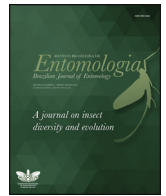




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Species of Hybotinae from Podocarpus National Park, Ecuador (Diptera, Empidoidea, Hybotidae)



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ABSTRACT

The Hybotinae of the Podocarpus National Park were studied. Fourteen species are recorded and nine new species are described and illustrated: *Euhybus pectinifemur* **sp. nov.**, *Neohybos fuliginosus* **sp. nov.**, *Neohybos globosus* **sp. nov.**, *Neohybos rostratus* **sp. nov.**, *Neohybos serratus* **sp. nov.**, *Neohybos spinosus* **sp. nov.**, *Syndyas longiventris* **sp. nov.**, *Syneches flavithorax* **sp. nov.** and *Syneches polleti* **sp. nov.** A key to *Neohybos* species from Ecuador is also presented.

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Introduction

The fauna of Hybotinae from Ecuador has been investigated with increasing intensity in the recent years (Ale-Rocha and de Carvalho, 2003; Ale-Rocha, 2007). The present paper deals with the Hybotinae that were collected in the Podocarpus National Park, located in an area of high biodiversity and endemism in the southern part of the country. This region represents a biodiversity hotspot, encompassing large areas with a diversity of natural habitats (Rahbek et al., 1995) where humidity, microclimates and geographical barriers abound.

Members of Hybotinae are characterized by holoptic females (except the genera *Lamachella* and *Leptocyrtoma*), usually with heavily sclerotized proboscis projected forward, two veins arising from cell dm, an usually developed anal lobe and prosternum free from the proepisternum (Sinclair and Cumming, 2006). Hybotinae includes the tribes Bicellariini and Hybotini, and only Hybotini with eight genera and 137 species has been recorded from the Neotropics (Yang et al., 2007; Ale-Rocha, 2007, 2008; Ale-Rocha and Vieira, 2008).

In this paper, we describe nine new species of hybotine flies from the Podocarpus National Park and add new records of five additional species for Ecuador. A key to species of *Neohybos* Ale-Rocha and de Carvalho, 2003, from Ecuador, is also presented.

Material and methods

The material studied belongs to the following institutions: Royal Belgian Institute of Natural Sciences, Brussels, Belgium (RBINS); Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil (INPA); Instituto de Ecología, Universidad Técnica Particular de Loja, San Cayetano Alto, Apartado, Ecuador (UTPL); Museo de Invertebrados da Pontificia Universidad Católica del Ecuador, Quito, Ecuador (QCAZ).

In the descriptions, the terminology follows Cumming and Wood (2009), except for antenna where the terms of Stuckenberg (1999) were used. In descriptions, the following abbreviations are used to the setae: acr, acrostichal; dc, dorsocentral; ial, intra-alar; npl, notopleural; pal, postalar; spal, supra-alar; and to positions of the setae on legs: AD, anterodorsal; AV, anteroventral; PD, posterodorsal; PV, posteroventral. Holotype label data are cited in full, with original spelling, punctuation and data; a comma separates data quoted from different lines. In the labels, the annotation "EC/2009-31/MP&ADB-012" is a sample code; YPT = yellow pan trap and RPT = red pan trap. Additional information is included in square brackets.

The terminalia were macerated in hot 85% lactic acid; their parts were observed and illustrated in glycerin on depressed slides, and subsequently stored in microvials containing glycerin. Wings were photographed after being removed from the body, mounted between covered slides and glued to a piece of resistant paper. Microvials and microslides were pinned together with their corresponding specimens.

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The Podocarpus National Park is located in southern Ecuador, on the boundary between the provinces of Loja and Zamora Chinchipe. The park covers an area of 360,000 acres (144,993 hectares), with an elevation range between 900 m and 3600 m (Ministerio del Ambiente, 2015). The park encompasses at least 6 life zones: montane humid forest, low montane humid forest, very humid montane forest, very humid premontane forest, very humid lowland forest, and páramo. In Ecuador, Podocarpus National Park is regarded as unique due to both its high biodiversity and the high degree of endemism of its fauna and flora (Pollet, 2009).

Taxonomy

Euhybus pectinifemur **sp. nov.**

(Figs. 1–6, 50, 51)

Diagnosis. Scutum with discreet bluish metallic shine, and numerous and elongate black setae. Wing narrow, slightly brownish, stigma brown. Hind femur thickened, clothed in elongate yellow setae, with ventral brush of spine-like setae; hind tibia cylindrical, widened and concave ventrally near apex to accommodate ventral brush of femoral spine-like setae. Hypandrium with 3 long and robust setae at apex of right lateral lobe; right surstylus developed, curved, external surface with small protuberances bearing long robust setae.

Description. Holotype male (QCAZ). Body: 5.1 mm. Wing: 4.3 mm. Postpedicel lanceolate, about 3 times longer than wide. Face very narrowly dichoptic, black, approximately as long as frons. Ocellar setae thin, parallel and proclinate. Postcranium shiny, clothed in dense pale-brown pruinescence; postocular setae elongate; occipital setae short, thin and numerous. Thorax black except for yellow spot on postpronotal lobe and postalar callus; scutum shiny, with discreet bluish metallic shine and brown pruinescence on lateral and prescutellar disc. Pronotum with numerous marginal, robust and elongate setae. Pleura mostly shiny, with narrow strip of sparse brown pruinescence on dorsal margin of upper sclerites, and on ventral margins of lower sclerites. Setae black and elongate; acr multiserial and dc uniserial on anterior third of scutum, and more numerous and indistinguishable on prescutellar disc; ial uniserial; spal numerous; notopleuron setose; 3 npl and 1 pal more robust, slightly shorter than apical scutellar pair. Scutellum with 5 pairs of setae: 1 apical pair long, robust, parallel and approximated; 4 lateral pairs slender, half-length of apical pair. Legs black except for yellow apex of femora, fore and mid tibiae pale brown, hind tibia with base and apex yellow and tarsomeres 1–2 of all legs yellow. Hind femur thickened, clothed in elongate yellow setulae, with brush of spine-like setae on ventral surface (Fig. 50); hind tibia cylindrical, widened and concave ventrally near apex to accommodate brush of spines on ventral surface of femur (Fig. 51); setulae brown. Fore tibia with 1 short preapical A. Fore tarsomere 1 with more robust sub-basal and preapical 1A setae. Mid tibia with 5 more robust and short AD setae and 1 long V apical seta surpassing mid-length of tarsomere 1. Mid tarsomere 1 with 1 long dorsal seta at mid-length

and 1 preapical seta, and 1 elongate P sub-basal seta almost reaching apex of tarsomere. Hind trochanter with 5 robust spines. Hind femur (Fig. 50) with 1D seta on distal fourth; 1A preapical seta and 2 setae on apical half; 9 spine-like elongate AV setae; 15 spine-like V setae with protuberant base, the seven distalmost setae reduced to short, robust spines, followed by parallel series of 5 spines on distal half, and ventral tubercle bearing brush of 8 strong, short spines at mid-length of femur; PV series with 4 spines on basal half and 1 on apical half. Hind tibia lacking strong setae. Wing narrow, slightly brownish, stigma brown; costal cell narrow; R_{4+5} and M_1 distinctly convergent apically. Abdomen black with discreet metallic bluish shine, with brown pruinescence on tergite 8 and very sparse pruinescence on sternites; about 3 times longer than length of thorax. Setulae short and thin, very sparse, inconspicuous dorsally, yellow; long setae on tergite 1 and on lateral of St 2–3. Terminalia (Figs. 1–4). Hypandrium with 3 long and robust setae at apex of right lateral lobe. Right surstylus developed, curved, external surface with small protuberances bearing long robust setae; left surstylus wide in lateral view, with long and slender setae. Phallus robust with ventral and dorsal ejaculatory apodemes similar in size; postgonites asymmetrical.

Female. Similar to the male except for some aspects of hind leg: hind femur with 1 strong A seta on distal third, 7AV setae on two distal thirds, 6PV setae on distal half, lacking ventral tubercle bearing strong spines at mid-length of femur; hind tibia simple, lacking wide, concave, preapical ventral area. Terminalia: tergite and sternite 7 short and wide, sternite with distal margin trilobed; segment 8 partially membranous.

Variations. Some paratypes have brown pleura.

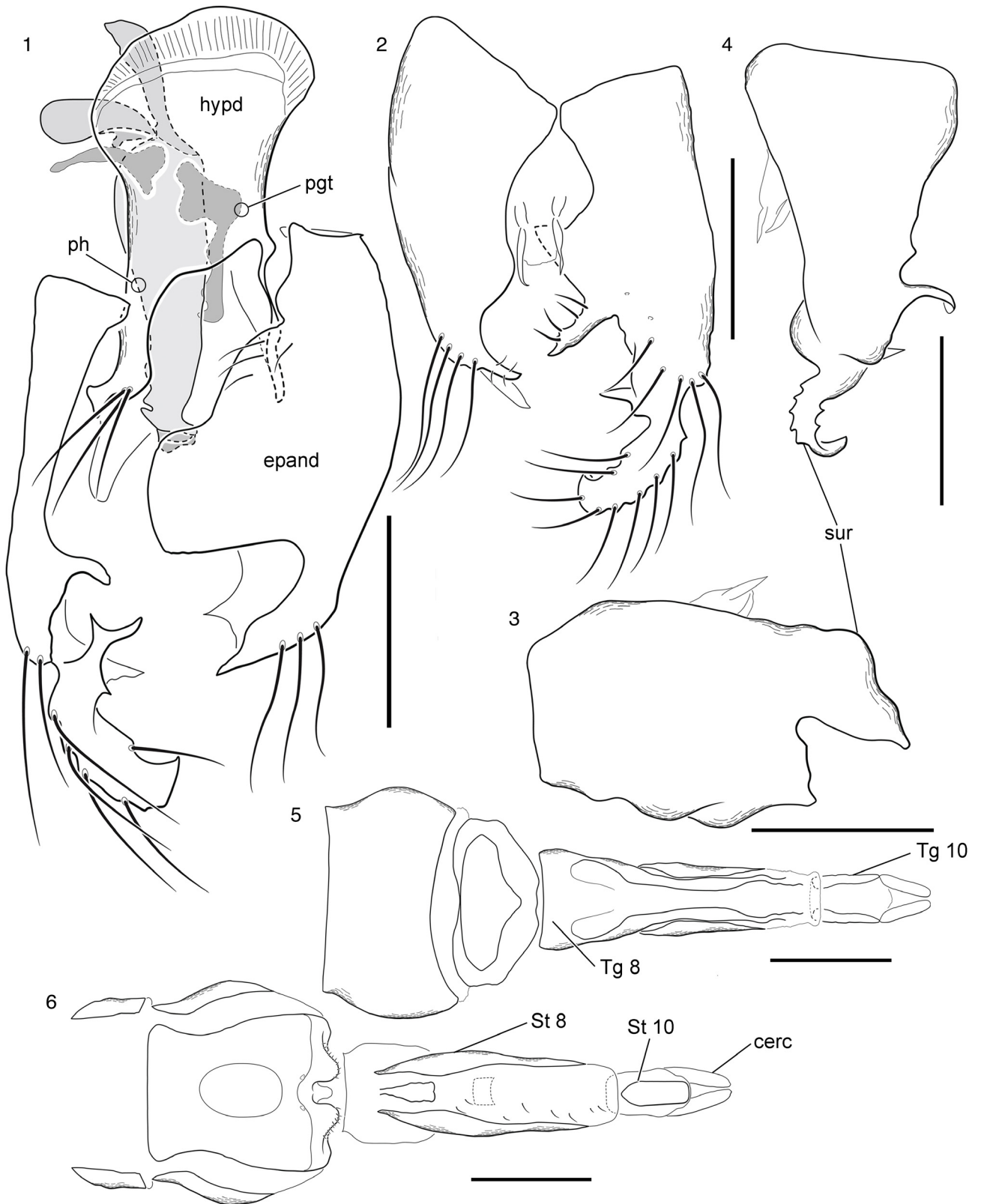
Type material. Holotype male (QCAZ). ECUADOR. Zamora Chinchipe, Estación Científica San Francisco [Reserva Biológica San Francisco], 0713956-9560588, Canal trail 1956 m, Varredura, 12–17/iv/2015, A. Plant & J. Camara Leg. Condition: good, except by the left wing folded and right antenna lost. Holotype not dissected.

