

A SYNOPTICAL VIEW OF THE MOSQUITOES OF BRITISH GUIANA.

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In no branch of Natural Science has progress been made with greater rapidity than, in recent years, has marked the advance of the knowledge of Economic Entomology, more especially in the tropical regions under occupation by white men. With respect to mosquitoes a whole new fauna quite startling in its dimensions has been displayed, and the collaboration of the Pathologist and Enomologist has resulted in the detection of many homicidal criminals winged with death, and the exposure of their dark and subtle methods of attack. So much has been done that it is already possible for authoritative writers to speak of "the prospect of the complete conquest of man over the insect pest in the West Indies" ("Health Progress and Administration in the West Indies," p. 40, 1910, Sir R. Boyce) and to pronounce, as the same distinguished authority has done, that the gravest scourge of man in the Tropics, Yellow Fever, is now so perfectly under medical and sanitary control that its terrors are a thing of the past.

In British Guiana in recent years a not altogether contemptible contribution has been made to knowledge in this department. Beginning with Drs. Rowland and Low in 1899 and 1900 collections have been made over a considerable area of the Guianas of the colony and in some few places, in the highlands of the interior. The workers, including with the above named Drs. Ozzard and Wallbridge and in recent years Drs. Wise and Minett and Mr. H. W. B. Moore have however been few and, in recording as I shall attempt to do the present position of the knowledge of Mosquitoes in British Guiana, it is with the certainty that the number of species still to be discovered is probably greater than that hitherto worked out, and the hope of helping some to begin work of the sort required.

A comprehensive synoptic table of the mosquitoes of the world wears to the tyro a rather discouraging appearance. The science indeed has reached dimensions quite alarming with its 180 genera and in the genus *Culex* alone 194 species, and it is possible that an intending inquirer's first glance might be his last if he were not assured that his own efforts in any particular region do not demand preliminary knowledge quite so encyclopædic as the mastery of all this detail would imply.

In Guiana so far only thirty genera with sixty-one species have been identified, and the diagnosis of these is for the most part possible to any one with an observant eye, a fairly efficient coddington lens and the patience of the naturalist. The synoptic tables which follow are intended to smooth the way of any such and together with the articles which have appeared in the B. G. Medical Annuals of 1905, 6 and 8 and some further detailed descriptions which the grace of the Editors of "Timehri" may allow me to publish, should make a good beginning in this very useful study comparatively easy.

Table of Sub-families.

A. Scutellum simple, never trilobed. Proboscis straight ; palpi long in male and female.

ANOPHELINAE.

A.A. Scutellum trilobed

a. Proboscis strongly recurved ; 1st sub-marginal cell very small.

MEGARHININAE.

aa. Proboscis straight ; metanotum nude.

b. Wings with six long scaled veins.

c. Antennae with 2nd. joint normal in length.

d. 1st sub-marginal cell as long as or longer than 2nd. posterior cell.

e. Female palpi shorter than proboscis, male palpi long.

CULICINAE.

ee. Palpi short in male and female.

AEDINAE.

dd. 1st sub-marginal cell very small, smaller than 2nd. posterior cell.

URANOTAENINAE.

cc. Antennae 2nd. segment very long. DEINOCERATINAE.

bb. Wings with seven long scaled veins HEPTAPHELBOMYINAE.

a.a.a. Proboscis straight ; metanotum with scales or chaetae.

b. Palpi long in male, short in female TRICHOPROSOPONINAE.

b.b. Palpi short in male and female DENDROMYINAE.

a.a.a.a. Proboscis elbowed LIMATINAE.

This last sub-family might, to be consistent, be placed on the character of the proboscis in a separate group, Ankylorynchae ; but after all perfect consistency is unattainable and perhaps at best a trifling goal.

Sub-Family Anophelinae.

Five genera are represented in the colony. I give also the diagnosis of Anopheles as it is the type genus, though not represented locally.

Table of Genera.

1st sub-marginal cell large.

Antennal segments without dense lateral scale tufts.

A. Thorax and abdomen with hair-like curved scales.

a. Head with cuneiform scales, no flat ones.

b. Basal lobe of genitalia of one segment.

Wing scales rather large, lanceolate.

1. ANOPHELES, Meigen.

Wing scales mostly small, narrow or slightly lanceolate ; costa prominently spotted. 2. MYZOMYIA.

Blanchard.

