NEW AND LITTLE KNOWN PSYCHODIDAE FROM BORNEO AND THE MALAY PENINSULA.

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Through the kindness of Mr. Paul Freeman of the British Museum, I have been permitted to study the collection of Psychodidae made by Mr. H. M. Pendlebury in British North Borneo and the Malaya Peninsula between the years 1924 and 1935. The collection is not a large one but is rich in new species and also contains many specimens of *Nemopalpus orientalis* Edwards, hitherto imperfectly known from the unique ♀. This species, and two species of *Trichopsychoda* Satchell[1], are the only described Psychodidae from this area. It is the purpose of this paper to describe a further 12 species.

Nemopalpus orientalis Edwards

1928. *Nemopalpus orientalis*, Edwards *J. F. M. S. Mus.* XIV, p. 65

In searching through the collection I initially came upon a single specimen of a male of this species. It is this specimen that has been used in drawing up the following description, and it thus constitutes the allotype of the species. Just before my stay at the British Museum was at an end, I found some 30 more specimens in a box I had overlooked. I was not able to incorporate these into the description in the short time left to me, but I managed to go through them and make sure that the description given below is applicable to them. This species has thus changed from being one of the least known and most poorly represented of the genus, to one of the best represented species in museum collections.

Male.—Head, antennae and palps a light ochraceous-brown; eyes separated by width of 4 facets. Flagellum of antenna broken at tip, but flagellar segments becoming progressively shorter (text-fig. 1*a*), the first 1·7 times as long as the second; ascoids paired on flagellar segments, each a heart shaped to irregularly triangular sac (text-figs. 1*b* & *c*).

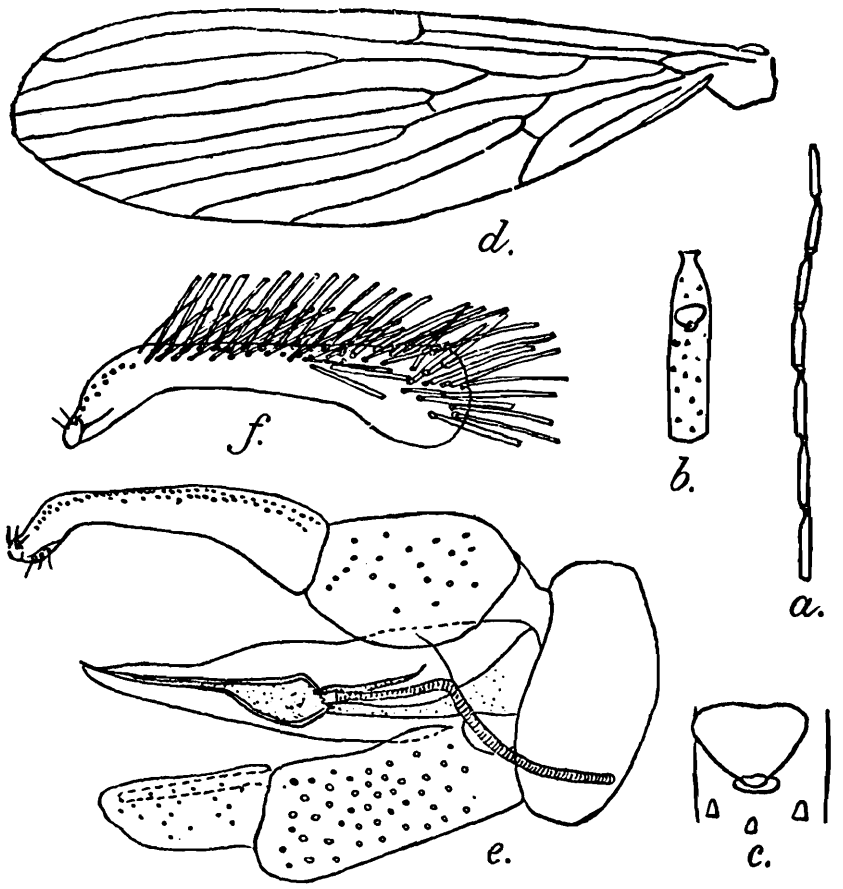
Thorax with long ochraceous hair; mesonotum with a darker brown lateral stripe; wing (text fig. 1*d*) with venational characters typical of old world representatives of the genus, R_2 2·1 times as long as R_{2+3}, r-m proximal to fo rking of M_{1+2}; Sc ending at a level just beyond that of forking of R_{4+5}; stem of M_{1+2} twice as long as r-m. Vestiture uniformly ochraceous and hairy; legs unicolourous.

Abdomen with a uniformly ochraceous vestiture lacking tufts and odoriferous pockets. Hypopygium as in text-fig. 1*e*, the 9th tergite almost twice as long as the cylindrical cercopod and thickly clothed with long setae; anal valve triangular, setose, almost as long as cercoped Coxite a little longer than wide, style straight in basal three quarters,

[1]Satchell, G.H., *Proc. Roy. ent. Soc. Lond.* B. XXIV pts. 3-4 (1955).

then bending to a blunt apex carrying a circular depression containing three small setae; ventral side of style apex narrow and flat, bearing a row of 3 or 4 small setae; inner face of style (text-fig. 1*f*) covered with numerous long straight setae with serrulate ends, densely clustered at base of style. Aedeagus (text-fig. 1*e*) consisting of a pointed sheath enclosing a sclerotized hollow internal structure which is swollen proximally and communicates with the wrinkled sclerotized sperm duct; no parameres present.

Allotype ♂.—Fraser's Hill, 4,200 feet, Pahang, Malay Peninisula, 30. V 1932. The allotype comes from the same district (Pahang) as the type, but not from the same locality (Cameron's Highlands).



Text-fig. 1.—*Nemopalpus orientalis* Edwards.

a. Basal flagellar segments; *b*. A flagellar segment showing ascoid; *c*. Ascoid; *d*. Wing; *e*. Hypopygium (lateral view); *f*. Style from inner side.

The species shows affinity with the old world species of the group (Fairchild[1]) particularly with *Bruchomyia edwardsi* Tonnoir, and *Nemopalpus capensis* Edwards. In the wing R_2 is longer than R_{2+3}, R_4 is at the wing tip, and r-m is proximal to the medial fork. In addition, the ♂ genitalia are similar, with simple undivided cerci and styles, and a symmetrical aedeagus lacking parameres. The heart-shaped to triangular ascoids are reminiscent of new world species but ascoids have not been described for all the old world species and the peltate and discoidal type may be of wider distribution.

[1]Fairchild, G.B. *Ann. ent. Soc. Amer.* XLV, p. 261 (1952).

Genus **Brunettia** Annandale

The genus *Brunettia* Annandale[1] even in the revised form proposed by Freeman[2] is not entirely satisfactory and as more species are described it becomes clear that a number of distinct segregates are involved. The change from a hairless to a hairy wing membrane is one that has probably occurred in a number of lines, and at present any hairy winged Psychodinae fly that does not fulfil the diagnosis of *Trichopsychoda* Tonnoir, is placed in *Brunettia*. As I intend to revise the genera of recent Psychodinae in a later paper I will not discuss it here. It is, however, clear that the three species *B. triangulata*, sp. nov., *B. pendleburyi*, sp. nov., and *B. brevifurca*, sp. nov. are closely related to the type species *B. superstes* Annandale, and to such species as *B. biformis* Edwards (which also occurs in Malaya) and *B. albonotata* Brun. This section of the genus is primarily Indo-malayan in its distribution, only the last species having acquired a cosmotropical distribution owing to its semi-domestic association with man. In this section of the genus the eye bridges are normally developed, the antennae are 15-segmented, the flagellar segments are eccentric, the ascoids are curled, the wing is often much broadened, and some or all of the retinaculae in the ♂ are racket-shaped.