Paratypes. Same data as holotype (1 female, 1 male QCAZ; 1 male INPA).

Geographical distribution. Ecuador (Zamora Chinchipe).

Etymology. From the Latin *pecten* = comb, in reference to the series of spines forming a comb on the ventral surface of the hind femur.

Comments. This species belongs to the *Euhybus neotropicus* species group that includes *E. agens* Curran, 1931 from Panama, *E. hyalopterus* (Bezzi, 1905) from Peru, *E. neotropicus* (Bezzi, 1905) from Bolivia and Brazil and *E. verrucicruz* Melander, 1928 from Costa Rica (Ale-Rocha, 2002b). The group shares a narrow hyaline wing with costal cell narrow and anal lobe weakly developed, and scutum with sparse setae. *E. pectinifemur* **sp. nov.**, however, can be easily distinguished from the other species of the group by the thickened hind femur with ventral brush of spine-like setae and hind tibia widened and concave ventrally. The male terminalia also provides useful characters for the recognition of this species. The hypandrium has 3 long and robust setae at apex of right lateral lobe and the right surstylus is developed and curved with external surface bearing long robust setae.



Figs. 1–6. *Euhybus pectinifemur* sp. nov. Male hypopygium (paratype): **1**, hypandrium and epandrium, ventral aspect (phallus and postgonites darkened); **2**, epandrium and cerci, dorsal aspect; **3, 4** right and left epandrial lamellae, respectively, lateral aspect. Female terminalia: **5, 6**, dorsal and ventral aspect, respectively. Scale bar = 0.3 mm. Abbreviations: cerc—cerci; epand—epandrium; hypd—hypandrium; ph—phallus; sur—surstylus; st—sternite; tg—tergite.

Key to species of *Neohybos* from Ecuador (male) (adapted from Ale-Rocha, 2007)

1. Pterostigma colored; hypandrium elongate, with one or two distal lobes	3
1'. Pterostigma hyaline; hypandrium short, lacking distal lobes	2
2. Wing slightly infusate (Fig. 45); prescutellar disc lacking posterior developed dc pair; hypandrium with posterior margin truncate; phallus short, robust, swollen apex bearing short lobes and strong spines (Fig. 12)	<i>Neohybos globosus</i> sp. nov.
2'. Wing hyaline; prescutellar disc with one posterior poorly developed dc pair; hypandrium distinctly narrowed, posterior margin somewhat concave; phallus long, narrowed medially and with a deep cleft at the apex, left branch bearing robust spines and a series of conspicuous saw-like lobes (Fig. 21)	<i>Neohybos serratus</i> sp. nov.
3. Wing brownish basally (Ale-Rocha, 2007, Fig. 75); right bacilliform sclerite with long process bearing two long and thick thorns apically (Ale-Rocha, 2007, Figs. 10 and 12) (Colombia, Ecuador)	<i>N. brunnescens</i> Ale-Rocha, 2007
3'. Wing hyaline or homogeneously infusate; process of right bacilliform sclerite, if present, not as above	4
4. Scutum wholly pruinose dorsally	5
4'. Pruinescence absent on anterior portion of scutum	8
5. Right bacilliform sclerite with developed process appearing under inner margin of epandrial lamella (Ale-Rocha, 2007, Figs. 1 and 61); color of scutal pruinescence variable	6
5'. Right bacilliform sclerite without developed process; scutum with rust-colored pruinescence	7
6. Abdomen rather robust, 2.7 times longer than length of thorax; hypandrium long and narrowed basally, right hypandrial lobe wide, short, with two thin pointed projections on inner margin (Ale-Rocha, 2007, Fig. 35) (Ecuador)	<i>N. cupreus</i> Ale-Rocha, 2007
6'. Abdomen long and slender, 3.3 times longer than length of thorax (Fig. 44); distal margin of hypandrium bilobed, left lobe short and right lobe very long, slender and sinuous, at least 9 times length of right lobe (Fig. 7)	<i>Neohybos fuliginosus</i> sp. nov.
7. Scutum clothed in gray pruinescence with strip of brown pruinescence along line of dorsocentral bristles; right hypandrial lobe inner curved (Ale-Rocha and de Carvalho, 2003, Fig. 25) (Bolivia, Ecuador)	<i>N. luridus</i> (Bezzi, 1909)
7'. Scutum clothed in rust-colored pruinescence; right hypandrial lobe straight (Ale-Rocha, 2007, Fig. 5) (Ecuador)	<i>N. bicolor</i> Ale-Rocha, 2007
8. Prescutellar disc with one long, strong pair of dc bristles	10
8'. Prescutellar disc lacking long, strong dc bristles	9
9. Tarsomeres brown; hypandrium with long, slender and clavate median lobe; phallus with a brush of long, stout bristles distally (Ale-Rocha, 2007, Fig. 48) (Ecuador)	<i>N. fuscipes</i> Ale-Rocha, 2007
9'. Tarsomeres 1–2, yellow, the remaining brown; hypandrium with long and wide median lobe, bearing several long slender setae and three sharpened tips distally; phallus with a swollen apex with dentate margins (Fig. 25)	<i>Neohybos spinosus</i> sp. nov.
10. Fore and mid femora yellow, hind femur yellow with apex brown; hind tibia strongly falciform; right epandrial lamella almost three times length of left lamella (Ale-Rocha, 2007, Figs. 36–39) (Colombia, Ecuador)	<i>N. elegans</i> Ale-Rocha, 2007
10'. Fore and mid femora pale brown to brown, coloration of hind femur variable; hind tibia not strongly falciform; right epandrial lamella subequal in length to left lamella	11
11. Hind femur brown to black medially, yellow basally and apically (Fig. 53); hypandrium with long proboscis-like lobe on the right side bearing several long setae along left margin; phallus slender bearing robust distal spines (Fig. 17)	<i>Neohybos rostratus</i> sp. nov.
11'. Hind femur brown to dark brown; hypandrium with broad and setose lobe on right side, with cleft apex; phallus robust, constricted near apex, robust distal spines absent (Ale-Rocha, 2007, Fig. 70) (Colombia, Ecuador)	<i>N. tenuis</i> Ale-Rocha, 2007

Neohybos fuliginosus sp. nov.

(Figs. 7–11, 44)

Diagnosis. Thorax black, entirely pruinose, pruinescence mostly pale brown, scutum with mixed pale and green pruinescence laterally and wide dorsal golden brown stripe. Scutum almost bare, setae inconspicuous; posterior dc pair not developed. Postpedicel slender and lanceolate. Legs brown to black with mid tibia and all tarsomeres 1–2 yellow, hind tibia yellow with ventral surface brown. Wing hyaline, stigma pale. Abdomen long and slender, 3.3 times longer than length of thorax. Distal margin of hypandrium bilobed, left lobe small and right lobe very long, slender and sinuous, at least 9 times length of right lobe.

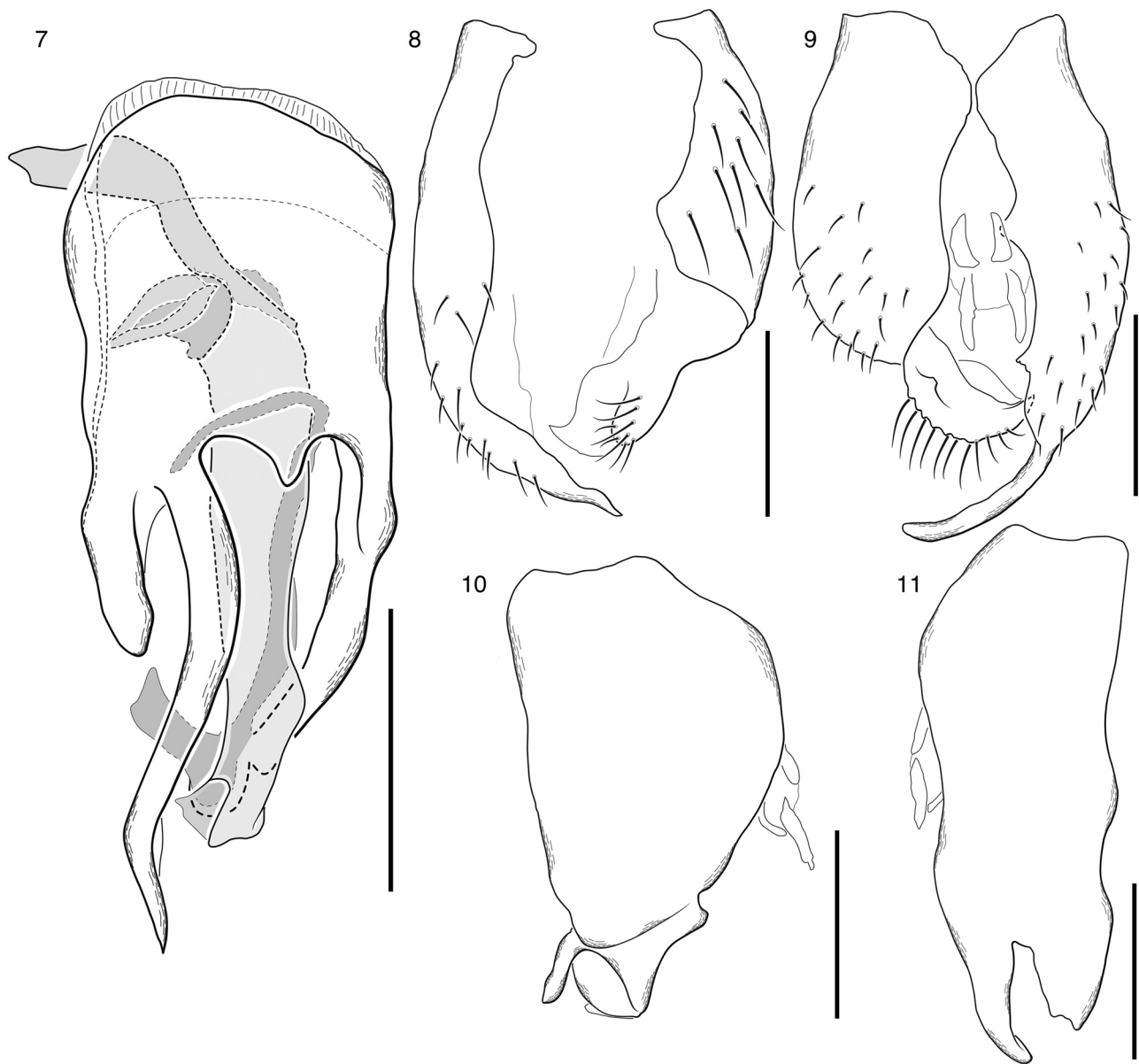
Description. Holotype male (UTPL) (Fig. 44). Body: 5.2 mm. Wing: 5.2 mm. Head. Postpedicel 3 times longer than wide, longer than length of scape and pedicel combined. Face narrowly dichoptic, as long as frons. One pair of elongate divergent ocellar setae. Postcranium clothed in dense pale-yellow pruinescence; postocular setae somewhat elongate; occipital setae thin, yellow and uniserial. Thorax black, entirely pruinose, pruinescence mostly pale brown, scutum with mixed pale and green pruinescence laterally and wide dorsal golden brown stripe. Acrostichal and dc uniserial, short, very thin and sparse, brown, posterior dc pair not developed; ial and spal setae sparse; 2 elongate npl setae, shorter than apical scutellar pair; pal seta as long as npl. Scutellum with 4 pairs of setae: apical pair long, robust, parallel, widely separated, twice longer than lateral seta, which is very thin. Legs brown to black with mid tibia and all tarsomeres 1–2 yellow, hind tibia yellow with ventral surface brown. Hind femur slightly thickened; hind tibia slightly arched, cylindrical. Setae mostly yellow. Fore tibia

with 1A short seta, and 1P preapical seta, poorly differentiated. Fore tarsomere 1 with 1A short seta and 1P preapical seta. Mid tibia bearing 2 AD elongate and strong setae on dorsal half and 1P long apical seta, almost reaching apex of tarsomere 1. Mid tarsomere 1 with 1AD short and robust seta, 1PD preapical seta, and 1V long sub-basal seta extending beyond mid-length of tarsomere 1. Hind trochanter with several robust setae. Hind femur with 3D setae on distal fourth; 1A seta near apex; 9AV spine-like elongate setae; 14V spine-like setae with protuberant bases, 6 basalmost setae well developed and 8 apicalmost setae reduced to short robust spines; PV series with 3 long setae on apical half. All tarsomeres 1 with 1D basal seta and 1D preapical seta, both somewhat elongate. Hind tibia lacking outstanding setae. Wing narrow; hyaline with pale stigma; costal cell narrow; R₄₊₅ and M₁ slightly convergent apically. Abdomen brown, darkening toward base; long and slender, about 3.3 times longer than length of thorax; all segments covered by very fine, sparse, pale-brown pruinescence. Setulae yellow, very thin, short and inconspicuous dorsally; long setae on tergite 1, laterally on tergites 2–3 and on distal margin of sternite 8. Terminalia (Figs. 7–11). Distal margin of hypandrium bilobed, left lobe small and right lobe very long, slender and sinuous, at least 9 times length of right lobe. Right epandrial lamella deeply cleft distally; left surstylus rounded and bearing robust spine-like setae inserted on tubercles. Postgonite slender, left postgonite long and connected to left hypandrial arm. Phallus long and slender.

