Epipsocetae (Psocoptera) from the Reserva Ducke, Amazonas

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Abstract

31 species of Epipsocetae are recorded from the Reserva Ducke, near Manaus (Brazil), of which 27 are described as new, and illustrated. The new taxa represent the genera Ptiloneura (1), Triplocania (8), Euplocania (2), Isthmopsocus (1), Neurostigma (4), Dicropococcus (1), Epipsocus (10), and their affinities are discussed.

INTRODUCTION

This paper is a taxonomic treatment of part of a large collection of Psocoptera made in the Reserva Ducke, near Manaus (Amazonas) during 1977-78 by Drs. J. Arias and N. D. Penny, and deals with the Epipsocetae.

The psocopteran group Epipsocetae is well-represented in Brazil and other parts of tropical South America. Thirty eight species, representing four families, have been described from Brazil, and none of these have yet been recorded from other parts of the continent. They were described by Banks (1920), Roesler (1940), New (1972, 1974), Eertmoed (1973), and Badonnel (1974); most are known only from one sex and from few specimens.

The collection forming the subject this paper comprises 31 species of Epipsocetae, of which 27 are described as new: the remaining four are already recorded from Brazil. The occurrence of this number of species at one site, and of 21 species at a small Mato Grosso site (New, 1972) — the only other Brazilian site so far sampled for psocids over a period — together with the fact that only three species occurred in both collections, indicates that the Brazilian fauna of Epipsocetae must be very large, and that considerable radiation has occurred. Large areas of the country have not been surveyed for psocids and, as singletons only are known for many species, it seems that many of them may be rare. This collection adds considerably to our knowledge of several genera, and provides the first South American record of a genus hitherto known only from Melanesia. Many of the species are described below from single specimens, sometimes incomplete, but in all cases genitalia are present. The distinctive nature of male genitalia, in particular, renders the likelihood of confusion between species small and the two sexes of Epipsocetae are commonly associable on venational features or details of body and wing coloration.

Most specimens were taken in Malaise traps or light traps, and are males: in general this sex is more commonly attracted to light and many Ptiloneuridae (in particular) are known only from singletons captured by this method.

For the sake of brevity, only the collecting method and date is given for the specimens. All are from the Reserva Ducke (03°08'S, 60°02'W), 26 km along the Manaus-Itacoatiara Highway (Am-010) to the N.E. of Manaus, Amazonas, Brazil. The vegetation of the area is primary rain forest. Types of the new species will be deposited in the collections of INPA (Manaus) and, where possible, paratypes in the British Museum (Natural History), London. Measurements, other than for body length (B), are from slide-mounted specimens. All are in mm, and the following abbreviations are used: FW (forewing length); HW (hind-wing length); f1, f2 (first and second flagellar segment lengths); F, T, t1-t6 (lengths of hind femur, tibia and tarsal segments 1-3), ct (number of ctenidia on hind tarsal segments 1-3).

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PTILONEURIDAE

Ptiloneura (Loneura) amazonica sp. n.  
(Figs. 12-14, 97)

FEMALE. Unknown.

MALE. Coloration. Pale brown; head darker. Eyes black. Ocelli on black tubercle. Vertex between eyes and ocelli dark brown; frons, except median anterior region, dark brown; genae dark brown; postclypeus with traces of 5 or 6 broad striae each side of midline; anteclypeus and labrum dark brown; maxillary palp dark brown; antennae paler. Thorax with slight dark brown markings on dorsum and pleura. Legs: femora with 2 dark brown bands, tibiae darkened near apex, tarsi wholly dark brown. Forewing (Fig. 12) marked with brown: apices of veins darkened; base and apex of pterostigma dark brown; a series of dark arcs near margin between all veins from R4+5 — Cula; nodulus and adjacent area of cell Culb darkened. Hindwing pale, except for slight darkening at apices of veins.

Abdomen irregularly darkened on all tergites.

Morphology. Lacinial apex as in Fig. 97. Forewing venation (Fig. 12); M 5-branched. Hindwing with M 3-branched. Hypandrium (Fig. 13) heavily sclerotised, with 2 elongate pointed lateral processes. Phallosome (Fig. 14) complex, frame closed anteriorly, and with complex heavily-sclerotised radular rods. Epiproct bluntly rounded, with group of about 8 lateral setae and small apical spiculate area. Paraproct with field of about 24 trichobothria.

Dimensions. B 3.10, FW 3.28, HW 2.25, f1 0.555, f2 0.450, f1/f2 1.233, F 0.870, T 1.470, t1 0.645, t2 0.060, t3 0.120, t1/t2 10.750, t2/t3 0.500, C 22.1.2.

Holotype  1, Malaise trap 14.iii.1978; paratypes (all Malaise trap) 1 16.v.1978, 2 8.viii.1978, 1 11.viii.1978, 1 25.viii.1978, 1 13.ix.1978.

COMMENTS

This species is clearly referable to Ptiloneura Enderlein (1900), and the forewing markings are rather similar to those of P. (Loneura) splendida Mockford (1957) known from Guatemala and Mexico, male genitalia of which were figured in part by Eertmoed (1973). Eertmoed (unpublished data supplement to his paper) gives the following hypandrial characters for splendida: (a) distal margin distinctly bilobed, lobes heavily sclerotised, (b) heavily sclerotised, (c) lateral lobes cylindrical. The two taxa are thus closely related and differ mainly in the different forewing markings in cell Culb and in details of the phallosome: the radular sclerites of splendida are more discrete than in amazonica, and the anterior of the frame is relatively broad.

Triplocania lunulata sp. n.  
(Figs. 1-4, 94)

FEMALE. Coloration. Very dark brown, almost black. Eyes black. Head glossy, unmarked, maxillary palpi and antennae dark. Thorax dark brown. Legs pale brown. Forewing (Fig. 1) basally brown; base and apex of pterostigma brown; a brown marginal band from R4+5 — Culb, with marginal hyaline lunules in all cells. Hindwing with basal half very pale greyish brown, otherwise unmarked, except for apices of veins slightly darkened. Abdomen dark brown, slightly paler ventrally.

Morphology. Lacinial apex as in Fig. 94. Forewing venation (Fig. 1): areola postica strongly domed. Hindwing M simple. Subgenital plate (Fig. 2) bluntly rounded; a thickened inner plate. Gonapophyses (Fig. 3): ventral valve slender, spiculate near apex; dorsal valve spiculate, with central group of 3-5 setae. Epiproct (Fig. 4) rounded, with 3 or 4 long central setae and more numerous apical setae. Paraproct (Fig. 4) with field of about 18 trichobothria.

Dimensions. B 2.85, FW 2.68, HW 1.96, antennae missing, F 0.705, T 1.110, t1 0.465, t2 0.045, t3 0.090, t2/t3 10.333, t1/t2 0.500, C 19.1.2.

MALE. Unknown.

