

A CATALOGUE OF THE CULICIDÆ IN THE HUNGARIAN NATIONAL MUSEUM

WITH DESCRIPTIONS OF NEW GENERA AND SPECIES.

By FRED. V. THEOBALD, M. A.

(Plates I—IV and 15 text figures.)

Preface.

The notes and descriptions of Culicidæ recorded in this Catalogue are taken from the collection of the National Museum of Hungary.

The material so beautifully mounted and collected by M. BIRÓ has been graciously placed at my disposal by Dr. KERTÉSZ to whom I owe many thanks for the honour he has paid me.

The types will be found in the Hungarian National Museum.

Wye (England), June 1904.

Introduction.

The Culicidæ or Mosquitoes are of special importance amongst Diptera on account of the part they play in the spread of certain diseases.

At least three well known complaints are connected with these insects, namely malaria, yellow fever and filariasis. The first named is spread by certain species of the Anophelina, the yellow fever by at least one *Stegomyia* and filariasis by certain *Culex* and possibly *Mansonia* and *Taeniorhynchus*.

These flies not only act as carriers of disease germs, for the Anophelines play the part of secondary hosts, in which the blood parasites of malaria undergo certain stages of their life-history.

There is reason to think that other fevers in tropical and warm climates may also be carried by Culicidæ. Their close study is therefore all the more essential.

The number of species in this family at present described is about five hundred but I have at least another hundred new species as yet undescribed and twenty-five are described in this Catalogue with seven new genera.

I believe the Mosquitoes will be found to rival in number of species any of the other dipterous families, for every collection sent me brings new species. Of the known species only some seventy occur in the National Museum at Budapest, but although the collection is small it is rich in types. Most of the new species have come from New Guinea and other neighbouring Islands, the Malay States, Bolivia and Peru, countries (except Malay) from which I had not previously seen any Mosquitoes.

In describing the new species I have followed the same plan as that adopted in my «Monograph of Culicidæ».

Not only are new species described here, but also some previously known ones which I had not seen before, so as to have uniform descriptions of all the known species drawn up for comparison.

Amongst the latter are *Culex vexans* MEIG., *Culex modestus* FIC. and *Grabhamia pulcritarsis* RONN. The collectors name is given in brackets and also the date of capture when such has been recorded on the labels.

I have also added in small print the general distribution of each species. The types are in two forms (I) pinned specimens and (II) balsam preparations to show minute structure, such as wing-scales, unguis, palpi etc.

The following genera are represented in the National Collection: *Anopheles* MEIG., *Myzorhynchus* BLANCH., *Myzomyia* BLANCH., *Cellia* THEOB., *Megarhinus* ROB.-DESV., *Toxorhynchites* THEOB., *Mucidus* THEOB., *Janthinosoma* ARRIE., *Stegomyia* THEOB., *Scutomyia* THEOB., *Skusea* THEOB., *Desvoidea* BLANCH., *Theobaldia* NEVEU-LEMAIRE, *Culex* LINN., *Melanconion* THEOB., *Grabhamia* THEOB., *Taeniorhynchus* ARRIE., *Mansonia* BLANCH., *Phoniomyia* THEOB., *Aedes* MEIG., *Uranotaenia* ARRIE., *Sabethes* ROB.-DESV., *Sabethoides* THEOB., *Dendromyia* THEOB., *Aedeomyia* THEOB., *Joblotia* BLANCH., *Finlaya* THEOB., *Corethra* MEIG.

To these I now add seven new genera: *Kertészia*, *Birónella*, *Lepidotomyia*, *Lophoceratomyia*, *Trichopronomyia*, *Leptosomatomyia* and *Polylepidomyia*. Thus with the seven new genera the collection has representatives of thirty five genera out of seventy that have been described.

By far the most interesting specimens are those coming in the new genus *Lophoceratomyia* in which very peculiar structures occur on the antennæ of the ♂. What their function is cannot even be guessed at, the structures are clearly altered and modified verticillate hairs.

The following is a list of genera and species found in the collection:

Anopheles MEIG.
maculipennis MEIG.
bifurcatus L.

Myzomyia BLANCH.
Ludlowii THEOB.
Rossii GILES.

Myzorhynchus BLANCH.
barbirostris v. D. WULP.
sinensis WIED.
 subsp. *pseudopictus* GRASSI.

Kertészia n. g.
boliviensis n. sp.

Cellia THEOB.
Kochii DÖNITZ
punctulata DÖNITZ.
pharoensis THEOB.

Birónella n. g.
gracilis n. sp.

Megarrhinus ROB.-DESV.
ferox WIED.
haemorrhoidalis FABR.

Toxorhynchites THEOB.
immisericors WALK

Janthinosoma ARRIB.
musica SAY.

Mucidus THEOB.
alternans WESTW.

Desvoidea BLANCH.
obturbans WALK.

Stegomyia THEOB.
fasciata FABR.
scutellaris WALK.
W-alba n. sp.
pseudonivea n. sp.

Scutomyia THEOB.
notoscripta SKUSE.
sugens WIED

Skusea THEOB.
culiciformis n. sp.
multiplex THEOB.
funerea THEOB.
 var. *ornata* n. var.

Lepidotomyia n. g.
alboscuteolata n. sp.

Theobaldia NEV.-LEM.
spathipalpis ROND.
annulata MEIG.

Culex L.
Birói n. sp.
impellens WALK.
microannulatus THEOB.
annulirostris SKUSE.
rubithorax MACQ.
occidentalis SKUSE.
flavifrons SKUSE.
vexans MEIG.
cantans MEIG.
nemorosus MEIG.
ornatus MEIG.
australis ERICHS.
lateralis MEIG.
trimaculatus n. sp.
pullus n. sp.
modestus FIC.
quasimodestus n. sp.
bicolor MEIG.
lutescens FABR.
fatigans WIED.
nigritulus ZETT.
pipiens L.

Lophoceratomyia n. g.
fraudatrix n. sp.
brevipalpus n. sp.

Trichopronomyia n. g.
annulata n. sp.

Melanoconion THEOB.
ornatus n. sp.
pallidiceps n. sp.

Grabhamia THEOB.
 dorsalis MEIG.
 pulchritarsis ROND.
 longisquamosa n. sp.
 maculosa n. sp.

Taniorhynchus ARRIE.
 acer WALK.
 brevicellulus THEOB.
 Richardii FIC.

Mansonia BLANCH.
 uniformis THEOB.
 septempunctata n. sp.

Finlaya THEOB.
 poicilia THEOB.

Joblotia BLANCH.
 nivipes THEOB.

Aedes MEIG.
 cinereus MEIG.

Leptosomatomyia n. g.
 lateralis n. sp.

Sabethes ROB.-DESV.
 remipes WIED.
 nitidus THEOB.

Sabethoides THEOB.
 confusus THEOB.

Aedeomyia THEOB.
 squamipennis ARRIE.

Uranotænia ARRIE.
 testacea n. sp.
 atra n. sp.

Phoniomyia THEOB.
 bimaculipes n. sp.
 indica n. sp.
 magna n. sp.

Dendromyia THEOB.
 quasiluteoventralis THEOB.

Polylepidomyia n. g.
 argenteiventris n. sp.

Corethra MEIG.
 plumicornis MEIG.

Total number of species: eighty-one.

*Notes on the collection and Descriptions of new genera
 and species.*

Genus ANOPHELES MEIG.

Syst. Besch. I. 10. II. (1818) MEIGEN; Monogr. Culicidæ I. 115 et III. (1901 et 1903) THEOBALD.

1. *Anopheles maculipennis* MEIG.

Syst. Besch. I. 11. 2 (1818) MEIGEN; Monogr. Culicid. I. 191 (1901) THEOBALD; Állattan. Közl. III. 32 (1904) KERTÉSZ.

From various localities in Hungary (vide: KERTÉSZ p. 35).

2. *Anopheles bifurcatus* LINN.

Syst. Ent. Ed. X. 603. 2 (1758) LINNAEUS; Monogr. Culicid. I. 195 (1901) et III. (1903) THEOBALD; Állattan. Közl. III. 35 (1904) KERTÉSZ.

Hungary (vide: KERTÉSZ p. 34).

Genus MYZOMYIA BLANCH.

Grassia THEOB.

Comp. Rend. Heb. Soc. Biolog. 23. p. 795 (1901) BLANCHARD; Monogr. Culicid. III. p. 24 (1903); Journ. Trop. Med. V. p. 181 (1902) (*Grassia*) THEOBALD.

1. *Myzomyia Ludlowii* THEOB.

Monogr. Culicid. III. p. 42. 1903.

Four ♀'s from Singapore (BIRÓ 1902). I fancy this species may be a variety of *M. Rossii* GILES. The striking difference is the spotting of the legs. These are the first specimens I have seen out side the Philippine Islands and yet I have had very large and numerous collections from Malayana.

It looks so different to *Rossii* and as no true *Rossii* had occurred in the Philippine Islands I placed it as a new species at once and do not yet feel inclined to alter my opinion.

2. *Myzomyia Rossii* GILES.

Specimens from India presented by the writer.

Genus MYZORHYNCHUS BLANCH.

Rossia THEOB.

Comp. Rend. Heb. Soc. Biologie. No. 23, p. 795 (1902) BLANCHARD; Journ. Trop. Med. p. 181 (1902) (= *Rossia*) THEOBALD.

1. *Myzorhynchus barbirostris* VAN DER WULP.

Leyden Museum Notes VI. p. 46, VAN DER WULP; Monogr. Culicid. I. p. 146 (1902) THEOBALD.

A single ♀ from New Guinea (BIRÓ, 1901).

Also recorded from Selangor; Perak; Upper Burma; Kuala Lumpur, Federated Malay States; Goa, India; Old Calabar, West Africa; Japan; Shaohy ling, China.

2. *Myzorhynchus sinensis* WIED.Subsp. *pseudopictus* GRASSI.

Anopheles pseudopictus GRASSI, *Anopheles pictus* FICALBI (non LOEW).

Atti Accad. Lincei, Rendic. VIII. 1. 102 (1899) GRASSI; Monogr. Culicid. I. 140 (1901) et III. p. 84 (1903) THEOBALD; Bull. Soc. Ent. Ital. XXVIII. 232 (1896) FICALBI (= *pictus*); Állattan. Köz. III. p. 30 (1904) KERTÉSZ.

Specimens from Hungary (vide: KERTÉSZ p. 32).

Also recorded from Italy (GRASSI).

Genus KERTÉSZIA nov. gen.

Intermediate between *Myzorhynchus* and *Cellia*.

Head densely clothed with upright forked scales. Thorax with hair-like curved scales, except in front over the head where there are tufts of large narrow-curved ones. Abdomen with long broad irregular scales. Palpi densely scaly. Wing scales as in *Myzorhynchus*. Base of antennæ densely scaly.

1. *Kertészia boliviensis* n. sp.

Head black with median frontal yellow spot. Thorax ashy-grey with two straight parallel median brown stripes and a broad curved brown stripe on each side. Abdomen dark brown, with dark brown scales and hairs. Legs brown and banded; the fore metatarsi with yellowish white apical, median and basal bands; the first two tarsi with broad pale apical dorsal areas, the brown forming only a small basal area and ventrally, last two dark; the mid legs with the metatarsal banding not so clear and only the first tarsal with a broad apical pale dorsal area: hind legs as in the mid, but the apical metatarsal pale areas smaller.

Wings with four yellow costal spots spreading evenly onto the first long vein; most of the veins dusky scaled, a few pale areas.

♀. Head brown, densely clothed with large upright forked-scales, black except on a small median wedge-shaped area in front and a few yellow narrow-curved scales projecting forwards in front, brown forwardly projecting hairs except in the centre where they are yellow; antennæ dark brown, basal joints with dense black scales; proboscis deep brown; palpi densely scaled with black scales and with three narrow yellow apical bands, tip yellow (formed by the third band).

Thorax ashy-grey with two straight parallel median brown lines and

a curved brown broader line on each side, covered scantily with golden hair-like curved scales which arise from black specks; in front three patches of creamy curved scales ending bluntly.

Scutellum with hairs and brown border-bridles; metanotum dark brown with traces of a median and lateral dark lines; pleuræ reddish-brown with greyish sheen here and there.

Abdomen deep brown, clothed with rather irregular large black scales and with deep brown lateral and posterior border-bridles.

Legs with the femora and tibiae brown, traces of a pale knee spot; on the venter of the femora are also pale patches; fore metatarsi with three creamy bands, one apical, first and second tarsi with very broad

A.

Fig. 1. *Kértészia boliviensis* n. sp. ♀. — A thoracic markings; B front of mesothorax; C abdominal scales.

apical yellow areas above (not true bands), last two tarsi all brown; in the mid legs the pale apical areas are only on the metatarsi and first tarsal and the other two metatarsal areas indistinct; in the hind legs the apex of the metatarsal pale above and traces of the other two pale spots, the greater part of the first tarsal white (a minute black base), the other tarsi dark brown; unguis small, equal and simple.

Wings with the costa with four yellow spots which spread evenly onto the first long vein and a small apical yellow spot where the lower branch of the first submarginal cell joins the border, extending on to the fringe; the rest of the veins dark scaled except for a pale area along the greater part of the third vein, a trace under the first costal spot on the upper branch of the first submarginal cell, another at its base on the stem, one at the cross-veins, one at the base of the fork of the fifth, another on its stem and a small one on the upper branch near the cross-vein, one near the base of the sixth and minute traces where the veins join the wing fringe; wing fringe with pale areas where the lower branch of the

fourth and both branches of the fifth join the fringe; first submarginal cell longer and narrower than the second posterior cell, its base slightly nearer the base of the wing, its stem not half the length of the cell; cross-veins pale, the mid in front of both the supernumerary and posterior. Halteres with pale stem and fuscous asymmetrical knob.

Length: 5.5 mm.

Habitat: Songo, Bolivia.

Observations. Described from a single female. It is a very distinct species told at once by the abdominal scales and thoracic ornamentation. It is one of the largest and handsomest Anophelines and is at present the only one recorded from Bolivia.



Fig. 2. *Kertészia boliviensis* n. sp. ♀.

Genus CELLIA THEOB.

Monogr. Culicid. III. p. 107 (1903).

1. *Cellia Kochii* DÖNITZ.

Insecten-Börse. XVIII. Nr. 5. p. 36.1 (1901); DÖNITZ; Monogr. Culicid. I. p. 174 (1901); THEOBALD.

A single ♀ from Singapore (BIRÓ).

Also recorded from Perak, Java and Sumatra.

2. *Cellia punctulata* DÖNITZ.

Anopheles punctulatus DÖNITZ.

Insecten-Börse. XVIII. p. 37.2 (1901).

A series showing great variation in wing markings from the following places in New Guinea: Friedrich-Wilhelmshafen (BIRÓ, 1900); Stephansort, Astrolabe-Bay (BIRÓ, 1901); Isl. Deslacs (BIRÓ, 1901).

Also recorded from Borneo and Sumatra.

3. *Cellia pharoensis* THEOB.*Anopheles pharoensis* THEOB.

Monogr. Culicid. I. p. 169. (1901).

Specimens from West Africa, presented by the writer.

Genus BIRÓNELLA nov. gen.

