

MOSQUITOES OF NEW GUINEA (DIPTERA : CULICIDAE)

PART VIII.—NEW SPECIES OF THE GENUS *Uranotaenia* LYNCH ARRIBÁLZAGA, 1891

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FIVE new species of *Uranotaenia* are described in the present paper and in Part IX. This serves to emphasise the wealth of speciation of this genus in New Guinea, and the total number of species and subspecies listed by Iyengar (1960) is thus increased to a probable 22 on the New Guinea mainland (and 30 in the south-west Pacific including the New Guinea mainland). One of the species described below, *Uranotaenia amiensis* sp. n., provides a link with some of the African members of this genus. This will be discussed further in Part IX.

***Uranotaenia albosternopleura* sp. n.**

Dark brown species, readily recognised by the combination of a distinct patch of silvery-white scales on upper sternopleuron, an indistinct line of silvery scales in front of wing root, dark head scales and poorly developed male antennal hair whorls.

Female (fig. 1).—*Head*: proboscis short, broadened distally, dark brown scaled and with numerous fine, short, dark brown hairs extending from the base to the apex; length $10 \times$ palpi. $1.1 \times$ abdomen, $0.75 \times$ fore femur, $0.77 \times$ wing. Palpi very short, barely extending beyond the clypeus, dark brown scaled with numerous short dark brown bristles pointing distally. Clypeus heart-shaped, light brown. Antennae long, $1.2 \times$ proboscis, dark brown with black, sparse hair whorls. First flagellar segment not elongated, tori light brown, bare except for 2 or 3 minute hairs on medial surface. Frontal and orbital bristles strong, black, bases of frontal pair separated by width of first antennal segment, a row of about 6 strong orbital bristles. Whole vertex covered with broad appressed scales, uniformly dull brown but giving an azure to purple sheen in certain lights. Narrow erect scales not visible in holotype, but some paratypes with 3 or 4 very small erect scales interspersed among the flat occipital scales. *Thorax*: scutal integument uniformly dark brown and densely clothed with rather long but very narrow dark brown scales, a few such scales on the prescutellar area. Up to 6 silvery-white scales in a line dorsal to the paratergite as figured (mostly missing in most specimens and easily lost by rubbing). These scales are large, oval and appressed. A full row of rather short acrostichal and long, strong, dorsocentral bristles present, also usual strong supralar group, all bristles dark brown with a purplish metallic sheen. Scutellum dark brown with broad, flat, dull brown scales on all lobes, 2 strong bristles on each lateral lobe; a strong medial pair and weaker lateral pair on median lobe, all dark brown. Pleural integument uniformly dark brown but ventral half of *msp* and *stp* pruinose. A large patch of silvery-white, broad, overlapping scales on the dorsal half of *stp* as figured (giving the species its name). Posterior surface of *apn* with small, broad, appressed, silvery-white scales (in most lights these are an opalescent grey). No other pleural scales. Pleural bristles: 2 weak medial and 1 strong lateral on *apn*, 1 strong *ppn*, and 1 weak spiracular, a single strong pre-alar, 3 weak upper *stp*, a line of 4 lower *stp* ventral to the scale patch, 1 weak upper *msp* and 1 strong lower *msp*; dorsal groups dark brown, ventral groups a lighter brown. Mesopostnotum dark brown, bare, pruinose. Halteres, stems light fawn, knobs dark scaled. *Wings*: length 1.5 mm., all vein scales dark brown, fringe paler, squama bare, outstanding vein scales paler, long and moderately broad. Vein R_{2+1} about 0.2 of vein R_{2+3} , vein M_{1+2} about 0.88 of vein M beyond *m-cu*. *Legs*: coxae and trochanters light fawn coloured with several slightly darker bristles on coxae but no scales. Femora, tibiae and tarsi dark brown with a bronzy sheen in certain lights except ventral surface of femora, which are a lighter brown. Mid femur expanded on basal three-fourths.

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No specialised scales or hairs. Relative lengths of tarsal segments decreasing normally towards extremity. *Abdomen*: tergites uniformly dark brown scaled with a row of fine dark hairs at the apex of segments I-VII. Scales have a purplish metallic sheen in certain lights. Sternites covered with pale fawn scales and rows of fine light coloured hairs basally.

