

NEW SPECIES AND NEW DATA FOR THE GROUP OF «*DISSOCHAETUS OVALIS*» JEANNEL, 1936 (COLEOPTERA: LEIODIDAE, CHOLEVINAE)

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Abstract: Three new taxa belonging to the genus *Dissochaetus* Reitter, 1884, from the Department of Cochabamba (Bolivia): *Dissochaetus angustipenis* n. sp., *D. cochabamba* n. sp. and *D. grossus* n. sp. are described. Detailed information and drawings of all the species currently included in the group of *Dissochaetus ovalis* Jeannel, 1936 are given, as well as a key (in English and Spanish) to the species of the group. Finally, *Dissochaetus napoensis pallipes* Salgado, 2008 is elevated to species level as *Dissochaetus pallipes* Salgado, 2008 **stat. nov.**

Key words: Coleoptera, Leiodidae, Cholevinae, *Dissochaetus*, taxonomy, new species, new status, new records.

Especies nuevas y nuevos datos sobre el grupo de «*Dissochaetus ovalis*» Jeannel, 1936 (Coleoptera, Leiodidae, Cholevinae)

Resumen: Se dan a conocer tres taxones nuevos del género *Dissochaetus* Reitter, 1884 procedentes del Departamento de Cochabamba (Bolivia): *Dissochaetus angustipenis* n. sp., *D. cochabamba* n. sp. y *D. grossus* n. sp.. Se aporta información completa y dibujos de todas las especies que actualmente están incluidas en el grupo de *Dissochaetus ovalis* Jeannel, 1936 y se incluye una clave (en inglés y español) para las especies del grupo. Por último, *Dissochaetus napoensis pallipes* Salgado, 2008 se eleva a nivel de especie como *Dissochaetus pallipes* Salgado, 2008 **stat. nov.**

Palabras clave: Coleoptera, Leiodidae, Cholevinae, *Dissochaetus*, taxonomía, especies nuevas, status nuevo, datos nuevos.

Taxonomy / Taxonomía:

Dissochaetus angustipenis n. sp., *Dissochaetus cochabamba* n. sp., *Dissochaetus grossus* n. sp., *Dissochaetus pallipes* Salgado, 2008, n. status.

Introduction

Species in the genus *Dissochaetus* Reitter, 1884 were first formed into groups by Jeannel (1936) and although they are not considered to be taxonomic categories, these divisions enable the position and differentiation of the species. The «*Dissochaetus ovalis*» group was established by Jeannel (*op. cit.*) and included five species: *Dissochaetus geayi* Portevin, 1903, *D. latus* Portevin, 1907, *D. monilis* (Murray, 1856), *D. obscurus* Portevin, 1903 and *D. ovalis* (Kirsch, 1873).

In a recent reorganisation of *Dissochaetus* into groups, Salgado (2010a) included six species and one subspecies: *Dissochaetus geayi* Portevin, 1903, *D. latus* Portevin, 1907, *D. monilis* (Murray, 1856), *D. napoensis* Salgado 2005, *D. napoensis pallipes* Salgado 2008, *D. ovalis* (Kirsch, 1873) and *D. sokolowskii* Szymczakowski, 1961 in the «*D. ovalis*» group; to which *D. dilatatus* Salgado, 2013 and three new taxa described in this study will be added. As can be seen, *Dissochaetus obscurus* is not included in this group because according to Salgado (2010a) it should belong to the group «*Dissochaetus spinipes*» Jeannel, 1936, in view of the unique characteristics of the male genitalia.

Generally, the characters that enable the 11 species to be included in «*D. ovalis*» are: 2nd and 3rd antennal segments similar in length; 7th and 8th antennal segments slightly or clearly asymmetrical; transverse striation perpendicular to elytral suture; metatibial spur almost as long as or slightly longer than the sum of the lengths of the first two metatarsomeres; median lobe of aedeagus triangular, and apical area generally narrow, elongate and pointed; basal lamina of penis with short rounded prolongation (only long, narrow and

pointed, but not very sclerotized in *Dissochaetus ovalis* and *D. latus*); parameres straight and robust, with two long apical setae and insertion pores close together; weakly sclerotized basal lamina with short thin flagellum normally present (not observed in the genitalia of *Dissochaetus dilatatus*, *D. ovalis* or *D. sokolowskii*, which could have been due to the extraction of the aedeagus, as it is at the base of the internal sac).

Materials and methods

Most of the specimens studied were provided by Oxford University Museum of Natural History, and were collected in two regions situated close to each other in Cochabamba Department (Bolivia) by A.C. Hamel and A. Pascall, two of the museum's collaborators. Specimens provided by other organisms were also examined and used as comparative material, and are indicated in the "examined material" sections.

The usual study technique for this type of work was used (see Salgado, 2002, 2005a). Specimen length was taken from the front to the tip of the last abdominal segment or of the elytra if they completely cover the dorsal face of the abdomen. The holotypes and paratypes and different studied specimens are deposited in the following collections, which will be referred to throughout the manuscript using abbreviations:

CJMS: Collection of José M^a Salgado (Vigo, Spain).
MNHN: National Museum of Natural History (Paris, Francia).
CZULE: León University Zoological Collection (León, Spain).
FMNH: Field Museum of Natural History (Chicago, USA).

OUMNH: Oxford University, Museum of Natural History (Oxford, UK).

QCAZ-Museum: Museum of the Pontifical University of Quito (Quito, Ecuador).

Taxonomic study

«*Dissochaetus ovalis*» group, Jeannel, 1936

KEY TO THE SPECIES IN THE GROUP:

1. Species with median lobe of aedeagus as long as or slightly longer than parameres (Fig. 16, 21, 30) 2
- 1'. Species with median lobe of aedeagus shorter than parameres (Fig. 5, 12, 26, 29) 4
2. Antennae with club segments widely separated; 6th to 10th segments asymmetrical, particularly 7th and 8th; insertion axis of 7th segment displaced (Fig. 19)..... *D. monilis*
- 2'. Antennae with club segments weakly separated; 6th to 10th segments not asymmetrical, 7th and 8th sometimes slightly asymmetrical; insertion axis of 7th segment not displaced (Fig. 13) 3
3. Protarsi wider than apical region of tibiae; antennae with 5th segment transverse and 11th less than twice length of 10th; sides of median lobe of aedeagus straight, lacking marginal setae, tip not dilated (Fig. 30).....
..... *D. sokolowskii*
- 3'. Protarsi narrower than apical area of tibiae; antennae with 5th segment not transverse and 11th more than twice length of 10th; sides of median lobe of aedeagus curved, with one marginal seta and dilated tip (Fig. 15)..... *D. dilatatus*
4. Male genital segment with apical area of sternal prolongation wide and arch-shaped (Fig. 24); in ventral or dorsal view, basal lamina of penis with long narrow posterior prolongation (Fig. 17, 25); median lobe of aedeagus very strongly curved towards middle of ventral face and two marginal setae very close to tip (Fig. 18, 26) 5
4. Male genital segment with apical area of sternal prolongation narrow and pointed (Fig. 3, 10); in dorsal or ventral view, basal lamina of penis with short rounded prolongation (Fig. 4, 11, 28, 30); median lobe of aedeagus weakly curved in median region close to tip, with or without marginal setae near the middle or base of the narrowed area (Fig. 5, 7, 22) 6
5. Intermediate and posterior tibiae lacking raised spines on external face; ligule of internal sac of aedeagus with scalloped apical edge (Fig. 17)*D. latus*
- 5'. Intermediate and posterior tibiae with row of long spines raised on external face; ligule of internal sac of aedeagus with angular anterior edge (Fig. 25)..... *D. ovalis*
6. Median lobe of aedeagus with narrow short and wide apical area; two marginal microsetae near base of narrow region; internal sac with two weakly sclerotized triangular pieces near the middle of the sac (Fig. 11)
.....*D. grossus n. sp.*
- 6'. Median lobe of aedeagus with apical area narrow long and not as wide; with or without long marginal setae; internal sac lacking triangular pieces (Fig. 4, 7, 22, 28) 7
7. Median lobe of aedeagus with very long very narrow apical area; lacking marginal setae; internal sac with four

