

Revision and cladistics of the Neotropical genus *Pseudoptilolepis* Snyder (Diptera, Muscidae) ¹

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ABSTRACT. *Pseudoptilolepis* Snyder, 1949, a monophyletic Neotropical muscid genus of six species, is reviewed to include four new species, *P. centralis* **sp. nov.**, *P. chrysellae* **sp. nov.**, *P. crocina* **sp. nov.** and *P. elbida* **sp. nov.** A taxonomic key is provided for the genus. The phylogenetic relationship among the studied species is: (*P. centralis* ((*P. chrysellae* (*P. fluminensis*, *P. fulvapoda*)) (*P. nudapleura* (*P. elbida* (*P. nigripoda*, *P. crocina*)))))). The geographic distribution of the species is also presented and briefly discussed.

KEY WORDS. Phylogeny, taxonomy.

RESUMO. Revisão e cladística do gênero neotropical *Pseudoptilolepis* Snyder (Diptera, Muscidae). O gênero Neotropical monofilético *Pseudoptilolepis* Snyder, 1949 é revisado para a inclusão de quatro espécies novas, *P. centralis* **sp. nov.**, *P. chrysellae* **sp. nov.**, *P. crocina* **sp. nov.** and *P. elbida* **sp. nov.** Uma chave taxonômica para o gênero é fornecida. A relação filogenética entre as espécies estudadas é: (*P. centralis* ((*P. chrysellae* (*P. fluminensis*, *P. fulvapoda*)) (*P. nudapleura* (*P. elbida* (*P. nigripoda*, *P. crocina*)))))). A distribuição geográfica das espécies é também apresentada e brevemente discutida.

PALAVRAS CHAVE. Filogenia, taxonomia.

Pseudoptilolepis Snyder, 1949 is a Neotropical genus with records from Nicaragua to south Brazil. The genus was proposed by SNYDER (1949) with four species: *P. fulvapoda*, *P. nigripoda*, *P. nudapleura* and *P. confusa*. ALBUQUERQUE (1954) described *P. fluminensis* and included *Mydaea latipalpis* Stein, 1918 in *Pseudoptilolepis*. PONT (1972) presented in his catalog a new combination to *Mydaea latipalpis* to *Pseudoptilolepis latipalpis*. LOPES & CARVALHO (1985) described the male of *P. nudapleura*, and added new records of *P. fluminensis* and *P. fulvapoda*. PONT (1972) and CARVALHO *et al.* (1993) included the genus in Cyrtoneuriniinae.

Within the Neotropical Phaoniinae, SNYDER (1954) placed the genus in the *Cyrtoneurina* Giglio-Tos group (Cyrtoneuriniini). HENNIG (1965) proposed a status of subfamily to the Cyrtoneuriniini. The characters that he used to justify this subfamily were: anepimeron setulose, lack of the proclinated fronto-orbital in the female and lack of the posterodorsal setae on the hind tibia. However, subsequent studies on Muscidae classification (SKIDMORE 1985, CARVALHO 1989b, COURI & CARVALHO 2002) did not recognize Cyrtoneuriniinae as a monophyletic group.

The present paper add four new species to *Pseudoptilolepis*, redescribe the genus and its six species, present a taxonomic key for the species and a cladogram of the genus and includes the geographic distribution for the species.

MATERIAL AND METHODS

Specimens from the following institutions were studied: American Museum of Natural History (AMNH), New York, United States of America; Departamento de Zoologia, Universidade Federal do Paraná (DZUP), Curitiba, Brazil; Museo Civico Di Storia Naturale (MCSNM), Milan, Italy; Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ), Rio de Janeiro, Brazil; Museu de Zoologia, Universidade de São Paulo (MZSP), São Paulo, Brazil.

The terminology and abbreviations used follow McALPINE (1981) and CARVALHO (1989a). The terminology used to describe thoracic setae follows O'HARA (1982).

All useful characters and character states distribution of *Pseudoptilolepis* species are found in table I. The software Hennig 86, version 1.5 (FARRIS 1988) was used for the phylogenetic analysis, applying the implicit enumeration (ie*). Following the idea of MICHELSEN (1991), where Anthomyiidae is the sister group of Muscidae, the genus *Phaonantho* Albuquerque, 1957 was used as outgroup to root the analysis.

The holotype of *Pseudoptilolepis latipalpis* was not examined by the authors. Dr. Adrian Charles Pont (Hope Entomological Collections, University Museum, Oxford, UK – UMO)

Table I. Character state distribution among species of *Pseudoptilolepis*. (0) Plesiomorphic character state, (1 and 2) apomorphic character state (unordered).

Taxas	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
Outgroup	0	0	0	0	0	0	0	0	0	0
<i>P. fulvapoda</i>	1	1	1	0	1	0	0	2	1	1
<i>P. nudapleura</i>	0	1	1	1	0	1	0	2	0	1
<i>P. nigripoda</i>	0	1	0	1	1	0	1	1	0	1
<i>P. fluminensis</i>	1	1	1	0	1	1	0	1	1	1
<i>P. chrysellia</i>	0	1	1	0	0	0	0	2	1	1
<i>P. crocina</i>	0	1	1	1	1	0	1	0	0	1
<i>P. centralis</i>	0	1	0	0	0	1	0	1	0	1
<i>P. elbida</i>	0	1	1	2	1	0	0	2	0	1

1. Proepisternum: 0) setulae absent; 1) setulose.
2. Lower calypter, dorsal face: 0) bare; 1) with discal cilia.
3. Color of the femur III: 0) brownish; 1) yellowish.
4. General color: 0) brownish; yellowish.
5. Median constriction in the median portion of the cercal plate in dorsal view: 0) absent (Figs 9, 10, 16); 1) present (Figs 11, 12, 13, 14, 15).
6. Position of the connection, in the cercal plate, dorsal view: 0) connecting on the second basal third (Figs 10, 11, 12, 14, 15); 1) connecting on the first basal third (Figs 9, 13, 16).
7. Dorsal projection of the paramere: 0) measuring less of the 1/2 of the diameter of the paramere where it is inserted (Figs 17, 18, 20, 21, 22, 24); 1) measuring about 1/2 of the diameter of the paramere where it is inserted (Figs 19, 23).
8. Measures of the shape of the sternite 5 of the male: 0) longer than wider (Fig. 3); 1) similar measures (Figs 1, 5, 7); 2) wider than longer (Figs 2, 4, 6, 8).
9. Shape of the sternite 5 of the male: 0) trapezoid (Figs 1, 3, 4, 7, 8); 1) square (Figs 2, 5, 6).
10. Shape of the distiphallus: 0) unique structure; 1) forked.

examined the holotype deposited at MCSNM and sent his observations.

The identification key did not include *P. confusa* Snyder, 1949 because there was not an available male to compare with the structures most used in the key.

None of the characters described for the genus was repeated in the species' description.

Descriptions and redescriptions

Pseudoptilolepis Snyder, 1949

Pseudoptilolepis Snyder, 1949:14 (original description); Pont, 1972: 49 (catalogue); Carvalho *et al.*, 1993: 64 (catalogue); Couri & Carvalho, 2002:156-158 (diagnosis, key).

Pseudoptilolepis [sic]; Lopes & Carvalho, 1985: 55 (redescription, key).

Diagnosis: lower calypter with dorsal discal cilia; anepimeron, hind coxa, postalar wall, meron, posterior margin of

the prosternum and lower margin of hind spiracle ciliated. Aedeagus forked with tiny spines on the extremity.