The species *B. longipalpis*, sp. nov., *B. tormentosa*, sp. nov., and *B. alternata*, sp. nov. though known only from the ♂ s, are more closely related to the *B. splendens* Tonn.—*B. gloriosa* Tonn. species group. Here the eye ridges are widely separated, the antennae are 16 segmented, the flagellar segments are symmetrical, elongate, and appear to have a distinct collar around the neck, the ascoids are straight or slightly bent, the wing is usually ovolanceolate, and the retinaculae, though of diverse shapes, are not racket-like. Quates[3] has published a description of a species *B. nitida* from N. America which belongs in this group, so it is evidently of wide distribution.

The species *B. anomala* does not obviously belong to either of these segregates. Its antennae are reminiscent of some species of *Telmatoscopus* and even the hairing of the wing membrane is very incomplete and extends only round the periphery of the wing.

Brunettia triangulata, sp. nov.

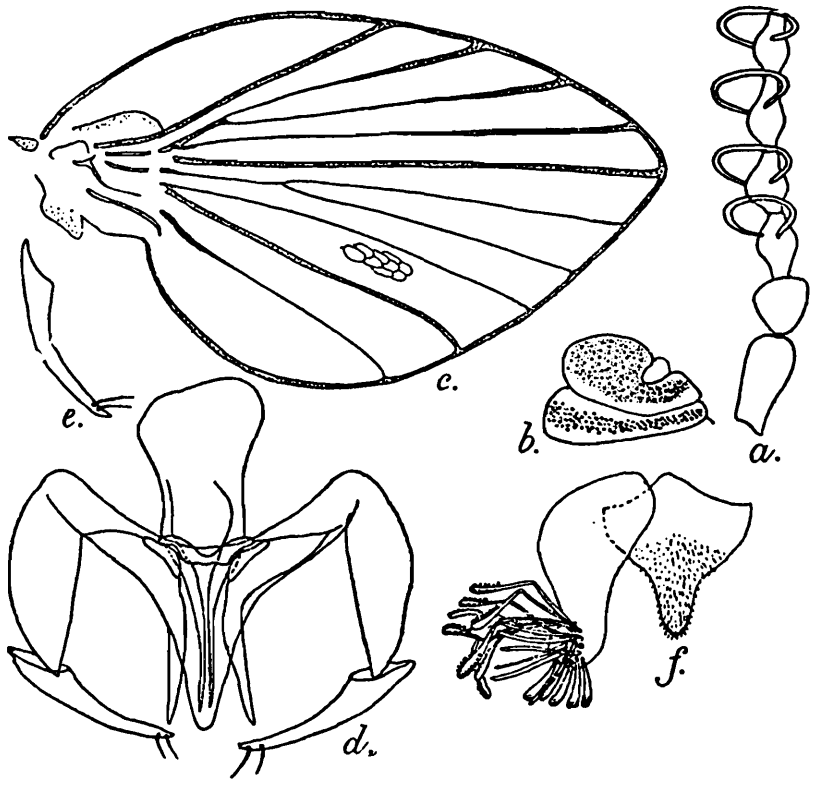
A black species with white spots at the vein tips very similar to *B. albonotata* Willist. but with broader wings.

Male.—A tuft of snow-white squamous hairs on clypeus, and brownish-black hairs on frons; eye bridges touching. Antenna 15-segmented, scape (text-fig. 2*a*) longer than wide, flagellar segments eccentric, bearing paired, strongly curved ascoids on segments 3-13. Palpi with first joint very small; formula 1 : 5 : 5·8 : 6·5.

Thorax with a vestiture of blackish-brown hairs anteriorly; posterior thorax rubbed. Allurement organ more extensively developed than in *B. albonotata* Willist. extending ventrally (text-fig. 2*b*) and curving

[1] Annandale, N., *Rec. Indian Mus.* V, p. 141 (1910).
[2] Freeman, P., *Proc. R. ent. Soc.* London, B, XX, p. 142 (1951).
[3] Quates, L., *Univ. Calif. Publ. Ent.* X, No. 3, pp. 103-273 (1954)

round the anterior spiracle, the portion ventral to the spiracle not as great as the portion dorsal to it ; allurement organ covered with numerous pores and flanked by a dense tuft of squamous hairs. Wing (text-fig. 2*c*) 2 mm. long, 1·7 times as long as broad, humeral region enlarged but not so extensively as to interrupt the line of curvature of the anterior wing margin ; R_5 at wing tip, medial fork after radial, with a well developed pedicil : upper surface of wing with a predominantly hairy vestiture, with scales intermixed over all but the apical sixth : lower surface evenly covered with blackish-brown iridescent scales ; on upper surface small tufts of white scales at vein tips, overlapping onto the unicolourous fringe ; alula tuft of rather short thick squamous hairs, scarcely extending to level of base of Cu which is a well developed vein. Legs black, tips of tibiae and metatarsi white.



Text-fig. 2.—*Brunettia triangulata*, sp. nov.

a. Base of antenna ; *b*. Allurement organ ; *c*. Wing ; *d*. Hypopygium ; *e*. Style (drawn from a paratype♂) ; *f*. Cercopod and anal valve.

Hypopygium with 9th sternite much extended antero-posteriorly in the mid-line to form a triangular lobe that extends posteriorly beyond the level of the tip of the aedeagus (text-fig. 2*a*) : style slightly curved (text-figs. 2*d* and *e*), the apical half straight and parallel sided, not sinuate ; aedeagus of two long slender pointed valves ; parameres with the spine sword-like, projecting considerably from the triangular base and bent at an angle to it ; cercopods a little longer than 9th tergite, bearing apically (text-fig. 2*f*) five or so rather strongly sclerotised spatulate retinaculae ; more basally a group of narrow, straight, bluntly ending retinaculae, and more basally still, 12 or so angulated racket-shaped retinaculae of the usual type ; anal valve as in fig. 2*f*.

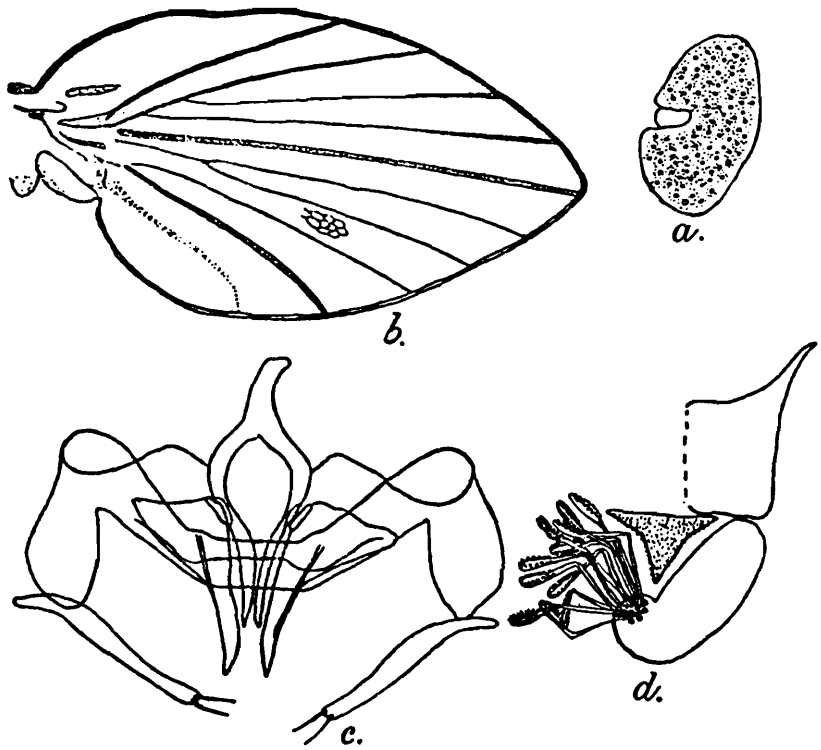
Type-specimen.—1♂ paratype ; Fraser's Hill, 4,200 feet, Pahang, and Malay Peninsula, 22.V.1932 and 4.VII.1931.

