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Black fungus gnats of Central America. Part I. (Diptera, Sciaridae)

With 46 figures

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Summary

The material of this first part on Sciaridae of Central America was collected in various localities in Costa Rica and Honduras. 51 species of 21 genera were identified. 38 species, 4 genera and 3 subgenera are described for the first time. The following genus group taxa are treated (number of species given in brackets): *Acutella* gen. nov. [1], *Bradysia* [8], *Chaetosciara* [1], *Corynoptera* [2], *Cratyna* (*Cratyna* s. str.) [3], *Cratyna* (*Spathobella*) [1], *Epidapus* (*Epidapus*) [1], *Epidapus* (*Pseudoaptanogyna*) [1], *Epidapus* (*Clandestina* subgen. nov.) [3], *Eugnoriste* [1], *Hyperlasion* [2], *Leptosciarella* (*Leptosciarella*) [1], *Leptosciarella* (*Protosciarella* subgen. nov.) [3], *Leucosciara* gen. nov. [2], *Odontosciara* (*Odontosciara*) [1], *Odontosciara* (*Obscura* subgen. nov.) [1], *Phytosciara* (*Dolichosciara*) [1], *Pseudolycoriella* [3], *Pseudosciara* [2], *Pterothrix* gen. nov. [2], *Rhynchosciara* [1], *Scatopsiara* (*Scatopsiara* s. str.) [1], *Schwenckfeldina* [2], *Sciara* [1], *Trichosciara* gen. nov. [1], *Zygomma* [5].

Most of the taxa are of South American affiliations and quite different from the Holarctic sciarid fauna. The Central American representatives of the cosmopolitan genera *Sciara*, *Chaetosciara*, *Epidapus*, *Phytosciara*, *Pseudolycoriella*, *Schwenckfeldina* and (for the most part) *Bradysia* are similar to species of the old World. The Central American species of the cosmopolitan subgenus *Cratyna* s. str. show more similarities to species from tropical areas of the Australian and Oriental region. Holarctic and/or Nearctic genera, like *Leptosciarella* (*Leptosciarella* s. str.), *Corynoptera*, *Scatopsiara* and *Eugnoriste* are represented in Central America only by few species. *Bradysia*, *Cratyna*, *Pseudolycoriella*, *Pseudosciara*, *Zygomma*, and *Leptosciarella* (subgenus *Protosciarella*) are diverse, common, and consequently typical Central American elements.

Zusammenfassung

Das Material für den Teil I der Trauermücken Mittelamerikas wurde in unterschiedlichen Landesteilen von Costa Rica und Honduras mit Malaise-Fallen und Gelbschalen gesammelt. Es wurden 51 Arten aus 21 Gattungen nachgewiesen, davon 38 Arten, 4 Gattungen und 3 Untergattungen als neu für die Wissenschaft beschrieben: *Acutella* gen. nov. [1], *Bradysia* [8], *Chaetosciara* [1], *Corynoptera* [2], *Cratyna* (*Cratyna* s. str.) [3], *Cratyna* (*Spathobella*) [1], *Epidapus* (*Epidapus*) [1], *Epidapus* (*Pseudoaptanogyna*) [1], *Epidapus* (*Clandestina* subgen. nov.) [3], *Eugnoriste* [1], *Hyperlasion* [2], *Leptosciarella* (*Leptosciarella*) [1], *Leptosciarella* (*Protosciarella* subgen. nov.) [3], *Leucosciara* gen. nov. [2], *Odontosciara* (*Odontosciara*) [1], *Odontosciara* (*Obscura* subgen. nov.) [1], *Phytosciara* (*Dolichosciara*) [1], *Pseudolycoriella* [3], *Pseudosciara* [2], *Pterothrix* gen. nov. [2], *Rhynchosciara* [1], *Scatopsiara* (*Scatopsiara* s. str.) [1], *Schwenckfeldina* [2], *Sciara* [1], *Trichosciara* gen. nov. [1], *Zygomma* [5].

Die taxonomischen Ergebnisse belegen, daß die Mehrzahl der Gattungen und Arten zum südamerikanischen Faunenkomplex gehören und deutliche Unterschiede zur holarktischen Fauna zeigen. Deutliche Beziehungen zur altweltlichen Fauna zeigen dagegen Arten der Gattungen *Sciara*, *Chaetosciara*, *Epidapus*, *Phytosciara*, *Pseudolycoriella*, *Schwenckfeldina* und eine nicht geringe Zahl von *Bradysia*-Arten. Die mittelamerikanischen Arten der weltweit verbreiteten Subgenus *Cratyna* s. str. unterscheiden sich von den holarktischen Vertretern und zeigen mehr Gemeinsamkeiten mit Arten tropischer Gebiete der australi-

schen und orientalischen Region. Holarktische oder nearktische Gattungen wie *Leptosciarella* (*Leptosciarella* s. str.), *Corynoptera*, *Scatopsiara* und *Eugnoriste* erreichen Mittelamerika nur mit wenigen Arten. Artenreich, häufig und somit typisch für die Fauna Mittelamerikas sind die Gattungen *Bradysia*, *Cratyna*, *Pseudohycoiella*, *Pseudosciara*, *Zygoma*, und *Leptosciarella* mit der Untergattung *Protosciarella*.

Introduction

Previously, the sciarid fauna of Central America has never been thoroughly investigated. AMORIN (1992) mentioned 24 species, mainly described by LENGERSDORF (1930, 1940, 1944) from Mexico and Costa Rica. Central America (excluding the Caribbean islands) represents the approximately 2.000 km long land bridge between North and South America with a tropical and subequatorial climate. It is bordered in the north by the Mexican Highland with arid and desert-like landscapes forming a natural barrier for faunistic exchange at least since the last ice age. In the south, the tropical rainforests of Central America flow uninterrupted into Columbia, Ecuador and Venezuela, as well as other neighboring areas of the Neotropic region. In the geological past, the land bridge between South and North America was disrupted about 170 Ma as a result of the massive mesozoic sheet movements following the Triassic separation of the Old and New World. Unimpeded faunistic exchange resumed during the mid Tertiary period (about 30 Ma) with the geological restoration of the land bridge between South and North America, and the separation of the Lesser Antilles from modern day Venezuela. With this unique geological background, it is exciting to determine whether the Nearctic or the Neotropic more heavily influenced the establishment of the recent Central American fauna.

Material, Methods and Acknowledgements

The following taxonomic studies are based on material from Costa Rica and Honduras as a result of an international biodiversity program, including the Department of Entomology of the Natural History Museum of Los Angeles County Museum. The sciarids were mainly selected from Malaise traps of different areas of Costa Rica (collected by BRIAN V. BROWN 1993, by GOULD and JANZEN 1986), by MOHRIG with yellow dishes 1996 as well as from Honduras (collected by R. CORDERO 1995). Other collectors of single specimens are mentioned under the corresponding species.

The sciarid flies were preserved in 70 % alcohol solution. For the preparation on microscopic slides they were dehydrated in 96 % alcohol solution and treated with Creosote for at least 10 minutes. The genitalia had been separated carefully. The body and the genitalia were subsequently embedded on the same slide under two different cover glasses in Canadian Balsam.

The morphologic terminology, abbreviations for structures, diagnoses of genera and subgenera and nomenclature generally correspond with that of MENZEL & MOHRIG (1997, 1998, 2000). Drawings were made with the aid of a simple microscopic drawing mirror of Abbe (Carl Zeiss Jena). The size of morphological structures is given in the legend of drawings and in figure 1 as the actual magnification.

I am much indebted to Dr. Brian V. Brown, Department of Entomology, Natural History

Museum of Los Angeles County, 900 Exposition Boulevard, who sent me this unique material for comparison. For taxonomic and zoogeographic remarks I thank very much my friend Dr. Frank Menzel (Deutsches Entomologisches Institut [DEI] Eberswalde, Germany). Types are stored in the PCMG (Private Collection MOHRIG Greifswald), Paratypes and comparative material are deposited in the Natural History Museum of Los Angeles County and in some cases in the Deutsches Entomologisches Institut Eberswalde, Germany. Finally, I would like to acknowledge the efforts of Elder Jason Cranial, Germany Berlin Mission of the Church of Jesus Christ of Latter-Day Saints, for his assistance in editing this article.

Systematics

Genus *Sciara* MEIGEN, 1803

(Mag. Insektenkunde, 2: 263)

Sciara penicillata (LENGERSDORF, 1944)

(Fig. 1 a-c)

Literature: LENGERSDORF 1944: 126, fig. 2 [as *Neosciara*] ; AMORIM 1992: 67 [as *Sciara*].

Redescription: ♂. **Head:** Dark brown. Eye bridge 4-5 facets wide. Antennae brown, flagellomeres with bottle-like necks, setulae as long as the diameter of the basal part; palpi 3-segmented, basal segment with 3 longer bristles and a patch of sensillae.

Thorax: Brown; mesonotum rather short and dense setose, lateral bristles longer; scutellum without distinct marginal bristles; posterior pronotum bare; anteprenotum and prethoracal episternite rather long setose; wings brownish; $R_1 = R$; joining C opposite the M-fork; R_5 with few ventral macrotrichia; $C = 2/3 w$; $y = x$, without macrotrichia; posterior veins with macrotrichia; halteres brownish. Coxae and legs long and thin, yellowish-brown, tarsi darkened; fore tibiae without spine-like bristles within the ground setae, at the inner apex with a large irregular patch of pale bristles; spurs of mid and hind tibiae equal and somewhat longer than the apex; claws untoothed.

Abdomen: brown, rather long and fine setose; hypopygium brown; gonocoxites short and strong, the inner ventral margin with short setae; gonostyles large, with 6 long spines on a narrow lobe above the more ventrally located broad and blunt tip; tegmen rounded; Aedeagus short and small, with a long furca. Body length: 4 mm.

Material: 1 ♂, 27.9.-18.10.1986; Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Remarks: The species is similar to the Palearctic species *Sciara hemerobioides* (SCOPOLI, 1763) and *Sciara analis* SCHINER, 1864. It is characterized by the long spines on a small, ventrally located lobus above the broad and short setose tip of gonostyles and the lack of setae on the posterior pronotum. The species was described by LENGERSDORF from Mexico.

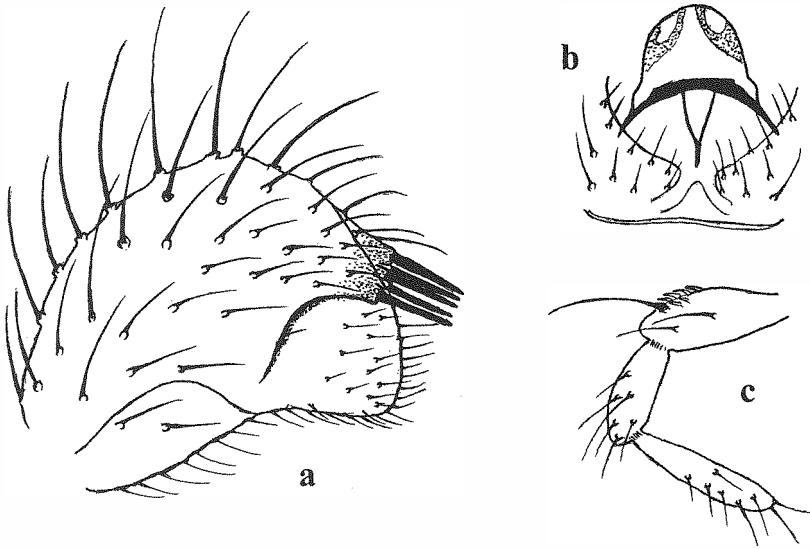


Fig. 1: *Sciara penicillata* (LENGERSDORF), ♂: a) Stylus (200 x); b) base of hypopygium (80 x); c) palpus (200 x).

Genus *Trichosciara* gen. nov.

Type species: *Lycoria spinimana* LENGERSDORF, 1944

Diagnosis: The genus is characterized by very large eyes with a broad eye bridge, reduced ocelli hill and absence of ocelli. Further characteristics: the flagellomeres show a slightly rough surface, especially the distal segments of antennae, with rather long, white and weakly bicolor necks; palpi three-segmented and without a sensory pit of the basal segment; posterior pronotum bare; wings with macrotrichia on posterior veins; fore tibiae without spine-like bristles within the ground setae, at the inner apex with a dense patch of dark bristles; spurs of mid and hind tibiae equal and longer than the diameter of the apex; claws untoothed; hypopygium ventrally at the base without lobe; gonocoxites with one megaseta at the ventral apex; tegmen membranously and with a large area of very fine teeth; aedeagus short, with a long furca.

Remarks: The new genus is well characterized by the absence of ocelli (autapomorphy) in combination with macrotrichia on posterior wing veins and a dense patch of dark bristles at the inner apex of fore tibiae. It is quite different from the genus *Sciara*, but positioned near the Holarctic genus *Trichosia*.

***Trichosciara spinimana* (LENGERSDORF, 1944) comb. nov.**

(Fig. 2 a-e)

Literature: LENGERSDORF 1944: 127, fig. 3 [as *Lycoria*]; AMORIM 1992: 67 [as *Sciara*].

Redescription: ♂. **Head:** Dark, roundly. Eyes very large, eye bridge 7-8 facets wide; ocelli hill reduced, ocelli absent. Antennae brownish; flagellomere with a slightly rough surface, especially on distal segments, necks rather long, white and weakly bicolor; flagellomere 4 about 2.2 times longer than wide, with dense, fine and white setae as long as half of the diameter of the basal part. Palpi brownish, three-segmented; basal segment with 6-7 bristles and short sensillae.

Thorax: Ochreous, with some darker spots; mesonotum with three strips of dense and rather long darker setae; scutellum with longer setae but without distinct marginal bristles. Posterior pronotum bare. Wings pale, $R_1 = 2/3 R$; R joining the C before the M-fork;

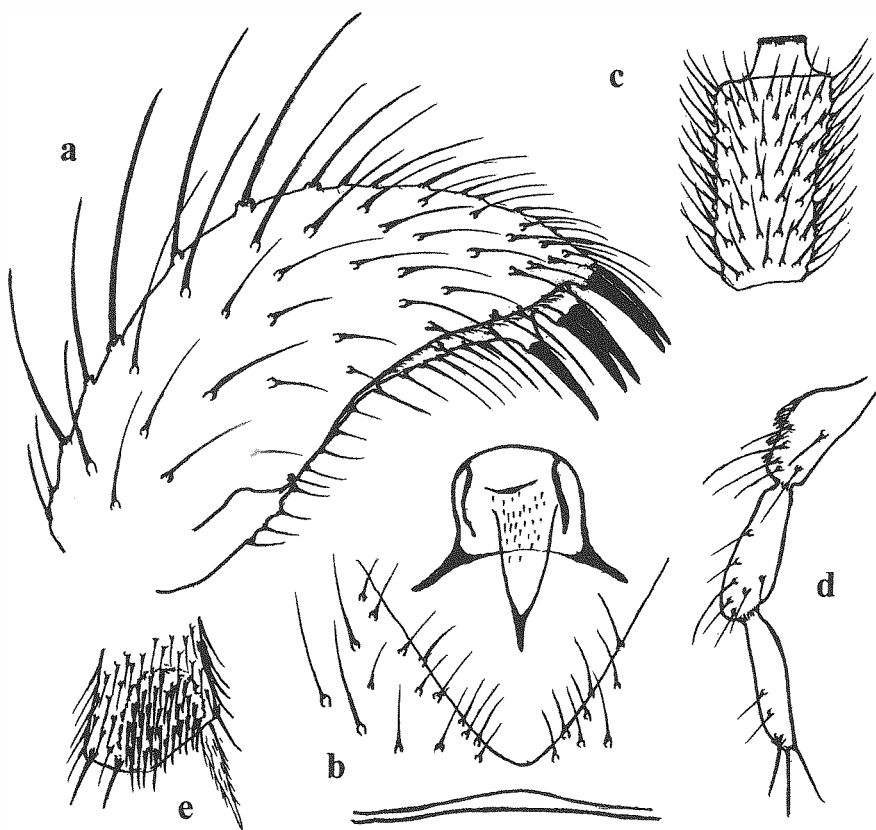


Fig. 2: *Trichosciara spinimana* (LENGERSDORF), ♂: **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** tip of fore tibiae (200 x).

R5 in the distal third with ventral macrotrichia; x-y long, y somewhat longer x and without macrotrichia; posterior veins with macrotrichia. Halteres brownish. Coxae and legs brownish; fore tibiae without spine-like bristles within the ground setae, at the inner apex with a dense patch of dark bristles; spurs of mid and hind tibiae equal and longer than the diameter of the apex. Claws untoothed.

Abdomen: Brownish. Hypopygium brownish, ventrally at the base without lobe; the inner border of gonocoxites short and sparse setose; gonocoxites with one megaseta at the ventral apex; gonostyles oblong, curved and flattened on the inner side, with 5 dark and strong apical spines. Tegmen as high as broad, membranously and with a large area of very fine teeth. Aedeagus short, with a long furca. Body length: 3.5 mm.

♀. Eyes very large; ocelli hill reduced, ocelli absent. Coloring as in male. Flagellomere 4 about 2 times longer than wide, surface lesser roughly as in male; setae short and pale. Wings browned along the anterior veins. Body length: 4.5 mm.

Material: Costa Rica, 9 ♂♂, 6.9.-27.9.1986; 8 ♂♂, 4 ♀♀, 27.9.-18.10.1986, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Paraguay, 6 ♂♂, 2 ♀♀, 6.-20.2.1996, Dept. San Pedro, Santa Rosa Hwy 3, 23°48'S; 56°07'W, Yaguarete forest, Malaise-trap, leg. J. BEIER (coll. MOHRIG).

Remarks: The species was described by LENGERSDORF from Mexico, Finca Vergel. It is wide distributed within Central and South America.

Genus *Leptosciarella* TUOMOKOSKI, 1960

(Ann. Zool. Soc. "Vanamo", 21(4):17, 20)

Leptosciarella (Leptosciarella) prospera spec. nov.

(Fig. 3 a-e)

♂. **Head:** Dark brown. Eye bridge 4-5 facets wide. Antennae rather short, unicolor brown, dark and bristle-like setose, necks short and conical; flagellomere 4 about 2 times longer than wide, setae shorter than the diameter of the basal part. Palpi three-segmented; basal segment with 2 bristles and a patch of short sensillae.

Thorax: Brown. Mesonotum sparse and fine setose, some lateral bristles longer; scutellum with 4 stronger marginal bristles. Posterior pronotum bare. Wings broad, brownish, $R1 = 2/3 R$; R5 in the apical third with ventral macrotrichia; $C = 2/3 w$; $y = x$, without macrotrichia; posterior veins with macrotrichia. Halteres with rather long stem, darkened. Coxae brown, elongated and narrow; legs long, femora and tibiae brown, tarsi darkened; fore tibiae at the inner apex with a weak patch of dark spine-like bristles; spurs long; claws untoothed

Abdomen: Brown. Hypopygium brown; the inner border of gonocoxites sparse, but rather long setose; gonostyles short and broad rounded to the tip, with a short hawk beak-like tooth and many awl-like spines in the apical third; tegmen square-like, with some fine teeth; Aedeagus rather long and thin. Body length: 2.2 mm.

Locus typicus: Honduras, Cortes, Parque Nacional Cusunco, 15.45°N, 88.22°W.

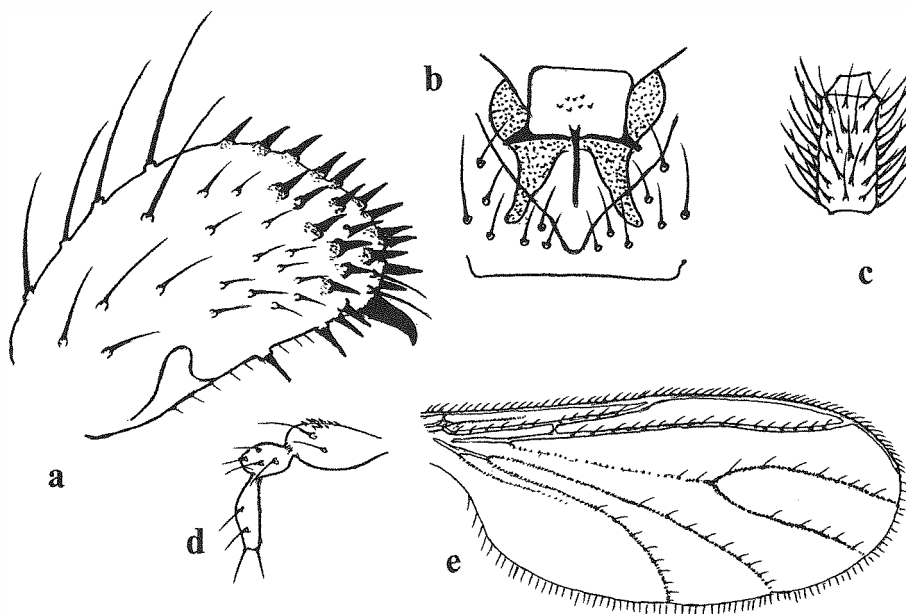


Fig. 3: *Leptosciarella* (*Leptosciarella*) *prospera* spec. nov., ♂: **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** wing (30 x).

Holotype: 1 ♂, 2.3.1995, Malaise trap, leg. R. CORDERO.

Remarks: This species belongs to the subgenus *Leptosciarella* s. str. through the combination of the conical necks of flagellomere, the shape of gonostyles with a short hawk beak-like tooth and awl-like spines at the tip and macrotrichia on the posterior wing veins. It is very similar to Holarctic species.

***Protosciarella* subgen. nov.**

Type species: *Leptosciarella virgatoalata* spec. nov.

Diagnosis: Flagellomeres with bottle-like necks (*Sciara*-like); Palpi 1-3-segmented; posterior pronotum bare; R5 without ventral macrotrichia; posterior wing veins without macrotrichia; halteres rather long; coxae elongate and narrow; legs long, fore tibiae at the inner apex with a irregular patch of pale bristles (sometimes more or less reduced); spurs of mid and hind tibiae equal and longer than the apex; hind tibiae with a row of short and stronger spine-like bristles; claws sometimes weakly toothed; hypopygium without a basal lobe; gonostyles with a strong hawk beak-like spine on the apex, sometimes more subapically inserted; tegmen more or less as broad as high; aedeagus mostly very long and strong; parameral apodeme well developed, often strikingly long.

Remarks: The new subgenus is characterised through the bottle-like necks of flagellomeres. It belongs to the genus *Leptosciarella* mainly by the typical strong hawk beak-like spine on the apex of gonostyles. The species differ in lack of short awl-like

spines at the tip of gonostyles, typical for species of *Leptosciarella* s. str., in the absence of macrotrichia on posterior wing veins and mostly strong developed parameral apodeme.

***Leptosciarella (Protosciarella) virgatoalata* spec. nov.**

(Fig. 4 a-e)

♂. **Head:** Dark. Eye bridge 4 facets wide; antennae long, unicolor brown, flagellomeres bottle-like; flagellomere 4 about 5.0 times longer than wide, with pale and stand up setae longer than the diameter of the basal part; palpi 3-segmented, basal segment with 2 long bristles and a patch of sensillae, 2. segment with few short and one long bristle.

Thorax: Dark brown; mesonotum with fine and sparse setae; scutellum with two longer marginal bristles; posterior pronotum bare; antepnotum and prethoracal episternite sparse and fine setose; wings narrow, smoky, with two darker spots (or irregular bands), one in the area from the base of M-fork to the anterior wing border, the second in the area of CuA2; R1 short, = $2/3$ R; R_5 without ventral macrotrichia; C = $2/3$ w; y shorter x, without macrotrichia; M-fork short and broad; CuA2 strong curved; posterior veins without macrotrichia; halteres rather long, brownish; coxae yellow, elongate and narrow; legs long, femora and tibiae yellow, tarsi darkened; fore tibiae at the inner apex with a irregular patch of pale bristles; spurs of mid and hind tibiae equal and longer than the apex; hind tibiae with a row of short and strong spine-like bristles; claws untoothed.

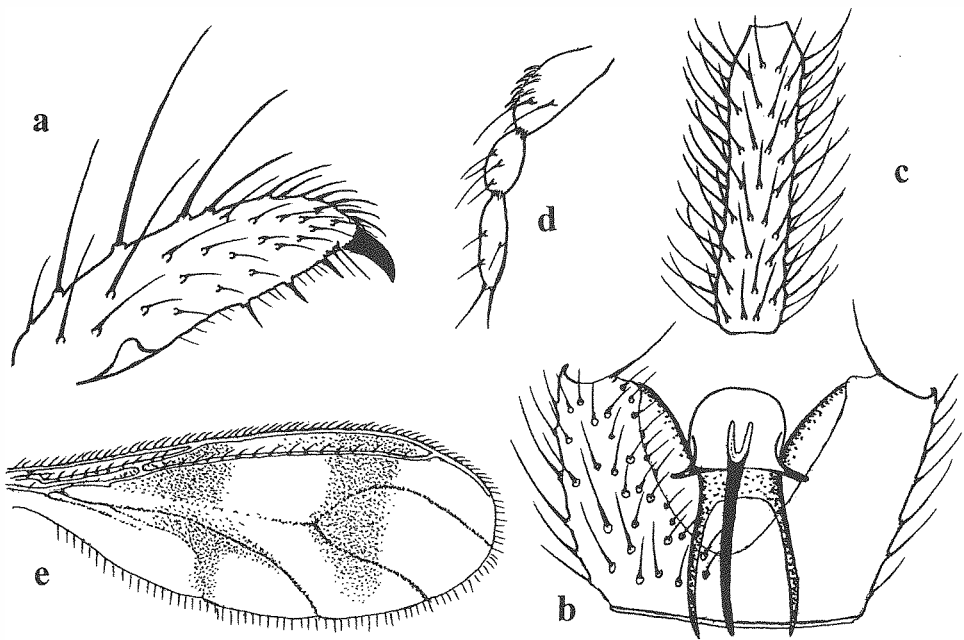


Fig. 4: *Leptosciarella (Protosciarella) virgatoalata* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** wing (30 x).