Description: flies measuring 4.8 to 6.3 mm (male) and 3.7 to 6.7 mm (female). Male: Head: dichoptic bare eyes; fronto-orbital plate narrow with the frontal vitae reduced to a triangular spot above the base of the antennae; complete row of frontal setae, those in the inferior half longer and stronger and directed inward or backward, while, except the last pair, the superior setae are thinner and directed forward; superior pair directed backward and slightly outward, as strong and about as long as the ocellar setae; vertical internal setae parallel and about the same length as the post-ocellar setae; dorsal half of the occipicium smooth and pruinose; gena on the lower point of the eye as four times wider than the anterior ocellus diameter; gena with one or two black setae upwardly directed similar in length with the ocellar setae; vibrissae strong and crossed about one and a half the length of the third flagellomere. Thorax: color predominantly yellow; scutum with one median longitudinal brown stripe and two lighter and narrower parallel lines (one each side of the median); presutural acrostichal setulae in about 10 irregular rows; presutural acrostichal setae includes two or three slightly larger setae; 1 intra-alar setae; notopleuron bare; katepisternal setae 1:2; posterior katepisternal setae strong, about a quarter longer than the anterior; anepisternum with a weak seta opposite the anterior notopleural setae; scutellar setae: apical pair strong as long as intrapostalar setae, pair of discal setae strong with half of the length of the apical setae, basal pair strong with the same length of the apical setae; scutellum ventrally bare; halter yellow. Legs: fore coxa with 2 A rows of strong and black setae and in the basal half weak clear yellow setae; fore femur with a complete row of strong PD setae, a complete row of weak PV setae and a row of D setae; fore tibia with median PV setae, and apical PV, V (half of the length of the PV apical setae) and D setae and an incomplete row of AD setae in the distal half; metatarsus in its proximal ventral extremity with a short tuft of setae, with a thin brown sensorial setulae and distal extremity with a similar but smaller sensorial setulae; other tarsal segments with sensorial setae; mid coxa with two rows of A setae; mid femur with a row of V and PV setae and with a weak row of A setae and with two strong subapical P setae; mid tibia on apical two-thirds third with an incomplete row of PD setae, with apical V, A, and P setae; hind coxa in the inferior margin with a row of strong setae and with thin A and D setae; hind femur with a complete row of D, AV and PV setae; hind tibia with two median AV setae, an incomplete row of AD setae and with apical A, V and D setae; claws and pulvilli short. Wing: clear, hyaline; membrane entirely covered with microtrichias; R₄₊₅ ciliated dorsally on entire surface to wing apex and ventrally to just before r-m; base of the R ciliated dorsally and ventrally to the transversal humeral; r-m at about the same position of the R₁ insertion; calypteres hyaline, lower calypter disc setulose dorsally. Abdomen: brownish; tergites with posterior margin darkened; longitudinal dorsal stripe darker and more

distinct; posterior two black segments and longitudinal dorsal stripe same color; tergites 3 and 4 with distinct lateral setae; tergite 5 with complete row of discal and apical setae. Terminalia: sternite 5 setulose with two projections in the posterior margin (Figs 1-8); cercal plate partly fused, connected in the lower half (Figs 9-16); prominence in the lower half (Figs 9-16); aedeagus forked with extremity covered by tiny spines (Figs 17-24); gonopod curve in frontal view; paramere with anterodorsal projection, papillae in the inferior face, posterior extremity outwardly directed laterally (Figs 17-24); epiphallus in posterior view "M" shaped; aedeagal apodeme, in dorsal view trapezoid. Female: differs from the male as follow: frontal inferior setae stronger and directed inward, median pair strong and two upper pairs outwardly directed; weaker row of setae between the frontal row of setae and the eye; ovipositor telescoped with cerci setulosae; tergites 6-8 present like elongated rods; sternites 6 and 7 present as narrow rods; sternite 8 reduces to a pair of small weakly sclerotised hind-marginal plates (Figs 25-26 and 27-28); 3 spermathecae pyriform.

Distribution: Nicaragua: Bluefields; Costa Rica: Turrialba; Panama: Barro Colorado Island; Brazil: Pará, Bahia, Mato Grosso, Goiás, Minas Gerais, Espírito Santo, São Paulo, Rio de Janeiro, Paraná; Paraguay: Jejuí.

Considerations: LOPES & CARVALHO (1985) considered fore leg. A face as P face.

Monophyly: lower calypter with dorsal discal cilia and aedeagus forked with tiny spines on the extremity are synapomorphic to genus. For the systematic position of *Pseudoptilolepis*, see discussion on phylogenetic analysis.

Pseudoptilolepis centralis sp. nov.

Figs 1, 9, 17

Diagnosis: general color yellow-brownish; anepimeron with weak and clear setae; male sternite 5 trapezoid, wider than long; cercal plate without median constriction.

Description: general color yellow with brownish abdomen. Male: Head: yellow-brownish; head height about 6.5 times frons width (n = 1); eyes distant in their greater proximity by a distance equal to half of the anterior oculus diameter; fronto-orbital plate yellow; parafacial and parafrontal junction not protruding, and so long as the greatest diameter of the arista; face yellow pruinose; gena yellow; ocellar triangle dark brownish; complete row of black postocular setae; row of brownish setae between the postocular row and the eye, from ventral margin of the gena to junction with the postocular row at two thirds eye height; others head setae black; palpus yellow; facial ridge with few short thin and pale setae upwardly directed. Thorax: dc: 2: 3; prealar setae short but distinct, about half of the anterior notopleuron setae length; anepisternum with a weaker distinct setae opposite the anterior notopleuron setae; proepisternum bare; proepimeron with weak and clear setae; proepisternal setae strong with the same length of the anterior notopleuron setae. Legs: color similar to the thorax. Ab-

domen: the last tergites 4 and 5 with the same color of the dorsal longitudinal stripe. Terminalia: sternite 5 trapezoid, wider than long, with concave posterior margin (Fig. 1); cercal plate, dorsal view, narrowed, dorsal extremity rhombus (Fig. 9); cercal plate without median constriction, the narrower width about two fifth its length (Fig. 9); surstylus discoid and concave; hypandrium vertex without callosity (inferior portion). Female: differs from the male as follow: head height 2.5 times the frons width.

Distribution: Costa Rica: Turrialba.

Material examined: holotype male, COSTA RICA, *Turrialba*: W. Neal [label: WWWNeal. 52-9724] – MNRJ; Paratype: COSTA RICA: *Turrialba*: female, W. Neal [label: WWWNeal. 52-9724] – MNRJ.

Pseudoptilolepis chrysellia sp. nov.