- long narrow sclerotized pieces, the most slender ones being recurved (Fig. 4)*D. angustipenis n. sp.*
- 7'. Median lobe of aedeagus with apical area not as long or narrow; with or without marginal setae; sclerotized pieces of internal sac shaped differently (Fig. 7, 22, 28) 8
8. Pronotum and elytra dark reddish; antennal club segments strongly robust (Fig. 6); male protarsi somewhat wider than apical area of tibiae; median lobe of aedeagus lacking marginal setae; sclerotized pieces of internal sac bifid at base (Fig. 7)*D. cochabamba n. sp.*
- 8'. Pronotum and elytra uniformly brown or shiny reddish-yellow; antennal club segments more slender (Fig. 27); male protarsi as wide as or somewhat narrower than apical area of tibiae; median lobe of aedeagus bearing marginal setae; sclerotized pieces of internal sac shaped differently (Fig. 22, 28) 9
9. Body uniformly dark brown; last two antennal segments dark, the last one sometimes slightly lighter; median lobe with two symmetrical marginal setae; internal sac with four sclerotized pieces; parameres slightly curved outwards in apical area (Fig. 22); in lateral view, apical area of median lobe very weakly dilated (Fig. 23)
..... *D. napoensis*
- 9'. Pronotum and basal area of elytra reddish-yellow; last two antennal segments yellowish; median lobe with four symmetrical marginal setae; internal sac with two sclerotized pieces; parameres straight (Fig. 28); in lateral view, apical area of median lobe dilated (Fig. 29)
.....*D. pallipes*

NOTE. *Dissochaetus geayi* Portevin, 1903 is not included in the key. Only one female specimen, collected on the shores of the river Lunier (French Guiana), is known. The species was recorded by Gnaspini (1991) in a checklist of species belonging to the genus *Dissochaetus*, and in 1999, this author stated that the area where the specimen was captured now belongs to Brazil, but makes no reference to the characteristics of the species. Only Jeannel (1936) provides a little information taken from Portevin (1903). The main reason for not including this species in the key is that the description by Portevin (1903) is very short and not accurate, and in particular, because the females in the genus *Dissochaetus* do not show clearly differentiating characters. Although the validity of this species has not been eliminated, it is necessary to examine a male specimen to confirm that it belongs to «*Dissochaetus ovalis*» and thus the validity of this taxon.

CLAVE DE ESPECIES DEL GRUPO:

1. Especies con el lóbulo medio del eedeago tan largo o algo más largo que los parámetros (Fig. 16, 21, 30) 2
- 1'. Especies con el lóbulo medio del eedeago más corto que los parámetros (Fig. 5, 12, 26, 29) 4
2. Antenas con los artejos de la maza muy desligados; los artejos 6° al 10° asimétricos, sobre todo el 7° y 8°; eje de inserción del artejo 7° desplazado (Fig. 19) ... *D. monilis*
- 2'. Antenas con los artejos de la maza poco desligados; los artejos 6° al 10° no asimétricos, a veces ligeramente asimétricos el 7° y 8°; eje de inserción del artejo 7° no desplazado (Fig. 13)..... 3

3. Protarsos más anchos que la zona apical de las tibias; antenas con el artejo 5° transverso y el 11° menos de dos veces la longitud del 10°; lados del lóbulo medio del edeago rectos, sin sedas marginales y el ápice no dilatado (Fig. 30) *D. sokolowski*
- 3'. Protarsos más estrechos que la zona apical de las tibias; antenas con el artejo 5° no transverso y el 11° más de dos veces la longitud del 10°; lados del lóbulo medio del edeago curvados, con una seda marginal y el ápice dilatado (Fig. 15) *D. dilatatus*
4. Segmento genital masculino con la zona apical de la prolongación esternal ancha y en arco (Fig. 24); lámina basal del pene, en visión ventral o dorsal, con una prolongación posterior larga y estrecha (Fig. 17, 25); lóbulo medio del edeago con una curvatura muy pronunciada hacia la mitad de la cara ventral y dos sedas marginales próximas al ápice (Fig. 18, 26) 5
4. Segmento genital masculino con la zona apical de la prolongación esternal estrecha y afilada (Fig. 3, 10); lámina basal del pene, en visión dorsal o ventral, con una prolongación corta y redondeada (Fig. 4, 11, 28, 30); lóbulo medio del edeago poco curvado en la zona media hacia el ápice y sin sedas marginales o con sedas hacia el medio o la base de la zona estrechada (Fig. 5, 7, 22) ... 6
5. Tibias intermedias y posteriores sin espinas levantadas sobre la cara externa; ligula del saco interno del edeago con el borde apical escotado (Fig. 17) *D. latus*
- 5'. Tibias intermedias y posteriores con un fila de largas espinas levantadas sobre la cara externa; ligula del saco interno del edeago con el borde anterior anguloso (Fig. 25) *D. ovalis*
6. Lóbulo medio del edeago con la zona apical estrecha, corta y ancha; dos microsetas marginales hacia la base de la zona estrecha; saco interno con dos piezas triangulares poco esclerotizadas hacia la zona media del saco (Fig. 11) *D. grossus* n. sp.
- 6'. Lóbulo medio del edeago con la zona apical estrecha, más larga y menos ancha; sin o con largas sedas marginales; saco interno sin piezas triangulares (Fig. 4, 7, 22, 28) ... 7
7. Lóbulo medio del edeago con la zona apical muy larga y muy estrecha; ausencia de sedas marginales; saco interno con cuatro piezas esclerotizadas largas y estrechas, las más gráciles recurvadas (Fig. 4) *D. angustipenis* n. sp.
- 7'. Lóbulo medio del edeago con la zona apical no tan larga ni tan estrecha; sedas marginales presentes o ausentes; piezas esclerotizadas del saco interno de otra forma (Fig. 7, 22, 28) 8
8. Coloración del pronoto y élitros rojiza oscura; artejos de la maza de las antenas muy robustos (Fig. 6); protarsos del macho algo más anchos que la zona apical de las tibias; lóbulo medio del edeago sin sedas marginales; piezas esclerotizadas del saco interno bifidas en la base (Fig. 7) *D. cochabamba* n. sp.
- 8'. Coloración del pronoto y élitros, marrón uniforme o amarillo-rojiza brillante; artejos de la maza de las antenas más gráciles (Fig. 27); protarsos del macho tan anchos o algo más estrechos que la zona apical de las tibias; lóbulo medio del edeago con sedas marginales; piezas esclerotizadas del saco interno de otra forma (Fig. 22, 28) 9
9. Coloración del cuerpo marrón oscura uniforme; dos últimos artejos de las antenas oscuros, a veces el último algo más claro; lóbulo medio con dos sedas marginales simétricas; saco interno con cuatro piezas esclerotizadas; parámetros algo curvados hacia afuera en la zona apical (Fig. 22); zona apical del lóbulo medio, en visión lateral, muy poco dilatada (Fig. 23) *D. napoensis*
- 9'. Coloración amarillo-rojiza en el pronoto y zona basal de los élitros; dos últimos artejos de las antenas amarillentos; lóbulo medio con cuatro sedas marginales simétricas; saco interno con dos piezas esclerotizadas; parámetros rectos (Fig. 28); zona apical del lóbulo medio, en visión lateral, dilatada (Fig. 29) *D. pallipes*

***Dissochaetus angustipenis* n. sp.**

MATERIAL EXAMINED: TYPE SERIES.