Head with numerous upright forked scales of two kinds (Fig. 3 *a*. and *b*) and with small thin out-standing irregular scales (*c*); palpi about two-thirds the length of the proboscis in the ♂, swelling gradually to the apex; apparently 2-jointed (probably 3-jointed) last segment large and swollen; proboscis with very acuminate labellæ; antennæ of ♂ plumose. Mesothorax with numerous short curved hairs over its surface; scutellum as in *Anopheles* (i. e. simple not trilobed). Abdomen nude, but hairy. Wings in the male with the first sub-marginal cell very small, the second posterior large, stem of the former at least four times as long as the small cell; the marginal crossvein very long, the supernumerary very small, the mid more than twice the length of the supernumerary; the third long vein, also the stem of the second posterior cell and the upper branch of the fifth vein bent in gentle waves; the two pseudo-veins very prominent.

This genus apparently comes in the *Anophelina* judging from the non-scaly thorax and abdomen and the simple scutellum. I have been unable to detect a ♀ in the collection. The most marked feature of the genus is the venation. I know of no *Culicine* in which the cells are so unequal and irregular in shape and size. The small first submarginal cell resembles *Megarrhinus* and *Toxorhynchites* and to some extent *Uranotaenia*.

1. *Birónella gracilis* n. sp.

(Plates II and III.)

Thorax brown with short dull golden hairs; pleuræ and scutellum paler; palpi and proboscis brown. Abdomen black, narrow, expanding apically, with brown hairs, which become golden brown on the large genitalia. Legs long, brown, pale yellowish-brown at the base and below the femora. Wings with brown-scaled veins, the membrane tinged with brown along the costa.

♂. Head brown with numerous yellowish and black upright fork-scales (Fig. 3 *a* and *b*), the latter very thin with bifid apex, the former

broader with expanded apex with numerous serrations, and apparently a few irregular narrow out-standing pale scales of similar size throughout their length (3 c).

Proboscis moderately long and thin clothed with deep brown almost black scales, labellæ very acuminate; palpi not quite as long as the proboscis, scaled with deep brown scales, swelling gradually towards the apex, the apical segment large, one joint only can be detected, but probably a basal one exists. Antennæ brown with pale bands below the whorls of verticillate hairs, hairs deep brown.

Thorax dark brown with slaty sheen and with short dull golden curved hairs projecting backwards. Scutellum pale yellowish-brown. Metanotum deep brown.

Abdomen black, nude but with black hairs, narrow basally but expanded apically; genitalia densely hairy.

Legs long and thin, brown, the coxæ and venter of the femora pale ochreous. Ungues apparently all equal and simple.

Fig. 3. *Birónella gracilis* n. sp. —
Head scales: *a* black; *b*, *c* yellow;
d a wing scale.

Wings with brown scales of the form shown on plate. The subcostal cell tinged with brown, rest of the membrane transparent; the first submarginal cell very small, its stem more than four times the length of the cell; the posterior cell about two and a half times the length of the former and about twice its width; stem of the second posterior cell a little longer than the cell, curved about its centre; the third long-vein also curved, continued to the base of the wing as a distinct pseudo-vein; fifth vein with its upper branch distinctly waved, after its junction with the posterior cross-vein; sixth long-vein nearly straight until its apex where it curves abruptly, a distinct pseudo-vein between the fifth and sixth; marginal cross-vein very long and prominent; the supernumerary very small, the mid as long as the marginal, joining the supernumerary; the posterior not as long as the mid and close to it. Halteres with the pale stem much swollen basally, constricted apically, the knob black.

Length: 5.5 mm.

Habitat: Muina, New Guinea (BIRÓ, 31. December 1900).

Observations. Described from three ♂'s, one dissected. It is a very distinct species told at once by the very abnormal venation. I cannot find

a female in the collection. As far as I can judge from the male it is an Anopheline, but unless both sexes are seen it is quite impossible to place any Culicid in any of the sections into which the family is divided. I know of no Culicine or Aedine, or Megarrhinine in which the abdomen is nude and the scutellum simple.

Genus MEGARRHINUS ROB.-DESV.

Essai s. l. Culicides. Mém. Soc. d'Hist. Nat. de Paris. III. p. 412 (1827) ROBINEAU-DESVOIDY; Monogr. Culicid. I. p. 215 (1901) THEOBALD.

1. *Megarhinus ferox* WIED.

Auss. Europ. Zweiflög. p. 1. WIEDEMANN; Monogr. Culicid. I. p. 237 (1901) THEOBALD.

One ♂ from Sao Paulo, Brazil.

Also recorded from Bogota.

2. *Megarhinus hæmorrhoidalis* FABR.

Ent. Syst. IV. 401. 5 (1794) FABRICIUS; Monogr. Culicid. I. p. 222 (1901) and III. p. 114 (1903) THEOBALD.

One ♂ from Surinam, Dutch Guiana.

Also recorded from Brazil, Mexico, Cayenne and Cuba.

Genus TOXORHYNCHITES THEOB.

Monogr. Culicid. I. p. 244 (1901).

1. *Toxorhynchites immisericors* WALK.

Megarhinus immisericors WALK.

Journ. Proc. Linn. Soc. Lond. IV. p. 91 (1860) WALKER; Monogr. Culicid. I. p. 225 (1901) THEOBALD.

A single ♂ from New Guinea from Sattleberg, Huon Golf (BIRÓ, 1898).

Also recorded from Waigou, Mysol, North Ceram, Amboina; Makassar, Celebes; Malay Peninsula; Burma; Travancore, Trincomalie, Nilghirri; S. India.

Genus JANTHINOSOMA ARRB.

Dipt. Argentina p. 52 (1891); Monogr. Culicid. I. p. 253 (1901) THEOBALD.

1. *Janthinosoma musica* SAY.

Culex musicus SAY. *Culex mexicanus* BELLARDI.

Journ. Acad. Nat. Sci. Phil. VI. p. 149; Monogr. Culicid. I. p. 255 (1901) THEOBALD.

Locality: Surinam (2 ♀'s).

Also recorded from the following places: Rio de Janeiro; British Guiana; Indiana; South Amazon.

Genus MUCIDUS THEOB.

Monogr. Culicid. I. p. 268 (1901); III. p. 132. (1903).

1. *Mucidus alternans* WESTW.

Culex alternans WESTW., *Culex commovens* WALK., *Culex hispidosus* SKUSE.

Trans. Ent. Soc. Lond. III. p. 384 (WESTWOOD); Ins. Saund. Dipt. p. 432 (WALKER) (= *commovens*); Trans. Linn. Soc. N. S. Wales p. 1726 (1891) (SKUSE) (= *hispidosus*).

Four ♀'s from Brisbane, Queensland (BIRÓ, 1900) and five from New Guinea.

Also recorded from Bupengary, South Queensland; New South Wales and Natal.

Genus DESVOIDEA BLANCH.

Armigeres THEOB.

Compt. Rendus Hebd. Soc. d. Biolog. N° 37. T. LIII. p. 1043. 1901 (BLANCHARD); Monogr. Culicid. I. p. 322 (= *Armigeres*) (THEOBALD) 1901.

1. *Desvoidea obturbans* WALK.

Desvoidea ventralis WALK., *Armigeres ventralis* WALK., THEOB., *Culex ventralis* WALK., *Culex obturbans* WALK.

Proc. Linn. Soc. Lond. IV. p. 91 (1860) and p. 144 (= *ventralis*) WALKER; Monogr. Culicid. I. p. 323 (1903) THEOBALD.

Localities: India, Matheran 800 m. (BIRÓ, 1902).

Also recorded from : Perak ; China ; Japan ; Madras ; Travancore ; Bengal ; Formosa ; Hong Kong ; Singapore ; Selangor ; Celebes ; Waigou ; Mysol ; North Ceram.

Genus STEGOMYIA THEOB.

Monogr. Culicid. I. p. 283. (1901) THEOBALD.

1. *Stegomyia fasciata* FABR.

Culex fasciatus FABR. 1805; *Culex calopus* MEIG. 1818; *Culex taeniatus* WIED. 1828; *Culex elegans* FIC. 1896; *Culex Rossii* GILES 1899; *Culex exagitans* WALK. 1856; *Culex formosus* WALK. 1848; *Culex frater* DESV. 1827; *Culex excitans* WALK. 1848; *Culex viridifrons* WALK. 1848; *Culex inexorabilis* WALK. 1848; *Culex Bancroftii* SKUSE 1886; *Culex mosquito* ARRIE. 1891; *Culex annulitarsis* MACQ. 1848; *Culex impatibilis* WALK. 1860; *Culex Konoupi* BRULL. 1832; *Culex zonatipes* WALK.

The collection contains a series of specimens from the following localities : Greece, Poros (KRÜPER); Cyprus, Larnaka (BORDAN); Port Said (BIRÓ, 1902); Arabia : Muscat (BIRÓ, 1902); Singapore (BIRÓ, 1902); New Guinea, Friedrich-Wilhelmshafen (BIRÓ, 1900).

Var. *mosquito* ARRIE.

Greece, Poros (KRÜPER); Cyprus, Larnaka (BORDAN); Port Said (BIRÓ); Singapore (BIRÓ, 1898 and 1902).

The wide distribution of this yellow fever-carrier need not be detailed here.

2. *Stegomyia scutellaris* WALK.

Culex scutellaris WALK.

Journ. Proc. Linn. Soc. Lond. III. p. 77 (1849) WALKER; Monogr. Culicid. p. 298 (1901) THEOBALD.

The collection contains a large series from the following localities : Singapore (BIRÓ) 1902; Ins. Deslacs (BIRÓ, 1900); Ins. Graget (BIRÓ); India (BIRÓ); New Guinea : Seleo, Berlinhafen, Stephansort, Astrolabe Bay, Muina.

This widely distributed Asiatic species also occurs at the following places : Hongkong; Selangor; Upper Burma; Siam; North Borneo; Am-

boina; Celebes; Mauritius; Formosa; Fiji; Japan: Madras; Central Provinces India; Naini Tal; Ceylon and probably over most of Asia.

3. *Stegomyia W-alba* n. sp.

Thorax rich brown with a white W-shaped area in front, a prolongation of this on each side bends round before the wing, enclosing an isolated brown patch on each side; scutellum white. Head white with a black patch on each side. Abdomen black with narrow basal white bands and large white laterals pots. Legs with metatarsi and tarsi with basal

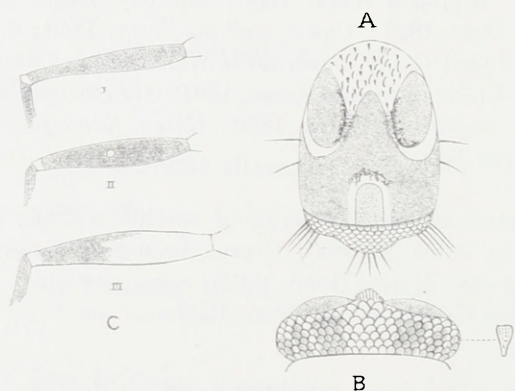


Fig. 4. *Stegomyia W-alba* n. sp. — A thoracic ornamentation of ♀; B cephalic ornamentation; C fore (I), mid (II) and hind (III) femora of ♀.

white bands, except the last two tarsi; mid femora with a prominent white median spot; hind femora with basal two-thirds creamy, apex silvery.

♀. Head (Fig. 4 B.) clothed with flat silvery-white scales in the middle, a large black patch on each side, with a small white spot near the eye on each and white scales again at the sides and to some extent a narrow white border round the eyes, a tuft of white scales projecting between them, a few dusky upright forked scales on the nape and black bristles projecting over the eyes. Palpi black; apical half snowy white; proboscis rather short, deep brown; antennæ brown, basal joint with white scales.

Thorax (Fig. 4 A.) dark brown ornamented with rich chestnut-brown

and silvery white rather large narrow-curved scales, the white ones forming a solid W-shaped area in front and a white line curving round in front of the wing to the pleura on each side, enclosing an oval chestnut-brown area and a few scattered white scales in front of the scutellum; the white scales apparently slightly broader than the brown; scutellum with flat scales, the basal ones black, the apical silvery white, border-bristles rich brown, five (?) to the mid lobe; there are also numerous long brown bristles over the roots of the wings; metanotum deep brown; pleuræ brown with large silvery-white puncta; prothoracic lobes with white scales.

Abdomen black with narrow basal white bands which spread out slightly at the sides, large basal white lateral spots; venter dark, with basal white bands.

Fore legs dark brown, the metatarsi and first tarsals with narrow basal white bands, and there is a white spot beneath the apex of the femora; mid legs with a prominent round white spot on one side in the middle of the femora; apex of femora white; metatarsi and first two tarsals basally white-banded; the hind femora pale yellow on their basal two-thirds, apex white, remainder deep brown, metatarsi and tarsi with broad white bands; ungues of the fore and mid legs rather small, equal, uniserrated, teeth fine.

Wings with the first submarginal cell longer and slightly narrower than the second posterior cell, its stem about half the length of the cell, its base about level with the base of the second posterior cell, stem of the latter as long as the cell; posterior cross-vein nearly three times its own length distant from the mid cross-vein; halteres with yellow stem and black knob.

Length: 3.8 mm.

Habitat: India orientalis, Matheran (BIRÓ, 1902).

Observations: Described from a single perfect female. It can be told at once from all known *Stegomyia*e by the marked thoracic adornment, the large solid white W-shaped mark in front being easily noticed, also by the prominent round white spot on the side of the mid femora.

1. *Stegomyia pseudonivea* n. sp.

Head clothed with flat black scales and a narrow grey border round the eyes; palpi and proboscis black. Thorax with the front half silvery white, remainder bronzy brown. Legs deep brown, unbanded, venter and extreme base of femora grey. Ungues equal and uniserrated.

♀. Head clothed with flat dark brown scales, showing bright violet reflections in certain lights, a narrow grey border of flat scales around

the eyes and dull grey flat scales at the sides, some black bristles projecting forwards; palpi, clypeus and proboscis deep brown; antennæ deep brown, basal joint with a few grey scales and the pubescence dull grey. Thorax deep brown, fore two-thirds clothed with rather large silvery white narrow-curved scales, remainder with similar bronzy scales, black bristles project forward over the head; scutellum black with flat black to bronzy scales; metanotum deep brown; prothoracic lobes reddish-brown or deep brown according to the light, with a few deep brown bristles, pleuræ brown with silvery spots. Abdomen black, the fifth, sixth and seventh segments with basal white bands and traces of basal lateral-spots; venter brown with basal silvery bands.

Legs deep brown; base and venter of femora grey; coxæ brown; fore and mid ungues small, equal and uniserrated, hind equal and simple.

Wings with the first submarginal longer, but very little narrower than the second posterior cell, its base nearer the base of the wing, its stem rather more than half the length of the cell; stem of the second posterior about as long as the cell; posterior cross-vein rather more than its own length distant from the mid cross-vein. Halteres with grey stem and widely expanded fuscous knob.

Length: 3 mm.

Habitat: Singapore (BIRÓ, 1902).

Time of capture: January.

Observations: Described from a single ♀. It bears a close resemblance to *Stegomyia nivea* LUDLOW but can at once be told by the fore and mid ungues being uniserrated, not simple and by the femora being dark above, not white as in *nivea*.

Genus SCUTOMYIA THEOB.

The Entomologist. p. 77. 1904.