Abdomen: brown, tergal and sternal sclerites sparse setose; hypopygium brown; the inner ventral margin of gonocoxites rather short setose; gonostyles long and narrow, with a strong hawk beak-like spine on the apex; tegmen broader than high; Aedeagus long and strong; parameral apodeme strikingly long. Body length: 2.8 mm.

♀. Characteristics as in male, but coxae darker, with more intensive brown spots on wings and flagellomeres thinner than in males. Body length: 4 mm.

Locus typicus: Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W.

Holotypus: 1 ♂, 6.9.-27.9.1986, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Paratypes: 11 ♂♂, same data; 5 ♂♂, 3 ♀♀, 27.9.-18.10.1986; 2 ♂♂, 1 ♀, 18.10.-8.11.1986, all locus typicus, leg. GOULD & JANZEN.

Remarks: The new species is well characterized by the dark spots on wing membrane in both sexes and the long aedeagus in connection with very long parameral apodeme.

Leptosciarella (Protosciarella) macroabdominalis spec. nov.

(Fig. 5 a-e)

♂. **Head:** Dark brown. Eye bridge 5 facets wide; antennae rather short, brownish, scape and pedicel darker, flagellomere bottle-like; flagellomere 4 about 2.5 times longer than wide, with white and stand up setae as long as the diameter of the basal part; palpi one-segmented, with about 10 bristles and a patch of sensillae.

Thorax: Brown; mesonotum with fine and sparse setae; scutellum with 4 longer marginal bristles; postpronotum bare; anteppronotum and prethoracal episternite sparse setose; wings broad, pale; R1 short, = 3/4 R; R5 without ventral macrotrichia; C = 2/3 w; y = x, without macrotrichia; M-fork long and small; CuA2 normally curved; posterior veins

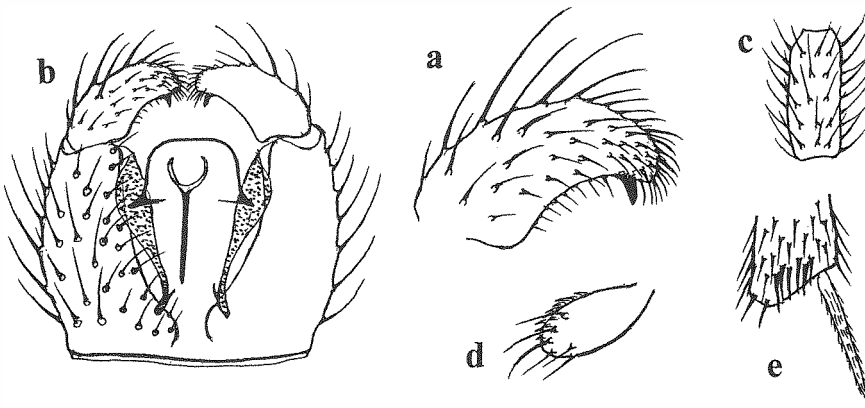


Fig. 5: *Leptosciarella (Protosciarella) macroabdominalis* spec. nov., ♂ a) Stylus (400 x); b) hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x); e) tip of fore tibiae (200 x).

without macrotrichia; halteres rather long, brownish. Coxae brown, elongated and narrow; legs long, femora and tibiae brownish; fore tibiae at the inner apex without a distinct patch of bristles; spurs of mid and hind tibiae equal and longer than the apex; hind tibiae with a row of short and strong spine-like bristles; claws weakly toothed.

Abdomen: brown, tergal and sternal sclerites rather dense setose; hypopygium brown; gonocoxites much larger (longer and thicker) than the short gonostyles, the inner ventral margin short setose; gonostyles short and narrowed to the tip and short setose, subapically with a strong hawk beak-like spine; tegmen as broad as high, with very fine teeth; aedeagus long; parameral apodeme elongate and rather long. Body length: 2.5 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Holotypus: 1 ♂, 26.6.-1.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Remarks: The new species is well characterized by the large gonocoxites, small gonostyles and only one-segmented palpi.

***Leptosciarella (Protosciarella) bipalpata* spec. nov.**

(Fig. 6 a-c)

♂. **Head:** Dark brown. Eye bridge 2-3 facets wide; antennae very long, yellowish-brown, scape and pedicel darker, flagellomere with bottle-like necks; flagellomere 4 about 7-8 times longer than wide, with pale setae as long as the diameter of the basal part; palpi 2-segmented, basal segment with 2-3 bristles and a patch of sensillae, second segment small.

Thorax: Brownish; mesonotum with long central and lateral bristles; scutellum with 4 longer marginal bristles; posterior pronotum bare; anteprenotum with 4, prethoracal episternite with 2 setae; wings broad, pale; R1 short, $= 2/3$ R; R5 without ventral macrotrichia; C = $2/3$ w; $y = x$ and with 2-3 macrotrichia; M-fork long and normal broad; CuA2 normally curved; posterior veins without macrotrichia; halteres rather long, brown. Coxae brown, elongate and narrow; legs long, femora and tibiae brown; fore tibiae at the inner apex without a distinct patch of bristles; spurs of mid and hind tibiae equal, thin and somewhat longer than the apex; hind tibiae with a row of short and strong spine-like bristles; claws untoothed.

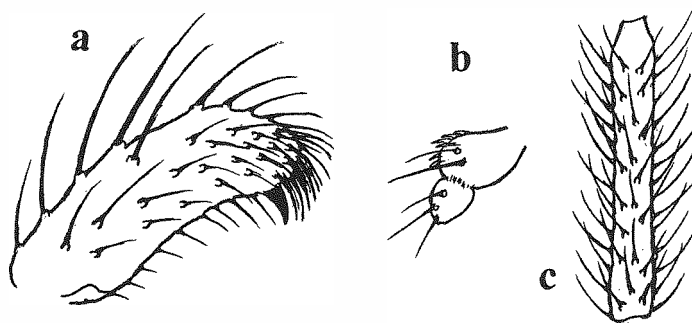


Fig. 6: *Leptosciarella (Protosciarella) bipalpata* spec. nov., ♂ a) Stylus (400 x); b) palpus (200 x); c) 4. flagellomere (200 x).

Abdomen: brown, tergal and sternal sclerites rather dense setose; hypopygium brown; gonocoxites somewhat longer than the slender gonostyles, the inner ventral margin sparse and fine setose; gonostyles weakly curved, rounded at the tip and short setose, subapically with a strong hawk beak-like spine; tegmen as broad as high, with very fine teeth; aedeagus rather short; parameral apodeme broad and rather short. Body length: 2.2 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Holotypus: 1 ♂, 26.6.-1.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Remarks: The new species is well characterized by the very long and thin flagellomere and the two segmented palpi.

Genus *Pterothrix* gen. nov.

Type species: *Pterothrix piliata* spec. nov.

Diagnosis: Head with short mouth parts, roundly, ocelli and ocelli hill well developed; eye bridge broad, ommatidae small; flagellomeres with short necks and weak roughly to the tip; the palpi one or two-segmented; basal segment with a patch of sensillae and 6-7 bristles; mesonotum short setose, scutellum with 4 longer marginal bristles; posterior pronotum bare; wings brown, whole membrane dense covered with macrotrichia; R1 longer R, joining the C somewhat before the M-fork; $C = 2/3 w$; y longer x, both with macrotrichia; M-vein very weak, M-fork narrow; posterior veins with macrotrichia; halteres short and densely covered with macrotrichia in the basal parts; fore tibiae at the inner apex with a large irregular patch of dark bristles; mid and hind tibiae with two long equal spurs; claws untoothed; hypopygium at the ventral base without lobe; gonocoxites with a long ventral megaseta, gonostyles narrowed to the tip, with a long apical tooth and shorter hyaline spines at the inner side of the apical half; tegmen higher than broad, rounded, with a central area of scale-like teeth; aedeagus rather long.

Remarks: The new genus is related to some old world species of *Scythropochroa* ENDERLEIN, especially to *Scythropochroa multispinosa* MOHRIG & MAMAEV, 1985 (missinterpreted in MENZEL & MOHRIG 2000: 257 as a species of *Corynoptera*). It differs in the absence of bristles on pleural sclerites and mainly through the wings, densely covered with macrotrichia on the whole membrane. It is not related to the genus *Trichomegalosphys* ENDERLEIN, 1911, described from the Oriental region.

Pterothrix piliata spec. nov.

(Fig. 7 a-d)

♂. **Head:** Brown. Eye bridge 4 facets wide. Flagellomere brown, necks short, scape and pedicel brown; flagellomere 4 about 2.2 times longer than wide, setae shorter than the diameter of the basal part. Palpi 2-segmented; basal segment with a patch of sensillae and 6-7 bristles.

Thorax: Brown. Mesonotum short setose, some lateral bristles longer; scutellum with 4 longer marginal bristles. Posterior pronotum bare. Wings brown, whole membrane dense covered with macrotrichia; R1 longer R, joining the C before the M-fork; $C = 2/3 w$; y longer x, both with macrotrichia; M-vein weak, M-fork narrow; posterior veins with

macrotrichia. Halteres short and brown. Coxae and femora brown, tarsi darkened; fore tibiae at the inner apex with a irregular patch of dark bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws untoothed.

Abdomen: Brown. Hypopygium brown; ventral base without lobe; gonocoxites with a long ventral megaseta, the inner border rather sparse setose; gonostyles curved and narrowed to the tip, with a long apical tooth and 7-8 shorter hyaline spines in the apical half; tegmen higher than broad, rounded, with a central area of scale-like teeth; aedeagus rather long. Body length: 4 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Holotype: 1 ♂, 9.-11.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Remarks: The new species is characterized by macrotrichia on the whole wing membrane, two-segmented palpi and the strong narrowed gonostyles with a long apical tooth and 6-7 hyaline spines within the distal half.

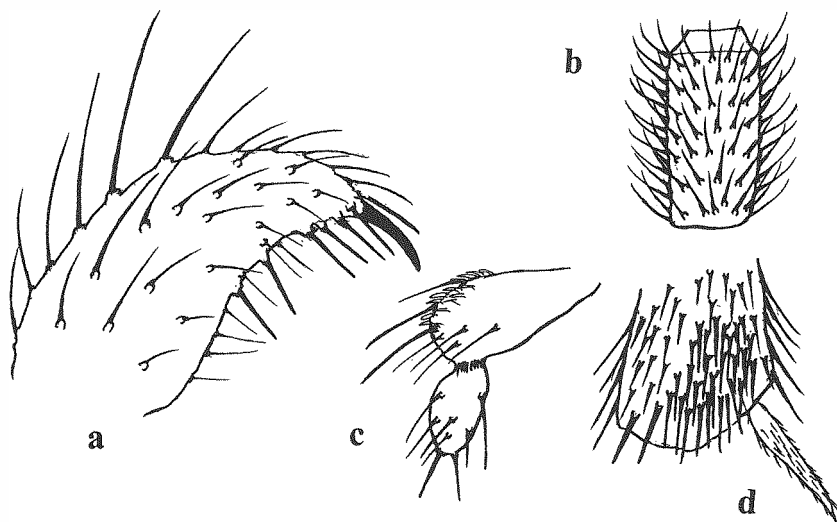


Fig. 7: *Pterothrix piliata* spec. nov., ♂ a) Stylus (400 x); b) 4. flagellomere (200 x); c) palpus (200 x); d) tip of fore tibiae (200 x).

Pterothrix capillosa spec. nov.

(Fig. 8 a-e)

♂. **Head:** Brown. Eye bridge 3 facets wide. Flagellomere brown, necks rather short, scape and pedicel brown; flagellomere 4 about 2.8 times longer than wide, setae shorter than the diameter of the basal part. Palpi one-segmented; with a patch of sensillae and more than 10 bristles.

Thorax: Brown. Mesonotum rather short and fine setose, some lateral bristles longer; scutellum with 4 longer marginal bristles. Posterior pronotum bare. Wings brownish, whole membrane dense covered with macrotrichia; R1 longer R, joining the C before the M-fork; C longer $1/2$ w; y longer x, both with macrotrichia; M-vein weak, M-fork broad opened; posterior veins with macrotrichia. Halteres short and brown. Coxae and femora yellowish, tarsi darkened; fore tibiae at the inner apex with a irregular patch of dark bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws untoothed.

Abdomen: Brown. Hypopygium brown; ventral base without lobe; gonocoxites with a long ventral megaseta, the inner border rather long setose; gonostyles curved and narrowed to the tip, with a long apical tooth and 5-6 shorter hyaline spines in the apical third; tegmen higher than broad, rounded, with a central area of fine teeth; aedeagus rather long. Body length: 3.6 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Holotype: 1 ♂, 24.-26.6.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratype: 1 ♂, 9.-11.7.1993, locus typicus, leg. B. BROWN.

Remarks: The new species is very similar to the above described *Pterothrix piliata*. It differs by one-segmented palpi, somewhat shorter flagellomere, lesser hyaline spines inserted in the distal third of gonostyles and yellowish legs.

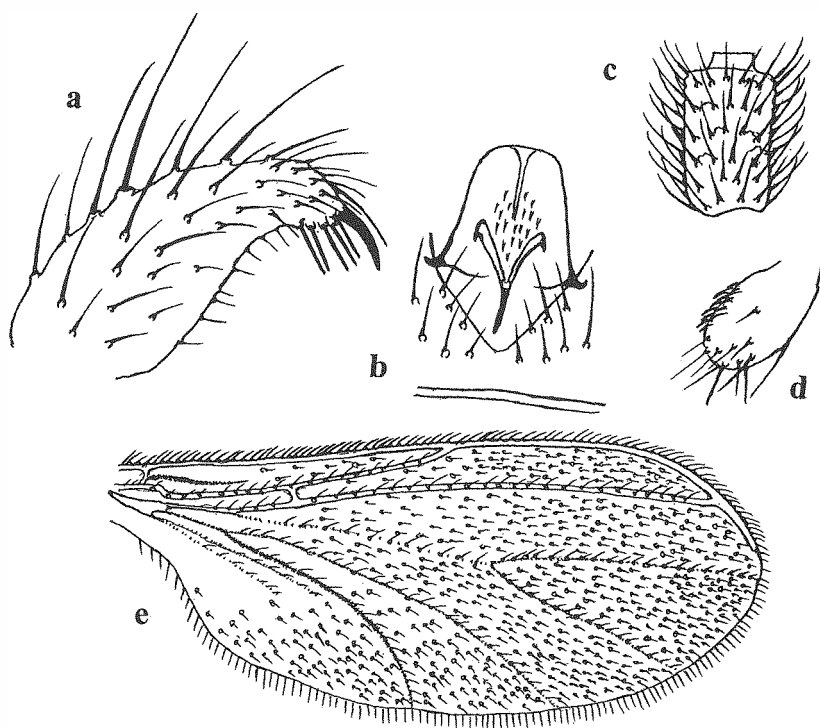


Fig. 8: *Pterothrix capillosa* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x); e) wing (30 x).

Genus *Schwenckfeldina* FREY, 1942

(Notul. Ent., 22: 32)

Schwenckfeldina filamentosa spec. nov.

(Fig. 9 a-d)

♂. **Head:** Dark. Eye bridge 5-6 facets wide. Antennae rather short; flagellomere without barred surface structure, brown, with short and dense setae and short necks; scape and pedicel brownish; flagellomere 4 about 2 times longer than wide. Palpi rather long, three-segmented; basal segment large, with 7-8 bristles and a patch of long sensillae.

Thorax: Yellowish-brown. Mesonotum darker, rather short and fine setose, some lateral setae longer; scutellum short setose, with 4 longer marginal bristles. Posterior pronotum bare. Wings pale, $R_1 = 2/3 R$, joining the C somewhat before the M-fork; R_5 in the distal third with ventral macrotrichia; y much longer than x and with 1-2 macrotrichia; CuA-stem short; posterior veins without macrotrichia. Halteres short, brownish. Legs brownish; fore tibiae with few spine-like bristles within the ground setae, at the inner apex with a dense and irregular patch of pale bristles; spurs of mid and hind tibiae equal, yellowish and longer than the diameter of the apex. Claws untoothed.

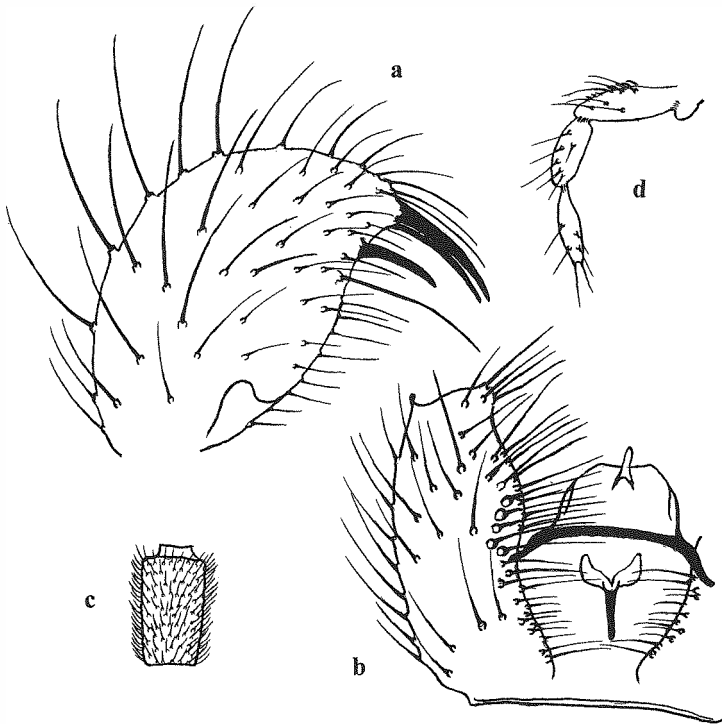


Fig. 9: *Schwenckfeldina filamentosa* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x).

Abdomen: Brownish. Hypopygium brown, with a broad intercoxal space and without lobe; gonocoxite with a long ventral megaseta within a patch of long bristles, ventrally at the inner border with very long and strong bristles on large inserting points; gonostyles large, outside rounded, inner side somewhat flattened; apically with two long spines and a half as long third spine inserts more dorsally, the inner side above the mid with a long whiplash hair. Tegmen rounded, with a large area of fine teeth and a finger-like protuberance on the backside. Aedeagus rather short and thin. Body length: 3.2 mm.

Locus typicus: Honduras, Olancho, Parque Nat. la Muralla, 15 km Northwest of La Union, 15.12°N, 86.75°W, 1450 m.

Holotype: 1 ♂, 15.5.1995, Malaise trap, leg. R. CORDERO.

Paratypes: 1 ♂, same data; 2 ♂♂, 2.3.1995, Honduras, Cortes, Parque Nat. Cusunco, 15.45°N, 88.22°W, 2 ♂♂, 6.2.1995, Honduras, Francisco Morazan, Cerro Ulyuca, San Antonio de Oriente, 14.03°N, 87.07°W, 1800 m; 2 ♂♂, 21.4.1995, Honduras, Francisco Morazan, Parque Nat. La Tigra, Malaise trap, all leg. R. CORDERO.

Remarks: The new species is characterized by the two long and one short apical spines, the long whiplash hair in the mid of gonostyles and the long bristles at the ventral inner side of gonocoxites. It belongs to the *Schwenckfeldina joffrei* species group, distributed in North America.

Schwenckfeldina forcipigera (ENDERLEIN, 1911)

(Fig. 10 a-d)

Literature: ENDERLEIN 1911: 164-166 [as *Lycoria*]; LENGERSDORF 1930: 128, fig. 4 [as *Neosciara trifida*]; AMORIM 1992: 67 [as *Schwenckfeldina*].

Redescription: ♂. **Head:** Dark. Eye bridge 5 facets wide. Antennae strong, unicolor brown; flagellomere with distinct barred surface structure, brown, with short and dense setae and rather long pale necks; scape and pedicel brown; flagellomere 4 about 2 times longer than wide. Palpi long, three-segmented; basal segment large, with 5-6 bristles and a patch of sensillae.

Thorax: Ochreous-brown. Mesonotum with darker central strips, antethoracal anepisternite, pleurotergite, metanotum and the under half of katepisternum dark brown, mesonotum rather short and dense setose, lateral setae not longer; scutellum short and dense setose, with few longer marginal bristles. Posterior pronotum bare. Wings between C and R5 browned, R1 very long, = 5/4 R, joining the C behind the M-fork; R5 in the distal third with ventral macrotrichia; y longer x and without macrotrichia; M-fork narrow; CuA-stem short; posterior veins without macrotrichia. Halteres short, brownish. Coxae and legs yellowish; fore tibiae with few spine-like bristles within the ground setae, at the inner apex with a dense and irregular patch of dark bristles; spurs of mid and hind tibiae equal, yellowish-brown and somewhat longer than the diameter of the apex. Claws untoothed.

Abdomen: Brown. Hypopygium very large, brown, with a broad intercoxal space and without lobe; gonocoxite with two long ventral megasetae, ventrally at the inner border above the mid with a distinct patch of strong and very long black bristles; gonostyles very large, elongate, rounded at the tip, subapically covered with long, black and spine-

like bristles; at the mid of the inner side with a large lobe, ending in 3-4 very long, thin and curved bristle-like spines. Tegmen higher than broad, with square lateral sides, a large area of fine teeth and a broad hyaline protuberance on the backside. Aedeagus rather long and thin. Body length. 4.8 mm.

Material: 1 ♂, 15.5.1995, Honduras, Olancho, Parque Nat. la Muralla, 15 km Northwest of La Union, 15.12°N, 86.75°W, 1450 m, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Remarks: This large species is characterized by the large hypopygium with a patch of long, strong and black bristles at the inner ventral side above the mid of gonocoxites, large and broad rounded gonostyles, which are subapically dense covered with black spine-like bristles, and with a lobe in the mid of the inner side, ending in 4 long, thin and curved spines. The species belongs to the *Schwenckfeldina carbonaria* species group, distributed with few species within the Holarctic region.

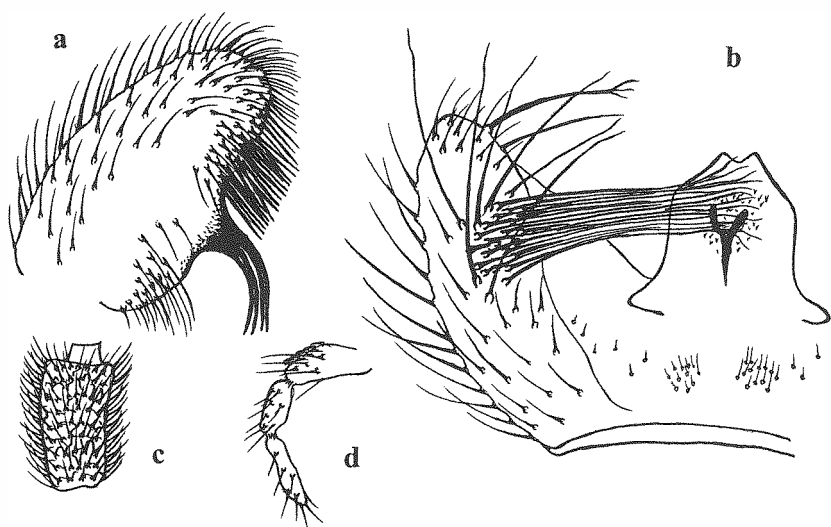


Fig. 10: *Schwenckfeldina forcipigera* (ENDERLEIN), ♂ a) Stylus (80 x); b) base of hypopygium (80 x); c) 4. flagellomere (80 x); d) palpus (80 x).

Genus *Odontosciara* RÜBSAAMEN, 1908

(Denkschr. med.-naturw. Ges. Jena, 13: 450)

Literature: MOHRIG & MENZEL 1994: 204; MENZEL & MOHRIG 2000, 711-713.

Subgenus *Odontosciara* RÜBSAAMEN, 1908 s. str.

Odontosciara nocta spec. nov.

(Fig. 11 a-d)

♂. **Head:** Dark. Eye bridge 5-6 facets wide. Antennae unicolor brown; flagellomere without a distinct barred surface structure; surface somewhat roughly, with short irregular rows of setae inserting points, rather long brown necks; scape and pedicel brown; flagellomere 4 about 2.2 times longer than wide, setae dense and half as long as the diameter of basal part. Palpi long, three-segmented; basal segment large, with 8-10 bristles and a patch of sensillae.

Thorax: Dark brown. Mesonotum with black central strips; mesonotum rather short and fine setose, lateral setae not longer; scutellum short and fine setose, without distinct marginal bristles. Posterior pronotum bare. Wings brownish, long and rather narrow; R1 very long, $= 5/4 R$, joining the C behind the M-fork; R5 in the distal third with ventral macrotrichia; $y = x$ and with 1-2 macrotrichia; M-fork long and narrow; CuA-stem rather long, $= x$; posterior veins without macrotrichia. Halteres short and brown. Coxae and legs dark brown; fore tibiae with few spine-like bristles within the ground setae, at the inner apex with a dense and irregular patch of dark bristles; spurs of mid and hind tibiae equal, brown and longer than the diameter of the apex. Claws untoothed.