Male.—General description as for female (above). *Head*: proboscis $1.4 \times$ palps, $1.2 \times$ abdomen, $0.7 \times$ fore femur, $0.8 \times$ wing. Antenna $1.2 \times$ proboscis, strongly curved, as sparsely whorled as the female, first flagellar segment not elongated. Other characters of head and thorax as in female. *Legs*¹: no specialised scales or hairs, mid-tarsal segment IV very short, mid-femur swollen on basal two-thirds. Fore and hind tibial combs rather poorly developed. Fore leg claws equal in length, untoothed, one broadened, mid-leg single claw only, hind leg 2 small equal broadened claws. *Terminalia* (fig. 2): ninth tergite broad, proximal part deeply emarginate and sclerotised, apical part shallowly emarginate, lateral lobes laterally sclerotised; proctiger with no sclerotic thickenings; coxite short and triangular, basal lobe with 5 or 6 stout bristles



FIG. 1.—*Uranotaenia albosternopleura* sp. n.: female, lateral view of head and thorax.

apically and 2 or 3 smaller ones basally, style as figured. Mesosome with a narrow, basal, dorsal sclerotised bridge; formed of 2 triangular plates with dorsolateral, ventrolateral and distal angles as figured, 2 small ventrolateral teeth directed laterally, dorsal margin furled medially towards basal bridge.

Larva and pupa.—Unknown.

Material described

Holotype ♀, NEW GUINEA: Maprik, Sepik District, v.1958 (resting at edge of small rock pool, river edge 3 miles west of Maprik). *Paratypes*: 1 ♂ (*allotype*), same locality data as holotype; 1 ♂, 3 ♀, same data as holotype; 4 ♂, 7 ♀, NEW GUINEA: Yambi (15 miles south of Maprik), light trap, 17.v.1958; 3 ♂, 1 ♀, NEW GUINEA: Wewak, Sepik District, 27.viii.1956 (1 ♂ mounted on slide).

All collected by Dr. W. Peters. Two male and two female paratypes (Yambi) and one male on slide mount (Wewak) in collection of British Museum (Natural History). Holotype, allotype and remaining paratypes in collection of Department of Entomology, C.S.I.R.O., Canberra, A.C.T., Australia.

Uranotaenia moresbyensis sp. n.

Moderate sized, ornamented species with well developed male antennae, minute palpi, no specialised setae or scale tufts on the male legs and the pleural scales in the form of a patch. Hind tarsal segments without white scales.

¹ Relative lengths of leg segments will be shown in Part IX of this series, fig. 3.

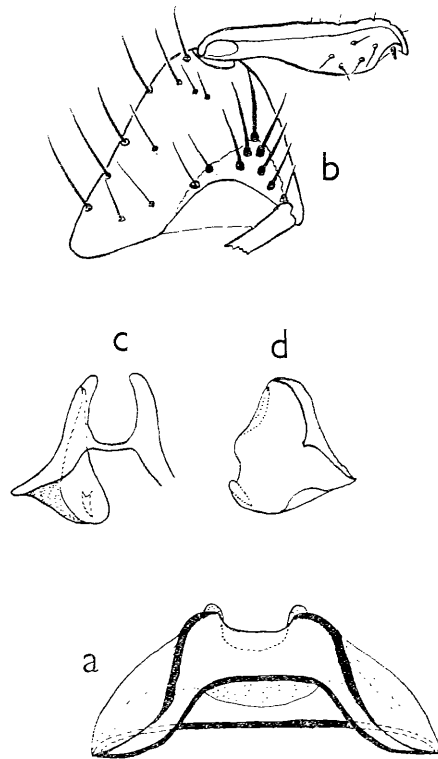


FIG. 2.—*Uranotaenia albosternopleura* sp. n., male terminalia: (a) ninth tergite and proctiger, dorsal view; (b) coxite and style, inner lateral view; (c) mesosome, dorsal view; (d) mesosome, inner lateral view of one side.

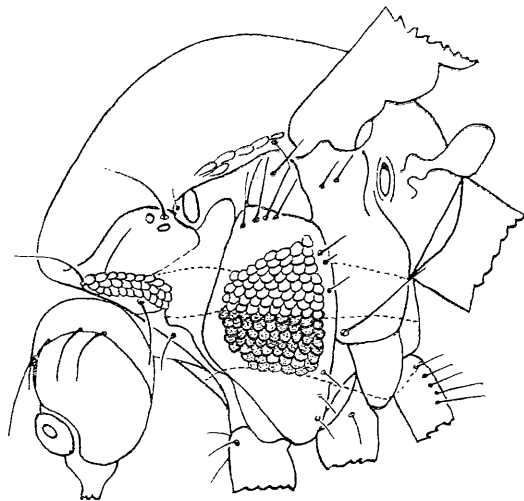


FIG. 3.—*Uranotaenia moresbyensis* sp. n.: male, lateral view of head and thorax.