Holotype, 1 , Malaise trap, 14.iii.1978; paratype 1 , same data.
Figs. 1-7 — Figs. 1-4, Triplocania lunulata sp. n.: Fig. 1 — Forewing; Fig. 2 — Subgenital plate; Fig. 3 — Gonapophyses; Fig. 4 — Female epiproct and paraproct. Figs. 5-7, Triplocania ariasi sp. n.: Fig. 5 — Forewing; Fig. 6 — Subgenital plate; Fig. 7 — gonapophyses (Scales in mm).

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COMMENTS

This, and the next two species, are superficially similar in having a broad brown marginal or premarginal band around the medial border of the forewing and the wing base darkened. T. reflexa Roesler (1940) also shows this feature.

T. lunulata is most similar to the next species, and differs from it by having distinct shallow hyaline lunules in cells R5—Cula and by having a pronounced inner plate to the subgenital plate.

**Triplocania ariasis** sp. n.  
(Figs. 5-7, 95)

**FEMALE.** Coloration. Dark greyish brown. Eyes black. Ocelli on black tubercle. Face unmarked. Maxillary palpi pale brown. Thorax dark dorsally, paler laterally. Legs pale brown. Forewing (Fig. 5): base and apex of pterostigma dark brown; marginal band from R2+3 posteriorly, without hyaline lunules, but paler in central region of medial cells. Hindwing hyaline. Abdomen pale brown, darkened medially.

Morphology. Lacinial apex as in Fig. 95. Forewing venation as in Fig. 5. Hindwing M simple. Subgenital plate (Fig. 6) tapered, sclerotised area distinctly Y-shaped. Gonapophyses (Fig. 7): ventral valve slender; dorsal valve with elongate spicate apex and central group of 2 or 3 setae. Epiproct deep, rounded, strongly setose on posterior half. Paraproct deep, with field of about 25 trichobothria.

Dimensions. B 3.20, FW 3.16, HW 2.20, antennae and hind legs missing.

**MALE.** Unknown.

Holotype, ♀, Malaise trap 25.x.1977.

**COMMENTS**

This species is very similar to T. lunulata, from which it differs mainly by lacking marginal hyaline lunules in the forewing band, and in the form of the subgenital plate.

**Triplocania caudata** sp. n.  
(Figs. 8-11, 96)

**FEMALE.** Unknown.

**MALE.** Coloration. Pale to mid-brown. Eyes black. Ocelli on black tubercle. Postclypeus with traces of narrow striae, face otherwise unmarked. Thorax slightly darkened dorsally. Legs pale. Forewing (Fig. 8) with brown marginal band posteriorly from anterior to R4+5; brown markings at apex of pterostigma and of R2+3, along basal Rs, behind Culb and at wing base. Hindwing with trace of pale greyish brown marginal shading behind wing apex. Abdomen pale.

Morphology. Lacinial apex (Fig. 96) with outer tine enlarged. Forewing venation as in Fig. 8: pterostigma long and shallow, Cula strongly sinuous. Hindwing M simple. Hypandrium (Fig. 9) with prominent trilobed median tongue bearing 2 short apical setae, this arising from emarginate transverse apex. Phallosome (Fig. 10) frame closed and tapered anteriorly; open posteriorly; radular sclerites complex and toothed. Epiproct (Fig. 11) rounded, with few short central setae and apical field of spicules and short setae. Paraproct with field of about 20 trichobothria.

Dimensions. B 3.40, FW 3.26, HW 2.20, f1 0.570, f2 0.450, f1/f2 1.267, F 0.900, T 1.395. t1 0.600, t2 0.050, t3 0.120, t1/t2 12.000, t1/t3 0.417, ct 21.1.2.

Holotype, ♂, light trap, 20.xii.1977.

**COMMENTS**

Forewing venation of this species, especially the unusual shape of the areola postica, is closely similar to that of T. reflexa Roesler (1940). The two taxa differ markedly on the form of the hypandrium (that of reflexa lacking the median tongue prominent in caudata) and on details of the phallosome, as well as in differences in pigmentation of the basal half of the forewing.
Figs. 8-14—Figs. 8-11. *Triplocania caudata* sp. n.: Fig. 8 — Forewing; Fig. 9 — Hypandrium; Fig. 10 — Phallosome; Fig. 11 — Male epiproct and paraproct. Figs. 12-14. *Filioneura (Loneura) amazonica* sp. n.: Fig. 12 — Forewing; Fig. 13 — Hypandrium; Fig. 14 — Phallosome. (Scales in mm).

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**Triplocania umbrata** sp. n.  
(Figs 19-23, 98)

**FEMALE.** Coloration. Pale brown. Eyes black. Ocelli on small black tubercle. Vertex with pale, but distinct, brown lines each side of midline; frons pale; postclypeus with traces of 5-7 narrow striae each side of midline; anteclypeus, labrum, maxillary palpi and antennae pale brown; genae darkened ventrally. Thorax pale, except for narrow dark brown pleural stripe. Legs pale, apex of tibiae and whole of tarsi darkened. Forewing (Fig. 19) with alve veins heavily shaded with tawny brown, and similar pigmentation around margin of wing; branches of Rs, of M, and Cul with dark greyish brown marginal spot; base of pterostigma dark greyish brown; setae on veins arising from dark spots. Hindwing hyaline. Abdomen with traces of darker dorsal annuli.

**Morphology.** Lacinial apex (Fig. 98) relatively narrow. Forewing venation (Fig. 19): basal half of Cula sinuous; stem of As long. Subgenital plate (Fig. 20) tapered, with deep U-shaped sclerotised area. Gonopore plate (Fig. 21) with lateral heavily sclerotised projections. Gonapophyses (Fig. 22): ventral valve relatively short, dorsal valve with long spiculate apex, a central group of 5 setae. Epiproct (Fig. 23) tapered, with few central setae, and apical setae. Paraproct (Fig. 23) tapered, with a field of about 24 trichobothria and 1 or 2 central setae without basal rosettes.

**Dimensions.** B 3.50, FW 3.21, HW 2.25, f, 4.95, f2 0.360, f1/f2 1.375, F 0.670, T 1.440, t1 0.915, t2 0.060, t3 0.315, t1/t2 15.250, t2/t3 0.571, ct 23.1.2.

**MALE.** Unknown.

Holotype, ♀, Malaise trap 20.ix.1978.

Paratype, ♀, same data.

The unusual forewing markings of *T. umbrata* immediately differentiate it from all other described Ptiloneuridae. The thickened gonopore plate with lateral processes is also anomalous.

**Triplocania immaculata** sp. n.  
(Figs. 28-31, 100)

**FEMALE.** Unknown.

**MALE.** Coloration. Pale brown. Eyes black. Ocelli on small black tubercle. A broad black interocular band dorsal to ocelli, and a similar band extending to frons border and eyes immediately dorsal to antennae. Postclypeus, anteclypeus, labrum, maxillary palpi dark brown. Genae blackened ventrally. Antennae: base very dark brown, flagellum paler. Thorax mainly pale, with slight darkening on dorsal lobes. Legs pale, except apex of femora dark. Forewing hyaline, veins brown. Hindwing hyaline. Abdomen pale.

