

# The Neotropical species of the genus *Somoleptus* SHARP, 1885 (Coleoptera: Staphylinidae: Staphylininae: Xantholinini)

With 52 figures and 2 keys

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Published on 2022-07-31

DOI: 10.3897/contrib.entomol.72.e87211

## Abstract

At present, 45 *Somoleptus* species are known from the Neotropical region. Among these, 28 species are newly described here, whereas 18 were described in the past. The new species are: *S. admirabilis* spec. nov., *S. andersoni* spec. nov., *S. ashei* spec. nov., *S. beniensis* spec. nov., *S. brevipennis* spec. nov., *S. brevisculus* spec. nov., *S. brooksi* spec. nov., *S. brunneus* spec. nov., *S. curtipennis* spec. nov., *S. curtulus* spec. nov., *S. elongatulus* spec. nov., *S. gigas* spec. nov., *S. grandiconus* spec. nov., *S. humicola* spec. nov., *S. longiceps* spec. nov., *S. lorentensis* spec. nov., *S. maximus* spec. nov., *S. melanarius* spec. nov., *S. mexicanus* spec. nov., *S. montanus* spec. nov., *S. oculatus* spec. nov., *S. ovatus* spec. nov., *S. pecki* spec. nov., *S. peruanus* spec. nov., *S. recurvatus* spec. nov., *S. struyvei* spec. nov., *S. triangulus* spec. nov., *S. tschirnhausi* spec. nov. Four species are transferred from the genus *Lithocharodes*. These are *S. cavicola* (BLACKWELDER, 1943) comb. nov., *S. strigulata* (BLACKWELDER 1943) comb. nov., *S. longicollis* (LECONTE, 1863) comb. nov., and *S. subtilis* (ERICHSON, 1839) comb. nov. *Somoleptus dichiformis* BERNHAUER, 1910 could not be assigned to either *Lithocharodes* or *Somoleptus*. Thus, this species must be treated as species incertae sedis. Two species groups could be differentiated due to the structure of the parameres and the aedeagal cones; one mainly occurs in South America, the second in Central America.

## Nomenclatural acts

*Somoleptus admirabilis* spec. nov. – urn:lsid:zoobank.org:act:4BE7793B-7763-48E9-B8DF-1D1165939D3E  
*Somoleptus andersoni* spec. nov. – urn:lsid:zoobank.org:act:EE71B4FE-AADE-460D-9856-5113E1CDD532  
*Somoleptus ashei* spec. nov. – urn:lsid:zoobank.org:pub:A6709650-1A50-46E2-ADBF-8215932502E5  
*Somoleptus beniensis* spec. nov. – urn:lsid:zoobank.org:act:684C60A5-569A-4AFB-B8A5-A2CD700762F1  
*Somoleptus brevipennis* spec. nov. – urn:lsid:zoobank.org:act:F4374FBE-13B5-41EA-9F5F-F7424E92EECA  
*Somoleptus brevisculus* spec. nov. – urn:lsid:zoobank.org:act:59C96EB8-4776-4627-800D-75E982C84F73  
*Somoleptus brooksi* spec. nov. – urn:lsid:zoobank.org:act:1F8C2AEA-2437-4B42-AE59-9D3601836AE1  
*Somoleptus brunneus* spec. nov. – urn:lsid:zoobank.org:act:377571F5-C8B7-4FA4-918D-9E1BD724B8E2  
*Somoleptus curtipennis* spec. nov. – urn:lsid:zoobank.org:act:CA403F62-42E7-410F-B533-661C0B64A73B  
*Somoleptus curtulus* spec. nov. – urn:lsid:zoobank.org:act:4FC0C167-057B-41E4-BCB3-576DC2B47F32  
*Somoleptus elongatulus* spec. nov. – urn:lsid:zoobank.org:act:1ECB0C9B-33DF-43A8-B418-7FB573C1DC49  
*Somoleptus gigas* spec. nov. – urn:lsid:zoobank.org:act:64813C41-0EEB-419F-852D-21FE5DD7338C

*Somoleptus grandiconus* spec. nov. – urn:lsid:zoobank.org:act:4207AA34-F874-44F2-83CA-00973148C3EE  
*Somoleptus humicola* spec. nov. – urn:lsid:zoobank.org:act:FF992A61-25BA-4E8B-9079-E89182E39F91  
*Somoleptus longiceps* spec. nov. – urn:lsid:zoobank.org:act:852FE924-DE95-473A-B6D1-9D5B5BFCB258  
*Somoleptus lorentensis* spec. nov. – urn:lsid:zoobank.org:act:598891A6-252E-4F7E-943C-B72D55B03813  
*Somoleptus maximus* spec. nov. – urn:lsid:zoobank.org:act:7D7BD9DE-0207-4E2B-B3E5-8D84225777B2  
*Somoleptus melanarius* spec. nov. – urn:lsid:zoobank.org:act:E5CB8799-D5AC-4D5D-876C-29E45C953438  
*Somoleptus mexicanus* spec. nov. – urn:lsid:zoobank.org:act:B83AEAEF-5D44-4D1B-B22A-2D898B620EDF  
*Somoleptus montanus* spec. nov. – urn:lsid:zoobank.org:act:1CB5C136-E50A-4001-A42E-DDFE38450986  
*Somoleptus oculatus* spec. nov. – urn:lsid:zoobank.org:act:F86FF6E7-81A2-48A1-B4F9-882CA4EE9213  
*Somoleptus ovatus* spec. nov. – urn:lsid:zoobank.org:act:901264F7-4008-4083-8E90-FC364B7CF3C1  
*Somoleptus pecki* spec. nov. – urn:lsid:zoobank.org:act:4224A157-EA8D-4633-8AA1-F137A8787758  
*Somoleptus peruanus* spec. nov. – urn:lsid:zoobank.org:act:842A0E8D-ED87-4AC1-9207-C4D7B730C7B3  
*Somoleptus recurvatus* spec. nov. – urn:lsid:zoobank.org:act:527B3680-EA00-4C31-AEF6-3F7C6A9E5576  
*Somoleptus struyvei* spec. nov. – urn:lsid:zoobank.org:act:9F3627D1-41A2-412E-9EE2-C9B6971BFFDC  
*Somoleptus triangulus* spec. nov. – urn:lsid:zoobank.org:act:4E69126B-1B3B-41D3-99F7-075F4527FC67  
*Somoleptus tschirnhausi* spec. nov. – urn:lsid:zoobank.org:act:6E414D13-7488-4C5F-83A7-B5C3C54E015B

## Key words

Neotropics, Xantholinini, new species, new combinations, zoogeography

## Zusammenfassung

Zurzeit sind 45 *Somoleptus* Arten aus der neotropischen Region bekannt. Von diesen werden 28 Arten hier neu beschrieben. Insgesamt 18 Arten waren schon bekannt. Die neu beschriebenen Arten sind: *S. admirabilis* spec. nov., *S. andersoni* spec. nov., *S. ashei* spec. nov., *S. beniensis* spec. nov., *S. brevipennis* spec. nov., *S. brevisculus* spec. nov., *S. brooksi* spec. nov., *S. brunneus* spec. nov., *S. curtipennis* spec. nov., *S. curtulus* spec. nov., *S. elongatulus* spec. nov., *S. gigas* spec. nov., *S. grandiconus* spec. nov., *S. humicola* spec. nov., *S. longiceps* spec. nov., *S. lorentensis* spec. nov., *S. maximus* spec. nov., *S. melanarius* spec. nov., *S. mexicanus* spec. nov., *S. montanus* spec. nov., *S. oculatus* spec. nov., *S. ovatus* spec. nov., *S. pecki* spec. nov., *S. peruanus* spec. nov., *S. recurvatus* spec. nov., *S. struyvei* spec. nov., *S. triangulus* spec. nov., *S. tschirnhausi* spec. nov. Vier Arten wurden aus der Gattung *Lithocharodes* nach *Somoleptus* überführt. Diese sind *S. cavicola* (BLACKWELDER, 1943) comb. nov., *S. strigulata* (BLACKWELDER 1943) comb. nov., *S. longicollis* (LECONTE, 1863) comb. nov. und *S. subtilis* (ERICHSON, 1839) comb. nov. *S. dichiformis* BERNHAUER, 1910 konnte weder der Gattung *Lithocharodes* noch der Gattung *Somoleptus* zugeordnet werden. Daher muss die Art zunächst als species incertae sedis aufgefasst werden. Aufgrund der Struktur der Parameren und des Aedeagusfortsatzes wurden zwei Artengruppen unterschieden; eine Gruppe ist hauptsächlich in Südamerika verbreitet, eine zweite in Zentralamerika.