1. *Scutomyia notoscripta* SKUSE.

Culex notoscripta SKUSE (1896); *Stegomyia notoscripta* SKUSE. THEOB. (1901).

Monogr. Culicid. I. p. 286. (1901) THEOBALD.

A large series from the following places: Singapore (BIRÓ) 1902; New Guinea: Muina 1900. Seleo, Berlinhafen 1896, Friedrich-Wilhelmshafen 1900; Ins. Graget (BIRÓ): Australia, Sydney, N. S. W. (BIRÓ, 1900).

Also recorded from: Queensland, N. S. Wales, India.

2. *Scutomyia sugens* WIED.

Culex sugens WIEDEMANN Aussereurop. zweifl. Ins., I. 545. 4 (1828);
Stegomyia sugens (1901).

Monogr. Culicid. I. p. 300 (1901) THEOBALD.

One ♂ from India or. Matheran 800 m. (BIRÓ, 1902).

Also recorded from: Freetown, Sierra Leone, Mashonaland, Nubia, Aden Hinterland, Corsica and India.

Genus SKUSEA THEOB.

Monogr. Culicid. III. p. 291. (1903).

This genus comes near *Stegomyia*, not in the Aedinæ as I at first thought. The ♀ palpi are somewhat narrower as a rule than those figured in my monograph (Fig. 157*a*). There is also a very thin row of narrow-curved scales around the eyes, not always easy to detect. So far the genus has been recorded from Queensland, East Indies and Malaya.

1. *Skusea culiciformis* n. sp.

(Plates I and IV.)

Head deep brown with ochreous reflection, nape testaceous; thorax brown with brown scales; abdomen brown with basal creamy bands. Legs, proboscis, palpi and antennæ uniformly brown.

♀. Head brown, clothed with small flat scales, brown in some lights, ochreous and clay colored in others, a few brown upright forked scales on the nape; proboscis deep brown; palpi brown; antennæ brown, basal joint light testaceous.

Thorax shiny brown with small narrow-curved brown scales; scutellum brown to testaceous with brown narrow-curved scales, seven posterior border-bristles on the mid lobe; metanotum brown; pleuræ pale yellowish-brown.

Abdomen brown with basal creamy bands, venter similarly adorned.

Legs uniformly brown with bronzy-ochreous reflections in some lights; unguis equal and simple.

Wings with short fork-cells, scales *Taeniorhynchus*-like but small; the first submarginal longer and narrower than the second posterior cell, its base very slightly nearer the apex of the wing; stem of the second posterior as long as the cell; posterior cross-vein nearly three times its own length distant from the mid cross-vein.

Length: 4 mm.

Habitat: Paumomu River, New Guinea (LORIA, IX, XII, 1892).

Observations: Described from a single ♀. It resembles generally *Culex fatigans*, but is stouter in build and as can be seen by the scale structure belongs to quite a different genus.

Two allied species are recorded in the following pages.

It can be told from *S. funerea* (THEOB.), by the simple abdominal banding and different venation and from *Skusea multiplex* THEOB. by having basal abdominal bands and simple unguis. A fourth species occurs in Africa.

2. *Skusea multiplex* THEOB.

Monogr. Culicid. III. p. 293. (1903).

A large series from New Guinea, from Friedrich-Wilhelmshafen, Stephansort, Astrolabe Bay, and Muina (BIRÓ) 1896 and 1900, and Ins. Graget (BIRÓ) 1901.

Some of the specimens do not show the median pale head spot, others show it as prominently as in the type from Queensland. The basal joint of the antennæ in some is dark, in others as in the type, testaceous. The thorax shows no trace of the two pale lines, which almost form one line across it, seen in the Australian specimens. The whole thorax is unadorned, of an uniform dark brown, colored with uniformly scattered reddish-brown scales, which are bronzy under the two-third power.

I cannot see any reason for separating these New Guinea specimens as a distinct species as there are only color differences. The male is described here for the first time.

♂. Head all black-scaled with the lateral pale areas only. Thorax and abdomen as in the ♀.

Palpi rather longer than the proboscis, very thin, black, no hair tufts, resembling those of *Desvoidea*. Apical segment of palpi slightly shorter than the penultimate segment. Wings long, fork-cells short, first submarginal cell longer and narrower than the second posterior cell, its base slightly nearer the apex of the wing than that of the second posterior, its stem as long as the cell; stem of the second posterior longer than the cell, supernumerary and mid cross-veins almost in one straight line, the posterior about its own length distant from the mid.

Legs as in the ♀; fore unguis unequal the larger nearly twice as long as the smaller, both uniserrated, the serration of the smaller close to the base; mid unguis equal and uniserrated; hind equal and simple.

Length: 4 to 4.5 mm.

Habitat: New Guinea (BIRÓ, 1900).

Observations: The ♂ very closely resembles the ♂ of *Desvoidea*, but the absence of flat scutellar scales at once separates it. The mid unguis being equal is a character found only in this genus of Culicidæ. There are only three males in the series one of which I have made preparations of in balsam.

4. *Skusea funerea* THEOB.

(Plate I.)

Monogr. Culicid. III. p. 292. (1903).

Variety: *ornata* nov. var.

Head black with a white median line and a creamy patch on each side. Thorax bright rich reddish-brown ornamented as follows: an irregular median golden scaled line and a curved golden scaled line on each side meeting in front; pleuræ brown with grey spots. Abdomen black with four white rather irregular bands towards the middle of the segments, i. e. with 3 bands, two black and one white. Legs brown unbanded; femora pale below.

♀. Head black, clothed with small flat black scales, a median line of creamy white and lateral areas of creamy white ones, a narrow border of golden narrow-curved scales around the eyes; a few golden bristles project between the eyes; palpi and proboscis brown; antennæ brown, basal joint pale bright testaceous.

Thorax deep brown, clothed with small narrow-curved rich reddish brown scales, ornamented with a more or less distinct median line of narrow-curved golden ones and lateral curved lines in front which meet behind the head and a pale golden scaled area over the wings; the median line forks round the bare space in front of the scutellum, three lines of black bristles which are most prominent behind and also numerous others over the roots of the wings; prothoracic lobes with narrow-curved golden scales; scutellum brown with golden narrow-curved scales and black border-bristles, five to the mid lobe; metanotum brown; pleuræ pale brown with white to grey puncta.

Abdomen deep black and white; basal segment all black; second segment with three white spots placed medianally, one in the centre and two lateral, next four segments with curved white narrow bands, the two basal towards the basal part of the segments, the two apical towards the apical borders of the segments; the seventh segment with two lateral white spots about the middle of the segment; apical segment all black, the white bands spread out into prominent median lateral

spots; venter with broad basal white bands, apical borders of the segments yellowish-brown. Legs deep brown, tibiæ and metatarsi bristly, coxæ and bases and venter of the femora pallid; ungues of fore and mid legs equal and simple, of hind equal and simple.

Wings typically scaled; the first submarginal cell considerably longer and a little narrower than the second posterior cell, its stem about half the length of the cell, its base nearer the base of the wing, stem of the second posterior as long as the cell and longer than the stem of the first submarginal; posterior cross-vein not quite its own length distant from the mid; pseudo-vein between the fifth and sixth very distinct.

Length: 3·8 to 4·5 mm.

Habitat: New Guinea, Sattelberg, Huon Golf (BIRÓ) 1899; Friedrich-Wilhelmshafen (BIRÓ) 1900.

Observations: Described from a series of eight ♀'s. This variety differs from the type in having an ornamented thorax and in the slightly different positions of the abdominal bands. I can see no reasons however to treat it as a distinct species as structurally it is the same as the type from Australia.

The specimens show variation in regards to the cephalic ornamentation, some being as described in the type-variety, others as in the typical Australian form.

Genus LEPIDOTOMYIA nov. gen.

(Plate II.)

Head clothed with narrow-curved scales except at the sides where they are small and flat; metanotum with very small narrow-curved scales; scutellum densely clothed with flat scales. Palpi short in ♀. Wings much as in *Stegomyia*, the fork-cells being rather short and their branches rather densely scaled; scales of *Stegomyia* type.

This genus is intermediate between *Culex* and *Stegomyia*, differing from the former by having flat scutellar scales and from the latter by having narrow-curved head scales over most of the head as in *Culex*.

A single species only occurs in the genus.

1. *Lepidotomyia alboscutellata* n. sp.

Head brown with golden and brown scales; proboscis and palpi deep brown. Thorax bright brown with small scattered bronzy scales and with four creamy scaled round spots; scutellum densely silvery-white scaled, pleuræ pale brown with white spots. Abdomen deep brown

unbanded; pale ventrally. Legs deep brown, apices of mid and hind femora with a silvery white spot. Wings with deep-brown scaled veins.

♀. Head brown with narrow-curved golden brown scales over the greater part, some small flat creamy ones at the sides; over the occiput numerous thin upright-forked scales; black bristles projecting forwards, especially two prominent ones between the eyes. Clypeus, proboscis, palpi brown; antennæ brown, the basal joint testaceous.

Thorax bright reddish-brown with four small golden scaled spots, two close to the head and with numerous scattered small narrow-curved bronzy scales, bristles black; scutellum densely clothed with flat silvery white scales and with black border-bristles; metanotum brown; pleuræ bright brown with three silvery white spots, composed of flat scales.

Abdomen black, unbanded with golden border-bristles; venter with broad basal creamy bands.

Legs brown, the front pair uniform, the mid and the hind with the apices of the femora and tibiæ pure silvery white; fore and mid ungues equal, uniserrated, hind equal and simple.

Wings (Plate II) with the fork-cells nearly equal in size, the first submarginal slightly longer and narrower than the second posterior cell, its stem about two-thirds the length of the cell, about the same length as that of the second posterior cell, the stem of which is about two-thirds the length of the cell; bases of the cells nearly level, that of the first submarginal if any thing slightly nearer the apex of the wing; posterior cross-vein about its own length distant from the mid. Halteres with dull stem and fuscous knob.

Length: 4 to 4.5 mm.

Habitat: New Guinea, Simbang, Huon (GOLF (BIRÓ, 1898) and FRIEDRICH-WILHELMSHAFEN (BIRÓ, 1900).

Observations: Described from two ♀'s. It is a very distinct species easily told by the silvery white scaled scutellum and the two silvery white apical spots on the mid and hind femora and tibiæ. The cephalic scales in one specimen are much brighter golden color than in the type.

Genus THEOBALDIA NEV.-LEM.

Comp. Rendus, d. Séances de la Soc. d. Biol. 29. NOV. (1902) NEVEU-LEMAIRE:
Monogr. Culicid. III. p. 148 (1901) THEOBALD.

1. *Theobaldia spathipalpis* ROND.*Culex spathipalpis* ROND.

Dipt. Ital. Prodro. I. (1886) RONDANI; Monogr. Culicid. I. p. 339 (1901) THEOBALD.

A ♂ and ♀ from Attica.

Also recorded from: Algeria, Teneriffe, Madeira, St. Michael, Crete, Cyprus, Cape Colony, Gibraltar, Italy and the larger Islands, India and Khartoum.

2. *Theobaldia annulata* SCHRANK.

Culex annulatus MEIG., *Culex affinis* STEPH., *Culex variegatus* SCHRANK.

Beitr. z. Naturgesch. 97. 70 (1776) SCHRANK; Zool. Journ. N. I. (= *affinis*) (1825) STEPHENS; Enum. Ins. Austr. 482. 983 (1781) (= *variegatus*) SCHRANK; Monogr. Culicid. I. 331. (1901) and III. 148 (1903) THEOBALD; Állattan. Közl. III. 60 (1904) KERTÉSZ.

Specimens from Hungary (vide: KERTÉSZ, p. 63).

Also recorded from many other parts of Europe from Scandinavia to Italy, also from India and North America.

Genus CULEX LINN.

Syst. Nat. (1735) LINNAEUS; Monogr. Culicid. I. p. 326. (1901) THEOBALD.

Several new species of this genus occur as the collection, including one from Europe identified by KERTÉSZ as *Culex modestus* FICALBI.

1. *Culex* Biróí n. sp.

(Plate I.)

Proboscis with a median yellow band. Head with rather long pale scales. Thorax brown, unadorned, with narrow-curved golden scales. Abdomen brown, with basal pale bands and white lateral spots. Legs with narrow basal pale bands to the metatarsi, all the tarsi in the fore legs, all except the last in the mid with narrow basal pale bands; two very faint ones behind. Wings with the fork-cells long, the stems very short.

♀. Head brown with rather long narrow pale creamy scales, dark brown upright forked scales and small flat creamy scales at the sides; clypeus dark brown; palpi black scaled; proboscis deep brown with a yellow band towards the apical half; antennæ deep brown. Thorax

brown, with narrow-curved golden scales, which become paler before the scutellum, with brownish bristles over the roots of the wings; scutellum very large, brown, with narrow-curved pale golden scales and brown border-bristles; metanotum pale brown; pleuræ tawny. When denuded the mesothorax shows two dark median lines and a curved one on each side. Abdomen deep brown with basal white bands, basal white lateral patches and creamy venter.

Legs brown, pale at the base and on the venter of the femora; the fore legs with narrow yellow bands to the metatarsi and tarsi, that on the last tarsus indistinct or absent; mid legs with the banding less distinct and the hind legs more so; unguis all equal and simple.

Wings with typical *Culex*-scales, the fork-cells long; the first submarginal considerably longer but no narrower than the second posterior, its base nearer the base of the wing, its stem about one third the length of the cell, stem of the second posterior as long as the cell; posterior cross-vein often nearly twice its own length distant from the mid. Halteres dusky.

Length: 3 mm.

♂. Palpi deep brown with narrow yellow basal bands on the two apical segments and with pale areas basally; hair-tufts dark brown; the dark apical joint acuminate; antennæ brown with broad grey bands between the verticils.

Thorax and abdomen as in the ♀. Fore and mid unguis unequal uniserrated, hind equal and simple.

Length: 3.3 mm.

Habitat: Bombay (BIRÓ, 1902).

Observations: Described from 3 ♀'s and 3 ♂'s. They are closely allied to *Culex Vishnui* THEOB., but can I think at once be told from others of the allied species by the much greater length of the first submarginal cell and by the head adornment which resembles that of *Culex microannulatus* THEOB. There is however a general different appearance and their small size also separates them from the latter. In *C. Vishnui* the first submarginal cell is nearer the apex of the wing than that of the second posterior and not nearly as long as in BIRÓ's specimens from Bombay.

2. *Culex impellens* WALK.

Proc. Linn. Soc. Lond. IV. 91. WALKER: Monogr. Culicid. I. p. 362 (1901) THEOBALD.

A single ♀ from Singapore (BIRÓ, 1898).

Also recorded from: Perak, Kuala Lumpur; Hoshiarpur, India; N. W. Provinces, India; Ceylon.

3. *Culex microannulatus* THEOB.

Monogr. Culicid. I. p. 353 (1901).

A large series from Singapore (BIRÓ, 1901).

Also recorded from: Madras, Quilon, Travancore, Hoshiarpur, (India); and Ceylon.

4. *Culex annulirostris* SKUSE.

Proc. Linn. Soc. IV. S. Wales, ser. 2. III. 1737. 20 (1899) SKUSE; Monogr. Culicid. I. p. 365 (1901) THEOBALD.