Holotype ♂: BOLIVIA. Department of Cochabamba, Pampa Grande, 16° 40' 09'' S 66° 28' 22'' W, 2300 m, 19-VIII-2001, baited pitfall, human faeces, humid montane forest, A.C. Hamel & A. Pascall leg. Deposited in the Coll. OUMNH. **Paratypes**: 70 ♂♂-76 ♀♀, same collection and capture data as for the holotype. Deposited in the Colls. OUMNH and CZULE (3 ♂♂-1 ♀).

DIAGNOSIS. Length: 2.34-3.28 mm; 2nd and 3rd, and 4th and 5th antennal segments normally almost equal; 6th to 10th segments transverse; male protarsi slightly wider than the apical area of the tibiae; sternal apophysis of genital segment weakly pointed; narrow apical area of median lobe long and strongly narrow, lacking marginal setae; parameres surpassing tip of median lobe; internal sac with four long narrow sclerotized pieces.

DESCRIPTION OF THE HOLOTYPE (MALE). Length: 3.05 mm; width: 1.48 mm (Fig. 1). Reddish slightly dull colouration on front, pronotum and basal area of elytra; tarsi and basal segments of antennae yellowish. Large, shallow well separated points on head. Eyes and metathoracic wings fully developed.

Antennae surpassing pronotal base, with two basal segments and apical segment lighter in colour; 2nd and 3rd, and 4th and 5th segments, respectively, almost equal; 7th segment the most robust, and together with 8th, slightly asymmetrical; 9th and 10th segments the same, transverse from 6th to 10th (Fig. 2) (Table I).

Pronotum narrower than elytra, strongly transverse as it is 2.05 times wider than long; widest near basal two thirds; hind vertices quite pointed.

Elytra not strongly convex, apical areas rounded, 1.48 times longer than wide and 3.30 times longer than pronotum; transverse striae easily discernible and perpendicular to suture, in median region at least.

Anterior tarsi slightly wider than apical area of protibiae (proportion = 1.05); large spur of posterior tibiae as long as sum of lengths of first two metatarsomeres.

Genital segment somewhat wider than long, sternal apophysis rather short and pointed posteriorly (Fig. 3).

Aedeagus long (0.75 mm). In dorsal view (Fig. 4), median lobe with long anterior area, sides parallel, strongly narrow, pointed and lacking marginal setae; parameres straight and very robust, longer than tip of median lobe and bearing two long apical setae with insertion pores very close together; basal lamina of penis shorter than median lobe, posterior prolongation rounded and scarcely protruding; internal sac



Fig. 1. *Dissochaetus angustipennis* n. sp. Habitus photo.

Table I. Measurements of antennal segments of *Dissochaetus angustipennis* n. sp., holotype. (L) length; (A) width. (50 units = 0,65 mm).

	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°
L	14,3	10,6	11,0	6,3	6,0	5,0	9,2	2,55	8,6	8,6	12,4
A	5,0	4,2	4,2	4,2	5,2	6,0	10,2	6,8	10,0	10,0	9,2

towards the apical area with four long narrow sclerotized pieces, two curved and two undulate, very small spines at their base, weakly defined rectangular plate at the bottom of the sac with a short, very fine flagellum. In lateral view (Fig. 5), parameres wide, width similar in entire median area; median lobe narrow, slightly curved with slightly dilated tip; posterior prolongation of basal lamina short.

DESCRIPTION OF THE FEMALE (PARATYPE). The external morphology and coloration of the female are similar to the male, and as expected, the protarsi are slender and antennae slightly shorter with the segments more transverse.

VARIABILITY. This can be seen in the size of the male paratypes: length 2.34-3.28 mm; width 1.40-1.58 mm, and the female paratypes: length 2.35-3.30 mm; width 1.35-1.60 mm. Also, in the coloration of the basal antennal segments, 2 or 3 of which are yellowish, the width of the male protarsi, as some are as wide as the maximum width of the protibiae. Finally, in some specimens the 2nd and 3rd antennal segments are of equal length.

ETYMOLOGY. The specific name «*angustipennis*» highlights one of the most unique characteristics of the species, the strongly narrow elongate apical area of the median lobe.

DISCUSSION. Observing the external morphology, the closest species appears to be *Dissochaetus grossus* n. sp., particularly in the coloration of the body and color and shape of the antennae, but not in the aedeagus, which is completely different. However, regarding the shape and structures of the internal sac of the aedeagus, the closest species seems to be *D. cochabamba* n. sp.; nevertheless, there are very clear differences between the two species in the narrow apical area of the median lobe which is more graceful and elongate in *D. angustipennis* n. sp, and also in this species the sclerotized

pieces of the internal sac are longer, curved and narrow. Apart from this, the size is generally larger, the antennal club segments more robust and the protarsi more dilated in *D. cochabamba*.

***Dissochaetus cochabamba* n. sp.**

MATERIAL EXAMINED: TYPE SERIES. Holotype ♂: BOLIVIA. Department of Cochabamba, Pampa Grande, 16° 40' 09''S 66° 28' 22''W, 2300 m, 19-VIII-2001, baited pitfall, human faeces, humid montane forest, A.C. Hamel & A. Pascall leg. Deposited in the Coll. OUMNH. **Paratypes:** 1 ♂-2 ♀♀, same collection and capture data as for the holotype. Deposited in the Colls. OUMNH and CZULE (1 ♂).

DIAGNOSIS. Size: 3.40-3.76 mm; antennal club segments thick, with 3rd somewhat longer than 2nd; 7th, 9th and 10th almost as long as wide; male protarsi wider than apical area of protibiae; sternal apophysis of genital segment weakly pointed; narrow apical area of median lobe of aedeagus narrow but not very long, lacking marginal setae; parameres strongly robust, longer than tip of median lobe; internal sac with bifid arcuate sclerotized pieces.

DESCRIPTION OF HOLOTYPE (MALE). Length: 3.58 mm; width: 1.72 mm. Body generally oval-shaped. Colour dark-reddish, not very shiny, only front slightly lighter reddish and tarsi, first two antennal segments and apical area of last segment light brown. Punctures on head not clearly observable, with large well separated points. Pubescence short, yellowish and recumbent, slightly longer in apical area of elytra. Eyes large and well-pigmented, posterior wings fully developed.

Antennal club segments thick and somewhat asymmetrical; 3rd segment slightly longer than 2nd; 4th and 5th almost equal in length and 7th the most robust; 7th, 9th and 10th segments almost as long as wide and 6th to 10th transverse; 8th segment two and a half times wider than long and 11th with strongly pointed apical area (Fig. 6) (Table II).

Table II. Measurements of antennal segments of *Dissochaetus cochabamba* n. sp., holotype. (L) length; (A) width. (50 units = 0,65 mm).