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- Wing with patches of large inflated scales. 3. CYCLOLEPTERON.
Theobald.
- b.b. Basal lobe of genitalia of two segments.
- a.a. Head with some flat scales on median area.
Prothoracic lobes mammilated.
Wing scales lanceolate 4. STETHOMYIA.
Theobald.
- B. Thorax with distinct narrow curved scales.
Abdomen hairy.
Wing scales broad and lanceolate.
Head scales broad not lying flat but not forked
or fimbriated. 5. MYZORHYNHELLA
Theobald
- C. Thorax and abdomen with scales.
Abdomen with lateral scale tufts. 6. CELLIA.
Theobald.

Genus ANOPHELES. Meigen.

No species classed by Theobald in this genus has been identified here. Messrs. Dyar and Knab include all Anophelines with the exception of the *Coelodiazesis* in this genus.

Genus MYZOMYIA. Blanchard.

One species has been recorded from Coriabo on the Barima River. (Dr. Low).

Myzomyia lutzii. Theobald.

Proboscis unbanded. Palpi with three white rings. Legs with median pale broad band on metatarsus and apical bands on tarsi (B.G. Med. Annual, 1905, pp. 14, 36.)

Genus CYCLOLEPTERON. Theobald.

One species has been recorded from Schepmoed on the Berbice River. Found by Dr. Rowland in May, 1905. One specimen only.

Cyclolepteron mediopunctatus. Theobald.

Proboscis unbanded. Palpi banded black and gold. Legs spotted with golden yellow, metatarsi and tarsi banded also; last tarsus all yellow. Abdomen with lateral tufts of black or black and gold scales. (B. G. Med. Annual, 1905, p. 25. 1906, pp. 59, 75.)

GENUS STETHOMYIA. Theobald.

One species recorded from Corato and Cabacaburi, Pomeroon. (Dr. Low.)

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Stethomyia nimba. Theobald.

Thorax black with silvery lines.
Proboscis covered with black and bronzy scales.
Palpi black. Legs unbanded.
Wings unspotted. (B. G. Med. Annual, 1905, pp. 15, 36.)

GENUS MYZORHYNCHHELLA. Theobald.

One species recorded from Kanuku Mountains.

Myzorhynchella nigra. Theobald.

Proboscis black. Palpi with 4 narrow white bands. Legs with tarsi banded white apically ; last three hind tarsi, all white.

Wings with three large and two small yellow spots on costa. (B. G. Med. Annual, 1908, pp. 3, 4, 22.)

GENUS CELLIA. Theobald.

Two species recorded from all parts of the colony in which collections have been made. Easily distinguished from *M. nigra* by the abdominal scales and prominent lateral tufts.

Legs with three hind tarsals white.

- 1. *Argyrotarsis*. R. Desvoidy.

Legs as above but apex of last hind tarsal with a black band.

- 2. *Albimana*. Wiedemann.

(B.G. Med. Annual, 1905, pp. 14, 25, 29, 36. 1906, pp. 65, 66, 72, 73. 1908, p. 19.)

~~Sud~~-Family MEGARHININAE. Theobald.

Ankylorynchae. Lutz.

Lynchiellina. Lahille.

Mr. Theobald includes in this sub-family three genera, of which only *Megarhinus* has been recorded from the colony.

GENUS MEGARHINUS R. Desvoidy.

Palpi long in both sexes. Last segment of female palp round or blunt as if broken.. Proboscis curved downwards. Abdomen with lateral tufts.

Two species or perhaps three are recorded from the colony.

- 1. Palpi of male and female 3rd joint longer than 4th.

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(B. G. Med. Ann., 1905, pp. 15, 36.)

2. Palpi male and female 3rd joint about equal in length to 4th.

Separatus.

Arribalzaga.

(B. G. Med. Ann., 1905, pp. 15, 36.)

Two species *superbus* and *lynchi* have been added by Dr. Dyar and Mr. Knab. The former is Osten Sacken's *haemorrhoidalis* and the latter Lynch's *haemorrhoidalis*, and the characters on which the species are separated are the arrangement of the white tarsal markings.

Sub-family Culicinae.

I. Eyes and scutellum normal.

A. Legs with dense outstandings scales.

Head with spindle-shaped, broad curved and flat scales.

Hind legs only densely scaled.

GENUS JANTHINOSOMA.

Arribalzaga.

All the legs more or less densely scaled.

GENUS PSOROPHORA.

Robineau-Desvoidy.

B. Legs normal, no irregular scales. Femora not markedly swollen.

1. a. Head with flat and upright cuneiform scales only.

GENUS STEGOMYIA.