Etymology. From the Latin *fuligo* = soot, in reference to the dense pruinescence covering the thorax.

Female. Unknown.

Type material. Holotype male (UTPL). ECUADOR. Loja: Cajanuma, Podocarpus National Park, trail Los Miradores,



Figs. 7–11. *Neohybos fuliginosus* **sp. nov.**. Male hypopygium (holotype): **7**, hypandrium (phallus and postgonites darkened); **8**, epandrium, ventral aspect; **9**, epandrium and cerci, dorsal aspect; **10, 11**, left and right epandrial lamellae, respectively, lateral aspect. Scale bar = 0.3 mm.

3000 m, 16/02/2009–20/02/2009 (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-31/MP&ADB-003. Condition: good, abdomen dissected.

Geographical distribution. Ecuador (Loja).

Etymology. From the Latin *fuligo* = soot, in reference to the dense pruinescence covering the thorax.

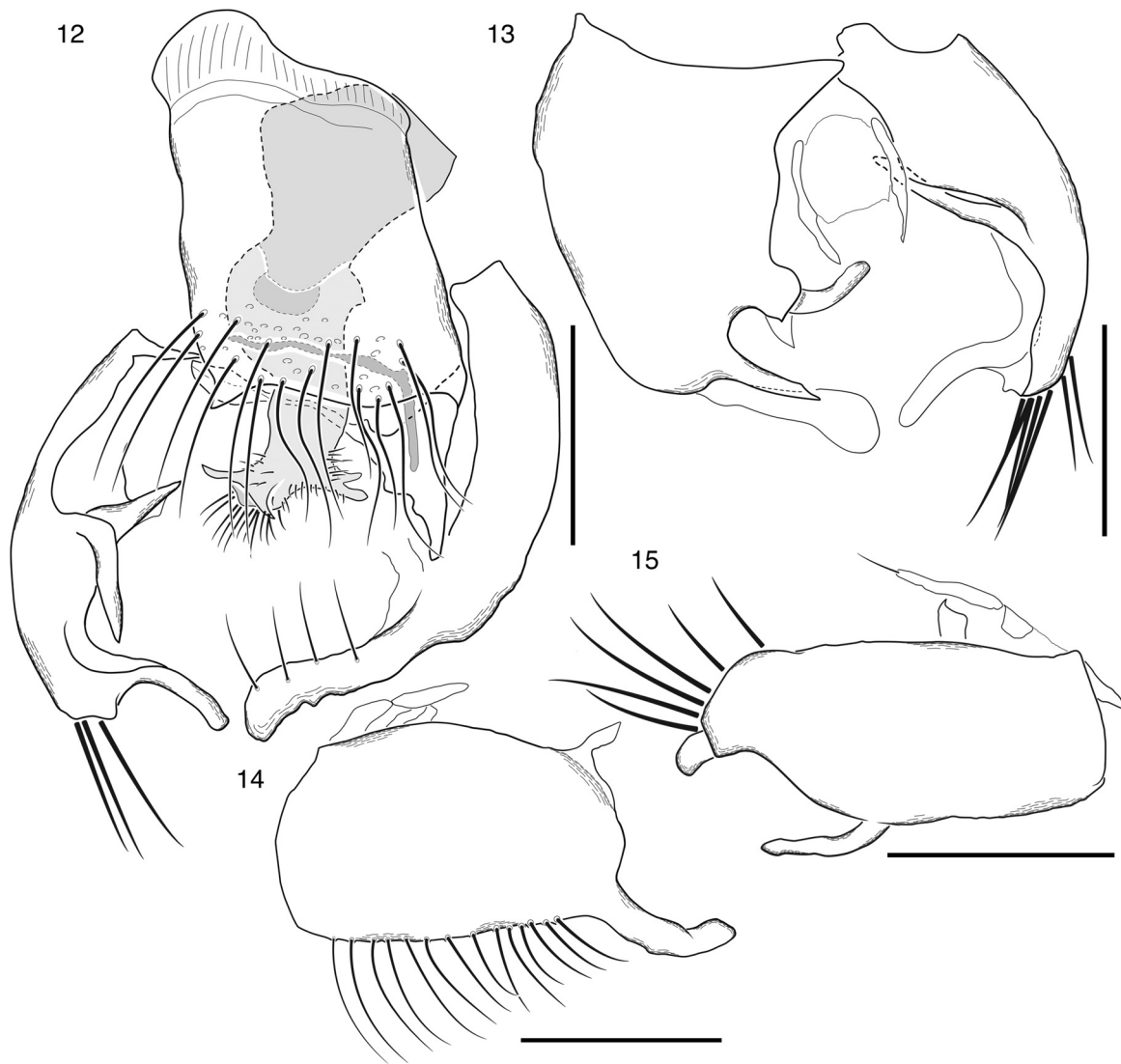
Comments. This species resembles *Neohybos schlingeri* Ale-Rocha, 2007 from Colombia in the colored stigma, wing hyaline, scutum wholly pruinose, lack of a strong pair of dc setae and hypandrium with very long and slender, sinuous distal lobe. However, in *N. fuliginosus* **sp. nov.**, the long distal lobe of the hypandrium is positioned laterally, the tibiae are yellow, the right bacilliform sclerite lacks a process and the epandrium has a different shape that can easily distinguish it from *N. schlingeri*.

Neohybos globosus **sp. nov.**

(Figs. 12–15, 45, 52)

Diagnosis. Thorax black, scutum shiny with brown pruinescence only laterally and prescutellar disc. Postpedicel slender and fusiform. Legs black except for yellow apex of all femora, fore tibia pale brown with base and apex yellow, mid tibia and all tarsomeres 1–2 pale yellow, hind tibia yellow on basal half, remaining dark brown, all tarsomeres 3–5 brown. Wing slightly brownish, stigma pale. Hypandrium short and wide, distal margin truncate, bearing several long thin setae.

Description. Holotype male (QCAZ) (Fig. 45). Body: 4.8 mm. Wing: 4.5 mm. Head. Postpedicel small, twice longer than wide, shorter than length of scape and pedicel combined. Face narrowly dichoptic, black, shorter than frons. Postcranium clothed in sparse brown pruinescence; postocular setae elongate; occipital setae short and somewhat numerous. Thorax black; scutum shiny with brown pruinescence laterally and on prescutellar disc. Pleura covered by dense brown pruinescence. Setae black; acr and dc setae uniserial, thin, short and very sparse; ial and spal setae elongate; 2 npl setae as long as apical scutellar pair; pal seta developed but shorter than npl seta; posterior dc pair not elongate. Scutellum



Figs. 12–15. *Neohybos globosus* sp. nov.. Male hypopygium (paratype): **12**, hypandrium and epandrium, ventral aspect (phallus and postgonites darkened); **13**, epandrium and cerci, dorsal aspect; **14**, **15**, left and right epandrial lamellae, respectively, lateral aspect. Scale bar = 0.3 mm.

with 5 pairs of setae: one apical pair long, robust, divergent, widely separated; 3 lateral pairs slender, half-length of apical pair; one pair of very thin and small crossed setae between apical pair. Legs black except yellow apex of all femora, fore tibia pale brown with base and apex yellow, mid tibia and all tarsomeres 1–2 pale yellow, hind tibia yellow on basal half, dark brown on apical half, all tarsomeres 3–5 brown. Hind femur slightly thickened toward apex, claviform, clothed in sparse thin yellow setulae; hind tibia nearly straight, cylindrical, with brown setulae. Fore tibia with 1A short seta and 1P elongate seta reaching mid-length of tarsomere, and 1 preapical seta. Fore tarsomere 1 with 1A seta and 1P preapical seta, both elongate and robust. Mid tibia with 2AD, short and more robust setae above middle and 1P long apical seta reaching tarsomere 1. Mid tarsomere 1 with 1AD short and robust preapical seta, and 1V elongate sub-basal seta, reaching apex of tarsomere 1. Hind trochanter with 3 spine-like setae. Hind femur (Fig. 52) with 2D setae and 1A seta near apex; 8AV elongate spine-like setae; 13V short spine-like setae with protuberant bases, eight distalmost setae reduced to short robust spines; PV series with 3 setae on basal third and 5 on apical third. Fore and mid tarsomere 1 with 1A short and robust basal seta. Hind tibia without stout setae. Wing narrow, slightly brownish, stigma pale; costal cell narrow; R_{4+5} and

M_1 slightly convergent apically. Abdomen black; shiny with brown pruinescence on tergite 1, tergite 8, sternites with sparse brown pruinescence; abdomen about 2.7 times longer than thorax. Setulae thin and short, very sparse and almost inconspicuous dorsally, yellow; long setae on tergite 1, lateral on tergites 2–4 and very long and numerous on distal margin of sternite 8 (as long as sternite). Terminalia (Figs. 12–15). Hypandrium short and wide, distal margin truncate, bearing several long thin setae. Right epandrial lamella bearing long and stout spine-like setae and a long ventral process, both on distal margin; left epandrial lamella with long and robust process on distal margin and a series of long and very slender setae along ventral margin. Postgonite ribbon-like, slender; phallus short, robust, swollen apex bearing short lobes and strong spines.

Female. Unknown.

Type material. Holotype male (QCAZ). ECUADOR. Zamora Chinchipe, Estación Científica San Francisco [Reserva Biológica San Francisco], 0713956-9560588, Canal trail 1956 m, Varredura, 12–17/iv/2015, A. Plant & J. Camara Leg. Condition: good except the left postpedicel and stylus, right stylus and ocellar setae lost; not dissected.

Paratypes: same data as holotype (2 males QCAZ; 1 male INPA). Geographical distribution. Ecuador (Zamora Chinchipe).

Etymology. From the Latin *globus* = ball, in reference to the globose appearance of the male hypopygium.

Comments. In the external morphology, this species is similar to *N. colombiensis* Ale-Rocha, 2007. With respect to male terminalia, the most conspicuous difference between this species can be seen in the shape of hypandrium which is short and wide with distal margin truncate, bearing several long thin setae in *N. globosus* **sp. nov.**

Neohybos rostratus **sp. nov.**

(Figs. 16–20, 46, 53)

Diagnosis. Thorax black except for yellow spot on postpronotal lobe and postalar callus, anepisternum yellowish on upper half; scutum shiny with brown pruinescence on lateral and prescutellar disc; one posterior dc pair of poorly developed setae. Coxae pale brown, trochanters yellow, fore and mid femora brown; hind femur yellow basally, brown to black medially and yellow apically; fore and mid tibiae yellow, hind tibia yellow on basal third and becoming dark brown toward apex; fore and mid tarsomeres 1–2 yellow, all tarsomeres 3–5 dark brown, hind tarsus brown except tarsomere 1 yellow on basal half. Wing slightly brownish, stigma brown. Hypandrium slender with median long proboscis-like lobe bearing several long thin basal setae; phallus long and slender bearing robust distal spines.