Figs 2, 10, 18, 25, 26

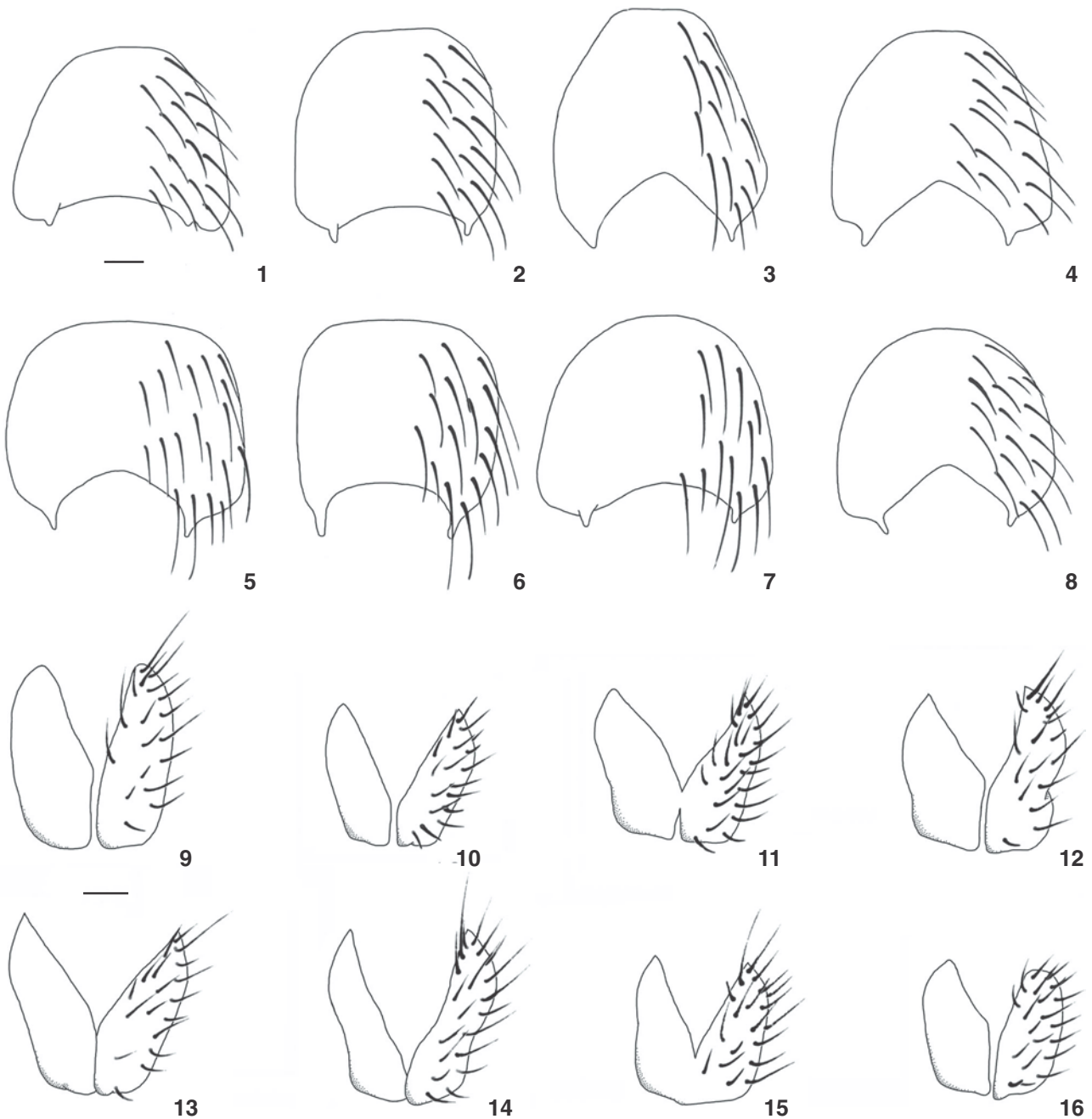
Diagnosis: general color yellow-brownish; anepimeron with weak and clear setae; male sternite 5 square.

Description: general color yellow with brownish abdomen. Male: total length 4,8 mm (n = 2); Head: yellow-brownish; head height about 8.5 times the frons width (n = 4); eyes distant in their greater proximity by a distance equal to the anterior oculus diameter; fronto-orbital plate brownish; parafacial and parafrontal junction not protruding and as long as the greatest diameter of the arista; face and gena yellow pruinose; ocellar triangle dark brown; ocellar setae similar to the upper last frontal pair of setae; weaker setae behind ocellar triangle setae; complete row of black postocular setae; row of brownish setae between the postocular row and the eye, from the ventral margin of the gena to junction with the postocular row in the second third of the eye height; others head setae black; palpus yellow; facial ridge with few short thin and pale upwardly directed setae. Thorax: dc: 2: 3; prealar setae short but distinct, about half of the length of the anterior notopleuron setae; proepisternum bare; proepimeron with weak and clear setae; anepisternum covered with weak setae with a distinct seta smaller than the anterior notopleuron seta; proepisternal setae strong and nearly same length as the anterior notopleuron setae. Legs: color similar to the thorax. Abdomen: tergites 4 and 5 same color as dorsal longitudinal stripe. Terminalia: sternite 5 square, with concave posterior margin (Fig. 2); cercal plate, dorsal view, narrowed dorsal extremity acute (Fig. 10); cercal plate without median constriction, narrowest width about one third its length (Fig. 10); surstylus ellipsoid and concave; hypandrium with one callosity in the vertex (inferior portion). Female: total length 6,7 mm (n = 7); differs from the male as follow: head height 2.9 times the frons width.

Distribution: Brazil: São Paulo and Paraná.

Considerations: The species shows records (on labels) of capture using fish, onion and liver as bait.

Material examined: holotype male, BRAZIL, *Paraná*: Ponta Grossa [Vila Velha], 15.IX.1987, (Lev. Ent. PROFAUPAR) [Malaise] – DZUP. Paratypes: BRAZIL, *Paraná*: Guarapuava [Est. Águas



Figures 1-16. (1-8) Sternite 5, male, dorsal view: (1) *Pseudoptilepis centralis*; (2) *P. chrysellae*; (3) *P. crocina*; (4) *P. elbida*; (5) *P. fluminensis*; (6) *P. fulvapoda*; (7) *P. nigripoda*; (8) *P. nudapleura*; (9-16) Cercal plate, dorsal view: (9) *Pseudoptilepis centralis*; (10) *P. chrysellae*; (11) *P. crocina*; (12) *P. elbida*; (13) *P. fluminensis*; (14) *P. fulvapoda*; (15) *P. nigripoda*; (16) *P. nudapleura*. Scale bar = 0.1 mm.

Sta. Clara], female, 13.VII.1987, (Lev. Ent. PROFAUPAR) [Malaise] – DZUP; Brazil: São Paulo: Poá, 1 female, 26.II.1963, (Rabello) – MZSP; Jundiaí, 1 female, 3.III.1999, (A. X. Lihares) – DZUP; Paraná: Ponta Grossa, 1 female, 15.IX.1986, 1 female,

11.V.1987, (Lev. Ent. PROFAUPAR), DZUP; Colombo, 1 female, 4.VIII.1986, 1 female, 6.X.1986, 1 female, 12.I.1987, 1X, 23.II.1987, (Lev. Ent. PROFAUPAR) – DZUP; Guarapuava, 1 female, 25.VII.1986, 1 male, 13.VII.1987, (Lev. Ent. PROFAUPAR)

– DZUP; Guarapuava, 1 female, 25.VII.1986, 1 male, 13.VII.1981, 1 male, 10.1981, 2 females, 22.XI.1981, 1 female, 6.XII.1981, 1 female, 7.II.1982, 1 female, 6.XII.1981, (C.B. de Jesus) – DZUP.

***Pseudoptilolepis crocina* sp. nov.**

Figs 3, 11, 19

Diagnosis: general color yellow-brownish; anepimeron with weak and clear setae; male sternite 5 trapezoid, longer than wide; cercal plate connected in the basal third.

Description: general color yellow with brownish abdomen. Male: total length 5,6 mm (n = 4); Head: yellow; head height about six times the frons width (n = 5); eyes separated by a distance equal to the diameter of the anterior ocellus; fronto-orbital plate yellow; face and gena yellow pruinose; ocellar triangle dark; ocellar setae similar to the upper last frontal setae pair; weaker setae behind the ocellar triangle setae; complete row of black postocular setae; row of brownish setae between the postocular row and the eye, from the ventral margin of the gena to the postocular row in the second third of the eye height, these setae are weaker than that in *P. fulvapoda*; other head setae black; palpus yellow; facial ridge with few short thin and pale setae upwardly directed. Thorax: dc: 2: 3; prealar setae absent; proepisternum bare; proepimeron with weak and clear setae; anepisternum with a weaker distinct setae opposite the anterior notopleuron setae, covered with weak setae; proepisternal setae strong with almost the same length of the anterior notopleuron setae. Legs: color similar to the thorax color. Abdomen: tergites 4 and 5 with the same color of the dorsal longitudinal stripe. Terminalia: sternite 5 trapezoid, longer than wide, with posterior margin in a inverted "V" shape (Fig. 3); cercal plate, dorsal view not narrowed, dorsal extremity acute (Fig. 11); cercal plate with median constriction, narrowest part about two fifth its length (Fig. 16); surstylus discoid and concave; hypandrium with one callosity in the vertex (inferior portion). Female: total length 6,1 mm (n = 7); differs from the male as follow: head height 2.7 times the frons width; prealar setae short but distinct, about a half of the anterior notopleuron length.