Abdomen: Dark brown. Hypopygium brown, basely closed and without lobe; gonocoxite with 2-3 long ventral megasetae within long bristles, ventrally at the inner border short and dense setose; gonostyles narrowed to the tip, lobe-like broadened in the basal half of the inner side; the tip densely covered with short bristle-like spines, the inner side densely covered with an irregular, palisade-like row of long, yellow-brown spines. Tegmen higher than broad, apically membranously and densely covered with fine teeth, in the mid with two patches of larger dark teeth. Aedeagus rather long and very strong. Body length. 5 mm.

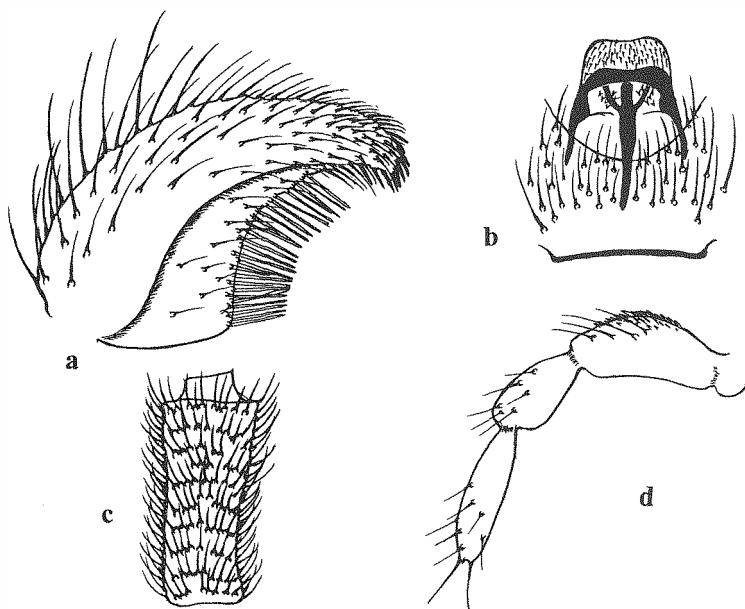


Fig. 11: *Odontosciara* (*Odontosciara*) *nocta* spec. nov., ♂ **a)** Stylus (200 x); **b)** base of hypopygium (80 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x).

Locus typicus: Honduras, Cortes, Parque Nat. Cusunco, 15.48°N, 88.22°W.

Holotype: 1 ♂, 2.3.1995, Malaise trap, leg. R. CORDERO.

Paratypes: 2 ♂♂, same data; 1 ♂, Honduras, Olancho, Parque Nat. la Muralla, 15 km Northwest of La Union, 15.12°N, 86.75°W, 1450 m, all leg. R. CORDERO.

Remarks: The large new species is characterized by the palisade-like arrangement of dark-hyaline spines along the inner side of gonostyles. The species is near related to *Odontosciara nigra* (WIEDEMANN, 1821), distributed in southern parts of USA and in Mexico.

Subgenus *Obscura* subgen. nov.

Type species: *Odontosciara grandis* spec. nov.

Diagnosis: Flagellomere short and broad, without a distinct barred structure; with a smooth, dense and short setose surface; palpi rather short, three-segmented; basal segment with 8-10 bristles and a patch of sensillae; mesonotum short and fine setose, lateral setae not longer; scutellum dense, short and fine setose, without distinct marginal bristles; posterior pronotum setose. Wings long and rather narrow; R1 long, but shorter R, joining the C behind the M-fork; R5 in whole length with ventral macrotrichia; y very long; M-fork long and very narrow; M1 basely reduced (M-fork begins only with the branch of M2) and joining the wing edge distinctly behind the tip; CuA-stem short; M-fork sometimes with macrotrichia; fore tibiae at the inner apex with a dense and irregular patch of darker bristles; spurs of mid and hind tibiae equal; claws untoothed; hypopygium basely small closed, with a v-like intercoxal space and without lobe; gonocoxite with 2-3 longer ventral megasetae within long bristles; gonostyles at the inner side without palisade-like spines; tegmen higher than broad, apical half membranously and densely covered with fine teeth; aedeagus with a long furca, short and strong.

Remarks: The subgenus is established for the two species *O. grandis* spec. nov. and *O. antiqua* LENGERSDORF, 1940 comb. nov., which are clear different from the *Odontosciara* s. str. species by the lack of palisade-like spines at the inner side of gonostyles, the not so strong closed base of the hypopygium, a shorter aedeagus with a long furca and a setose posterior pronotum. It differs also from the near related genus *Schwenckfeldina* by the lack of a barred surface structure of flagellomere, an another ground structure of gonostyles and of the tegmen. The tegmen is very similar in the known species of *Odontosciara* s. str., also as the dense and fine setae on mesonotum and scutellum without distinct marginal bristles.

Odontosciara (Obscura) grandis spec. nov.

(Fig. 12 a-f)

♂. **Head:** Dark. Eye bridge 5-6 facets wide; ocelli hill well developed. Antennae short and dark brown; flagellomere short and broad, without a distinct barred surface structure; smooth, dense and very short setose, with very short necks; flagellomere 4 as long as wide. Palpi rather short, three-segmented; basal segment with 8-10 bristles and a patch of sensillae.

Thorax: Dark brown. Mesonotum with black central strips; mesonotum rather short and fine setose, lateral setae not longer; scutellum short and fine setose, without distinct marginal bristles. Posterior pronotum with 3-4 setae. Wings brownish, long and rather narrow; R1 long, but shorter R₂, joining the C behind the M-fork; R₅ in the distal third with ventral macrotrichia; y very long, = 3 x and without macrotrichia; M-fork long and narrow, M1 basely reduced (M-fork begins only with the branch of M₂); CuA-stem short; posterior veins without macrotrichia. Halteres short and brown. Coxae and legs dark brown; fore tibiae without spine-like bristles within the ground setae, at the inner apex with a dense and irregular patch of dark bristles; spurs of mid and hind tibiae equal, brown and as long as the diameter of the apex. Claws untoothed.

Abdomen: Dark brown. Hypopygium black, basely with a v-like intercoxal space and without lobe; gonocoxite with 2-3 long ventral megasetae within long bristles, ventrally at the inner border short and dense setose; gonostyles long and narrowed to the tip, the tip with 8-9 short spines, the inner side only setose. Tegmen higher than broad, apically membranously and densely covered with fine teeth. Aedeagus very short and with a long furca. Body length. 8-9 mm.

Locus typicus: Honduras, Cortes, Parque Nat. Cusunco, 15.48°N, 88.22°W.

Holotype: 1 ♂, 30.5.1995, Malaise trap, leg. R. CORDERO.

Paratypes: 7 ♂♂, same data; 1 ♂, Honduras, Francisco Morazan, Parque Nat. La Tigra, 14.22°N, 87.12°W, all leg. R. CORDERO.

Remarks: This very large species is characterized by the short and broad flagellomeres with very short and dense setae and short necks, setose posterior pronotum and simple gonostyles with 8-9 short and strong spines at the tip. It is very similar to *Lycoria antiqua* LENGERSDORF, 1940, described from Mexico. *Odontosciara grandis* differs in much longer gonostyles, stronger narrowed in the distal half, broader flagellomeres, larger body size and especially in lack of macrotrichia on posterior wing veins.

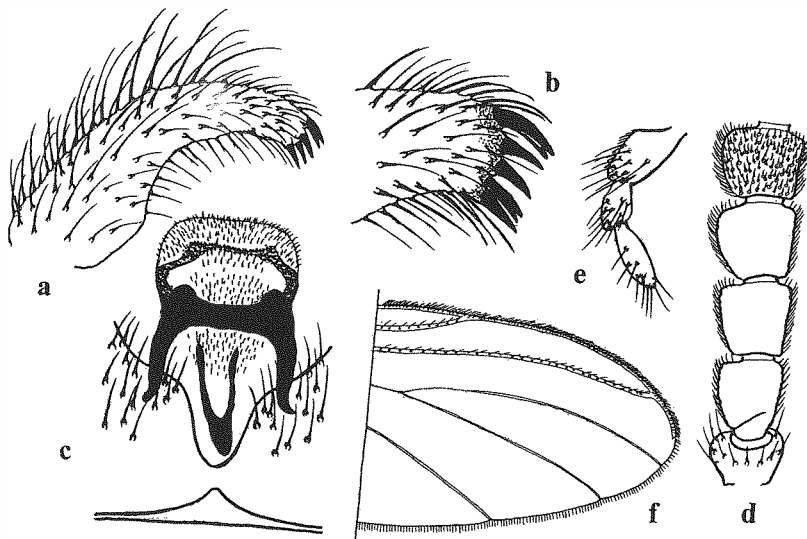


Fig. 12: *Odontosciara (Obscura) grandis* spec. nov., ♂ a) Stylus (80 x); b) tip of gonostyle (200 x); c) base of hypopygium (80 x); d) base of antennae (80 x); e) palpus (80 x); f) distal half of wing (30 x).

Genus *Rhynchosciara* RÜBSAAMEN, 1894

(Berl. Ent. Z., 39(1): 19 and 29)

Literature: Breuer 1969: 167-198.

Rhynchosciara mathildae BREUER, 1969

(Fig. 13 a-g)

Material: 4 ♂♂, 2 ♀♀, december 1999, Costa Rica, San Jose, San Antonio de Escasu, 1325 m, leg. W. EBERHARD (coll. MOHRIG).

Remarks: This species is characterized by a flat and long head with prolonged cheeks and clypeus, flagellomere with a fine barred surface structure; palpi with a distinct sensory pit and the browned wings without macrotrichia on the posterior veins. The hypopygium is large, the gonostyles simple and with 6-7 subapically inserted short and dark spines. It is with a body length of 8 mm in males and 9-12 mm in females (wings broad and at least 9 mm) and with a considerably body volume one of the largest sciarid species. The species from Costa Rica show somewhat stronger apical spines on gonostyles than the type species from Columbia.

Genus *Chaetosciara* FREY, 1942

(Notul. Ent., 22: 32 and 33 [as subgenus of *Neosciara* PETTEY])

Literature: TUOMIKOSKI 1960: 5 and 41; MOHRIG & KRIVOSHEINA 1990: 225-226; MENZEL & MOHRIG 2000: 199-205.

Chaetosciara solutospina spec. nov.

(Fig. 14 a-d)

♂. **Head:** Dark. Eye bridge 4 facets wide. Antennae short, unicolor brown; flagellomere short, with a distinct barred surface structure; short and dense setose and with very short necks; scape and pedicel brown; flagellomere 4 about 1.2 times longer than wide. Palpi three-segmented; basal segment with 6-8 bristles and a patch of sensillae.

Thorax: Brownish. Mesonotum dark setose, some lateral and praescutellar setae longer; scutellum with 4 marginal bristles. Posterior pronotum bare. Wings pale; $R_1 = 2/3 R$, joining the C opposite the M-fork; R_5 only at the tip with ventral macrotrichia; $y =$ or somewhat longer x and with 1-2 macrotrichia; CuA-stem shorter x ; posterior veins without macrotrichia. Halteres short and brownish. Coxae and legs brownish; fore tibiae with few spine-like bristles within the ground setae, at the inner apex with a dense and irregular patch of dark bristles; spurs of mid and hind tibiae equal, yellowish and much longer than the diameter of the apex. Claws untoothed.

Abdomen: Brown. Hypopygium brown, with a triangular, sparse setose basal lobe; gonocoxite with one ventral megaseta, ventrally at the inner border sparse and short setose; gonostyles elongate, rounded at the tip, with 8-9 longer spines subapically inserted in the apical third; the inner side only with few longer setae. Tegmen simple, as high as

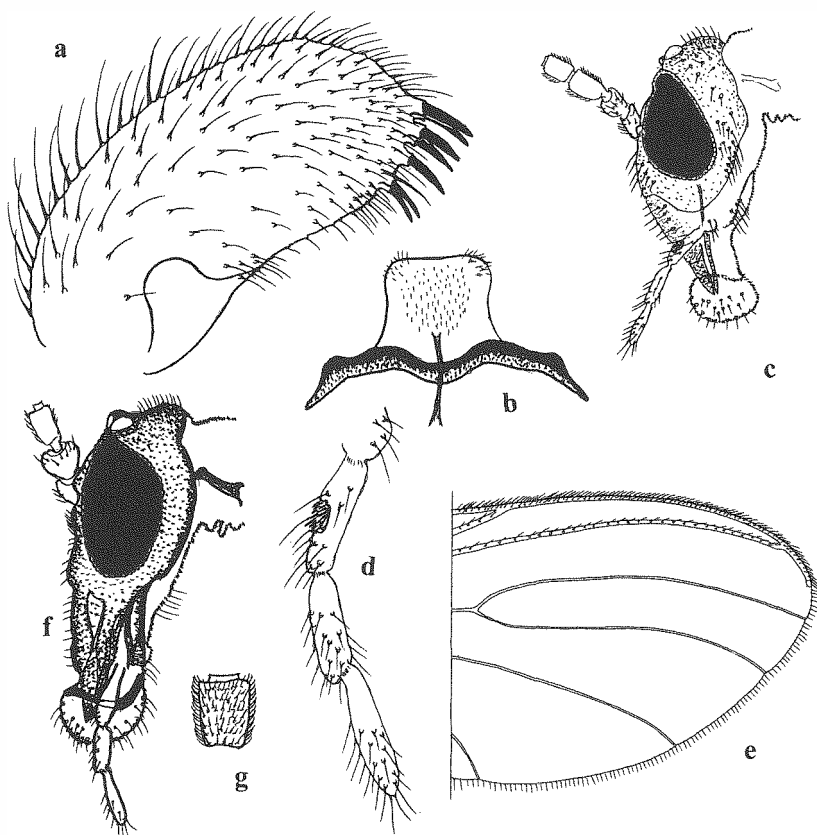


Fig. 13: *Rhynchosciara mathildae* BREUER; ♂: **a)** Stylus (200 x); **b)** tegmen (80 x); **c)** head (30 x); **d)** palpus (80 x); **e)** distal half of wing (10 x); ♀: **f)** head (30 x); **g)** 4. flagellomere (80 x).

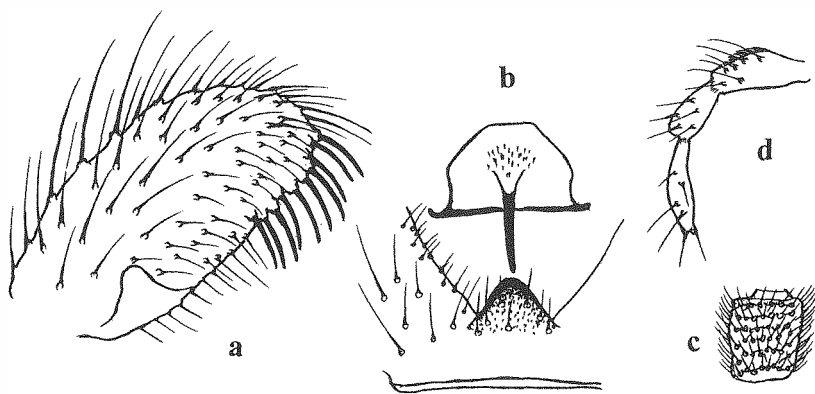


Fig. 14: *Chaetosciara solutospina* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x).

broad, rounded, with a small area of fine teeth. Aedeagus rather long and strong. Body length. 2.5 mm.

Locus typicus: Honduras, Cortes, Parque Nat. Cusunco, 15.45°N, 88.22°W.

Holotype: 1 ♂, 2.3.1995, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Paratypes: 4 ♂♂, locus typicus, same data; 2 ♂♂, 6.2.1995, Honduras, Francisco Morazan, 14.03°N, 87.07°W, Cerro Uyuca, San Antonio de Oriente, 1800 m, Malaise trap, all leg. R. CORDERO; 1 ♂, 8.1995, Costa Rica, San Jose Province, Lurgui de Moravia, 1600 m, leg. P. HANSON (all coll. MOHRIG).

Remarks: The new species belongs to *Chaetosciara* through the distinct barred surface structure of flagellomeres and the triangular and sparse setose basal lobe of the hypopygium. It differs from other species known from the Palearctic region by the higher number of spines and their isolated arrangement within the apikal third of gonostyles.

Genus *Cratyna* WINNERTZ, 1867

(Monogr. Sciarinen: 167)

Literature: TUOMIKOSKI 1960: 31-35 [as *Plastosciara*]; LANE 1960: 119-126 [as *Plastosciara*]; HIPPA et al. 1998: 1-86 [as *Pseudozygoneura*]; MOHRIG 1999: 167-182; MENZEL & MOHRIG 2000: 265-293 [as *Cratyna*].

Subgenus *Cratyna* WINNERTZ s. str.

Cratyna (*Cratyna*) *ciliovenosa* spec. nov.

(Fig. 15 a-e)

♂. **Head:** Brown. Eye bridge 4 facets wide. Antennae unicolor brown; flagellomere with rather short necks and bristle-like setae; flagellomere 4 about 2.2 times longer than wide, setae as long as the diameter of the basal part. Palpi small, one-segmented; basal segment with several bristles and a patch of sensillae.

Thorax: Brown. Mesonotum rather fine setose, with some longer lateral setae; scutellum short setose, with 4 longer marginal bristles. Posterior pronotum bare. Wings brownish, R1 very long, = 1/3 R, joining the C behind the M-fork; R5 in whole length with ventral macrotrichia; y = x, both with dorsal and ventral macrotrichia; posterior veins with dense covered with macrotrichia. Halteres short, brownish. Coxae and legs brown; legs not prolonged; fore tibiae at the inner apex only with a small patch of longer bristles; spurs of mid and hind tibiae equal and longer than the diameter of the apex; claws untoothed.

Abdomen: Brown. Hypopygium brown; gonocoxites short and strong, with a short ventral megaseta, ventrally at the inner border sparse setose; gonostyles large and thick, the inner side excavated, with an apical pair of hyaline spines and a second pair on the under border of excavation. Tegmen large, rounded, with an inner semicircular structure. Aedeagus very short. Body length: 3.2 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Type: 1 ♂, 1.-6.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratype: 2 ♂♂, 9.-11.7.1993, locus typicus, leg. B. BROWN (coll. MOHRIG).

Remarks: This new species is similar in shape and arrangement of spines of gonostyles and other characteristics to typical species of *Cratyna* s. str. known from South America (LANE 1960) and Papua New-Guinea (MOHRIG 1999). It is the only known species with the presence of macrotrichia on posterior wing veins and the membrane at the tip of wings.

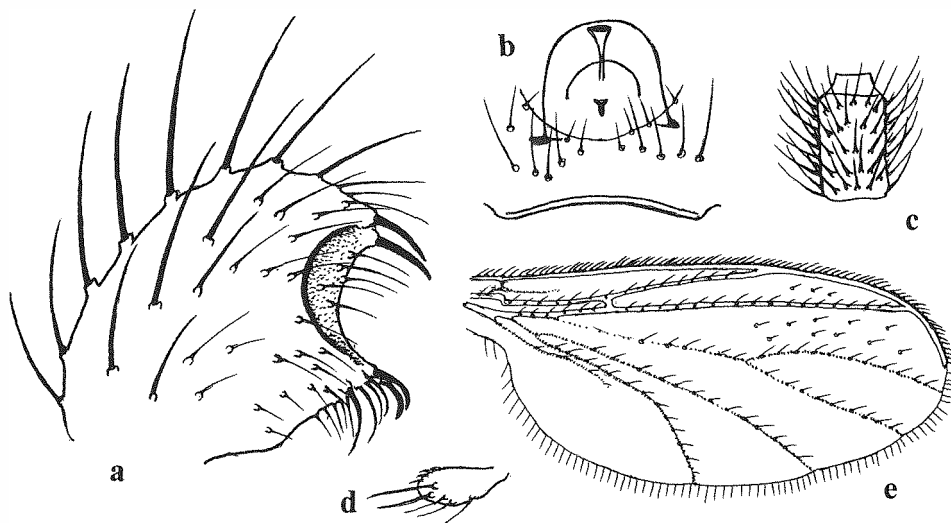


Fig. 15: *Cratyna (Cratyna) ciliovenosa* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x); e) wing (30 x).

Cratyna (Cratyna) ciliocera spec. nov.

(Fig. 16 a-d)

♂. **Head:** Yellowish-brown. Eye bridge 4 facets wide. Antennae long; flagellomere with very long necks and long cecidomyiid-like bristles, arranged in two more or less circular whorls; flagellomere 4 about 1.2 times longer than wide, neck longer than the basal part, pale; setae about 4 times longer than the diameter of the basal part. Palpi short and thick, three-segmented; basal segment large, with 2 long bristles and a patch of long sensillae.

Thorax: Brown-ochreous with darker parts on lateral sclerites. Mesonotum rather fine setose, with some longer central and lateral setae; scutellum short setose, with 4 longer marginal bristles. Posterior pronotum with 4-5 bristles. Wings brownish, R1 longer R, joining the C before the M-fork; R5 in whole length with ventral macrotrichia; $y = x$ and with 1-2 macrotrichia; posterior veins without macrotrichia. Halteres short, brownish. Coxae and legs yellowish; legs long; fore tibiae at the inner apex only with a small patch of longer bristles; spurs of mid and hind tibiae equal and much longer than the diameter of the apex; claws untoothed.

Abdomen: Brown. Hypopygium brown; gonocoxites short and smaller than gonostyles, with a short ventral megaseta, ventrally at the inner border rather long and sparse setose; gonostyles large, longer than broad and long setose on the outside, apically with 5 hyaline spines (3+2). Tegmen somewhat broader than high, rounded, with an inner semicircular structure. Aedeagus short. Body length: 2.5 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Type: 1 ♂, 1.-6.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratype: 5 ♂♂, same data; 1 ♂, 24.-26.6.1993; 2 ♂♂, 26.-1.7.1993, all locus typicus, leg. B. BROWN (coll. MOHRIG).

Remarks: The new species is characterized by the long necks and the long circular arranged whorls of bristles of flagellomeres, short three-segmented palpi, lack of macrotrichia on posterior wing veins and large gonostyles with 5 hyaline spines. The long necks and the circular whorls of antennal bristles are not common in the genus. I also find this characteristics in several species of tropical forests in Papua New-Guinea (MOHRIG 1999), HIPPA et al. (1998) in species of the Oriental region.

Cratyna (Cratyna) micra spec. nov.

(Fig. 17 a-d)

♂. **Head:** Brown; with an elongated lobe-like cheek. Eye bridge 4 facets wide. Antennae long; flagellomere with very long necks and long cecidomyiid-like bristles, arranged in one complete circular whorl; flagellomere 4 as long as wide, neck somewhat longer than the basal part, brownish; bristles about 4 times longer than the diameter of the basal part. Palpi thick, 1-segmented; basal segment with 7-8 bristles and a patch of long sensillae.

Thorax: Brown. Mesonotum rather fine setose, with some longer central and lateral setae; scutellum with 4 longer marginal bristles. Posterior pronotum bare. Wings pale, R1 short, joining the C long before the M-fork; R5 only at the tip with ventral macrotrichia; y shorter x, without macrotrichia; M-fork narrow; Cu-stem short; posterior veins without macrotrichia. Halteres short, brownish. Coxae and legs yellowish-brown; legs long; fore tibiae at the inner apex without any differentiation of bristles; spurs of mid and hind tibiae equal and longer than the diameter of the apex; claws untoothed.

Abdomen: Brown. Hypopygium brown; gonocoxites short and strong, with a short ventral megaseta, ventrally at the inner border rather long setose; gonostyles large and round, apically with two pairs of hyaline spines and a subapically located short tooth. Tegmen broad rounded, with an inner semicircular structure; aedeagus very short. Body length: 2.2 mm.

Locus typicus: Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W.

Holotypus: 1 ♂, 27.9.-18.10.1986, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Paratypes: 1 ♂, 18.10.-8.11.1986, locus typicus, leg. GOULD & JANZEN (coll. MOHRIG).

Remarks: The new species is characterized by the long necks and the long circular arranged whorl of bristles of flagellomeres, one-segmented palpi, large and round gonostyles with 2 pairs of hyaline spines in combination with a short subapical tooth.

Cratyna micra is the first described species of the subgenus *Cratyna* s. str. which shows a tooth on gonostyles. Two further undescribed species we know from Malaysia (MENZEL & MOHRIG 2000: 266). This unique phenomenon could be intermediate between *Cratyna* s. str. and the subgenus *Spathobdella* FREY 1948.

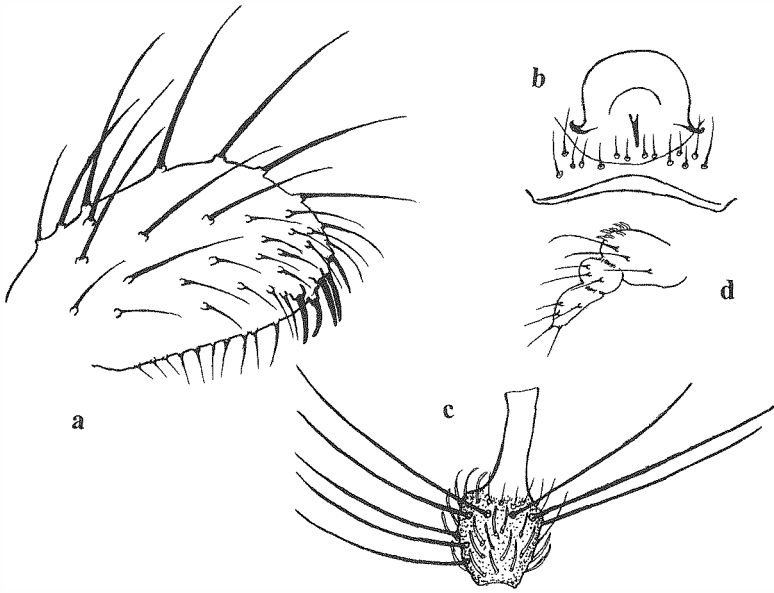


Fig. 16: *Cratyna (Cratyna) ciliocera* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x).