## Schlüsselwörter

Neotropis, Xantholinini, neue Arten, neue Kombinationen, Zoogeographie

## Introduction

In his work on the Central American Staphylinidae, SHARP (1885) described the new genus *Somoleptus* based on several Central American and one South American species. He separated it from the similar genus *Lithocharodes* (SHARP, 1876). The assignment of species to one of the two genera was mixed several times in the past. The characterisation and differentiation were described in the revision of the Neotropical *Lithocharodes* species (IRMLER 2021). It mainly based on the structure of the aedeagus, which is more consistent than the external characters proposed by NAVARRETE-HEREDIA et al. (2002). After the revision of the Neotropical species of *Lithocharodes* (IRMLER

2021), it seems necessary to work also on a revision of the Neotropical *Somoleptus* species for a clear assignment of the species to one of the genera. The results of this work are presented here.

Overall, if the species described in the past and the new species described here are combined, a number of 45 species will be known from the Neotropical region. One species must be assigned as species incertae sedis: *S. dichiformis* BERNHAUER, 1910. The type specimen of *S. dichiformis* BERNHAUER, 1910 deposited in Field Museum of Natural History (Chicago, U.S.A.) is a male, but the structure of the aedeagus neither fits the aedeagal structures of *Somoleptus* nor that of *Lithocharodes*.

In addition, species groups are proposed, and zoogeographic and ecological remarks are given.

## Material and methods

The material studied in this investigation is presently deposited in the following public museums and private collections:

|      |   |
|------|---|
| BMNH | The Natural History Museum, London, United Kingdom                        |
| FMNH | Field Museum of Natural History, Chicago, U.S.A.                          |
| KNHM | University of Kansas, Museum of Natural History, Lawrence, Kansas, U.S.A. |
| MCZ  | Museum of Comparative Zoology, Boston, U.S.A.                             |
| SDEI | Senckenberg, Deutsches Entomologisches Institut, Müncheberg, Germany      |
| ZMHU | Zoologisches Museum der Humboldt-Universität, Berlin, Germany             |
| TSC  | private collection of Tim Struyve, Mechelen, Belgium                      |
| UIC  | collection of author, Plön, Germany, is part of SDEI                      |

The photographs were taken using a Makroskop M 420 (Wild, Herbrugg) in combination with a digital camera Leica EC3. Additionally, photographs were also made using a Stereomicroscope Olympus SZX7 with the digital camera LC 30. CombineZ5 (HADLEY 2006) was used to optimise depth of focus. Length was measured in the middle of tagmata: head from clypeus to posterior edge, pronotum from anterior to posterior edge along midline, elytra from anterior edge at humeral angles to posterior edge; width at the widest part of tagmata (head width includes eyes). In the measurement of total length, the abdominal inter-segmental space is subtracted. The following ratios were used in the descriptions: Eye length versus length of posterior sides of head (PS : E); length of cones versus length of central lobe (C : A) (Fig. 1).

The statistical analysis to estimate the species richness in the Neotropical region was performed using the rarefaction analysis and the Chao-1 analysis with the program PAST (HAMMER et al. 2012).

## Acknowledgements

I thank the curators of the museums, institutions and private collectors for the steady support, help and relinquishment of several specimens for my collection: Crystal Maier (FMNH and MCZ), Max Barclay and Michael Geiser (BMNH), Zack Falin (KNHM), Johannes Frisch and J. Willers (ZMHU), Stephan Blank and Lutz Behne (SDEI), Tim Struyve (Mechelen, Belgium).

## Characterisation and key of species groups

In the study on the Neotropical genus *Lithocharodes* SHARP, 1876, IRMLER (2021) differentiated the genera *Lithocharodes* and *Somoleptus* mainly by the structure of the aedeagus. In contrast to *Lithocharodes*, *Somoleptus* species have a process at the apical orifice of the central lobe. The study of the *Somoleptus* material results in some more aedeagal characters that allowed to separate species groups. These are structures of the parameres, which are either bilobed or unilobed, structures of the process at apical orifice, location of apical cones outside or inside the central lobe, and presence or absence of a sclerotised endophallus.

Two major groups can be differentiated: laevis-group and longicollis-group. The laevis-group has a simple, usually uni-lobed paramere; cones at the apical orifice variable, but do not have the characteristic cone-like structure of the longicollis-group. They can be extremely elongate, such as in *S. laevis* BERNHAUER, 1908 or very short and inside the apical orifice, such as in *S. brevisculus* spec. nov. Only three species have bilobed parameres, such as in *S. agraeformis* SHARP, 1885. But the outer lobe of the parameres of these species are slender and elongate in contrast to the broader and more circular outer lobe in the longicollis-group. These species may be considered as transitional between both groups. In total, at least 18 species are assigned to the laevis-group. The longicollis-group is much more uniform in the structure of the parameres and the process at the apical orifice of the aedeagus. In this group, the parameres are bilobed with a slender or short and broad, often nearly circular outer lobe. The process has a typical cone-like structure with crowns of stacked spines (Fig. 1c). In addition, the endophallus is very uniform and mainly differs in the form and number of loops. In total, at least 24 species can be assigned to this group, which are in many cases extremely difficult to identify.

The species of the laevis-group can be subdivided into three subgroups with closer related species. These are the aenescens-subgroup, which is characterised by a typical laminated brush-like process at the apical orifice of the aedeagus (Fig. 1d). Four species can be assigned to this subgroup (*S. aenescens*, *S. beniensis*, *S. pulcher*, *S. recurvatus*). Another subgroup consists of the species *S. curtulus*, *S. admirabilis*, *S. agraeformis*, and *S. nitidus* (SHARP). In these four species the endophallus of the aedeagus is not sclerotised and the process varies but is similarly cone-like as in the longicollis-group. A third subgroup is formed by *S. peruanus*, *S. struyvei*, *S. brevisculus*, and *S. montanus*. In the four species, the process at the apical orifice is shifted to the inner side of the orifice (Fig. 1e).

In the longicollis-group species can be assigned to two subgroups: the longicollis-subgroup with male sternite VII triangularly prominent at posterior margin (*S. ashei*, *S. columbicus*, *S. longiceps*, *S. longicollis*, *S. mexicanus*, *S. obscurus*, *S. obsoletus*, *S. ovatus*,

*S. parvulus*, *S. pecki*, *S. punctulatus*, *S. sparsus*, *S. triangularis*) and the alticola-subgroup with male sternite VII straight at posterior margin (*S. alticola*, *S. brevipennis*, *S. brunneus*, *S. gigas*, *S. humicola*, *S. maximus*, *S. melanarius*, *S. oculatus*). The species in the subgroups certainly reflect species with closer evolutionary relation. The following key will allow the assignment of the species to groups and subgroups.