**Morphology.** Lacinial apex as in Fig. 100. Forewing venation as in Fig. 28; pterostigma very shallow. Hindwing M simple. Hypandrium (Fig. 29) broad, heavily sclerotised, with lateral lobes and a small thickened median lobe. Phallosome (Fig. 30) complex: frame rounded and closed anteriorly; with divergent hooked lobes posteriorly; complex radular sclerites. Epiproct (Fig. 31) shallow, rounded. Paraproct (Fig. 31) rounded, with field of about 20 small trichobothria.

**Dimensions.** B 3.85, FW 4.07, HW 2.78, f1 1.125, f2 1.200, f1/f2 0.938, F 1.155, T 2.070, t1 0.900, t2 0.060, t3 0.135, t1/t2 15.000, t2/t3 0.444, ct 34.1.2.

Holotype, ♀, light trap 20.ix.1978.

**COMMENTS**

The only described species of *Triplocania* with unmarked wings is *T. dolosa* Roesler (1940), known only from the female. From Roesler's figure, the two species differ considerably in the shapes of the pterostigma and areola postica. These features also separate *dolosa* from the next species.

**Triplocania calcarea** sp. n.  
(Figs. 32-35, 101)

**FEMALE.** Unknown.

**MALE.** Coloration. Dark brown. Eyes black. Ocelli on dark tubercle. Frons mainly very dark; postclypeus with about 6 narrow dark
Figs. 15-23 — Figs. 15-18, *Euulocania picta* sp. n.: Fig. 15 — Forewing; Fig. 16 — Hypandrium; Fig. 17 — Phalloosome; Fig. 18 — Male epiproct and paraproct. Figs. 19-23, *Triplocania umbrata* sp. n.: Fig. 19 — Forewing; Fig. 20 — Subgenital plate; Fig. 21 — Gonopore plate; Fig. 22 — Gonapophyses; Fig. 23 — Female epiproct and paraproct. (Scales in mm).
striae each side of midline; anteclypeus and labrum dark, maxillary palp and antennae paler. Thorax irregularly darkened dorsally and laterally. Legs pale. Forewing hyaline, veins pale brown. Hindwing hyaline. Abdomen pale.

Morphology. Lacinial apex as in Fig. 101. Forewing venation as in Fig. 32. Hindwing M simple. Hypandrium (Fig. 33) heavily sclerotised; two outwardly curved lateral processes flanking an elongate pointed median projection; a deep narrow anterior sclerotised region. Phallosome (Fig. 34) complex; frame closed and broadened anteriorly; divergent apical hooks and complex radular sclerites. Epiproct (Fig. 35) shallow, rounded. Paraproct (Fig. 35) with field of about 25 small trichobothria.

Dimensions. B 3.15, FW 3.07, HW 2.16, f1 0.465, f2 0.435, f3/f4 1.069, F 0.825, T 1.380, t1 0.615, t2 0.045, t3 0.120, t1/t2 13.667, t2/t3 0.375, ct 21.1.1.

Holotype, ♂, light trap 31.i.1970.

Paratypes, 1 ♂ light trap, 13.ii.1977; 1 ♀ light trap 1.iii.1977; 1 ♂, light trap, 3.i.1978.

COMMENTS

The generic placement of this species is tentative; all specimens seen have the media of the forewing 4-branched, but in all, the posterior two branches arise from a common stem. This contrasts with the taxa conventionally placed in Euplocania, in which the media has 4 branches arising independently from the stem (see Fig. 15). The species somewhat resembles the last-described Organotypus species in having a very simple hypandrium and hooked paraprocts, and these strongly suggest eventual generic separation. The minute side branches (spur veins) arising from some forewing veins suggest similarity to Euplocania fusca Roesler (1940) (as figured by Eertmoed, 1973, Fig. 12), but are extremely weakly developed. On genitalia features, the two species described here are clearly closely related, suggesting that the presence of spur veins may not alone be of generic value. They differ on details of the phallosome and of ornamentation of the paraproct hook and on epiproct shape. T. uncinata may prove to be the male of fusca, but differences in area postica shape and forewing pigmentation render this association currently unwise.
Figs. 24-31 — Figs. 24-27, *Euplocania cerata* sp. n.: Fig. 24 — Forewing; Fig. 25 — Hypandrium; Fig. 26 — Phallosome; Fig. 27 — Male epiproct and paraproct. Figs. 28-31, *Triplocania immaculata* sp. n.: Fig. 28 — Forewing; Fig. 29 — Hypandrium; Fig. 30 — Phallosome; Fig. 31 — Male epiproct and paraproct. (Scales in mm).
**Triplocania prionota** sp. n.  
(Figs. 40-42, 117)

**FEMALE.** Unknown.

**MALE.** Coloration. Pale brown. Eyes black. Ocelli on dark brown tubercle. Vertex darkened in midline; postclypeus with traces of 5 or 6 narrow striae each side of midline. Thorax darkened dorsally. Legs pale. Forewing (Fig. 40) mainly pale; dark brown spots at apex of all veins and on margin between veins. Hindwing hyaline, except for slight marginal spotting at apex of veins and behind M. Abdomen pale.

Morphology. Lacinial apex as in Fig. 117. Forewing venation as in Fig. 40. Hindwing M simple. Hypandrium broadly rounded, simple. Phallosome (Fig. 41) largely membranous with narrow rounded bilobed apex. Epiproct (Fig. 42) trapezoidal, with margin heavily sclerotised. Paraproct (Fig. 42) with strong medially — directed apical hook; a field of about 17 trichobothria.

Dimensions. B 2.40, FW 2.25, HW 1.68, antennae broken; F 0.525, T 0.900, t1 0.345, ts 0.045, ts 0.060, t1/t2 7.667.

Holotype, ♂, light trap, 29.xi.1977.

Paratypes, 3 ♂♂, light trap, date from xi.1977 — vi.1978.

**COMMENTS**

See under *T. uncinata* (p. 186).

Figs. 32-35, *Triplocania calcarata* sp. n.: Fig. 32 — Forewing; Fig. 33 — Hypandrium; Fig. 34 — Phallosome. Fig. 35 — Male epiproct and paraproct. (Scales in mm).
**Euplocania picta** sp.n.  
(Figs. 15-18)

**FEMALE.** Unknown.

**MALE.** Coloration. Brown. (Head missing). Thorax darkened dorsally, pleura with traces of stripe. Legs: coxae with dark bar, femora pale, tibiae and tarsi dark brown. Forewing (Fig. 15) strongly marked with very dark brown black: a marginal band interrupted by white arcs flanking apices of veins. Hindwing pale grey basally; apices of veins browned. Abdomen with traces of darker brown dorsal markings.

**Morphology.** Forewing venation as in Fig. 15: M 4-branched, Cula sinuous. Hindwing M simple. Hypandrium (Fig. 16) heavily sclerotised; with bifurcate lobes flanking a short median arc, ridged longitudinally each side of midline. Phallosome frame (Fig. 17) closed and tapered anteriorly, open posteriorly; radular sclerites complex. Epiproct (Fig. 18) deep, rounded, with few setae. Paraproct (Fig. 18) with small field of about 25 trichobothria.