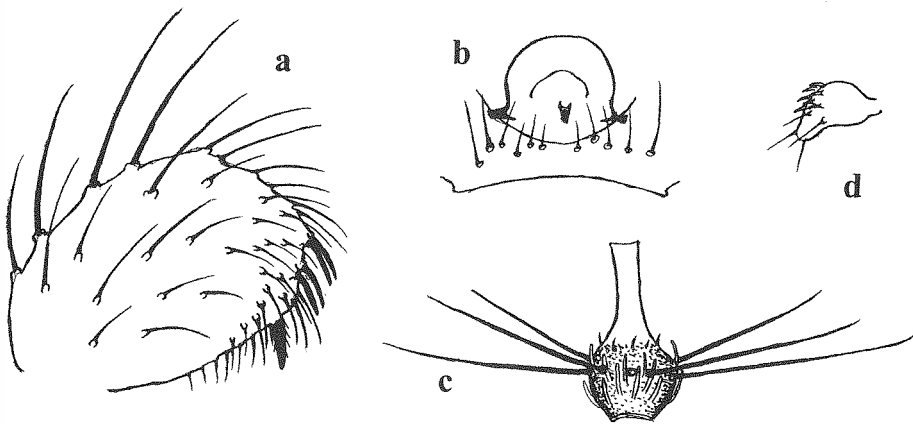


Fig. 17: *Cratyna (Cratyna) micra* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x).

Subgenus *Spathobdella* FREY, 1948

(Notul. Ent., 27(2-4): 46 and 72)

Literature: TUOMIKOSKI 1960: 35-39; MENZEL & MOHRIG 2000: 267.

Cratyna (Spathobdella) exteriora spec. nov.

(Fig. 18 a-d)

♂. **Head:** Yellowish-brown. Eye bridge 4 facets wide. Antennae brown, scape and pedicel paler; flagellomere with rather short necks and dense setose; flagellomere 4 about 2 times longer than wide, setae shorter than the diameter of the basal part. Palpi short, 3-segmented; basal segment with 3-4 bristles and a patch of sensillae.

Thorax: Yellowish-brown. Mesonotum dark setose, with longer lateral and praescutellar setae; scutellum with 4 longer marginal bristles; posterior pronotum with 1-2 setae. Wings pale, $R_1 = 2/3 R$, joining the C before the M-fork; R_5 only at the tip with ventral macrotrichia; $y = x$, without macrotrichia; Cu-stem short; posterior veins without macrotrichia. Halteres short, brownish. Coxae and legs brownish; fore tibiae at the inner apex with a weak patch of bristles; spurs of mid and hind tibiae equal and longer than the diameter of the apex; claws untoothed.

Abdomen: Brown, rather long setose. Hypopygium brown; gonocoxites with a rather long ventral megaseta, ventrally at the inner border short setose; gonostyles short and basely broad, narrowed to a lobe-like tip with 4-5 long bristles, subapically with a strong and curved tooth on the inner side; the under corner of the inner side shows 3 short and somewhat spoon-like hyaline spines; tegmen broad rounded, without an inner semicircular structure; aedeagus short. Body length: 2 mm.

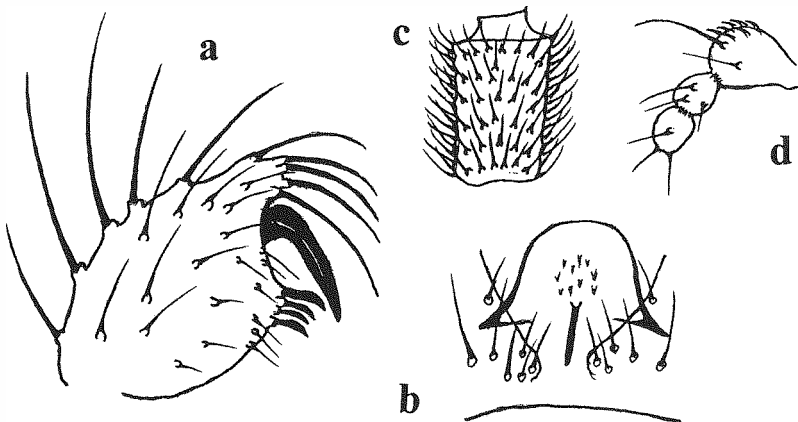


Fig. 18: *Cratyna (Spathobdella) exteriora* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x).

Locus typicus: Costa Rica, Heredia, La Salva.

Type: 1 ♂, 26.6.-1.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratypes: 1 ♂, 9.-11.7.1993, locus typicus, leg. B. BROWN; 1 ♂, 15.5.1995, Honduras, Olancho, Park Nat. La Muralla, 1450 m, 15.12°N, 86.75°W, leg. R. CORDERO (coll. MOHRIG).

Remarks: This new species is characterized by the lobe-like tip of gonostyles and the strong and curved tooth on their inner side. It represents in the shape of gonostyles a very unusually feature of *Spathobdella*, rather different from the known Holarctic species. All other characteristics agree with them of this subgenus.

Genus *Hyperlasion* SCHMITZ, 1919

(Tijdschr. Ent., 61(1-2): 96, 108 und 109)

Literature: MENZEL & MOHRIG 2000: 343-348.

This genus is represented with the type species *Hyperlasion wasmanni* SCHMITZ from Europe and the rather questionable species *H. viridiventris* (FREY, 1945) from the Azores. Recently two species are described from Papua New Guinea (MOHRIG 2002). All these species, including the described below *H. capitulatum* and some non described species from Costa Rica in my collection are very similar to *Cratyna* s. str. with the exception that the tibial spurs are very short and the head capsule shows in some species the tendency to extend.

Hyperlasion wasmanni SCHMITZ, 1919

(Fig. 19 a-e)

Literature: RUDZINSKI 1993: 446-448, fig. 7-11; LAURENCE 1994: 107-108, fig. 4-6; MOHRIG et al. 1997: 381-382, fig. 1 a-f (as *Cratyna*).

Material: 9 ♂♂, 3 ♀♀, Honduras, Francisco Morazan, Parque Nacional La Tigra, 14.22°N, 87.12°W, 1 ♂, 21.4.1995, malaise trap, leg. R. CORDERO (coll. MOHRIG).

Remarks: This small species (body length 1.4 mm in male, 1.8 mm in female) is characterized by: one-segmented palpi, in every case with a very small rudiment of the second segment, and apically with a deepened patch of sensillae; flagellomere 4 about 1.8 times longer than wide, neck somewhat shorter than half the length of the basal part; posterior pronotum mostly with few setae; large wings; rather short coxae, short legs and very short and fine tibial spurs; gonostyles somewhat prolong and apically rounded, subapically with six in two groups inserted hyaline spines on the inner side; tegmen small, higher than broad, apically rounded.

This species is perhaps cosmopolitan distributed. I have specimens from Central and Western Europe (in some cases from greenhouses), the Canary Islands, Zimbabwe and Honduras.

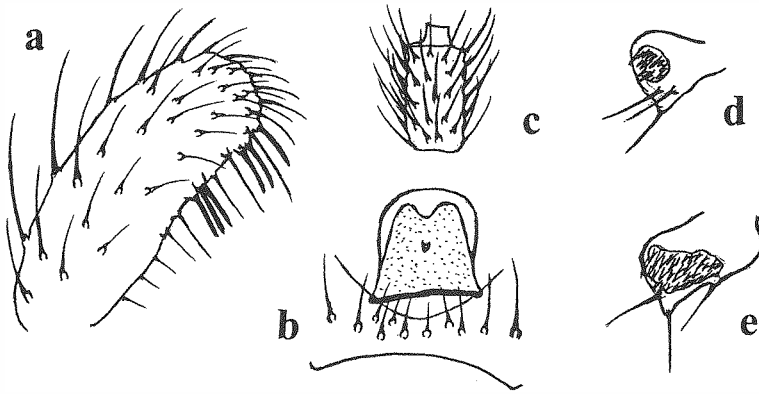


Fig. 19: *Hyperlasion wasmanni* SCHMITZ; ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x); e) f: palpus (200 x).

***Hyperlasion capitulatum* spec. nov.**

(Fig. 20 a-c)

♂. **Head:** Subglobular prolong, with a large posterior vertex. Eye bridge closed, 2 facets wide. Antennae short, unicolor brownish; flagellomere with very short necks and bristle-like setae; flagellomere 4 as long as wide, setae as long as the diameter of the basal part. Palpi large, one-segmented; with 4-5 bristles and a flat pit of apical inserted sensillae; rostrum rudimentary, labellar lobes small.

Thorax: Brownish. Mesonotum short setose, with some longer lateral setae; scutellum with 2 longer bristles; posterior pronotum bare. Wings pale, long and somewhat narrowed at the base; $R1 = 2/3 R$; $R5$ without ventral macrotrichia; $y = x$ and with 1-2 macrotrichia; posterior veins very weakly and without macrotrichia. Halteres rather long, brownish. Coxae and legs brown, short and strong; fore tibiae at the inner apex only with few longer bristles; spurs of mid and hind tibiae equal, very short and not longer than the diameter of the apex; claws untoothed.

Abdomen: Brown, short and sparse setose. Hypopygium brown; gonocoxites short, with a short ventral megaseta, ventrally at the inner border short setose; gonostyles prolong, apically rather long setose, subapically with 4 hyaline spines in two pairs; tegmen rounded, with a weak developed inner semicircular structure; aedeagus very short. Body length: 1 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Type: 1 ♂, 1.-6.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratype: 1 ♂, 2.3.1995, Honduras, Cortes, Parque National Cusunco, 15.48°N, 88.22°W; Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Remarks: This very small species is characterized by the prolong head capsule, one-segmented palpi with a flat apical pit of sensillae and 4 hyaline spines in two pairs subapically inserted on the inner side of gonostyles.

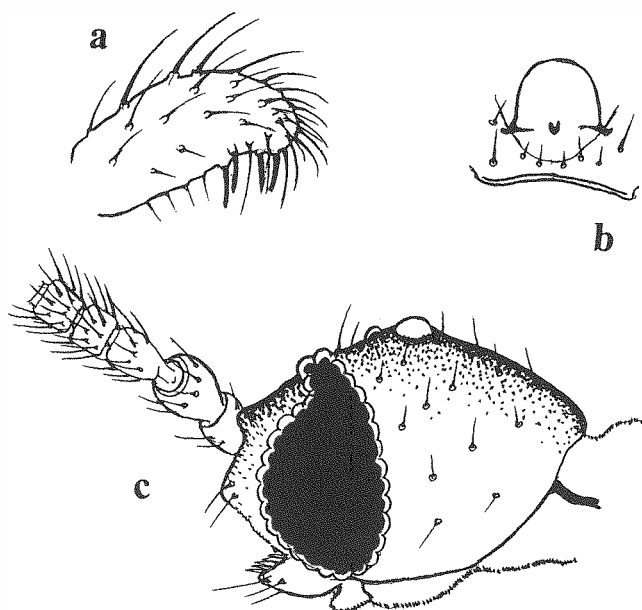


Fig. 20: *Hyperlasion capitulatum* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) head (200 x).

Genus *Phytosciara* FREY, 1942

(Notul. Ent., 22: 21, 27-28)

Literature: HIPPA & VILKAMAA 1991: 113-155; MOHRIG & MENZEL 1994: 167-210.

Subgenus *Dolichosciara* TUOMIKOSKI, 1960

(Ann. Zool. Soc. .Vanamo., 21(4): 103, 107-108)

Phytosciara (Dolichosciara) exlobata spec. nov.

(Fig. 21 a-e)

♂. **Head:** Yellow, darkened around ocelli. Eye bridge 3 facets wide. Antennae rather strong; flagellomere brown with a slightly rough surface, necks short and weakly bicolor; scape and pedicel yellow; flagellomere 4 about 2.2 times longer than wide, setae as long as half of the diameter of the basal part. Palpi brownish, short three-segmented; basal segment with 3-4 bristles and short sensillae.

Thorax: Yellow-ochreous; pleurotergite, antethoracal anepisternite, paratergite and parts of the metanotum brown; mesonotum and scutellum centrally darkened; mesonotal setae short and dark; scutellum with about 6 longer marginal bristles. Posterior pronotum

bare. Wings brownish, R1 somewhat shorter R; R5 in the distal half with ventral macrotrichia; y twice longer x, without macrotrichia; posterior veins with macrotrichia. Halteres brownish. Legs yellow, distal part of tibiae and tarsi darkened; fore tibiae with spine-like bristles within the ground setae and at the inner apex with a comb-like row of black spine-like bristles; spurs of mid and hind tibiae equal and much longer than the diameter of the apex. Claws toothed.

Abdomen: Brownish. Hypopygium yellow, ventrally at the base without lobe; at the inner border of gonocoxites short setose; gonocoxites with two megasetae at the ventral apex; gonostyles elongate, darkened at the tip and dense covered with short dark setae; at the inner side with two spines and few longer setae. Tegmen as high as broad, rounded, with a smaller area of fine teeth. Aedeagus short. Body length: 3.0 mm.

♀. Coloring as in male. Flagellomere 4 about 2.4 times longer than wide, setae short. Body length: 3.5 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Holotypus: 1 ♂, 26.6.-1.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratypes: 1 ♂, locus typicus, same data; 1 ♂, 1 ♀, 1.-6.7.1993, locus typicus, leg. B. BROWN (coll. MOHRIG).

Remarks: The species is characterized by only two spines at the inner side of gonostyles and the lack of an intercoxal lobe at the ventral base of hypopygium.

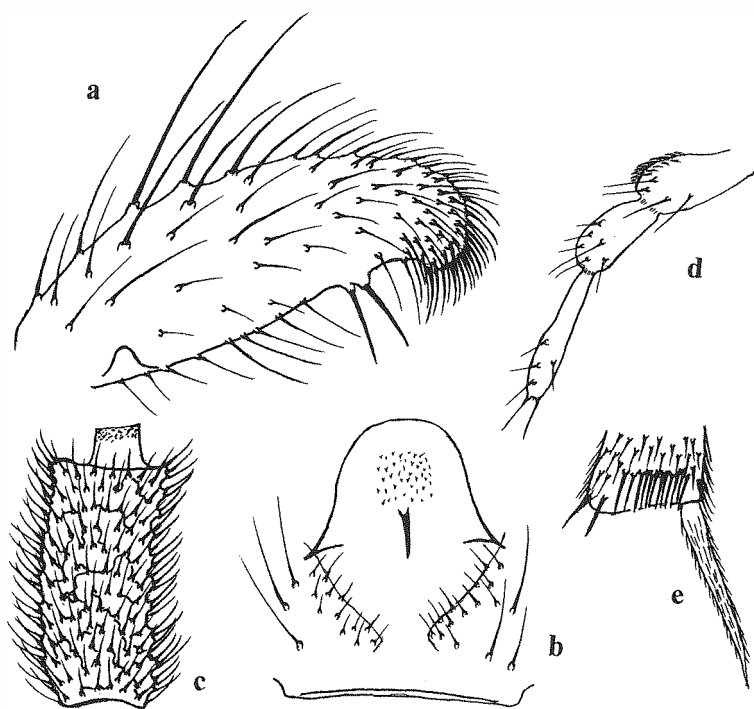


Fig. 21: *Phytosciara (Dolichosciara) exlobata* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** tip of fore tibiae (200 x).

Genus *Pseudosciara* SCHINER, 1866

(Verh. zool.-bot. Ges. Wien, 16: 927-934)

Literature: LANE 1959: 287-298.

Pseudosciara melanocephala RÜBSAAMEN, 1894 comb. nov.

(Fig. 22 a-c)

(Berl. Ent. Z. - Berlin, 39(1): 23-24, fig. 1 and pl. III, fig. 21)

= *Tichosia ribeiroi* LANE, 1953 syn. nov.

Literature: LANE 1953: 256-257, fig.1; AMORIM 1992: 68 [as *Trichomegalosphys*].

This species was first described by RÜBSAAMEN from Suriname, later by LANE also as a species of *Trichosia* from Brasil. AMORIM (1992) transferred *T. ribeiroi* LANE to *Trichomegalosphys* ENDERLEIN, 1911 on the base of macrotrichia on the whole wing membrane. We compared it with original specimens of ENDERLEIN from Sumatra and can establish that there are strong generic differences between *Trichomegalosphys* from the Oriental region and *Trichosia ribeiroi* LANE. We may assume that *Trichomegalosphys* as well as *Trichosia* are not distributed in Central and South America. The species *melanocephala* RÜBSAAMEN and *ribeiroi* LANE are identical and belong in fact to the genus *Pseudosciara* through the typical

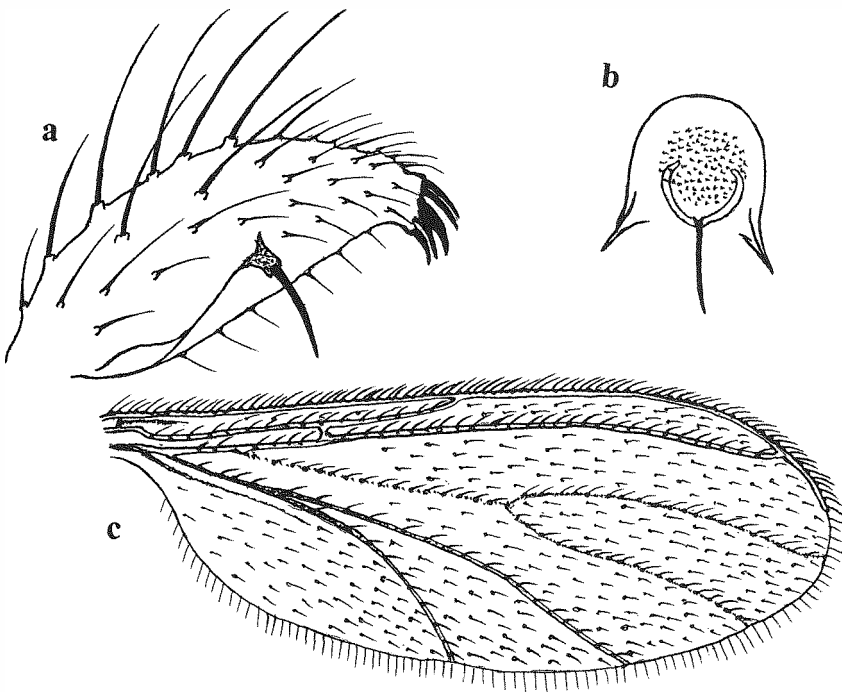


Fig. 22: *Pseudosciara melanocephala* RÜBSAAMEN; ♂: a) Stylus (400 x); b) tegmen (200 x); c) wing (30 x).

shape of gonostyles, the long stem of CuA and the arrangement of spine-like bristles at the tip of fore tibiae. It is the only species within the genus *Pseudosciara* with macrotrichia on the wing membrane (and not only on the posterior wing veins).

Material: 1 ♂, 15.5.1995, Honduras, Olancho, Parque Nat. La Tigra, 15 km north-west of La Union, 15,12°N, 86,75°W, 1450 m, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Pseudosciara pedunculata (ENDERLEIN, 1911)

Literature: ENDERLEIN 1911: 131 (as *Megalosphyx*); LANE 1959: 297, fig. 11 [as *Pseudosciara*].

Pseudosciara pedunculata is with 4,5 mm length of wings one of the largest species of the genus and of dark body color in contrast to most other species, which are contrast rich colored in yellow and black.

Material: 1 ♂, 15.5.1995, Honduras, Olancho, Parque Nat. La Tigra, 15 km north-west of La Union, 15,12°N, 86,75°W, 1450 m, Malaise trap, leg. R. CORDERO; 3 ♂♂, 18.10.-8.11.1986, Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (all coll. MOHRIG).

Genus *Eugnoriste* COQUILLET, 1896

(Proc. Ent. Soc. Wash., 3: 321-322)

Eugnoriste villosaabdominalis spec. nov.

(Fig. 23 a-g)

♂. **Head:** Brown; oblong, about 2 times higher than long, with proboscis-like mouth parts (labrum and labellum elongate). Eye bridge 4 facets wide. Antennae unicolor brown; flagellomeres with rather short necks and pale setae, flagellomere 4 about 2 times longer than wide; setae longer than half of the diameter of the basal part. Palpi long and thin, three-segmented; basal segment with 6-7 bristles and few short sensillae.

Thorax: Unicolor brown; mesonotum short, sparse and dark setose, some lateral bristles longer; scutellum with 2 longer marginal bristles; posterior pronotum bare. Wings pale, R1 short, = 2/3 R; R5 without ventral macrotrichia; C a little longer 1/2 w; y = x and with 1-2 macrotrichia; M-fork narrow; posterior veins without macrotrichia. Halteres short, brown. Coxae and legs yellowish; fore tibiae at the inner apex with an semicircular bordered patch of pale bristles; spurs of mid and hind tibiae equal and longer than the apex. Claws untoothed.

Abdomen: Brown, tergite V with dense setae in the mid of the apical border. Hypopygium brown, ventrally with a broad intercoxal space without setae; the inner border of gonocoxites proximally with a weak setae patch, distally short and sparse setose; gonostyles short, outsides strong curved, inner side in parts deep excavated, apically with two long and curved spines and a long whiplash seta. Tegmen somewhat broader than high, with a small area of fine teeth. IX. sternite small and broad, apically straight. Aedeagus short and with a broad furca. Body length: 2 mm.

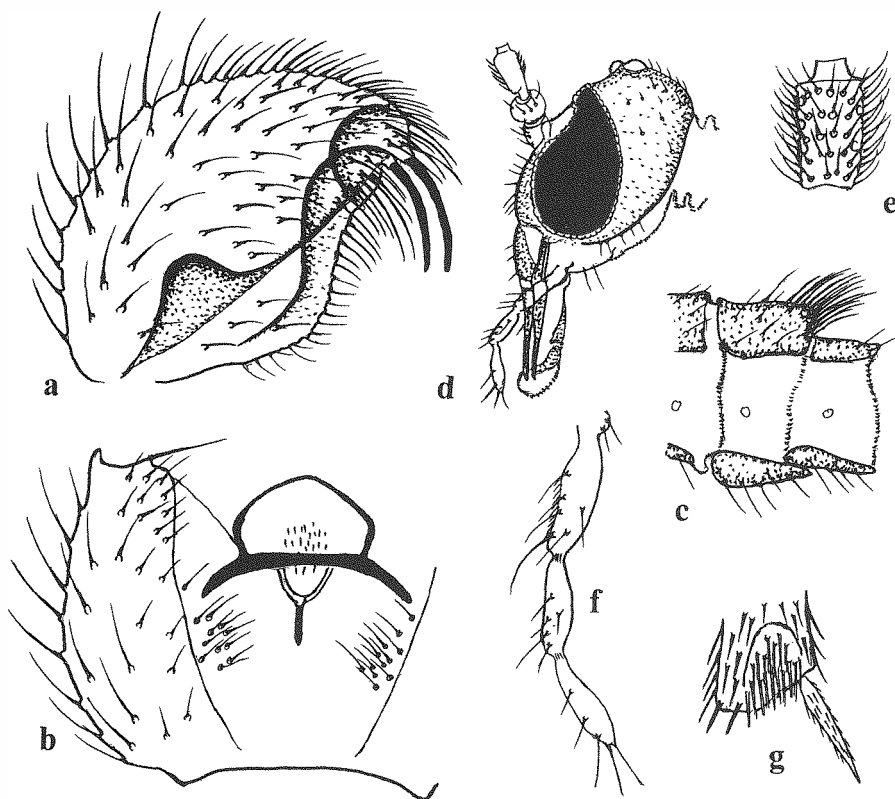


Fig. 23: *Eugnoriste villosaabdionalis* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** abdominal segments IV-VI (80 x); **d)** head (30 x); **e)** 4. flagellomere (200 x); **f)** palpus (200 x); **g)** tip of fore tibiae (200 x).

♀. Characteristics as in male, but abdominal tergite without dense setae; flagellomere 4 only 1.2 times longer than wide, setae shorter than half of the diameter of the basal part and legs more brown. Body length: 3 mm.

Locus typicus: Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W.

Holotypus: 1 ♂, 18.10.-8.11.1986, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Paratypes: 6 ♂♂, 1 ♀, locus typicus, same data; 16 ♂♂, 6.9.-27.9.1986, 2 ♂♂, 27.9.-18.10.1986, all locus typicus, leg. GOULD & JANZEN. (coll. MOHRIG).

Remarks: The new species differs from the North American *Eugnoriste brevirostris* COQUILLET, 1904 (similar in the shape of head and in the prolong mouth parts) by longer flagellomeres, short cerci of male hypopygium, shorter spines on gonostyles and much lesser setae on male abdominal tergites. The genus is known with only four species from the USA.