## Description of species

*Somoleptus admirabilis* spec. nov.

urn:lsid:zoobank.org:act:4BE7793B-7763-48E9-B8DF-1D1165939D3E

Figs 13a–d, 46 G

**Type material:** male, holotype: Panama: Chiriqui, 27.7 km W Volcan, Hartmann's Finca (8°45.'N, 82°48'W), 1800 m elev., oak forest litter, 16.6.1995, leg. R. Anderson,

1. Parameres bilobed with slender elongate inner lobe and broad mostly semi-circular outer lobe; process at apical orifice of aedeagus cone-like with cones of spines (Fig. 1); male sternite VII at posterior margin with triangular process or straight ..... longicollis-group ..... 4
  - Parameres rarely bilobed; if bilobed inner lobe broader, not much slenderer than outer lobe; process at apical orifice of aedeagus varying; male sternite VII at posterior margin rarely with triangular process; mostly with central emargination or straight ..... laevis-group ..... 2
2. Without sclerotised endophallus ..... admirabilis-subgroup
  - Endophallus sclerotised with several loops ..... 3
3. Process at apical orifice of aedeagus brush-like (Fig. 1d) ..... aenescens-subgroup
  - Process at apical orifice of aedeagus short and translocated into the inner side of the orifice (Fig. 1e) ..... struyvei-subgroup
4. Posterior margin of male sternite VII triangularly prominent (Fig. 21 c) ..... longicollis-subgroup
  - Posterior margin of male sternite VII straight (Fig. 22 c) ..... alticola-subgroup

#PAN2A95 28C (KNHM). Paratypes: Costa Rica: 1 female, San José, 117 km Pan American Highway, 19 km N San Isidro (83°42.20'W, 9°28.0'N), 1800 m elev., cloud forest litter, 15.2.1998, leg. R. Anderson #CR2A98 001 (KNHM); 1 male, Puntarenas, San Vito, Estac. Biol. Las Alturas, 2 km NE (82°50.4'W, 8°58.26'N), 1720 m elev., 21.6.1998, leg. R. Anderson #CR1A98 106 (KNHM); 2 males, San José, 117 km Pan American Highway, 19 km N San Isidro (83°42.2'W, 9°28'N), 1800 m elev., cloud forest litter, 15.2.1998, leg. R. Anderson #CR1A98 001 (KNHM); Panama: 6 males, 6 females with same data as holotype (10 KNHM, 2 UIC).

**Diagnosis:** The species resembles *S. curtulus* in size, short elytra and black colouration. Other species with short elytra and absent humeral angles are either smaller between 4 and 6 mm, e.g. *S. alticola*, *S. brunneus*, and *S. curtupennis* or have nearly quadrate elytra such as *S. strigulata*. The endophallus of *S. admirabilis* is transparent as in *S. curtulus* and the male sternite VII has an incision at posterior margin. Even the shape of parameres is similar. However, the aedeagus of *S. admirabilis* is distinctly larger, a central apical tooth present and the cones broader. Thus, without preparation of the aedeagus, a separation of the species from *S. curtulus* is difficult.

**Description:** Length: 6.0 mm. Colouration: Black; legs and antennae brown.

Head: 0.97 mm long, 0.75 mm wide; eyes short, not prominent, postocular sides slightly divergent posteriad; PS : E ratio 6.5; posterior angles combined with posterior margin semi-circular; setiferous punctation dense and moderately deep; without impunctate midline; on average, interstices between punctures as wide as diameter of punctures; partly denser; surface with weak isodiametric microsculpture; shiny. Antennae with first antennomere half-length of head; second and third antennomere conical, twice as long as wide; following antennomeres wider than long and increasing in width; fourth antennomere twice as wide as long; tenth antennomere 2.5 times as wide as long; all antennomeres pubescent. Pronotum: 1.18 mm long, 0.71 mm wide; widest slightly behind anterior third; anteriorly narrowed to neck in convex curve; posteriad nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation as dense as on head but slightly finer; wide midline impunctate; surface without microsculpture; polished. Elytra: 0.70 mm long; 0.78 mm wide; without humeral angles; posterior angles rectangular; posterior margin triangularly retreated to suture; setiferous punctation deep and dense; on average, interstices less than half as wide as diameter of punctures; at base partly coriaceous; surface partly with irregular ground-sculpture; matt. Abdomen with dense setiferous punctation; weaker than on elytra; surface with transverse reticulate microsculpture; posterior margin of male sternite VII with triangular incision; posterior margin of



male tergite VII straight. Aedeagus oval; between apical cones with short triangular central tooth; cones broad; C : A ratio 0.27; endophallus transparent, not sclerotised; parameres twice as long as apical cones; broad at base; narrowed to acute apex in apical third; with numerous sensillae.

**Etymology:** The species name is derived from the Latin *admirabilis* meaning astonishing or strange and refers to the aedeagus with the non-sclerotised endophallus.

*Somoleptus aenescens* SHARP, 1885

Figs 6a–d, 46 B

*Somoleptus aenescens* SHARP, 1885: 495

**Type material examined:** male, here designated as lectotype: Guatemala, Vera Paz, San Geronimo, leg. Champion (BMNH). 2 female syntypes, 2 male syntypes with same data as lectotype (BMNH); within the loan of the BMNH four specimens were fixed on one plate and one female on a separate plate but from the same location. The 4 specimens of the plate were separated, dissected and one male was labelled as lectotype.

**Additional material examined:** Mexico: female, Veracruz, 5.5 mi S Huatusco, and 4.8 mi W on microondus road, 5900 ft elev., cloud forest litter at base of trees, sifting, 25.4.1977, leg. J.S. Ashe (FMNH); Panama: 9 females, Bocas de Toro, Fortuna/Chiriqui, Grande road (8°47'N, 82°11'W), 500 m elev., tropical wet forest litter, sifting, 16.-18.7.1987, leg. D.M. Olson (8 FMNH, 1 UIC); Cerro Azul, ca. 2000 ft elev., wet debris, small forest stream, 21.2.1976, leg. A. Newton (FMNH); 1 female, Chiriqui, Escopeta (N), along Rio Escopeta, 860 m elev., riddled stage III log in coffee plantation, 9.1.1981, leg. A. Suter (FMNH); 1 female, Colon, Parque Nac. Soberania, Pipeline Rd. (79°45'W, 9°07'N), beating veg., 20.5.1995, leg. C. Chaboo (KNHM); Ecuador: 1 male, 1 female, Manabi Agua Blanca, 20 km N Puerto Lopez, Machanilla N.P. (80°27.47'W, 1°31.35'S), 11.3.2006, leg. U. Irmeler (UIC).

**Diagnosis:** The species is characterised by its dark colour combined with the polished glossy surface. In particular, the cones at the orifice of the aedeagus and the shape of the parameres are specific and in common with the other species of the aenescens-subgroup. Within this subgroup, the triangular parameres and the semi-circular emargination of male sternite VII characterises the species among the other species of the subgroup.

**Description:** Length: 5.6 mm. Colouration: Blackish; abdomen lighter brown; pronotum slightly lighter, but still blackish; legs and antennae yellowish-brown. Head: 0.91 mm long, 0.71 mm wide; eyes moderately short; PS : E ratio 3.3; postocular sides nearly parallel;

posterior angles widely rounded; Posterior margin convex; setiferous punctation sparse and moderately deep; on average, interstices between punctures twice as wide as diameter of punctures; surface without microsculpture; polished. Antennae with first antennomere as long as half head-length; second and third antennomere conical; twice as long as wide; following antennomeres wider than long and increasing in width; fourth antennomere slightly wider than long; tenth antennomere twice as wide as long; all antennomeres pubescent. Pronotum: 1.02 mm long, 0.65 mm wide; widest shortly behind anterior third; anteriorly sides narrowed in convex curve; in posterior half nearly parallel; posterior angles sub-rectangular; posterior margin slightly curved; setiferous punctation sparse and moderately deep; wide midline impunctate; near anterior margin, impunctate midline convergent; surface without microsculpture; polished. Elytra: 0.96 mm long, 0.90 mm wide; humeral and posterior angles sub-rectangular; posterior margin convexly curved; sides slightly divergent; setiferous punctation distinctly denser and deeper than on head and pronotum; on average, interstices between punctures as wide as diameter of punctures; surface with weak isodiametric microsculpture; less shiny than pronotum. Abdomen much denser punctate than fore-body; male sternite VII with semi-circular emargination at posterior margin; male tergite VII straight. Metatarsus with three subapical ctenidia. Aedeagus oval; endophallus curled; covered by numerous minute teeth; cones at orifice broad and angled; C : A ratio 0.3; contiguous to endophallus; parameres short; triangular; at outer edge with smooth convex curve; at inner edge with two concave emarginations; with numerous sensillae in anterior half.