Distribution: Brazil: Espírito Santo and Paraná.

Material examined: Holotype male, BRAZIL, *São Paulo*: Campinas, XI.1978, (Arício X. Linhares) [RCSM] – MZSP; Paratypes: BRAZIL, *São Paulo*: Campinas, female, IX.1978, (Arício X. Linhares) [RCSL] – MZSP; Brazil: Espírito Santo: Itapina, 1 female and 1 male, XI.1970, (P.C. Elias) – MZSP; São Paulo: Campinas 1 male, II.1978, 2 females, V.1978, 1 male, VII.1978, 1 female, IX.1978, (Arício e Linhares) – MZSP; 1 female and 2 males, VII.1990, (J. Mendes) – MZSP.

***Pseudoptilolepis elbida* sp. nov.**

Figs 4, 12, 20

Diagnosis: general color pale yellow, slightly gray; anepimeron with weak and clear setae; male sternite 5 trapezoid, wider than long; cercal plate without median constriction.

Description: general color pale yellow with brownish ab-

domen. Male: total length 5,9 mm (n = 1); Head: yellow whitish; head height about seven times the frons width (n = 3); eyes separated by a distance equal to twice the anterior ocellus diameter; fronto-orbital plate white; face and gena white; ocellar triangle dark; ocellar setae similar to the upper last frontal setae pair; weaker setae behind the ocellar triangle setae; complete row of black postocular setae; row of brownish setae between the postocular row and the eye, from ventral margin of the gena to the postocular row in the second third of the eye height; other head setae black; palpus yellow; facial ridge with few short thin and pale setae upwardly directed. Thorax: dc: 2: 3; prealar absent; anepisternum with a weaker distinct setae opposite to the anterior notopleuron setae; proepisternal setae strong with almost the same length of the anterior notopleuron setae; proepisternum bare; proepimeron with weaker and clearer setae. Legs: color similar to the thorax. Abdomen: tergites 4 and 5 with the same color of the dorsal longitudinal stripe. Terminalia: sternite 5 trapezoid, with posterior margin with a median cut (Fig. 4); cercal plate, in dorsal view, narrowed, dorsal extremity acute (Fig. 12); cercal plate with median constriction, the narrowest part about half of its length (Fig. 12); surstylus discoid and concave; hypandrium with one callosity in the vertex (inferior portion). Female: total length 5,6 mm (n = 3); differs from the male as follow: head height 2.8 times the frons width; presutural acrostichal setae developed; prealar setae short but distinct, as long as half of the anterior notopleuron setae.

Distribution: Paraguay: Canindeyú.

Material examined: Holotype male, PARAGUAY, *Canindeyú*: Jejuí (Reserva Natural del Bosque Mbaracajú), 25-30.III.1996, (A.C. Costa) [Malaise 1: pastizal con suelo saturado] – DZUP; Paratypes: PARAGUAY, *Canindeyú*: Jejuí (Reserva Natural del Bosque Mbaracajú), 1 female, 25-30.III.1996, 1 male, 6-10.VII.1996, 3 females and 2 males, 25-30.II.1996 (A.C. Costa) – DZUP.

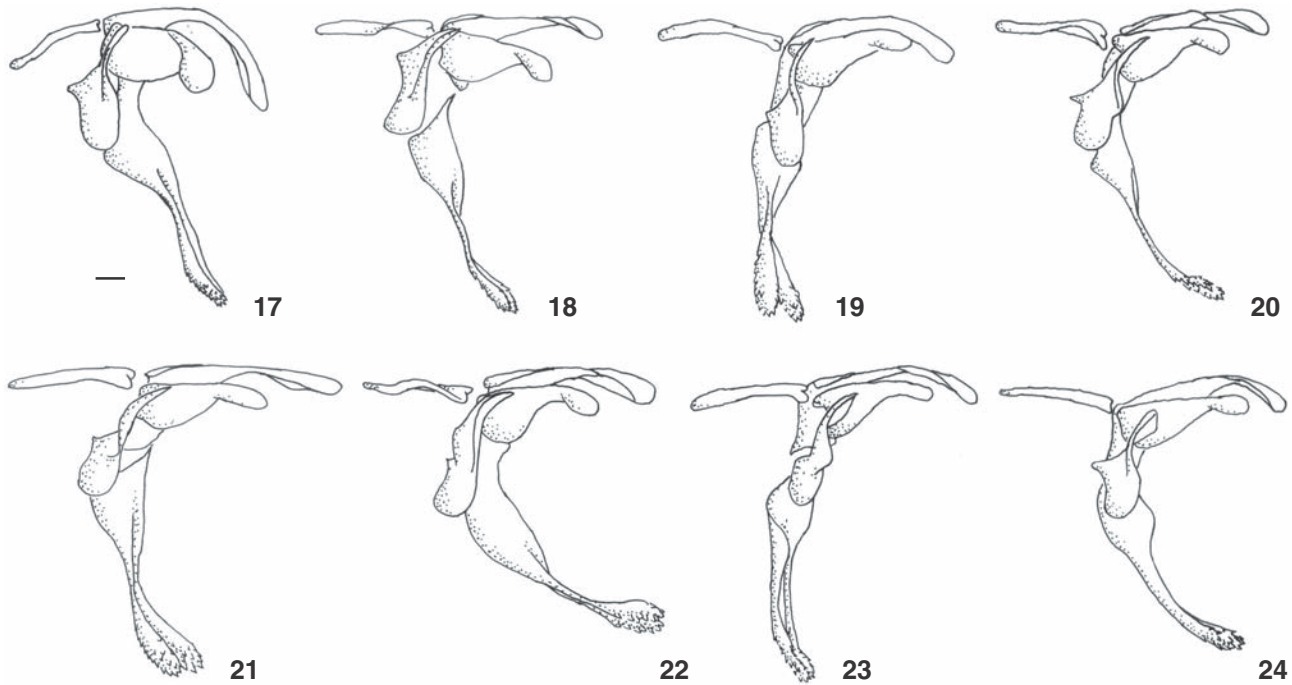
***Pseudoptilolepis fluminensis* Albuquerque, 1954**

Figs 5, 13, 21

Pseudoptilolepis fluminensis Albuquerque, 1954: 253 (description male/female); Pont, 1972: 49 (catalogue); Carvalho *et al.*, 1984: 553 (synanthropy); Lopes & Carvalho, 1985: 55 (terminalia, notes); Carvalho *et al.*, 1993: 64 (catalogue); Couri & Carvalho, 2002: 157 (key).

Diagnosis: general color yellow-brownish; anepimeron with weak and clear setae; male sternite 5 square, wider than longer; cercal plate connected in the median region.