Description. Holotype male (QCAZ) (Fig. 46). Body: 5.4 mm. Wing: 5.0 mm. Head. Face narrowly dichoptic, black and shorter than frons. Ocellar setae thin, parallel and oriented upward. Postcranium clothed in dense brown pruinescence; postocular setae elongate; occipital setae short and uniserial. Thorax black except for yellow spot on postpronotal lobe and postalar callus, anepisternum yellowish on upper half; scutum entirely shiny with discreet bluish metallic shine, pruinescence brown on lateral and prescutellar disc. Pleura covered by dense brown pruinescence. Setae black; acr and dc setae uniserial, sparse, very thin and short; ial and spal setae short, sparse; 2 npl setae, as long as apical scutellar pair; pal seta developed, slightly shorter than npl seta; one posterior dc pair poorly developed. Scutellum with 6 pairs of setae: one apical pair long, robust, widely separated and divergent; 5 lateral slender pairs, shorter than apical pair. Legs with pale-brown coxae, yellow trochanters, and fore and mid femora brown; hind femur yellow basally, brown to black medially and yellow apically; fore and mid tibiae yellow, hind tibia yellow on basal third and becoming dark brown toward apex; fore and mid tarsomeres 1–2 yellow, all tarsomeres 3–5 dark brown, hind tarsus brown, except tarsomere 1 yellow on basal half. Hind femur slightly thickened toward apex, claviform, clothed in sparse, thin, pale-brown setae; hind tibia nearly straight, cylindrical, setulae brown. Fore tibia with 1A short preapical seta and 1P elongate seta, reaching mid-length of tarsomere 1. Fore tarsomere with 1A elongate seta and 1P preapical, more robust seta. Mid tibia with 3AD more robust, short and strong setae on basal half, and 1P long apical seta reaching apex of tarsomere 1. Mid tarsomere 1 with 1 long and robust preapical AD seta, 1 elongate sub-basal V seta reaching apex of tarsomere 1. Hind trochanter with 2 robust, spine-like setae. Hind femur (Fig. 53) with 2D setae on distal fourth; 1A seta on distal third; 10AV spine-like, elongate setae; 17V spine-like and short setae with protuberant base, the five distalmost reduced to short robust spines; PV series with 5 spine-like setae on distal third and 2 sub-basal setae. First four tarsomeres with 1A short and robust seta at base. Hind tibia lacking strong setae. Wing narrow, slightly brownish, stigma brown; costal cell narrow; R_{4+5} and M_1 slightly convergent apically. Abdomen black, shiny, with brown pruinescence on tergite 1, base of tergites 2 and 8 and very sparse pruinescence on sternites; about 3.4 times longer than length of thorax. Setulae yellow, thin, very sparse, short and inconspicuous dorsally; long setae

on tergite 1, on lateral of tergite 2 and on distal margin of sternite 8. Terminalia (Figs. 16–20) elongate and slender. Hypandrium slender with median long proboscis-like lobe bearing several long thin basal setae on right margin and long setae along left margin. Epandrium elongate; right lamella bifid distally; left lamella curved inward distally. Postgonite very slender. Phallus long and slender bearing robust distal spines.

Female. Unknown.

Type material. Holotype male (QCAZ). ECUADOR. Zamora Chinchipe, Estación Científica San Francisco [Reserva Biológica San Francisco], 0713956-9560588, Canal trail 1956 m, Varredura, 12–17/iv/2015, A. Plant & J. Camara Leg. Condition: good except by postpedicel and stylus lost; terminalia dissected, stored within a microvial with glycerin.

Geographical distribution. Ecuador (Zamora Chinchipe).

Etymology. From the Latin *rostrum* = beak, snout, in reference to the elongate snout-like lobe on distal margin of hypandrium.

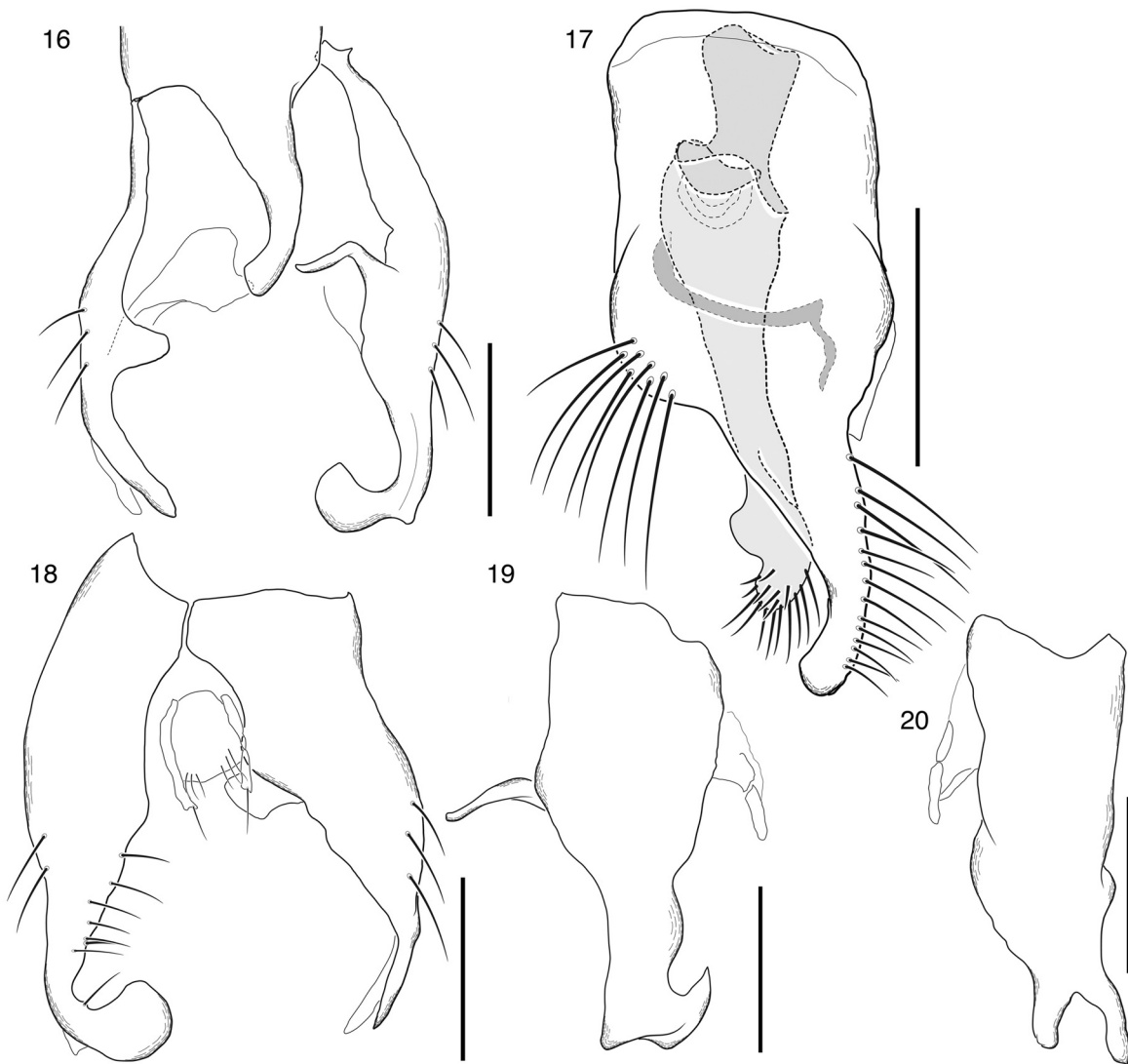
Comments. In the external morphology, this species is similar to *N. fuscipes* Ale-Rocha, 2007, but can be distinguished from it by the shape of male terminalia. In *N. rostratus* **sp. nov.**, the hypandrium is slender with median long proboscis-like lobe bearing several long thin setae, right epandrial lamella bifid distally, left lamella curved inward distally, phallus slender bearing robust distal spines. In *N. fuscipes*, the hypandrium is broad with three elongate lobes, right epandrial lamella truncate distally, left epandrial lamella not curved inward distally, phallus robust with brush of numerous, long and stout ventral bristles at distal third.

Neohybos serratus **sp. nov.**

(Figs. 21–24)

Diagnosis. Thorax black; scutum shiny with brown pruinescence laterally and on prescutellar disc. Postpedicel slender and fusiform. One posterior poorly developed dc pair of setae. Legs with apex of all femora yellow, fore tibia pale brown with base and apex yellow, mid tibia and all tarsomeres 1–2 pale yellow, hind tibia yellow on basal half and dark brown on apical half, all tarsomeres 3–5 and remaining parts brown to dark brown. Wing hyaline, stigma slightly brownish. Phallus deeply cleft distally with left branch saw-toothed.

Description. Holotype male (QCAZ). Body: 5.4 mm. Wing: 4.7 mm. Head. Postpedicel small, twice longer than wide, shorter than length of scape and pedicel combined. Face narrowly dichoptic, black, shorter than frons. Postcranium clothed in dense brown pruinescence; postocular setae elongate; occipital setae short, thin and somewhat numerous. Thorax black; scutum shiny, with a discreet metallic bluish shine, with pale-brown pruinescence laterally and on prescutellar disc. Pleura covered by dense pale-brown pruinescence. Acrostichal and dc setae uniserial, sparse, very thin and short, black; ial and spal setae sparse; 2 npl setae as long as apical scutellar pair; pal developed but shorter than npl setae; posterior dc pair poorly developed. Scutellum with 8 pairs of setae: one apical pair long, robust, parallel, widely separated; 6 slender lateral setae, half-length of apical pair; one pair of very thin and small parallel setae between the long apical pair. Legs: apex of all femora yellow, fore tibia pale brown with base and apex yellow, mid tibia and all tarsomeres 1–2 pale yellow, hind tibia yellow on basal half, all tarsomeres 3–5 and remaining parts brown to dark brown. Hind femur slightly thickened toward apex, claviform, clothed in sparse thin yellow setae; hind tibia nearly straight, cylindrical, setae brown. Fore tibia with 1A short and 1P preapical setae. Fore tarsomere 1 with 1A short and more robust seta and 1P preapical seta. Mid tibia with 2AD more robust and short setae on dorsal half and 1P long apical seta, reaching apex of tarsomere 1. Mid tarsomere 1 with 1 preapical short and robust AD seta, 1V elongate sub-basal seta reaching apex of tarsomere 1. Hind trochanter with 1 robust



Figs. 16–20. *Neohybos rostratus* sp. nov.. Male hypopygium (holotype): **16**, epandrium and apex of hypandrium, ventral aspect; **17**, hypandrium (phallus and postgonites darkened); **18**, epandrium and cerci, dorsal aspect; **19**, **20**, left and right epandrial lamellae, respectively, lateral aspect. Scale bar = 0.3 mm.

spine-like seta. Hind femur with 2D setae on distal sixth; 1A seta on distal fifth; 9AV spine-like elongate setae; 13V spine-like short setae with protuberant base, and the 9 distalmost, reduced to short and robust spines; PV series with 5 setae on basal third and 3 on apical third. Fore tarsomeres 1–4 with 1A short and robust basal seta. Hind tibia lacking strong setae. Wing narrow, hyaline with slightly brownish stigma; costal cell narrow; R_{4+5} and M_1 parallel apically. Abdomen dark brown; shiny with brown pruinescence on tergite 1 and tergite 8, and very sparse brown pruinescence on sternites; about 3.5 times longer than length of thorax. Setulae thin and short, very sparse, inconspicuous dorsally, yellow; long setae on T1, on lateral of T2 and on distal margin of St 8. Terminalia (Figs. 21–24) globose. Hypandrium short, distinctly narrow basally and wider distally, posterior margin somewhat concave, bearing some long and robust setae. Right epandrial lamella bearing long spine-like setae on distal margin, and large distal process; left epandrial lamella with large curved distal process with apex broadened in lateral view. Postgonite very slender, ribbon-like. Phallus unusual, long, narrower medially and deeply cleft distally, left branch bearing robust spines distally and a series of conspicuous tooth, saw-like lobes, on shaft.

Female. Unknown.

Type material. Holotype male (QCAZ). ECUADOR. Zamora Chinchipe, Estación Científica San Francisco [Reserva Biológica San Francisco], 0713956-9560588, Canal trail 1956 m, Varredura, 12–17/iv/2015, A. Plant & J. Camara Leg. Condition: good except by the right postpedicel and stylus, and ocellar pair of setae lost; terminalia dissected, stored within a microvial with glycerin.

Geographical distribution. Ecuador (Zamora Chinchipe).