Male (fig. 3).—*Head*: proboscis, $18 \times$ palps (which are minute), $0.81 \times$ abdomen, $1.04 \times$ fore femur, $0.74 \times$ wing; expanded dorsoventrally on distal third, covered with light brown scales and a few light brown hairs towards the apex, labellae orange. Palpi minute, bulbous, brownish-yellow with numerous short light brown hairs. Clypeus same colour, bare. Antennae $1.2 \times$ proboscis, with dense hair whorls, light brown in colour, first flagellar segment shortened, 2 apical segments elongated to about twice length of preceding segments; torus dark brown, pruinose, bare. Vertex covered with flat appressed broad scales whose colour varies from metallic peacock blues and greens to an opalescent light brown, depending on direction of the light. A row of about 5 narrow, dark brown, erect occipital scales among the flat scales. Two strong, widely separated frontal bristles, black with a metallic sheen and a row of 4 similar but shorter

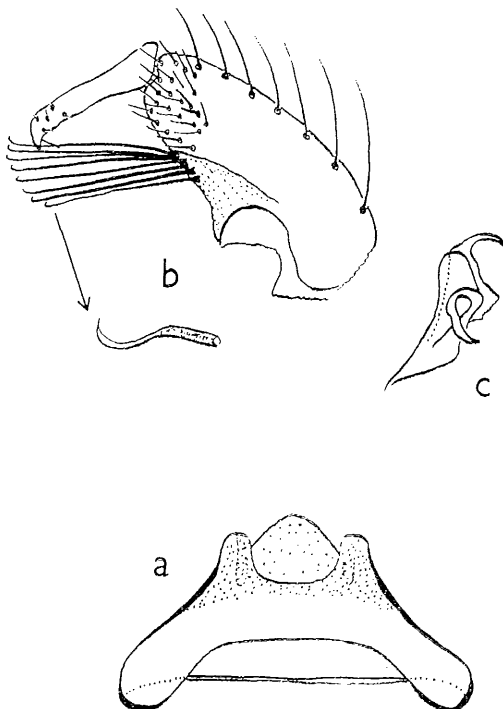


FIG. 4.—*Uranotaenia moresbyensis* sp. n., male terminalia: (a) ninth tergite and proctiger, dorsal view; (b) coxite and style, inner lateral view (tip of one basal coxite lobe spine enlarged); (c) mesosome, inner lateral view of one side.

orbital bristles on each side. *Thorax*: scutal integument uniformly light brown, fairly densely clothed with very small, curved, hair-like, light brown scales. A row of about 6 large, oval, pearly-grey scales dorsal to the paratergite as figured. Scutellum damaged but apparently light brown and covered with oval shaped, flat, dark brown scales on all lobes. Strong metallic black dorsocentral and weaker acrostichal bristles forming a complete row on scutum. Two strong lateral and 1 strong medial bristle on lateral lobes of scutellum. Pleural integument dark brown with a pale pruinose band running from and including *apn*, across upper third of *stp* and lower third of *msp* to ventrolateral part of *mts*. Small, oval, flat, opalescent, whitish scales on posterior surface of *apn* and a patch of larger scales of similar colour on pale portion of *stp*. Ventrad and continuous with these are darker scales blending with colour of integument and thus difficult to distinguish. The most ventral of the scales paler, blending with pale ventral extremity of *stp*. Pleural bristles: 3 strong, metallic black *apn*, a single strong *ppn* with one or two large flat scales at its base (these scales may be artefacts), a single small spiracular, 1 pre-alar, 4 upper *stp*, 2 or 3 strong upper *msp* and a single strong lower *msp*, 3 delicate dark brown bristles on the dorsoposterior border of the *stp* and 3 very delicate pale ones on the ventroposterior border. Mesopostnotum dark brown dorsally, narrowly very pale laterally. Halteres light on basal two-thirds of stem, rest of stem and knobs dark scaled. *Wings*: length 1.5 mm., wing scales

light brown, fringe paler. outstanding vein scales very broad and rounded distally. Vein R_{2+1} about 0.3 of vein R_{2+3} , vein M_{1+2} about 0.80 of M beyond $m-cu$. No paler scales on dorsum of veins. *Legs*: coxae and trochanters yellowish, with slender yellowish bristles. Midfemur swollen on basal two-thirds, all legs uniformly light brown without pale basal bands. Normal tibial combs on fore and hind legs. No specialised scale tufts but a dorsal row of 4 short erect spines just beyond the base of the front tibia. Front claws unequal, one with a membranous blade, the other narrow; mid-claws, one very long and narrow, the other short; hind claws apparently as front claws (but the smaller one appears to be missing from the slide mount of the legs). *Abdomen*: tergites with light brown scales and apical rows of fine light brown hairs. Sternites slightly paler scaled. *Terminalia* (fig. 4): ninth tergite broad, proximally with a shallow, broad emargination, lateral lobes sclerotised at base and laterally but not apically. Proctiger unsclerotised. Coxite rather elongated, bare dorsally except at apex, which has a patch