Remarks.—This species is one of a group of closely similar species, and the wing is identical to that figured for *B. atrisquamis* Brunetti. However, as the two sets of specimens of this species in the British Museum collections have different genitalia and as Brunetti made the description from a single ♂, it seems wisest to describe this species as new rather than to link it with such an inadequately known species

Brunettia pendleburyi, sp. nov.

A black species with white spots on the wing margin, very similar to *B. triangulata*, sp. nov. but with different genitalia and a less broadened wing.

Male.—Frons and clypeus with a black squamous covering; eye bridges touching. Antenna 15-segmented, scape bulging on inner side, twice as long as broad, flagellar segments eccentric, bearing paired strongly curved ascoids on segments 3-13. Palpal formula 1 : 5 : 5 : 6.



TEXT-FIG. 3.—*Brunettia pendleburyi*, sp. nov.
a. Allurement organ ; *b*. Wing ; *c*. Hypopygium ; *d*. Cercopod and anal valve

Thorax with a black vestiture of long squamous hairs. Allurement organ (text-fig. 3*a*) extensively developed, surrounding anterior spiracle so that portion below spiracle is equal to or greater than portion above it. Wing (text-fig. 3*b*) 2·3 mm long, 1·7 times as long as broad, humeral region enlarged so that anterior margin is broken into two separate regions of curvature; R_5 slightly below wing tip, medial fork after radial, with a well developed pedicil; Cu a very vaguely indicated vein; upper surface of wing with a predominantly hairy vestiture, with scales intermixed over all but the apical sixth; ventral surface evenly scaly; on upper surface tufts of broad white scales present behind tips of R_1, R_2, R_3, M_2, M_3 and M_4: tuft behind R_1 separated from it by a distance equal to half that between the tips of R_1 and R_2; a less conspicuous tuft at tip making 7 in all; alula tuft broadening out from base to tip, extending beyond base of Cu.

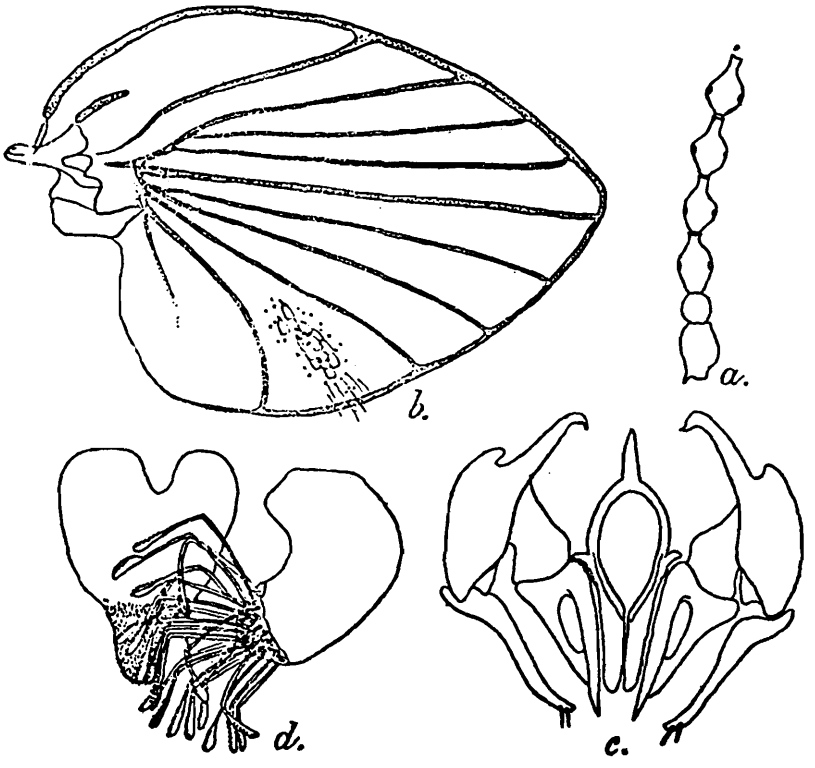
Hypopygium as in text-fig. 3*c*; the 9th sternite forming a rather broad transverse bar sclerotised noticeably on the anterior margin; 9th sternite not reaching beyond tip of aedeagus; style almost straight bluntly ended, the usual pair of preapical setae here at the very tip; aedeagus of two slender pointed valves; parameres with the spine as long again as the triangular base, sword-like and bent at an angle to the base; cercopods a little longer than the 9th tergite bearing apically (text-fig. 3*d*) a cluster of 14 or so angulated racket-shaped retinaculae; anal valve as in Fig. 3*d*.

Type-specimen.—Type and only specimen; Fraser's Hill, 4,200 feet, Pahang, Malay Peninsula, 5.VII.1931.

The species is named after Mr. H. M. Pendlebury who collected all the specimens in this collection of Psychodidae.

Brunettia brevifurca, sp. nov.

A black species with a particularly broad wing in which Cu has been rotated to a position almost at right angles to R_5.



TEXT-FIG. 4.—*Brunettia brevifurca*, sp. nov.

a. Base of antenna; *b*. Wing; *c*. Hypopygium; *d*. Cercopod and anal valve.

Male.—Eye bridges three facets wide, separated by a width of 3 facets but linked by a sclerotised band. Antennae broken off apically, scape (text-fig 4*a*) one and a half times as long as wide, broadest half way up, bearing a tuft of squamous hairs on inner side; flagellar segments with necks shorter than bulbs, ascoids apparently paired, Palpal formula 1 : 3·3 : 3 : 3·9.

Thorax lacking any allurement organ. Wing very broad (text-fig. 4*b*), 3 mm long, 1·5 times as long as broad, radial fork very close to origin of R_{2+3} but after medial; medial fork so close to wing base that its pedicil is almost obliterated; R_5 below wing apex; anal part of wing so expanded that M_4 has the shape usually taken by Cu, bending posteriorly near the margin, and Cu, which is rotated into a position almost at right

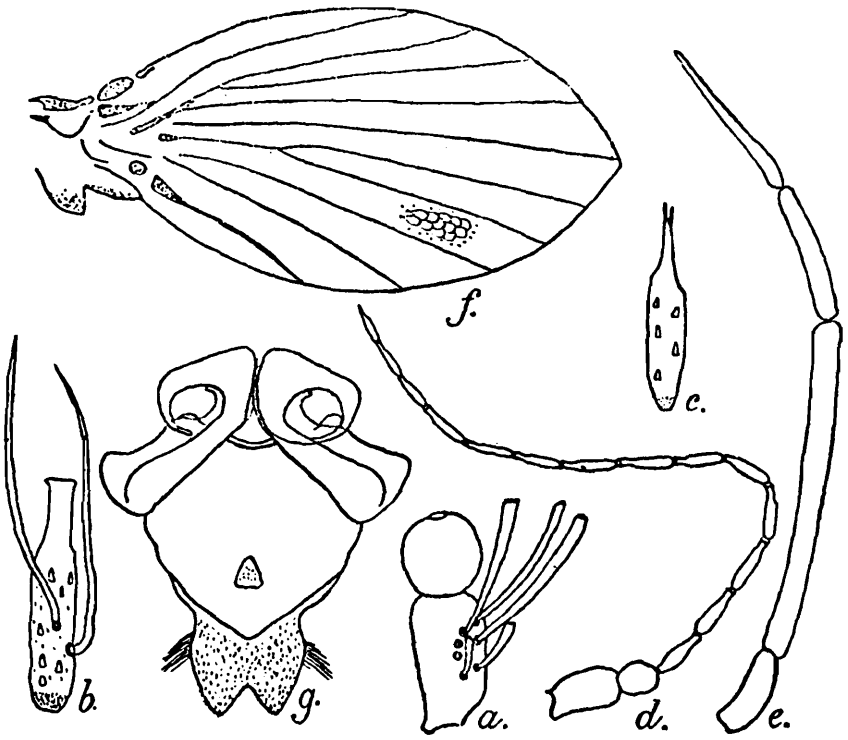
angles to R_5, is a very diffuse and indefinite vein that fades away before the margin; whole of wing membrane on both surfaces evenly covered with short scales, with a few hairs intermixed near the margin on the upper surface. Legs black, tibiae with a subapical ring of white scales; basal third and tip of metatarsi and whole of second tarsal joint white.