	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°
L	14,0	10,8	11,7	7,2	7,0	5,6	12,3	2,4	10,6	10,8	17,5
A	6,6	6,2	5,9	6,0	6,4	7,2	13,0	7,0	11,8	12,0	10

Pronotum narrower than elytra, 1.94 times wider than long, sides uniformly arcuate, hind vertices clearly discernible; maximum width just after median region. Elytra elongate oval-shaped, uniformly arcuate and quite convex; transverse striolae shallow, quite close together and perpendicular to suture.

Anterior tarsi strongly dilated and slightly wider than maximum width of tibiae (proportion = 1.10); external spur of posterior tibiae slightly longer than the sum of lengths of first two metatarsomeres.

Shape of genital segment very similar to that of *D. angustipennis* n. sp. (Fig. 3).

Aedeagus strongly robust and long (0.93 mm). In dorsal view (Fig. 7), apical area of median lobe narrow and rather short, sides parallel, tip pointed and lacking marginal setae; basal lamina of penis as long as median lobe, sides parallel and posterior prolongation short; parameres strongly robust, longer than median lobe and bearing two long apical setae, also along the entire length of the parameres three edges can

be see, which seem to form three sides; internal sac with two strongly sclerotized pieces, arcuate and bifid towards lower part – which are, in fact, four imbricated pieces–, and near the bottom of the sac, a rectangular plate with a weakly defined flagellum. In lateral view (Fig. 8), the robustness of the parameres, weakly curved apical lobe and short, weakly pointed posterior prolongation of the basal lamina, can be observed.

DESCRIPTION OF THE FEMALE (PARATYPE). The shape and colour of the body is very similar to the male. The most obvious difference between them has to be the protarsi, which are slender in the female, as in this species, the antennal segments are very similar.

VARIABILITY. Observed in the size of the male paratypes: length 3.50-3.60 mm; width 1.68-1.72 mm, and the female paratypes: length 3.40-3.76 mm; width 1.65-1.78 mm) and male protarsi, whose width is not always uniform.

ETYMOLOGY. The specific name is given in apposition and refers to the Bolivian province of Cochabamba where the specimens of this interesting new taxon were collected.

DISCUSSION. The species closest to this new taxon are *Dissochaetus angustipenis* n. sp. and *D. napoensis* Salgado. Differences between the new species and the former species are indicated in a previous section; differences with the latter species include the dark reddish body, antennal club segments more robust and male protarsi more expanded in *D. cochabamba*, and although the aedeagus are very similar, the marginal setae in are absent in *D. cochabamba* and the pieces of the internal sac are very differently shaped.

***Dissochaetus grossus* n. sp.**

MATERIAL EXAMINED: TYPE SERIES. Holotype ♂: BOLIVIA. Department of Cochabamba, Carmen Pampa, 16° 37' 06''S 66° 28' 50''W, 1820 m, 26-VIII-2001, baited pitfall, human faeces, humid montane forest, A.C. Hamel & A. Pascall leg. Deposited in the Coll. OUMNH. **Paratypes:** 266 ♂♂-239 ♀♀, same collection and capture data as for the holotype. Deposited in the Colls. OUMNH and CZULE (3 ♂♂-1 ♀). Department of Cochabamba, Pampa Grande, 16° 40' 09''S 66° 28' 22''W, 2300 m, 19-VIII-2001, baited pitfall, human faeces, humid montane forest, 2 ♂♂-2 ♀♀, A.C. Hamel & A. Pascall leg. Deposited in the Coll. OUMNH.

DIAGNOSIS. Length 2.32-3.15 mm; in general, 3rd antennal segment slightly longer than 2nd; 5th to 10th segments transverse; male protarsi somewhat narrower than apical area of tibiae; sternal apophysis of genital segment long and strongly pointed; narrow apical area of median lobe short, expanded, tip rounded, with two minute setae in margins; parameres exceeding tip of median lobe; internal sac with two robust sclerotized pieces and two more tenuous triangular plates.

DESCRIPTION OF THE HOLOTYPE (MALE). Body length: 3.12 mm; width 1.43 mm. Shiny red colouration on front, pronotum, basal and median areas of elytra and legs, vertex and sides of head and apical area and sides of elytrae blackish. Punctures on head with large, shallow, well separated points. Pubescence short, recumbent, golden, slightly thicker and raised on head and longer in apical area of elytra. Eyes large, well pigmented and metathoracic wings fully developed.

Antennae with three basal segments and apical segment reddish while the rest are brown; 3rd antennal segment

Table III. Measurements of antennal segments of *Dissochaetus grossus* n. sp., holotype. (L) length; (A) width. (50 units = 0,65 mm).

	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°
L	13,2	11	11,4	6,7	5,4	3,8	8,5	2,2	8,0	8,0	15,0
A	6,0	5,2	5,0	5,0	5,8	6,6	10	6,6	9,9	9,6	6,5

being longer than the 2nd, gradually decreasing in length from 4th to 6th; 7th longest and most robust in club; 5th to 10th segments transverse, with 8th three times wider than long; also 7th, 9th and 10th slightly asymmetrical, 8th clearly asymmetrical (Fig. 9) (Table III).

Pronotum narrower than elytra, 1.90 times wider than long, widest near base, sides uniformly arcuate, hind angles obtuse. Elytra moderately convex, sides uniformly arcuate and striolae transverse, though shallow, clearly marked and perpendicular to the suture in the middle region.

Anterior tarsi slightly narrower than apical area of tibiae; large spur of posterior tibiae almost as long as sum of first two metatarsomeres.

Genital segment, without measuring the apophysis, slightly wider than long; sternal apophysis long and strongly pointed (Fig. 10).

Aedeagus very characteristic, with a total length of 0.73 mm. In dorsal view (Fig. 11), with narrow apical area of median lobe short, expanded and tip blunt, also, two minute setae on basal margins; basal lamina of penis slightly longer than median lobe, with posterior prolongation short and a little pointed towards the back; robust parameres just surpassing tip of median lobe, expanded in apical half and two long setae inserted in apex, with insertion pores very close together; anterior part of internal sac with two robust sclerotized pieces strongly hooked outwards, with small spines at their base, two weakly sclerotized triangular plates in the middle and a quadrangular plate at the bottom of the sac with a short, very fine flagellum inserted anteriorly. The previously mentioned structures can be seen in lateral view (Fig. 12), and also the tip of the median lobe, slightly curved and dilated, and the posterior prolongation of the basal lamina slightly curved and narrow.

DESCRIPTION OF THE FEMALE (PARATYPE). The external morphology of the female is similar to the male, except for the protarsi which are more slender and the antennae which are generally somewhat shorter and robust. The general structure of the spermatheca is as described for all the species in *Dissochaetus*.

VARIABILITY. It can be seen in the size of the male paratypes: length 2.32-3.15 mm; width 1.35-1.48 mm, and the female paratypes: length 2.35-3.25 mm; width 1.38-1.50 mm; in the colouration of the basal segments of the antennae, two to four of which can be reddish, and also, in some specimens, the 2nd and 3rd antennal segments are of equal length.

ETYMOLOGY. The specific name highlights the most unusual character in the species, the narrow apical area of the aedeagus is short and stout.