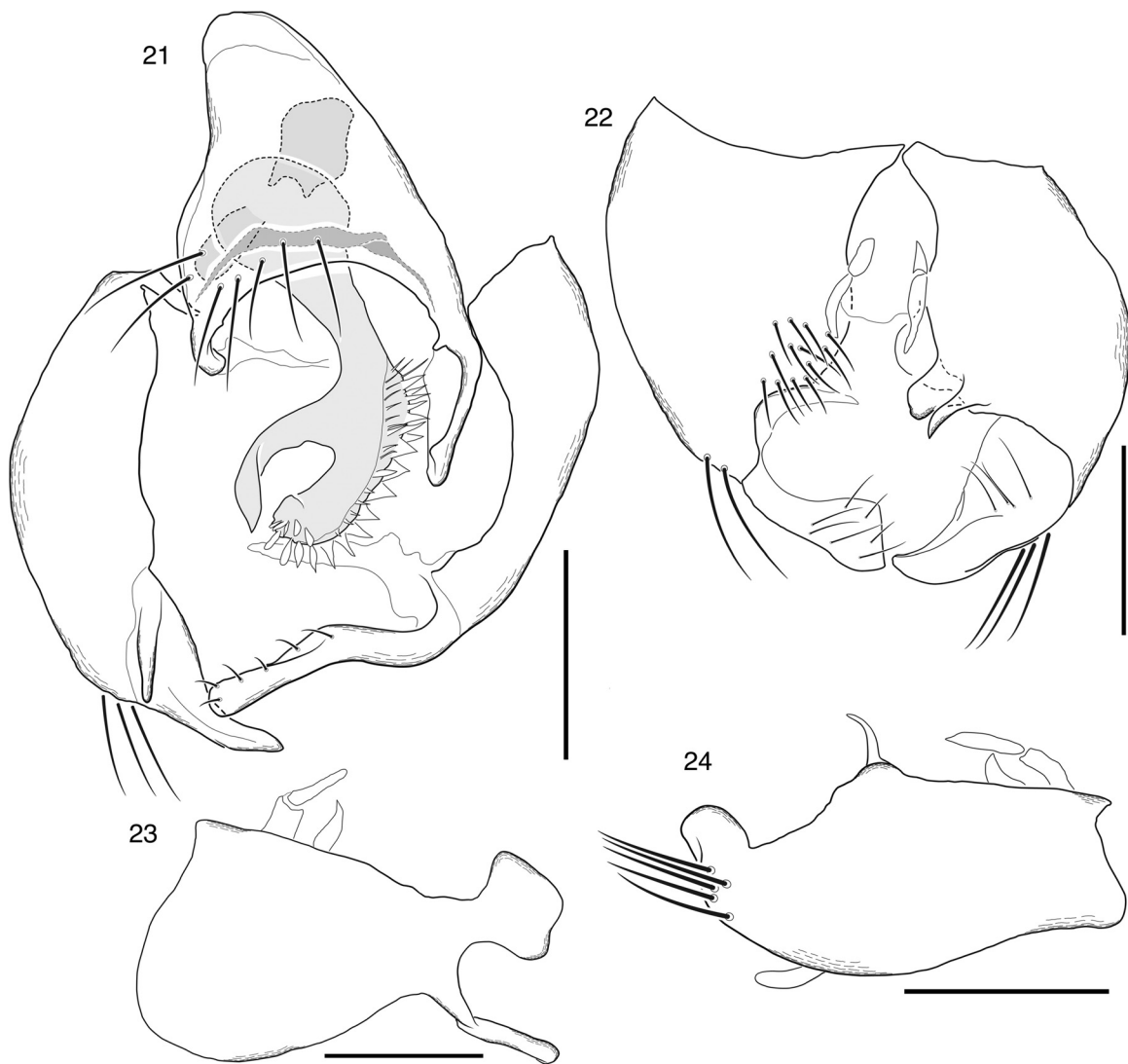
Etymology. From the Latin *serra* = saw, in reference to the toothed saw-like apex of phallus.

Comments. This can be distinguished from all other species of *Neohybos* by the distinctive shape of the male terminalia, particularly the phallus which is narrower medially, deeply cleft distally with left branch saw-toothed distally.

Neohybos spinosus sp. nov.

(Figs. 25–30, 54)

Diagnosis. Thorax black, scutum with weak metallic bluish shine, brown pruinescence only on lateral of scutum and prescutellar disc; postpedicel slender and lanceolate; posterior dc setae pair not developed; legs brown to black except mid tibia, tarsomeres 1–2, distal half of fore tibia and basal half of hind tibia dark yellow;

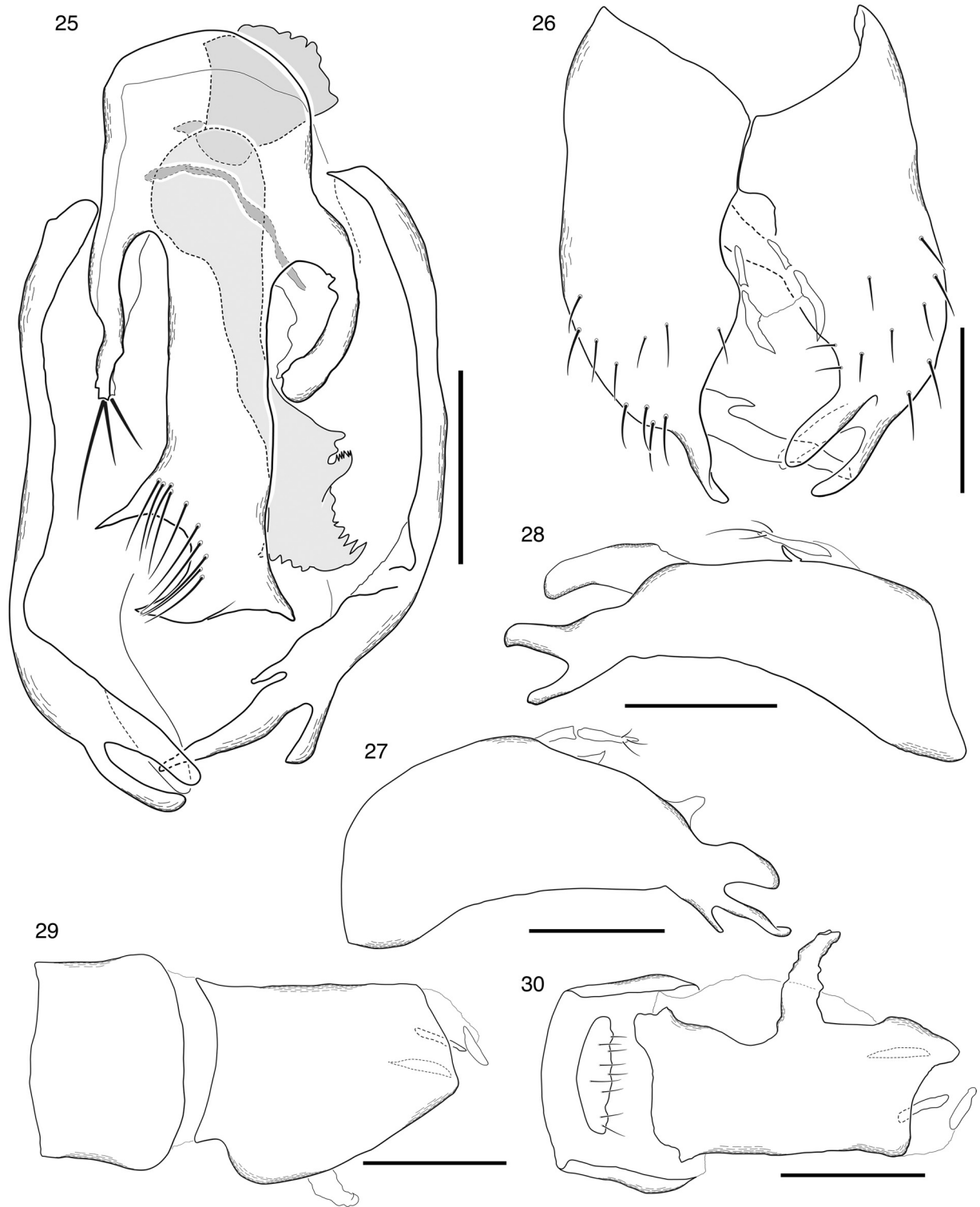


Figs. 21–24. *Neohybos serratus* sp. nov.. Male hypopygium (holotype): **21**, hypandrium and epandrium, ventral aspect (phallus and postgonites darkened); **22**, epandrium and cerci, dorsal aspect; **23, 24**, left and right epandrial lamellae, respectively, lateral aspect. Scale bar = 0.3 mm.

wing pale brown, stigma brown, hind femur with long AV spine-like setae, giving it a thorny appearance; distal margin of hypandrium with a long and wide median lobe, almost twice length of hypandrium, bearing several long slender setae and three sharpened tips distally; phallus long, with a swollen apex with dentate margins.

Description. Holotype male (QCAZ). Body: 4.7 mm. Wing: 4.8 mm. Head. Postpedicel 3 times longer than wide (observed in female), as long as length of scape and pedicel combined. Face narrowly dichoptic, black and shorter than frons. One pair of short, parallel ocellar setae. Postcranium shiny, clothed in sparse yellow pruinescence; postocular setae short; occipital setae thin, yellow and uniserial. Thorax black; scutum with weak metallic bluish shine, brown pruinescence only on lateral of scutum and prescutellar disc. Pleura covered by dense pale-brown pruinescence. Acrostichal and dc setae very thin and short, sparse and brown; acr setae 4-serial; dc setae uniserial; ial and spal setae sparse; 2 npl setae as long as apical scutellar pair; pal seta shorter than npl seta; posterior dc pair not developed. Scutellum with 6 pairs of setae: apical pair longest, robust and parallel, twice longer than the very thin lateral setae. Legs brown to black except mid tibia, all tarsomeres 1–2, distal half of fore tibia and basal half of hind tibia dark yellow. Hind femur moderately thickened, with a thorny appearance due to the long AV spine-like setae; hind tibia slightly arched and

cylindrical. Setae yellow. Fore tibia with 1A short preapical seta and 1P long seta reaching mid-length of tarsomere 1. Fore tarsomere with 1A short and robust, 1D and 1P preapical setae. Mid tibia with 3AD elongate and strong setae on upper half and 1P long apical seta reaching apex of tarsomere 1. Mid tarsomere 1 with 1 short and robust preapical AD seta, 1 long sub-basal V seta reaching mid-length of tarsomere 2. Hind trochanter with 2 robust setae. Hind femur (Fig. 54) with 2D setae on distal fourth and 1 robust A seta beyond mid-length; 9 long, spine-like AV setae; 16 V, shorter spine-like setae with protuberant bases, the 9 basalmost setae developed and the 7 apicalmost setae reduced to short, robust spines; PV series with 7 spine-like setae on distal half. Mid tarsomere 1 with 1 basal and 1 preapical, slender, somewhat elongate, dorsal setae. Hind tibia lacking outstanding setae. Wing somewhat broadened, stigma infusate with brown; costal cell narrow; R_{4+5} and M_1 slightly convergent apically. Abdomen black; all segments covered with very fine and sparse metallic bluish dust, brown pruinescence only on tergite 1, base of tergites 2 and 8 and very sparse on sternites; abdomen long and slender, about 3 times longer than length of thorax. Setulae yellow, very thin and short, almost inconspicuous dorsally, and longer on T1, lateral of T2–3 and very long on distal margin of St 8 (as long as sternite). Terminalia (Figs. 25–28). Distal margin of hypandrium with long and wide median lobe, almost



Figs. 25–30. *Neohybos spinosus* sp. nov. Male hypopygium (holotype): **25**, epandrium and hypandrium, ventral aspect (phallus and postgonites darkened); **26**, epandrium and cerci, dorsal aspect; **27, 28**, left and right epandrial lamellae, respectively, lateral aspect. Female terminalia: **29, 30**, dorsal and ventral aspect, respectively. Scale bar = 0.3 mm.

twice length of hypandrium, bearing several long slender setae and three sharpened tips distally. Right epandrial lamella slender and bifurcate distally, with preapical dorsal elongate process; left epandrial lamella bearing three distal lobes with varied shapes. Postgonite ribbon-like, slender; phallus long, narrowest on medial portion with a swollen apex with dentate margins.