Theobald.

a a. Head with flat scales except a small area of narrow curved scales behind and upright cuneiform scales.

GENUS GNOPHODEOMYIA.

Theobald.

a.a.a. Head with flat scales at sides ; median area occupied by narrow curved and cuneiform scales.

b. Scutellum with narrow curved scales only.

c. Wing : lateral vein scales broadish ; median vein scales large and spatulate.

GENUS LEUCOMYIA.

Theobald.

(1.) Fork cells short.

GENUS CULICELSA.

Felt,

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(2.) Fork cells medium.

Head : curved scales broadish upright scales black
and yellow.

Wing : median vein scales denser on 5th vein.

GENUS *PROTOCULEX*.
Felt.

c.c. Wing : lateral vein scales narrow linear or lan-
ceolate ; fork cells long in female ; costa not
markedly spinose.

GENUS *CULEX*.
Linnæus.

Proboscis with a tuft of hairs in middle.

GENUS *TRICHOFRONOMYIA*.
Theobald.

b.b. Scutellum with narrow curved and spatulate scales.
Wing : fork cells short.

GENUS *GUALTERIA*.
Lutz.

c.c.c. Wings : lateral vein scales elongated broadish
Fork cells long.

1. Brown species GENUS *TAENIORHYNCHUS*.
Arribalzaga.

2. Yellow species GENUS *CHRYSOCONOPS*.
Goeldi.

c.c.c.c. Wing : lateral vein scales large broad asymmetrical

GENUS *MANSONIA*.
Blanchard.

II. Legs with femora swollen apically and basally

Head : narrow curved scales on middle flat scales
at sides only

GENUS *MELANOCONION*.
Theobald.

To the Genera above described two new ones will probably fall to be added. One is a domestic species which comes near *Gnophodeomyia*, but has the femora swollen apically and basally as in *Melanoconion*. I have sent specimens to Mr. Newstead, of Liverpool, and await his opinion. The larvae are found in houses, in cisterns and bath water and the adults have a peculiarly disrespectful affection for tender integuments, the lips, nostrils or other exposed mucous membrane receiving their attention. The name *Asebeomyia* would be proper for this new genus. Into this genus will also come my *Culex epira* (B.G. Medical Annual for 1908, p. 8). The other is a near ally of *Culicella* specimens of which I received from Mr. W. H. B. Moore. I should place it in this genus but for the long first forked cell of wing. The larva which have also been kindly sent me by Mr. Moore show a peculiar development of the maxilla which are armed at the apex with stout hairs curved at the ends quite differing in this respect from any culicine larva I have seen. The long narrow syphon is also distinctive in being armed with five spine like chaetae on one side near the apex, a tuft of fine hair on the other side. In some respects this larva is similar to *Pectinopalpus fuscus* Theobald? (I as figured by Mr. Wesche from larvae collected at Lagos by Dr. W. M. Graham. (Bull. Ent. Research.

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GENUS JANTHINOSOMA. Arribalzaga.

Three species are recorded from the colony. The character by which this genus is easiest identified is the proportionately very long narrow upright scales fimbriated rather than forked, and the large spindle shaped-scales on the head.

a. Last two hind tarsals white.

Head bright honey yellow.

Thorax with scattered yellow and bronzy scales

1. *Sayii*, Theobald.

(B. G. Med. Ann., 1905, pp. 16, 27, 36. 1906, 66, 72, 75.)

Head golden, purple at the sides.

Thorax with broad yellow scaled lateral areas

2. *Lutzi*, Theobald.

(B. G. Med. Ann., 1905, pp. 16, 27, 36. 1906, pp. 66, 72, 73, 75.)

a.a. Last hind tarsal white.

Thorax with scattered bronzy and yellow scales

3. *posticata*, Wiedemann.

(B. G. Med. Ann., 1908, pp. 6, 22.)

J. sayii is the *musica*, Say, of former notes on the B. G. mosquitoes. Probably *J. albipes* which differs from *lutzi* in having creamy scales instead of yellow on the lateral thoracic areas is also to be found in the colony.

GENUS PSOROPHORA. Robinean-Desvoidy.

One species only is known here.

Psorophora Scintillans. Wiedemann.

Hind legs with apex of femora white scaled

The largest of the Culicine mosquitoes found here. Found on the Demerara river by Dr. Wise.

GENUS STEGOMYIA.

One species and the variety *luciensis* have been identified. From Yupukari specimens came which showed points of difference from *Fasciata*, but their condition when I examined them was not such as to warrant separating them. (B. G. Med. Ann., 1908, p. 7.)