*Somoleptus agraeformis* SHARP, 1885

Figs 14a–d, 46 B

*Somoleptus agraeformis* SHARP, 1885: 498

**Type material examined:** female, syntype: Mexico, leg. Flohr (BMNH).

**Additional material examined:** Mexico: 5 males, 5 females, Veracruz, 7.4 mi S Huatusco, 1400 m elev., wooded pasture, litter in rock cracks along stream, 24.4.1977, leg. J.S. Ashe (8 FMNH, 2 UIC); 1 female, 7 km E Huatusco, Hwy. 125, 1230 m elev., under stones by stream, 16.7.1990, leg. J.S. Ashe, K.J. Ahn, R. Leschen, #184 (KNHM); 4 females, Veracruz, 3.5 km S Jalapa, sifted from leaf litter along stream, 1400 m elev., 22.5.1991, leg. J.S. Ashe (KNHM); 2 males, 1 female, Oaxaca, 14.2 mi S Ejutla, Hwy. 179, 1720 m elev., oak-pine forest, leaf litter, 18.6.1979, leg. J.S. Ashe (FMNH); 2 males, 2 females, Veracruz, 3.5 km S Jalapa, 1400 m elev., sifted from beat litter along stream, 22.5.1991, leg. J. Ashe, #22 (KNHM); 2 females, 4.0 km

S. Jalapa, 1350 m elev., leaf litter along stream 30.5.1991, leg. J.S. Ashe #40 (KNHM); 1 female, 2.3 km S Jalapa, 1320 m elev., leaf litter near river, 13.7.1992, leg. J. Ashe #67 (KNHM); San Luis Potosi, 29 km S Tamazunchale, Hwy. 85, 820 m elev., 10.7.1990, leg. J.S. Ashe (KNHM); Panama: 1 female, Chiriqui Prov., La Fortuna "Hydro Trail" (82°14'W, 8°42'N), 1150 m elev., flight intercept trap, 23.5.-9.6.1995, leg. J. Ashe, R. Brooks #156 (KNHM).

**Diagnosis:** The species is characterised by the narrow neck in combination with the strongly narrowed head and pronotum, which certainly resembles the overall shape of the carabid beetle *Agra*. Moreover, the short aedeagus with the long cones is species specific.

**Description:** Length: 4.6 mm. Colouration: Blackish, pronotum and abdomen brown; legs and antennae yellowish brown.

Head: 0.76 mm long, 0.54 mm wide; eyes moderately large; PS : E ratio 2.5; postocular sides widely curved to neck; without posterior angles; setiferous punctation moderately dense and deep; on average, interstices between punctures 1.5 times as wide as diameter of punctures; punctation on vertex slightly sparser than laterally; anteriorly on small central area impunctate; surface without microsculpture; polished. Antennae with first antennomere half as long as head; second and third antennomere elongate and conical; combined half as long as first antennomere; following antennomeres wider than long and increasing in width; twice as wide as long. Pronotum: 0.90 mm long, 0.51 mm wide; widest closely in front of middle; sides anteriorly continuously convergent; posteriorly nearly parallel; posterior angles obtusely rounded; posterior margin slightly convex; setiferous punctation moderately deep and dense; on average, interstices twice as wide as diameter of punctures; wide midline impunctate; impunctate midline anteriorly convergent; surface without microsculpture; polished; Elytra: 0.85 mm long, 0.68 mm wide; humeral and posterior angles sub-rectangular; sides nearly parallel; very slightly curved; posterior margin slightly retreated to suture; setiferous punctation denser and deeper than on head and pronotum; on average, interstices between punctures as wide as diameter of punctures; surface with weak isodiametric microsculpture; less glossy than head and pronotum; Abdomen with dense and moderately deep setiferous punctation; setae long and dark; surface with weak microsculpture; as shiny as elytra; male sternite VII with short central triangular emargination; male tergite VII with straight posterior margin. Metatibia with one subapical ctenidium. Aedeagus small; nearly circular; without sclerotised endophallus; C : ratio 0.8; parameres with inner lobe elongate; longer than cones; outer lobe as large plate; as long as cones.

*Somoleptus alticola* SHARP, 1885

Figs 22a–d, 46 D

*Somoleptus alticola* SHARP, 1885: 498

**Type material examined:** female, holotype: Guatemala: Totonicapam, 8000–10,500 ft. elev., leg. Champion (BMNH).

**Additional material examined:** Mexico: 2 males, 7 females, Michoacan, Cerro de Garnica, Puerto Garnica, 9400 ft elev., oak-conifer forest, leaf litter, forest floor, Berlese, 17.-18.9.1973, leg. A. Newton (7 FMNH, 2 UIC); 3 males, same region but 4.8 km W Mil Cumbres, 2820 m elev., pine-oak forest, 27.7.1988, leg. R.S. Anderson (KNHM); 1 male, 6 females, Chiapas, Cerro Huitepec, ca. 5 km W San Cristóbal, 2650 m, 2750 m elev., wet oak forest leaf litter, 17.9.1991, leg. R. Anderson (FMNH); 1 female, Mpio: San Cristóbal de las Casas, Reserva Huitepec (92°40.7'W, 16°458'N), 2200 m elev., oak forest, 13.11.2001, leg. R. Anderson #MEX1A01 201 (KNHM); 1 female, same data except 2450 m elev., sifted leaf litter cloud forest, 21.6.2008 (KNHM); 1 female, same region but (92°41.31'W, 16°44.68'N), 2600 m elev., cloud forest litter, Winkler, 11.7.2007, leg. J. Longino #JTL6036-s (KNHM); 1 female, 8.9 km E Rayon, 1500 m elev., cloud forest litter, 19.9.1991, leg. R. Anderson #91-109 (KNHM); 3 females, Cerro Tzontehuiz (Pico), ca. 10 m NE San Cristóbal, 2910 m elev., cloud forest leaf litter, 16.9.1991, leg. R. Anderson (FMNH); 1 female, Mpio: Angel Albino Corzo Reserva El Triunfo (92°48.7'W, 15°40.1'N), 2400 m elev., cloud forest litter, 16-21.11.2001, leg. R. Anderson #MEX1A01 204 (KNHM); 1 male, Oaxaca, 10.4 km S Totontepec, 2840 m elev., cloud leaf & moss, 17.6.1979, leg. J.S. Ashe (FMNH); 1 female, Veracruz, 7 km E Huatusco, cloud forest litter, Berlese, 22.6.1983, leg. R. Anderson (FMNH); Veracruz, 3.2 km SW Las Vigas, Hwy 140, pine treefall litter, 2830 m elev., 3 males, 11.7.1992, leg. J.S. Ashe #40 (KNHM); 4 females, Chiapas, 8.9 km E Payon, 1500 m elev., cloud forest litter, 19.9.1991, leg. R. Anderson, #91-109 (KNHM); 2 females, Yerbabuena Reserve, 2.1 km NW Pueblo Nuevo Solistahuacan, 2070 m elev., Liquidamber forest litter, 23.9.1992, leg. R. Anderson #92-114 (KNHM); 1 female same region but (92°53.52'W, 17°1.00'N), 1950 m elev., oak/pine liquidambar forest, 22.7.2003, leg. R. Anderson #MEX1A03 116 (KNHM); 5 females, Mpio., Huixtán, Bazóm (92°29.18'W, 16°44.19'N), mixed magnolia oak forest litter, 2450 m elev., 9.6.2003, leg. R. Anderson #MEX1A03 106 (KNHM); 1 female, Mpio. Tapalapa, Cerro El Calvaric nr. Tapalapa (93°0721'W, 17°11.11'N), 2200 m elev., wet cloud forest, 23.7.2003, leg. R. Anderson #MEX1A01 118 (KNHM); Guatemala: 3 females, Totonicapam, Paqrque Ecologia Chajil Siwan (-91.32961, 14.93638), 2790 m elev., sifted, oak-pine litter, 6.6.2015, leg. R. Anderson, GUAT1A15 120 (KNHM); 4 males, same region, but road below antennae, 3118 m elev., sifted, Cupressus litter, 7.6.2005, leg. R. Anderson, GUAT1A15 123 (2 KNHM, 2 UIC);