Description: general color yellow with brownish abdomen. Male: total length 6,3 mm (n = 6); Head: yellow with clear pruinescence; head height about 6.6 times the frons width (n = 10); distance between eyes equal to the anterior ocellus diameter; fronto-orbital plate yellow; parafacial yellow; face and gena yellow pruinose; ocellar triangle black, arising immediately behind the last pair of frontal setae; few weaker setae behind, and one third the size of, the ocellar setae and directed forward; postocellar



Figures 17-24. Aedeagus, lateral left view. (17) *Pseudoptilolepis centralis*; (18) *P. chrysellia*; (19) *P. crocina*; (20) *P. elbida*; (21) *P. fluminensis*; (22) *P. fulvapoda*; (23) *P. nigripoda*; (24) *P. nudapleura*. (Ap) Aedeagal apodeme, (df) distiphallus, (ep) epiphallus, (gn) gonopod, (pr) paramere. Scale bar = 0.1 mm.

setae about two thirds the length of the ocellar setae; complete row of black postocular setae, progressively longer in length in the dorso-ventral direction; row of brownish setae between the postocular row and the eye, from the ventral margin of the gena until it meets the postocular row in the second third of the eye height; others head setae black; palpus yellow and very slender, similar to *P. nudapleura*. Thorax: dc: 2: 3; prealar setae short, similar in length to the anterior notopleuron; two strong proepisternal setae; anepisternum with a weak distinct setae opposite to the anterior notopleuron setae; proepimeral setae strong and similar to the proepisternal setae in its length; proepisternum setulose. Legs: color yellow. Abdomen: tergites 4 and 5 with the same color of the dorsal longitudinal stripe. Terminalia: sternite 5 square, with posterior margin concave (Fig. 5); cercal plate, dorsal view, narrowed with dorsal extremity acute, cercal plate connected to each other in the median region (Fig. 13); cercal plate with slight median constriction, narrowest width about one third its length (Fig. 13); surstylus discoid and concave; hypandrium with one callosity in the vertex (inferior portion). Female: total length 6,2 mm (n = 10); differs from the male as follow: head height 2.6 times the frons width; facial ridge with short, thin and pale setae directed upwardly opposite the median portion of the third antenal segment; acrostichal presutural setae strong.

Distribution: Panamá: Barro Colorado Island. Brazil: Rio de Janeiro and Paraná.

Considerations: The species shows records (on labels) of capture using fish, onion and meat as bait.

Material examined: PANAMÁ: Barro Colorado Island, 1 female, [n.:4590] (Jas Zetek) – MNRJ. BRAZIL, Pará: Santarém, 1 female, 1-11.II.1968, (Exp. Perm. Amaz.), – MNRJ; Rio de Janeiro: Nova Friburgo [900 m], 7 females and 3 males, I.1946, (Wygod.) – MNRJ; Rio de Janeiro, 6 males, 1.II-8.III.1957, (D.O. de Albuquerque) – MNRJ; 5 females and 5 males, 8.II.1984, 2 females, 7.II.1985, 1 female, 14.VII.1985, (H. Guimarães) – MNRJ; Paraná: Curitiba, 2 males, 17.X.1981, (C.B. Jesus) – MNRJ. Allotype: BRAZIL, Rio de Janeiro: Nova Friburgo [800 m], male, I.1946, (Wygod) [without anterior legs and right hind leg] – MNRJ.

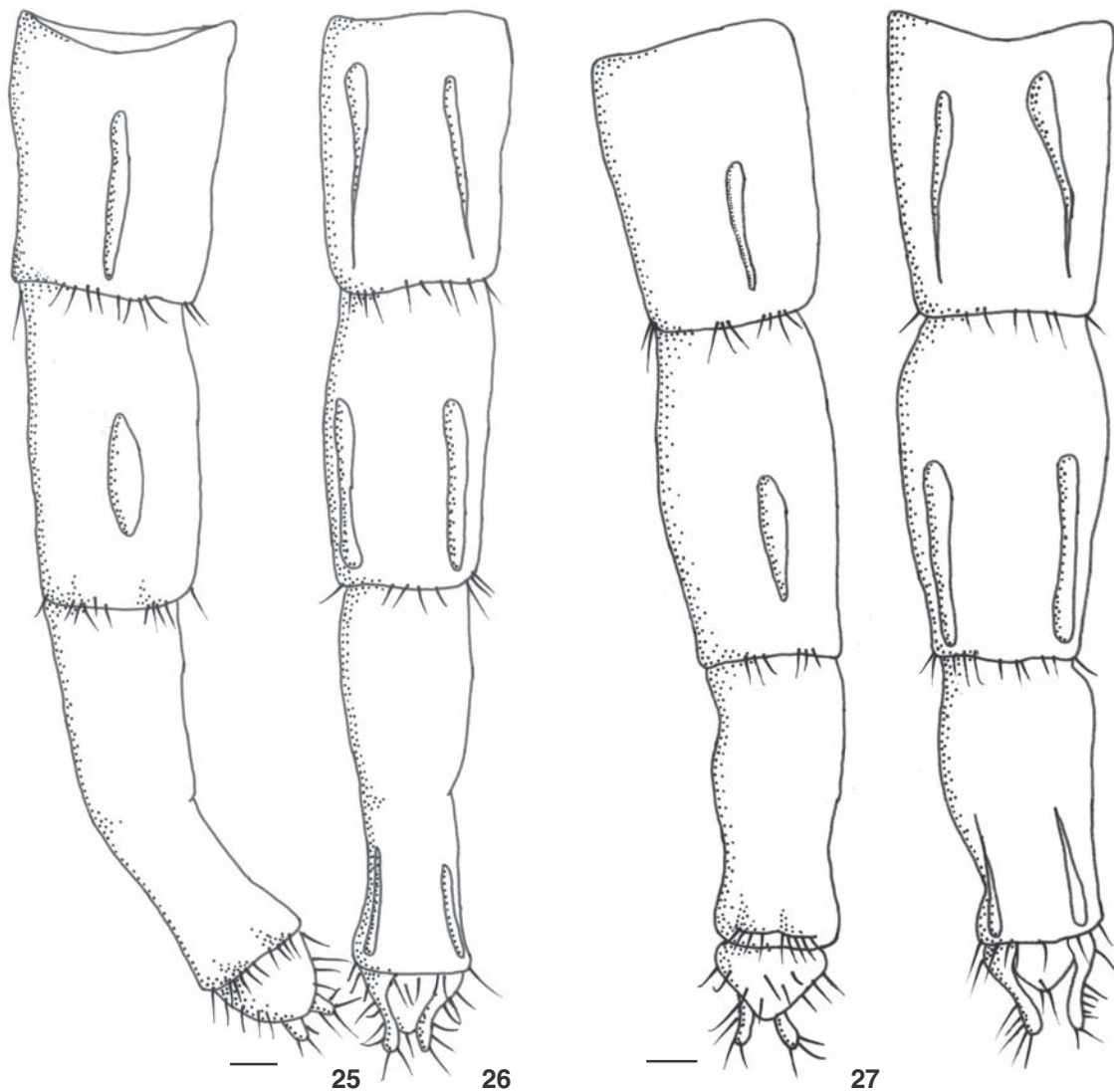
Pseudoptilolepis fulvapoda Snyder, 1949

Figs 6, 14, 22, 27, 28

Pseudoptilolepis fulvapoda Snyder, 1949: 16 (description male/female); Pont, 1972: 49 (catalogue); Lopes & Carvalho, 1985: 58 (male redescription); Carvalho *et al.*, 1984: 553 (synanthropy); Carvalho *et al.*, 1993: 64 (catalogue); Couri & Carvalho, 2002: 157 (key).

P. fulvipoda [sic] Albuquerque, 1954: 256 (citation).

Diagnosis: general color brownish (lighter than *P. nigripoda*); proepisternum with yellow setae in the center; proepimeron with weak and clear setae; male sternite 5 square;



Figures 25-28. (25-26) Ovipositor of *Pseudoptilolepis chrysellae*: (25) ventral view; (26) dorsal view; (27-28) Ovipositor of *Pseudoptilolepis fulvapoda*: (27) ventral view; (28) dorsal view. Scale bar = 0.1 mm.

sternite 5 longer than wider.