Genus *Pseudolycoriella* MENZEL & MOHRIG, 1998

(Studia dipt., 5(2): 367-369)

Literatur: MOHRIG & JASCHHOF 1999: 36-43; MENZEL & MOHRIG 2000: 464-480.

The genus is characterized in males by one or more long whiplash hair behind subapically inserted spines. The gonostyles are never toothed at the tip. Most species show two (rarely one or more) subapical spines of different length on the gonostyles. Both sexes are characterized by a more or less rough surface of flagellomeres with few deepened inserting points of sensillae or large inserting points of setae, in some cases also with a weak barred structure; toothed claws in most species, three-segmented palpi with few setae on the basal segment, bare posterior pronotum and without macrotrichia on posterior wing veins. The patch of bristles at the tip of fore tibiae changed from an irregular row up to a strong bordered bristle patch. The genus is near related to *Eugnoriste* COQUILLET through the shape and spines of gonostyles.

Pseudolycoriella ferocia spec. nov.

(Fig. 24 a-e)

♂. **Head:** Brown. Eye bridge 5 facets wide. Antennae rather long, brown, flagellomere with a rough surface by circular inserting points of setae; flagellomere 4 about 2.5 times longer than wide, setae pale, bristle-like and somewhat shorter than the diameter of the basal part, neck about 1/5 of the length of the basal part. Palpi long, three-segmented, basal segment with 12-15 bristles and short sensillae.

Thorax: Brown. Mesonotum with darker central strips, very dense and long setose, some lateral setae stronger; scutellum dense setose, with two longer marginal bristles. Posterior pronotum bare. Wings brownish; $R_1 = 2/3 R$; R_5 with some ventral macrotrichia; $C = 2/3 w$; $y = x$ and with 1-2 macrotrichia; posterior veins distinct and without macrotrichia. Halteres short and darkened. Coxae and legs brownish; fore tibiae at the inner apex with an irregular row of bristles, basely bordered; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws toothed.

Abdomen: Brownish, dense and long setose. Hypopygium brown; gonocoxites with a long ventral megaseta, ventrally long and dense setose, at the inner border and membrane shorter and fine setose; gonostyles large, strong curved and long and dense setose on the outer side; apically narrowed and with a short and dense setae at the tip, under it with 3 somewhat longer bristle-like hyaline spines and 2 whiplash hairs, the inner side with long and upwards directed bristles; tegmen broader than high, with a vertical structure and rather strong teeth between the furca of aedeagus; aedeagus rather strong. Body length: 4.5 mm.

Locus typicus: Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W.

Holotype: 1 ♂, 6.9.-27.9.1986, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Paratypes: 5 ♂♂, locus typicus, same data; 11 ♂♂, 27.9.-18.10.1986; 1 ♂, 18.10.-8.11.1986, locus typicus, all leg. GOULD & JANZEN (coll. MOHRIG).

Remarks: This large new species is characterized by the shape of gonostyles with a long and dense setose outer side and 3 fine subapical spines and 2 (3) whiplash hairs under the tip.

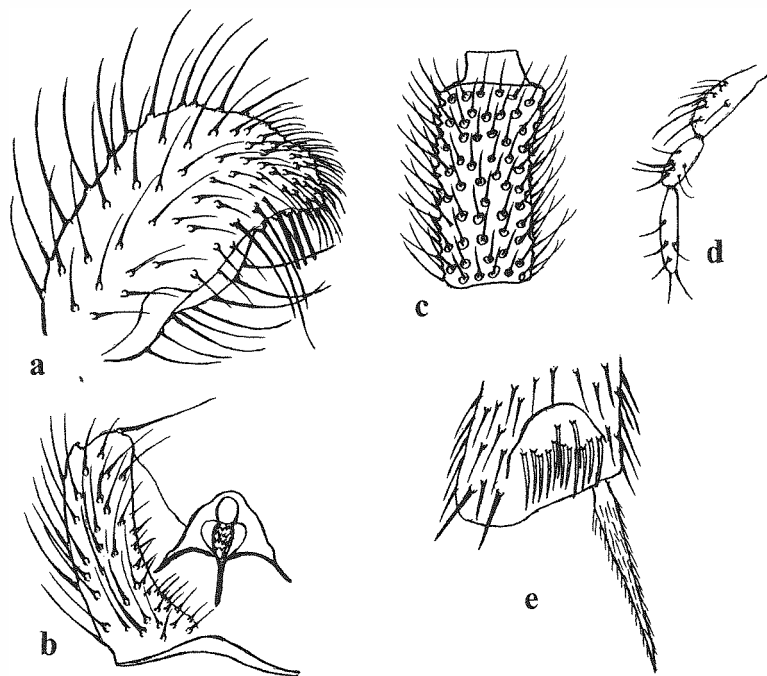


Fig. 24: *Pseudolycoriella ferocia* spec. nov., ♂ **a)** Stylus (200 x); **b)** base of hypopygium (80 x); **c)** 4. flagellomere (200 x); **d)** palpus (80 x); **e)** tip of fore tibiae (200 x).

***Pseudolycoriella curviseta* spec. nov.**

(Fig. 25 a-d)

♂. **Head:** Brown. Eye bridge 4 facets wide. Antennae rather long, brown, flagellomere with a weakly rough surface because of few deeper inserting points of sensoria; flagellomere 4 about 2.5 times longer than wide, setae pale, bristle-like and somewhat shorter than the diameter of the basal part, neck about 1/4 of the length of the basal part. Palpi long, three-segmented, basal segment with 3-4 bristles and short sensillae.

Thorax: Brown. Mesonotum rather short setose, some lateral setae stronger; scutellum with 2 longer marginal bristles. Posterior pronotum bare. Wings pale; $R1 = 2/3 R$; $R5$ without ventral macrotrichia; $C = 2/3 w$; $y = x$, without macrotrichia; posterior veins distinct and without macrotrichia. Halteres short and darkened. Coxae and legs rather long, brownish; fore tibiae at the inner apex with an irregular patch of bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws very fine toothed.

Abdomen: Brownish, sparse and fine setose. Hypopygium brown; gonocoxites with a long ventral megaseta, ventrally in the basal third with a dense patch of longer setae, apically at the inner border nearly bare; gonostyles oblong, weakly curved and with short and dense setae at the tip; subapically with a thin spine and 2-3 whiplash hairs, one curved; the inner dorsal side with short spine-like and upwards directed bristles; tegmen broader than high, with a small area of fine teeth; aedeagus rather strong. Body length: 2.4 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Holotype: 1 ♂, 1.-6.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratype: 3 ♂♂, 24.-26.6.1993, locus typicus; 1 ♂, 26.6.-1.7.1993, locus typicus, all leg. B. BROWN; 1 ♂, 6.9.-27.9.1986, 3 ♂♂, 27.9.-18.10.1986; 3 ♂♂, 18.10.-8.11.1986, Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W, tropical forest, Malaise trap, all leg. GOULD & JANZEN (coll. MOHRIG).

Remarks: The new species is characterized by the prolonged gonostyles, subapically with one hyaline spine and 2-3 long whiplash hairs, the longest curved.

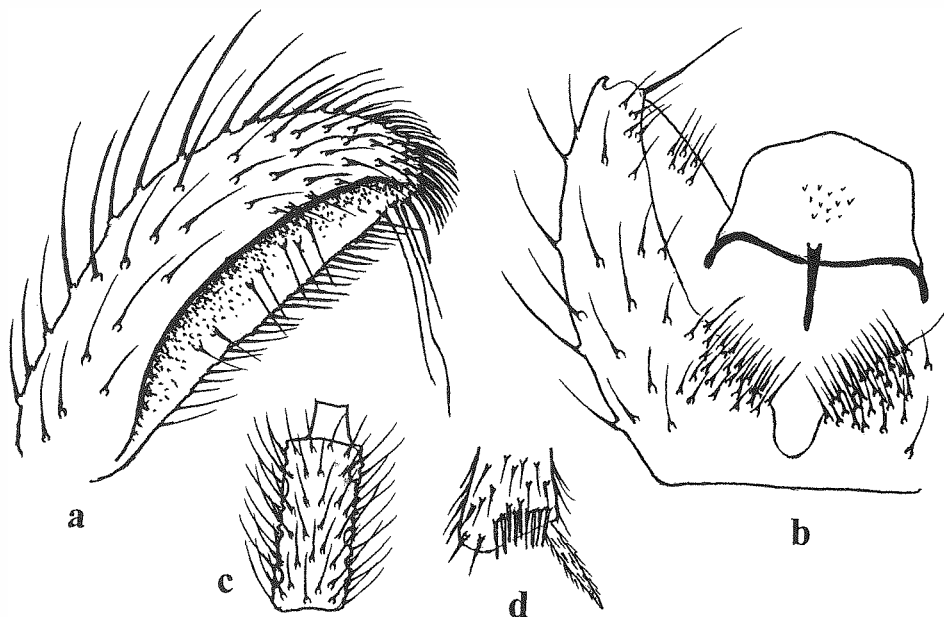


Fig. 25: *Pseudolycoriella curviseta* spec. nov., ♂ **a)** Stylus, ventrolateral view (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** tip of fore tibiae (200 x).

***Pseudolycoriella coecoalata* spec. nov.**

(Fig. 26 a-f)

♂. **Head:** Brown. Eye bridge 3 facets wide. Antennae rather long, brown, flagellomere with a weakly rough surface by circular inserting points of bristles with a barred-like structure; flagellomere 4 about 2.4 times longer than wide, setae brownish, bristle-like, rather dense and somewhat shorter than the diameter of the basal part, neck about 1/5 of the length of the basal part. Palpi long, three-segmented, basal segment with 5-6 bristles and short sensillae.

Thorax: Dark brown. Mesonotum with some longer lateral and praescutellar setae; scutellum with 4 longer marginal bristles. Posterior pronotum bare. Wings brown; R1 long, = 3/4 R; R5 without ventral macrotrichia; C = 2/3 w; y = x, without macrotrichia; posterior veins distinct and without macrotrichia. Halteres short and darkened. Coxae and legs rather long, brown; fore tibiae at the inner apex with a small semicircular bordered patch of bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws rather strong toothed.

Abdomen: Brown, rather long and dense setose. Hypopygium brown; gonocoxites with a long ventral megaseta, ventrally at the inner border rather short setose; gonostyles oblong, weakly curved at the tip and covered with short and dense setae, subapically with two thin and bristle-like spines and 2-3 longer setae in the apical third (not typical whiplash hairs); tegmen higher than broad, with a small area of stronger teeth between the narrow furca of aedeagus; aedeagus strong. Body length: 3.2 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Holotype: 1 ♂, 9.-11.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratype: 1 ♂, 1.-6.7.1993, locus typicus, leg. B. BROWN (coll. MOHRIG).

Remarks: The new species is characterized by the dark color of body and wings, the rather strong toothed claws, prolong gonostyles with dense setae at the tip and subapically with two longer bristle-like spines, together with 2-3 longer setae (reduced whiplash hairs) and a strong aedeagus with rather strong teeth between the basal fork.

Genus *Zygomma* ENDERLEIN, 1911

(Arch. Naturgesch., 77(1) Suppl. 3: 126 and 143)

The type species *Zygomma fasciatellum* ENDERLEIN is characterized by a strong curved M1 in their basal part, so that the M-fork looks vase-like (as in Holarctic species of *Zygoneura*), but with macrotrichia on the posterior wing veins. The fore tibiae show a comb-like row of spine-like bristles as in *Bradysia* (species of *Zygoneura* show an irregular patch of long bristles), the necks of flagellomere are well developed, but not long and strikingly elongate as in *Zygoneura*, and the hypopygium is of other shape and shows another arrangement of spines and teeth. AMORIM (1992) summarized all species with a strong curved M1 and synonymized *Zygomma* with *Zygoneura* MEIGEN and *Mapiria* EDWARDS. A curved M1 is not a solid generic characteristic and occurs in species of different genera. From the species list of AMORIM only *flavicoxa* JOHANNSEN, 1912 belongs to *Zygoneura*, a genus

distributed in the Holarctic region. We reactivated *Zygomma* ENDERLEIN (MENZEL & MOHRIG 2000) on the base of the type species. Beside *Zygomma fasciatellum* ENDERLEIN I include now in this genus the species *Zygoneura alboantennata* LANE, 1946, *Sciara zygoneura* WILLISTON, 1896 from St. Vincent, *Mapiria transversalis* EDWARDS, 1934 also as few new species described below.

Summaring the characteristics of the known species than the genus is characterized as follows: head with the tendency to flattened faces (shorter than high) with prolonged mouth parts; flagellomere with rather short necks, long, but not cecidomyiide-like setose, the last antennal segments in most species white or pale (depigmented) in both sexes; palpi long, thin and three-segmented, without a deepened patch of sensillae; thorax dark brown and in strong contrast to the yellowish-white coxae and femora (hind femora mostly brownish in distal half); fore tibiae with a broad comb-like row of bristles (as in *Bradysia*); claws toothed; wings in most species distinctly or with the tendency to a curved M1 and therefore a vase-like shape of M-fork; posterior wing veins without macrotrichia (with exception of *Zygomma fasciatellum* ENDERLEIN); hypopygium of common *Bradysia* type; gonostyles mostly with an apical tooth, surrounded by a different number of strong spines.

The comb-like arrangement of bristles at the tip of fore tibiae and the *Bradysia*-like structure of hypopygium positioned the genus very near to *Bradysia*.

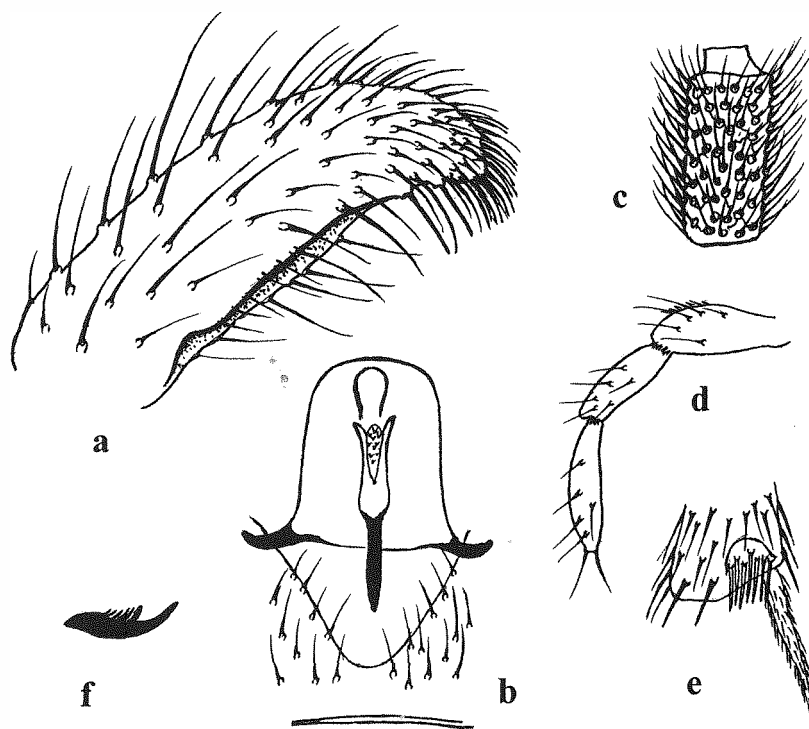


Fig. 26: *Pseudolycoriella coecoalata* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x); e) tip of fore tibiae (200 x); f) claw (400 x).

***Zygomma fasciatellum* ENDERLEIN, 1911**

(Fig. 27)

Literature: MENZEL & MOHRIG 2000: 722-723, fig. 605-607.

The species is characterized in both sexes by wings with a strong curved M1 and two bands of dark color, macrotrichia on posterior wing veins, last four antennal segments white (depigmented), head downstairs weakly prolonged. The gonostyles in males show on the dorsal side of the tip a long spine on a larger base and over them a short and fine spine in the apical setae.

Material: 1 ♂, 3 ♀♀, 9.-11.7.1993; 7 ♀♀, 1.-6.7.1993, Costa Rica, Heredia, La Salva; Malaise trap, leg. B. BROWN; 1 ♀, 27.9.-18.10.1986, 2 ♀♀, 18.10.-8.11.1986, Costa Rica, Guanacaste Province, Santa Rosa Nat. Park, 10.95°N, 85.62°W, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

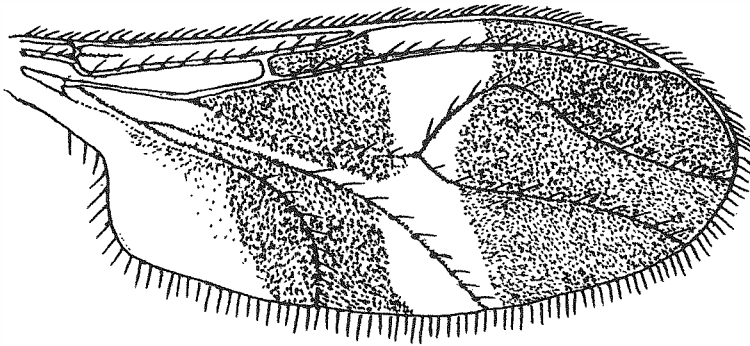


Fig. 27: *Zygomma fasciatellum* ENDERLEIN, ♀: wing.

***Zygomma alboantennata* (LANE, 1946) comb. nov.**

Literature: LANE 1946: 350, fig. 9 [as *Zygoneura*]; AMORIM 1992: 68 [as *Zygoneura*].

The species is characterized in males: short and broad gonostyles with a fine and somewhat pale tooth, surrounded by two spines over and one spine under them; wings with a strong curved M1 and without macrotrichia on posterior wing veins, last two antennal segments white (depigmented), head downstairs weakly prolonged; prescutum with lateral patches of large inserting points of very short sensory-like setae.

Material: 2 ♂♂, august 1995, Costa Rica, San Jose Province, San Jose, Lurgui de Moravia, 1600 m, leg. P. HANSON (coll. MOHRIG).

Zygomma acuta spec. nov.

(Fig. 28 a-g)

♂. **Head:** Dark brown, with somewhat flattened face, but mouth parts not prolonged. Eye bridge 3 facets wide. Antennae rather long and with very dense setae; flagellomere dark brown, the last segment whitish; flagellomere 4 about 2.5 times longer than wide, setae dense and shorter than the diameter of the basal part, neck $1/5$ of the length of the basal part. Palpi long, three-segmented, basal segment long and narrow, without a deepened patch of sensillae, with 7-8 bristles.

Thorax: Dark brown. Mesonotum rather long and fine setose, some lateral setae stronger; scutellum with 2 longer marginal bristles. Posterior pronotum bare; anteprenotum and prethoracal episternite dense and long setose. Wings pale, with a well developed anal angle; $R1 = 2/3 R$; $R5$ without ventral macrotrichia; $C = 3/4 w$; $y = x$, without macrotrichia; M-fork narrow, M1 only weakly curved; Cu-stem rather long; posterior veins distinct and without macrotrichia. Halteres short and darkened. Coxae and femora yellowish-white, tarsi darkened; hind femora brown in the distal half; fore tibiae at the inner apex with a broad comb-like row of bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws fine toothed.

Abdomen: Dark brown, rather long setose. Hypopygium brown, the ventral base broad closed; gonocoxites with a long ventral megaseta, ventrally at the inner border sparse setose; gonostyles bulbously, with a long and strong apical tooth and 3 shorter spines over and one spine under it; tegmen broad rounded, with few fine teeth; aedeagus rather long. Body length: 2.8 mm.

Locus typicus: Costa Rica, San Jose Province, Lurgui de Moravia, 1600 m.

Holotype: 1 ♂, august 1995, leg. P. HANSON (coll. MOHRIG).

Remarks: The new species is characterized by a whitish last flagellomere, dense setae of antennae, rather weakly curved M1 and a large apical tooth on gonostyles with three spines over and one spine under it.

Zygomma suspiciosa spec. nov.

(Fig. 29 a-e)

♂. **Head:** Dark brown, with a flattened face (head much higher than long), clypeus and mouth parts distinctly prolonged. Eye bridge 3 facets wide. Antennae rather long and very dense setose; flagellomere dark brown, the last segment whitish; flagellomere 4 about 2.5 times longer than wide, setae dense and as long as the diameter of the basal part, neck $1/4$ of the length of the basal part. Palpi long, three-segmented, basal segment long and narrow, with a flat patch of sensillae and 7-8 bristles.

Thorax: Dark brown. Mesonotum nearly bare, laterally and on prescutum with large inserting points of very fine and short setae (like sensoriae); scutellum without distinct marginal bristles. Posterior pronotum bare; anteprenotum and prethoracal episternite short setose. Wings pale, with a well developed anal angle; $R1 = 2/3 R$; $R5$ without ventral macrotrichia; $C = 3/4 w$; $y = x$ and with 1-2 macrotrichia; M-fork narrow, M1 only weakly curved; posterior veins distinct and without macrotrichia. Halteres short and darkened. Coxae and femora yellowish-white, tarsi darkened; hind femora brown in

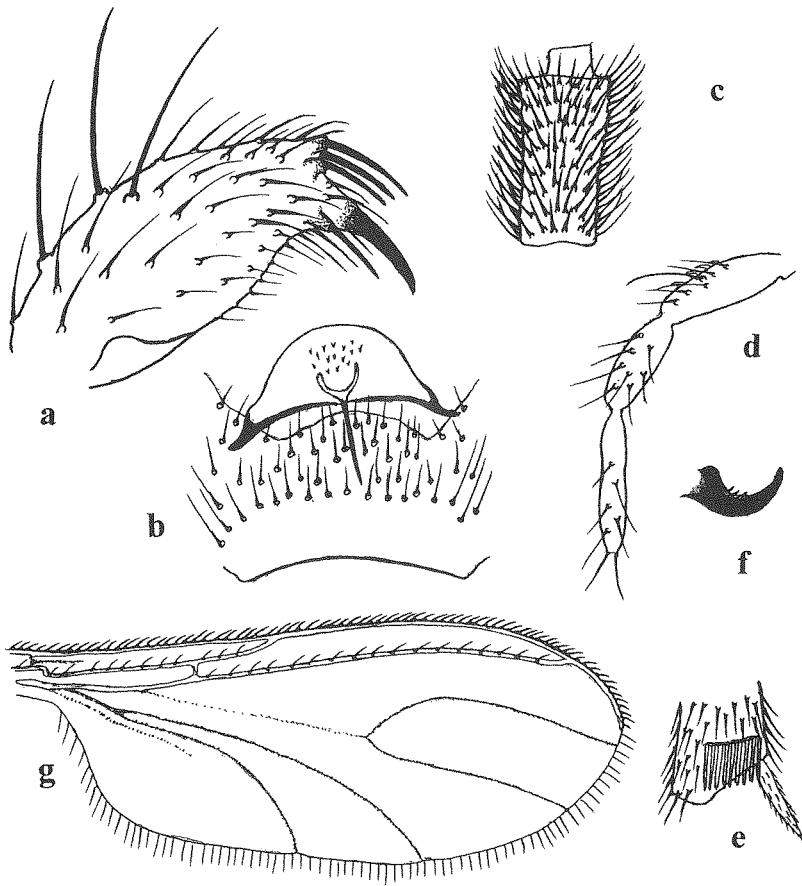


Fig. 28: *Zygomma acuta* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** tip of fore tibiae (200 x); **f)** claw (400 x); **g)** wing (30 x).

the distal half; fore tibiae at the inner apex with a broad comb-like row of bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws fine toothed.

Abdomen: Dark brown, rather long setose. Hypopygium brown, ventral base broad closed; gonocoxites with a long ventral megaseta, ventrally at the inner border rather long setose; gonostyles large and ovoid, with a strong apical tooth and 5 spines over and 2 spine under it; tegmen broad rounded, with few fine teeth; aedeagus rather long. Body length: 2.5 mm.

♀. Characteristics and color as in male. Typical characteristics are the large inserting points of very fine and short setae on mesonotum.

Locus typicus: Honduras, Francisco Morazan, 14.03°N, 87.07°W, Cerro Uyuca, San Antonio de Oriente, 1800 m.

Holotype: 1 ♂, 6.2.1995, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Paratype: 1 ♀, 21.4.1995, locus typicus, leg. Coldero (coll. MOHRIG).

Remarks: The new species is characterized by two white apical flagellomeres, flat face, weakly curved M1 and large ovoid gonostyles with an apical tooth and 5 spines over and 2 spines under it.

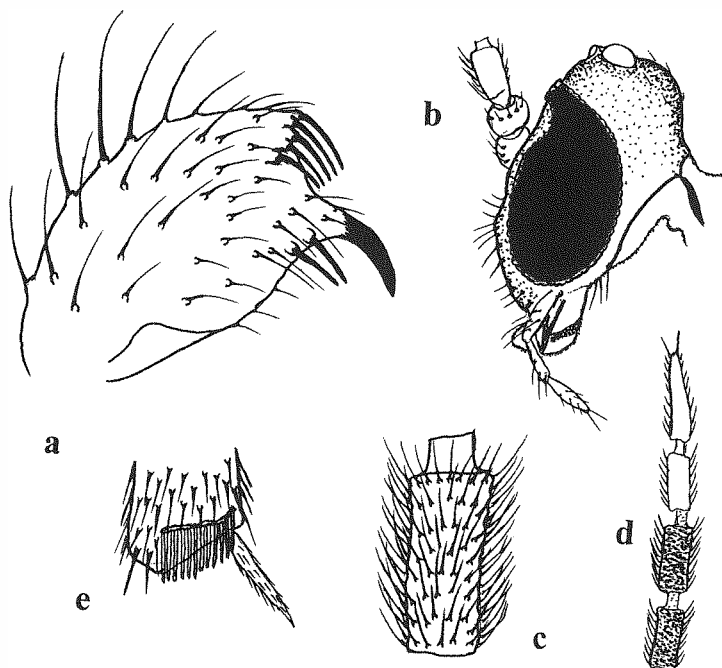


Fig. 29: *Zygomma suspiciosa* spec. nov., ♂ **a)** Stylus (400 x); **b)** head (80 x); **c)** 4. flagellomere (200 x); **d)** flagellomeres 11-14 (80 x); **e)** tip of fore tibiae (200 x).