1 male, 1 female, El Progreso, Cerro Pinaión (-89.95319, 15.08350), sifted, leaf litter, cloud forest, 2500 m, 2560 m elev., 30.4., 2.5.2009 LLAMA09 Wm-B-01-2-02 (KNHM); 6 males, 10 females, Huehuetenango, Puerta del Cielo (-91.60338, 15.55307), sifted, fir-shrub litter, oak forest litter, fir-moss litter, 3400 m, 3358 m, 2974, elev., 13., 14.6.2015, -leg. R. Anderson GUAT1A15 144 (14 KNHM, 2 UIC); 3 females, Solola, Xeabaj I (-91.40841, 14.82364), sifted, mixed litter, 7.6.2015, leg. R. Anderson GUAT1A15 122 (KNHM); 2 males, Quiche, Nebaj, old road to 2545 m elev. (-91.13326, 15.37183), sifted, cloud-alder forest litter, 15.6.2015, leg. R. Anderson GUAT1A15 150 (KNHM); 1 male, San Marcos, Vega del Volcan, road to 2950 m elev. (-92.08626, 15.14936), sifted, alder forest litter, 9.6.2015, leg. R. Anderson GUAT1A15 131 (KNHM); 13 males, 25 females, Quetzaltenango, 8 km SE Zunil (14°46.1'N, 91°26.9'W), 2450 m, 2560 m, 2700 m elev., berlesate forest litter, 16.6.1993, leg. Anderson & Ashe, #93-1B (33 KNHM, 5 UIC); 1 male, same region and collectors, but 1520 m elev. (14°41.7'N, 91°25.5'W), oak leaf litter (KNHM); 1 male, 1 female, Quetzaltenango, Volcan Siete Orejas, summit rd. (-91.5816, 14.7889), 2911 m elev., sifted oak forest litter, 5.6.2015, leg. R. Anderson #GUAT1A15 113 (KNHM); El Progreso, Cerro Pinalón (15.08304, 89.92229), 2845 m elev., sifted leaf litter, cloud forest, 1.5.2009, leg. KNHM, #LLAMA09 Wm-B-01-1-03 (KNHM).

**Diagnosis:** *Somoleptus alticola* can be distinguished from the other species of the longicollis-subgroup by the short, divergent elytra and the absence of humeral angles. This is certainly an adaptation to the habitat in the high mountains. Additionally, the broad sclerotised endophallus in combination with the extremely short cones are specific within the subgroup.

**Description:** Length: 4.6 mm. Colouration: Totally black; legs and antennae blackish brown.

Head: 0.75 mm long, 0.56 mm wide; eyes very short; PS : E ratio 4.0; postocular sides nearly parallel; posterior angles in even curve with posterior margin; setiferous punctation sparse and moderately deep; on average, interstices between punctures more than twice as wide as diameter of punctures; indistinct midline impunctate; surface without microsculpture, polished; Antennae with first antennomere half head-length; second and third antennomere elongate; second antennomere one fourth longer than third; following antennomeres wider than long and increasing in width; fourth antennomere slightly wider than long; tenth nearly twice as wide as long. Pronotum: 0.88 mm long, 0.59 mm wide; widest close to middle; anteriad convergent in continuous curve; posteriad slightly narrowed to obtuse posterior angles; posterior margin slightly convex; setiferous punctation moderately dense and deep; with wide impunctate midline; surface without microsculpture; polished; Elytra: 0.62 mm long, 0.66 mm wide; sides divergent to posterior angles; humeral angles absent; posterior angles sub-rect-

angular; posterior margin with deep and broad triangular incision at suture; setiferous punctation much denser and deeper than on head and pronotum; on average, interstices between punctures as wide as diameter of punctures; surface with weak isodiametric microsculpture; less shiny than head and pronotum. Abdomen with setiferous punctation as deep and dense as on elytra; male sternite and tergite VII with straight posterior margin. Metatibia with one subapical ctenidium. Aedeagus oval; cones short; C : A ratio 0.10; endophallus with broad sclerotised part in posterior half and smaller circle part in anterior half; parameres with elongate inner and outer lobe; outer lobe only half as long as inner lobe; inner lobe with four pairs of setae at inner edge.

*Somoleptus andersoni* spec. nov.

urn:lsid:zoobank.org:act:EE71B4FE-AADE-460D-9856-5113E1CDD532

Figs 10a, b, 49 E

**Type material:** male, holotype: Mexico: Mpio: Chalchihuitan, Cerro de Chalchihuitan (92°37.13'W, 16°59.20'N), 2050 m elev., cloud forest litter, 24.7.2003, leg. R. Anderson #MEX1A03 120 (KNHM). Paratypes: 1 male, 1 female with same data as holotype (KNHM); 1 male, Chiapas, Yerbabuena Reserve, 2.1 km NW Pueblo Nuevo Solistahuacan, 2070 m elev., Liquidamber forest litter, 23.9.1992, leg. R. Anderson #92-114 (UIC); Guatemala: 1 female, El Progreso, Cerro Pinalon, Finca las Nubes (-89.9425, 15.0838), 2500 m elev., sifted oak/cloud forest litter, 21.9.2008, leg. R. Anderson #LLAMA08 RSA142 (KNHM).

**Diagnosis:** The species is characterised by the extremely short eyes with postocular sides 7–10 times longer than eyes. Among the other species with short elytra and eyes, *S. andersoni* is also conspicuous by its large size. The similarly large *S. admirabilis* and *S. curtulus* can be separated by the absence of a sclerotised endophallus.

**Description:** Length 6.1 mm. Colouration: Black, legs and antennae dark brown.

Head: 0.97 mm long, 0.74 mm wide; eyes extremely short; PS : E ratio 7.2; sides slightly curved; posterior angles combined with posterior margin semi-circular; interantennal furrows weak; setiferous punctation moderately deep and dense; on average, interstices between punctures 1–1.5 times as wide as diameter of punctures; surface without microsculpture; shiny. Antennae with first antennomere half-length of head; antennomeres 2 and 3 approximately twice as long as wide; combined half-length of first antennomere; antennomeres 4–10 wider than long and increasing in width; each twice as wide as long; antennomeres 4 to 11 pubescent. Pronotum: 1.11 mm long, 0.70 mm wide; widest at anterior third; anteriorly narrowed in smooth convex curve; in central third slightly narrowed; in posterior third nearly parallel; posterior angles obtuse; posterior margin slightly convex;



setiferous punctation as deep and dense as on head except adjacent to impunctate midline with denser punctation; irregular line approximately with 20 punctures; surface without microsculpture; shiny. Elytra: 0.78 mm long, 0.84 mm wide; without humeral angles; sides divergent posteriad; posterior angles rectangular; posterior margin deeply retreated to suture; setiferous punctation less deep than on pronotum but on average slightly denser; surface with weak irregular ground sculpture; less shiny than head and pronotum. Abdomen with setiferous punctation as dense as on elytra but weaker; surface with transverse microsculpture; matt; posterior margin of male sternite VII straight; posterior margin of male tergite VII slightly convex. Aedeagus oval; egg-shaped; at base wider than at apex; anterior angles obtuse; cones extremely short; C : A ratio 0.1; sclerotized endophallus with several torsions; covered by short teeth except a more transparent part apically; parameres slender; 5 times as long as cones; apically with hook-like prominence; apex acute; at lower edge of prominence several spines.