Description: general color dark yellow. Male: total length 5,9 mm (n = 10); Head: brownish; head height about 6 times the frons width (n = 10); eyes separated by a distance equal to the diameter of anterior ocellus; fronto-orbital plate brownish; parafacial yellow; face pruinose yellow; gena brownish yellow; ocellar triangle brownish to black, behind the last pair of frontal setae a distance about that of the anterior ocellus diameter; few weak setae behind the ocellar setae; complete row of black postocular setae; row of brownish setae between the postocular row and the eye, from the ventral margin of the gena to the postocular row in the second third of the eye

height; others head setae black; palpus yellow and not entirely dilated; facial ridges with short, thin, pale setae which extend upward to opposite the middle of third antennal segment. Thorax: dc: 2: 3; prealar setae short but distinct, as about half of the length of the anterior notopleuron; anepisternum with weaker distinct setae opposite the anterior notopleuron setae; proepisternal setae strong similar in length to the anterior notopleuron setae; proepisternum setulose in the center with weak, yellow setae. Legs: color yellow. Abdomen: tergites 4 and 5 with the same color of the dorsal longitudinal stripe. Terminalia: sternite 5 square, longer than wide, with concave posterior margin (Fig. 6); cercal plate, dorsal view, narrowed,

dorsal extremity acute connected in the basal third (Fig. 14); cercal plate with median constriction, the narrowest part about one fourth its length (Fig. 14); surstylus discoid and concave; hypandrium with two callosities in the vertex (inferior portion); aedeagus forked in the median half (Fig. 22). Female: total length 6,1 mm (n = 10); differs from the male as follow: head height 2.8 times the frons width; hind femur, PV face, without strong setae; tergite 5 without strong apical row of setae.

Distribution: Nicaragua: Bluefields. Brazil: Bahia, Rio de Janeiro, São Paulo, Paraná and Santa Catarina.

Considerations: the species shows records (on labels) of capture using onion, liver, fish, fermented bananas and human feces as bait.

Material examined: NICARAGUA: Bluefields, 1 male, 26.VIII.1943, (P.A. Woke) – MNRJ; 1 male, 16.VI.1940, (R.P.) – MNRJ; BRAZIL, Bahia: Encruzilhada, 2 females and 1 male, XI.1974, (Roppa & Alvarenga) – MNRJ; São Paulo: Jundiá, 1 female, 3.III.1999, (A.X. Linhares) – DZUP; Batéa, 1 male, X.1940, (J.Lane) – MNRJ; Salesópolis 1 female, 21.X.1964, (Rabello) – MZSP; Rio de Janeiro: Nova Friburgo, 1 male, I.1948 (Wygod) – MNRJ; Teresópolis, 2 females, 9.VI.1989, (P.P. Baptista) – MNRJ; 4 females and 2 males, 9.X.1988, (P.P. Baptista) – MNRJ; 2 females and 2 males, 3.XII.1988, (P.P. Baptista) – MNRJ; Petrópolis, 1 female, 24.1-23.II.1953, (D. Albuquerque) – MNRJ; 2 males, 1.II-8.III.1957, (D. Albuquerque) – MNRJ; Rio de Janeiro, 1 female, XI.1988 (C.M.O. Sordello) – MNRJ; 4 females, 16.III.1984, 1 female, 7.IV.1984, 1 female, 7.IV.1984, 1 female, 9.VI.1984, 3 females, 8.XI.1984, 7 females and 1 male, 14.III.1985, (H. Guimarães) – MNRJ; Paraná: Ponta Grossa, 1 female, 11.VIII.1986, 2 females, 18.VIII.1986, 2 male, 25.VIII.1986, 1 female, 1.IX.1986, 1 female, 8.IX.1986, 2 male, 22.IX.1986, 1 male, 29.IX.1986, 3 females and 2 males, 6.X.1986, 2 females, 13.X.1986, 1 female and 1 male, 27.X.1986, 3 females, 3.XI.1986, 1 male, 10.XI.1986, 1 female, 24.X.1986, 1 female, 5.I.1987, 1 female, 19.I.1987, 1 female and 1 male, 26.I.1987, 1 female, 2.II.1987, 1 female, 16.II.1987, 1 female, 9.III.1987, 1 female, 16.III.1987, 1 female, 27.IV.1987, 1 female, 4.V.1987, 1 female, 18.V.1987, 1 female, 15.V.1987, 1 female, 6.VII.1987, 1 female, 8.VII.1987, 1 female, 20.VII.1987, 2 females, 27.VII.1987, (Lev. Ent. PROFAUPAR) – DZUP; Colombo, 2 females, 25.VIII.1986, 4 females, 1.IX.1986, 1 female, 8.IX.1986, 5 females, 15.IX.1986, 2 females, 22.IX.1986, 3 females, 6.X.1986, 2 females, 13.X.1986, 1 female, 20.X.1986, 1 female, 3.XI.1986, 1 female, 12.I.1987, 1 female, 9.II.1987, 1 female and 1 male, 30.III.1987, 1 female, 13.VII.1987, 1 female, 20.VII.1987, 1 female, 27.VII.1987, 2 females, 13.VII.1987, (Lev. Ent. PROFAUPAR) – DZUP; 2 females and 1 male, 22.I.1992, (M.R. Marques, L. Batista, M. Moura) – DZUP; Guarapuava, 1 female, 4.VII.1986, 1 female, 13.X.1986, (Lev. Ent. PROFAUPAR) – DZUP; Curitiba, 3 females, 6.IX.81, 3 females, 10.X.1981, 2 females, 22.XI.1981, 1 male, 20.XII.1981, 4 females and 1 male, 24.I.1982, 1 male, 24.I.1982, 1 male, 28.II.1982, 2 males, 7.III.1982, 2 males, 14.III.1982, 1 female, 28.III.1982, 1 male, 11.IV.1982, (C.B. Jesus) – DZUP; 1 female, 14.II.1985, (S.R. Malkowski) – DZUP; 1 female and 2 males,

13.II.1985, 1 female and 1 male, 15.II.1985, 1 male, 14.III.1985, (no collector name) – DZUP; 1 female, 14.II.1985, (S.R. Malkowski) – DZUP; 1 male, 26.VI.1984, (R. Zonta e M. Santos) – DZUP; Tijucas do Sul, 2 females, III.1981, (C.B. Carvalho) – MNRJ; 1-4.IV.1997, (M. Copacheski) – DZUP. Type: Holotype: Brazil: Santa Catarina: Nova Teutonia [Seara, 27°11'S, 52°23'W], male, 14.VI.1939, (Fritz Plaumann) [without right fore leg. and right mid leg] – AMNH.

Pseudoptilolepis latipalpis (Stein, 1918)

Mydaea latipalpis Stein, 1918: 216 (description female); Stein, 1919: 120 (catalogue); Séguy, 1937: 286 (catalogue); Snyder, 1949: 14 (citation); Albuquerque, 1954: 256 (citation).

Pseudoptilolepis latipalpis; Pont, 1972: 49 (catalogue); Lopes & Carvalho, 1985: 60 (citation); Carvalho *et al.*, 1993: 64 (catalogue); Couri & Carvalho, 2002: 156, 157 (citation, key).

Diagnosis: general color clear yellow; dc: 2: 4; proepisternum with yellow setae in the center.

Description: general color yellow with brownish abdomen. Female: length 5-7 mm (n = 1); Head: yellow; head height about 3.8 times the frons width; fronto-orbital plate and parafacialia yellow; face clear pruinose yellow; gena same color as face; complete row of black postocular setae; row of brownish setae between the postocular row and the eye, from the ventral margin of the gena to the postocular row in the second third of the eye height; six pairs of frontal setae and two orbital pairs; subgenal setae black; other setae of the head black; palpus yellow; 6 thin setae above the vibrissae insertion that do not reach the facial junction. Thorax: dc: 2: 4; prealar setae similar in length to the anterior notopleuron setae; two strong proepisternal setae; anepisternum with a weaker distinct setae opposite the anterior notopleuron setae; strong proepimeral similar to the proepisternal; proepisternum setulose. Legs: color similar to the thorax.

Distribution: Brazil: Rio de Janeiro and São Paulo.