***Zygomma modica* spec. nov.**

(Fig. 30 a-d)

♂. **Head:** Brown, with a flattened face (head much higher than long), clypeus and mouth parts distinctly prolong. Eye bridge narrow, 1-2 facets wide. Antennae rather long; flagellomere brown, also the last segments; flagellomere 4 about 2.5 times longer than wide, setae rather dense and longer than the diameter of the basal part, neck 1/3 of the length of the basal part. Palpi long, three-segmented, basal segment long and narrow, with few sensillae and 7-8 bristles.

Thorax: Dark brown. Mesonotum nearly bare, laterally and on prescutum without large inserting points of very fine and short setae; scutellum without distinct marginal bristles. Posterior pronotum bare; antepnotum and prethoracal episternite short setose. Wings pale, with a well developed anal angle; R1 short, = 1/3 R; R5 without ventral macrotrichia; C = 3/4 w; y = 1/2 x and without macrotrichia; M1 only weakly curved; posterior veins distinct and without macrotrichia. Halteres short and darkened. Fore coxae yellowish, coxae of mid and hind legs darker, femora yellowish, hind femora brown in the distal

half; tarsi darkened; fore tibiae at the inner apex with a broad comb-like row of bristles; mid and hind tibiae with two equal spurs, as long as the diameter of the apex. Claws fine toothed.

Abdomen: Brown, first two segments yellowish. Hypopygium brown, ventral base broad closed; gonocoxites with a long ventral megaseta, ventrally at the inner border sparse setose; gonostyles basally broad and strong narrowed to the tip; with a short claw-like tooth dorsally inserted and three longer, equal apical spines and few longer bristles below; tegmen broad rounded, with few fine teeth and strong basal sclerites; aedeagus rather long. Body length: 2.2 mm.

♀. Mouth parts very prolonged, eye bridge 2 facets wide, three last antennal segments white, first two abdominal tergites and all sternites yellowish

Locus typicus: Costa Rica, Guanacaste Province, Santa Rosa Nat. Park, 10.95°N, 85.62°W, dry tropical forest.

Holotype: 1 ♂, 18.10.-8.11.1986, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Paratypes: 1 ♀, locus typicus, same data; 1 ♀, august 1995, Costa Rica, San Jose Province, Lurgui de Moravia, 1600 m, leg. P. HANSON; 1 ♂, 20.7.1995, Patagonia, leg. BROWN (all coll. MOHRIG); 1 ♂, 1930, Costa Rica, La Caja, 8 km western San Jose, leg. SCHMIDT (coll. DEI Eberswalde).

Remarks: The new species is characterized in males by the curved and strong narrowed gonostyles with a short dorsal inserted tooth and three longer spines at the tip, in both sexes through the flat face with prolong mouth parts, distinctly curved M1, without macrotrichia on posterior wing veins and without large inserting points on the lateral parts of mesonotum; females with three white apical flagellomeres and more yellowish basal parts on the abdomen.

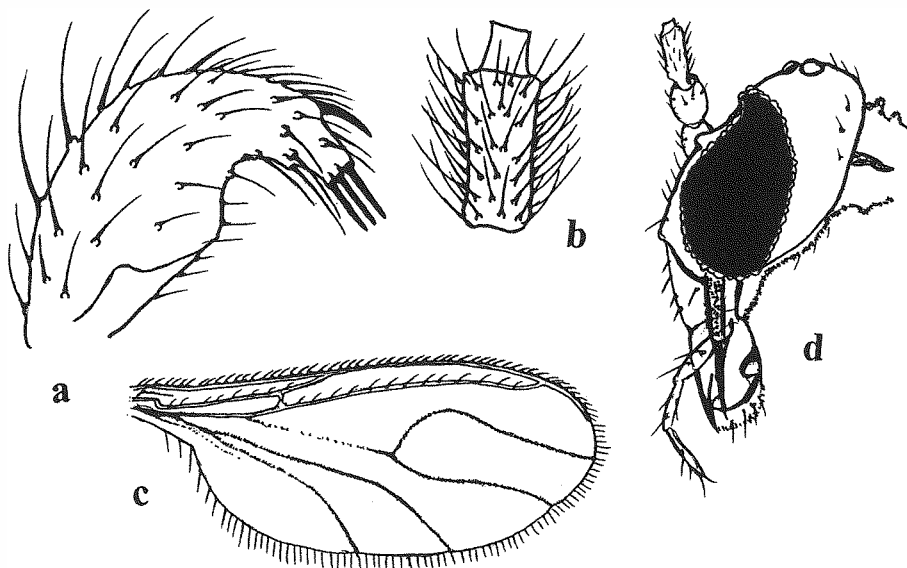


Fig. 30: *Zygomma modica* spec. nov., ♂ a) Stylus (400 x); b) 4. flagellomere (200 x); c) wing (30 x); ♀: d) head (80 x).

***Acuatella* gen. nov.**

Type species: *Acuatella vestituda* spec. nov.

Diagnosis: Head not prolong, with short mouth parts; eye bridge 3 facets wide, ocelli present; antennae unicolor brown; flagellomeres with rather long necks; setae bristle-like and longer than the diameter of the basal part; palpi three-segmented; basal segment with 6-7 bristles and a patch of sensillae; mesonotum rather short and sparse setose; scutellum short setose and without longer marginal bristles; posterior pronotum bare; wings pale, R1 short, = $1/2$ R; R5 without ventral macrotrichia; M1 strong curved in the basal part and M-fork vase-like; CuA2 strong curved; posterior veins without macrotrichia; halteres short; fore tibiae at the inner apex with a dense patch of pale bristles, semicircular bordered; spurs of mid and hind tibiae subequal, thin and rather short; claws untoothed; hypopygium on the inner border of gonocoxites sparse and short setose; gonostyles prolonged, without tooth, at the tip with short bristles and on the inner side with isolated spines; tegmen as high as broad, rounded, with a large area of teeth; aedeagus rather short.

Remarks: The new genus is similar to species of *Zygoneura* and *Zygomma* through the strong curved M1, but differs in the shape of gonostyles, the lack of apical spines or teeth, the distinct bordered patch of spine-like bristles at the tip of fore tibiae and the very strong curved CuA2. Species of the genus *Metangela* RÜBSAAMEN, 1894 with similarly curved M1 have macrotrichia on the whole wing membrane, distinctly toothed claws, flagellomeres with short necks and two long marginal bristles on the scutellum.

***Acuatella vestituda* spec. nov.**

(Fig. 31 a-f)

♂. **Head:** Brown, mouth parts short. Eye bridge 3 facets wide. Antennae unicolor brown; flagellomere with rather long necks and longer setae, flagellomere 4 about 2.5 times longer than wide, neck about $1/4$ the lengths of the basal part; setae bristle-like and longer than the diameter of the basal part. Palpi three-segmented; basal segment with 6-7 bristles and a patch of sensillae.

Thorax. Unicolor brown; mesonotum rather short, sparse and dark setose; scutellum short setose, without longer marginal bristles. Posterior pronotum bare. Wings pale, R1 short, = $1/2$ R; R5 without ventral macrotrichia; C = $3/4$ w; y shorter x and without macrotrichia; M1 strong curved in the basal part, M-fork vase-like; CuA2 strong curved; posterior veins without macrotrichia. Halteres short, brown. Coxae and legs yellowish; fore tibiae at the inner apex with a semicircular bordered, irregular patch of pale bristles; spurs of mid and hind tibiae somewhat subequal, thin and rather short; claws untoothed.

Abdomen: Brown. Hypopygium brown; the inner border of gonocoxites sparse and short setose; gonostyles prolonged, weakly curved and somewhat flattened at the inner side; at the tip only with short bristles, before the mid with 2 long spines; tegmen as high as broad, rounded, with a large area of teeth; aedeagus rather short. Body length: 2.5 mm.

♀. Characteristics as in male, only the M1 stronger curved.

Locus typicus: Honduras, Francisco Morazan, Cerro Ulyuca, San Antonio de Oriente, 14.03°N, 87.07°W.

Holotype: 1 ♂, 6.2.1995, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Paratypes: 1 ♂, same data; 3 ♂♂, 15.5.1995, Honduras, Olancho, Parque Nat. la Muralla, 15 km Northwest of La Union, 15.12°N, 86.75°W, 1450 m; 2 ♂♂, 2.3.19905, Honduras, Cortes, Parque National Cusunco, 15.48°N, 88.22°W, Malaise trap, leg. R. CORDERO; 1 ♀, 1.-6.7.1993, Costa Rica, Heredia, La Salva, Malaise trap, leg. B. BROWN (all coll. MOHRIG).

Remarks: The species is characterized by the vase-shaped M-fork, lack of macrotrichia on posterior wing veins, a semicircular bordered patch of bristles on the tip of fore tibiae, untoothed claws and prolonged gonostyles without apical teeth or spines, but with two longer spines on the inner side before the mid.

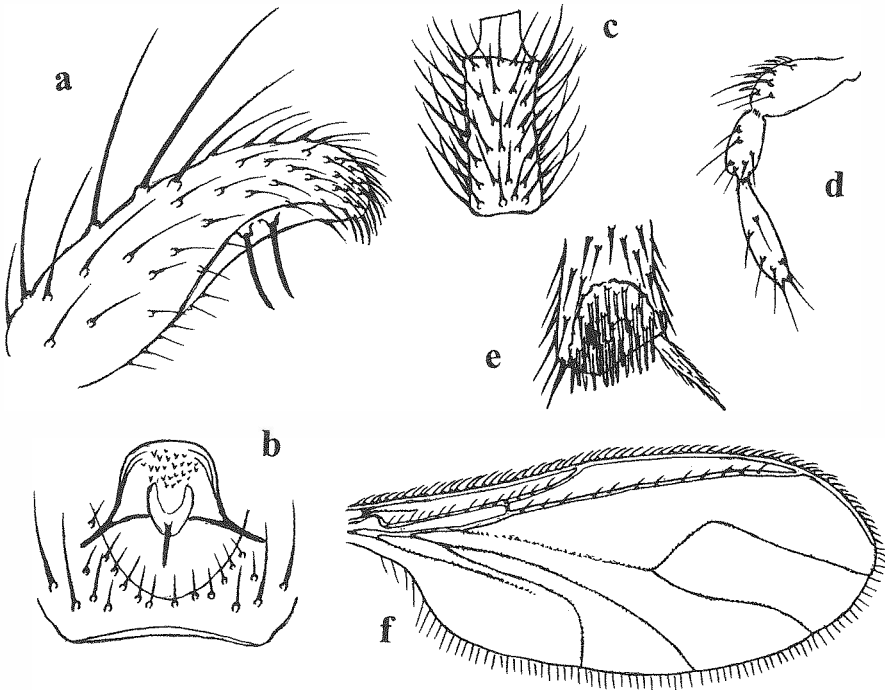


Fig. 31: *Acuatella vestituda* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x); e) tip of fore tibiae (200 x); f) wing (30 x).

Genus *Bradysia* WINNERTZ, 1867

(Monogr. Sciarinen: 180)

Literature: TUOMIKOSKI 1960: 110-149; MENZEL & MOHRIG 2000: 98-185.

Bradysia diversiabdominalis (LENGERSDORF, 1941)

Literatur: LENGERSDORF 1941: 65-68, fig. 1-3 [as *Neosciara*]; MOHRIG & MAMAEV 1983: 12-13, fig. 1 a-f [as *B. latystylia*]; MENZEL & MOHRIG 2000: 159.

Material: 1 ♂, 6.9.-27.9.1986; 3 ♂♂, 27.9.-18.19.1986; 11 ♂♂, 18.10.-8.11.1986, Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W, tropical forest, Malaise trap, all leg. GOULD & JANZEN; 1 ♂, Costa Rica, San Jose Province, San Jose, Lurgui de Moravia, august 1995, leg. P. HANSON; 7 ♂♂, 15.5.1995, Honduras, Orlancho, Park Nat. La Muralla, 15.12°N, 86.75°W, 1450 m; 2 ♂♂, 30.5.1995, Honduras, Cortes, Parque National Cusunco, 15.48°N, 88.22°W, 2 ♂♂, 21.4.1995, Honduras, Francisco Morazan, Park Nat. La Tigra, 14.22°N, 87.12°W, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Remarks: The species is well characterized by the long gonostyles, spoon-like excavated on the inner side. It is wide distributed within the Holarctic region.

Bradysia forattinii (LANE, 1959)

Literature: LANE 1959: 82, fig. 10 [as *Neosciara*]; AMORIM 1992: 58 [as *Bradysia*].

Material: 2 ♂♂, 1.-6.7.1993; 2 ♂♂, 26.6.-1.7.1993; 1 ♀, Costa Rica, Heredia, La Salva, Malaise trap, all leg. B. BROWN; 1 ♂, 6.2.1995, Honduras, Francisco Morazan, Cerro Uyuca, San Antonio de Oriente, 14.03°N, 87.07°W, 1800 m; 4 ♂♂, 15.15.1995, Honduras, Orlancho, Park Nat. La Muralla, 15.12°N, 86.75°W, 1450 m, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Remarks: The species is in the shape of gonostles similar to species of *Zygomma*. It is distributed from Brasil to Central America.

Bradysia tumulta spec. nov.

(Fig. 32 a-e)

♂. **Head:** Brown. Eye bridge 3 facets wide. Antennae unicolor brown; flagellomere 4 about 2 times longer than wide, setae dense and somewhat shorter than the diameter of the basal part. Palpi three-segmented, basal segment with a flat patch of sensillae and with 7-8 bristles.

Thorax: Brown. Mesonotum with three dark strips and rather long setose, some lateral setae stronger; scutellum with 2 longer marginal bristles. Posterior pronotum bare; anteppronotum and prethoracal episternite rather dense setose; postthoracal episternite,

katapisternum, antethoracal anepisternite and mediotergite with short setae. Wings pale; $R1 = 2/3 R$; $R5$ without ventral macrotrichia; $C = 2/3 w$; $y = x$, without macrotrichia; posterior veins distinct and without macrotrichia. Halteres short and darkened. Coxae and femora yellowish brown, tarsi darkened; fore tibiae at the inner apex with a broad comb-like row of pale bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws untoothed.

Abdomen: Brown, rather dense setose. Hypopygium brown, with very strong bristles on the dorsal side of gonocoxites, the IX. tergite and on gonostyles; gonocoxites with a long ventral megaseta within long bristles, ventrally at the inner border long setose; gonostyles club-shaped, apically covered with black, short and dense setae, out side with many long and strong bristles; tegmen broad rounded, with rather strong teeth; aedeagus rather short. Body length: 3 mm.

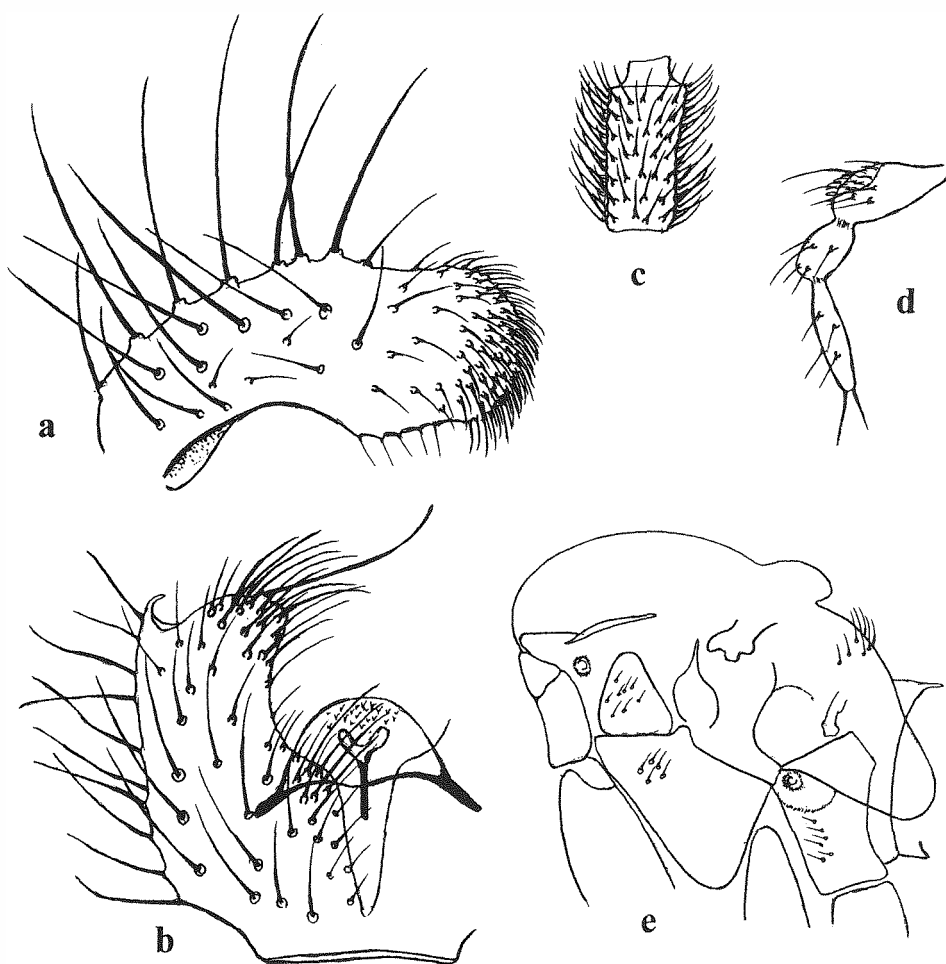


Fig. 32: *Bradysia tumulta* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** thorax (30 x).

Locus typicus: Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W.

Holotype: 1 ♂, 18.10.-8.11.1986, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Paratypes: 2 ♂♂, locus typicus, same data, 3 ♂♂, 27.9.-18.10.1986, locus typicus (coll. MOHRIG).

Remarks: The new species is characterized by the strikingly tousled and strong setae on hypopygium. Unusually are also the setae patches on some thoracal sclerites. It belongs together with *B. diversiabdominalis* to the Holarctic distributed *B. nervosa* group.

Bradysia incidera spec. nov.

(Fig. 33 a-c)

♂. **Head:** Brown. Eye bridge 3 facets wide. Antennae long, flagellomere brown, necks bicolor, scape and pedicel yellow; flagellomere 4 about 3 times longer than wide, setae longer than the diameter of the basal part. Palpi three-segmented, yellow; basal segment with a flat patch of sensillae and 2 bristles.

Thorax: Brown. Mesonotum with strong central and lateral bristles; scutellum with 4 long marginal bristles. Posterior pronotum bare; anteprenotum and prethoracal episternite fine setose. Wings pale; $R1 = 2/3 R$; $R5$ without ventral macrotrichia; $C = 2/3 w$; $y = x$, without macrotrichia; posterior veins weak and without macrotrichia. Halteres short and brownish. Coxae and femora yellowish brown, tarsi darkened; fore tibiae at the inner apex with a comb-like row of pale bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws untoothed.

Abdomen: Brown. Hypopygium brownish; gonocoxites with a long ventral megaseta, ventrally at the inner border short setose; gonostyles prolong, subapically with 6 short spines; tegmen broad rounded, with scale-like teeth; aedeagus rather short; IX. sternite with a deep notch, bilobated. Body length: 3 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Holotype: 1 ♂, 24.-26.6.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratype: 1 ♂, locus typicus, same data (coll. MOHRIG).

Remarks: The new species is characterized by the bilobated IX. sternite, long flagellomeres with long setae and bicolored necks, and simple prolonged gonostyles with 6 subapically inserted short spines. The species is near related to the word wide distributed *B. hilaris* group.

Bradysia dilucida spec. nov.

(Fig. 34 a-c)

♂. **Head:** Brown. Eyes very large, eye bridge 6 facets wide. Antennae long, flagellomeres brown, necks bicolor, scape and pedicel yellowish brown; flagellomere 4 about 3.5 times longer than wide, setae longer than the diameter of the basal part. Palpi three-segmented; basal segment with a flat patch of sensillae and one bristle.

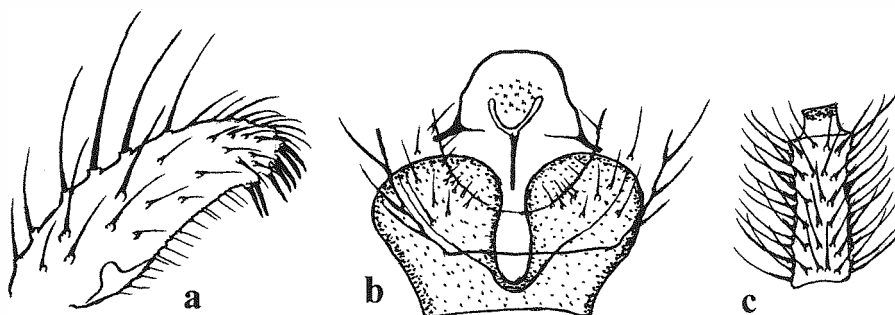


Fig. 33: *Bradysia incidera* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium with sternite IX (200 x); **c)** 4. flagellomere (200 x).

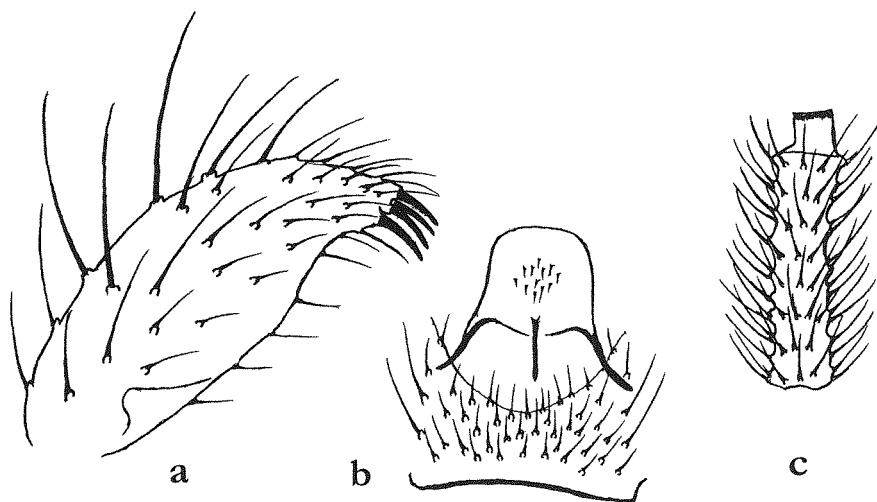


Fig. 34: *Bradysia dilucida* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x).

Thorax: Yellow. Mesonotum short and pale setose, some lateral bristles longer; scutellum with 4 long marginal bristles. Posterior pronotum bare; antepronotum and prethoracal episternite fine setose. Wings large, pale; $R1 = 3/4 R$; $R5$ without ventral macrotrichia; $C = 2/3 w$; $y = x$, without macrotrichia; M-fork as long as M-stem; posterior veins weak and without macrotrichia. Halteres yellow, with long stem. Coxae and femora yellow, tibiae and tarsi darkened; fore tibiae at the inner apex with a comb-like row of dark bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws untoothed.

Abdomen: Yellow. Hypopygium yellowish; gonocoxites with a long ventral megaseta, ventrally at the inner border sparse and long setose; gonostyles bulbously, darkened to

the tip and with 4 short apical spines; tegmen as high as broad, with fine teeth; aedeagus rather short. Body length: 2.5 mm.

♀. Coloring and characteristics as in male; 4. flagellomere 3 times longer than wide, with shorter setae.

Locus typicus: Honduras, Cortes, Parque National Cusunco, 15.48°N, 88.22°W.

Holotype: 1 ♂, 30.5.1995, Malaise trap, 1800 m, leg. R. CORDERO (coll. MOHRIG).

Paratypes: 6 ♂♂, 1 ♀, locus typicus, same data; 2 ♂♂, Honduras, Francisco Morazan, Cerro Uyuca, San Antonio de Oriente, 14.03°N, 87.07°W, all leg. R. CORDERO (coll. MOHRIG).

Remarks: The new species is characterized by the yellow color of the whole body, the long flagellomeres with bicolor necks and 4 short apical spines. The species belongs to the world wide distributed *B. hilaris* group.

Bradysia lobatula spec. nov.

(Fig. 35 a-d)

♂. **Head:** Yellowish brown. Eye bridge 3 facets wide. Antennae long, flagellomere brown, necks bicolor, scape and pedicel yellow; flagellomere 4 about 2.5 times longer than wide, setae longer than the diameter of the basal part. Palpi three-segmented, yellow; basal segment with a flat patch of sensillae and 3 bristles.

Thorax: Yellowish-brown. Mesonotum with strong central and lateral bristles; scutellum with 4 long marginal bristles. Posterior pronotum bare. Wings pale; $R_1 = 2/3 R$; R_5 in distal half with ventral macrotrichia; $C = 2/3 w$; $y = x$ and with macrotrichia; posterior veins weak and without macrotrichia. Halteres short and yellowish. Coxae and femora yellowish, tarsi darkened; fore tibiae at the inner apex with a comb-like row of pale bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws untoothed.