Legs basally banded. Last tarsal segment all white.

1. *fasciata*, Fabricius.

(B. G. Med. Ann., 1905, pp. 16, 26, 31, 36. 1906, pp. 67, 73, 74. 1908, pp. 19, 71.)

Last tarsal segment white with a black band at apex.

2. *var. luciensis*. Theobald.

(B. G. Med. Ann., 1905, pp. 16, 36. 1906, p. 71.)

NOTE.—The name *fasciata* is still retained by Mr. Theobald although Villiers' *Culex fasciatus* 1789) ante-dates Fabricius' use of the name. The type of *C. fasciatus* Villiers is lost and the description too vague to be of use, so that Mr. Theobald thinks that species had best be set aside and as the identity of Meigen's *calopus*, is doubtful retain the name for *C fasciatus*, Fab., especially as this mosquito is so universally known by that name.

GENUS GNOPHODEOMYIA. Theobald.

This genus is formed for a mosquito found in Berbice and bred from larvæ by Dr. Rowland and the writer. It is so far the only known representative of the genus. Messrs. Dyar and Knab have restored it to the genus *Culex* under the name *C. aikenii*. (B.G. Medical Annuals 1905, pp. 25, 29, 32, 34. 1906, pp. 60, 69, 71, 72, 76. 1908, pp. 9, 10, 23.)

V Scutellum with narrow curved scales all over, and six bristles on mid lobe 3-3 on each side of a bare space in middle.

Gnophodeomyia inornata. Theobald.

Messrs Dyar and Knab have separated a species near above sent to them by Mr. H. B. Moore.

GENUS LEUCOMYIA. Theobald.

Our *Culex confirmatus* Arribalzaga (1891) has been removed to this genus and *scapularis*, Rondani (1848) identified with it. Possibly another species is local, that identified by Professor Howard as *Aedes Oswaldi* (v. B. G. Med. Annual, 1908, p. 13.)

Leucomyia Scapularis. Rondani.

Legs unbanded, thorax with silvery scales in front, brown scales behind.

(B. G. Med. Ann., 1905, pp. 18, 27, 36. 1906, pp. 68, 75. 1908, p. 10.)

GENUS CULICELSA. Felt.

One species occurs in the colony. The genus was founded on our common *C. taeniorhynchus* Wiedemann.

Culicelsa Taeniorhynchus. Wiedemann.

Proboscis banded. Legs basally banded. Abdomen basally banded with lateral comma-shaped white markings on each segment.

(B. G. Med. Ann., 1905, pp. 17, 26, 31. 1906, pp. 65, 67, 68, 69, 72, 73. 1908, p. 20.)

GENUS PROTOCULEX. Felt.

This genus was founded by Felt on our *C. serratus*, separated from *Culex* mainly on characters of male genitalia. Theobald adds to the definition the palp characters female palpi 5 segments, male with 2 apical segments swollen.

Protoculex serratus. Theobald.

Thorax with broad median band of creamy broad curved scales and lateral brown narrow curved scales.

(B. G. Med. Ann., 1905, pp. 17, 27, 29, 36. 1906, pp. 68, 75, 1908, p. 23.)

GENUS CULEX. Linnæus.

The seven local species retained in this genus by Mr. Theobald are difficult to synoptise and vary greatly, but I believe most of the forms will find a place in the following groups.

A. Abdomen basally pale banded.

- a. Scutellum with pale narrow curved scales. Head with pale border round eyes. Thorax with largish golden narrow curved scales. Legs with knee and tibial spot.

1. *fatigans*. Wiedemann.

(B. G. Med. Annual, 1905, pp. 19, 27, 29, 37. 1906, pp. 71, 72, 73, 74, 76. 1908, pp. 11, 23.)

Thorax with small golden brown narrow curved scales.

Legs yellowish, apices of femora and tibia darker.

2. *flavipes*. Macquart.

(B. G. Med. Ann., 1905, pp. 18, 37, 1906, pp. 76. 1908, p. 23.)

- a.a. Scutellum with small brownish narrow curved scales.

Legs with pale spots at apices of femora and tibia.

Abdomen with bands which spread laterally on 6th and 7th segments.

3. *similis*. Theobald.

(B. G. Med. Ann., 1905, pp. 25, 29, 30. 1906, pp. 64, 76. 1908, p. 23.)

Abdomen with bands on 2nd. to 5th segments only.

4. *palus*. Theobald.

(B. G. Med. Ann., 1906, pp. 65, 69, 76. 1908, p. 23.)