Female. Similar to male except for hind femur with 1D setae on distal fourth, 8 long spine-like AV setae, 9V short spine-like setae

and PV series with 5 spine-like setae on distal third. Terminalia (Figs. 29 and 30): Segment 8 asymmetrical, rotated 45° to the left; sclerites fused forming a cylindrical structure, membranous on left side in ventral view, lateral margin of ventral plate bearing an elongate finger-like projection at mid-length; cercus positioned on right side.

Type material. Holotype male (QCAZ). ECUADOR. Zamora Chinchipe, Estación Científica San Francisco [Reserva Biológica

San Francisco], 0713956-9560588, Canal trail 1956 m, Varredura, 12–17.iv.2015, A. Plant & J. Camara Leg. Condition: good except by postpedicel and stylus of the antennae and ocellar setae lost; terminalia dissected, stored within a microvial with glycerin.

Paratypes: same data as holotype (2 females INPA, 2 females CCAZ).

Geographical distribution. Ecuador (Zamora Chinchipe).

Etymology. From the Latin *spina* = thorn, in reference to the long AV spine-like setae on hind femur, giving it a thorn appearance.

Comments. This species has a very distinctive combination of characters: male with outstanding spine-like setae on hind femur, hypandrium with distal margin bearing a long and wide median lobe, almost twice length of hypandrium, bearing several long slender setae and three sharpened tips distally; phallus long, with a swollen apex with dentate margins; and female with unusually rotated eighth abdominal segment with a digitiform process that is easily visible externally.

Syndyas longiventris **sp. nov.**

(Figs. 31–35, 47)

Diagnosis. Abdomen long and slender, about 4 times longer than length of thorax; scutum and pleura black; scutellum with 1 apical robust seta and 6 lateral slender setae; wing with cells bm and br subequal in length; hind femur moderately swollen with 16AV spine-like setae inserted on small protuberances; fore and mid tibiae, apex of fore and mid femora, all tarsomeres 1–2 and basal half and apex of hind tibia dark yellow, remaining parts brown to dark brown.

Description. Holotype male (UTPL) (Fig. 47). Body 6.7 mm; wing 3.7 mm. Head. Upper facets discreetly enlarged. Ocellar setae parallel, erect, long and slender. Face narrow, black with brown pruinescence. Antenna brown; pedicel with short, slender setae; postpedicel about twice longer than wide, as long as length of scape and pedicel combined; stylus 3 times length of antenna. Postcranium black; pruinescence brown, paler and denser around subcranial cavity; postocular setae long and weak, pale brown; lower half of occiput with short and weak setae. Palpus pale brown; proboscis dark yellow. Thorax black in ground-color; scutum covered by pale-brown pruinescence except for a narrow bare band on anterior margin. Acrostichal and dc multiserial, weak and yellow, longer on prescutellar disc; pronotum with one row of elongate and thin marginal setae; 2 long and stout npl; pal not present; scutellum with 1 preapical pair (broken) and 6 short and thin, lateral setae. Legs. Fore and mid legs with apex of femora, tibiae and tarsomeres 1–2 dark yellow, remaining parts brown; hind leg with coxa, trochanter and femur black, tibia dark yellow with wide brown ring beyond mid-length, tarsomeres 1–2 dark yellow, 3–5 brown. Coating setulae sparse, thin, pale brown to yellow, longer on posterior surface of mid tibia and fore coxa. Hind femur moderately swollen. Hind tibia tubular, slightly arched and swollen apically. Hind tarsomere 1 approximately as long as all remaining tarsomeres combined. Mid tibia with robust AD setae, becoming longer apically, and short robust setae surrounding apex, 1 V apical longer seta, about half-length of respective tarsomere 1. Hind coxa with anterior robust preapical setae. Hind trochanter with 1 V short and robust spine. Hind femur bearing 16AV spine-like, long setae that become shorter apically; row with 10PV spine-like short setae inserted on small tubercles, becoming longer apically; 1D seta on apical fourth and 1A long and robust seta. Fore and mid tarsomere 1 bearing 1 medial and 1 preapical dorsal, robust and elongate setae; fore tarsomere 1 with short AV spine-like seta. Wing hyaline, stigma not colored; first section of vein M and vein A₁+CuA₂ inconspicuous; costal, r1, br, bm, basal half of r2+3 and dorsal margin of cup cells lacking microtrichiae; Sc not reaching beyond h, reaching near R1 as a fold; br and bm subequal in length. Abdomen dark brown, all

segments covered by dense red brown pruinescence dorsally and fine sparse bluish dust laterally. Abdomen long and slender, about 4 times length of thorax; setae yellow, thin, very sparse, inconspicuous dorsally and longer laterally on tergites 1–2. Sterite 8 with elongate setae on distal margin. Terminalia (Figs. 31–35) robust. Distal margin of hypandrium triangular with long marginal setae. Epandrium large; left epandrial lamella shorter than right lamella, distal margin rounded in lateral view, bearing elongate and robust spine-like setae, a sinuous and elongate distal process on ventrolateral margin, and dorsolateral margin bearing small distal bilobed process; right epandrial lamella with distal margin trilobed in lateral view, ventrolateral margin deeply cleft basally and bearing moderately long setae. Phallus short and robust, bearing developed and sclerotized ejaculatory apodeme. Postgonite wide, partially encircling the phallus.

Female. Unknown.

Type material. Holotype male (UTPL). ECUADOR. Zamora Chinchipe: Bombuscaro, Podocarpus National Park, trail Higueroles, 1000 m, 15/02/2009–21/02/2009 (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-32/MP&ADB-006. Condition: good, abdomen dissected.

Geographical distribution. Ecuador (Zamora Chinchipe).

Etymology. From the Latin *longus* = long and *ventris* = abdomen, in reference to the very long and slender abdomen.

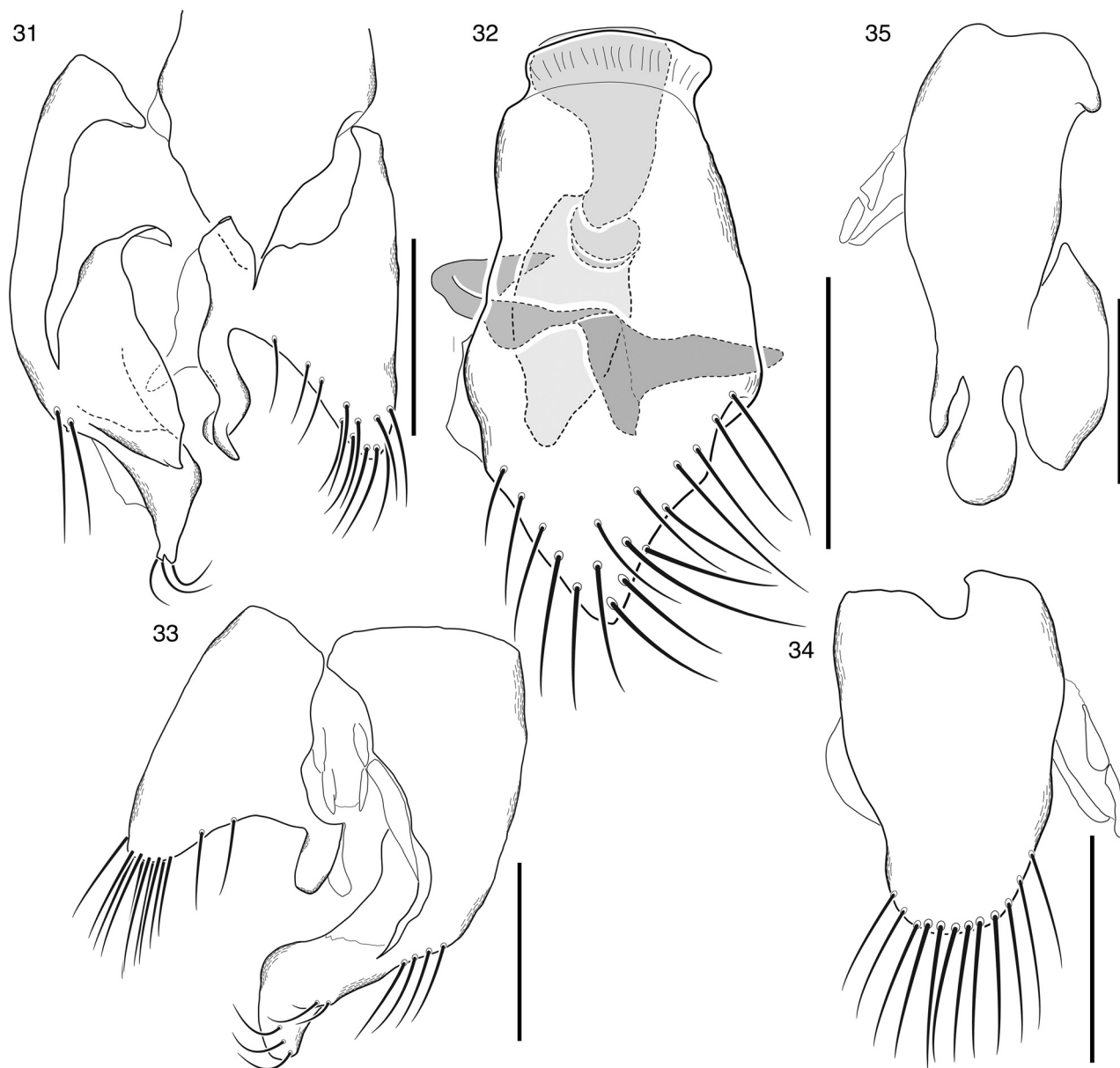
Comments. This is the second species of *Syndyas* known from the Neotropical Region. This species differs from *Syndyas amazonica* Ale-Rocha, 1999, the other Neotropical species, in having a long abdomen, about 4 times length of thorax, scutellum with seven pairs of setae, and some features of male terminalia. In *S. amazonica*, the male terminalia is comparatively simpler, the distal margin of the hypandrium is truncate and the epandrial lamellae are slightly concave on distal margin, forming two small lobes (Ale-Rocha, 1999, Figs. 3–6).

Syneches flavithorax **sp. nov.**

(Figs. 36–38, 48)

Diagnosis. Antenna, proboscis, palpus and scutum yellow; pleura yellow with ventral margin of anepisternum, ventral half of katepisternum and meron pale brown. Legs long and slender, yellow except apex of hind femur black; mid tibia with 1 long AD seta. Wing with colorless stigma. Hypandrium elongate; distal margin with a deep medial concavity forming two lobes bearing long setae, apical seta longest.

Description. Holotype male (UTPL) (Fig. 48). Body 4.0 mm; wing 3.8 mm. Head. Eyes with lower facets slightly enlarged near subcranial cavity. Eyes yellow on upper part and pale brown on lower part. Ocelli yellow. Ocellar triangle very protuberant, as high as twice the diameter of ocellus; ocellar setae short and slender. Face brown with brown pruinescence. Antenna yellow with short yellow microtrichiae; pedicel with short, brown marginal setae; postpedicel small, as long as length of scape and pedicel combined, rounded, 1.5 times longer than wide, with 1 dorsomedial brown seta as long as postpedicel; stylus about 4.5 times length of antenna, with short microtrichiae, bare on distal fourth. Postcranium dark brown with ferruginous pruinescence, setae brown; postocular setae short, straight and sparse; occipital setae sparse, moderately long, about twice length of postocular setae. Proboscis and palpus brown; palpus short, third length of proboscis, microtrichiae yellow, 1 apical and 1 long ventral medial setae. Thorax. Prosternum narrow. Pronotum yellow with short brown marginal setae. Scutum yellow, strongly arched, pyramidal, postalar callus whitish; golden pruinescence anteriorly and whitish pruinescence on prescutellar disc; scutellum yellow with yellow pruinescence. Setae short, sparse and brown (setae of prescutellar disc lost); acr setae 4-serial; dc setae uniserial; 2 robust npl setae, widely separated,



Figs. 31–35. *Syndyas longiventris* sp. nov.. Male hypopygium (holotype): **31**, epandrium and apex of hypandrium, ventral aspect; **32**, hypandrium (phallus and postgonites darkened); **33**, epandrium and cerci, dorsal aspect; **34**, **35**, right and left epandrial lamellae, respectively, lateral aspect. Scale bar = 0.3 mm.

the posterior longer; 1 pal seta. Scutellum with 1 subapical pair of long and robust setae; apical pair slender, half-length of subapical pair; and 3 weak lateral setae, about two-thirds of subapical pair. Pleura yellow, except for lower half of meron and katepisternum, and ventral margin of anepisternum pale brown; pruinescence yellow. Legs long and slender, yellow except apex of hind femur black. Coating setulae short, sparse, pale brown; outstanding setae sparse. Mid tibia with 1 long sub-basal AD seta reaching apex of tibia, and 1 moderately long apical V seta, surpassing mid-length of tarsomere 1. Hind tibia with 1D seta before middle and 1P preapical, moderately long seta. Hind femur with 1AV seta anterior to mid-length and 1AV seta on distal fourth, moderately long and only slightly thickened. Wing. Subhyaline, stigma colorless; apex of R_{2+3} nearly straight. Abdomen about 2.5 times longer than thorax; brown with golden pruinescence. Setae brown, sparse, elongate, stouter on latero-distal margin of tergites. Terminalia (Figs. 36–38) robust. Hypandrium elongate; distal margin with a deep medial concavity forming two lobes bearing long setae, apical seta longest.