A ♂ from Brisbane, Queensland (BIRÓ) and ♀'s from Bupengary (THEOBALD).

5. *Culex rubithorax* MACQ.

Dipt. Exot. 4-th Supp. p. 9 (1850) MACQUART; Monogr. Culicid. I. p. 416 (1901) THEOBALD.

A single ♀ from Botany Bay, Sydney, N. S. Wales (BIRÓ, 1900).

Also recorded from: S. Queensland and Tasmania.

6. *Culex occidentalis* SKUSE.

Proc. Linn. Soc. N. S. Wales. p. 1729. ser. 2. III. (1889) SKUSE; Monogr. Culicid. I. p. 419 (1901) THEOBALD.

A single ♀ from Springwood, New South Wales (BIRÓ, 1900).

Also recorded from: Victoria and King George's Sound, Western Australia and South Queensland.

7. *Culex flavifrons* SKUSE.

Proc. Linn. Soc. N. S. Wales, ser. 2. III. p. 1735. (1889).

A single ♀ from Springswood, N. S. Wales (BIRÓ, 1900).

Also recorded from the Blue Mountains and Brisbane, Queensland.

8. *Culex vexans* MEIG.

Culex articulatus ROND.

Syst. Besch. VI. 241. 16 (1830) MEIGEN; Állattan. Közl. III. p. 53 (1904) KERTÉSZ.

Several specimens of this species occur in the collection. It appears from the number of localities given by KERTÉSZ to be common in Hun-

gary. I have not yet seen this species from Britain. It is very distinct from any other European species, the narrow basal pale bands to the legs separating it, with its serrated ♀ unguis. It might be passed over amongst a lot of *C. nemorosus* MEIG. but the leg banding should at once separate it. The head has a very pronounced spot of flat black scales on each side. For literature, full description etc. vide: KERTÉSZ's paper.

9. *Culex cantans* MEIG.

Syst. Besch. 1. 6. 6 (1818) MEIGEN; Monogr. Culicid. I. p. 401 (1901) and III. p. 179 (1903) THEOBALD; Bull. Soc. Ent. Ital. XXVIII. 258. 10 (1896) et XXXI. 170. 3 (1899) FICALBI; Állattan. Közl. III. p. 49 (1904) KERTÉSZ.

This species occurs in the collection from various places in Hungary (vide: Dr. KERTÉSZ's paper on Hungarian Culicidæ). One ♂ has the abdomen entirely covered with dense scattered creamy scales and another shows the larger mid unguis much shorter and more symmetrical than typical male *cantans*.

For full details vide: KERTÉSZ's paper. I am inclined to think *Culex annulipes* MEIG. a distinct species, but KERTÉSZ regards it as synonymous with *C. cantans*.

10. *Culex nemorosus* MEIG.

Culex sylvaticus MEIG.; *Culex guttatus* CURT.; *Culex provocans* WALK.; *Culex salinus* FIC.

Syst. Besch. 1. 4 (1818) MEIGEN; Syst. Besch. VI. 241 (1830) (= *sylvaticus*) MEIGEN; Guide. Arr. Brit. Ins. Curtis. (1829) (= *guttatus*); List. Brit. Mus. 1. 7 (= *provocans*) WALKER.

A single ♀ from Germany (KERTÉSZ).

Also recorded from: Canada, and in Europe from Italy to Lapland.

11. *Culex ornatus* MEIG.

C. equinus MEIG. (non *C. ornatus* FICALBI).

Syst. Besch. 1. 5. 4 (1818) MEIGEN; Monogr. Culicid. II. p. 77 (1901) THEOBALD; Klass. 1. 3. 4 (1804) (= *equinus*) MEIGEN; Állatt. Közl. III. 44 (1904) KERTÉSZ.

A single ♂ from Budapest (KERTÉSZ). Vide also: KERTÉSZ. p. 47.

Also recorded from: Germany, Austria, Holland, Scandinavia and England.

12. *Culex australis* ER.*Culex crucians* WALK.

Archiv für Naturg. III. p. 470 (1842) ERICHSON; Ins. Saundersiana. I. p. 432 (1856) (= *crucians*) WALKER; Monogr. Culicid. II. p. 91 (1901) THEOBALD.

A ♀ from Mount Victoria, New South Wales, Australia (BIRÓ 1900), taken in November. The posterior cross-vein is nearer the mid than in those specimens I have seen from Victoria. The legs are very dark and the pale tibial spot referred to by ERICHSON quite absent.

13. *Culex lateralis* MEIG.

Syst. Besch. 1. 5. 5 (1818) MEIGEN; Monogr. Culicid. II. 51 (1901) THEOBALD; Állattan. Közl. III. 58 (1904) KERTÉSZ.

Specimens taken in various parts of Hungary (vide: KERTÉSZ, p. 59). Also recorded from: England, Austria, Russia, Switzerland and Algeria.

14. *Culex trimaculatus* n. sp.

Head with dull golden narrow-curved scales and dark upright forked scales; thorax pale yellowish-brown with a large median reddish-brown elongate triangular spot and another on each side behind; metanotum bright yellowish-brown. Abdomen brown (rather indistinct) basal bands spreading out laterally. Legs brown unbanded. Wings of typical *Culex*-form.

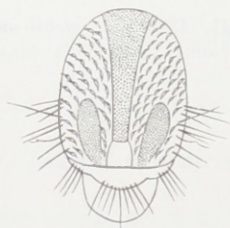


Fig. 5. *Culex trimaculatus* n. sp. (♀). Thoracic ornamentation.

♀. Head brown with small narrow-curved golden scales and numerous thin dark-brown upright forked scales; proboscis rather short, brown; palpi and antennæ brown.

Thorax (Fig. 5) pale yellowish-brown with a median reddish-brown elongated triangular spot, the base near the head and another reddish-brown spot on each side at the back, covered with small scattered narrow-curved dull golden scales and numerous golden bristles over the roots of the wings; scutellum pale yellowish-brown with dusky narrow-curved scales on the mid lobe, paler ones on the side lobes; border-bristles pale golden, nine to the mid lobe; metanotum pale brown.

Abdomen dull brown with basal dull yellow bands, which spread out laterally; in certain lights the abdomen looks dull ochreous. Legs brown, paler basally; ungues of fore and mid legs uniserrated, hind equal and simple.

Wings with typical *Culex*-scales; the first submarginal cell a little longer and very slightly narrower than the second posterior cell, its base slightly nearer the apex of the wing than that of the second posterior; its stem about two-thirds the length of the cell; stem of the second posterior also about two-thirds the length of the cell; posterior cross-vein rather more than its own length distant from the mid cross-vein.

Length: 4.3 mm.

Habitat: Bombay (BIRÓ, 1902).

Observations: Described from a single perfect ♀. It can be told from all other species of *Culex* by the very marked thoracic ornamentation, which resembles that of a *Corethra*.

15. *Culex pullus* n. sp.

Head deep brown, with tawny brown scales; palpi, proboscis and antennæ deep brown. Thorax deep brown densely clothed with reddish-brown scales. Abdomen deep brown with grey basal areas, the third and fourth segments with more or less triangular areas, the following with more or less complete bands. Legs brown unbanded. Wings of typical *Culex*-form.

♀. Head (Fig. 6) clothed with very small narrow-curved pale golden scales in the middle and passing as a narrow area up to between the eyes; on the sides and spreading somewhat on to the occiput and around the eyes are flat dull grey scales, somewhat irregularly disposed and a few black upright forked scales. Palpi small and thin, densely black scaled. Proboscis deep brown; clypeus brown; antennæ deep brown, basal joint testaceous.



Fig. 6. *Culex pullus* n. sp. ♀. —
Cephalic ornamentation.

Abdomen deep brown, a few pale scales in the middle at the base of the second segment, the base of the third and fourth segments with grey triangular spots, the other segments with grey basal bands, venter yellowish.

Legs uniformly brown with ochreous reflections, coxæ and venter of femora ochreous; ungues equal and simple.

Wings with the fork-cells fairly long, the first submarginal lon-

ger and narrower than the second posterior, its base nearer the base of the wing, its stem rather more than half the length of the cell; stem of the second posterior about two-thirds the length of the cell; cross-veins very pale, the posterior more than its own length distant from the mid. Halteres with yellow stem and slightly fuscous knob.

Length: 3 mm.

Habitat: Muina, New Guinea (BIRÓ, 1900).

Observations: Described from a single perfect ♀. It resembles at first sight *C. fatigans*. Wied but differs in (1) the small reddish-brown narrow curved scales which are of quite different form to those in *C. fatigans* and in the marked cephalic scale arrangement which almost excludes it from *Culex*. The flat scales spread some way on to the top of the head in front and are irregularly disposed but the typical narrow-curved head scales of *Culex* are present even to the front just between the eyes and cover most of the top of the head.

16. *Culex modestus* Fic.

Bull. d. Soc. Ent. Italiana. Anno XXI. Firenze, 1889; Atti della R. Accademia dei Fisiocritici. Serie IV. Vol. I. Siena, 1889; Bull. d. Soc. Ent. Ital. XXVIII. 279, 27 (1896) and XXXI. 211, 14 (1899); Venti specie zanzare Italiane. p. 163. (1890); Monogr. Culicid. II. 122, 1057, fig. 211—212 (1901) THEOBALD; Állattan. Közl. III. p. 70 (1904) KERTÉSZ.

Three ♂'s and 1 ♀ from Zimony, Hungary, collected by Dr. KERTÉSZ. They are named by Dr. KERTÉSZ and are probably this species but the thorax in all four specimens differs in color being bright yellowish-brown, not dark brown in front, nor are the basal antennal joints, coxae or halteres speckled. Structurally they agree with FICALBIS species. There is no trace of speckling due to yellow scales on the abdomen, although they look speckled from partial scale denudation. A single ♀ from Sfax described as new answers nearly as well as the above to FICALBI's description but differs from these specimens. Dr. KERTÉSZ also records this species from Gyón, Kecskemét, Szeged, Deliblat, Székesfehérvár and Beregszász.

Recorded and described from Italy (FICALBI).

17. *Culex quasimodestus* n. sp.

(? var. of *bicolor*).

Head brown with narrow golden curved scales; palpi brown; proboscis dull yellowish-brown basally, deep brown apically. Thorax deep brown with dull golden brown narrow-curved scales showing some orna-

mentation. Abdomen deep brown with scattered ochreous scales, most dense on the apical segments. Legs deep brown, unbanded, deep ochreous at the base. Wings with the first submarginal cell considerably longer than second posterior, its stem very short.

♀. Head deep brown, with narrow-curved golden scales and with thin upright deep brown forked scales. Palpi deep brown; proboscis deep brown at the apex with the basal half dull yellowish-brown to ochreous; antennæ black, basal joint deep testaceous.

Thorax deep brown with narrow-curved deep golden-brown scales, with two oblong areas just in front of the roots of the wings darker than the rest, with very small narrow-curved scales, the scales in front of it somewhat paler than the rest, those in front of the scutellum also somewhat paler; scutellum testaceous with narrow-curved pale scales and deep brown border-bristles; metanotum bright brown; pleuræ deep brown with some pale scaled areas.

Abdomen black with blackish-brown scales and with yellow scaled basal bands on the second to fifth segments, the following with scattered yellow scales all over them; venter black with scattered yellow scales all over it.

Legs uniformly deep brown; with a pale spot, almost white at the junction of the femora and tibiæ; the coxæ deep testaceous; fore and mid and hind ungues equal and simple.

Wings with the first submarginal cell very much longer and slightly narrower than the second posterior cell, its stem nearly one fifth the length of the cell; its base much nearer the base of the wing than that of the second posterior cell; stem of the second posterior cell rather more than half the length of the cell; posterior cross-vein, about one and a half times its own length distant from the mid. Halteres pale ochreous.

Length: 4.8 mm.

Habitat: Sfax, Tunis (BIRÓ, 1903).

Observations: Described from a single ♀. It comes very near *Culex bicolor* MEIG., but is smaller and the whole abdomen is not densely ochreous scaled. It also answers to FICALBI's description of his *Culex modestus* but does not agree with the specimens described as *modestus* by KERTÉSZ and which also agree with FICALBI's description. It differs from the latter in its darker thorax and basal yellow abdominal banding and ochreous scaled apex and also in the fork-cells. The first submarginal being very long as in *C. bicolor*. It might even be a small variety of the latter.

18. *Culex bicolor* MEIG.

Syst. Besch. 1 (1818).

Head brown with narrow-curved pale golden yellow scales and ochreous black upright forked ones. Thorax brown with golden narrow-curved scales, with traces of darker longitudinal lines. Abdomen scaled with dull yellow scales all over. Femora and tibiæ with dull yellowish reflections, tarsi dark brown.

♀. Head brown with scattered pale golden narrow-curved scales, with ochreous upright forked scales centrally, black towards the sides, lateral areas clothed with pale creamy flat scales; palpi brown clothed with dark and pale creamy scales, the latter predominating and with black bristles; proboscis ochreous, darker towards the apex; antennæ deep brown, basal segment testaceous, also the clypeus.

Thorax greyish-brown with darker longitudinal lines, clothed with narrow-curved pale golden scales and with dark brown bristles; scutellum pale testaceous with narrow-curved dull golden scales and brown border-bristles, nine to the mid lobe; metanotum bright chestnut-brown; pleuræ yellowish with some pale scaled areas.

Abdomen black, more or less completely clothed with dusky yellow scales, but on the fourth segment the scales are somewhat darker in two areas giving a bispotted appearance (not seen in all lights); posterior border-bristles and lateral hairs pale golden; venter similarly colored.

Legs with the coxæ, femora and tibiæ of a dull ochreous hue, the tibiæ darker (almost brown in some lights) than the two former, metatarsi and tarsi dark brown; ungues all equal and simple.

Wings with typical *Culex*-scales, the first submarginal much longer and slightly narrower than the second posterior cell, its base much nearer the base of the wing, its stem about one-fourth the length of the cell; supernumerary and mid cross-veins not closely united, the posterior nearly twice its own length distant from the mid; third vein and lower branch of the fifth vein darker scaled than the rest. Halteres pale ochreous.

Length: 6 mm. (specimen swollen with blood and contracted). MEIGEN gives 7—8 mm.

Habitat: Sfax, Tunis (BIRÓ, 1903).

Also recorded from: Austria (SCHINER); Russia (GIMMERTHAL); England (STEPHENS).

Observations: Redescribed from a perfect female in this collection. I do not think there is any doubt that this is MEIGEN's species in spite of his curt and obscure description, but all of his few characters agree, granted the mesothorax of his specimen was rubbed. I had not previously

seen anything that would answer to this species, all specimens so named being only worn *Culex pipiens* L.

19. *Culex lutescens* FABR.

Culex flavescens VILLERS; *Culex flavescens* FABR.

Systema Entomol. etc. Flensburgi et Lipsiæ (1775) et Ent. Syst. Hafniæ (1792-94) FABRICIUS; Ex Faun. Fridr. (1709) VILLERS; Syst. Antl. (1805) (= *flavescens*) FABRICIUS; Rev. Sist. Del. Culicidæ Europeæ. p. 267 (1896) FICALBI; Syst. Besch. Europ. Zweiflüg. Insekt. I. p. 81 (1818) MEIGEN; Syst. Nat. V. 2888. 9. GIMMERTHAL; Ins. Brit. Dipt. III. 248 (1856) WALKER; Faun. Austr. Die Fliegen. I. SCHINER.