B. Abdomen unbanded but with basal lateral spots.

- a. Scutellum with creamy narrow curved scales.

Legs with tibial spot only.

5. *lateropunctata*. Theobald.

(B. G. Med. Ann., 1908, p. 11.)

- a.a. Scutellum with brown narrow curved scales.

6. *scholasticus*. Theobald.

(B. G. Med. Ann., 1905, pp. 18, 36. 1906, p. 76. 1908, p. 23.)

Legs unspotted.

7. *nubilus*. Theobald.

(B. G. Med. Ann., 1905, pp. 18, 36. 1906, p. 75. 1908, p. 23.)

Mr. Theobald is not quite certain that *scholasticus* is really separate from *fatigans*.

A species of which I have seen only one specimen taken at Canefield, Canje, and of which the description has not yet been published, will have to be added. It is a very dark mosquito with abdomen basally banded and a tibial spot on the hind leg. The curved scales on the head are light bronzy colour and both black and ochraceous cuneiform scales are present.

Another new species comes also from Canefield, Canje Creek. Abdomen unbanded, with greyish lateral spots only seen in certain lights; hind tarsi with distinct ochraceous spots and fore with traces. It comes near *scholasticus*, Theobald, but the tarsal bands and absence of tibial spot distinguish it. The thorax has bronzy brown hair-like scales as also the scutellum. The first forked cell of wing is long, about 4—1 of stem.

In Mesrs. Dyar and Knab's nomenclature *lachrimans* now stands for the local race of *similis*, the larva of which has some peculiarities; *cubensis* appears to be the West Indian type of *fatigans*, Wiedemann, found here, but Mr. Theobald declares our species identical with the widely dispersed insect. Dyar and Knab prefer the name *quinesfasciatus*, Say, to *fatigans*, Wied., on grounds of priority; in replacing *Gnopodeomyia inornata*, Theobald, in *Culex* the name *inornata* becomes pre-occupied by Williston's *Culex inornatus* and *aikenii* is transferred from above *lachrimans* to Theobald's *G. inornata*.

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GENUS TRICHOPRONOMYIA. Theobald.

Two species are known, one occurs in the colony.

Trichopronomyia microannulatus. Theobald.

Proboscis banded and enlarged on apical half. Abdomen with basal median creamy yellow spots, last two segments with almost complete bands.

This species was described from a single male as was also the species *annulata* on which the genus is founded. I have not met with another specimen since the one bred from water taken from a pond in Stanley Town and sent to Mr. Theobald, and the female so far continues unknown.

(B. G. Med. Ann., 1908, pp. 9, 23.)

GENUS TAENIORHYNCHUS. Arribalzaga.

Two species occur in the colony.

Legs basally pale banded. Abdomen unbanded, lateral pale spots Thorax dark brown, prothorax with saddle-shaped area outlined in golden scales, branching laterally in diagonal lines; mesothorax with two lines and a median patch of similar scales.

1. *fasciolatus* Arribalzaga.

(B. G. Med. Ann., 1905, pp. 20, 37. 1906, pp. 68, 76. 1908, pp. 20, 24.)

Abdomen banded apically. Thorax rich brown golden scaled a paler V-shaped mark on each side.

2. *confinnis*, Arribalzaga.

(B. G. Med. Ann., 1905, p. 20.)

GENUS CHRYSOCONOPS. Goeldi.

This genus was separated from *Taeniorhynchus* to include a number of yellow species, the eggs almost rhombic in shape, the prevailing asymmetrical wing scales and general appearance seem to justify their separation.

(B. G. Med. Ann., 1905, p. 20, 29, 37. 1906, p. 76. 1908, p. 24.)

Thorax yellow in front, darker behind. Abdomen ochreous, unbanded. Wings costa yellow, apex brown.

Chrysoconops fulvus. Wiedemann.

GENUS MANSONIA. Blanchard.

Two species have been identified here. *Tittilans* is the common coast species met with. *Fascipes* has been collected only in the interior at Omai. The larvæ of *tittilans* have been recently traced to their habitat by Mr. H. W. B. Moore and are similar in their way of life to those of *Taeniorhynchus perturbans* which Professor J. B. Smith found some inches deep in the mud and attached to the roots of water plants. Plants of the *Pistia* spp. are, Mr. Moore says, favoured by *tittilans*.

Proboscis banded. Thorax uniformly dark brown. Posterior

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Proboscis unbanded. Thorax with irregular line of pale grey scales laterally. Wings uniformly dark bordered.