Considerations: the vertex is damaged in such a way that the vertex and ocellar triangle setae are not visible; in STEIN'S (1918) description there are dc: 2:3, while the holotype presents dc: 2:4.

Material examined: Syntype female, BRAZIL, São Paulo: 11.I.1903, (Lutz) [Stein's handwritten identification label] – MCSNM.

Considerations: the type specimen was not examined by the authors but by Adrian Charles Pont (UMO) who provided his annotations.

Pseudoptilolepis nigripoda Snyder, 1949

Figs 7, 15, 23

Pseudoptilolepis nigripoda Snyder, 1949: 17 (description male/female); Albuquerque, 1954: 256 (citation); Pont, 1972: 49 (catalogue); Linhares, 1981: 232 (synanthropy); Lopes & Carvalho, 1985: 60 (terminalia); Carvalho *et al.*, 1993: 65 (catalogue); Couri & Carvalho, 2002: 157 (key).

Diagnosis: general color varying from yellow to brownish; hind femur brownish, darker than the anterior legs or with the distal margin of calypter darkened or brownish; male sternite 5 trapezoid, wider than longer; paramere with aterodorsal projection measuring about half of its length.

Description: general color yellow with brownish abdomen. Male: total length 6,2 mm (n = 2); Head: yellow with clear pruinescence; head height about seven times the frons width (n = 2); eyes distant in their greater proximity by a distance equal to the anterior ocellus diameter; fronto-orbital plate, parafacial, gena and face clear pruinose yellow; ocellar triangle arising about the measure of the anterior ocellus diameter behind the last frontal setae pair; few weaker setae behind the ocellar setae measuring a quarter of them and directed forward; complete row of black postocular setae; row of brownish setae between the postocular row and the eye, from the ventral margin of the gena to the postocular row in the second third of the eye height progressively greater ventrally; other head setae black; palpus yellow and very thin similar to *P. nudapleura*. Thorax: dc: 2: 3; prealar setae as long as half of the anterior notopleuron setae length; proepisternal setae strong; anepisternum with a weaker distinct setae opposite to the anterior notopleuron setae; strong proepimeral setae, similar to proepisternal setae; proepisternum bare. Legs: yellow with the hind leg. dark brownish. Abdomen: tergites 4 and 5 with the same color as dorsal longitudinal stripe. Terminalia: sternite 5 trapezoid, wider than long, with posterior margin concave (Fig. 7); cercal plate, dorsal view, narrowed, dorsal extremity acute (Fig. 15); cercal plate with slightly median constriction, narrowest part about one third its length (Fig. 15); surstylus discoid and concave; hypandrium with just one callosity in the vertex (inferior portion). Female: total length 5,9 mm (n = 5); differs from the male as follow: head height 2.8 times the frons width; facial ridge with short, thin and pale setae which extend upward to opposite the middle of third antennal segment; presutural acrostichal setae developed.

Distribution: Nicaragua: Coclé. Panama: Balboa. Brazil: Pará, Mato Grosso, Bahia, Espírito Santo, Rio de Janeiro.

Considerations: the species shows records (on labels) of capture using human feces bait.

Material examined: NICARAGUA, *Coclé*: El Valle, female, 16.VI.1940, (R.P.) – MNRJ. BRAZIL, *Mato Grosso*: Juína, 2 males, V.1985, (O. Roppa e B. Silva) – MNRJ; Maracajú; 1 female, II.1937, [no collector] – MNRJ; *Bahia*: Encruzilhada, 1 female, XI.1974, (Roppa e Alvarenga) – MNRJ, 1 female, XI.1974, (Seabra e Roppa) – MNRJ; *Espírito Santo*: Colatina, 6 females, XII.1970, (P.C. Elias) – MZSP; *Rio de Janeiro*, 1 female, III.1989, (C.M.O. Sordello) – MNRJ. Holotype female, PANAMÁ, *Balboa*: Canal Zone, 12.VI.1943, (F.M. Snyder) [without the fore legs and the mid right leg] – AMNH.

Pseudoptilolepis nudapleura Snyder, 1949

Figs 8, 16, 24

Pseudoptilolepis nudapleura Snyder, 1949: 19 (description female); Pont, 1972: 49 (catalogue); Lopes & Carvalho, 1985:

61 (male description); Carvalho *et al.*, 1993: 64 (catalogue); Couri & Carvalho, 2002: 157 (key).

Diagnosis: general color clear yellow; proepimeron bare; male sternite 5 trapezoid, wider than long; cercal plate without median constriction.

Description: general color clear yellow with brownish abdomen. Male: total length 5,6 mm (n = 6); Head: clear and pruinose yellow; head height about six times the frons width (n = 6); nearest distance between eyes 1.5 times the anterior ocellus diameter; ocellar triangle brown to black, arising about the measure of the anterior ocellus diameter behind the last frontal setae pair; few weaker setae behind the ocellar setae measuring about one third the ocellar setae height and directed forward; complete row of black postocular setae; row of brownish setae between the postocular row and the eye, from the ventral margin of the gena until it join with the postocular row in the second third of the eye height; other head setae black; palpus yellow and very thin. Thorax: gray pruinescence in the dorsal pre-sutural region; dc: 2: 3; prealar setae measuring half of the length of the anterior notopleuron setae; proepisternal setae strong; anepisternum with a weaker distinct setae opposite the anterior notopleuron setae; proepimeral setae strong similar to the proepisternal setae in its length; proepisternum bare. Legs: color yellow as the thorax. Abdomen: tergites 4 and 5 with the same color of the dorsal longitudinal stripe. Terminalia: sternite 5 trapezoid, wider than long, with the anterior margin smaller than the posterior and with a median cut (Fig. 8); cercal plate, in dorsal view, thick, dorsal extremity rhomboid (Fig. 16); cercal plate without median constriction, narrowest part about half of its length (Fig. 16); hypandrium with two callosities in the vertex (inferior portion). Female: total length 5,9 mm (n = 10); differs from the male as follow: head height 2.8 times the frons width; facial ridge with short, thin and pale setae which extend upward to opposite the middle of third antennal segment.

Distribution: Brazil: Mato Grosso, Bahia, Goiás, Minas Gerais, Espírito Santo, São Paulo, Rio de Janeiro, Paraná. Paraguay: Villarica.

Considerations: The species shows records (on labels) of capture using fish decayed, feces and dead mouse as bait.

Material examined: BRAZIL, *Mato Grosso*: Maracajú, 1 female, III.1957, (Serviço Febre Amarela M.E.S., Bras.) – MNRJ; *Bahia*: Encruzilhada, 5 females and 2 males, XI.1972, (Seabra and Roppa) – MNRJ; 2 females and 8 males, XI.1974, (Roppa and Alvarenga) – MNRJ; *Goiás*: Jataí, 1 female, XII.1972, (F.M. Oliveira) – MNRJ; *Minas Gerais*: Belo Horizonte, 1 female, 18.I.1939, (Martins, Lopes e Mangabeira) – MNRJ; Cambuquira, 1X, II.1941, (Lopes & Gomes) – MNRJ; Viçosa, 18 females, 15.VIII.1984, (O. Francisco and P.S. Fiúza) – MZSP; *Espírito Santo*: Baixo Guandu, 4 females and 1 male, X.1970, (P.C. Elias) – MZSP; Itapina, 5 females and 8 males, XI.1970, (P.C. Elias) – MZSP; Colatina, 2 females and 1 male, XII.1970, (P.C. Elias) – MZSP; Itaguaçu, 10 females and 3 males, X.1970, (P.C. Elias) –

MZSP; Rio de Janeiro: Angra dos Reis, 1 male, 09.IV.1972, (H.S. Lopes) – MNRJ; 1 male, 14.XI.1972, (H.S. Lopes) – MNRJ; Grajaú, 1 female, 20.VIII.1939, (S. Lopes) – MNRJ; Rio de Janeiro, 1 female and 1 male, XI.1988, (C.M. Sordello) – MNRJ; 1 female and 1 male, 27-29.XI.1970, (J.H. Guimarães), MZSP) – MZSP; São Paulo: Campinas, 1 male, 4.II.1978, (A.X. Linhares) – MNRJ; 1 female, X.1989, (J. Mendes) – MZSP; 1 female, I.1990, (J. Mendes), MZSP; Itapetininga, 1 male, XII.1965, (E.X. Rabello) – MZSP; Paraná: Tijucas do Sul, 1 female, III.1981, (C.B. Carvalho) – MNRJ. Types: were not examined. Holotype: female Paraguay, Villarica (USNM).

