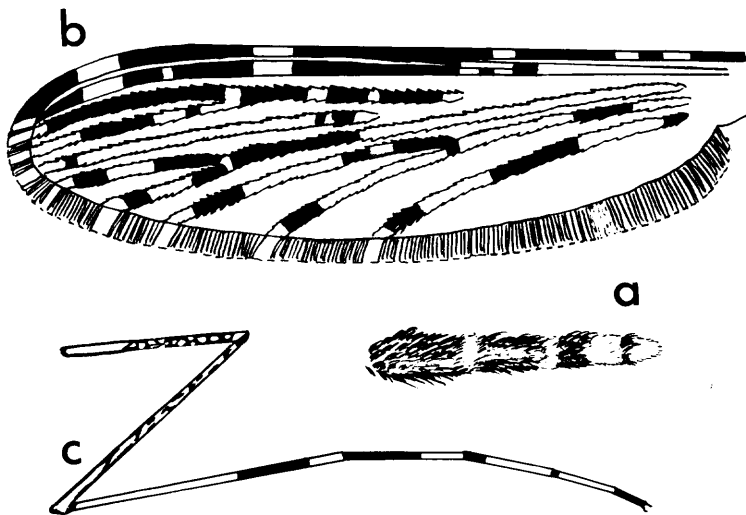


Fig. 1. *Anopheles cristipalpis* sp. nov.; (a) palp; (b) wing and (c) hind-leg.

Anopheles given by Gillies and De Meillon (1968), which contains nine species having laterally projecting tufts of scales. The present species is readily distinguished from all of these species by the pattern of pale and dark scaling on the hind tarsi.

Female

Palps. Shaggy, four irregular white bands at apices of segments 2–5, also scattered white scales (Fig. 1a). *Head.* Erect, white truncated scales confined to relatively small anterior area on occiput, erect and semi-erect dark scales in broad band behind white scales and laterally adjacent to eyes. Frontal tuft of narrow white scales well developed. *Mesonotum.* Dark grey, distinct pair of black oval spots on level with fossae on either side of a median black line. *Thoracic pleurae.* Dark grey, three distinct transverse silvery lines. *Wings.* As in figure 1b, but pale scaling on vein 2·2 may be more extensive. All pale scales white, not yellowish or creamy, pale fringe spot behind vein 6 indistinct, scales of fringe not broad. *Legs.* Fore-femora, mainly black anteriorly, pale posteriorly, apex and base dark; fore-tibia, white scaled with scattered patches of dark scales, pale posteriorly; fore-tarsi, segment 1 mainly white, but scattered areas of dark scales; segment 2, basal third to half dark; segment 3, basal quarter to third dark; segments 4 and 5 dark. Mid-femora, dark with areas of white scales, posteriorly pale; mid-tibiae, anteriorly mainly pale, posteriorly pale scaled but dark basally; mid-tarsi segment 1, apical white band, scattered white scales on dark area; segments 2 and 3, apical third pale; segments 4 and 5 dark. Hind-femora narrowly dark basally, followed by pale area and then dark scaled having scattered pale scales, apically narrowly pale, posterior surface mainly pale; hind-tibiae, dark with scattered pale scales; hind-tarsi, segment 1, narrowly dark basally but otherwise basal half or more pale, then dark band followed by pale apical band; segment 2, apical third pale; segment 3, apical two-thirds to three-quarters pale; segment 4, narrowly dark basally; segment 5 dark (Fig. 1c). *Abdomen.* Lateral basal tufts of dark scales on segments 2–7, tergites clothed in bronzy coloured scales, sternites with broad white scales, especially numerous on posterior segments, cerci dark scaled.

Holotype ♀ NIGERIA: Biting man in grounds of Rest House, Kafanchan (09° 39' N, 08° 33' E) in Kagoro Hills of Jos-Plateau, 1570 m, viii 1975 (Y. Bang); paratypes 4♀♀ same data as holotype. All specimens deposited in British Museum (Natural History), London.