**Dimensions.** FW 4.12, HW 2.92.

**Holotype, e', Malaise trap 6.ix.1978.**

**COMMENTS**

Few species of *Euplocania* have been described: this specimen, although incomplete differs markedly on forewing markings from any of these and its description as a new species is facilitated by the distinctive male genitalia. Genitalia are otherwise known only for *E. greeni* New (1972) and for the next species. The form of the hypandrium is grossly similar to that of *greeni* in being centrally bifurcate and with strong lateral sclerites, but the phallosomes of the two species differ considerably.

**Euplocania cerata** sp.n.  
(Figs. 24-27, 99)

**FEMALE.** Unknown.

**MALE.** Coloration. Dark brown. Eyes black. Ocelli on black tubercle. Anterior of vertex, lateral regions of frons very dark; postclypeus with traces of 3 or 4 striae each side of midline; anteclypeus and labrum dark brown; palpi dark. Thorax with irregular dark pleural stripe, dorsum dark. Legs brown, femora darker than rest of leg. Forewing (Fig. 24) with slight brown markings at apices of veins R2+3 -- Culb, at base and apex of pterostigma, and at nodulus; a brown spot behind Cu, shortly after separation from M. Hindwing unmarked. Abdomen pale, except for dark pleural stripe along anterior half.

**Morphology.** Lacinial apex as in Fig. 99. Forewing venation as in Fig. 24. Hindwing M simple. Hypandrium (Fig. 25) heavily sclerotised, with two short tapered apical processes. Phallosome (Fig. 26) closed and slightly tapered anteriorly, open posteriorly, with elongate central sclerites and complex anterior radular sclerites. Epiproct (Fig. 27) rounded, with apical spiculate field. Paraproct with field of about 21 trichobothria.

**Dimensions.** B 2.90, FW 2.68, HW 1.96, F 0.705, T 1.110, t; 0.465, t; 0.045, t; 0.090, t/t; 10.333, t/t; 0.500, ct 19.1.2.

**Holotype, e', light trap, 6.xii.1977.**

**Paratype, e same data.**

**COMMENTS**

*E. cerata* differs from other members of the genus on forewing markings and on the shape of the areola postica, as well as on genitalic features.

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**DOLABELLOPSOCIDAE**

**Dolabellopsocus ctenatus** (New)

**Epipsocus ctenatus** New, 1972: 480, figs. 87-90 (e, Mato Grosso).

**Dolabellopsocus ctenatus** (New). Eertmoed, 1973: 397.

**Material examined.** 3 e; 2, light trap 6.xii.1977, 1, Malaise trap 14.xii.1978.

**COMMENTS**

This characteristic species is now known from both Mato Grosso and Amazonas, and males only have been found.

**Isthmopsocus luridus** sp.n.  
(Figs. 43-47)

**Both sexes.** Coloration. Pale brown. Eyes black. Ocelli on dark tubercle. Body unmarked. Wings very pale tawny.
Morphology. Female. Lacinial apex with four narrow tines, inner tine small and considerably basal to outer three. Forewing venation as in Fig. 43. Subgenital plate bluntly rounded. Gonapophyses (Fig. 47) with apical process heavily sclerotised; a central field of 3-6 setae. Clunium unornamented. Epiproct with field of about 25 trichobothria.

Figs. 36-42 — Figs. 36-39, Triplocania uncinata sp. n.: Fig. 36 — Forewing; Fig. 37 — Hypandrium; Figs. 38 — Phallosome; Fig. 39 — Male epiproct and paraproct. Figs. 40-42, Triplocania prionota sp. n.: Fig. 40 — Forewing; Fig. 41 — Phallosome; Fig. 42 — Male epiproct and paraproct. (Scales in mm).
MALE. Lacinia and wing venation as female. Hypandrium transverse. Phallosome frame (Figs. 44, 45) elongate, with apical hooks and complex radular sclerites; a long denticulate anterior radular process. Clunium (Fig. 46) slightly ornamented in central region. Epiproct (Fig. 46) rounded. Paraproct (Fig. 46) with field of about 25 trichobothria.

Dimensions. ♀, B 2.60, FW 2.49, HW 1.87. f1 0.405, f2 0.070, f1/f2 1.500, F 0.645, T 1.050, t1 0.390, t2 0.135, t1/t2 2.889, ct 19.4.

♂, B 2.50, FW 2.30 HW 1.78, f1 0.760, F 0.660, T 0.990, t1 0.375, t2 0.135, t1/t2 2.778, ct 21.4.

Holotype, ♂, Emergence trap, 11.x.1977.
Paratypes, 10 ♂♂, 10 ♀♀, Emergence traps, various dates from x.1977-vi.1978.

COMMENTS

On forewing venation, most specimens of this species are clearly referable to Isthmopsocus Eertmoed. In several, however, vein A5 terminates free in the membrane rather than joining A4; genitalia of these specimens are identical with ‘typical’ specimens, and it now appears that variation in this wing character may transcend the conventional boundary between Isthmopsocus and Dolabellopsocus.
The phallosome form is most similar to that of *I. hylonomus* Eertmoed in having a bifurcate apex, but details of radular sclerites differ considerably. *I. hylonomus* is known only from Panama.

This was by far the most common species of Epipsocetee captured during the survey: the paratype series represents only a small proportion of numbers seen. Several hundred specimens were captured in emergence traps, in Malaise traps and in light traps.

**EPISOCIDAE**

*Neurostigma enderleini* sp. n. (Figs. 48-51, 104)

**FEMALE.** Unknown.

**MALE.** Coloration. Dark brown. Eyes black. Head glossy, central regions of vertex and frons darkened; postclypeus with traces of narrow striae; anteclypeus and labrum dark brown; palpi dark. Thorax almost black. Legs dark, except pale apex of femora and base of tibiae. Forewing (Fig. 48) basally very dark brown, stigmal crossveins similar: all other veins almost black. Hindwing with basal half greyish brown. Abdomen pale, central dorsal region dark brown.

Morphology: Lacinial apex as in Fig. 104. Forewing venation as in Fig. 48; basal stigmal crossveins not shaded to wing margin; M strongly flexed basal to areola postica; Cula fused with M, medial cells narrow. Hindwing: R₅ forked, M simple. Hypandrium (Fig. 49) broadly rounded, with strongly sclerotised lateral regions. Phallosome (Fig. 50): apex trapezoidal, frame open anteriorly, radular sclerites weakly developed. Epiproct (Fig. 51) rounded, with central and apical setae. Paraproct (Fig. 51) with field of about 44 small trichobothria.

Dimensions. B 4.45, FW 4.31, HW 2.87, f₁ 1.02, remainder of antennae, whole of hind leg missing.

Holotype, ♂, Malaise trap 29.viii.1978.

**Neurostigma paucivenosa** sp. n. (Figs. 52-54, 105)

**FEMALE.** Unknown.

**MALE.** Coloration. Brown. Eyes black. Ocelli on dark brown tubercle. Posterior of vertex very dark; face unmarked except for irregular traces of dark brown postclypeal striae; maxillary palpi and antennae brown. Thorax dark glossy brown, almost black dorsally; pleura darkened immediately dorsal to coxae. Legs with: tibiae and tarsi dark brown. Forewing (Fig. 52): basal half pale brown, apical half of pterostigma pinkish brown, all other veins dark brown. Hindwing pale greyish brown basally. Abdomen pale.