DISCUSSION. As indicated in a previous section, the general shape of the body, and colouration on the head, pronotum, anterior area of the elytra and antennae are very similar to *Dissochaetus angustipenis* n. sp. Two small differences in the external morphology can be observed, one in the male protarsi, which are more slender, and the other in the sternal prolongation of the genital segment, which is longer and

pointed in *D. grossus* n. sp. The character that clearly distinguishes one species from the other is that the apical area of the median lobe of the aedeagus is much shorter and wider in *D. grossus* n. sp.. This character is not observed in any of the species in the «*Dissochaetus ovalis*» group either.

DISTRIBUTION. Of the three new taxa described, this is the only species collected in samplings carried out in the two localities near Cochabamba. Therefore, *Dissochaetus grossus* n. sp. cohabits with *D. angustipennis* n. sp. and *D. cochabamba* n. sp. in Pampa Grande.

***Dissochaetus dilatatus* Salgado, 2013**

Dissochaetus dilatatus Salgado, 2013. 52: 80.

MATERIAL EXAMINED: PERÚ. Department of Cuzco, Consuelo, Manu road km 165, 1-X-1982, leaf litter and litter under rotten palm, 1 ♂, E. Watrous & G. Mazurek leg. Holotype of Coll. FMNH.

BRIEF DESCRIPTION. Body length 2.58 mm; width 1.24 mm. Colouration reddish, with lateral areas of head, anterior area of pronotum, both hind thirds of elytra and first eight antennal segments slightly darker. Eyes fully developed, as are the metathoracic wings. Club segments 7th and 8th slightly asymmetrical; also, with 2nd segment slightly longer than 3rd, 6th to 10th segments transverse, 11th very long, just over twice the length of 10th (Fig. 13). Pronotum 1.38 times longer than wide. Elytra with transverse elytra clearly visible and perpendicular to suture. Protarsi, though dilated, with first tarsomere narrower than apical area of protibiae (proportion = 0.80). Posterior tibiae with large spur as long as sum of first two metatarsomeres. Genital segment with sternal apophysis quite long and clearly pointed (Fig. 14).

Aedeagus with narrow apical area of median lobe short, with tip somewhat dilated and two short marginal setae; parameres robust and as long as median lobe; basal lamina of penis much shorter than median lobe and weakly prolonged backwards; internal sac with two long well sclerotized plates forming a hook-shaped structure, surrounded by numerous spines (Fig. 15 and 16).

See Salgado (2013) for more information.

OBSERVATION. Specimens of *Dissochaetus monilis* (Murray, 1856) are known from this locality (Salgado, 2010b). Nevertheless, the differences between the two species are very evident in both the shape of the antennae and the structures in the internal sac, also in the lack of marginal setae in the median lobe in *D. monilis*.

DISTRIBUTION. Currently, this species is only known from the Department of Cuzco (Peru) (Salgado, 2013).

***Dissochaetus latus* Portevin, 1907**

Dissochaetus latus Portevin, 1907. Ann. Soc. ent. Fr., 76: 70.

MATERIAL EXAMINED: Male specimen, "type": Mapiri (Bolivia), Coll. Portevin, and two preparations of different "type" species (one with the aedeagus and genital segment, and another only with the aedeagus). Coll. MNHN.

BRIEF DESCRIPTION. Body length 2.30-2.60 mm; width 1.32 mm. Uniformly dark reddish, with base and last antennal segment lighter. Antennae with 3rd segment just longer than 2nd and 7th, 9th and 10th segments of similar length and width. Male protarsi slightly narrower than apical area of protibiae

(proportion = 0.95). Genital segment with sternal apophysis in weakly protruding rounded arch, very similar to that observed in *D. ovalis* (Fig. 24). The general shape of the aedeagus is also similar to *D. ovalis* (Fig. 17), the most significant differences being observed in the structures of the internal sac, amongst them the ligule scalloped on the apical edge and the bottom of the internal sac with a weakly defined arch-shaped plate with a tenuous flagellum inserted (Fig. 18). The aedeagus drawn in this study was probably also used by Jeannel (1936) as a basis for his own description and drawing.

OBSERVATION. There is very little information on this species. It has only been mentioned by Portevin (1907) and Jeannel (1936). In his description of the species, the first author only highlights the shiny dark reddish colour of the body, with a poorly defined reddish mark in the area of the scutellum, the antennae are dark with basal segments and last segment light, and the slightly rounded shape of the pronotum which is widest at the base. However, Jeannel (*op. cit.*), based on data from Portevin's description (*op. cit.*), states that *D. latus* can be differentiated from *D. ovalis* in the shape of the intermediate and posterior tibiae and the way in which the spines are set out (see key) and also by the scalloped apical edge of the ligule.

In this study, *D. latus* and *D. ovalis* remain independent and the characters proposed by Jeannel (*op. cit.*) are used in the key to separate them; nevertheless, it is difficult to think that species so close to each other can live in the same localities, for example, Coroico and Maripi (Bolivia) (Jeannel, 1936; Peck *et al.*, 1998).

***Dissochaetus monilis* (Murray, 1856)**

Catops monilis Murray, 1856. Ann. Mag. Nat. Hist., 18(2): 395.

MATERIAL EXAMINED: PERÚ. Department of Cuzco, Consuelo, Manu road km 165, 1-X-1982, leaf litter and litter under rotten palm, 1 ♂-1 ♀, E. Watrous & G. Mazurek leg. Deposited in the Coll. CZULE.

BRIEF DESCRIPTION. Body length 2.85-3.50 mm; width 1.43-1.48 mm. Colouration of pronotum, front area, basal of elytra and legs reddish, being apical area of elytra, lateral areas of head, and 4th to 10th antennal segments brown. Antennae with club strongly robust and segments widely separated; also, 6th to 10th antennal segments asymmetrical, particularly 7th and 8th, which have the insertion axis displaced; 2nd segment as long as 3rd and 5th to 10th segments transverse (Fig. 19). Pronotum strongly transverse, 1.92 times wider than long. Elytra with transverse striation clearly differentiated, striae close together and perpendicular to the sutural stria in anterior and median regions. Male protarsi dilated but clearly narrower than apical area of protibiae (proportion = 0.74). External spur of posterior tibiae slightly longer than sum of first two metatarsomeres.

Silhouette of aedeagus triangular with narrow pointed apical area, lacking marginal setae; parameres straight, robust with two long apical setae, as long as or slightly longer than median lobe, as well as three edges that form three sides on the parameres; internal sac with four robust pointed curved sclerotized pieces surrounded by small spines and also a weakly defined plate-shaped structure with a fine filament inserted, possibly similar to flagellum (Fig. 20, 21).

DISTRIBUTION. All of the data on this species corresponded to different areas in Venezuela (Murray, 1856; Jeannel, 1936; Szymczakowski, 1961, 1969). Years later, Salgado (2010b) reported the first data for Peru. With regard to the presence of *D. monilis* in Ecuador as indicated by Salgado (2001), the specimen is thought to belong to the proximate species *Dissochaetus sokolowskii* Szymczakowski, 1961.

***Dissochaetus napoensis* Salgado, 2005**

Dissochaetus napoensis Salgado, 2005. *Graellsia*, 61(1): 52.

MATERIAL EXAMINED: ECUADOR: Province of Napo, 15 km NW Baeza, 2200 m, carrion-baited pitfall traps, 1 ♂, S. Peck leg. Paratype of collection JMS.