Epandrial lamella wide; with one long and stouter preapical seta. Phallus robust with sharpened apex and two elongate lateral protuberances. Postgonite broad, as long as phallus.

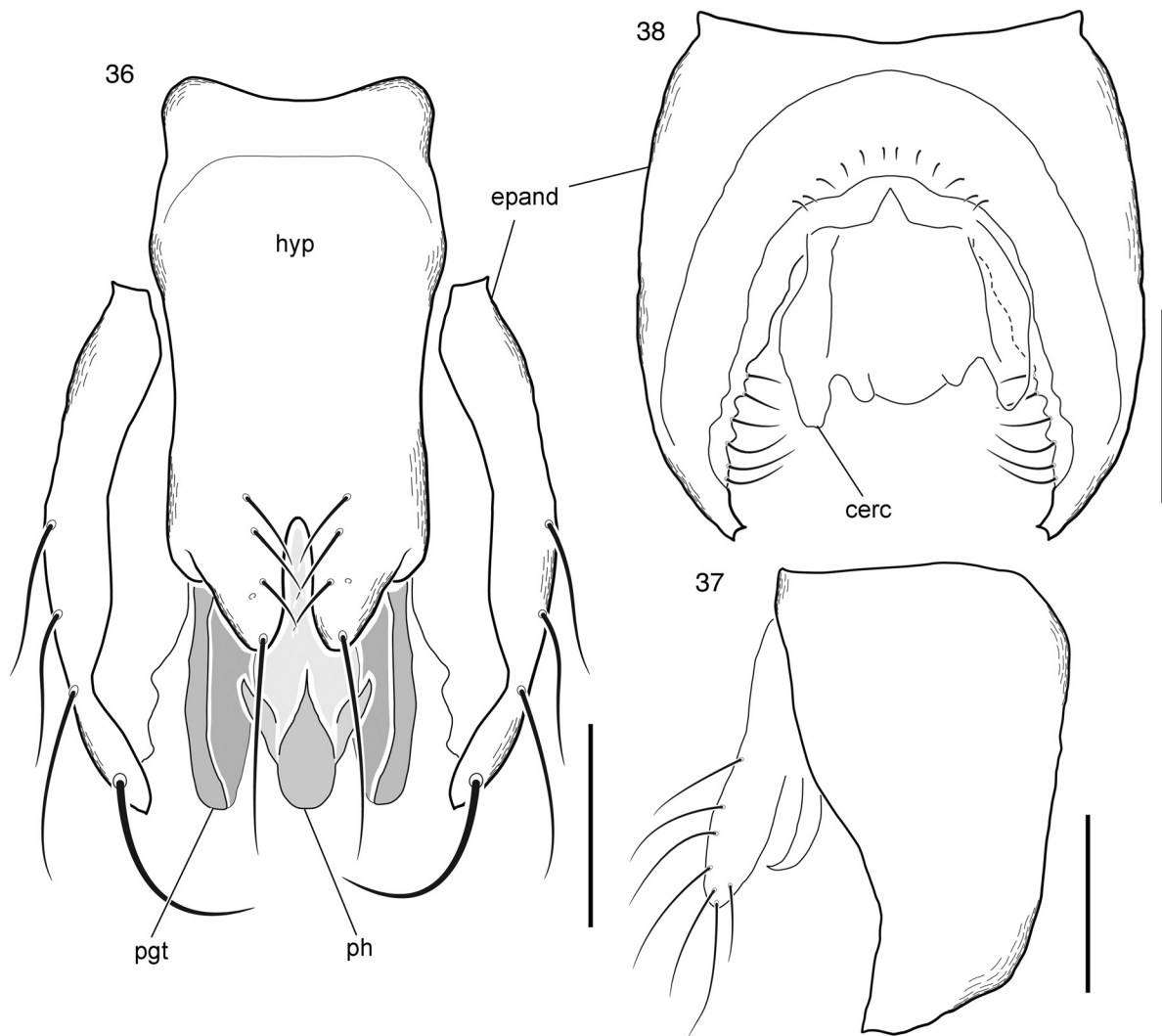
Female. Unknown.

Type material. Holotype male (UTPL). ECUADOR. Zamora Chinchipe: San Francisco, Reserva Biológica San Francisco, trail Canal, 2000 m, 03°58'30" S 79°04'25" W, 13/02/2009–3/03/2009 (MT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-36/MP&ADB-017. Condition: good, abdomen dissected.

Geographical distribution. Ecuador (Zamora Chinchipe).

Etymology. From the Latin *flavus* = yellow, in reference to the coloration of thorax.

Comments. This species is similar to *S. moraballi* Smith, 1963 by having prescutellar disc covered by dense whitish pruinescence, legs slender and yellow, and wing hyaline with colorless stigma. *S. flavithorax* sp. nov. has yellow thorax, apex of hind femur black and hind tibia lacking median ring, while in *S. moraballi*, the thorax is light brown, the hind femur



Figs. 36–38. *Syneches flavithorax* sp. nov.. Male hypopygium (holotype): **36**, epandrium, hypandrium, phallus and postgonites, ventral aspect; **37**, right epandrial lamella, lateral aspect; **38**, epandrium and cerci, dorsal aspect. Scale bar = 0.1 mm.

is entirely yellow and the hind tibia has a median brown ring.

Syneches polleti sp. nov.

(Figs. 39–43, 49)

Diagnosis. Antenna pale brown to brown. Proboscis and palpus yellow. Thorax brown except postpronotal lobe and postalar callus yellow; scutum highly arched but rounded with reddish brown pruinescence on anterior half and mixed gray and golden pruinescence on prescutellar disc and scutellum, and slender grayish yellow dorsocentral stripe; prosternum narrow. Legs slender with hind tibia swollen toward apex and hind tarsomere 1 enlarged; legs yellow except coxae, trochanters, apex of hind femur, distal three-fourths of fore tibia, hind tarsomere 1, distal portion of hind tarsomeres 2–5 and fore and mid tarsomeres pale brown. Hypandrium elongate; with some long setae on distal half medially; distal margin with shallow medial concavity forming two round lateral lobes.

Description. Holotype male (UTPL) (Fig. 49). Body 4.7 mm; wing 3.7 mm. Head. Eyes and ocelli yellow. Ocellar triangle slightly protuberant; anterior pair of ocellar setae long and posterior pair very short and thin. Face brown with brown pruinescence. Scape and pedicel pale brown; pedicel bearing elongate brown marginal setae; postpedicel shorter than length of scape and pedicel

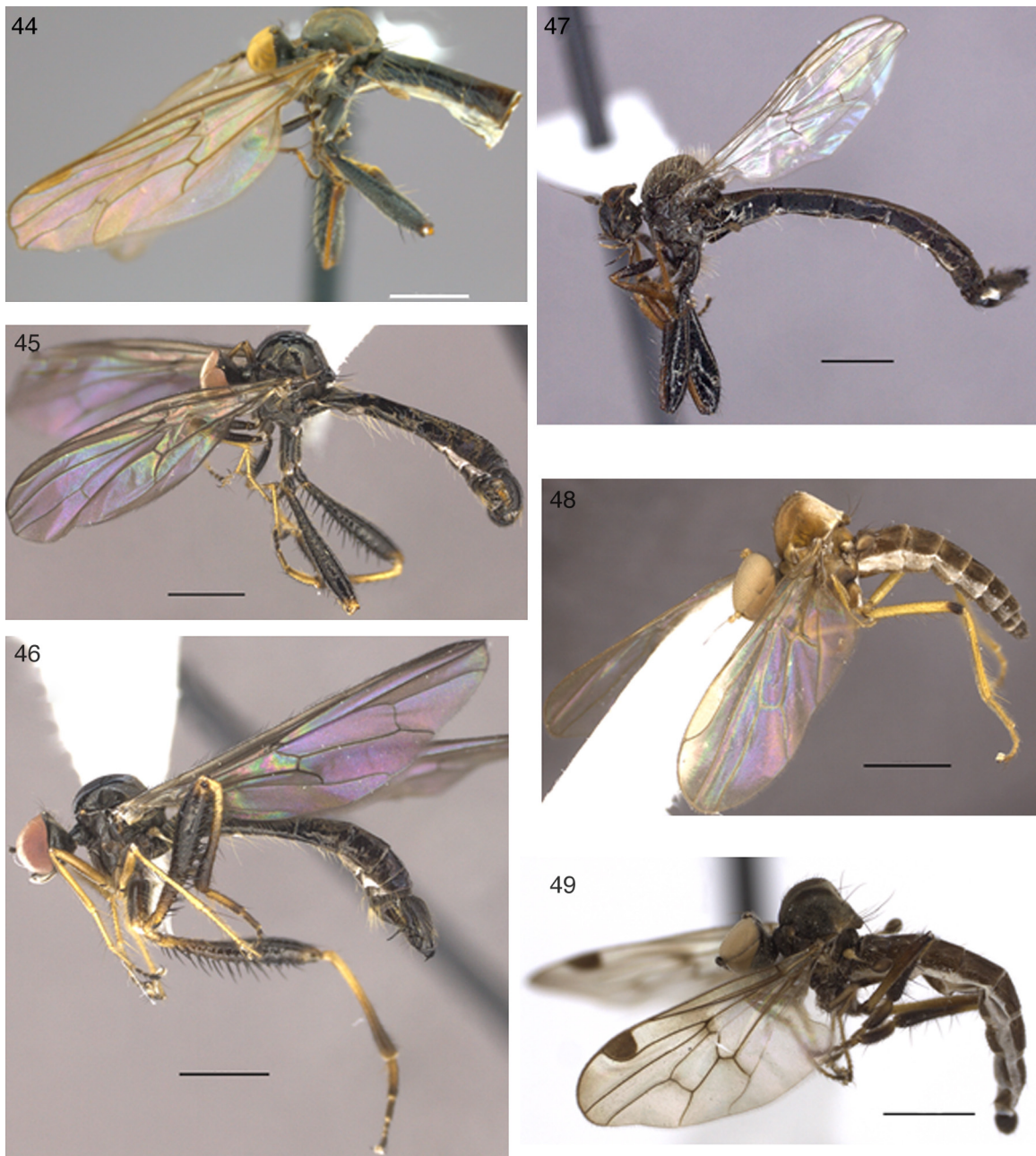
combined, brown, with 1 short sub-basal dorsal seta, apex truncate; stylus bare, approximately twice length of antenna. Postcranium brown, pruinescence sparse and pale; postocular setae short, almost inconspicuous on upper half of postcranium, brown; occipital setae sparse, longer than postoculars. Proboscis and palpus yellow; palpus with one apical and one long ventral median setae. Thorax. Prosternum narrow. Pronotum with short, pale-brown, marginal setae. Scutum highly arched but rounded; brown with postpronotal lobe and postalar callus yellow; with reddish brown pruinescence on anterior half and mixed gray and golden pruinescence on prescutellar disc and scutellum, a slender grayish yellow dorsocentral stripe and pale pruinescence laterally. Setae short, sparse and brown, longer on prescutellar disc; acr setae multiserial with one discreetly differentiated pair on prescutellar disc; dc setae uniserial, with 1 prescutellar pair long and robust and bent tip; ial sparse; 2 long npl setae; 1 long and slender pal seta. Scutellum setose with 1 long and robust, slightly convergent, subapical pair of setae; 2 slender apical pairs, convergent, about three-fourth the length of subapical pair; and 5 slender lateral setae, as long as apical pair. Pleura brown with pale pruinescence. Legs slender; femora not swollen; hind tibia swollen toward apex; hind tarsomere 1 enlarged. Coxae, trochanters, apex of hind femur, distal three-fourths of fore tibia, hind tarsomere 1, distal portion of hind tarsomeres 2–5 and fore and mid tarsomeres pale brown,