Head clothed with pale yellowish scales, palpi and proboscis black; thorax clothed with dull pale yellow scales, having a slightly reddish-brown hue in the middle; in certain lights the scales in the mid line seem paler, then showing two dark (reddish-brown) lines; pleuræ pale scaled. Abdomen covered with pale yellowish scales. Legs with most of femora yellowish, remainder black.

♀. Head deep brown, clothed with large pale creamy yellow narrow-curved scales in front and with dense yellow upright forked ones behind; palpi, clypeus and proboscis black; antennæ deep brown, the basal and second segments with creamy scales, those on the basal segment forming a distinct pale spot.

Thorax deep brown, clothed with rather large pale yellow narrow-curved scales at the sides, front and behind, with thinner and more closely set reddish ones in the middle, the darker area having a median line of pale yellow scales, easily seen under the $\frac{2}{3}$ power, but not other wise, the thorax thus looks when held in certain lights as if it had two rather darker broad median areas; scutellum deep brown with large narrow-curved pale yellow scales, border-bristles and also those on the mesothorax golden-brown; metanotum deep brown; pleuræ deep brown, with flat creamy white scales, also the prothoracic lobes.

Abdomen deep brown clothed with flat yellow scales, a few dusky ones in the middle of each segment; basal segment with creamy white scales, apical segments paler than the preceding ones; border-bristles pale golden yellow; venter densely clothed with pale creamy scales.

Legs unbanded, coxæ brown with pale scales; femora yellowish, dark towards the apex, tip white; tibiæ with scattered pale and dark scales above, pale yellow and white scales below; metatarsi black above, dull yellowish below; tarsi black; ungues all equal, large, black and uniserrated.

Wings with the veins yellowish or brown according to the light, costa dark; base of wings yellowish; fork-cells short, first submarginal much narrower and a little longer than the second posterior cell, its base slightly nearer the apex of the wing, its stem nearly as long as the cell; stem of the second posterior as long as the cell; posterior cross-vein longer than the mid, not quite its own length distant from it. Halteres yellowish, the knob darker and clothed with grey scales.

Length: 6 mm.

Time of capture: April (25-th).

Habitat: Budapest, Hungary (KERTÉSZ).

Observations: Redescribed from a perfect ♀ in this collection. I see no reason to doubt that this is FABRICIUS' species, it answers to his short description and is the only European species I have seen that does so. *Culex bicolor* can at once be told from it by the *pipiens*-like venation and the simpler thorax and simple unguis. This species comes in the group round *Culex cantans* and will have to be removed with it to a new genus.

Culex flavescens THEOB. comes very near this insect but has banded tarsi.

20. *Culex fatigans* WIED.

Culex aestuans WIED.; *Culex anxifer* COQU.; *Culex pallipes* MEIG.; *Heteronycha dolosa* ARRIE.

Auss. Zweiflüg. Ins. p. 10 (1828) WIEDEMANN; Syst. Besch. Siebenter Th. oder Supp. (1838) (= *pallipes*) MEIGEN; Dipt. Argentina 56 (1896) (= *dolosa*) ARRIBALZAGER; Monogr. Culicid. II. p. 151 (1901) THEOBALD; Soc. Ent. d. France. Annales. 1858 (= *anxifer*) COQUEREL.

A number of specimens from the following places: Greece, Poros (KRÜPER); Tunis, Sfax (BIRÓ, 1903); Egypt, Port Said (BIRÓ, 1902); Smyrna; Madras (BIRÓ, 1902); Singapore (BIRÓ, 1902); New Guinea, Friedrich-Wilhelmshafen (BIRÓ, 1896), Stephansort, Astrolabe Bay (BIRÓ, 1900).

For general distribution vide: Monogr. Culicid. Vol. II. p. 155. and Vol. III. p. 225 (1903) THEOBALD.

21. *Culex nigrutilus* ZETT.

Dipt. Scandinaviae. t. IX. (1850) ZETTERSTEDT; Monogr. Culicid. II. p. 140 (1901) and III. p. 301 (1903) THEOBALD.

A single ♀ from Poros, Greece (KRÜPER).

I first rediscovered this small *Culex*, which closely resembles a small *C. pipiens* in a water butt in my garden. It has since been found in Crete and in North America.

22. *Culex pipiens* LINN.

Syst. Nat. Ed. X. 602. 1 (1758) LINNÆUS; Monogr. Culicid. II. 132 (1901) THEOBALD; Állattan. Közl. III. 66 (1904) KERTÉSZ.

Specimens from various parts of Hungary. Vide: KERTÉSZ for full synonymy and localities.

Also recorded from most countries in Europe, from Malta, Cyprus, North America, Algeria, Suez, Palestine, Madeira and Teneriffe.

Genus LOPHOCERATOMYIA nov. gen.

(Plates I and III.)

Head clothed with small narrow-curved scales, upright forked scales and very small flat ones laterally; thorax with narrow-curved scales, also the scutellum. Wing scales broad and short, especially on the first and the second long-veins, more elongated on the third and fourth, the lateral ones of the fifth long and thin; ♀ palpi short, 3-jointed, but with traces of one notch near the base, apical joint as long as the rest of the palp, pointed; antennæ of the ♀ normal. The ♂ palpi (Fig. 7*a.* et 9*a.*) long, longer or shorter than proboscis, acuminate, 3-jointed, the two apical joints equal, or nearly equal, a characteristic process at the base (Fig. 7*b.*). Male antennæ with striking peculiarities, the sixth segment with a large tuft of long narrow flat plates on the outer side, the seventh and eighth with small tufts on the inner side, the ninth with a long hook-like process, the next two segments with the inner verticillate hairs partly darkened and denser than the rest, at the junction of the verticillate hairs at tenth, eleventh and thirteenth segments are two small curved pectinated processes, they are present on all the other segments, but are not so pronounced (*fraudatrix*). These organs vary in the different species.

This genus is very distinct especially the male, owing to the strange antennal processes. The wing scales and palpi of the female will at once separate them from *Culex* which they resemble at first sight. What the function of the extraordinary male antennal processes is I have not the least idea. Two * species occur in this genus, both from the same collector (BIRÓ).

* A third species has recently been sent me by Mr E. GREEN from Ceylon. It was described in a paper New Culicidæ from Ceylon, read at the Entomological Society of London, but was not considered by that august body of sufficient value to publish in their transactions!

1. *Lophoceratomyia fraudatrix* n. sp.

Head black, with a pale triangular median frontal area. Thorax brown. Abdomen black, unbanded. Legs uniformly brown, paler at the base. Wings unspotted, veins and scales brown with slight ochreous tinge. Male with rich deep brown antennal hairs and black tuft-organs.

♀. Head black with some small narrow-curved pale and dull golden scales in front, sides with dull creamy small flat scales, the same but grey, forming a line around the eyes; proboscis brown; palpi brown; antennæ brown, basal joint black. Thorax brown with very small and small scattered pale dull brown narrow-curved scales, some almost hair-like; scutellum paler brown with the same scales; metanotum brown; pleuræ pale brown. Abdomen black, narrow, no trace of banding or lateral spots. Legs brown, unbanded, bases pale ochreous and venter of femora also pale; the mid femora rather swollen, distinct apical tibial spines on the fore and mid legs. Ungues equal and simple. Wings (Plate I) with the costa, subcostal and first long-vein densely scaled with short, rather large broad scales; the costal border with large spine-like scales; branches of the second also with rather broad short scales, longer and narrower ones on the third and fourth long-veins, considerably longer on the fifth and sixth; fringe scales of two series, rather large and acuminate; border-scales prominent, projecting outwards; first submarginal cell longer and narrower than the second posterior cell, its stem half the length of the cell, its base very slightly nearer the base of the wing; stem of the second posterior cell nearly as long as the cell; posterior cross-vein about twice its own length distant from the mid cross-vein; a very distinct



Fig. 7. *Lophoceratomyia fraudatrix* n. sp. — a male palp; b basal process; c female palp.

ches of the second also with rather broad short scales, longer and narrower ones on the third and fourth long-veins, considerably longer on the fifth and sixth; fringe scales of two series, rather large and acuminate; border-scales prominent, projecting outwards; first submarginal cell longer and narrower than the second posterior cell, its stem half the length of the cell, its base very slightly nearer the base of the wing; stem of the second posterior cell nearly as long as the cell; posterior cross-vein about twice its own length distant from the mid cross-vein; a very distinct

pseudo-vein between the fifth and sixth veins. Halteres pale with faintly fuscous knob.

Length: 2.5 to 3 mm.

♂. Palpi and proboscis brown; antennæ black and grey, with brown verticillate hairs and black tuft-organs. Thorax and abdomen as in the ♀. Wings (Plate I) with the fork-cells very short, the first submarginal longer and narrower than the second posterior, its stem rather more than two-thirds the length of the cell, its base nearer the apex of the wing than that of the second posterior cell; stem of the second posterior cell not quite as long as the cell; posterior cross-vein twice its own length distant from the mid cross-vein; the pseudo-vein between the fifth and

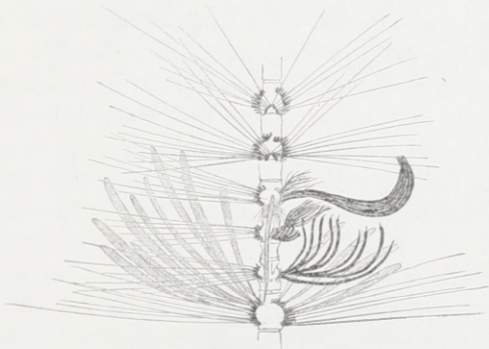


Fig. 8. *Lophoceratomyia fraudatrix* n. sp. ♂. — Antennal organs.

sixth long veins very distinct. Ungues of fore and mid legs unequal, the fore both uniserrated, the mid simple, the hind small, equal and simple. Claspers of the genitalia curved and twisted, blade-like.

Length: 3 to 4 mm.

Habitat: New Guinea, Friedrich-Wilhelmshafen (Biró, 1900) and Stephansort, Astrolabe-Bay (Biró, 1900).

Observations: Described from a large series of ♂'s and several ♀'s. The generic characters are too well marked for this species to be confused with any other Culicid. The false vein is very prominent in all the specimens.

An allied species is described here which differs from *fraudatrix* in having the antennal organs of different form.

2. *Lophoceratomyia brevipalpus* n. sp.

Head deep brown, some golden scales around the eyes: ♂ palpi much shorter than the proboscis, brown: proboscis fairly long, yellowish-brown to deep brown, swelling apically. Antennæ with distinct prominence on inner side of basal joint; antennal organs smaller than in

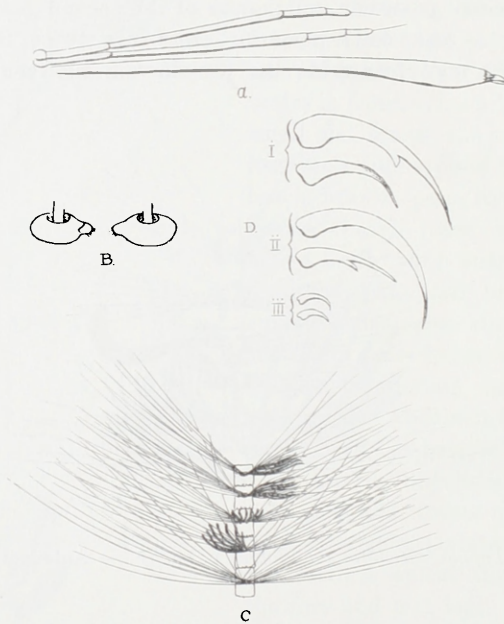


Fig. 9. *Lophoceratomyia brevipalpus* n. sp. ♂. — a male palpi and proboscis; B basal segments of antennæ; C antennal organs; D fore, mid and hind unguis.

the preceding species. Thorax deep brown, shiny with brown scales, a line of grey scales on each side in front of the wings; pleuræ yellowish-brown. Abdomen black dorsally, base of venter yellowish. Legs deep brown, coxæ and venter of femora yellowish.

♂. Head deep brown with very small narrow-curved dull brown scales, slightly golden around the eyes and with numerous deep ochreous upright forked scales and small flat dull brown ones laterally; palpi shorter than the proboscis, (Fig. 9a) thin, scaly, brown except at the actual base where they are testaceous, the two apical joints are small, the

penultimate a little longer than the apical one, apex bristly (the exact number of joints cannot be made out owing to the scales). Clypeus small, rather long and bright testaceous. Proboscis brown, yellowish-brown at the base, fairly long and swollen apically. Antennæ (Fig. 9B et C) with the basal joint brown with a hoary sheen, testaceous in the cuplike depression and with a very pronounced blunt prominence on the inner side (B), the prominence having fine hairs on one portion, the four following joints normal, the sixth to ninth with varied processes as shown in the figure, the two long apical joints very pubescent. Thorax deep shiny brown with scattered bronzy brown narrow-curved scales, at the base of the wings the integument is pallid; prothoracic lobes with dull grey flat scales; scutellum testaceous with small narrow-curved black scales and four black bristles to the mid lobe; pleuræ ochreous brown.

Abdomen violet black with bronzy reflections in certain lights, basal segment bright testaceous with two spots of black scales; venter brown apically, yellowish-brown to ochreous basally; hairs brown.

Legs uniformly brown with bronzy reflections, coxæ pale ochreous, and also venter of femora; ungues of the fore legs unequal, the larger curved and thick and uniserrated, the smaller simple; the mid unequal, the larger much curved and simple, the smaller uniserrated; hind very small equal, simple and curved. (Fig. 9D.)

Wings with the fork-cells short, the first submarginal longer and narrower than the second posterior cell, its base nearer the base of the wing than that of the second posterior cell, its stem more than two-thirds the length of the cell; stem of the second posterior a little longer than the cell; supernumerary cross-vein shorter than the mid, the mid longer than the posterior cross-vein, the latter about three times its own length distant from the mid; scales on the branches of the fork-cells *Taeniorhynchus*-like but small; on the stems and on the fifth and sixth median-vein scales are alone present. Halteres with pale stem: and slightly fuscous knob.

Length: 4.5 mm.

Habitat: Singapore (Biró, 1902).

Observations: Described from a single perfect male. In spite of the shorter palpi and the strange prominence on the basal antennal joint I place this species in this genus as the peculiar antennal organs are so very similar as well as all the squamose characters. I have been unable to draw the antennal organs in detail as I could not break up the type. It can easily be distinguished from *L. fraudatrix* by the smaller size of the antennal organs and their different structure.

Genus TRICHOPRONOMYIA nov. gen.

(Plates II and III.)

Head clothed with narrow-curved, upright forked and flat lateral scales. Proboscis (Fig. 10*a*.) with dense tuft of hairs towards the middle and shorter hairs on apical portion. Antennæ plumose. Thorax with narrow-curved scales on mesothorax and with a patch of out-standing scales on each side before the wings, somewhat like the cephalic forked scales; prothoracic scales flat; scutellar scales narrow-curved. Wings with *Taeniorhynchus*-like scales on the branches of the fork-cells, some small *Mansonia*-like ones on the base of the first long-vein and on the subcostal vein.