Morphology. Vertex strongly setose, eyes almost reaching vertex. Lacinial apex as in Fig. 105. Forewing venation (Fig. 52): pterostigma with 2 crossveins, areola postica not linked with M. Hindwing R₅ simple, unbranched. Hypandrium broadly rounded. Phallosome (Fig. 53) with elongate rounded median apex; broad anteriorly; radular sclerites represented by rows of sclerotised denticles. Epiproct (Fig. 54) broad, shallow, with setae on central region. Paraproct (Fig. 54) simple, with field of about 27 trichobothria.

Dimensions. B 3.00, FW 3.02, HW 2.20, f₁ 0.585, f₂ 0.360, f₁/f₂ 1.625, hindleg missing.

Holotype, ♂, light trap, 13.xii.1977.

**COMMENTS**

This species is most similar to *N. chaetoccephala* Enderlein (1900, Peru), the type of which has not been seen. It resembles *chaetoccephala* in (a) the shape of the pterostigma, and (b) the pronounced flexure of M before linking with Cula, and apparently differs from it in (a) smaller size (FW 4.3 cf 6½' of Enderlein), (b) the basal forewing pigmentation being more pronounced and (c) the basal pterostigmal crossveins not being pigmented to the wing margin. Genitalia of *chaetoccephala* are unknown.
Figs. 48-54, Figs. 48-51, Neurostigma enderleini sp. n.: Fig. 48 - Forewing; Fig. 49 - Hypandrium; Fig. 50 - Phallosome; Fig. 51 - Male epiproct and paraproct (reflected). Figs. 52-54, Neurostigma paucivenosa sp. n.: Fig. 52 - Forewing; Fig. 53 - Phallosome; Fig. 54 - Male epiproct and paraproct. (Scales in mm).

Epipsocetae...
COMMENTS

This species differs markedly from other species of Neurostigma in having a relatively narrow forewing with very few pterostigmatic crossveins, but is clearly referable to this genus on other venation features. The phallosome differs from that of other species in the more pronounced apical projection and the better-differentiated radial sclerites.

Neurostigma dispositum Roesler
(Fig. 55)

Neurostigma dispositum Roesler, 1940: 130, figs. 40-48.
Neurostigma dispositum Roesler, New, 1972: 484.

Material examined. 1  ♀, light trap, 20.xii.1977.

Neurostigma roesleri sp. n.
(Figs. 56-58, 102)

FEMALE. Coloration. Pale brown. Eyes dark grey. Body unmarked except for traces of broken dark brown pleural stripe along pterothorax and abdomen. Legs with apex of coxae, dorsal edge of femora and apex of tibiae with dark brown motting. Forewing (Fig. 56) pale, stigmal crossveins very dark brown, most other veins pale brown, branches of R₁, R₅, M, Cula shaded towards apex. Hindwing unmarked.

Morphology. Head and thoracic dorsum conspicuously hairy. Lacinial apex as in Fig. 102, with outer edge strongly produced. Forewing venation (Fig. 56): Cula strongly sinuous, not contacting M; apical two veins of pterostigma paler than basal crossveins; pterostigma very large. Hindwing R₅ forked, M simple. Subgenital plate (Fig. 57) simple, rounded. Gonapophyses (Fig. 58) bluntly tapered, with central group of about 6 setae. Epiproct (Fig. 58) rounded. Paraproct with field of about 20 trichobothria and 1 or 2 setae without basal rosettes.

Dimensions. B 3.80, FW 3.59, HW 2.59, f₁ 0.405, f₂ 0.300, f₁/f₂ 1.350, F 0.765, T 1.245, t₁ 0.465, t₂ 0.180, t₁/t₂ 2.583, ct 19.2.

MALE. Unknown.

Holotype, ♀, light trap, 20.xii.1977.
Paratype, ♀, light trap, 7.lii.1978.

COMMENTS

N. roesleri resembles N. dispositum (forewing, Fig. 55), but differs from it on the different lacinial form and in a number of forewing characters: (a) more dispersed pigmentation in the basal half of the wing and overall paler, (b) the paler apical veins of the pterostigma, which is rather larger, (c) the shaded apical veins and (d) the different shape of the areola postica. The latter feature is somewhat variable in species of Neurostigma, but the two specimens available are alike.

Neurostigma xanthoptera sp. n.
(Figs. 59-61, 103)

FEMALE. Unknown.

MALE. Coloration. Pale brown. Eyes black. Ocelli small, with black crescents on their inner margins. Face with dense dark setae; pedicel and maxillary palpi marked with dark brown. Thorax pale dorsally, dark laterally. Legs with tibiae and tarsi very dark brown. Forewing (Fig. 59) pale to bright yellow in basal half, with pale greyish brown markings flanking basal veins; pterostigmatic crossveins dark brown; venation mainly brown. Hindwing with basal half largely pale greyish brown. Abdomen laterally darkened on anterior half.

Morphology. Vertex narrowed, raised and distinctly emarginate medially. Lacinial apex as in Fig. 103. Forewing venation (Fig. 59): M flexed before junction with Cula; medial cells deep and narrow. Hindwing R₅ forked. Hypandrium bluntly rounded. Phallosome (Fig. 60) with trapezoidal apical projection; radial sclerites with small denticles, more pronounced in midline. Epiproct (Fig. 61) shallow, rounded. Paraproct (Fig. 61) with large field of about 40 trichobothria.

Dimensions. B 4.50, FW 4.41, HW 2.91, f₁ 0.885, f₂ 0.615, f₁/f₂ 1.439, F 0.900, T 1.695, t₁ 0.600, t₂ 0.210, t₁/t₂ 2.857, ct 23.5.

Holotype, ♀, Malaise trap, 14.l.1978.
Paratypes, 11 ♀♂, Malaise trap, various dates from ii.1978-viii.1978.

This large species resembles chaetocephalum in some venation features, but differs from it on wing colour. The excavated vertex appears to be unusual in this genus.
Figs. 55-61. Fig. 55. Forewing of Neurostigma dispositum Roesler. Figs. 56-58, Neurostigma roesleri sp. n.: Fig. 56. Forewing; Fig. 57. Subgenital plate; Fig. 58. Gonapophyses, epiproct and paraproct. Figs. 59-61, Neurostigma xanthoptera sp. n.: Fig. 59. Forewing; Fig. 60. Phallosome; Fig. 61. Male epiproct and paraproct. (Scales in mm.)
Dicropsocus brasiliensis sp. n.  
(Figs. 62-64, 106)

FEMALE. Unknown.

MALE. Coloration. Dark greyish brown. Eyes black. Face largely unmarked; postclypeus with traces of 3 or 4 broad striae each side of midline; maxillary palpi pale brown. Thorax very dark dorsally, paler laterally. Legs with coxae and femora pale, tibiae and tarsi dark brown. Forewing (Fig. 62) marked with dark brown; setae on basal veins sited on dark spots; apex of pterostigma dark; much of margin from As-Culb dark, with small hyaline lunules in most cells. Hindwing with brown shading at vein apices. Abdomen mainly dark brown, paler ventrally.