**Etymology:** The species name honours the collector of the species, R. Anderson, who collected extensively in the Neotropical region.

*Somoleptus ashei* spec. nov.

urn:lsid:zoobank.org:pub:A6709650-1A50-46E2-ADBF-8215932502E5

Figs 43a, b; 46 E

**Type material:** male, Holotype: Mexico: Veracruz, 5.5 mi S Huatusco, and 4.8 mi W on microodus road, cloud forest, 5900 ft. elev., sifting litter at base of tree, 25.4.1977, leg. J.S. Ashe (FMNH). Paratype: Mexico: 1 male with same data as holotype (FMNH); 1 female, Veracruz, 16.4 km S Orizaba on rd. to Tlaquilpa, 1630 m elev., litter in sinkhole, 15.7.1992, leg. J.S. Ashe, H. Frania #70 (KNHM); 6 males, 2 females, Oaxaca, 40 km SW Valle Nacional km 93, 1900 m elev., oak forest leaf litter, Berlese, 26.7.1992, leg. R. Anderson #92-031 (6 KNHM, 2 UIC); 2 females, same region and collector but 32 km SW Valle Nacional, km 85, 1650 m elev., trans./cloud forest leaf litter, Berlese, 26.7.1992 #92-030 (KNHM); 1 female, Chiapas, Yerbabuena Reserve 2.1 km SW Pueblo Nuevo Solistahuacan, 2100 m elev., cloud forest litter, 23.9.1992, leg. R. Anderson #91-114 (KNHM); Honduras: 2 females, Yoro Dept., P.N. Pico Pijol (87°37.6'W, 15°09.4'N), 1400 m elev., upper montane forest litter, 11.5.2002, leg. R. Anderson #RSA2A2002-016 (KNHM); 1 male, 2 females, Morazan Dept., Res. Biol. El Chile, nr. Guaimaca (85°52'W, 14°21'N), 1600 m elev., upper montane forest litter, 8.5.2002, leg. R. Anderson #RSA2002-011 (2 KNHM, 1 UIC); Guatemala: 1 male, Quiche, Reserva de Recuerdas (-90.75887, 5.45220), 1398 m elev., sifted evergreen forest, 16.6.2015, leg. R. Anderson #GUAT1A15 152 (KNHM); 1 female, Huehuetenango, Nentón, Gracias de Dios, El Quetzal (-91.66444, 16.06948), 1569 m elev., leaf litter, 12.5.2010,

leg. F. Camposeco & J. Monzon (KNHM); 1 female, Petén, 13 km NW Manchaquilá (-89.54982, 16.44569), 400 m elev., sifted leaf litter tropical moist for., 27.5.2009, leg. ? (KNHM); 1 female, Progreso, 20 km N Estanesa de la Virgen, 1800-1900 m elev., cloud forest litter, 8.6.1991, leg. R. Anderson #91-55 (KNHM).

**Diagnosis:** According to the colouration, punctation and glossy surface, *S. ashei* resembles *S. aenescens*. It is distinctly smaller than *S. aenescens* and the parameres are extremely slender compared to the triangular parameres of *S. aenescens*. The aedeagus of *S. ashei* resembles the aedeagus of *S. alticola*. In contrast to the short elytra and absence of hind wings in *S. alticola*, elytra are long and with hind wings in *S. ashei*.

**Description:** Length: 5.1 mm. Colouration: Totally black; legs and antennae dark brown.

Head: 0.82 mm long, 0.59 mm wide; eyes moderately large, PS : E ratio 3.1; postocular sides slightly curved; postocular margin combined with posterior angles convex with short straight centre; setiferous punctation moderately sparse and deep; on average, interstices between punctures 1.5 times as wide as diameter of punctures; anteriorly with narrow impunctate midline; surface without microsculpture; polished. Antennae with first antennomere slightly longer than half-length of head; second and third antennomere conical; combined half as long as first; following antennomeres wider than long and increasing in width; twice as wide as long; antennomeres 4–11 pubescent; Pronotum: 0.91 mm long, 0.58 mm wide; widest at anterior third; anteriorly narrowed in smooth curve; sides in posterior half nearly parallel; posterior angles obtuse; posterior margin convex; setiferous punctation still sparser than on head; on average interstices more than twice as wide as diameter of punctures; laterally much sparser than adjacent to midline; wide midline impunctate; adjacent to midline irregular band of dense punctures; surface without microsculpture; polished. Elytra: 0.81 mm long, 0.72 mm wide; humeral and posterior angles sub-rectangular; posterior margin slightly retreated to suture; setiferous punctation slightly denser than on head and pronotum; on average, interstices between punctures 1.5 times as wide as diameter of punctures; surface without microsculpture; shiny. Abdomen with moderately dense setiferous punctation; segments at base with transverse microsculpture; posterior margin of male sternite VII triangularly prominent; posterior margin of male tergite VII straight. Metatibia with one subapical ctenidium. Aedeagus oval; C : A ratio 0.18; sclerotised endophallus covered by minute teeth; broad and straight in posterior half; at middle with one loop; inner lobe of parameres slender and nearly half as long as aedeagus; outer lobe broad plate; half as long as inner lobe; at inner edge of inner lobe with row of setae.

**Etymology:** The species name honours J.S. Ashe, who collected it on one of his numerous collecting expeditions to Latin America.



*Somoleptus beniensis* spec. nov.

urn:lsid:zoobank.org:act:684C60A5-569A-4AFB-B8A5-A2CD700762F1

Figs 7a, b; 46 F

**Type material:** male, Holotype: Bolivia: Dept. Beni, Prov. Vaca Diaz, 2.5 km NW of Tumichucua, forest, flight intercept trap, 11.8.1990, leg. P. Parillo & P. Betella (FMNH). Paratypes: Suriname: 1 male, Marowijne, Perica, 70 km E Paramaribo, on East-West Road (54°36.31'W, 5°40.28'N), 5 m elev., flight intercept trap, 31.5-5.6.1999, leg. Z.H. Falin (KNHM); Peru: 2 males, Dept Loreto, 1.5 km N Teniente Lopez (76°06.92'W, 2°35.66'S), 210-240 m elev., flight intercept trap, 22.7.1993, leg. R. Leschen (1 KNHM, 1 UIC); Paraguay: 1 male, Guairá, Melgarejo, Tacuara Creek, flood detritus, 20.10.1004, leg. U. Drechsel (KNHM).

**Diagnosis:** In the uniformly black colouration and the elytral length, *S. beniensis* resembles *S. ashei*, but the punctuation on the head is distinctly sparser than in this species and total length is distinctly smaller. Moreover, in males the shape of sternite VII is different, the endophallus is broadly sclerotised and the parameres are broad and s-shaped and not as slender as in *S. ashei*.