This genus is founded on the hairy proboscis; characteristic wing scales separating it from *Culex* and also the peculiar arrangement of scales in front of the wings on the mesothorax. The palpi are damaged.

1. *Trichopronomyia annulata* n. sp.

Head brown with pale yellowish scales, a dusky patch on each side. Proboscis brown with a creamy yellow band on the apical half, long hairs on each side just below the band and shorter ones above it. Thorax brown with pale golden and creamy-white scales, the latter forming more or less a patch on each side. Abdomen deep brown, with basal creamy yellow bands and a few scattered creamy scales on the apex. Legs brown with narrow pale yellow basal and apical bands. Wings with *Taeniorhynchus*-like scales.

♂. Head brown with narrow-curved pale creamy yellow scales and flat pale creamy ones at the sides, dense yellow upright forked ones centrally, black ones laterally, forming two dark areas. Eyes coppery red. Proboscis deep brown with a yellow band on the apical half, below the yellow band the proboscis has long dense black hairs and on the dark area towards the apex numerous shorter dark hairs (Fig. 10*a*.). Antennæ banded brown and white; verticillate hairs brown; the two long thin apical joints with dense pale yellowish hairs all over them.

Thorax brown with narrow-curved pale golden scales in front and pale creamy white ones at the sides forming more or less lateral pale patches, in front of the wings at the sides a patch of out-standing yellow upright scales (Fig. 10*b*.) very similar to the forked scales of the head, also numerous black and brown bristles, rather short thick and curved; prothoracic lobes with small pale flat scales and yellow hairs; scutellum brown

with small narrow-curved dark scales basally, pale creamy yellow apically; border-bristles black and long; metanotum brown; pleurae with patches of small flat white scales.

Abdomen hairy, deep brown, with narrow creamy-yellow basal bands; the first segment testaceous with a median tuft of flat dark scales and yellowish-brown hairs; apical segment with scattered yellow scales all over it; genitalia brown. hairy (not scaly) claspers simple, brown.

Legs brown with scattered pale scales; metatarsi and tarsi with narrow pale bands involving both sides of the joints.

Wings (Plate II) with the fork-cells short, the first submarginal longer and narrower than the second posterior, its base nearer the apex of the wing, its stem about two-thirds the length of the cell; stem of the second posterior not quite as long as the cell; posterior cross-vein about its own length distant from the mid cross-vein; third vein continued as a distinct

pseudo-vein to the base of the wing, another pseudo-vein between the fifth and sixth; scales (Plate III) on the branches of the fork-cells and the apex of the first long-vein *Taeniorhynchus*-like, others smaller, except on the subcostal and basal half of the first long-vein where some are similar in form to *Mansonia*-scales but smaller. Halteres with pale stem and black knob.

Length: 5.5 mm.

Habitat: Friedrich-Wilhelmshafen, New Guinea (BIRÓ, 1900).

Observations: Described from a single ♂. It is a very marked species told at once by the hairy proboscis. It cannot be placed in any known genus, so a new one has been formed for it.

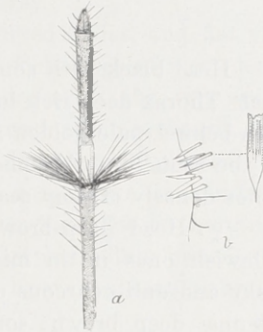


Fig. 10. *Trichopronomyia annulata* n. sp. ♂. — a apex of proboscis; b scales in front of wing.

Genus MELANOCONION THEOB.

Monogr. Culicid. III. 238. (1903).

1. *Melanoconion ornatus* n. sp.

(Plates I and IV.)

Head black, with some median yellowish scales; palpi and proboscis black. Thorax deep rich brown, ornamented with two parallel pale scaled lines behind, pale golden scales at the sides and pale scales in front and on the scutellum. Abdomen deep brown with pale basal lateral spots; venter densely creamy scaled. Legs bronzy brown, unbanded.

♀. Head deep brown with small dusky curved scales, some dull yellowish ones in the middle, dusky grey flat ones at the sides, a few dusky and dull ochreous upright forked ones; palpi and proboscis black; antennæ deep brown; some long black bristles on the palpi and short ones on the proboscis.

Thorax deep chestnut-brown with very small narrow-curved scales, two pale scaled lines on the posterior half running down to the scutellum, golden scales at the sides in front of the wings and extending to the head and some golden scales in front; scutellum brown with pale creamy narrow-curved scales; metanotum deep brown; pleuræ brown with yellowish tinge.

Abdomen deep brown with basal creamy lateral spots which on some of the segments nearly meet to form indistinct basal bands; border-bristles pale golden in some lights, brown in others; venter covered with creamy scales. Legs thin, deep brown, the coxæ and bases and venter of femora deep ochreous; unguis small, equal and simple. Wings (Plate I) with brown scales, fork-cells short, the first submarginal with dense thick scales, also the first longitudinal and to some extent the third long-vein; first submarginal cell longer and narrower than the second posterior cell, its stem nearly two-thirds the length of the cell, its base nearly level with that of the second posterior cell; stem of the second posterior as long as the cell; posterior cross-vein a little longer than the mid. nearly twice its own length away; halteres with pale stem and fuscous knob.

Length: 3.5 mm.

Habitat: Friedrich-Wilhelmshafen, New Guinea (Biró, 1900).

Time of capture: December.

Observations: Described from a single ♀. It can at once be told from all other *Melanoconions* by the ornamentation of the thorax.

2. *Melanoconion pallidiceps* n. sp.

Head silvery-grey, dark behind; palpi of ♂ and proboscis brown. Thorax brown with two dark median lines in front and a dark patch on each side behind, with small bronzy scales; pleuræ testaceous.

Abdomen deep brown, venter with creamy scales. Legs brown with bronzy reflections, coxæ and venter of femora grey.

♂. Head deep brown with pale narrow-curved scales, and flat pale scales at the sides and numerous black upright forked scales, most dense behind; palpi deep brown, longer than the proboscis, the two apical joints nearly equal, both with black hairs on each side; proboscis deep brown, swelling apically; antennæ brown with flaxen-brown plumes.

Thorax brown to slaty grey with two broad deep brown lines in front and a large brown patch on each side behind over the roots of the wings, with small scattered pale golden to bronzy scales; scutellum brown with narrow-curved pale scales; metanotum deep brown; pleuræ ochreous brown.

Abdomen brown, with deep brown scales, unbanded, hairy, hairs blackish; genitalia ochreous, with yellowish hairs; venter with traces of basal pale bands. Legs brown, unbanded, with ochreous reflections, coxæ ochreous, venter of femora pale creamy; fore and mid ungues unequal and uniserrated, the hind equal and simple.

Wings with the fork-cells short, the first submarginal a little longer and much narrower than the second posterior, its stem as long as the cell, its base slightly nearer the apex of the wing, stem of the second posterior as long as the cell; posterior cross-vein sloping backwards, about twice its own length distant from the mid, the mid and super-numerary nearly in a straight line. Halteres with pale brown stem and fuscous knob.

Length: 4 mm.

Habitat: Friedrich-Wilhelmshafen, New Guinea (BIRÓ, 1900).

Time of capture: December the twenty-seventh.

Observations: Easily told by the white scaled head and thoracic ornamentation on the integument.

Genus GRABHAMIA THEOB.

Monogr. Culicid. III. p. 243. (1903).

1. *Grabhamia dorsalis* MEIG.

Culex dorsalis MEIG., *Culex penicillaris* ROND.

Syst. Besch. IV. 242. 18. and 1, 2, 3. MEIGEN; Monogr. Culicid. II. p. 16 (1901) and III. p. 251 (1903) THEOBALD; Állattan. Közl. III. 41 (1904) KERTÉSZ.

Three ♀'s and 3 ♂'s from Szatymaz, Hungary (KERTÉSZ). (Vide: KERTÉSZ p. 44.)

Also recorded from Great Britain, Scandinavia, Germany, Holland, Austria and North America.

2. *Grabhamia pulchritarsis* ROND.

Culex pulchritarsis ROND., *Culex leucacanthus* LOEW. (?)

Bull. Soc. Ent. Ital. IV. 31. 8 (1892) RONDANI; Wien. Ent. Zeitg. XII. 170 (1893) STROBL; Bull. Soc. Ent. Ital. XXVIII. 265. 15 (1896) et XXXI. 181. 6 (1899); NoÉ, Bull. Soc. Ent. Ital. XXXI. 247 (1899); Gnats. p. 274. 67 (1900) GILES; 2. Edit. p. 425. 63 (1902); Monogr. Culicid. II. 12. 56 (1901) THEOBALD; Állattan. Közl. III. p. 55 (1904) KERTÉSZ; Entom. Zeitschr. XVII. 33. 1 (1873) LOEW et FESCH.; Europ. Dipt. III. 1. 1 (1873) LOEW (*leucacanthus*).

Head clothed with large narrow-curved pale yellowish grey scales almost white around the eyes. Thorax densely clothed with narrow-curved pale creamy-grey scales with traces of two slightly darker areas in front. Abdomen deep brown with basal white bands constricted in the middle spreading out laterally. Legs with apical and basal banding. Wings speckled with grey scales. Ungues uniserrated.

♀. Head brown, clothed with large curved scales of a pallid yellowish grey hue and with similar colored upright forked ones behind and flat white ones at the sides; palpi deep brown, their apex with white scales; proboscis deep brown with scattered white scales on the middle and on its basal area; antennæ brown, the three basal joints testaceous, the two basal ones with small flat white scales.

Thorax brown in front, testaceous behind, densely clothed with narrow-curved pale creamy grey scales, in front two slightly defined small areas of yellow scales; scutellum bright testaceous with narrow-curved pale scales; metanotum pale ochreous; pleuræ ochreous with patches of flat white scales.

Abdomen deep brown with broad basal white bands much constricted in the middle and spreading out laterally on the fifth and sixth segments, most of the area is composed of the pale scales, apical segment mostly pale scaled; venter clothed with creamy white scales; hairs of the abdomen pallid.

Legs deep brown speckled with grey scales and the metatarsi of the fore legs, also the first two tarsals with apical and basal pale bands, the third tarsus with basal pale band, the fourth unbanded; in the mid legs the same; in the hind the last tarsus is all dull white; the femora and tibiæ have also a pale apical spot and the coxæ are bright testaceous; fore and mid ungues equal and uniserrated hind simple; wings with the submarginal cell longer and narrower than the second posterior cell, its base just a little nearer the apex of the wing, its stem about half the length of the cell; stem of the second posterior also about half the length of the cell; posterior cross-vein about one and half times its own length distant from the mid: the veins mottled with brown and grey scales. Halteres ochreous.

Length: 4.5 to 5.5 mm.

♂. Thorax and abdomen much as in the ♀. Palpi with the two apical joints swollen, the penultimate joint hairy, especially on one side and also the apex of the antepenultimate; brown with narrow basal white bands to the last two joints and traces of a broader pale band on the long penultimate joint; hair-tufts golden brown; antennæ with flaxen plume-hairs.

Legs as in the ♀ but the last hind tarsi not all white, there being a minute black apex; fore and mid ungues unequal, both uniserrated; hind equal and simple.

Length: 5 to 6 mm.

Habitat: Novi, Orsova and Budakesz in Hungary (KERTÉSZ); Italy (RONDANI and FICALBI).

Time of capture: July.

Observations. These are the only specimens I have seen. It is clearly distinct from the other related species of *Grabhamia* and can easily be told by the pale scaled head and thorax and abdominal banding. The head scales are also characteristic and resemble those of *maculosa*.

3. *Grabhamia longisquamosa* n. sp.

Head creamy-yellow scaled with a dusky patch on each side; thorax clothed with dense brassy scales, paler in front of the scutellum; pleura with white patches. Abdomen almost entirely clothed with creamy scales.

venter pale scaled. Legs brown with scattered pale scales and pale banding involving both sides of some of the joints, but faint; apical tarsal joints deep bronze brown (hind one?). Wings with the veins with mixed colored scales, the creamy ones predominating.

♀. Head (Fig. 11*a*) brown, densely clothed with long creamy narrow-curved scales which become ochreous at the sides and then follow ochreous and grey small flat scales, thin creamy and ochreous upright forked scales and pallid bristles; antennæ brown, the two basal joints ochreous with small flat grey scales; palpi testaceous with black and grey scales, the apex white scaled, bristles black; the proboscis deep brown, mottled in the middle and down to the base with grey scales. Thorax deep brown,

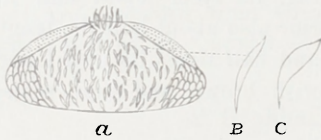


Fig. 11. *Grabhamia longisquamosa* n. sp. ♀. — *a* cephalic ornamentation; *B* and *C* head scales.

densely clothed with a thick coating of brassy narrow-curved scales which become broader and paler (almost creamy) before the scutellum; scutellum brown with narrow-curved pale scales, metanotum bright brown; pleuræ deep brown with patches of flat white scales, which also occur on the prothoracic lobes. Abdomen deep brown, clothed with creamy scales with a few black ones here and

there; basal segment dusky with flat creamy scales; venter dark brown with dense flat creamy white scales.

Legs ochreous-brown mottled with deep brown and creamy scales, the metatarsi and tarsi dark bronzy black with traces of apical and basal pale banding except on the last two segments of the fore and mid legs; hind legs very similar (but last two segments absent); fore and mid ungues equal and uniserrated.

Wings with the veins speckled with dark and light scales, the latter by far the most numerous; fork-cells short, first submarginal very slightly longer and narrower than the second posterior cell, its stem as long as the cell, its base very slightly nearer the apex of the wing; stem of the second posterior slightly longer than the cell, about its own length distant from the mid cross-vein; halteres with dusky grey stem and fuscous knob.

Length: 6 mm.

Habitat: Sousse, Tunis (BROD, 1903).

Time of capture: February 28th.

Observations. Described from a single ♀. The brassy thorax is very pronounced. From *G. pulchritarsis* ROXB., it can be told at once by the very long narrow-curved head scales. The legs have a deep bronzy

purple hue on the tarsi in some lights, the banding being dull white and often scarcely perceptible in some lights. The majority of the vein scales are light and so give the wings a light appearance.

4. *Grabhamia maculosa* n. sp.

(Plate I.)

Head clothed with broad-curved bright brown scales, with some creamy ones behind, and flat creamy lateral scales with a small black spot. Proboscis and palpi brown, speckled with white. Thorax deep brown densely clothed with narrow-curved bright brown scales with traces of two paler lines behind. Abdomen deep brown with scattered creamy scales.

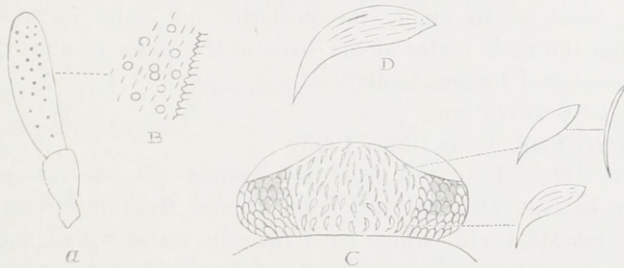


Fig. 12. *Grabhamia maculosa* n. sp. ♀. — *a* Female palp; *B* enlarged surface of same; *C* Cephalic ornamentation; *D* enlarged head scale.

most dense basally and apically. Legs brown with scattered creamy scales, bases and venter of femora creamy; unguis uniserrated.