Anopheles brohieri Edwards

This is basically a northern savannah species having a distribution restricted to West Africa. It belongs to the *marshalli-hancocki* group of *Anopheles* (*Cellia*) and adults closely resemble both *An. hancocki* Edwards and *An. theileri* Edwards. It was first recorded from Wa in Ghana (Edwards, 1929) and described as a variety of *An. theileri* Edwards, and later raised to specific status by Hamon (1954), and then regarded as a variety of *An. hancocki* by Adam *et al.* (1956). It was finally placed as a species by Gillies and De Meillon (1968). Adults, and to a lesser extent larvae, exhibit considerable taxonomic variation which has resulted in the naming of three varieties, *An. theileri* var. *septrionalis* Evans, *An. hancocki* var. *masseguini* Adam, Hamon, Rickenbach & Lips, and *An. hancocki* var. *gilroyi* Service. All are now considered to represent examples of variations found within *An. brohieri* (Gillies and De Meillon, 1968), although var. *gilroyi* is unusual because it was collected further south than has been recorded for *An. brohieri*.

The present three females which were caught in July 1975 in the village of Abor, some 19 km south of Enugu (06° 27' N, 07° 33' E), Nigeria, are identified as far as couplet 14 of section II of the key provided by Gillies and De Meillon (1968),

14. Hind tarsus 3 entirely pale. . . . *hancocki*, and *brohieri* in part
Hind tarsus 3 dark basally. . . . *brohieri* in part, and *theileri*

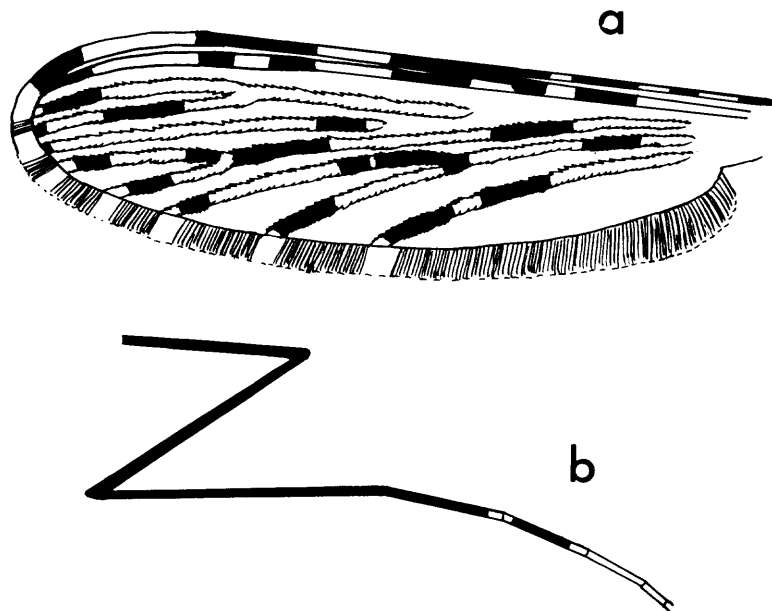


Fig. 2. Wing (a) and hind-leg (b) of an atypical form of *Anopheles brohieri* collected from Nigeria.

Because all specimens have the third hind tarsal segment narrowly but distinctly pale scaled basally prior to the dark band (Fig. 2b) they do not key out satisfactorily. Furthermore, adults differ from both *An. hancocki* and *An. brohieri* in lacking a pale apical spot on the tibiae. The distribution of pale and dark scales on the wings is within the variations exhibited by *An. hancocki* and *An. brohieri* which, like the present specimens, may have a pale fringe spot opposite vein 6. The wing ornamentation also resembles in many respects that of *An. theileri* especially in the pale scaling of vein 6 and the presence of a pale fringe spot opposite it (Fig. 2a). In *An. hancocki* and *An. theileri* the pale wing scales are creamy and in *An. theileri* yellowish, whereas in the present specimens they are white.

According to Gillies and De Meillon (1968) *An. theileri* is found mainly in southern Africa, although its range extends northwards through Zambia and Mozambique to Katanga and south-western Tanzania. It is not a West African species and records from this area probably refer to *An. brohieri*.

Although pale scales are present at the base on the third hind tarsal segment in all specimens, and this separates adults from typical *An. brohieri*, in view of the variability of this species it seems prudent to regard the specimens as representing an extreme variation within the species. It is nevertheless interesting that this variation and that formerly called *gilroyi* are only known from the Enugu area, which is in the rain forest of Nigeria, whereas *An. brohieri* is a northern savannah species.

There is a long overdue need to study the variability exhibited in *An. hancocki*, *An. brohieri* and *An. theileri* by rearing out adults from identified larvae, by comparing their polytene chromosomes and by cross mating experiments.

SUMMARY

A new *Anopheles* species of the subgenus *Cellia* Theobald, named *An. cristipalpis*, is described

from five females caught in human bait catches in Nigeria. A description is also given of three females that are apparently an atypical form of *An. brohieri* Edwards.

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