BRIEF DESCRIPTION. Length: 3.40-3.80 mm; width: 1.55 mm. Uniformly dark brown, only the first three basal segments of the antennae and tarsi of the legs somewhat lighter. Antennal segments 7th, 9th and 10th slightly asymmetrical, 8th clearly asymmetrical; 2nd and 3rd segments equal, the 7th being the most robust. Anterior tarsi dilated, with first segment as wide as maximum width of tibiae. Genital segment almost as long as wide, with posterior apophysis fully developed and tip weakly pointed.

Aedeagus with apical region clearly narrowed, tip slightly pointed and two short marginal setae inserted in apical third; basal lamina as long as median lobe or just longer, and a short rounded posterior prolongation at the tip; parameres long and robust, clearly surpassing the tip of the median lobe, both with apical region narrowed and slightly curved inwards, bearing two setae of unequal length; internal sac with four sclerotized pieces, two more robust, and a small very weakly sclerotized plate at the bottom of the sac, with a short poorly defined flagellum (Fig. 22, 23).

DISTRIBUTION. The only data available on this species is from Napo province (Ecuador).

***Dissochaetus ovalis* (Kirsch, 1873)**

Choleva ovalis Kirsch, 1873. *Berl. Ent. Zs.*, 17: 134.

MATERIAL EXAMINED: ECUADOR: Province of Orellana, Yasuni National Park, Biological Station - PUCE, 220 m, 17-23-III-2009, Amazon forest, trap beef liver, 2 ♂♂-1 ♀, J. M. Salgado leg. Deposited in the CZULE.

BRIEF DESCRIPTION. Length 2.50-3.15 mm; width 1.10-1.28 mm. Colour dark reddish, head and apical area of elytra somewhat darker, basal segments 2-3 and last or two last antennal segments and three pairs of legs lighter. Both antennae and protarsi and male genital segment with the same characters as previously described in *D. latus* (Fig. 24). Shape of aedeagus very characteristic, with apical area of median lobe very narrow, pointed and two apical setae inserted close to tip; basal lamina of penis with long, narrow pointed posterior prolongation (Fig. 25); parameres straight, with lateral areas thinned out in hyaline laminas and expanded apically in lateral view; ventral face of median lobe tapering and curve in the middle (Fig. 26). Internal sac with complex structures, in mid apical area an angulose ligule between two groups of numerous small spines with a sclerotized bar behind, and other groups of small spines.

DISTRIBUTION. *Dissochaetus ovalis* and *D. hetschkoi* Reitter, 1884 are probably the most widely dispersed. Peck *et al.* (1998) and Perreau (2000) mention *D. ovalis* from Bolivia,

Ecuador and Peru, with records by Kirsch (1873), Portevin (1903, 1907, 1927), Jeannel (1936) Szymczakowski (1968). Recently Salgado (2008, 2010b) mentions this species again from several areas of Ecuador, as well as Argentina and Paraguay.

***Dissochaetus pallipes* Salgado, 2008 n. status**

Dissochaetus napoensis pallipes Salgado, 2008. *Memoirs on Biodiversity*, 1: 220.

MATERIAL EXAMINED: ECUADOR: Province of Cotopaxi, Otonga, 2065 m, S 00° 25' 01.2'' W 79° 00' 14.0'', 21-23-VII-2006, 1 ♂-1 ♀, P.M. Giachino leg. Paratypes of Coll. JMS. Province of Cotopaxi, Canton Sigchos, Las Pampas, Otonga Natural Reserve, 25-28-VII-2005, 2 ♂♂-1 ♀, W. Rossi leg. Coll. JMS.; *idem*, 11-29-VII-2009, 11 ♂♂-14 ♀♀, C. Tapia leg.; *idem*, 8-9-VIII-2009, 5 ♂♂-4 ♀♀, W. Rosii leg.; *idem*, 5-29-VIII-2009, 25 ♂♂-31 ♀♀, W. Rosii leg. Deposited in the Colls. CZULE, JMS, FMNH and OUMNH. Province of Pichincha, Unión de Toachi, Otongachi Natural Reserve, 810 m, 10-III/5-IV-2009, 4 ♂♂-5 ♀♀, J.M. Salgado leg. Deposited in the Colls. CZULE and FMNH.

BRIEF DESCRIPTION. Body length 2.90-3.10 mm; width 1.10-1.28 mm. Reddish-yellow colour, except median and posterior regions of head, intermediate antennal segments (4th to 9th) and median and apical area of elytra darker. Antennae long, twice the length of the pronotum, and two last segments yellows; 3rd segment very slightly longer than 2nd; segments 4th to 6th decreasing progressively in length; segments 7th, 9th and 10th similar; 7th segment a little asymmetrical and 8th very asymmetrical; 6th to 10th segments transverse (Fig. 27). Anterior tarsi and genital segment as in *Dissochaetus napoensis*.

In dorsal view (Fig. 28), aedeagus with apical area of median lobe narrow, robust and tip slightly pointed, with two pairs of marginal setae of different lengths; parameres straight, wide and robust, clearly surpassing tip of median lobe; basal lamina of penis slightly shorter than median lobe, with short rounded posterior prolongation on tip; internal sac with two pairs of robust sclerotized pieces, the most robust of which have a hook-shaped tip and all pieces surrounded by spines, at the bottom of the internal sac an weakly sclerotized arch-shaped plate with a very fine tenuous flagellum inserted. In lateral view, aedeagus with apical area of median lobe dilated and rounded; the other characters as previously indicated (Fig. 29).

VARIABILITY. Specimens have been observed with two or four of the basal segments of the antennae yellowish, and the protarsi in some of the males are slightly wider than the apical area of the protibiae; in some specimens, the aedeagus may have three pairs of symmetrical setae in the marginal areas of the median lobe.

OBSERVATION. *Dissochaetus napoensis pallipes* is elevated to status of species as the differences observed in this study in comparison with *D. napoensis* are very evident. These differences can be seen in the color of the body and antennal segments; and also in several structures in the aedeagus, such as the median lobe with a more robust and dilated tip and with two pairs of marginal setae, and the basal lamina of the penis which is shorter in comparison with the median lobe in *Dissochaetus pallipes*, also the pieces of the internal sac are shaped differently.

DISTRIBUTION. From the number of specimens captured, *Dissochaetus pallipes* seems to be an abundant species. The specimens were collected in two Nature Reserves in Ecuador located close to each other, the Otongachi Reserve (Pichincha province) and the Otonga Reserve (Cotopaxi province).

***Dissochaetus sokolowskii* Szymczakowski, 1961**

Dissochaetus sokolowskii Szymczakowski, 1961. *Pols. Pism. Ent.*, 31(14): 155.

MATERIAL EXAMINED: ECUADOR: Province of Cotopaxi, Otonga, 2000 m, 00° 25' S – 79° 00' W, 2-VIII-1997, 1 ♂, L. Tapia & P. Ponce leg. Deposited in the Coll. QCAZ.

BRIEF DESCRIPTION. Body length between 2.84-2.90 mm; width between 1.28-1.30 mm. Colouration brown, with three or four basal segments and apical segment, and legs slightly lighter. Antennae with 5th to 10th segments transverse; 2nd and 3rd segments similar in length; club segments stout, 7th a little asymmetrical and 8th two and a half times wider than long and also asymmetrical. Pronotum 1.72 times wider than long, with hind vertices clearly marked. Elytra with transverse striae close together and perpendicular to suture. Anterior tarsi dilated, the first slightly wider than apical area of tibia (proportion = 1.15). External spur of posterior tibiae slightly shorter than sum of first two metatarsomeres.