♀. Head (Fig. 12*C*.) deep brown clothed with large broad-curved scales (*D*) reddish-brown in color but part creamy behind, those in front all pointing uniformly forwards, those behind irregular; in front ochreous upright forked scales, behind they are black; at the sides flat creamy scales with a small spot of black ones. Palpi (*a*) black with scattered white scales, apical-joint large nearly twice as long as the penultimate; proboscis deep brown with scattered creamy scales. Antennæ deep brown, basal-joint with flat creamy scales.

Thorax deep blackish-brown with narrow-curved golden-brown scales, those in front of the scutellum broader, like those on the head and creamy, in certain lights there are traces of two pale-scaled parallel lines behind; scutellum paler brown with large narrow-curved creamy scales and gol-

den brown border-bristles; metanotum deep brown; pleuræ and prothoracic lobes densely scaled with flat white scales.

Abdomen black scaled with scattered creamy white scales all over but forming prominent basal bands and narrower apical ones as well, basal segment bright testaceous with scattered flat white scales; border bristles pale; venter dark with scattered creamy white scales all over. Legs mottled with brown and creamy white scales, the femora and tibiæ with more pale scales than the tarsi, the venter of all the segments pale scaled; ungues thick, equal uniserrated.

Wings (Plate I) rather densely scaled with brown and creamy scales, giving the veins a mottled appearance; first submarginal cell considerably longer and narrower than the second posterior cell its base about level with that of the latter, its stem about half the length of the cell; stem of the second posterior cell nearly as long as the cell; supernumerary and mid cross-veins meet at an angle, the posterior not quite its own length distant from the mid, scales at the base of the veins creamy. Halteres with pale stem and fuscous knob.

Length: 6 to 6.5 mm.

Habitat: Sfax, Tunis (BIRÓ, 1903).

Observations. Described from five perfect ♀'s one dissected and mounted in balsam. They are large conspicuous Mosquitoes looking like *Culex cantans* MEIG. etc., which have densely scaled wings and similar palpi. The complete speckeling of the abdomen, legs, wings and palpi should at once separate it from all other known Culicidæ. It is best placed in this genus but the ♀ palpi are apparently only 2-jointed, the 2 basal joints being fused.

Genus TAENIORHYNCHUS ARRIB.

Dipt. Arg. p. 47 (1899) ARRIBALZAGA; Monogr. Culicid. II. p. 190 (1901) THEOBALD.

1. *Tæniorhynchus acer* WALK.

List. Brit. Mus. p. 2. WALKER; Monogr. Culicid. II. p. 211 (1901) THEOBALD.

A large series from the following localities: Brisbane, Queensland (BIRÓ, 1900); and the following places in New Guinea: Friedrich-Wilhelmshafen, 1896; Mount Hansemann, Astrolabe Bay 1901 and Yomba 1901 (BIRÓ).

This species has also been recorded from Bupengary, Queensland and New Zealand.

2. *Tæniorhynchus brevicellulus* THEOB.

Monogr. Culicid. II. p. 212 (1901).

A single ♀ from Singapore (BIRÓ, 1902).

Also recorded from Selangor, Burma.

3. *Tæniorhynchus Richardii* FIC.

Culex richardii FIC.

Bull. Soc. Ent. Ital. 21. 50 (1889) FICALBI; Monogr. Culicid. II. 194 (1901) THEOBALD;
 Állattan. Közl. III. 63 (1904) KERTÉSZ.

Specimens recorded from Hungary by KERTÉSZ (vide: p. 65).

Also found in Italy (FIC.) and England (THEOB.).

Genus MANSONIA BLANCH.

Panoplites THEOB.

Compt. Rend. Hebd. Soc. d. Biol. No. 37. T. LIII. p. 1046. (1901) BLANCHARD;
 Monogr. Culicid. II. p. 173. (1901) THEOBALD.

1. *Mansonia uniformis* THEOB.

Panoplites uniformis THEOB. 1901, *Panoplites africanus* THEOB. 1901.
Panoplites australiensis GILES, 1903.

Monogr. Culicid. II. p. 180. (1901) (*uniformis*); p. 187 (*africanus*); Handbk. Gnats
 p. 355 (*australiensis*) GILES (1903).

Localities of specimens in the collection as follows: New Guinea at
 Dilo 1890, Ins. Grajet (BIRÓ), Friedrich-Wilhelmshafen (BIRÓ, 1901).

Also recorded from: Quilon, Travancore, S. India; Perak; Dacca; Ceylon;
 Uganda; Zomba, British Central Africa; Gambia; White and Blue Niles;
 Baro and Pibor, Abyssinia; Bahr el Ghazal; Lagos; Algeria; Natal.

2. *Mansonia septempunctata* n. sp.

Head brown with scattered grey scales and a grey border around
 the eyes and grey flat scales laterally, with black upright scales; proboscis
 with a broad yellow band, apex with a few pale scales, palpi brown with
 white apex. Thorax brown with bright reddish-brown scales
 and with seven pale puncta, three in front near nape and then two

lateral pairs; scutellum pale. Abdomen with apical silvery patches. Legs spotted.

♀. Head brown with narrow-curved silvery grey scales, dense along the borders of the eyes, flat grey lateral ones and numerous black upright forked scales; palpi testaceous with brown scales and snowy white apex; clypeus bright brown; proboscis brown scaled, the middle with a broad yellow scaled band, a few pale scales at the apex; antennæ deep brown, with narrow pale bands at the verticills, basal joint bright ochreous, second joint less so with black scales; the frons distinctly produced between the antennæ as in *Rhynchomyia*.

Thorax deep brown with small narrow-curved rich bright brown scales, with three silvery white scaled spots in front near the neck and two lateral pairs behind, there are also scattered silvery scales over and behind the root of the wings and around the bare space in front of the scutellum, bristles dense, deep brown and black; scutellum brown, the mid lobe very large and prominent, densely clothed with narrow-curved dull silvery scales, border-bristles long, black, six to the mid lobe; metanotum deep brown; pleuræ brown with a patch of flat silvery white scales.

Abdomen deep brown, the two basal segments with median yellow scaled spots, apical lateral silvery white spots to the segments which on the last two spread out on to the dorsum so that most of the surface is white scaled; posterior border-bristles golden brown; venter with the segments basally ochreous, white apically.

Legs brown, spotted and banded with white as follows: fore femora with five white spots on one side, two on the other, apex white, base yellowish, fore tibiæ with five white spots and a broad yellow apex; metatarsi with a median white spot, first and second tarsals with a dorsal basal white spot, last two segments ochreous brown, unspotted; mid femora and tibiæ the same and also the tarsi; hind similar but with traces of pale basal spots on all the tarsi; ungues equal and simple.

Wings with brown and yellow scales; fork-cells long, the first submarginal a little longer and slightly narrower than the second posterior, its base a little nearer the apex of the wing, its stem more than half the length of the cell, stem of the second posterior cell more than half the length of the cell; posterior cross-vein nearly three times its length distant from the mid; border-scales small (not *Mansonia*-like).

Length: 4.5 mm.

Habitat: Friedrich-Wilhelmshafen, New Guinea (Biró, 1901).

Time of capture: November.

Observations. Closely related to *M. annulipes* WALK. but the thorax

is distinct, having seven pale spots. The whole insect is of a reddish-brown hue not dark blackish-brown as in *annulipes*.

Genus FINLAYA THEOB.

Monogr. Culicid. III. p. 281 (1903).

1. *Finlaya poicilia* THEOB.

(Plates II and III.)

Monogr. Culicid. III. p. 283 (1903).

Seven ♀'s from New Guinea collected at Friedrich-Wilhelmshafen (1901); Seleo Berlinhafen (1896); Mount Hansemann, Astrolabe Bay (BIRÓ, 1901).

They resemble the type in structural details but the wings have fewer spots. Males have recently been received from Kuala Lumpur, Federated Malay States, which show this genus belongs to the *Culicinae*. The ♂ is shortly being described in the «Entomologist». The ♀'s bear a very strong superficial resemblance to *Aedeomyia*.

The New Guinea specimens differ in the following features from the specimens I have seen from Malaya: (I) leg markings often yellowish instead of white, (II) the wings present the following ornamentation — the costal pale areas may be either reduced to two, one small apical one, or four, one small apical one, two prominent median and one small basal spot, the third long-vein with two or three pale spots, the sixth with only two.

The ventral abdominal tufts readily get worn off. The head and scutellar flat scales are not so pyriform as shown in the figures in the text of my Monograph of Culicidae — the photo on plate XIII. Vol. III. gives the correct form of the wing scales and also in Plate III. of this work.

Genus JOBLOTIA BLANCH.

Trichoprosopon THEOBALD.

Compt. Rend. Hebd. Soc. d. Biolog. No. 37. T. LIII. p. 1043 (1901) BLANCHARD;
Monogr. Culicid. II. p. 283 (*Trichoprosopon*) (1901) THEOBALD.

1. *Joblotia nivipes* THEOB.

Trichoprosopon nivipes THEOB.

Monogr. Culicid. II. p. 285. 1901.

A single fine ♀ specimen from Mexico.

Also recorded from: Rio de Janeiro; Sao Paulo and Trinidad.

Genus *Aedes* MEIG.

Syst. Besch. 1. 13. (1818) MEIGEN; Monogr. Culicid. II. 224 (1901) and III. 285 (1904) THEOBALD.

1. *Aedes cinereus* MEIG.

Aedes rufus GIMMERTHAL.

Syst. Besch. 1. 13. 1 (MEIGEN) 1818; Monogr. Culicid. II. p. 232 (THEOBALD) 1902; Állattan. Közl. III. p. 72 (KERTÉSZ) 1904.

Specimens occur in the collection from various places in Hungary (vide: KERTÉSZ).

Two sent me (a ♂ and ♀) have been carefully examined and in the ♀. I find as I described in my Monograph p. 232 that the hind ungues are equal and simple, not uniserrated as figured by KERTÉSZ (p. 73. fig. 37. h. III.). The flat head scales in the male from Hungary are more creamy than those from Britain.

For full bibliography vide: KERTÉSZ.

Genus *LEPTOSOMATOMYIA* nov. gen.

Head clothed mostly with flat scales, a few narrow-curved ones in the middle line and upright forked scales behind. Antennæ in the ♂ lightly plumose; palpi in ♂ very short. Thorax with narrow-curved scales also the prothoracic lobes; scutellum with small flat scales to the mid lobe, narrow-curved ones on the lateral lobes. Fork-cells of ♂ short; median vein-scales mostly in single line; lateral vein-scales linear, rather thick.

Distinguished from other Aedine genera by the cephalic and scutellar squamose characters.

1. *Leptosatomyia lateralis* n. sp.

Head deep brown with a few median golden scales; palpi, proboscis and antennæ deep brown. Thorax deep brown with brighter brown scales; pleuræ paler with patches of white scales. Abdomen black with basal white lateral spots. Legs brown, pale basally.

♂. Head (Fig. 13a.) deep brown, mostly clothed with deep brown flat scales, some small golden narrow-curved ones around the eyes and a in the mid line of the head, behind some dull yellowish upright for-

ked scales. Proboscis deep brown; palpi very short, brown; antennæ slightly plumose, brown.

Thorax deep brown with rather large narrow-curved bronzy scales in the middle, a few golden ones at the sides and in front, a few dark bristles over the roots of the wings; prothoracic lobes with small golden narrow-curved scales; scutellum (Fig. 13*b*.) paler, the mid lobe with small flat scales showing brown, violet and ochreous reflections, the lateral lobes with dull creamy narrow-curved scales; pleuræ pale brown with patches of flat silvery scales; metanotum brown. Abdomen narrow and long, slightly expanding apically, deep black, with basal lateral white spots.

Legs brown with bronzy reflections; coxæ pale and the venter of the femora pale brown; fore ungues unequal, the larger with a small tooth towards the apex, the smaller simple; mid ungues unequal, both simple; hind small, equal and simple (Fig. 13. *c*, *d*, *e*). Wings with the fork-cells short the first submarginal narrower but no longer than the second posterior cell, its stem the same length as the cell, its base level with that of the second posterior cell; stem of the second posterior the same length as the cell; posterior cross-vein longer than the mid and about its own length distant from it, the mid much shorter than the super-numerary thus bringing the third long vein close to the fourth. Halteres with testaceous stem and fuscous knob.

Length: 4 mm.

Habitat: Muina, New Guinea (BIRÓ, 1900).

Time of capture: 31st December.

Observations. Described from a perfect ♂, partly dissected. It cannot be placed in any known Aedine genus, so a new genus has been founded for it. The abdomen is very long and thin, but whether this character will occur also in the ♀ remains to be seen.

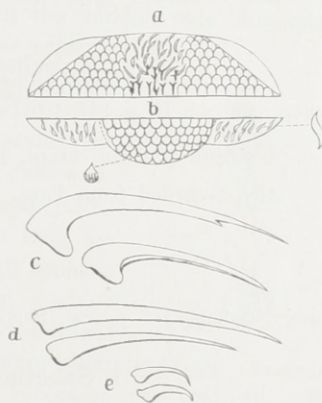


Fig. 13. *Leptosomatomyia lateralis* n. sp. ♂. — *a* cephalic; *b* scutellar ornamentation; *c*, *d* and *e* fore, mid and hind ungues of ♂.

Genus SABETHES ROB.-DESV.

Essai 5. l. tri. des. Culicides. (1827) ROB.-DESV.; Monogr. Culicid. I. p. 247 (1901) and III. p. 321 (1903) THEOBALD.

1. *Sabethes remipes* WIED.

Auss. Zweiflüg. Ins. I. p. 573 (1828) WIEDEMANN; Monogr. Culicid. I. p. 248 and III. p. 324 (1903) THEOBALD.

A single ♀ from Surinam, Dutch Guiana.

Also recorded from the following localities: Amazon region; British Guiana.

2. *Sabethes nitidus* THEOB.

Monogr. Culicid. II. p. 347 (1901) and III. p. 326 (1903).

A single ♀ from Suapi, Bolivia.

Also recorded from Para.

Genus SABETHOIDES THEOB.

Monogr. Culicid. III. p. 328 (1903).

1. *Sabethoides confusus* THEOB.

Sabethes remipes ♀ THEOB. (NON WIED.), *Sabethes nitidus* ♀ THEOB
Monogr. Culicid. III. p. 328. 1903; II. p. 246 (*remipes* ♀) and p. 247 (*nitidus* ♀).

A single ♀ from Songo, Bolivia. This specimen is larger than any I have seen before but is undoubtedly this species.

Genus AEDEOMYIA THEOB.

(Plate II.)

Monogr. Culicid. II. p. 218. (1901).

1. *Aedeomyia squammipennis* ARRIB.

Aedes squammipennis ARRIB.

El. Nat. Arg. 1. 151. 3. (1878); Dipt. Arg. p. 62 (1891). ARRIBALZAGA; Monogr. Culicid. II. p. 219 (1901) THEOBALD.

Two ♂'s and several ♀'s from New Guinea at Seleo Berlinhafen 1896 and Friedrich-Wilhelmshafen 1901 (BIRÓ).

This species has also been recorded from British Guiana, Brazil, Argentine, Madras, Perak, Trinidad, Ceylon and the Sudan.