Hypopygium with style a little curved; aedeagus (text-fig. 4*c*) symmetrical, bifid, the two valves ending in rounded tips; paramere with the spine scarcely extending beyond the triangular basal piece and with its axis a continuation of the axis of the basal piece; paramere only a little longer than aedeagus; cercopod (fig. 4*d*) equal to 9th tergite, with a terminal cluster of 40 or so racket-shaped angulated retinaculae; anal valve with a rounded posterior margin (text-fig. 4*d*).

Type-specimen.—Type and only specimen; Mt. Kinabalu, 5,500 feet, Luma Luma, North Borneo, 17.IV.1924.

Brunettia longipalpis, sp. nov.

A species with very long palps and the wings evenly covered with iridescent scales.



TEXT-FIG. 5.—*Brunettia longipalpis*, sp. nov.

a. Scape and pedicil; *b*. A medial flagellar segment with ascoids; *c*. Terminal antennal segment; *d*. Whole antenna; *e*. Palp; *f*. Wing; *g*. Subgenital plate and spermathecae.

♀ Eyes with very short bridges, not extending beyond the medial edge of the antennal socket, separated by a width equal to ¼ of the head. Antenna (text-fig. 5*d*) 16-segmented, 1·25 times as long as wing width; scape (fig. 5*a*) 1·6 times as long as wide, some long squamous hairs present on inner side; flagellar segments (fig. 5*b*) like narrow flasks, the neck perfectly distinct, but not very much more narrow than the bulb; apical segment (fig. 5*c*) with a conical tip bearing two minute sensillae; ascoids very long, almost straight, in pairs on segments 4-14. Palpi very long (figs. 5*e* and *d* are drawn to the same scale), almost as long as antennae; formula 1 : 4 : 1·8 : 2.

Wing (text fig. 5*f*) 2·7 mm long, 2·3 times as long as broad, radial fork before medial, very close to origin of R_{2+3}, which is after apex of basal cell; R_5 very little above wing apex: Sc appearing as a triangular sclerotization; base of Cu much thickened; wing membrane above and below, evenly covered with small iridescent scales. Legs with a brown scaly covering. Apex of anterior and middle tibiae, base and tip of metatarsi and dorsum of 2nd tarsal joints with a white scaly covering; posterior leg with white scales on base and tip of metatarsi and most of 2nd tarsal joint.

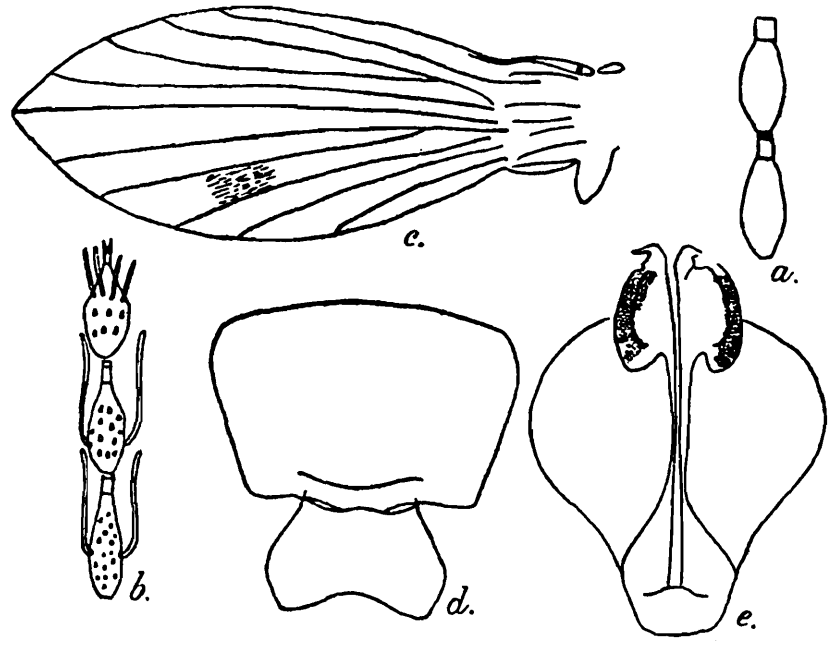
Abdomen with a brown scaly decumbent vestiture. Subgenital plate with a deep medial indentation, as seen in the text-fig. 5*g*. Spermathecae as in text-fig. 5*g*.

Type-specimen.—Type and only specimen; Samairan, near Sandakan, North Borneo, 15.VII.1927.

This species is very closely related to *B. splendens* Tonnoir (1936) of Central Africa.

Brunettia tormentosa, sp. nov.

Uniformly brown species with silvery-white tarsi and a brown hairy wing.



Text-fig. 6.—*Brunettia tormentosa*, sp. nov.

a. Medial flagellar segments; *b.* Terminal flagellar segments with ascoids; *c.* Wing; *d.* Subgenital plate; *e.* Spermathecae.

Female.—Frons and clypeus with tufts of long brown squamous hairs. Eye bridges separated by width of 6 facets, their medial edges projecting distinctly beyond medial edge of antennal socket. Antenna 16-segmented, 1·2 times as long as wing width; scape 1·5 times as long as wide, bearing 20 or so strong squamous hairs on inner face; flagellar segments (text-fig. 6*a*) with slender basal bulbs and apical necks, the neck with a distinct, more sclerotized, collar-like band around it; terminal segments (text-fig. 6*b*) unreduced, the 16th with a sensory cone bearing two sensillae at the apex; ascoids paired, almost straight on segments 3-15, those on segment 16 replaced by a group of sensory rods. Palpal formula 1 : 1·9 : 2·1 : 1·9.

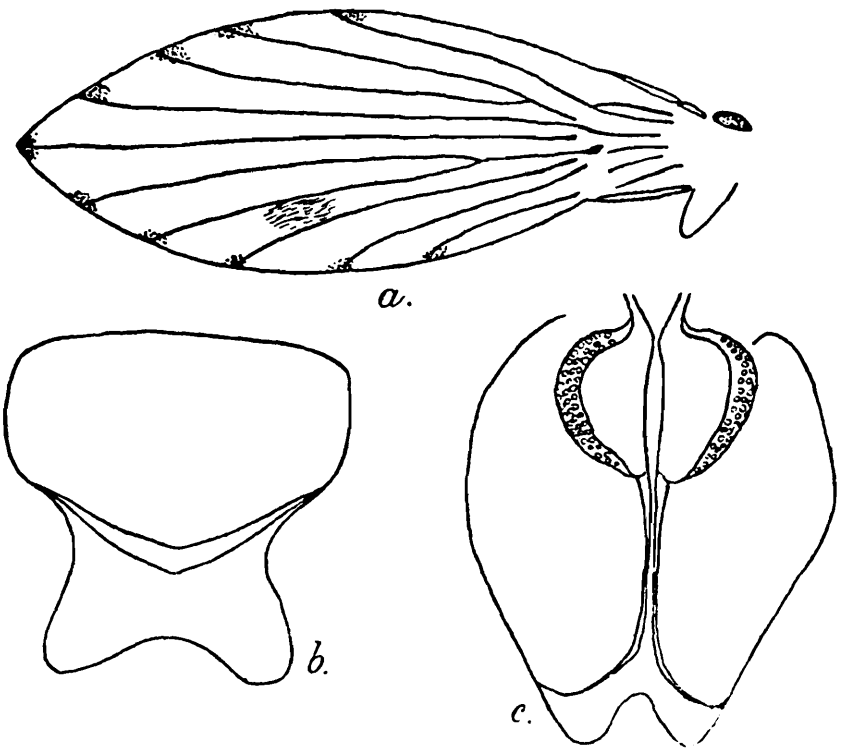
Thorax with a uniformly brown hairy vestiture. Wing (text-fig. 6*c*) 2·9 mm long, 2·5 times as long as broad, the area of wing lying below R_5 greater than that lying above it; R_5 at wing apex, origin of R_{2+3} at apex of basal cell, radial fork very little before medial, both near base of wing; wing membrane evenly covered on both surfaces by fine brown hairs; hairs on veins in the basal sixth of the undersurface rather squamous in character. Legs covered with scales with a silvery-white reflection, the apparent extent of the whiteness varying with the light; in diffuse light, apex of tibiae, metatarsi and all but last two tarsal joints appearing silvery white.