Figs. 39–43. *Syneches polleti* sp. nov.. Male hypopygium (paratype): **39**, epandrium, hypandrium, phallus and postgonites, ventral aspect; **40**, right epandrial lamella, lateral aspect; **41**, epandrium and cerci, dorsal aspect. Female terminalia: **42**, **43**, dorsal and ventral aspect, respectively. Scale bar = 0.1 mm.

remaining parts yellow. Setae pale brown. Fore tibia with 3AD setae slightly longer and more robust than all other setae; basal third of mid tibia with 1AD seta and 1PV seta, very long, surpassing, apex of tibia, and 1 long apical P seta reaching apex of tarsomere 1. Hind femur with 4 very long AV setae, 1A seta and 1D short seta on distal fourth, and some elongate PV setae on distal third. Hind tibia with 1 median AD seta and 1 preapical AD seta, with both setae long and robust. Wing yellowish, subhyaline with

large quadrate brown stigma at the end of cell r1. Abdomen slender, about 3 times length of thorax; brown with reddish brown pruinescence. Setae brown, short dorsally and longer on lateral of tergites. Tergite 8 short; sternite 8 short and trapezoidal, with some setae on distal corners. Terminalia (Figs. 39–41) robust. Hypandrium elongate; with some long setae on distal half medially; distal margin with shallow medial concavity forming two round lateral lobes. Epandrial lamellae wide, slightly concave apically with small



Figs. 44–49. Hybotinae from Podocarpus National Park, Ecuador, habitus: **44**, *Neohybos fuliginosus* **sp. nov.**, holotype; **45**, *Neohybos globosus* **sp. nov.**, holotype; **46**, *Neohybos rostratus* **sp. nov.**, holotype; **47**, *Syndyas longiventris* **sp. nov.**, holotype; **48**, *Syneches flavithorax* **sp. nov.**, holotype; **49**, *Syneches polleti* **sp. nov.**, holotype. Scale bar = 0.1 mm.

dorsoapical projection and robust preapical setae. Phallus elongate with round apex and two small lateral protuberances. Postgonite broad, slightly longer than phallus.

Female. As in male. Terminalia (Figs. 42 and 43): T8 rectangular; St 8 mostly membranous with central portion sclerotized and short setae; cercus very short, ovate, about one-fourth length of segment 10.

Type material. Holotype male (UTPL). ECUADOR. Zamora Chinchipe: San Francisco, Reserva Biológica San Francisco, trail rio San Francisco, 2000 m, 03°58'30" S 79°04'25" W, 25/02/2009–3/03/2009 (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-36/MP&ADB. Condition: good, not dissected.

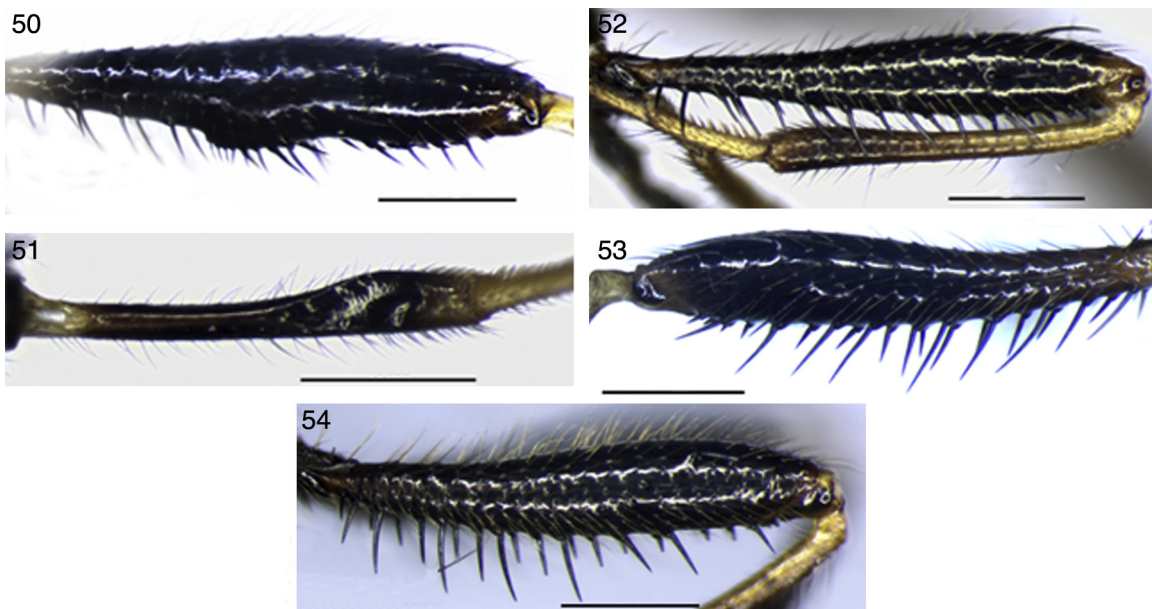
Paratypes. ECUADOR. Zamora Chinchipe: San Francisco, Reserva Biológica San Francisco, trail Canal, 2000 m, 03°58'30" S 79°04'25" W, 25/02/2009–3/03/2009 (YPT), leg. Marc Pollet & Anja

De Braekeleer, EC/2009-36/MP&ADB-016 (1 male, RBINS); same data as holotype (1 male, INPA).

Geographical distribution. Ecuador (Zamora Chinchipe).

Etymology. The species is named after Marc Pollet from the Research Institute for Nature and Forest (INBO), Brussels, Belgium, collector of the type-series, in honor of his worldwide contribution to the knowledge of Empidoidea.

Comments. This species is similar to *S. manaos* Smith, 1962 in having a narrow prosternum, wing with large quadrangular stigma at the end of vein r1 and abdomen slender and elongate. The two species can be distinguished by the protuberant ocellar triangle and slender femora in *S. polleti* **sp. nov.** In *S. manaos*, the ocellar triangle is not protuberant and all femora are swollen, notably the hind femur. Additionally, the features of the male terminalia are dissimilar in both species.



Figs. 50–54. Hybotinae from Podocarpus National Park, Ecuador, legs: **50**, *Euihybus pectinifemur* sp. nov., hind femur, posterior aspect; **51**, *Euihybus pectinifemur* sp. nov., hind tibia, posterior aspect; **52**, *Neohybos globosus* sp. nov., hind leg, anterior aspect; **53**, *Neohybos rostratus* sp. nov., hind femur, anterior aspect (holotype); **54**, *Neohybos spinosus* sp. nov., hind femur, anterior aspect. Scale bar = 0.5 mm.

New records from Ecuador and National Park of Podocarpus

The following species are herein recorded for the first time from the National Park of Podocarpus. Those with an asterisk are new records for Ecuador:

Neohybos brunnescens Ale-Rocha, 2007*

Material examined. ECUADOR. Loja: Cajanuma, Podocarpus National Park, trail Oso de anteojos, 3000 m, 16/02/2009–20/02/2009, (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-31/MP&ADB-011 (1 male, RBINS); 16/02/2009–20/02/2009, EC/2009-31/MP&ADB-012 (1 male, 3 females, RBINS); 20/02/2009–27/02/2009, EC/2009-34/MP&ADB-003 (1 female, RBINS); 20/02/2009–27/02/2009, EC/2009-34/MP&ADB-011 (1 female, RBINS); 20/02/2009–27/02/2009, EC/2009-34/MP&ADB-012 (1 male, 3 female, RBINS); 27/02/2009–5/03/2009, EC/2009-37/MP&ADB-012 (7 females, RBINS); trail Los Miradores, 3000 m, 16/02/2009–20/02/2009, EC/2009-31/MP&ADB-004 (1 female, INPA); trail Bosque Nublado, 3000 m, 27/02/2009–5/03/2009, EC/2009-37/MP&ADB-002 (1 male, INPA); 16/02/2009–20/02/2009, EC/2009-31/MP&ADB-001 (1 female, INPA); 20/02/2009–27/02/2009, EC/2009-34/MP&ADB-001 (1 male, INPA).

Geographical distribution. Ecuador, Colombia (Ale-Rocha, 2007).

Neohybos luridus (Bezzi, 1909)

Material examined. ECUADOR. Zamora Chinchipe, Estación Científica San Francisco [Reserva Biológica San Francisco], 0713956 – 9560588, Canal trail, 1956 m, Varredura, 12–17.iv.2015, A. Plant & J. Camara Leg. (1 male, 1 female, QCAZ).

Geographical distribution. Ecuador, Bolivia (Bezzi, 1909).

Neohybos tenuis Ale-Rocha, 2007

Material examined. ECUADOR. Zamora Chinchipe: San Francisco, Reserva Biológica San Francisco, trail Canal, 2000 m, 03°58'30" S 79°04'25" W, 18/02/2009–25/02/2009 (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-33/MP&ADB-004 (2 males, RBINS).

Geographical distribution. Ecuador, Colombia (Ale-Rocha, 2007).

Syndyas amazonica Ale-Rocha, 1999*

Material examined. ECUADOR. Zamora Chinchipe, Estación Científica San Francisco [Reserva Biológica San Francisco], 0713956 – 9560588, Canal trail, 1956 m, Varredura, 12–17/iv/2015, A. Plant & J. Camara Leg. (1 female, QCAZ).

Geographical distribution. Ecuador, Brazil (Ale-Rocha, 1999).

Syneches rafaelli Ale-Rocha & Vieira, 2008*

Material examined. ECUADOR. Zamora Chinchipe: Bombuscaro, Podocarpus National Park, trail El Mirador, 1000 m, 26/02/2009–4/03/2009 (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-38/MP&ADB-001 (1 female, RBINS); trail Higuerones, 1000 m, 21/02/2009–26/02/2009 (WPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-35/MP&ADB-007 (1 female, RBINS).

Geographical distribution. Ecuador, Brazil (Ale-Rocha and Vieira, 2008).

Cerathybos sp.

Material examined. ECUADOR. Zamora Chinchipe: Bombuscaro, Podocarpus National Park, trail El Mirador, 1000 m, 26/02/2009–4/03/2009 (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-38/MP&ADB-002 (1 female, RBINS).

Geographical distribution. Ecuador, Brazil, Colombia, Peru, Bolivia (Bezzi, 1909; Ale-Rocha and Rafael, 1995; Ale-Rocha, 2002a).

Material not identified

Five female specimens of *Neohybos* (*Neohybos* 2, 3, 4, 5) could not be identified, but are probably new species:

Neohybos sp. 1: ECUADOR. Loja: Cajanuma, Podocarpus National Park, trail Bosque Nublado, 3000 m, 16/02/2009–20/02/2009 (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-31/MP&ADB-002 (1 female, RBINS); trail Los Miradores, 3000 m, 27/02/2009–5/03/2009 (RPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-37/MP&ADB-007 (1 female, RBINS).

Neohybos sp. 2: ECUADOR. Loja: Cajanuma, Podocarpus National Park, trail Los Miradores, 3000 m, 20/02/2009–27/02/2009 (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-34/MP&ADB-003 (1 female, RBINS).

Neohybos sp. 3: ECUADOR. Loja: Cajanuma, Podocarpus National Park, trail Oso de anteojos, 3000 m, 20/02/2009–27/02/2009 (YPT),

leg. Marc Pollet & Anja De Braekeleer, EC/2009-34/MP&ADB-012 (1 female, RBINS).

Neohybos sp. 4: ECUADOR. Zamora Chinchipe: San Francisco, Reserva Biológica San Francisco, trail Canal, 2000 m, 03°58'30" S 79°04'25" W, 25/02/2009–3/03/2009 (YPT), leg. Marc Pollet & Anja De Braekeleer, EC/2009-36/MP&ADB-01 (1 female, RBINS); Estación Científica San Francisco [Reserva Biológica San Francisco], 0713956 – 9560588, Canal trail, 1956 m, Varredura, 12–17/iv/2015, A. Plant & J. Camara Leg. (1 female, QCAZ).

Conflicts of interest

The author declares no conflicts of interest.

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