Genus URANOTAENIA ARRIB.

Diptera Argentina p. 63; Monogr. Culicid. II. p. 241 (1901) THEOBALD.

1. *Uranotaenia testacea* n. sp.

(Plates II and III.)

Thorax bright testaceous with azure blue prothoracic lobes; pleuræ brown with a pale blue line; head dark in the middle, pale blue around the eyes. Abdomen brown, unbanded, venter yellow. Proboscis, palpi and legs brown, the hind and mid tarsi pale, especially the last two segments.

♀. Head clothed with flat black scales in the middle, azure blue ones around the eyes and at the sides; antennæ deep brown, basal joint testaceous, the second joint (Fig. 14.) as long as the two following joints; palpi and proboscis brown, apex of latter swollen and distinctly hairy.

Thorax bright testaceous with narrow-curved dark scales; prothoracic lobes with flat azure blue scales; scutellum with flat black scales; metanotum brown, pale in the middle; pleuræ testaceous with a line of pale blue scales.

Abdomen brown with brown scales; yellow ventrally.

Legs brown, unbanded with ochreous reflections, the last two or three joints clayey white in certain lights on the mid and hind legs; ungues small, equal and simple.

Wings (Plate II) of typical venation and squamose characters (Plate III); stem of the first submarginal twice as long as the cell; stem of the second posterior one and a half times as long as the cell; posterior cross-vein much longer than the mid, sloping backward and close to the base of the upper branch of the fifth long-vein, large clavate scales on the branches of the first submarginal and its stem near the cell, and on both sides of the third long-vein, also some on both sides of the branches of the second posterior cell; upper costal border very distinctly spinose.

Halteres with testaceous stems and deep brown knobs.

Length: 2.5 mm.



Fig. 14. *Uranotaenia testacea* n. sp. — Basal segments of ♀ antenna.

Habitat: Singapore (BIRÓ, 1902).

Observations. Described from two perfect ♀'s. They can at once be distinguished by the cephalic ornamentation, absence of thoracic ornamentation except the blue prothoracic lobes. The mid and hind legs have the last two or three tarsi apparently pale, but in some lights the legs are unicolorous.

2. *Uranotænia atra* n. sp.

Head black with dull brownish violet scales. Thorax black with brown scales and a grey scaled line over the roots of the wings. Abdomen black. Legs uniformly dark brown.

♀. Head black with flat dusky scales, the lateral areas showing dull brownish violet, scattered over the whole surface are a few large deep brown upright forked scales. Palpi, antennæ and proboscis deep brown.

Thorax black with bronzy narrow-curved scales, except for a line of grey ones over the roots of the wings and black bristles over the roots of the wings; scutellum black with flat black scales; metanotum nude, black, pleuræ black (denuded). Abdomen black, unbanded; venter black.

Legs brown, the swollen mid femora testaceous below, the others at the base; ungues small equal and simple.

Wings with the first submarginal cell half the size of the second, its stem three times as long as the cell.

Stem of the second posterior one and a half times as long as the cell; posterior cross-vein considerably longer than the mid, not its own length distant from it. Halteres with stem yellowish at the base, black above and also on the knob.

Length: 2 mm.

Habitat: Muina, New Guinea (BIRÓ, 1900).

Observations. Described from a single ♀. It differs from all known *Uranotaenia* in the general blackish-brown hue and absence of adornment, except the grey line of scales on each side over the roots of the wings.

Genus PHONIOMYIA THEOB.

Monogr. Culicid. III. p. 311 (1903).

1. *Phoniomyia bimaculipes* n. sp.

Head bright blue in front, black behind. Thorax shiny brown, bright testaceous in front with scanty small brown scales; pleuræ deep brown, base of wings pale testaceous. Abdomen black with apical silvery white spots and silvery areas ventrally.

Legs brown, unbanded; the femora of all the legs with two silvery spots on one side.

♀. Head clothed with small flat bright blue scales in front, black ones behind, the two colors forming a distinct contrasted line; palpi brown, small; proboscis brown, thin, long, as long as the whole body; antennæ brown, basal joint bright testaceous; verticillate hairs brown.

Thorax deep brown, shiny, but bright testaceous in front with narrow-curved black scattered scales; prothoracic lobes bright testaceous with small black spatulate flat scales; scutellum testaceous with black flat scales and four median-lobe border-bristles; metanotum deep brown, testaceous in the middle; pleuræ deep brown in the middle, testaceous above and under the wings.

Abdomen deep brown, with silvery blue apical lateral lines and numerous golden bristles on the apex. Legs with pale yellowish coxæ with some silvery scales; femora brown, the fore and the mid with two round silvery spots (pale blue in some lights under $\times 3$ power); in the hind legs the median spot is drawn out into a long silvery streak and the second silvery spot is large and near the apex; unguis small, equal and simple. In some lights the legs have a bronzy ochreous hue.

Wings with typical scales; the first fork-cell a little longer and much narrower than the second, its base nearer the apex of the wing, its stem about two-thirds the length of the cell, stem of the second posterior cell also nearly two-thirds the length of the cell; posterior cross-vein about its own length distant from the mid cross-vein; scales on the upper costal border very long, dark and spiny. Halteres pale at the base, half the stem and the knob dark brown.

Length: 3.5 mm.

Habitat: New Guinea at Moroka 1300 m. (LORIA, VII—XI, 1893) and Friedrich-Wilhelmshafen (BIRÓ, 1901).

Observations. Described from three ♀'s. It is a very distinct and beautiful species and can at once be told by the two silvery spots on the femora and the beautifully ornamented head.

2. *Phoniomyia indica* n. sp.

(Plates II and III.)

Head black, with deep violet to black scales; palpi and proboscis violet black. Thorax black with bronze and metallic green scales, a pale apple green and azure blue area behind roots of wings; metanotum chestnut-brown with black chaetæ; pleuræ and a line on each side in front of the root of wings silvery. Abdomen deep violet with basal

lateral triangular silvery spots. Proboscis of ♂ nearly as long as the whole body.

♂. Head black completely clothed with flat scales showing violet or black in color according to the light, and in certain lights a dull silvery patch between the eyes; antennæ, palpi, clypeus and proboscis black, the palpi very short, the clypeus showing a dull grey sheen.

Thorax shiny black clothed with irregularly arranged small bronzy spindle-shaped scales and large flat violet, blue and green scales, a line of the silvery scales in front of the root of each wing at the side and in some lights there appears an apple-green line behind; the large flat scales are most dense just behind the root of the wings where they are very large and project outwards and also just before the scutellum; prothoracic lobes with flat various shaded scales and there are numerous short stout bristles projecting forward from the mesonotum, over the head; scutellum testaceous with flat black scales: border-bristles black, four large and some small ones on the mid lobe; metanotum brown with a dense patch of short black bristles, radiating outwards; pleuræ reddish-brown with patches of silvery white scales. Abdomen deep violet, almost black in some lights with silvery white triangular basal lateral spots, apex swollen and very bristly; claspers very small and delicate, pale grey.

Legs bronzy brown, deep ochreous at their base, the coxæ having a patch of silvery scales; venter of femora paler than remainder of the legs.

Wings (Plate II) with dense brown scales, the first submarginal cell longer but very slightly narrower than the second posterior cell, its base slightly nearer the base of the wing than that of the second posterior cell, its stem about half the length of the cell, stem of the second posterior nearly as long as the cell; posterior cross-vein about the same size as the mid cross-vein and about one and a half times its own length distant from it; scales as shown in the figure plate III. Halteres rather stout, stem pale, knob fuscous.

Length: 4 mm.

Habitat: Singapore (BIRÓ, 1902).

Observations: Described from a perfect male. It most nearly approaches *P. longirostris* THEOB., but can at once be told by the shorter proboscis and unadorned legs. The male claspers very small and pallid.

3. *Phoniomyia magna* n. sp.

Head black, with black, violet, dull mauve and grey reflections; palpi and proboscis deep brown; clypeus brown. Thorax deep blackish-brown with metallic brassy yellowish and violet scales; scutellum silvery scaled; prothoracic lobes mauve scaled. Abdomen deep brown above, unbanded; yellowish below with grey scales. Leg deep brown, yellowish basally, unbanded. Wings scales dense, brown.

♀. Head black with flat scales showing black, violet, dull mauve and grey reflections when held in different lights; palpi black scaled; antennæ deep brown, basal segment with grey sheen above; proboscis long, thin, acuminate, deep brown; clypeus with grey sheen.

Thorax black with spindle-shaped brassy-yellowish scales, some showing violet and mauve reflections; scutellum with flat silvery-white scales, the basal ones dusky in some lights; prothoracic lobes with mauve scales, dusky when viewed in some lights; pleuræ deep brown with some white scales.

Abdomen testaceous covered with deep brown scales above; yellowish below, with grey and almost white scales.

Legs yellowish with deep brown scales, which are scanty basally and so appear yellowish; ungues small, equal and simple.

Wings with the second posterior cell considerably longer and but slightly narrower than the second anterior cell, its stem a little more than one-fourth the length of the cell; stem of the second posterior more than one-half the length of the cell; base of the first submarginal considerably nearer the base of the wing; the posterior cross-vein shorter than the mid, about its own length distant from it. The bases of the wings are pale testaceous. Halteres testaceous, with stem and knob with blackish scales.

Length: 5 mm.

Habitat: S. Antonio, Bolivia.

Observations: Described from a single female. It is one of the largest of the genus and should at once be told by its silvery grey scutellum, its densely scaled thorax and its mauve prothoracic lobes.

Genus DENDROMYIA THEOB.

Monogr. Culicid. III. p. 316. (1903).

1. *Dendromyia quasiluteoventralis* THEOB.

Monogr. Culicid. III. 317. (1903).

A single ♀ from Songo, Bolivia. It is somewhat larger than the specimens I have seen from British Guiana.

Genus POLYLEPIDOMYIA nov. gen.

(Plates I and IV.)

Head (Fig. 15*a*.) clothed with flat scales over all the front, sides and centre; a small area behind of narrow-curved scales and some upright forked ones. Palpi short but moderately developed in the ♀. Antennæ of ♀ pilose, verticillate hairs long. Proboscis moderately long. Thorax clothed with large, narrow-curved scales; prothoracic lobes with small flat scales; scutellum (*b*) with flat scales; metanotum nude. Apex of abdomen very bristly. Wings with *Culex*-venation and scales.

This genus founded on five ♀'s comes apparently in the *Aedinæ*. Both palpi and proboscis show variation in relative lengths.

The nearest related genera seem to be *Dendromyia* and *Phoniomyia* but the absence of metathoracic chaetæ and the different wing scales and cephalic ornamentation will at once separate it.

1. *Polylepidomyia argenteiventris* n. sp.

Head deep brown, dull ochreous in the middle, the sides silvery white. Thorax deep brown clothed with bronzy brown scales; prothoracic lobes white. Abdomen black above, unbanded, venter silvery white. Legs deep brown unbanded.

♀. Head (Fig. 15. *a*) deep brown, with deep brown flat scales with ochreous line in the middle and silvery white at the sides; with some upright forked scales at the back and some small pale narrow-curved ones. Clypeus bright brown; palpi and proboscis deep brown. Antennæ deep brown, the basal joint paler, pilose, hairs rather long.

Thorax deep brown with a dense matting of rather large broad curved bronzy scales, irregularly disposed; prothoracic lobes with small flat silvery scales; scutellum (Fig. 15. *b*) testaceous with flat violet brown scales and with four large and two small (central) bristles to the mid

lobe (Fig. 15. *c*); metanotum nude, black; pleuræ brown with flat silvery white scales. Abdomen black, unbanded; venter silvery white; apex bristly. Legs uniformly brown, with ochreous sheen in certain lights; ungues small, equal and simple. Wings with typical brown (*Culex*-scales (Plate IV)); the first submarginal cell longer and very slightly narrower than the second posterior cell, its base a little nearer the base of the wing, its stem about one-third the length of the cell, stem of the second posterior about one half the length of the cell; posterior cross-vein rather more than twice its own length distant from the mid; the lateral vein-scales are rather long, especially on the basal part of the second and fourth veins. Halteres with testaceous stem and fuscous knob with some pallid scales.

Length: 3.5 to 4 mm.

Habitat: Paumomu River, New Guinea (LORIA, IX—XII, 1892).

Observations: Described from five ♀'s. It is easily identified by the thoracic scales and the black abdomen with silvery venter. It is subject to considerable variation in size and in apparently the relative length of the palpi and proboscis, also in the relative distance of the posterior cross-vein and mid cross-vein.

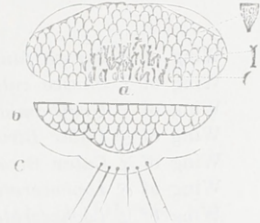


Fig. 15. *Polylepidomyia argenteiventris* n. sp. — *a* cephalic, *b* scutellar ornamentation; *c* border-bristles of scutellum.

Genus CORETHRA MEIG.

ILLIGER's Magaz. II, 260 (1803) MEIGEN.

1. *Corethra plumicornis* FABR.

Ent. Syst. IV, 246, 58 (1794) FABRICIUS; Monogr. Culicid. II, p. 299 (1901) THEOBALD; Allattan. Közl. III, 74 (1904) KERTÉSZ.

Specimens from numerous places in Hungary. (Vide: KERTÉSZ, p. 75).

Also recorded from many other parts of Europe.

DESCRIPTION OF THE PLATES I—IV.

Plate I.

- Wing of ♀ *Skusea funerea* var. *ornata* n. v.
Wing of ♀ *Skusea culiciformis* n. sp.
Wing of ♀ *Girabhamia maculosa* n. sp.
Wing of ♂ *Culex Birói* n. sp.
Wing of ♀ *Culex Birói* n. sp.
Wing of ♂ *Lophoceratomyia fraudatrix* n. sp.
Wing of ♀ *Lophoceratomyia fraudatrix* n. sp.
Wing of ♀ *Polylepidomyia argenteiventris* n. sp.
Wing of ♀ *Melanoconion ornatus* n. sp.

Plate II.

- Wing of ♀ *Trichopronomyia annulata* n. sp.
Wing of ♀ *Uranotaenia testacea* n. sp.
Wing of ♂ *Birónella gracilis* n. sp.
Wing of ♀ *Phoniomyia indica* n. sp.
Wing of ♀ *Lepidotomyia alboscuteolata* n. sp.
Wing of ♀ *Aedeomyia squammipennis* ARIBALZAGA.
Wing of ♀ *Finlaya poicilia* THEOBALD.

Plate III.

- Wing scales of *Trichopronomyia annulata* n. sp. (♂).
Wing scales of *Lophoceratomyia fraudatrix* n. sp. (♀).
Wing scales of *Uranotaenia testacea* n. sp. (♀).
Wing scales of *Birónella gracilis* n. sp. (♀).
Wing scales of *Finlaya poicilia* THEOBALD (♀).
Wing scales of *Phoniomyia indica* n. sp. (♀).

Plate IV.

- Wing scales of *Polylepidomyia argenteiventris* n. sp. (♀).
Wing scales of *Lepidotomyia alboscuteolata* n. sp. (♀).
Wing scales of *Melanoconion ornatus* n. sp. (♀).
Wing scales of *Skusea culiciformis* n. sp. (♀).
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