**Description:** Length: 4.3 mm, Colouration: Totally black; legs and antennae light brown.

Head: 0.71 mm long, 0.57 mm wide; eyes large; PS : E ratio 2.6; postocular sides divergent; posterior angles combined with posterior margin convex with short straight part in front of neck; with weak interantennal furrows; setiferous punctuation sparse and moderately deep; on average interstices between punctures twice as wide as diameter of punctures; anteriorly with impunctate midline; surface without microsculpture; polished. Antennae with first antennomere longer than half-length of head; second and third antennomere longer than wide; combined as long as half-length of first antennomere; following antennomeres wider than long and increasing in width; twice as wide as long; antennomeres 4–11 pubescent. Pronotum: 0.79 mm long, 0.48 mm wide; widest at anterior third; anteriorly narrowed in smooth curve; sides in posterior half nearly parallel; posterior angles combined with posterior margin convex; setiferous punctuation sparse and moderately deep; on average, interstices between punctures more than twice as wide as diameter of punctures; wide midline impunctate; surface without microsculpture; polished. Elytra: 0.75 mm long, 0.70 mm wide; humeral and posterior angles sub-rectangular; sides nearly parallel; posterior margin slightly retreated to suture; setiferous punctuation denser than on head and pronotum; on average, interstices between punctures as wide as diameter of punctures; surface with weak isodiametric microsculpture; shiny. Abdomen with still denser setiferous punctuation than elytra; without microsculpture; posterior margin of male sternite VII convex; posterior margin of male tergite VII straight; Metatibia with one subapical ctenidium. Aedeagus oval;

anteriorly obtusely angled; C : A ratio 0.25; sclerotised endophallus broad; with few large teeth and numerous minute teeth; parameres broad; s-shaped; without setae.

**Etymology:** The species name is derived from the Departamento Beni in Peru, where the holotype was collected.

*Somoleptus brevipennis* spec. nov.

urn:lsid:zoobank.org:act:F4374FBE-13B5-41EA-9F5F-F7424E92EECA

Figs 38a, b; 49 B

**Type material:** male, holotype: Honduras, Lempira Dept., P.N. Celaque, nr. Gracias, above Camp. Don Tomas (88°39.7'W, 14°32.7'N), 2250 m elev., mixed oak forest litter, 12.-13.5.2002, leg. R. Anderson #RSA2002-021 (KNHM). Paratypes: Mexico: 3 females, Guerrero, 10.3 km SW Filo de Caballo, 2700 m elev., oak/pine/fir forest leaf/log litter, 15.7.1992, leg. R. Anderson #92-008 (KNHM); Honduras: 3 males, 4 females with same data as holotype (6 KNHM, 1 UIC); Guatemala: Zacapa, Alejandria, nr. Finca Lucas (-89.6247, 15.1349), 2122 m elev., sifted oak forest litter, 19.6.2015, leg. R. Anderson #GUAT1A15 155 (KNHM).

**Diagnosis:** *S. brevipennis* belongs to the alticola-subgroup with short elytra and eyes. It is smaller than the similar *S. alticola* and *S. brevisculus* and can be identified only by dissection of the aedeagus. The cones at apical orifice of the aedeagus are longer than in *S. alticola* and *S. brevisculus*. In contrast to *S. brevisculus*, the parameres are bilobed as in *S. alticola* but the endophallus is slenderer than in *S. alticola*.

**Description:** Length: 3.9 mm. Colouration: Dark brown; legs and antennae lighter brown.

Head: 0.64 mm long, 0.48 mm wide; eyes short, PS : E ratio 5.4; sides nearly parallel; posterior angles combined with posterior margin semi-circular; interantennal furrows weak; setiferous punctuation deep and moderately dense; on average, interstices as wide as diameter of punctures; close to impunctate midline partly denser; surface without microsculpture; shiny. Antennae with first antennomere distinctly longer than half-length of head; antennomeres 2 and 3 longer than wide; combined half as long as first antennomere; antennomeres 4–10 twice as wide as long and increasing in width; antennomeres 4–11 pubescent. Pronotum: 0.82 mm long, 0.54 mm wide; widest at middle; anteriorly narrowed in convex curve; posteriorly parallel; posterior angles obtuse; posterior margin slightly convex; setiferous punctuation as dense and deep as on head; wide midline impunctate; surface without microsculpture; shiny. Elytra: 0.52 mm long, 0.58 mm wide; humeral angles absent; sides divergent posteriorly; posterior margin deeply retreated to suture; setiferous punctuation as dense and deep as on pronotum; surface without microsculpture; shiny. Abdomen with setiferous punctuation as dense as on elytra but finer; at base of segments with transverse microsculpture;

posterior margin of male sternite VII semi-circular; posterior margin of male tergite VII straight. Aedeagus oval with anterior angles sub-rectangular; C : A ratio 0.19; one fifth as long as total length of aedeagus; sclerotized endophallus with several torsions; partly transparent; partly covered by moderately long spines and lobes; parameres short; slightly longer than cones; divided into two lobes; outer lobe plate-like; inner lobe slender with five setae.

**Etymology:** The species name is a combination of the Latin words *brevis* (meaning short) and *pennis* (meaning elytra) and refers to the short elytra.

*Somoleptus brevisculus* spec. nov.

urn:lsid:zoobank.org:act:59C96EB8-4776-4627-800D-75E982C84F73

Figs 20a, d; 49 F

**Type material:** male, holotype: Mexico: Chiapas, Reserva Huitepec (92°41.312'W, 16°44.686'N), 2600 m elev., cloud forest leaf litter, Winkler extraction, 11.7.2007, leg. J. Longino #LLAMA07 JTL6036-s (KNHM). Paratypes: Mexico: 2 females, 1 male, same data as holotype (2 KNHM, 1 UIC); 1 male, Cerro Huitepec, ca. 5 km W San Cristobal, 2700 m elev., oak forest litter, 14.9.1992, leg. R.S. Anderson #92-100 (KNHM); 1 female, Chiapas, San Cristóbal, 7 km WSW (92°42'W, 16°43'N), 2550 m elev., pine/oak forest leaf litter, Winkler extraction, 9.7.2007, leg. M.G. Branstetter #LLAMA07 MGB630 (KNHM); female, Veracruz, 3.2 km SW Las Vigas, Hwy. 140, 2380 m elev., pine tree fall litter, 11.7.1992, leg. J.S. Ashe #40 (KNHM); 1 male, 1 female, Guerrero, 15 km W Filo de Caballo, 2500 m elev., oak forest (wet)litter, Berlese, 17.7.1992, leg. R.S. Anderson (KNHM).

**Diagnosis:** Among the species with short elytra and eyes, *S. brevisculus* resembles *S. brevipennis* and *S. alticola* in size. It is slightly larger than *S. brevipennis* and shorter than *S. alticola*. It is separated from these species by the reddish colouration of the head and pronotum and the extremely short cones at the apical orifice of the aedeagus.

**Description:** Length: 4.3 mm. Colouration: Blackish; head and pronotum light reddish; legs and antennae yellowish.

Head: 0.74 mm long, 0.54 mm wide; eyes short; not prominent; PS : E ratio 4.3; slightly divergent to posterior sub-rectangular angles; posterior margin nearly straight; without interantennal furrows; impunctate midline narrow; setiferous punctation moderately deep and dense; on average, interstices between punctures 1–1.5 times as wide as diameter of punctures; surface without microsculpture; shiny. Antennae with first antennomere slightly longer than half-length of head; antennomeres 2 and 3 longer than wide; conical;

combined slightly shorter than first antennomere; antennomeres 4 to 10 wider than long; antennomere 4 approximately 1.5 times as wide as long; antennomere 10 about twice as wide as long; all antennomeres pubescent. Pronotum: 0.86 mm long, 0.55 mm wide; widest at anterior third; anteriorly narrowed in smooth convex curve; posteriorly nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation denser and deeper than on head; wide midline impunctate; irregular line adjacent to midline approximately with 17–18 punctures; surface without microsculpture; shiny. Elytra: 0.62 mm long, 0.64 mm wide; without humeral angles; sides posteriorly divergent; posterior angles sub-rectangular; posterior margin slightly retreated to suture; setiferous punctation as deep and dense as on pronotum; on average; interstices between punctures as wide as diameter of punctures; surface with weak irregular ground sculpture; less shiny than head and pronotum. Abdomen with setiferous punctation as dense as on elytra but weaker than on elytra; setae pointing posteriad; surface with weak transverse netlike microsculpture; matt; posterior margin of male sternite VII triangularly prominent; posterior margin of male tergite VII straight. Aedeagus oval; without anterior angles; cones extremely short; C : A = 0.04; sclerotised endophallus in anterior half transparent; in posterior half densely covered by short teeth; with several torsions; parameres short and slender; not divided into two lobes; without sensillae or setae.