2. *fascipes*. Coquillet.

(B. G. Med. Ann., 1908, pp. 13, 24.)

GENUS MELANOCONION. Theobald.

Three species have been described from the colony.

Abdomen with lateral pale spots.

Pleurae black

1. *atratus*. Theobald.

(B. G. Med. Ann., 1905, pp. 19, 29, 31, 34, 37. 1906, p. 76. 1908, pp. 20, 23.)

Pleurae yellow

2. *luteopleurus*. Theobald.

(B. G. Med. Ann., 1905, pp. 24, 25. 1906, p. 76. 1908, p. 23.)

Abdomen unadorned

3. *indecoribilis*. Theobald.

(B. G. Med. Ann., 1908, p. 23.)

To these will have to be added a new species I have recently separated in which there is an appearance of basal banding on abdomen and distinct tarsal markings.

Sub-Family Aedinae.

Three or, if Gualteria be included, four genera are represented here.

Table of Genera.

A. Legs densely scaled at apices of femora. Antennae 14 jointed, basal joint with scales. Thorax with broad flat spindle-shaped scales. Scutellum with broad flat scales. Wings with broad *Mansonia*-like and long lateral scales; 1st forked cell with base nearer apex of wing than base of forked cell.

Head with upright fan shaped scales and small rather outstanding obovate scales.

1. **AEDEOMYIA.** Theobald.

B. Legs normal, no irregular scales.

a. Head with flat iridescent scales only; palpi five jointed.

Wing with rather short fork cells.

2. **HAEMAGOGUS.** Williston.

Abdomen with cluster of blunt outstanding spines on the under side of penultimate segment.

Wing: base 1st forked cell nearer apex of wing than base of 2nd forked cell. Palpi of male about half length of proboscis.

3. **CACOMYIA.** Coquillet.

a.a. Head with flat scales at sides, upright scales in middle and spindle-shaped scales.

Wing: base of 1st forked cell nearer base of wing than base of 2nd forked cell.

4. **GUALTERIA.** Lutz.

GENUS AEDEOMYIA. Theobald.

Of the two species described, one has been found here.

Aedeomyia Squamipenna. Arribalzaga.

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Legs banded. Mid and hind femora with scale tufts.

(B.G. Med. Ann., 1905, pp. 21, 28, 29, 31, 33, 38. 1906, pp. 69, 72, 77. 1908, p. 24.)

GENUS HAEMAGOGUS. Williston.

One species found here.

Haemagogus Cyaneus. Fabricius.

Principal colours blue and dark violet.

Wing: 1st forked cell about twice stem, base nearer base of wing than base of 2nd forked cell.

In Proc. Ent. Soc., Wash. Vol. xi, 1909, No. 3. Mr. Knab proves conclusively that the type *Culex cyaneus* Fab. is a Sabethid. Williston's name *Splendens* therefore stands for this species. (B.G. Med. Ann., 1905, p. 21, 1906, p. 77. 1903, p. 24.)

GENUS CACOMYIA. Coquillet.

One species found here on Demerara River, Pomerona and Canje.

Cacomyia Albomaculatus. Theobald.

Abdomen with median basal patches of white scales on last two segments.

(B. G. Med. Ann., 1905, p. 22, 38. 1906, p. 77. 1908, p. 24.)

GENUS GUALTERIA.

A specimen taken on the Dutch side of Corentyne, sent to Professor Howard, was identified by him as *G. oswaldi*. It may come in the Genus as defined by Lutz, but is almost certainly not his *oswaldi*. (v. B. G. Med. Annual, 1908, p. 13, and sup. p. 195.)

Sub-Family Uranotaeninae.

Of the nine genera included in this sub-family three very typical genera are found here, all small insects with brilliant blue and silvery markings.

Table of Genera.

First fork-cell very small.

a. Male unguis normal.

Wings with rounded white scales at root of 4th and 5th long veins.

1. URANOTAENIA. Arribalzaga.

Wing with rounded white scales on base of 3rd. long vein and elsewhere.

2. PSEUDO-URANOTAENIA. Theobald.

a.a. Male unguis broad and plate-like.

3. ANISOCHOLEOMYIA. Theobald.

GENUS URANOTAENIA. Arribalzaga.

Four species have been described from the colony. A new species near *Geometrica* and one or two others occur but have not yet been worked out. (B. G. Med. Ann., 1906, p. 69).

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Table of Species.

A. Legs banded. Thorax with median line of flat blue scales.

1. *Pulcherrima*. Arribalzaga.