Subgenital plate not deeply cleft medially, its greatest width two-thirds of the distance from the anterior margin; spermathecae as in fig. 6*e*, the capsules with a finely reticulate sculptured pattern.

Type-specimen.—Type and only specimen; Fraser's Hill, 4,200 feet, Pahang, Malay Peninsula, 22.V.1926.

Brunettia alternata, sp. nov.

A brown species with white metatarsi and alternating black spots and white spaces in the wing margins; closely related to *B. tormentosa*.



TEXT-FIG. 7.—*Brunettia alternata*, sp. nov.
a. Wing ; *b*. Subgenital plate ; *c*. Spermathecae.

Female.—Eye bridges separated by width of 12 facets, their medial edges scarcely projecting beyond the medial edge of the antennal socket; antennae and palpi incomplete but very similar to those of *B. tormentosa*; the flagellar segments each with a distinct collar around the neck.

Thorax with a brown vestiture. Wing (text-fig. 7*a*) 2·2 mm long, 2·5 times as long as broad, divided more nearly into two symmetrical halves by R_5 than is the case with *B. tormentosa*; venation much as in that species but radial fork equidistant between base of R_{2+3} and level of medial fork; veins and membrane evenly covered with brown hairs; a cluster of darker brown to black squamous hairs at each vein tip,

membrane between adjacent vein tips occupied by a clear patch bearing white hairs; similar patches present also behind the tips of R_1 and Cu; fringe unicolourous apart from a few white hairs around wing apex. Legs pale brown, metatarsi and first tarsal joint creamy white, the remaining tarsal joints brown.

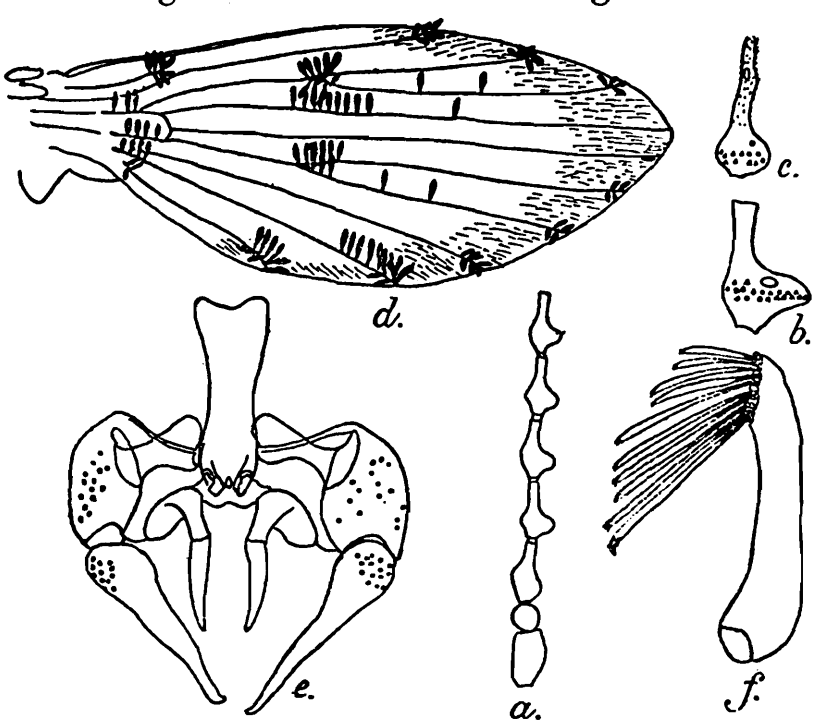
Subgenital plate as seen in the text-fig. 7*b*, the greatest width at the level of the tips of the lobes; spermathecae as in text-fig. 7*c*, the capsules bearing a sculptured pattern of minute circular pits.

Type-specimen.—Type and only specimen; Negri Sembilan, near Port Dickson, Malay Peninsula, 9.I.1935.

Brunettia anomala, sp. nov.

A pale brown species with long antennae and tufts of thick black scales on the forks and at the vein tips.

Male.—Eye bridges 5 facets wide, separated by a width of 1½ facets. Antenna 16-segmented, 2·3 times as long as wing width; scape 1·7 times as long as broad (fig. 8*a*), flagellar segments with eccentric bulbs (fig. 8*b*) and necks a little longer than bulbs in all except first flagellar segment; terminal segments with necks showing no reduction in length,



Text-fig. 8.—*Brunettia anomala,* sp. nov.

a. Base of antenna; *b.* A medial flagellar segment; *c.* Terminal antennal segment; *d.* Wing, showing distribution of dark scales and hairs on wing membrane; *e.* Hypopygium; *f.* Cercopod.

16 with an elongate apiculus twice as long as the bulb; ascoids lost in type but visible as flat leaf-like structures in unprepared fly. Palpal formula 1 : 2 : 1·8 : 2·3.

Thorax without allurement organ. Wing (text-fig. 8*d*) 2·1 mm long, 2·4 times as long as broad, radial fork a little after medial, both after level of tip of Cu; R_5 well below wing tip; origin of R_{2+3} much before apex of first basal cell. Vestiture of wing mainly light brown and hairy; groups of black scales present over bases of veins, over forks, and at the tips of Sc, R_1, R_2, R_3, M_1, M_2, M_3, M_4 and Cu; a row of black scales on R_4 below fork and scattered odd scales amongst the normal hair on

R_3, R_4 and M_2; patches of rather paler hair present over each vein tip; underside with tufts of black scales over vein bases, forks, and tips of So, M_4 and Cu; a peripheral band of hairs on wing membrane close to margin, on both surfaces; remainder of wing membrane naked. Legs brown, white rings at bases of metatarsi and first two tarsal joints.

Hypopygium with 9th sternite a simple curved band; coxites (text-fig. 8*e*) a little longer than broad, style longer than coxite, tapered, almost straight, slightly hooked at tip; aedeagus bluntly ending, not projecting beyond the posterior margin of the 9th segment; parameres simple and pointed; cercopod twice as long as 9th tergite, cylindrical, little tapered, bearing a cluster of 14 or so retinaculae with fringed tips; anal valve an elongate triangle with a rounded tip.

Type-specimen.—Type and only specimen; Bukit kutu, 3,500 feet, Selangor, Malay Peninsula, 16.III.1931.

Genus **Telmatoscopus** Eaton

Of the four species of *Telmatoscopus* present, *T lanceolatus* is of interest as it is the first species of the subgenus *Mormia* Enderlein to be found outside the Palaearctic region. Of the various subgenera of *Telmatoscopus* that have been proposed, this is probably the most distinct and easily recognised. In the position of the origin of R_2+_3 and in the presence of port-hole organs on the ♂ antenna, *T lanceolatus* is a typical member of it. *T retrobarbus* is a curious species showing affinities with the European *T albomaculatus* Wahlg. though the retinaculae are unique in the genus. *T. fuscinervis* is quite the most ornately decorated species in the genus, specimens of it standing out in the cabinet even to naked eye inspection. The affinities of it, and of *T. candidus* can not be surmised as they are known only from ♀s.