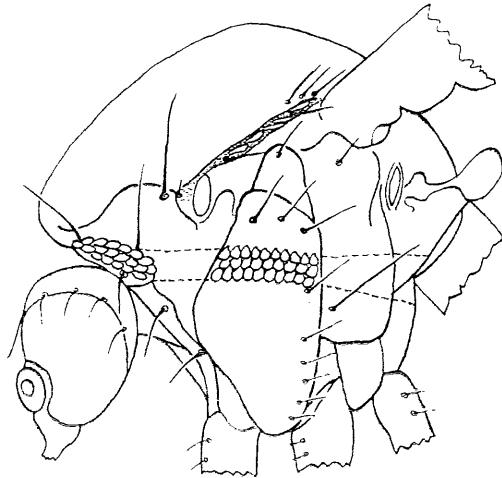


FIG. 5.—*Uranotaenia amiensis* sp. n.: male, lateral view of head and thorax.

of fine short hairs; ventrally and laterally with scattered long bristles. Basal lobe long with about 8 long stout bristles towards apex, each bristle flattened and membranous at tip, as figured. Style as figured with a delicate subapical hair instead of the usual spine. Mesosome expanded to form a ventrolateral sclerotised plate, the two sides joined by a wide bridge; one large hooked spine distally and ventrally bent over to point laterally and proximally as figured.

Female, pupa and larva.—Unknown.

Material described

Holotype ♂, PAPUA: Port Moresby, Central District, 23.ii.57 (caught at light) (Dr. W. Peters). Genitalia and legs on slide mount.

Holotype deposited in the collection of the Department of Entomology, C.S.I.R.O., Canberra, A.C.T., Australia.

***Uranotaenia amiensis* sp. n.**

Small dark species, characterised in male by a narrow pale pleural band, pale orbital margin, dark legs and abdominal scaling and sparsely whorled antenna, and by an entirely pale blue vertex in female. No secondary sexual leg characters in male. Although the male holotype and paratype are described from widely separated localities there is no doubt about their identity.

Male (fig. 5).—*Head*: proboscis rather short, expanded ventrodorsally, on distal one-third covered with dark scales and numerous fine dark hairs, $11 \times$ palpi, $0.75 \times$ fore femur, $0.75 \times$ wing. Palpi minute, just exceeding the clypeus, dark brown with a number of fairly long dark brown bristles; clypeus dark brown, bare. Antennae sparsely whorled, $1.1 \times$ proboscis, curled, dark brown, first segment not elongated; torus dark brown, pruinose. Vertex with an orbital

line of broad appressed scales, a whitish-blue colour, the border about 4 scales deep dorsomedially and decreasing to 1 laterally, none ventrally. Rest of flat vertical scales dull brown with a mauve bronzy sheen in certain lights. Two strong, widely separated, frontal bristles, about 4 pairs of strong orbitals, all bristles black. *Thorax*: scutal integument dark chestnut brown, sparsely clothed with long, narrow, slightly curved, dark reddish-brown scales. About 6 slightly wider scales in pre-alar region, dorsal to paratergite, pearly white in colour (some missing in each specimen); numerous strong dorsocentral and shorter acrostichal bristles, all dark brown. Scutellar integument dark brown, all lobes covered with dark brown, flat broad scales. Lateral lobes with 2 large and 1 small median bristle, median lobe with 2 pairs of strong equal bristles. Pleural integument dark chestnut brown with a slightly paler transverse pruinose band including

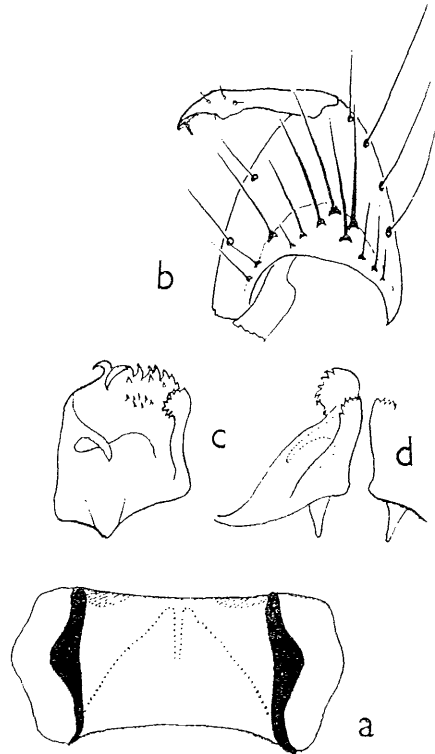


FIG. 6.—*Uranotaenia amiensis* sp. n., male terminalia: (a) ninth tergite and proctiger, dorsal view; (b) coxite and style, inner lateral view; (c) mesosome, inner lateral view of one side; (d) mesosome, dorsal view.