Silhouette of median lobe of aedeagus in elongate isosceles triangle, with the tip weakly pointed and lacking marginal setae; parameres straight, as long as median lobe, with two long terminal setae; internal sac with four sclerotized plates surrounded by numerous small spines (Fig. 30).

OBSERVATION. The specimen studied in this paper was identified by Salgado (2001) as *D. monilis* (Murray, 1856). As the specimens of *D. monilis* described in this study are completely different to the Otonga specimen, and taking into account that Szymczakowski (1961) considers *D. sokolowskii* to be a neighbour of *D. monilis*, a further examination confirms that, given the morphological characters, antennae and protarsi, and also the shape of the aedeagus, the specimen described by Salgado (2001) corresponds to *D. sokolowskii*.

DISTRIBUTION. This species is known from Venezuela (Szymczakowski, 1961). The record in this study is the first for Ecuador, thus extending the distribution area of the species.

Acknowledgements.

I am most grateful to Drs. A. J. Mann and A. Spooner, who are in charge of the entomological collection of Oxford University-Museum of Natural History, for allowing me to study such interesting specimens. Also to Drs. Th. Deuve and A. Taghavian from the Muséum National d'Histoire Naturelle (Paris); Drs. A. Newton and J.H. Boone from the Field Museum of Natural History (Chicago) and Dr. A. Barragán from the Museo de la Pontificia Universidad de Quito, for sending the specimens and preparations that enabled me to carry out a comparative study of the species.

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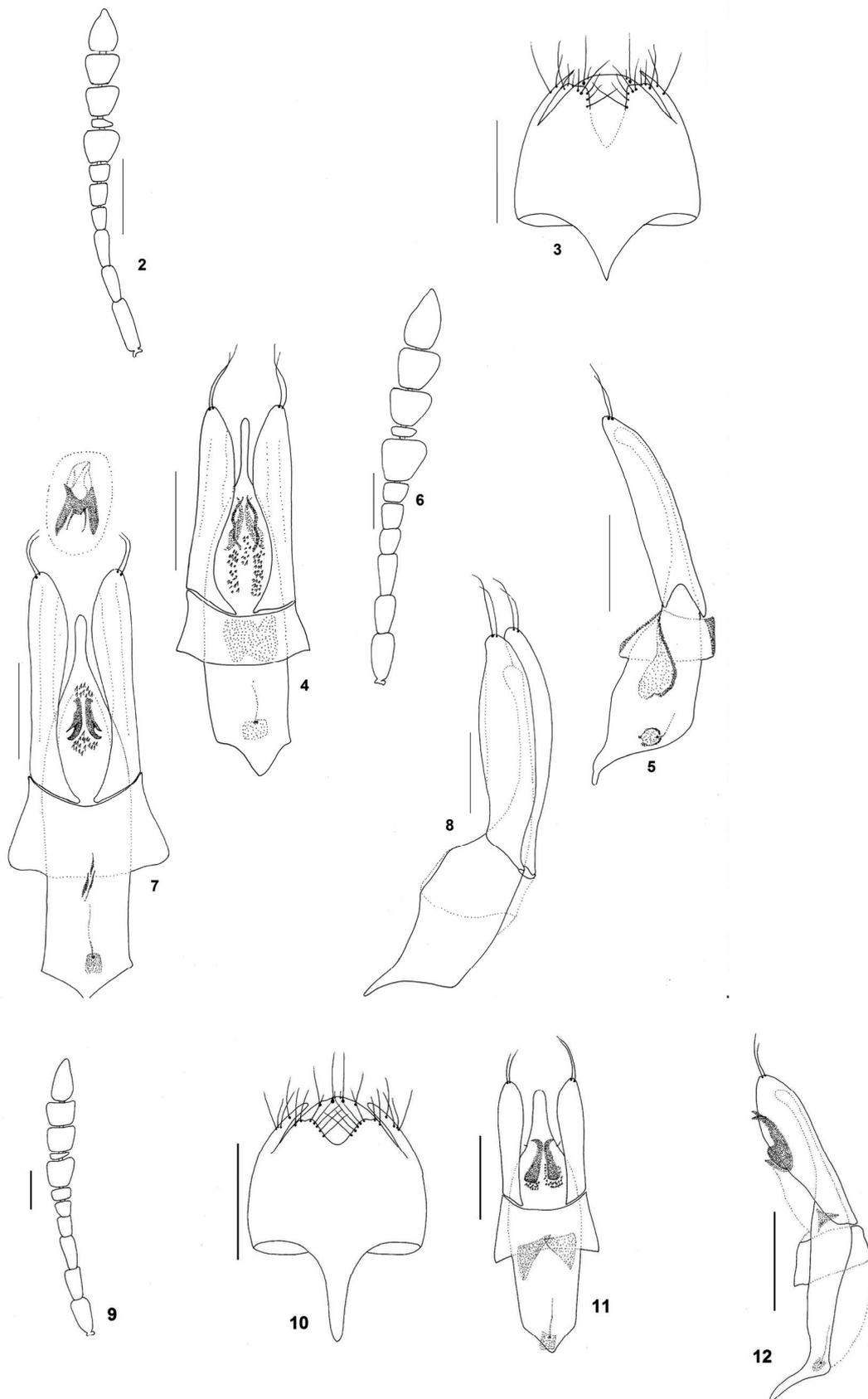


Fig. 2-8. *Dissochaetus angustipenis* n. sp. 2. Antenna; 3. Genital segment; 4. Aedeagus, dorsal view; 5. Aedeagus, lateral view. *Dissochaetus cochabamba* n. sp. 6. Antenna; 7. Aedeagus and sclerotized pieces, dorsal view; 8. Aedeagus, lateral view. (Scale bars: 0,20 mm). **Fig. 9-12.** *Dissochaetus grossus* n. sp. 9. Antenna; 10. Genital segment; 11. Aedeagus, dorsal view; 12. Aedeagus, lateral view. (Scale bars: 0,20 mm).