Subgenus **Mormia** Enderlein

Telmatoscopus (Mormia) lanceolatus, sp. nov.

A small black species with lanceolate wings and a white space in the fringe at the wing apex.

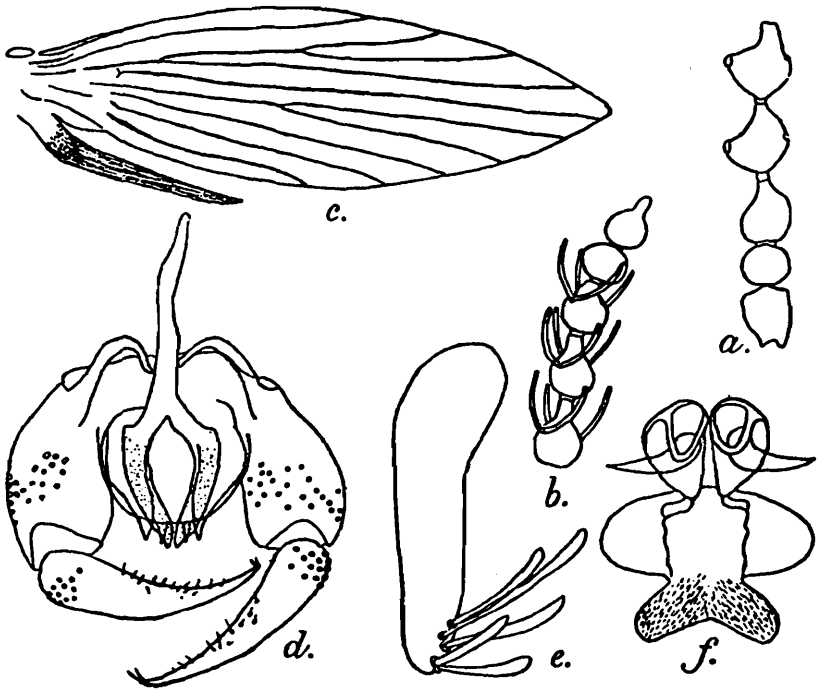
Male.—Eye bridges 3 facets wide, touching. Antenna 16-segmented, broken at the 5th segment in type and only ♂, but calculated to be 2·6 times as long as wing width; scape (text-fig. 9*a*) only a little longer than wide, basal flagellar segments with very little neck, segments 3-5 (and probably some subsequent to 5) with port-hole organs: apical segments missing in type but probably similar to allotype. Palpi with a scaly vestiture; formula 1 : 1·3 : 1·4 : 2·3.

Thorax with a black vestiture, no allurement organ present. Wing (text-fig. 9*c*) lanceolate, 1·6 mm long, 3·3 times as long as broad; radial fork a little after medial, above tip of Cu; origin of R_2+_3 well after apex of 1st basal cell, R_5 below wing apex; alula tuft very long and pencil-like; lying parallel with hind margin of wing; wing vestiture blackish-brown apart from three tufts of decumbent hairs which are white basally and black apically, lying just before tips of Cu, M_3 and R_2 in each case terminating the rows of erect hairs on these veins; erect,

hairs also present on R_3, R_4, M_1 and M_2 ; wing fringe black with a white space at the tip, extending from tip of R_3 to M_1, formed by hairs brown in proximal third and white in distal 2/3rd ; underside of wing with hairs replaced by broad scales in basal half. Legs unicolourous.

Hypopygium : coxite (text-fig. 9*d*) twice as long as wide, style as long as coxite, tapering, pointed, slightly curved ; aedeagus symmetrical, bifid, flanked by pointed parameres the same length as the aedeagus ; cercopod (text-fig. 9*e*) a little longer than 9th tergite, cylindrical, a little tapered, bearing 5 spatulate retinaculae ; anal valve an equilateral triangle with rounded corners.

Female.—Similar to ♂ but scales on underside of wing not broad, and blending more gradually into normal hairs, the three white marks in the wing disc more pronounced, alula tuft not as long as in ♂. Antenna



Text-fig. 9.—*Telmatoscopus* (*Mormia*) *lanceolatus*, sp. nov.

a. Base of antenna ; *b*. Tip of Antenna ; *c*. Wing ; *d*. Hypopygium ; *e*. Cercopod ; *f*. Subgenital plate and spermathecae.

as seen in text-fig. 9*b*, segment 13 with a well developed neck, 14 with a reduced neck, 15 sub-spherical, lacking a neck and 16 with a short terminal apiculus ; ascoids V-shaped, in pairs on segments 3-14. Subgenital plate and spermathecae as seen in text-fig. 9*f*.

Type-specimens.—Type, allotype, 1♂ paratype ; Bukit kuti, 3,500 feet, Selangor, Malay Peninsula, 19—20.VI.1926. 1♂ Paratype. Fraser's Hill, 4,200 feet, Pahang, Malay Peninsula, 20.V.32.

Subgenus **Telmatoscopus** Jung.

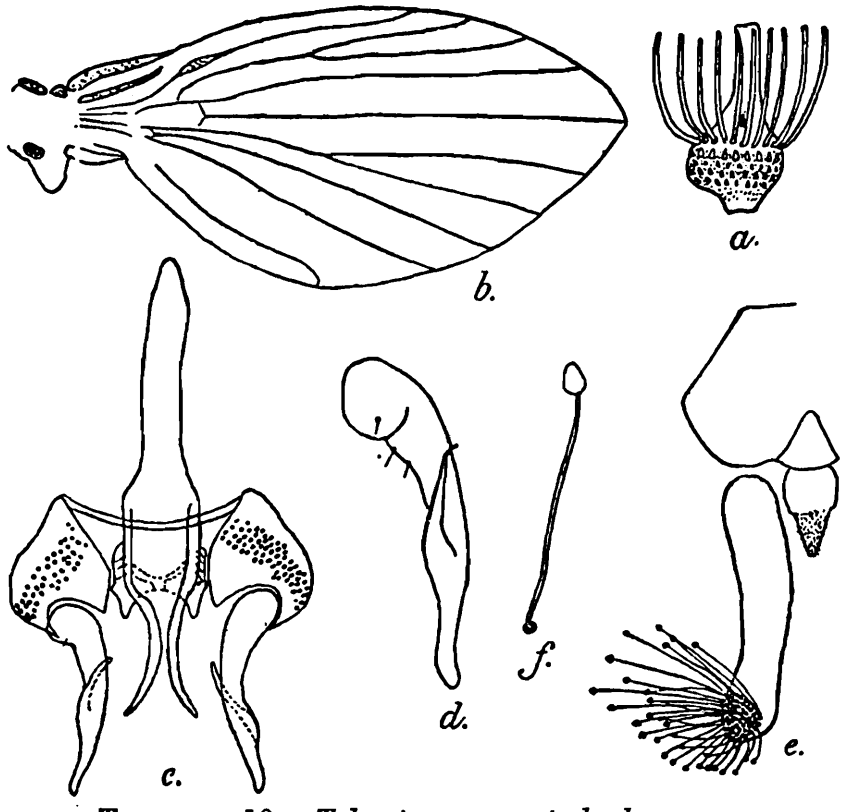
Telmatoscopus (Telmatoscopus) retrobarbus, sp. nov.

A brown species with white tufts on the wings and thorax.