(B. G. Med. Ann., 1905, pp. 28, 29, 31, 33, 38. 1906, p. 77. 1908, p. 16.)

Thorax with narrow curved brown gold bordered scales and spot of pale blue scales near scutellum. Abdomen with lateral triangular pearly patches.

2. *geometrica*. Theobald

(B. G. Med. Ann. 1906, pp. 63, 69, 77. 1908, p. 24.)

B. Legs unbanded.

Thorax with silvery blue spot at base of each wing.

Abdomen with apical pearly blue spots.

Two and a half tarsi of hind legs white.

3. *lowii*, Theobald.

(B. G. Med. Ann., 1908, p. 14, 15, 16, 25.)

Thorax with azure blue scales at front of root of wings.

Abdomen with apical pale blue spots.

Two and a half tarsi of hind leg white, in some lights dusky.

4. *minuta*.* Theobald.

(B. G. Med. Ann., 1908, pp. 15, 16, 25.)

GENUS PSEUDO-URANATAENIA. Theobald.

Founded on specimens taken in Berbice. One species found here.

Pseudo-uranataenia rowlandii. Theobald.

Wings with creamy white spot on costal border.

Thorax with scales similar to *Geometrica*. Abdomen unbanded.

(B.G. Med. Ann., 1905, p p. 25 28. 1906, p.p. 61, 77. 1908, p. 24.)

GENUS ANISOCHELEOMYIA. Theobald.

One species bred from larvae from a pond in Stanleytown.

Anisocheleomyia leucoptera. Theobald.

Head with dark flat scales violet reflections.

Thorax brown scaled in middle, silvery white outstanding scales at sides.

Abdomen with white median patches.

Wings white with costa brown at base and brown area at cross veins.

Sub-Family Trichoprosoponinae. Theobald.*Table of Genera.*

Palpi of female nearly one-third length of proboscis; of male about same length.

a A conical blunt process between eyes and clypeus. Proboscis long.

1. RUNCHOMYIA. Theobald

a.a. Conical process absent.

b. Clypeus with hairs.

Metanotum with chaetae and scales.

Proboscis moderately long.

2. TRICHOPROSOPON. Theobald.

Proboscis long and thin.

3. JOBLOTIA. Blanchard.

b.b. Clypeus without hairs. Proboscis short, thick, apically expanded.

4. GOELDIA. Theobald.

GENUS RUNCHOMYIA. Theobald.

Of three species described one occurs in the colony: one described from the Philippines by Giles is, according to Theobald, doubtful. The distinguishing character is the blunt prominence on the frons.

Runchomyia frontosa. Theobald.

Head with flat scales, brown and violet.

An tennæ basal joint plug-shaped. Proboscis as long as body.

Wings with large broad brown scales and some long ones.

(B.G. Med. Ann. 1905, p.p. 23, 38. 1906, p. 77. 1908, p. 25.)

GENUS TRICHOPROSOPON, Theobald.

In this genus Theobald seems to include Joblotia (Blanchard) although his synoptic table appears to distinguish them. (M. Cul., Vol. V, p. 554.) The Genus Joblotia was formed from *lunata* by Lutz on the absence of hairs on the clypeus, but is replaced by Theobald in Trichoprosopon in his Vol. V, (v. p. 557); the note in that reference is contradicted by his note on *Lesticocampa* id., p. 621, which replaces *lunata* in Joblotia!! A Joblotia sp. was identified amongst specimens collected at Yupukari, and sent by Dr. Wise to the London School of Medicine. I have not seen a description of the species which was reported to be new. (v. B. G. Med. Annual, 1908, p. 4.)

GENUS GOELDIA. Theobald.

One species found by Dr. Low on the Demerara river and by Dr. Lutz in Brazil is the sole representative of the Genus.

Goeldia fluviatilis. Theobald.

16 *A Synoptical View of the Mosquitoes of British Guiana.*

Head with flat scales and black upright scales at nape.

Thorax with bronzy narrow curved scales, some broader scales near root of wing and in front of scutellum.

Wing with pale spot at base.

(B. G. Med. Ann., 1905, p. 23, 38. 1906, p. 77. 1908, p. 25.)

Sub-Family Dendromyinae. Lutz.

Eleven genera are now included in the sub-family, four of which are represented in the colony.

Table of Genera.

Legs with paddle-like structures.

1. SABETHES. R. Desvoidy.

Legs without such structures.

Wing: lateral vein scales linear.

Proboscis shorter than body, swollen at apex.