Morphology. Lacinial apex as in Fig. 106, narrow. Forewing (Fig. 62) with extensive secondary venation: Rs 4-branched, M 4- or 5-branched. Hindwing Rs forked, M simple. Hypandrium transverse, lightly sclerotised. Phallosome frame (Fig. 63) simple, open anteriorly and with short blunt median projection. Epiproct (Fig. 64) rounded, shallow, with short setae on central region and central marginal setae. Paraproct with field of about 32 trichobothria.

Dimensions. B 2.85, FW 2.73, HW 1.96, antennae missing, F 0.705, T 1.215, hind tarsus missing.

Holotype, ♂, light trap 25.iv.1978.

COMMENTS

Forewing characters of this unusual species correspond closely to those of species of Dicropsocus Smithers and Thornton (1977), a genus hitherto known only from Melanesia. However, the lacinia differs markedly: that of Dicropsocus s.str. has an elongate outer projection rather than several small teeth as in the present species. Males are known only of D. montanus Smithers and Thornton (New Guinea). The central lobe of the phallosome is extended and truncate, as in brasiliensis, but the radula of montanus appears to be more strongly developed. None of the described species of Dicropsocus has a pterostigmal crossvein.

The form of the lacinia is thus the major feature in which this species differs from Melanesian Dicropsocus species. Although this feature is generally accepted as of generic value in Epipsocidae, to raise a new genus on this feature alone, and from a single specimen, is premature: brasiliensis is thus tentatively referred to Dicropsocus, although it may be transferred to a new genus when more material becomes available for study. No similar Neotropical Epipsocidae are known.

Epipsocus capitulatus sp. n.  
(Figs. 65, 66, 107)

FEMALE. Unknown.

MALE. Coloration. Pale brown. Eyes black. Ocelli on dark brown tubercle. Face unmarked. Thorax with dorsum darkened and a pronounced dark brown pleural stripe, continued along anterior half of abdomen. Legs pale brown. Forewing (Fig 65) extensively marked with pale greyish brown; setae on alavve veins sited on dark spots; small hyaline marginal lunules in medial cells. Hindwing hyaline, slight darkening at apex of veins.

Morphology. Lacinial apex as in Fig. 107. Forewing venation as in Fig. 65. Hindwing Rs forked near apex. Hypandrium transverse. Phallosome frame (Fig. 66) open anteriorly, simple, with expanded median posterior projection; radular sclerites scarcely developed. Epiproct small, trapezoidal. Paraproct with field of about 38 small trichobothria.

Dimensions. B 2.70, FW 2.59, HW 2.16, antennae missing, F 0.795, T 1.320, t1 0.630, t2 0.150, t1/t2 4.200, ct 31.4.

Holotype, ♂, light trap, 6.xii.1977.

COMMENTS

This, and the next species, both appear to be related to E. roncadorensis New and E. sinuatus New on forewing pattern. E. capitulatus is very similar to roncadorensis on the form of the phallosome and is differentiated on the longer shallower pterostigma and areola postica. The phallosome also separates it from phaeus sp.n., in which the phallosome has a smaller apex and slightly more pro-
Figs. 62-69, Figs. 62-64, Dicropsocus brasiliensis sp. n.: Fig. 62 — Forewing; Fig. 63 — Phallosome; Fig. 64 — Male epiproct and paraproct. Figs. 65, 66 Epipsocus capitulatus sp. n.: Fig. 65 — Forewing; Fig. 66 — Phallosome. Figs. 67-69, Epipsocus phaeus sp. n.: Fig. 67 — Forewing; Fig. 68 — Phallosome; Fig. 69 — Male epiproct and paraproct. (Scales in mm).

Epipsocetae...
ounced radular ornamentation. Males of *sinuatus* are not known, but the more extensive basal pigmentation in the forewing, as well as the more elongate pterostigma and areola postica, strongly imply that *capitulatus* is distinct.

**Epipsocus phaeus** sp. n.  
(Figs. 67-69, 108)

**FEMALE.** Unknown.  
**MALE.** Coloration. Pale brown. Eyes black; a broad interocellar dark brown band enclosing ocelli and continued behind eyes; postclypeus pale; anteclypeus dark; labrum paler medially. Thorax dark brown in dorsal midline, and with broad dark pleural band. Legs: femora with dark spot on outer edge of apex, tibiae with 2 dark bands; base of t. darkened. Forewing (Fig. 67): setae on all veins sited on dark spots; extensive pale brown patches near margin in medial cells and around Cula; much of basal half of wing pale brown; spines of all veins darkened. Hindwing hyaline, except for slight darkening at apices of main veins. Abdomen dark brown laterally, irregularly darkened dorsally.

Morphology. Lacinial apex as in Fig. 108. Forewing venation as in Fig. 67. Hindwing R forked near apex. Hypandrium shallowly rounded, incipiently bilobed. Phallosome frame (Fig. 68) open, broad; apex small and truncate; median posterior process; radula with laterally directed anterior spines, numerous smaller pointed or rounded sclerites posteriorly. Epiproct broadly rounded, with border thickened as in Fig. 76. Paraproct with field of about 38 trichobothria.

Dimensions. B 2.00, FW 1.92, HW 1.63, t. 1.170, F 0.825, T 1.410, t. 0.645, t. 0.150, t. 4.300, ct 38.4.

**Holotype,** 1α, light trap 3.ii.1977.

**COMMENTS**

See under *E. capitulatus* (p. 196).

**Epipsocus roesleri** New  
(Fig. 119)

**Epipsocus roesleri** New, 1972: 469 (α, 2, figs. 42-49).

Material examined: 1α, light trap, 3.ii.1978.

**Epipsocus verrucosus** sp. n.  
(Figs. 72, 73, 109)

**FEMALE.** Unknown.  
**MALE.** Coloration. Dark brown. Eyes black. Ocelli on large black tubercle. Postclypeus with 3 or 4 narrow dark striae each side of midline; central region of anteclypeus dark. Thorax darker dorsally. Legs brown, uniform. Forewing (Fig. 72) unmarked, except for slight darkening at nodulus. Hindwing hyaline. Abdomen slightly darkened dorsally.

Morphology. Lacinial apex as in Fig. 109. Forewing venation as in Fig. 72. Hypandrium incipiently bilobed, heavily sclerotised. Phallosome (Fig. 73) broad, open with arms divergent anteriorly; an elongate tapered median posterior process; radula with laterally directed anterior spines, numerous smaller pointed or rounded sclerites posteriorly. Epiproct broadly rounded, with border heavily sclerotised. Paraproct with field of about 24 trichobothria.

Dimensions. B 2.45, FW 2.25, HW 1.63, f. 0.525, f. 0.375, t./t. 1.400, F 0.615, T 1.020, t. 0.510, t. 0.135, t./t. 3.778, ct 27.4.