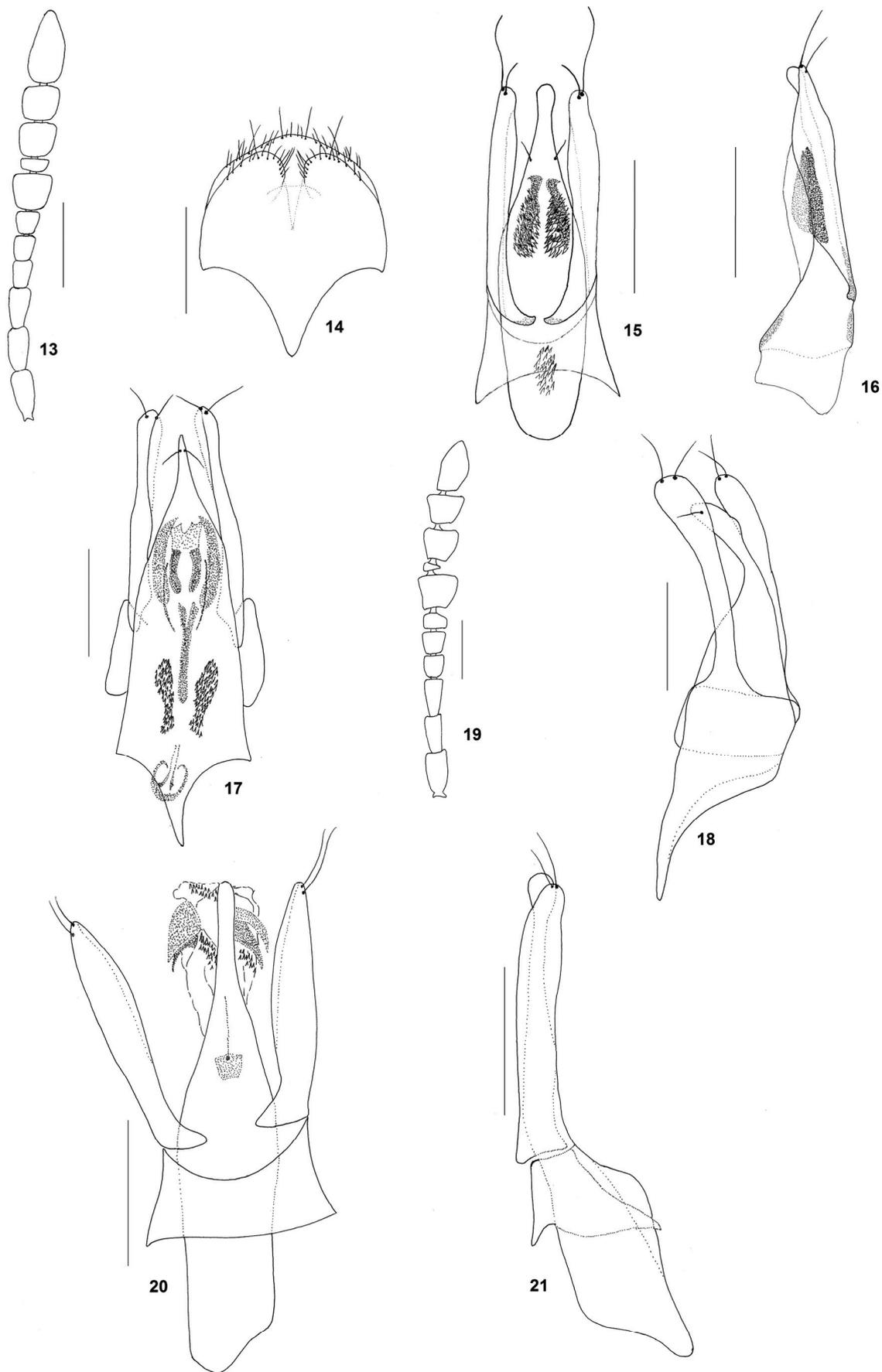


Fig.13-16. *Dissochaetus dilatatus* Salgado. **13.** Antenna; **14.** Genital segment; **15.** Aedeagus, dorsal view; **16.** Aedeagus, lateral view. (Scale bars: 0,20 mm). **Fig.17-21.** *Dissochaetus latus* Portevin. **17.** Aedeagus, ventral view; **18.** Aedeagus, lateral view. *Dissochaetus monilis* (Murray). **19.** Antenna; **20.** Aedeagus, dorsal view; **21.** Aedeagus, lateral view. (Scale bars: 0,20 mm).

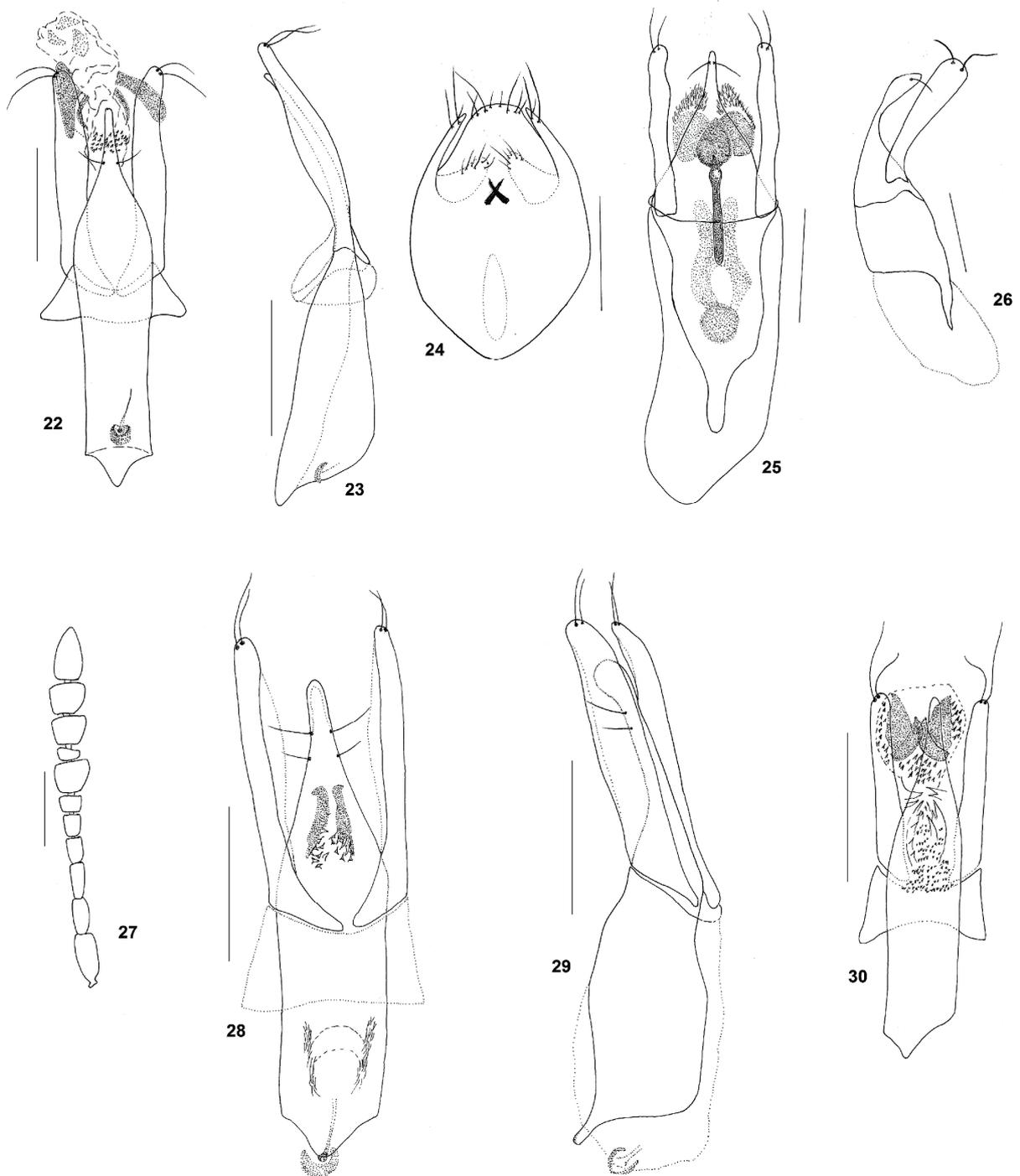


Fig. 22-26. *Dissochaetus napoensis* Salgado. **22.** Aedeagus, ventral view; **23.** Aedeagus, lateral view. *Dissochaetus ovalis* (Kirsch). **24.** Genital segment; **25.** Aedeagus, dorsal view; **26.** Aedeagus, lateral view. (Scale bars: 0,20 mm). **Fig. 27-30.** *Dissochaetus pallipes* Salgado. **27.** Antenna; **28.** Aedeagus, dorsal view; **29.** Aedeagus, lateral view. *Dissochaetus sokolowski* Szymczakowski. **30.** Aedeagus, ventral view. (Scale bars: 0,20 mm).