2. WYEMYIA. Theobald.

Proboscis equal in length to abdomen, not swollen.

Wing: lateral wing scales broadish asymmetrical. Posterior and mid cross veins in one line.

3. SABETHOIDES. Theobald.

Proboscis swollen apically.

Mesonotum: scales dusky metallic.

Clypeus without scales.

Wings with broad symmetrical lateral scales.

4. DENDROMYIA. Theobald.

The Genus *Dendromyia* from which this Sub-Family takes its name was formerly stated by Mr. Theobald to be very closely allied to *Runchomyia*, one of the Trichoprosoponinae but he has now adopted Lutz's classification in which these genera are placed in different sub-families.

GENUS SABETHES. Robinean-Desvoidy.

Two species have been found in the colony.

Mid legs only with paddles.

remipes. Wiedemann.

(B. G. Med. Ann., 1905, pp. 23, 38. 1906, p. 77. 1908, p. 17, 25.)

All legs more or less padded.

longipes. Macquart.

A specimen kindly procured for me from Essequibo River by Mr. R. O. H. Spence, of the Lands and Mines Department, differs in several points from *longipes* Macquart (Theo. Mon. Cul., I, 250, III, 327.) It has paddles on all legs shaped as in *longipes* but the mid paddle has white outstanding scales only at apex; the silvery white base of tibia and the tarsal white markings show all round; the foreleg has absolutely no white scales, the hind tarsi show distinctly light coppery brown, the mesonotum has two rows of white scales, the posterior and mid cross veins of wings are almost in a line. The proboscis is only slightly swollen apically. This is probably *S. Ochausi* D and R.

The type of *S. cyaneus* in Copenhagen Museum is clearly proved by recent investigation to be identical with *S. remipes* which should therefore be known as *S. cyaneus* (v. note supra *H. cyaneus* and reference to Mr. Knab's paper in proc. Ent. Soc., Washington.)

GENUS WYEOMYIA. Theobald.

A species from the colony has been identified as *melanocephala* by Messrs. Dyar and Knab. I have not yet seen the description which was published in the Proceedings of the Biol. Socy. of Washington, Vol. XIX, p. 140 (1906).

GENUS SABETHOIDES. Theobald.

Abdomen metallic green, mauve, purple, blue, white and yellow; white lateral spots; venter yellow. Legs, 1st to 3rd tarsals of mid leg silvery underneath.

confusus. Theobald.

(B. G. Med. Ann., 1905, pp. 23, 38. 1906, pp. 65, 77.)

As above but without lateral white spots on abdomen.

undosus. Coquillet.

(B. G. Med. Ann., 1906, p. 65. 1908, pp. 17, 25.)

GENUS DENDROMYIA. Theobald.

Four species occur here, the genus was founded on *ulocoma* and *assullepta* found by Dr. Low on Demerara river. It is allied to *Wyeomyia* and differs mainly in the wing scales which are broader and sometimes asymmetrical.

Table of Species.

A. Prothoracic lobes golden scaled.

Prothorax with two dark areas. Abdomen dusky brown; venter, probably great

(B. G. Med. Ann., 1905, pp. 22, 38. 1906, p. 77. 1908, p. 25.)

assullepta. Theobald.

B. Prothoracic lobes not golden.

Abdomen dusky black, 1st segment violet reflections; yellowish venter.

Thorax unadorned.

Head with white line round and between eyes.

luteoventralis. Theobald.

(B. G. Med. Ann., 1905, pp. 22, 38. 1906, p. 77. 1908, p. 25.)

Hind metatarsus longer than tibia.

quasi-luteoventralis. Theobald.

(B. G. Med. Ann., 1905 pp. 22, 38. 1906, p. 77. 1908, p. 25.)

No white line between eyes.

B.G. Med. Ann. 1905, pp. 22, 38. 1906, p. 77. 1908, p. 25.

ulocoma. Theobald.

Sub-Family Limatinae.

One genus only is known, and occurs in Brazil and in the colony.

GENUS LIMATUS. Theobald. One species only.

Limatus durhamii. Theobald.

Proboscis elbowed a tuft of scales at the bend, another at apex, some bristles at the base ventrally.

Mesothorax with rich purple scales and I shaped golden median lines in front.

Wing: lateral scales broad rather asymmetrical; base of wing pale yellowish.

Abdomen almost black, basal lateral white spots

Identified by Professor Howard in a collection from Rupununi. (v. B. G. Med. Ann. 1908, p. 3, 18.)

Lim : scales dusk
without scales.
th broad symm