Male.—Clypeus with a decumbent tuft of pale brown squamous hairs, frons with an erect snow-white tuft. Eye bridges 4 facets wide, separated by width of 3 facets. Antenna 16-segmented, 1·5 times as long as wing width, scape 1·6 times as long as wide, scape and pedicil with a covering of brown and white squamous hairs ; flagellar

segments with eccentric bulbs, necks shorter than bulbs in basal segments, longer than bulbs in more apical segments (text-fig. 10*a*) ; last segment with an elongate neck gradually decreasing in diameter and terminated by a short apiculus ; ascoids numerous, simple, arranged in almost a complete circle (text-fig. 10*a*) of 18 or so in the basal segments to 12 or so in the apical ones, present on segments 3-16. Palpal formula 1 : 2·3 : 2·2 : 2·7

Thorax with a vestiture of white erect squamous hairs ; a transverse band of brown hairs present in front of wing bases; no allurement organ. Wing (text-fig. 10*b*) 1·8 mm long, ovate, twice as long as broad, R_5 at wing tip, medial fork a little after radial and above tip of Cu, origin of R_{2+3} before apex of 1st basal cell, which is longer than the 2nd ; vestiture of dark brown to black hair, with some white hairs present on R_2, R_3 and R_4, constituting a white tuft and again on M_1, M_2 and M_3,



TEXT-FIG. 10.—*Telmatoscopus retrobarbus*, sp. nov.

a. A medial flagellar segment ; *b*. Wing ; *c*. Hypopygium ; *d*. Style, from below ; *e*. Cercopod, anal valve and 9th tergite.

constituting a second white tuft, the two tufts at the level of the tip of R_1 ; ill-defined white tufts at vein tips ; fringe rather rubbed, but unicolourous at least on anterior margin ; hairs at wing base, particularly those on Sc, rather squamous. Tibiae with a broad white band in proximal half not quite reaching base, and an apical white ring ; metatarsi with some apical white scales.

Abdomen with anterior dorsal vestiture of long brown decumbent hairs, flanked by uprising tufts of long squamous hairs that curl over the dorsal surface of the abdomen. Hypopygium with coxites (text-fig. 10*c*) broader than long. Style as seen in text-fig. 10*d* with a ventrally arising spine half way along, which points anteriorly ; no tuft of deciduous hairs on style, but an extensive one on coxite ; aedeagus ymmetrical and bifid, dividing into two outwardly curved pointed blades ; cercopods (text-fig. 10*e*) cylindrical, not tapered, 1·7 times

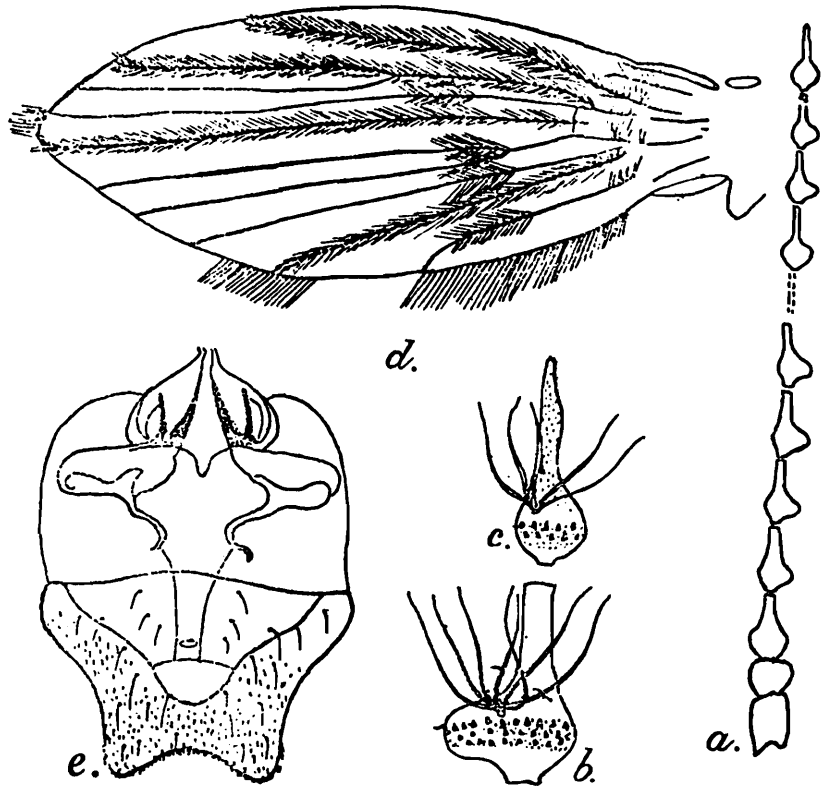
as long as 9th tergite, bearing an apical cluster of 60-70 thread-like retinaculae with minute bell-like tips (text-fig. 10*f*); anal valve triangular, longer than wide.

Type-specimens.—Type, and paratype ♂; Negri sembilan, near Port Dickson, Malay Peninsula, 9.I.1935 and 14.XII.1935.

Telmatoscopus fuscinervis, sp. nov.

A beautifully coloured species in which the creamy ground colour of the wing is dissected by radiating rows of chocolate-brown hairs along some of the veins.

Female.—Eye bridges 4 facets wide, separated by a width of 1 facet. Antenna (text-fig. 11*a*), 16-segmented, 1·8 times as long as wing width, scape 1·3 times as long as wide, flagellar segments (text-fig. 11*b*) with eccentric bulbs and long necks, terminal necks unreduced, the last



Text-fig. 11.—*Telmatoscopus fuscinervis,* sp. nov.

a. Antenna ; *b.* A medial flagellar segment with ascoid ; *c.* Terminal flagellar segment ; *d.* Wing, showing distribution of brown hairs ; *e.* Subgenital plate and spermathecae.

(text-fig. 11*c*) with an apiculus twice as long as the bulb ; ascoids (text-fig. 11*b*) in pairs on segments 3-16, each consisting of a radiating bunch of 7-10 filaments. Palpal formula 1 : 2 : 2·3 : 2·2.

Thorax with a creamy vestiture, some of the long hairs between the wings faintly tipped with brown. Wing (text-fig. 11*d*) 2·5 mm long, lanceolate, 2·4 times as long as wide ; R_5 at wing tip ; radial fork after, medial fork before, level of tip of Cu ; origin of R_{2+3} before apex of 1st basal cell which is much longer than the second : erect hairs absent on R_1, R_5 and M_4, confined to the stem of the radial fork and to a little before this level on the other veins ; wing vestiture creamy-yellow in colour ; some diffuse brown hairs over bases of veins, a distinct transverse fascia of brown hairs at level of medial fork, four lines of brown hairs on R_1, R_2, R_5 and M_4, running across the distal half of the wing

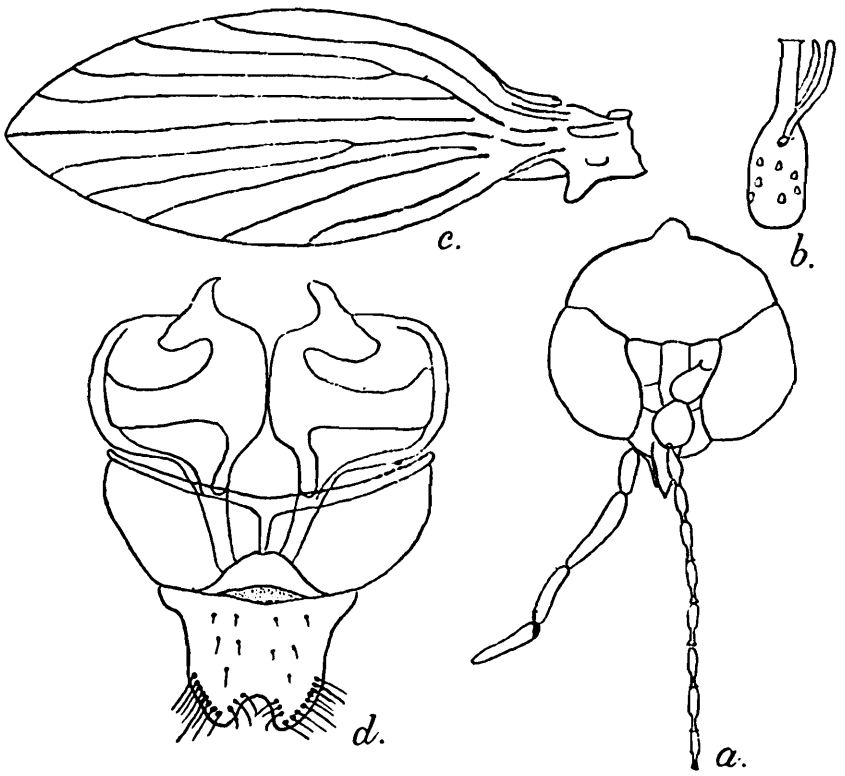
to the margin and constituting a pattern of great distinctness; fringe creamy with three brown spaces, a narrow one at wing apex, a broader one at tip of M_4, and a very broad one extending from tip of Cu to wing base; a faint infuscation at tips of longer hairs in anterior fringe. Legs light brown, the tarsi creamy white, a faint infuscation on the ventral surface of the 1st and 2nd tarsal joints of the hind leg.