**Holotype,** 1α, light trap 1.x.1977.

**COMMENTS**

This species appears to be most similar to *E. quercus* Roesler (1940), genitalia of which are unknown. Pending reexamination of the types of *quercus*, it is unwise to assign the present specimen to that species, as what are apparently minor differences in forewing venation may prove to be of specific value. The phallosome frame implies relationship with the following two species, and all three have the male epiproct border thickened as in Fig. 76. They are separable on details of phallosome shape, of radular sclerite and of the forewing.
Figs. 70-76, Figs. 70, 71, Epipsocus acanthus sp. n.: Fig. 70 — Forewing; Fig. 71 — Phallosome; Figs. 72, 73, Epipsocus verrucosus sp. n.: Fig. 72 — Forewing; Fig. 73 — Phallosome; Figs. 74-76, Epipsocus argutus sp. n.: Fig. 74 — Forewing; Fig. 75 — Phallosome, with insert of apex; Fig. 76 — Male epiproct and paraproct. (Scales in mm).
Epipsocus acanthus sp. n.  
(Figs. 70, 71)  

**FEMALE.** Unknown.  
**MALE.** Coloration. Pale brown. Eyes black. Ocellar tubercle darkened. Central region of face and of thoracic dorsum slightly darkened; body otherwise unmarked. Legs pale. Forewing (Fig. 70) very pale brown. Hindwing hyaline.  

Morphology. Forewing venation as in Fig. 70. Hypandrium incipiently bilobed. Phallosome frame (Fig. 71) broad, open anteriorly, elongate rounded median process; radular sclerites complex: many small rounded denticles and central posterior more elongate sclerites. Epiproct rounded, with border strongly sclerotised. Paraproct with oval field of about 24 trichobothria.  

Dimensions. B 2.60, FW 2.54, HW 1.87, f, 0.630, F 0.675, t, 0.135, t./t2 3.889, ct 29.4.  

Holotype, ♀, light trap, 31.i.1978.  

**COMMENTS**  
See comment following the previous species.  

Epipsocus argutus sp. n.  
(Figs. 74-76, 110)  

**FEMALE.** Unknown.  
**MALE.** Coloration. Dark brown. Eyes black. Ocelli on black tubercle. Vertex blackened dorsal to eyes and in midline; frons dark; postclypeus with 3 posterior striae converging on midline from each side, anteriorly dark brown; anteclypeus very dark brown; labrum paler; maxillary palp and antennae pale. Thorax ventrally darkened. Legs dark brown. Forewing (Fig. 77) predominantly pale; most veins with a few dark brown spots; apex of pterostigma, membrane at apices of veins R2 + 3 — M4 darkened; whole of areola postica dark brown. Hindwing hyaline, except for slight darkening at nodulus. Abdomen pale dorsally, slightly darkened laterally.  

Morphology. Lacinial apex as in Fig. 110. Forewing venation (Fig. 77): R5 3-branched. M 4-branched. Hypandrium broadly rounded, lightly sclerotised. Phallosome frame (Fig. 78) open anteriorly, sinuously rounded posteriorly; radular sclerites scarcely evident. Epiproct shallow, rounded. Paraproct with field of about 23 trichobothria.  

Dimensions. B 2.65, FW 2.54, HW 1.87, f, 0.675, f2 0.570, f./f2 1.184, F 0.675, T 1.155, t, 0.525, t, 0.135, t./t 3.889, ct 30.3.  

Holotype, ♀, light trap, 11.x.1977.  
Paratype, ♀, light trap, 15.xi.1977.  

**COMMENTS**  
This species is clearly related to the preceding two new species, but is separable from them on phallosome form and on having darkened forewing areas at the apices of the radial and medial veins.  

Epipsocus fuscareolatus sp. n.  
(Figs. 77, 78, 111)  

**FEMALE.** Unknown.  
**MALE.** Coloration. Pale brown. Eyes black. Ocelli darkened, sited in narrow dark brown band across frons; face unmarked; maxillary palp and antennae pale. Thorax ventrally darkened. Legs dark brown. Forewing (Fig. 77) predominantly pale; most veins with a few dark brown spots; apex of pterostigma, membrane at apices of veins R2 + 3 — M4 darkened; whole of areola postica dark brown. Hindwing hyaline, except for slight darkening at nodulus. Abdomen pale dorsally, slightly darkened laterally.  

Morphology. Lacinial apex as in Fig. 111. Forewing venation (Fig. 77): R5 3-branched. M 4-branched. Hypandrium broadly rounded, lightly sclerotised. Phallosome frame (Fig. 78) open anteriorly, sinuously rounded posteriorly; radular sclerites scarcely evident. Epiproct shallow, rounded. Paraproct with field of about 23 trichobothria.  

Dimensions. B 2.45, FW 2.30, HW 1.77, f, 0.450, f 0.345, f./f 1.304, hind leg missing.  

Holotype, ♀, light trap, 18.x.1977.  

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New
The dark brown areola postica, with no similar darkening of the medial cells, immediately differentiates *fuscareolatus* from all other South American Epipsocidae. It is unknown whether the additional branches to R₅ and M in the forewing are aberrant.

Figs. 77-83, Figs. 77, 78, *Epipsocus fuscareolatus* sp. n.: Fig. 77 — Forewing; Fig. 78 — Phallosome. Fig. 79, 80, *Epipsocus pennyi* sp. n.: Fig. 79, Forewing; Fig. 80 — Phallosome. Figs. 81-83. *Epipsocus maculithorax* sp. n.: Fig. 81 — Forewing; Fig. 82 — Phallosome; Fig. 83 — Male epiproct and paraproct. (Scales in mm)

Epipsocidae...
Epipsocus pennyi sp. n.
(Figs. 79, 80, 112)

FEMALE. Unknown.

MALE. Coloration. Pale brown, head overall darker. Eyes black. Ocelli on black tubercle; postclypeus and anteclypeus darkened. Thorax pale, slightly darkened dorsally. Legs pale brown. Forewing (Fig. 79) pale greyish brown, with darker central areas in radial and medial cell; apices of most veins darkened. Hindwing very pale greyish brown. Abdomen unmarked.

Morphology. Lacinial apex as in Fig. 112. Forewing venation as in Fig. 79. Hypandrium transverse. Phallosome (Fig. 80) broad, open anteriorly; a narrow rounded median posterior process; radula scarcely sclerotised. Epiproct rounded. Paraproct with field of about 26 widely-spaced trichobothria.

Dimensions. B 2.50, FW 2.44, HW 1.82, antennae and hind legs missing.

Holotype, ♂, Malaise trap, 2.viii.1977.

COMMENTS

This, and the next species, resemble E. nepos Enderlein (1900, Peru), E. plaumanni Roesler (1940, Brazil) and E. latistigma New
Roesler (1940, Brazil) in having relatively discrete dark patches in the radial and medial forewing cells. Genitalia of nepos are unknown but (from Enderlein's figures), the areola postica is considerably longer and shallower than in either of the present species or in Roesler's species.