apn, centre of subspiracular area, ventral half of upper *stp*, centre of lower *msp* and ventral portion of base of *mts*. Posterior surface of *apn* with fairly broad, flat, pearly white scales. A band of broad, flat, pearly white scales about 3 scales deep on paler part of *stp*. No other pleural scales. Pleural bristles all dark brown, 3 strong on *apn*, 1 strong *ppn*, 1 weak spiracular, 1 pre-alar, 3 upper *stp* and a row of 5 delicate lower *stp*, 1 short upper *msp*, 1 strong lower *msp*. Mesopost-notum dark chestnut brown, bare. Halteres with pale yellow stems and dark scaled knobs. *Wings*: length 1.8 mm. All wing scales dark brown, those on costa and subcosta with bronzy green reflection in certain lights. Outstanding plume scales on vein R_3 broadly lanceolate. Vein R_2 about 0.25 length of vein R_{2+3} ; vein M_{1+2} short, only about 0.57 of vein M beyond *m-cu*. *Legs*: coxae and trochanters pale beige with fine bristles of similar colour. Midfemur swollen dorsoventrally on basal two-thirds. All legs uniformly dark brown except mid-tarsal segments IV and V and hind tarsal segments III-V, whose scaling gives a paler reflection in certain lights. Ventral surface of midfemur light brown. Normal combs at apices of fore and hind tibiae, base of hind tarsal segment I with a few specialised scales and hairs on dorsal surface, consisting of about 6 semi-erect bristles in a line from the base, about $1.5 \times$ mean diameter of segment, then

continuing with a line of about 6 semi-erect flattened bristles of about the same length. Front claws about equal length, one slender, the other broadly scimitar shaped; mid-claw a long single curved claw; hind claws as front ones. *Abdomen*: tergites uniformly dark brown scaled with apical rows of fine dark brown hairs. Sternites with light beige scaling and similar coloured hairs. *Terminalia* (fig. 6): ninth tergite short, broad and membranous, slightly concave at base and apex, with 2 strong sublateral sclerotised bars, lateral lobes turned ventrally as figured. Proctiger unsclerotised, conical in outline with incomplete median cleft. Coxite short and triangular, basal lobes short and broad with 5 long and about 6 shorter bristles. A few long bristles on lateral and posterior surfaces; style as figured with slender subterminal bristle surrounded by a number of delicate short hairs and about 3 stronger but short hairs more basally. Mesosome consisting of 2 plates, square in side view, triangular in anteroposterior view, with short proximal projections ventromedially, a recurved tooth ventrally, pointing laterally; a dorsal, incompletely separated arm with a saw-like knobbed tip pointing distally; distal edge of plate with teeth and small ventral hooks as figured, pointing laterally. Lateral plates apparently not bridged medially.

Female.—Generally similar to the male, except for the following sexual characters: *Head*: proboscis $11 \times$ palpi, $0.66 \times$ fore femur, $0.69 \times$ wing. Vertex entirely clothed with very light blue flat scales (same light colour as in male) at least as far as occiput (beyond this it is hidden by shrinkage in the specimen). One black erect occipital scale visible. Pale scaling appears to be replaced ventrolaterally by dull brown scaling. Wing length, 1.6 mm.

Larva and pupa.—Unknown.

Material described

Holotype ♂, NEW GUINEA: Ami, 10 miles NW. of Maprik, Sepik District, 17. iv. 1958, from pupa found at river edge (No. 180) (*Dr. W. Peters*). (Pupal skin missing.) *Paratypes*: 1 ♀ (*allotype*), same locality data, 24. iii. 1958 (No. 158) (*Dr. W. Peters*); 1 ♂, PAPUA: Mapamoiwa, Fergusson Island, Milne Bay District, xi. 1956 (*Dr. W. Peters*).

Holotype, allotype and paratype deposited in the collection of the Department of Entomology, C.S.I.R.O., Canberra, A.C.T., Australia.

REFERENCES

- IYENGAR, M. O. T., 1960, A review of the mosquito fauna of the South Pacific. *Tech. Pap. Pacif. Comm.* 130, pp. 1-102, 1 map.

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