Abdomen: Brownish, dense setose. Hypopygium yellowish-brown; ventral base with a membranous bipointed lobe, gonocoxites with 2 long ventral megasetae, in the basal part at the inner border with a patch of 4-5 setae, the distal border sparse setose; gonostyles prolong, apically muzzle-like, with two rows of short spines; tegmen somewhat conical, with fine teeth; aedeagus rather short and thin; IX. sternite somewhat bilobated. Body length: 2 mm.

Locus typicus: Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W.

Holotype: 1 ♂, 27.9.-18.10.1986, tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Paratypes: 9 ♂♂, locus typicus, same data; 4 ♂♂, 6.9.-27.9.1986; 3 ♂♂, 18.10.-8.11.1986, all leg. GOULD & JANZEN (coll. MOHRIG).

Remarks: The new species is characterized by a small membranous basal lobe, bilobated IX. sternite, flagellomeres with long setae and bicolor necks and prolong gonostyles with a muzzle-like tip and 2 rows of short spines. It is similar to *Bradysia pararufescens* MOHRIG & RÖSCHMANN, 2002 and *Bradysia mellea* MOHRIG & RÖSCHMANN, 2002 from the Dominican Republic. Species of the *pararufescens* group are known only from South and Central America and the Caribbean.

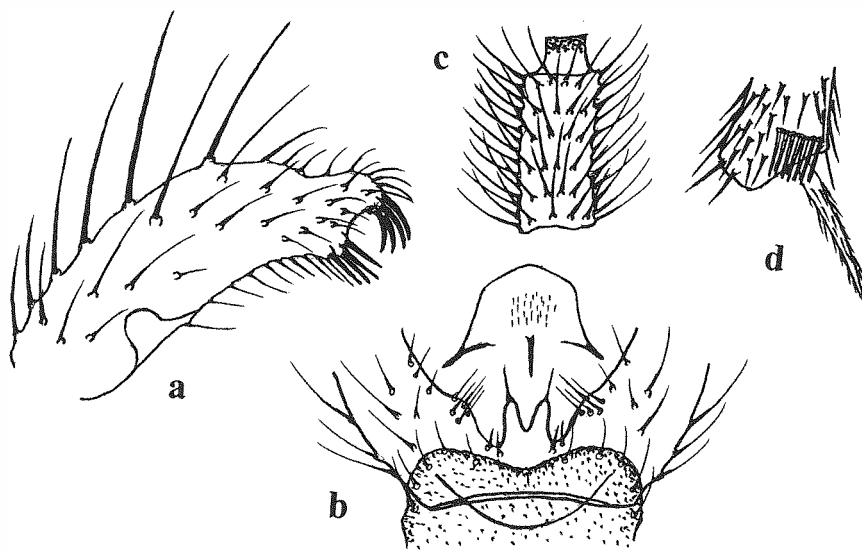


Fig. 35: *Bradysia lobatula* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium with sternite IX (200 x); **c)** 4. flagellomere (200 x); **d)** tip of fore tibiae (200 x).

***Bradysia validolobata* spec. nov.**

(Fig. 36 a-d)

♂. **Head:** Bownish. Eye bridge 2-3 facets wide. Antennae long, flagellomeres brown, necks bicolor, scape and pedicel brown; flagellomere 4 about 2.5 times longer than wide, setae longer than the diameter of the basal part. Palpi three-segmented, yellow; basal segment with a flat patch of sensillae and 2 bristles.

Thorax: Brown. Mesonotum with longer central and lateral bristles; scutellum with 2 long marginal bristles. Posterior pronotum bare. Wings pale; $R1 = 2/3 R$; $R5$ without ventral macrotrichia; $C = 2/3 w$; $y = x$, without macrotrichia; posterior veins weak and without macrotrichia. Halteres short and brownish. Coxae and femora brownish, tarsi darkened; fore tibiae at the inner apex with a comb-like row of bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws untoothed.

Abdomen: Brownish. Hypopygium brown; ventral base with a very large and broad lobe, sparse setose on surface; gonocoxites with a long ventral megaseta, the inner border sparse setose; gonostyles prolong, apically with a thinn and curved spine and a longer tooth-like spine, subapically with a group of 5-6 shorter spines; tegmen conical, with a central patch of fine teeth; aedeagus rather long. Body length: 2 mm.

Locus typicus: Honduras, Cortes, Parque National Cusunco, 15.48°N, 88.22°W.

Holotype: 1 ♂, 2.3.1995, Malaise trap, 1800 m, leg. R. CORDERO (coll. MOHRIG).

Remarks: The new species is characterized by a very large basal lobe, flagellomeres with long setae and bicolor necks, gonostyles with one stronger spine at the tip and a subapically group of 5-6 short spines. The intrageneric position is unclear.

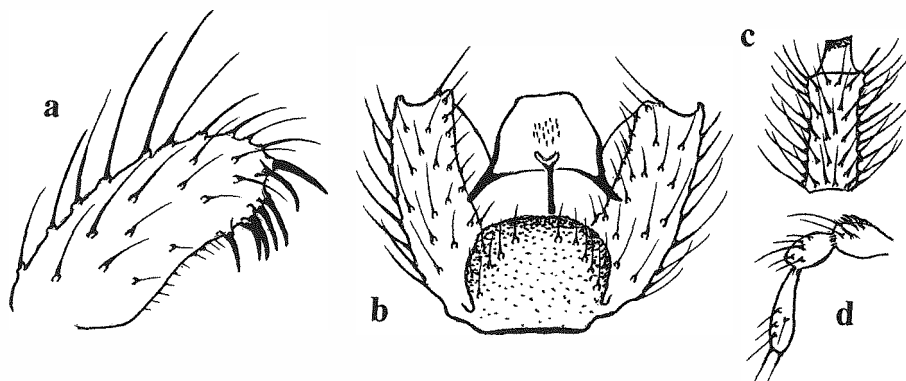


Fig. 36: *Bradysia validolobata* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x).

***Bradysia floribunda* spec. nov.**

(Fig. 37 a-e)

♂. **Head:** Bown, rounded and with short mouth parts. Eye bridge 2-3 facets wide. Flagellomeres brown, with a weakly rough surface, short and brownish necks; flagellomere 4 about 2 times longer than wide, dense and shorter setose than the diameter of the basal part. Palpi three-segmented, basal segment with a dark sensory pit and 2 bristles.

Thorax: Brown. Mesonotum with short central and longer lateral bristles; scutellum with 2 long marginal bristles. Posterior pronotum bare. Wings pale; $R1 = 2/3 R$; $R5$ without ventral macrotrichia; C somewhat longer $1/2 w$; $y = x$, with macrotrichia; posterior veins strong and without macrotrichia. M1 and Cu1A in the basal half reduced; Cu1-stem and the base of Cu1B depigmented; the membrane behind C and R1 and x/y as well as along the basal half of Cu1B shiny through the absence of microtrichia. Halteres short and brown. Coxae and femora yellowish, tarsi darkened; fore tibiae at the inner apex with a comb-like row of pale bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws untoothed.

Abdomen: Brown. Hypopygium brown; ventral base without lobe; gonocoxites with a shorter ventral megaseta, the inner border sparse setose; gonostyles short and strong, with 5-6 strong apical spines; tegmen broad rounded, with a large central patch of teeth; aedeagus long. Body length: 3.5 mm.

Locus typicus: Costa Rica, Puntarenas Province, Monteverde, Cerro Plano, 1400 m.

Holotype: 1 ♂, 4.-8.5.1999, house garden, pollinating the orchid *Lepanthes glicensteinii*, leg. G. BARBOZA (coll. MOHRIG).

Remarks: The new species is characterized by the wing venation with reduced parts of M1 and Cu1A and shiny membrane spaces, and strong gonostyles with 5-6 spine at the tip. The species belongs to the *B. praecox* group.

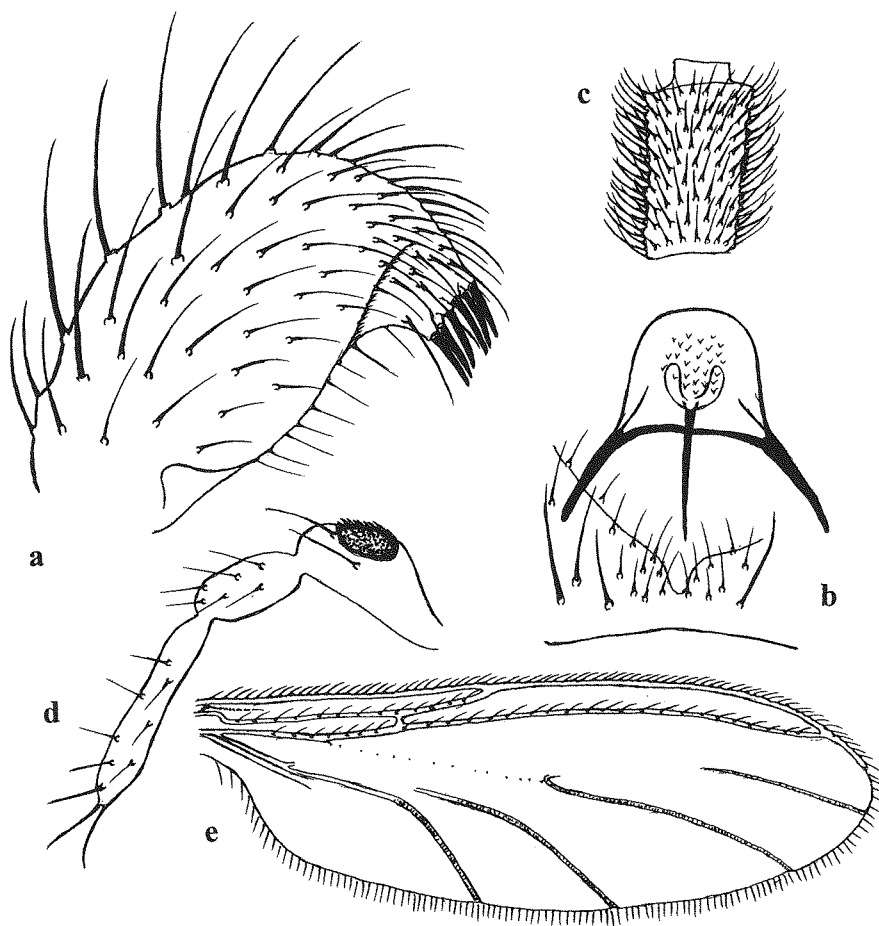


Fig. 37: *Bradysia floribunda* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** wing.

Genus *Leucosciara* gen. nov.

Type species: *Leucosciara imperfecta* spec. nov.

Diagnosis: Eye bridge closed, 3 facets wide, ocelli well developed. Antennae with short necks and somewhat bicolored flagellomeres; palpi three-segmented; basal segment with a flat patch of sensillae and few bristles; thorax yellowish brown; mesonotum with some longer central and lateral bristles; scutellum with 4 long marginal bristles; posterior pronotum bare; anteprenotum and prethoracal episternite rather fine setose. Wings brownish; R5 with ventral macrotrichia; $C = 2/3 w$; M-fork narrow and shorter than the M-stem; posterior veins without macrotrichia; halteres short; coxae and legs yellowish, tarsi darkened; fore tibiae at the inner apex with an irregular row of pale bristles, strong semicircular bordered; mid and hind tibiae with two equal spurs, much longer than the diameter of the apex. Claws untoothed; gonocoxites with one long ventral megaseta,

gonostyles prolong, without tooth, the tip covered with short curved spines; tegmen as high as broad, rounded, with a central area of rather fine teeth; aedeagus rather short and thin.

Remarks: The intergeneric position of the new genus is not clear. The contrast rich body color, the shape and the bicolor necks of flagellomeres, the palpi, long tibial spurs, untoothed claws, the simple tegmen and the strong bordered patch of bristles at the tip of fore tibiae induced a relationship to *Pseudosciara*. This assumption underlined *Pseudosciara fragistyla* MOHRIG & RÖSCHMANN, 2002 from the Dominican republic, which is very similar in the shape of gonostyles through the lack of an isolated spine at the inner side of gonostyles.

***Leucosciara imperfecta* spec. nov.**

(Fig. 38 a-e)

♂. **Head:** Brown. Eye bridge 4 facets wide. Antennae long, flagellomeres brown, necks somewhat bicolored; flagellomere 4 about 2.8 times longer than wide, setae as long as the diameter of the basal part. Palpi three-segmented; basal segment with a flat patch of sensillae and 4-5 bristles.

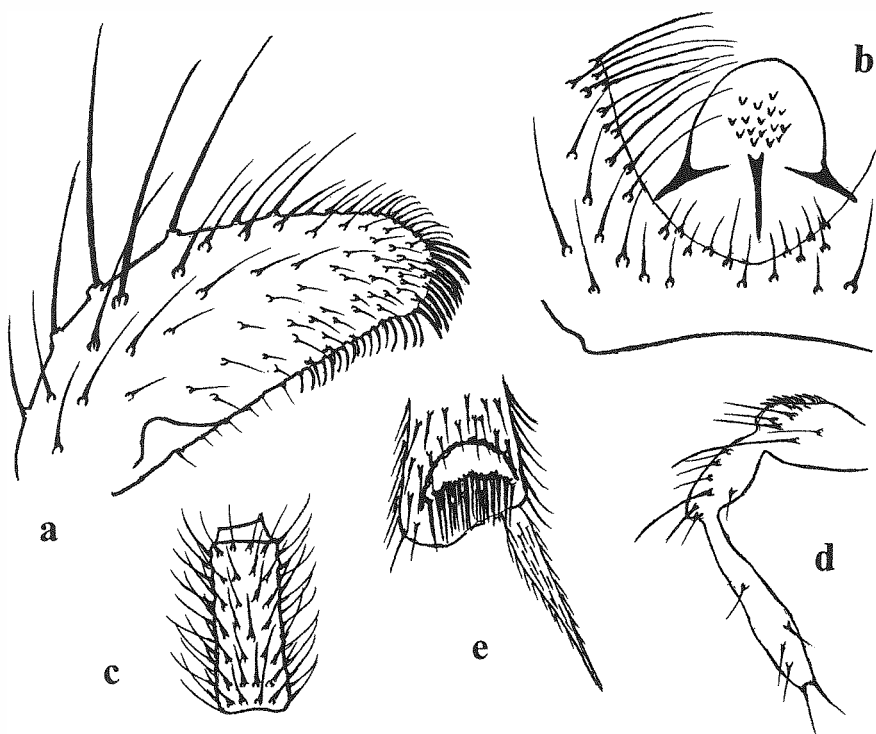


Fig. 38: *Leucosciara imperfecta* spec. nov., ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x); e) tip of fore tibiae (200 x).

Thorax: Yellow. Mesonotum, scutellum and metanotum central darkened; mesonotum rather long setose short and pale setose, some lateral bristles longer; scutellum with 4 long marginal bristles. Posterior pronotum bare; anteprenotum and prethoracal episternite dark and rather long setose. Wings brownish; $R1 = 2/3 R$; $R5$ in whole length with ventral macrotrichia; $C = 2/3 w$; y longer x and with macrotrichia; M-fork narrow and shorter than the M-stem; posterior veins without macrotrichia. Halteres brown and short. Coxae and femora yellow, tibiae and tarsi darkened; fore tibiae at the inner apex with an irregular row of pale bristles, strong semicircular bordered; mid and hind tibiae with two equal spurs, much longer than the diameter of the apex. Claws untoothed.

Abdomen: Tergite brown, sternite yellowish. Hypopygium brown; gonocoxites with a long ventral megaseta, ventrally at the inner border very long setose; gonostyles oblong, basely broader on the out side and with long bristles; the tip dense covered with more than 10 short and curved spines; tegmen as high as broad, rounded, with a central area of rather coarse teeth; aedeagus rather long and thin. Body length: 3 mm.

Locus typicus: Honduras, Cortes, Parque National Cusunco, 15.48°N, 88.22°W.

Holotype: 1 ♂, 2.3.1995, Malaise trap, leg. R. Condero (coll. MOHRIG).

Paratype: 1 ♂, locus typicus, same data, leg. R. Condero (coll. MOHRIG).

Remarks: The new species is similar to the below described *Leucosciara inana*. It differs in more stronger and broader gonostyles with more short spines at the tip, and longer y covered with macrotrichia.

Leucosciara inana spec. nov.

(Fig. 39 a-c)

♂. **Head:** Brown. Eye bridge 3 facets wide. Antennae rather long, flagellomere brown, necks short and somewhat bicolor; flagellomere 4 about 2.5 times longer than wide, setae as long as the diameter of the basal part. Palpi three-segmented; basal segment with a flat patch of sensillae and 4-5 bristles.

Thorax: Yellowish brown, mesonotum not darker. Mesonotum with some longer central and lateral bristles; scutellum with 4 long marginal bristles. Posterior pronotum bare; anteprenotum and prethoracal episternite rather fine setose. Wings brownish; $R1 = 2/3 R$;

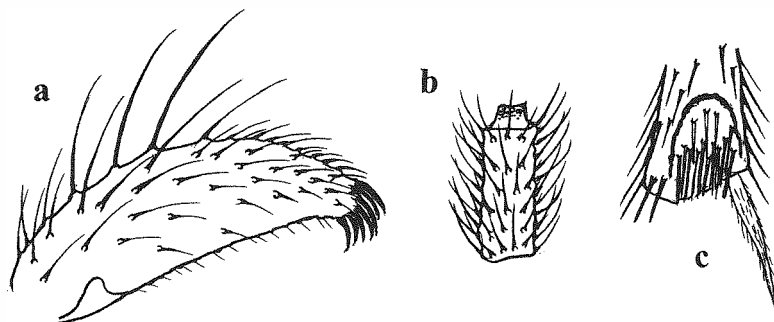


Fig. 39: *Leucosciara inana* spec. nov., ♂ a) Stylus (400 x); b) 4. flagellomere (200 x); c) tip of fore tibiae (200 x).

R5 in distal half with ventral macrotrichia; $C = 2/3 w$; y mostly longer x and with or without macrotrichia; M-fork narrow and shorter than the M-stem; posterior veins without macrotrichia. Halteres brownish and short. Coxae and legs yellowish-brown, tarsi darkened; fore tibiae at the inner apex with an irregular patch of pale bristles, strong semicircular bordered; mid and hind tibiae with two equal spurs, much longer than the diameter of the apex. Claws untoothed.

Abdomen: Brownish. Hypopygium brown; gonocoxites with a long ventral megaseta, ventrally in the apical half at the inner border rather long setose; gonostyles prolong and narrow, basely not broadened; the tip covered with about 8 short and curved spines; tegmen as high as broad, rounded, with a central area of rather fine teeth; aedeagus short and thin. Body length: 2.6 mm.

Locus typicus: Honduras, Cortes, Parque National Cusunco, 15.48°N, 88.22°W.

Holotype: 1 ♂, 2.3.1995, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Paratypes: 3 ♂♂, locus typicus, same data; 8 ♂♂, 27.9.-18.10.1986, 1 ♂, 18.10.-8.11.1986, Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W, dry tropical forest, Malaise trap, leg. GOULD & JANZEN; 1 ♂, 6.2.-20.2.1996, Paraguay, Department San Pedro, Santa Rosa Hwy 3, 23.48°N, 56.07°W, Yaguarete forest, Malaise trap, leg. J. BEIER (coll. MOHRIG).

Remarks: The new species differs from the above described *Leucosciara imperfecta* by the yellow color of the whole body, longer flagellomeres and slender gonostyles.

Genus *Scatopsciara* EDWARDS, 1927

(in TONNOIR & EDWARDS 1927:798)

Literature: MENZEL & MOHRIG 2000: 480-508.

Scatopsciara (Scatopsciara) funesta spec. nov.

(Fig. 40 a-f)

♂. **Head:** Brown. Eye bridge 5 facets wide. Antennae brown; flagellomere 4 about 2.2 times longer than wide, with rather dense and fine setae, somewhat shorter than the diameter of the basal part, neck about 1/4 of the length of the basal part. Palpi short, three-segmented, basal segment with 2-3 bristles and a flat deepened patch of sensillae.

Thorax: Dark brown. Mesonotum very short setose, lateral setae not longer; scutellum with short marginal bristles; posterior pronotum bare. Wings pale, narrowed at the base and with rather strong veins; $R1 = 1/2 R$; R5 without ventral macrotrichia; $C = 2/3 w$; $y = 1/2 x$, without macrotrichia; M-fork narrow and much longer than M-stem; Cu-stem rather long; posterior veins without macrotrichia. Halteres with darkened knobs and yellowish stem. Coxae and legs yellowish, tarsi darkened; fore tibiae at the inner apex with a broad comb-like row of paler bristles, spurs broad and toothed; mid tibiae with two somewhat unequal spurs, hind tibiae only with one short spur. Claws large and strong curved.

Abdomen: Brownish, sparse and fine setose. Hypopygium brown; gonocoxites with a rather short ventral megaseta, ventrally at the inner border sparse, but rather long setose;

gonostyles strong curved, the inner side weakly excavated; at the tip with a strong tooth and 10-12 long spines in a palisade-like row on the inner side from the tip up to the base, behind them on the dorsal side dense setose; tegmen large, with a small area of fine teeth, laterally with sharp corners; aedeagus rather long. Body length: 2.5 mm.

Locus typicus: Honduras, Francisco Morazan, Parque Nacional La Tigra, 14.22°N, 87.12°W.

Holotype: 1 ♂, 21.4.1995, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Paratypes: 4 ♂♂, locus typicus, same data; 1 ♂, 2.3.1995, Honduras, Cortes, Parque Nacional Cusunco, 15.48°N, 88.22°W, leg. R. CORDERO (coll. MOHRIG).

Remarks: The new species is characterized by the strong apical tooth and the palisade-like row of spines at the inner side of gonostyles. It belongs to the *Scatopsciara atomaria* group and is similar to species as *Sc. geophila* TUOMIKOSKI, 1960 and *Sc. subgeophila* MOHRIG & MAMAEV, 1990, distributed within northern parts of the Palaearctic region.

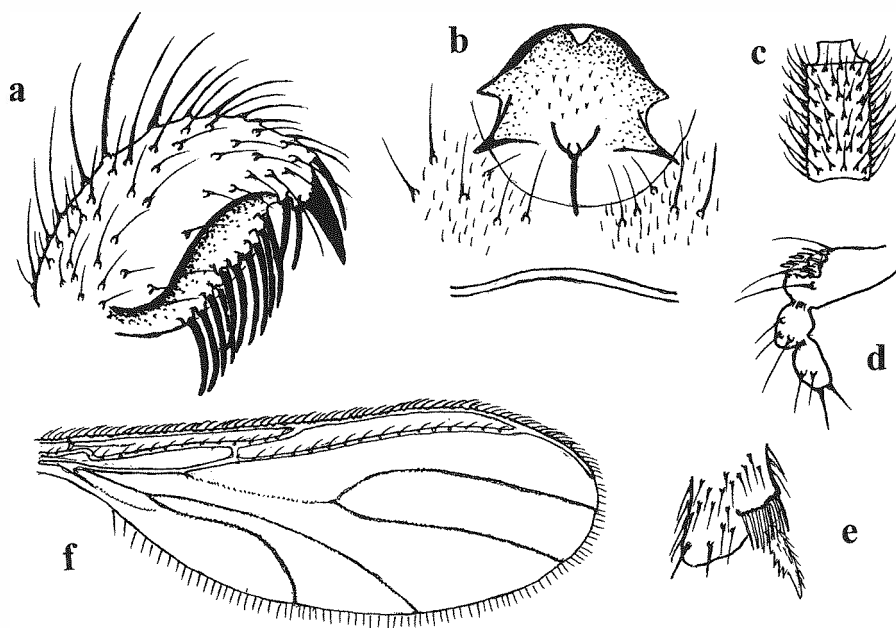


Fig. 40: *Scatopsciara (Scatopsciara) funesta* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** tip of fore tibiae (200 x); **f)** wing (30 x).

Genus *Corynoptera* WINNERTZ, 1867 (sensu TUOMIKOSKI 1960)

(Monogr. Sciarinen: 177, Taf., Fig. 5)

Literature: TUOMIKOSKI 1960: 42-73; MENZEL & MOHRIG 2000: 205-260.

***Corynoptera tetrachaeta* TUOMIKOSKI, 1960**

Literature: TUOMIKOSKI 1960: 57-58, fig. 10 h.

Material: 13 ♂♂, 21.4.1995, Honduras, Francisco Morazan, Parque National La Tigra, 14.22°N, 87.12°W; 2 ♂♂, 15.5.1995, Honduras, Olancho, Parque Nat. La Muralla, 1450 m, 15.12°N, 86.75°W, Malaise trap, leg. R. CORDERO; 1 ♂, 2.3.1995, Honduras, Cortes, Parque Nat. Cusunco, 15.48°N, 88.22°W, Malaise trap, leg. R. Cortes; 1 ♂, 27.9.-18.10.1986, Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (all coll. MOHRIG)

Remarks: The specimens from Honduras and Costa Rica show little slender gonostyles and one or two more subapical spines as the Palearctic specimens. This species is wide spread in Europe and known also from California, USA.