Abdomen with subgenital plate as seen in text-fig. 11*e*, distally parallel sided and with an emargination of moderate depth; spermathecae lacking any sculptured patterning, strengthened by two heavily sclerotised ridges, ovipositor short.

Type-specimen.—Type and only specimen, Cameron's Highlands, Pahang, Malay Peninsula, 4,800 feet, 26.VI.1935.

Telmatoscopus candidus, sp. nov.

A black species with white tufts on the wing.



TEXT-FIG. 12.—*Telmatoscopus candidus,* sp. nov.

a. Head showing eyes, palp and antenna base; *b*. A medial flagellar segment; *c*. Wing; *d*. Subgenital plate, with spermathecae.

Female.—Eyes lacking all trace of eye bridges (text-fig. 12*a*), antenna broken off at 10th segment, but calculated to be 1·3 times as long as wing width; scape scarcely longer than wide, first flagellar segment with little neck, remaining segments with a neck equal to the narrow cylindrical bulb (text-fig. 11*b*); ascoids simple, paired, sinuate rods. Palpal formula 1 : 2·1 : 1·7 : 1·9.

Wing (text-fig. 11*c*) 1·7 mm long, 2·5 times as long as broad; radial fork before medial, both well before tip of Cu; origin of R_{2+3} on R_4 well after apex of basal cell, R_5 at wing tip. Wing vestiture mainly dark brownish-black, erect hairs present on R_1, and on all veins except R_5; some erect white squamous hairs scattered over bases of veins and others aggregated into two circular patches in wing disc at level of tip of Cu, one on R_2, R_3 and R_4, the other on M_1, M_2 and M_3; smaller

erect white tufts a little before the tip of each vein except on R_5; fringe dark except for a white space from just before the tip of M_2, to the tip of M_1. Legs dark brownish-black, the tarsi creamy-white except for fore metatarsi, which are brown; a shadowy infuscation marring the whiteness of the 2nd-4th tarsal joints of the hind leg.

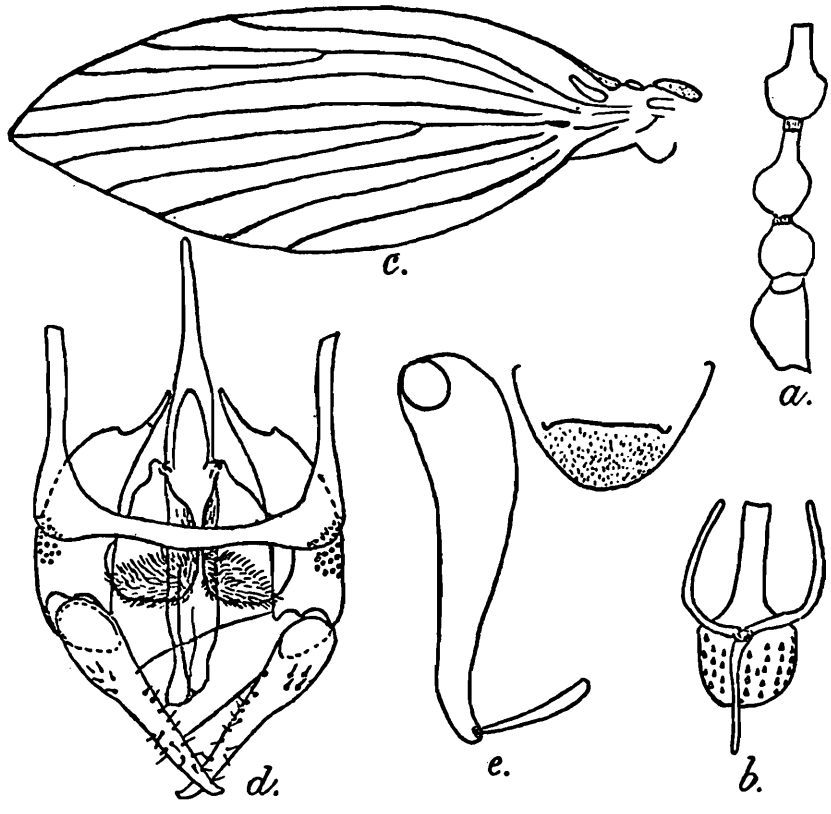
Subgenital plate as seen in text-fig. 12*d*, the lateral margins with a row of 8 or so, strong setae. Spermathecae as seen in text-fig. 12*d*, ovipositor of moderate length.

Type-specimen.—Type and only specimen, Fraser's Hill, 4,200 feet, Pahang, Malay Peninsula, 31.V.1932.

Genus **Psychoda** Latreille

Psychoda selangoriana, sp. nov.

An ochraceous-brown species with black spots at the vein tips.



Text-fig. 13.—*Psychoda selangoriana,* sp. nov.

a. Base of antenna ; *b.* A medial flagellar segment; *c.* Wing ; *d.* Hypopygium ; *e.* Cercopod and anal valve.

Male.—Eye bridges 4 facets wide, separated by width of 1 facet. Antenna broken off at 11th joint, but calculated to be twice as long as wing width : scape (text-fig. 13*a*)1·4 times as long as wide, basal flagellar segments with necks shorter than bulbs; equal to bulbs in medial segments (text-fig. 13*b*); ascoids Y-shaped. Palpal formula 1 : 1·1 : 1·1 : 1·3.

Thorax with a rather dense vestiture of ochraceous-brown hair. Wing (text-fig. 13*c*) 2 mm long, 2·7 times as long as wide, radial fork after medial, but before tip of Cu; erect hairs to tips of usual veins (absent on R_5, M_2 and M_4), some rather long white squamous hairs scattered amongst the erect hairs; others with a dark bronzy reflection intermixed with them, the rows appearing as rather darker

than the surrounding vestiture; a tuft of decumbent blackish-brown hairs at each vein tip; fringe unicolourous. Legs unicolourous.

Hypopygium (text-fig. 13*d*) with 9th sternite a rectangular transverse band rugose at the corners. Coxites twice as long as wide, tuft of usual deciduous hairs here very limited in its extent; style subequal to coxite, straight, slightly hooked at tip; a single long seta near the base and numerous small sensory setae along the length, but no lateral basal tuft of deciduous hairs. Aedeagus a simple median process with a flattened shelf-like extension on one side; paired lobular parameres densely covered with recurved spiny hairs, articulating with aedeagus. Cercopods 1·2 times as long as 9th tergite, tapering and slightly curved (text-fig. 13*e*), bearing a single retinaculum one third as long as the cercopod; anal valve (text-fig. 13*e*) rounded in outline.

Type-specimen.—Type and only specimen, Bukit Kutu, Selangor, 3,500 feet, Malay Peninsula, 20.IV.1926.

I am most grateful to Mr. Paul Freeman for permission to study the collections of Psychodidae in the British Museum. I am also most indebted to Dr. G. B. Fairchild of Panama for much helpful discussion.