Key to the species of *Pseudoptilolepis*

1. dc: 2: 3 2
- 1'. dc: 2: 4. (Brazil: Rio de Janeiro, São Paulo) *P. latipalpis*
2. Male sternite 5 square with the apical margin similar in length to the basal margin (Figs 2, 5, 6) 3
- 2'. Male sternite 5 trapezoid with the apical margin shorter than the basal margin (Figs 1, 3, 4, 7, 8) 5
3. Proepisternum with yellow setae in the center 4
- 3'. Proepisternum without yellow setae in the center. (Brazil: São Paulo, Paraná) *P. chrysellia* sp. nov.
4. Male sternite 5 longer than wide, posterior margin concave (Fig. 6); cercal plate connected in the basal third (Fig. 14). (Nicaragua: Bluefields. Brazil: Bahia, Rio de Janeiro, São Paulo, Paraná, Santa Catarina) *P. fulvapoda*
- 4'. Male sternite 5 wider than long, posterior margin in a inverted "V" shape (Fig. 5); cercal plate connected in the middle portion (Fig. 13). (Panama: Barro Colorado Island. Brazil: Rio de Janeiro, Paraná) *P. fluminensis*
5. Male sternite 5 longer than wider (Fig. 3); cercal plate connected after the basal third (Fig. 11). (Brazil: Espírito Santo, São Paulo) *P. crocina* sp. nov.
- 5'. Male sternite 5 wider than longer (Figs 1 4, 7, 8); cercal plate connected in the basal third (Figs 9, 12, 15, 16) 6
6. Hind femur brownish, lower calypter with brownish border 7
- 6'. Hind femur yellow as the others femurs, lower calypter yellow hyaline 8
7. Cercal plate with median constriction (Fig. 15); paramere dorsal projection measure about half of its diameter (Fig. 23). (Nicaragua: Cocle. Panamá: Balboa. Brazil: Pará, Mato Grosso, Bahia, Espírito Santo, Rio de Janeiro) *P. nigripoda*
- 7'. Cercal plate without median constriction (Fig. 9); paramere dorsal projection small not greater than a third of its diameter (Fig. 17). (Costa Rica: Turrialba) *P. centralis* sp. nov.
8. General body color clear yellow; cercal plate without median constriction (Fig. 16). (Brazil: Mato Grosso, Bahia, Goiás, Minas Gerais, Espírito Santo, São Paulo, Rio de Janeiro, Paraná. Paraguay: Villarica.) *P. nudapleura*
- 8'. General body color grayish yellow, pale; cercal plate without median constriction (Fig. 12). (Paraguay: Jejuí) *P. elbida* sp. nov.

Phylogenetic analysis

The family Muscidae is a large family with probably more than 4000 extant species of a world-wide distribution (MICHELSEN 1991) in about 173 genera (CARVALHO *et al.* 1993) representing about 3% of the total diversity in Diptera. Phylogenetic works in its family are still scarce (CARVALHO 1989b). Currently, the phylogeny of Muscidae has been studied by CARVALHO (1989b) and more recently by COURI & CARVALHO (2003). The family certainly constitute a monophyletic group (HENNING 1965, MCALPINE 1989, MICHELSEN 1991) but has included groups that are doubtfully monophyletic (CARVALHO 1989b).

Pseudoptilolepis is considered as genus of Cyrtoneuriniinae (SNYDER 1954, HENNING 1965, PONT 1972, LOPES & CARVALHO 1985, LOPES & COURI 1989, CARVALHO *et al.* 1993, COURI & CARVALHO 2002), recently recognised as a polyphyletic muscid subfamily (COURI & CARVALHO 1998). Several genera of this subfamily were transferred to other subfamilies (CARVALHO *et al.* 1993). No phylogenetic study to date resolves the position of the genus inside the family.

We suggest that *Pseudoptilolepis*, *Micropotamia* Carvalho, 1993 and *Chaetagenia* Malloch, 1928, are related genera. This relationship hypothesis is based on the upwardly curved setae on genae (CARVALHO 1993) and on the aedeagus with juxta spinulose (CARVALHO 1993, COURI & LAMAS 1993). CARVALHO (1993) presented this configuration of the distifallus (with juxta spinulose) as the most striking evidence of the Azeliini monophyly.

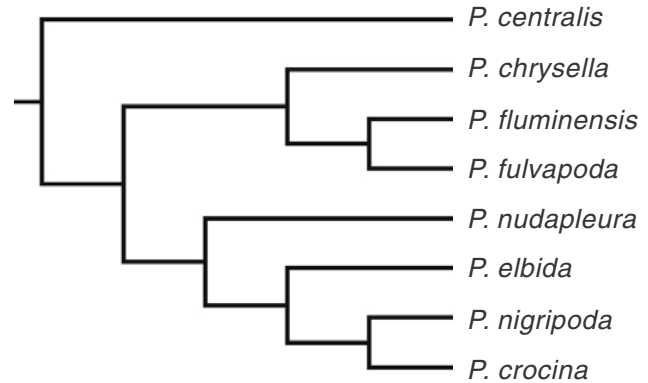


Figure 29. Cladogram of the species of the genus *Pseudoptilolepis*. Length = 19, consistency index = 63 and retention index = 61.

The upwardly curved setae on genae was presented by MICHELSEN (1978) and CARVALHO (1993) as a character present on most of the Azeliini genera. Both characters lead us to positioned *Pseudoptilolepis* and *Chaetagenia* in Azeliini.

Chaetagenia is probably closely related to *Pseudoptilolepis* based on: the hind spiracle lower margin and anepimeron ciliated and on the on the forked aedeagus (COURI & LAMAS 1993).

Cladistic analysis was carried out using parsimony as implemented in Hennig86 (FARRIS 1988), version 1.5, using the

software Tree Gardener, version 2.2 (RAMOS 1997), an interface for the use of the Hennig86 in Windows environment. The data matrix comprised 10 morphological characters: 3 from external morphology and 7 from male terminalia. The cladogram was generated by applying "implicit enumeration *" (ie*) option. The analysis resulted in a single tree (Fig. 29) with length 19, consistency index 63 and retention index 61. Two species were not analysed, the first one is *P. latipalpis* because we do not have a male for the analysis and the second one *P. confusa* because we did not exam the holotype.

The genus is monophyletic based in two characters: the forked aedeagus and calypter setulose and the relationship between the species of the genus is (*P. centralis* sp. nov. ((*P. chrysellata* sp. nov. (*P. fluminensis*, *P. fulvapoda*)) (*P. nudapleura* (*P. elbida* sp. nov. (*P. nigripoda*, *P. crocina* sp. nov.)))).

The geographic distribution of the species of the genus shows sympatry among *P. fulvapoda*, *P. fluminensis*, *P. nudapleura*, *P. chrysellata* sp. nov., *P. nigripoda* for Rio de Janeiro (Brazil); *P. nudapleura*, *P. nigripoda*, *P. fulvapoda*, for Espírito Santo (Brazil); *P. chrysellata* sp. nov., *P. fulvapoda*, *P. fluminensis*, *P. crocina* sp. nov. and *P. nudapleura* for São Paulo and Paraná (Brazil).

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