E. pennyi differs from other members of this group in the ground colour of the forewing being darker and in the narrow elongate median phallosome process. The phallosome of latistigma is also relatively simple, but the apex broader and bluntly rounded. That of plaumanni is considerably more complex (Roesler 1940, fig. 56). E. pennyi and maculithorax sp.n. are readily separable on phallosome and forewing features: the three discrete groups of radular denticles found in maculithorax also separate it from all other known species.

Epipsocus maculithorax sp.n.
(Figs. 81-83, 113)

FEMALE. Unknown.
MALE. Coloration. Pale tawny brown. Eyes black. Head unmarked except for small dark brown spot behind eyes, contiguous with narrow pleural stripe along cervix and pro...
thorax. Thorax also with small black spot at base of each wing, and a larger spot above hind coxa. Legs: apex of tibiae, whole of tarsi darkened. Forewing (Fig. 81) yellowish brown, with dark brown markings at apex of veins R2+3—Cu2; slight darker patches in radial and medial cells. Hindwing hyaline, except for slight darkening at apices of R5 and M.

Morphology. Lacinial apex (Fig. 113) strongly produced on outer side. Forewing venation (Fig. 81). Hypandrium transverse. Phallosome (Fig. 82) broad, open anteriorly; median posterior projection short, emarginate at apex; radula with three patches of dark denticles. Epiproct (Fig. 83) deep, rounded. Paraproct (Fig. 83) with elongate field of about 20 trichobothria.

Dimensions. B 3.85, FW 3.64, HW 2.68, f1 1.245, F 0.975, T 1.905, t1 0.870, t2 0.180, t1/t2 4.833, ct 42.4.

Holotype, ♂, light trap, 25.v.1978.

Paratypes, 6 ♂♂, light trap, 1 on each of following dates: 7.iii.1978, 2.v.1978, 9.v.1978, 27.vi.1978, 6.ix.1978, 27.ix.1978.

COMMENTS

See under preceding species. *E. maculithorax* is further separable by its colour and relatively large size.

Epipsocus atratus sp. n.  
(Figs. 84-86, 114)

**FEMALE.** Unknown.

**MALE.** Coloration. Dark glossy brown, unmarked except for blackening of central region of the vertex. Eyes black. Legs dark brown. Forewing (Fig. 84) uniform dark greyish brown. Hindwing very pale greyish brown. Abdomen predominantly pale, darkened dorsally.

Morphology. Lacinial apex as in Fig. 114. Forewing venation as in Fig. 84. Hypandrium transverse, incipiently bilobed. Phallosome frame (Fig. 85) open anteriorly; a rounded median posterior process; lightly sclerotised 'mushroom-shaped' radular patches. Epiproct (Fig. 86) deep, rounded. Paraproct (Fig. 86) with large field of about 32 trichobothria.

Dimensions. B 2.80, FW 2.73, HW 2.15, f1 0.465, f2 0.345, f1/f2 1.348, F 0.705, T 1.215, t1 0.510, t2 0.180, t1/t2 2.833, ct 20.5.

Holotype, ♂, Malaise trap, 29.xi.1977.

Paratype, ♂, Malaise trap, 9.viii.1977.

**COMMENTS**

The darkwinged species is superficially similar to *E. niger* New (1972), *E. fuscatus* New (1972) and to *Mesepipsocus newi* Badonnel.
Flgs. 110-119, Lacinial apices of: Fig. 110 — Epipsocus argutus sp. n.; Fig. 111 — Epipsocus fuscareolatus sp. n.; Fig. 112 — Epipsocus pennyi sp. n.; Fig. 113 — Epipsocus maculithorax sp. n.; Fig. 114 — Epipsocus atratus sp. n.; Fig. 115 — Epipsocus pereirai Badonnel; Fig. 116 — Triplocania uncinata sp. n.; Fig. 117 — Triplocania prionota sp. n.; Fig. 118 — Epipsocus meruleus sp. n.; Fig. 119 — Epipsocus roesleri New. (1974). The forewing differs from any of these in having a relatively longer areola postica. Males are known only for fuscatu-s: the phallosome frame is of the same general form as that of atratus, but fuscatu-s lacks radular sclerifications.

Epipsocus pereirai Badonnel (Figs. 87, 88, 115)

Material examined. 4 ♂♂, Malaise trap, 1 each of the following dates: 21.ii.1978, 18.iv.1978, 30.v.1978, 6.ix.1978.

COMMENTS

These specimens are referred to pereirai on correspondence of forewing markings and of phallosome form, although the forewing pigmentation is more pronounced basally, and the lacinial apex (Fig. 115) differs somewhat. The illustrations given here facilitate comparison with Badonnel’s specimen from Utiaritii.

Epipsocus meruleus sp. n. (Figs. 89-93, 118)

FEMALE, MALE. Coloration. Dark brown. Eyes black. Ocelli on black tubercle. Face unmarked; maxillary palpi and antennae paler. Thorax undarkened dorsally; a narrow dark pleural stripe. Legs, wings (except for slight brown ing around apical margin) and abdomen unmarked.

Morphology. Lacinial apex as in Fig. 118. Forewing venation as in Fig. 89.

FEMALE. Subgenital plate (Fig. 91) rounded, heavily sclerotised. Gonapophyses (Fig. 92): ventral valve short and slender; dorsal valve strongly attenuated, with few preapical spicules; a central field of about 10 setae. Epiproct trapezoidal. Paraproct with field of about 26 trichobothria.

MALE. Hypandrium bluntly rounded. Phallosome (Fig. 90) with broad transverse apex. Epiproct (Fig. 93) rounded. Paraproct (Fig. 93) with field of about 28 trichobothria.

Dimensions. 9. B 3.00, FW 2.92, HW 2.16, f1 0.645, f2 0.570, f1/f2 1.132, F 0.720, T 0.870. t1 0.435, t2 0.150, t1/t2 2.900, ct 23.4.

♂, B 2.90, FW 2.83, HW 2.06, f1 0.660, f2 0.585, f1/f2 1.128, F 0.795, T 1.305, t1 0.645, t2 0.150, t1/t2 4.300, ct 33.5.

Holotype, ♂, Emergence trap, 8.xi.1977.

Paratypes. 2 ♀♀, Emergence trap, 20.xi.1977, 4.x.1977; 2 ♂♂, emergence trap, 11.x.1977; 1 ♂, light trap, 20.xii.1977.

COMMENTS

This species resembles several other Brazilian taxa with unmarked wings, namely quercus Roesler (1940), uniformis New (1972) and willineri New (1972). Genitalia of quercus are unknown, and the latter two known only from females. Both have a ventral valve to the gonapophyses, as in the present species, but differ on the form of subgenital plate sclerotisation and of the gonapophyses.
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Resumo

Trinta e uma (31) espécies de Epipsocetae são citadas da Reserva Ducke, localizada perto de Manaus (Brasil), das quais vinte e sete (27) são descritas como novas e ilustradas. Os novos taxa representam os gêneros Ptiloneura (1), Triplocania (8), Euplocania (2), Isthmopsocus (1), Neurostigma (4), Dicropsocus (1), Epipsocus (10), sendo as suas afinidades discutidas.

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