***Corynoptera pertaesa* spec. nov.**

(Fig. 41 a-e)

♂. **Head:** Brown. Eye bridge 3 facets wide. Antennae brown; flagellomere 4 about 2.2 times longer than wide, setae bristle-like and somewhat longer than the diameter of the basal part, neck about 1/3 of the length of the basal part. Palpi three-segmented, basal segment with one bristle and a weakly deepened patch of sensillae, second segment with few bristles, one longer.

Thorax: Brown. Mesonotum rather long setose, some lateral setae stronger; scutellum with 2 longer marginal bristles. Posterior pronotum bare. Wings pale; R1 = 2/3 R; R5 without ventral macrotrichia; C = 2/3 w; y = x and with 1-2 macrotrichia; posterior veins without macrotrichia. Halteres short and darkened. Coxae and legs brownish; fore tibiae at the inner apex not bordered, only with an irregular patch of bristles; mid and hind tibiae with two equal spurs, longer than the diameter of the apex. Claws untoothed.

Abdomen: Brown. Hypopygium brown; gonocoxites with a long ventral megaseta, ventrally at the inner border sparse, but rather long setose; gonostyles at the inner side flat excavated, on the tip with 4 long spines and few long setae, one spine curved and inserted on a broad lobe; tegmen large, with a small area of fine teeth; aedeagus rather long. Body length: 1.4. mm.

Locus typicus: Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W.

Holotype: 1 ♂, 27.9.-18.10.1986, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Paratypes: 1 ♂, locus typicus, same data; 1 ♂, 6.9.-2.9.1986, locus typicus, leg. GOULD & JANZEN (coll. MOHRIG).

Remarks: This new species is characterized by 4 long apical spines, one inserted on a broad lobe. It belongs to the *Corynoptera forcipata* group, distributed within the Holarctic region.

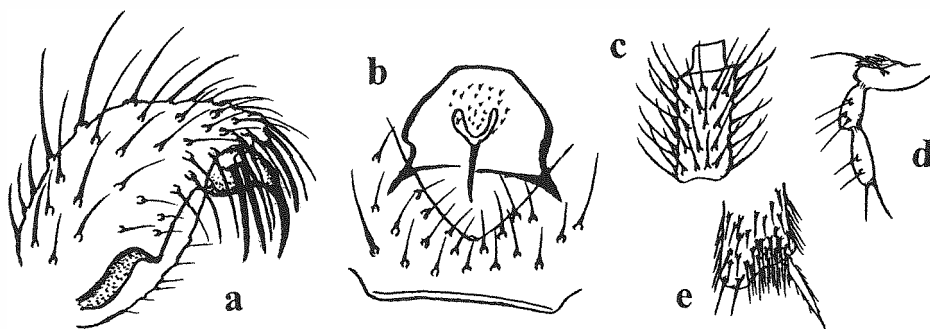


Fig. 41: *Corynoptera pertaesa* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** tip of fore tibiae (200 x).

Genus *Epidapus* HALIDAY, 1851

(in WALKER 1851, Ins. Brit. Dipt. 1: 7)

Literature: MENZEL & MOHRIG 2000: 299-339.

Subgenus *Epidapus* HALIDAY, 1851 s. str.

Literature: MENZEL & MOHRIG 2000: 307-310.

Epidapus (Epidapus) lacertosus spec. nov.

(Fig. 42 a-f)

♂. **Head:** Brown, globular. Eye bridge 3 facets wide. Antennae unicolor brown; flagellomere strong, brownish, with bristle-like setae and rather long necks; scape and pedicel brown; flagellomere 4 about 1.5 times longer than wide, setae as long as the diameter of the basal part, neck 1/2 of the basal part. Palpi short 1-segmented, with 2-3 bristles and some rather long sensillae.

Thorax: Brown. Mesonotum with rather long central setae; scutellum with 2 long marginal bristles. Posterior pronotum bare; anteprenotum with one, prethoracal episternite with two setae; katepisternum flat and directed backwards. Wings pale, densely covered with microtrichia, R1 short, = 1/2 R; R5 without ventral macrotrichia; y shorter x, without macrotrichia; anterior veins rather broad; posterior veins without macrotrichia; M-fork narrow. Halteres short, brownish. Legs long and thin, brownish; fore tibiae at the inner apex without any differentiation of bristles; spurs of mid and hind tibiae equal, long and thin, longer than the diameter of the apex. Claws untoothed.

Abdomen: Brownish. Hypopygium brownish; gonocoxites with a small ventral megaseta, ventral base bare, ventrally at the inner border sparse setose; gonostyles strong narrowed to the tip, with a long and curved apical tooth and 2-3 somewhat shorter bristle-like spines; tegmen somewhat broader than high, straight, with fine teeth; aedeagus short. Body length: 1.5 mm.

Locus typicus: Costa Rica, Heredia, La Salva.

Holotype: 1 ♂, 1.-6.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratypes: 3 ♂♂, locus typicus, same data; 3 ♂♂, 22.-26.6.1993, locus typicus; 1 ♂, 24.-26.6.1993, locus typicus; 2 ♂♂, 26.6.-1.7.1993, locus typicus, all leg. B. BROWN; 1 ♂, 27.9.-18.10.1986, Guanacaste Province, Santa Rosa Nat. Park, 10.95° N, 85.62° W, dry tropical forest, leg. GOULD & JANZEN (coll. MOHRIG).

Remarks: The new species belongs to the genus *Epidapus* through the reduced palpi, the flat katapisternum, the long and thin legs and the typical shape of gonostyles with one apical tooth and few hyaline bristle-like spines at the tip. It belongs to the *Epidapus atomarius* group, wide distributed within the Holarctic region.

Subgenus *Pseudoaptanogyna* VIMMER, 1926

(Sb. vys. sk. zemed. Brne, D 3: 10)

Epidapus (Pseudoaptanogyna) mixtus spec. nov.

(Fig. 43 a-e)

♂. **Head:** Brown. Eye bridge 2 facets wide. Antennae unicolor brownish; flagellomere with rather short necks and bristle-like setae; flagellomere 4 about 1.8 times longer than wide, setae as long as the diameter of the basal part. Palpi rather small and 1-segmented; with 3-4 bristles and a patch of sensillae.

Thorax: Brown. Mesonotum dark setose, with some longer lateral setae; scutellum with 2 longer marginal bristles; posterior pronotum mostly with 1-2 setae. Wings brownish, narrowed at the base; R1 short, = 1/2 R, joining the C long before the M-fork; R5 only at the tip with ventral macrotrichia; y = x and with 1-2 macrotrichia; M-fork broad; posterior veins without macrotrichia. Halteres rather long, brownish. Coxae and legs brown, rather long and thin; fore tibiae at the inner apex only with a small patch of longer bristles; spurs of mid and hind tibiae equal, short and not longer than the diameter of the apex; claws untoothed.

Abdomen: Brown, short and sparse setose. Hypopygium brown; gonocoxites short, with a short ventral megaseta, ventrally at the inner border sparse setose; gonostyles short, the inner side flattened, with an apical pair of dark spines and a single spine at the inner side. Tegmen large, rounded, with an inner semicircular structure; aedeagus very short. Body length: 1.8 mm.

Locus typicus: Honduras, Cortes, Parque National Cusunco, 15.48°N, 88.22°W

Holotype: 1 ♂, 2.3.1995, Malaise trap, leg. R. CORDERO (coll. MOHRIG).

Paratypes: 2 ♂♂, same data; 1 ♂, 15.5.1995, Honduras, Olancho, Parque Nat. la Muralla, 15 km Northwest of La Union, 15.12°N, 86.75°W, 1450 m; 1 ♂, 21.4.1995, Francisco

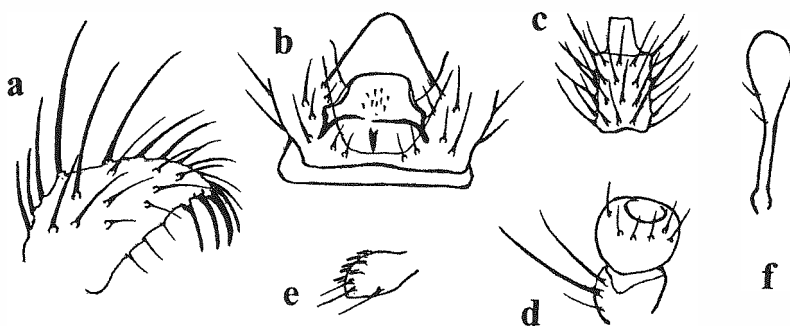


Fig. 42: *Epidapus (Epidapus) lacertosus* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** scape and pedicel (200 x); **e)** palpus (200 x); **f)** halter (80 x).

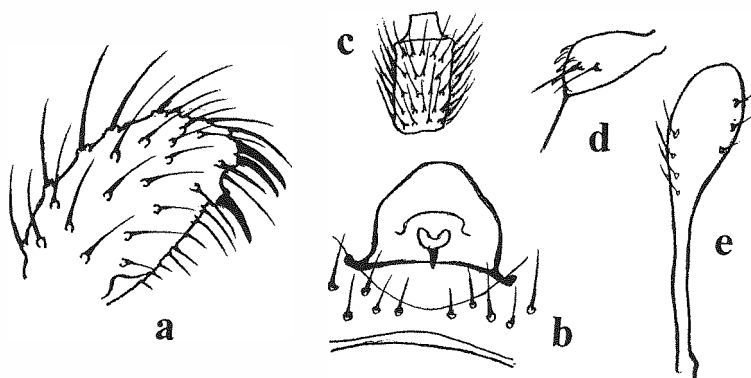


Fig. 43: *Epidapus (Pseudoaptanogyna) mixtus* spec. nov., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** halter (80 x).

Morazan, Parque Nacional La Tigra, 14.22°N, 87.12°W, leg. R. CORDERO (coll. MOHRIG).

Remarks: This new species is characterized by small one-segmented palpi, narrow eye bridge with two rows of ommatidia, rather long halteres, long coxae and legs and 3 strong and dark spines on gonostyles. The species is similar to the palearctic *E. absconditus* (VIMMER, 1926).

Subgenus *Clandestina* subgen. nov.

Type species: *Epidapus libidinosa* spec. nov.

Diagnosis: Head globular, mouth parts very short; eye bridge 2-3 facets wide. Scapus without long seta; flagellomeres two times as long as wide or shorter, bristle-like setose and with rather long necks; palpi one segmented or with a strong reduced second segment, without an apical sensory pit. Mesonotum short setose, scutellum with two somewhat

longer marginal setae; posterior pronotum without setae; katapisternum of normal size or weakly flattened. Wings rather short and broad, anal area weakly narrowed, R5 rather short, $C = 2/3 w$ or longer, posterior wing veins without macrotrichia. Halteres short. Coxae and legs rather long and thin; tarsal segments thin; fore tibiae without a distinct patch of bristles; all tibiae without distinct spine like bristles within the ground hair; claws untoothed.

Hypopygium, especially the gonostyles, dense covered by conspicuously long microtrichia; gonocoxites without a distinct ventral megaseta; gonostyles narrowed to the tip, short and bristle-like setose and without or with a short and more subapically inserted tooth with a fine rough surface; tegmen broader than high, aedeagus rather long.

The new subgenus is similar to *Epidapus* s. str.. It is characterized mainly by the long and dense microtrichia on the hypopygium, especially on gonostyles, short flagellomeres, short halteres, the absence of spine-like bristles on tibiae, broad wings and the tendency to reduce the subapical tooth.

Epidapus (Clandestina) libidinosus spec. nov.

(Fig. 44 a-e)

♂. **Head:** Dark. Eye bridge 3 facets wide; ommatidia large. Antennae unicolor brown; scapus without long setae; flagellomere with rather long necks and bristle-like setae; flagellomere 4 about 1.8 times longer than wide, setae somewhat shorter than the diameter of the basal part. Palpi small and 1-segmented; with 3-4 bristles and long bristle-like apical sensillae.

Thorax: Brownish. Mesonotum short setose, scutellum with 2 longer marginal bristles; posterior pronotum bare. Wings broad and brownish; $R1 = 3/4 R$, joining the C long before the M-fork; R5 without ventral macrotrichia; $y = x$ and with macrotrichia; Culex shorter x; posterior veins without macrotrichia. Halteres short, brownish. Coxae

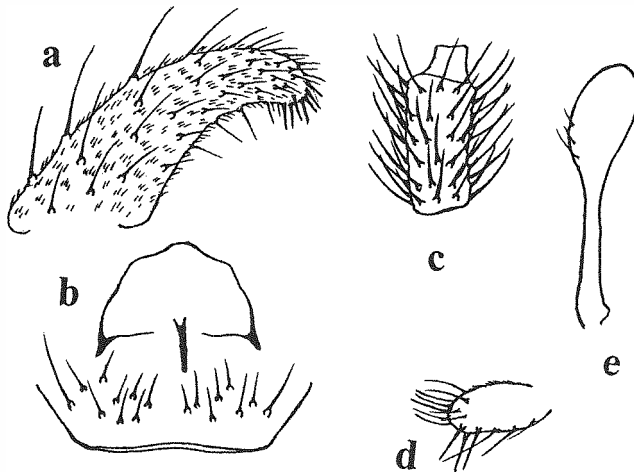


Fig. 44: *Epidapus (Clandestina) libidinosus spec. nov.*, ♂ a) Stylus (400 x); b) base of hypopygium (200 x); c) 4. flagellomere (200 x); d) palpus (200 x); e) halter (80 x).

and legs brown, rather long and thin; tibiae without spine-like bristles within the ground hair; fore tibiae at the inner apex without a distinct patch of bristles; spurs of mid tibiae equal, of the hind tibiae somewhat unequal and very short on all legs; claws untoothed.

Abdomen: Brown, rather short and sparse setose. Hypopygium brown; gonocoxites short, without a distinct ventral megaseta, ventrally at the inner border sparse setose; gonostyles narrowed to the tip and weakly curved, without teeth or spines and only short setose at the tip; gonocoxites and gonostyles dense covered with microtrichia. Tegmen large; aedeagus rather long and thin. Body length: 2.2 mm.

Locus typicus: Costa Rica, Heredia, La Selva

Holotype: 1 ♂, 26.6.-1.7.1993, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Paratypes: 2 ♂♂, locus typicus, same data; 2 ♂♂, 4.5. and 17.7.1977, Brasil, Manaos, Reserva florestal, leg. Adis (coll. MOHRIG, 1 ♂ in col. HELLER, Germany).

Remarks: The species is characterized by small one-segmented palpi, short halteres, long coxae and legs, gonostyles only short and spine-like setose at the tip and densely covered with microtrichia.

Epidapus (Clandestina) conciliatus spec. nov.

(Fig. 45 a-e)

♂. **Head:** Dark brown. Eye bridge 3 facets wide; ommatidia large; overhead with few short setae. Antennae unicolor brown; scapus without long setae; flagellomere with rather long necks and bristle-like setae; flagellomere 4 about 1.8 times longer than wide, setae as long as the diameter of the basal part. Palpi small, roundly and 1-segmented; with 4-5 bristles and short apical sensillae.

Thorax: Brown. Mesonotum short and sparse setose, scutellum with 2 short marginal bristles; posterior pronotum bare. Wings rather broad, base only weakly narrowed; $R_1 = 2/3 R$, R_5 without ventral macrotrichia; y shorter x and with 1-2 macrotrichia; Cu-stem longer x; posterior veins without macrotrichia. Halteres short, brownish. Coxae and legs brown,

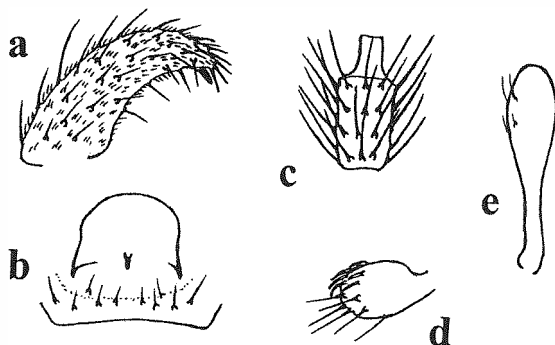


Fig. 45: *Epidapus (Clandestina) conciliatus spec. nov.*, ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x); **e)** halter (80 x).

rather long and thin; tibiae without spine-like bristles within the ground hair, fore tibiae at the inner apex only with few longer bristles; spurs of tibiae equal and very short on all legs; claws untoothed.

Abdomen: Brown, short and sparse setose. Hypopygium brownish; gonocoxites without a distinct ventral megaseta, ventrally at the inner border short and sparse setose; gonostyles narrowed to the tip and weakly curved, with a short tooth below the short setose tip; gonocoxites and gonostyles dense covered with large microtrichia. Tegmen broad and large; aedeagus short. Body length: 1.2 mm.

Locus typicus: Costa Rica, Guanacaste Province, Santa Rosa National Park, 10.95°N, 85.62°W,

Holotype: 1 ♂, 27.9.-18.10.1986, dry tropical forest, Malaise trap, leg. GOULD & JANZEN (coll. MOHRIG).

Remarks: This small species is characterized by one-segmented palpi, short halteres, long coxae and legs, narrow gonostyles, densely covered with microtrichia, and with a short hyaline tooth below the short setose tip.

***Epidapus (Clandestina) perniciosus* EDWARDS, 1922 comb. nov.**

(Fig. 46 a-d)

(Entomologist's mon. Mag., 58: 160-161)

= *Epidapus semifactus* MOHRIG & RÖSCHMANN, 1999 syn. nov. - J. Ent. Res. Soc. 1(3): 31-32, fig. 7 a-e.

Locus typicus: Greece, Peleponnes.

Literature: STEFFAN 1973: 1265-1266; STEFFAN 1974: 48; MENZEL & MOHRIG 2000: 288-289.

Material: 3 ♂♂, 22.-26.6., 1 ♂, 24.-26.6., 1 ♂, 1.-6.7.1993, Costa Rica, Heredia, La Selva, Malaise trap, leg. B. BROWN (coll. MOHRIG).

Remarks: The species was described from greenhouses in England, where the larvae were destructive on cucumbers, feeding in the roots and stems. STEFFAN (1973) discovered in laboratory colonies from Hawaii an unusual degree of behavioral and morphologic polymorphism. He identified macropterous and micropterous males and females with different behavior. The micropterous morphotypes of each sex are maggot-like with reduced head structures, thoracic sclerites, wings and halteres. The late fourth instar larvae construct communal pupal chambers, each containing at least one female and one male. Adults mated and females oviposited and died within the chamber. When the microhabitat is not longer favorable, then macropterous morphotypes are produced for invading other favorable habitats. Macropterous individuals are capable to enter suitable outdoor habitats also.

E. perniciosus is apparently a cosmopolitan species, distributed with greenhouse plants to other zoogeographic regions. It is known from Europe (England, Czech, Greece, Canary Islands), Hawaii, Galapagos Islands and Costa Rica.

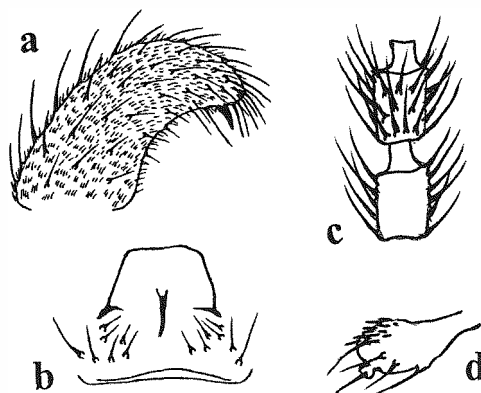


Fig. 46: *Epidapus (Clandestina) perniciosus* EDWARDS., ♂ **a)** Stylus (400 x); **b)** base of hypopygium (200 x); **c)** 4. flagellomere (200 x); **d)** palpus (200 x).

Discussion

The material of this first section on Sciaridae of Central America was gathered from various locations in Costa Rica and Honduras. This study identified no significant differences in the sciarid fauna between the two countries. 51 species from 21 genera were detected. 38 species, four genera and three subgenera were described as new for science. Summarizing the results of the taxonomic studies we can conclude that most of the faunistic elements are of South American origin and quite different from the Holarctic sciarid fauna. This is essential for the genera *Acuatella*, *Leucosciara*, *Odontosciara*, *Pseudosciara*, *Pterothrix*, *Rhynchosciara*, *Trichosciara* and *Zygomma*. Only the genera *Odontosciara* and *Pseudosciara* at all present north of Mexico and southern parts of the USA, though not extensively. Also the species of *Leptosciarella*, subgenus *Protosciarella*, and of the *Bradysia pararufescens* group are typical for the Central and perhaps the South American sciarid fauna. Similar to old world species are the Central American representatives of the globally distributed genera *Sciara*, *Chaetosciara*, part of *Epidapus* species, *Phytosciara*, *Pseudolycoriella*, *Schwenckfeldina* and in most cases also *Bradysia*. The species of the globally distributed subgenus *Cratyna* s. str. differ from the feature of Holarctic representatives and display more similarities with species from tropical areas of the Australian or Oriental region, especially through the flagellomeres with very long necks and long cecidomyiid-like setae, arranged in two more or less circular whorls (HIPPA et al. 1998; MOHRIG 1999).

On the other hand, Holarctic and/or Nearctic genera are only sparsely distributed in Central America with such species as *Bradysia diversiabdominalis* (LENGERSDORF) and *Corynoptera tetrachaeta* TUOMIKOSKI, both known from Europe and North America. Genera as *Leptosciarella* (subgenus *Leptosciarella* s. str.), *Corynoptera* and *Scatopsiara* are typical faunistic elements of the sciarid fauna of the northern hemisphere. The few species of these genera which have been detected in Central America, excepting the above mentioned species, are of autochthon origin, but with a clear Holarctic feature. This means that ancestors of these genera entered Central America during glacial periods which accelerated faunistic exchange (as well as the extinction of species) through the displacement of climate zones. The lowlands of Central America are believed to have had at least a

subtropical climate during the glacial periods, whereas the mountains had a more temperate climate. *Eugnoriste* also belongs to the above mentioned genera, with the exception that it is a genus of Nearctic origin, which is widely distributed within the USA.

In modern times the broad desert line in the north of Mexico and southern parts of California, Arizona, New Mexico and Texas prevents extensive faunistic exchange, so that only few species migrate in either direction, as demonstrated by the low rate of identical species in Central and North America. Typical faunistic elements for Central America include the genera *Bradysia*, *Cratyna*, *Pseudolycoriella*, *Pseudosciara* and the subgenus *Protosciarella*, as well as *Odontosciara*, *Rhynchosciara* and *Zygomma*, though these are not as common. The other detected genera, especially those newly described, will require more research to determine their distribution and frequency in Central and South America.

Check list

- Acuatella vestituda* spec. nov.
Bradysia dilucida spec. nov.
Bradysia diversiabdominalis (LENGERSDORF, 1941)
Bradysia floribunda spec. nov.
Bradysia forattinii LANE, 1959
Bradysia incidera spec. nov.
Bradysia lobatula spec. nov.
Bradysia tumulta spec. nov.
Bradysia validolobata spec. nov.
Chaetosciara solutospina spec. nov.
Corynoptera pertaesa spec. nov.
Corynoptera tetrachaeta TUOMIKOSKI 1960
Cratyna (*Cratyna*) *ciliocera* spec. nov.
Cratyna (*Cratyna*) *ciliovenosa* spec. nov.
Cratyna (*Cratyna*) *micra* spec. nov.
Cratyna (*Spathobdella*) *exteria* spec. nov.
Epidapus (*Clandestina*) *conciliatus* spec. nov.
Epidapus (*Clandestina*) *libidinosus* spec. nov.
Epidapus (*Clandestina*) *perniciosus* EDWARDS, 1922
Epidapus (*Epidapus*) *lacertosus* spec. nov.
Epidapus (*Pseudoaptanogyna*) *mixtus* spec. nov.
Eugnoriste villosiabdominalis spec. nov.
Hyperlasion capitulatum spec. nov.
Hyperlasion wasmanni SCHMITZ, 1919
Leptosciarella (*Leptosciarella*) *prospera* spec. nov.

- Leptosciarella* (*Protosciarella*) *bipalpata* spec. nov.
Leptosciarella (*Protosciarella*) *macroabdominalis* spec. nov.
Leptosciarella (*Protosciarella*) *virgatoalata* spec. nov.
Leucosciara *imperfecta* spec. nov.
Leucosciara *inana* spec. nov.
Odontosciara (*Obscura*) *grandis* spec. nov.
Odontosciara (*Odontosciara*) *nocta* spec. nov.
Phytosciara (*Dolichosciara*) *exlobata* spec. nov.
Pseudolycoriella *coecoalata* spec. nov.
Pseudolycoriella *curviseta* spec. nov.
Pseudolycoriella *ferocia* spec. nov.
Pseudosciara *melanocephala* RÜBSAAMEN, 1894
Pseudosciara *pedunculata* (ENDERLEIN, 1911)
Pterothrix *capillosa* spec. nov.
Pterothrix *piliata* spec. nov.
Rhynchosciara *mathildae* BREUER, 1969
Scatopsiara (*Scatopsiara*) *funesta* spec. nov.
Schwenckfeldina *filamentosa* spec. nov.
Schwenckfeldina *forcipigera* ENDERLEIN, 1911
Sciara *penicillata* (LENGERSDORF, 1944)
Trichosciara *spinimana* LENGERSDORF, 1944
Zygomma *acuta* spec. nov.
Zygomma *alboantennata* (LANE, 1946)
Zygomma *fasciatellum* ENDERLEIN, 1911
Zygomma *modica* spec. nov.
Zygomma *suspiciosa* spec. nov.

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