**Etymology:** The species name is a diminutive of the Latin word *brevis* meaning short and refers to the short elytra.

*Somoleptus brooksi* spec. nov.

urn:lsid:zoobank.org:act:1F8C2AEA-2437-4B42-AE59-9D3601836AE1

Figs 4a–d, 49 D

**Type material:** male, holotype: French Guiana: Roura, 8.4 km SSE (52°13.25'W, 4°40.41'N), 200 m elev., flight intercept trap, 25.-29.5.1997, leg. J. Ashe, R. Brooks #FG1AB97 088 (KNHM). Paratypes: French Guiana: 2 females with same data as holotype except 240 m, 280 m elev., 29.5.-16.6.1997, 25.-29.5.1997 (KNHM); 4 females, Saül, 7 km N, 0.5 km ESE, 3 km NW Les Eaux Claires, Mt. La Fumée (53°13.19'W, 3°39.46'N), flight intercept trap, 4.-8.6.1997, 1.-8.6.1997, leg. J. Ashe, R. Brooks #FG1AB97 164/162 (KNHM); 2 females, 2, 7 km N, 2-9 km NW, NW Les Eaux Claires, along Rue de Belizon trail (53°13.19'W, 3°39.46'N), 220-240 m elev., flight intercept trap, 31.5.-3.6.1997, leg. J. Ashe, R. Brooks #FG1AB97 122 (KNHM); 6 males, 4 females, Cayenne, 33.5 km S and 8.4 km NW Hwy N2 on Hwy D5 (52°28.41'W, 4°48.18'N), 30 m elev., flight intercept trap, 29.5.-9.6.1997, leg. J. Ashe, R. Brooks #FG1AB97 171 (8 KNHM, 2 UIC).

**Diagnosis:** The species resembles *S. aenescens* in external appearance as it is a moderately large species with moderately small eyes. The aedeagus is unique among the known *Somoleptus* species by the small circular closure of the central lobe. Additionally, the parameres are extremely broad, forming a forceps-like structure.

**Description:** Length: 5.5 mm. Colouration: Black; legs and antennae dark brown.

Head: 0.89 mm long, 0.69 mm wide; eyes moderately large, slightly prominent; PS : E ratio 3.3; posterior, sides slightly divergent; posterior angles combined with posterior margin semi-circular; interantennal furrows weak; setiferous punctation irregular; on average, extremely sparse and moderately deep; on average, 2–3 times as long as diameter of punctures; on interocular space partly denser and with larger punctures; surface without microsculpture; polished. Antennae with first antennomere slightly longer than half-length of head; antennomeres 2 and 3 longer than wide; combined slightly shorter than half-length of first antennomere; antennomeres 4–10 wider than long and increasing in width; antennomere 4 nearly twice as wide as long, antennomere 10 nearly 3 times as long as wide; antennomeres 4–11 pubescent. Pronotum: 1.05 mm long, 0.62 mm wide; widest near middle; anterior narrowed in long convex curve; posterior slightly convergent; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation as deep as on head but slightly denser; on average, interstices between punctures 1.5–2 times as wide as diameter of punctures; wide midline impunctate; irregular line adjacent to midline with 10–14 punctures; surface without microsculpture; polished. Elytra: 0.88 mm long, 0.83 mm wide; humeral and posterior angles sub-rectangular; posterior, sides slightly divergent; posterior margin slightly retreated to suture; setiferous punctation as deep and dense as on pronotum; along suture slightly deeper; surface without microsculpture; shiny. Abdomen with setiferous punctation as dense as on elytra but distinctly finer; surface without microsculpture; shiny; posterior margin of male sternite VII with semi-circular emargination at centre; posterior margin of male tergite VII straight. Aedeagus oval; egg-shaped; at base slightly wider than at apex; apical angles obtuse; ventral closure circular; apical orifice wide with cones retreated interiorly; C : A ratio 0.22; sclerotized endophallus with central torsion and covered by moderately large teeth; in apical straight part, teeth smaller; at apex nearly transparent; parameres long and thick; half as long as total length of central lobe; basic part straight; at apex shortly curved to inner side; forming a forceps; at base with numerous setae; apically with numerous sensillae.

**Etymology:** The species name honours R. Brooks, who collected extensively in the Neotropical region together with J. Ashe.

*Somoleptus brunneus* spec. nov.

urn:lsid:zoobank.org:act:377571F5-C8B7-4FA4-918D-9E1BD724B8E2

Figs 44a–d; 46 G

**Type material examined:** male Holotype. Panama: Bocas d. Toro, Cerro Pata de Macho Trail, W of Cerro Horoqueta, near Boquete (82°23'W, 8°53'N), lower montane rain forest, sifting litter, 1780 m elev., 10.–12.8.1987, leg. D.M. Olson (FMNH). Paratype: Costa Rica: 1 male, 3 females, Heredia, Porrosati, 6 km N San José de la Montana (84°7.0'W, 10°5.3'N), 1900 m elev., Berlese, forest litter, 27.6.1997, leg. R. Anderson #CR1A97 039C (KNHM); 2 females, San José/Cartago, km 45, Int. Amer. Hwy. 6 km N El Empalme (83°58.3'W, 9°45.0'N), 1975 m elev., Berlese, forest litter, 8.6.1997, leg. R. Anderson #CR1A97 007C (KNHM); 1 female, km 89, Inter. Amer. Hwy., Cerro Buenavista (83°45.30'W, 9°33.0'N), 3300 m elev., Berlese forest litter, 8.6.1997, leg. R. Anderson #CR1A97 010D (KNHM); 3 females, Cartago, Cerro Chirripo, Valle de los Conellos (83°29.23'W, 9°28.37'N), 3600 m elev., paramo shrub litter, 26.6.1999, leg. R. Anderson #CR1A99-104C (KNHM); Panama: 1 female with same data as holotype, but (82°24'W, 8°50'N), 8.–10.8.1987, and elevation 2020 m (FMNH); 1 female, Chiriqui, 20 km N Gualaca, Finca La Suiza (82°12.0'W, 8°39.0'N), 1450–1600 m elev., oak forest litter, 11.6.1995, leg. R. Anderson #PAN1A95 18C (KNHM); 1 female, 27.7 km W Volcan, Hartmann's Finca (82°48.0'W, 8°45.0'N), 1800 m elev., oak forest litter, 16.6.1995, leg. R. Anderson #PAN2A95 28C (KNHM).

**Diagnosis:** According to the shape of the elytra, *S. brunneus* resembles *S. alticola*. However, the elytra of *S. alticola* are still shorter and the colouration is much darker than in *S. brunneus*. Moreover, males are distinguished from *S. alticola* by the different shape of sternite VII and the endophallus. The parameres are similarly slender in both species, but the row of setae at the inner face is longer in *S. brunneus* than in *S. alticola*.

**Description:** Length: 4.9 mm. Colouration: dark brown, legs and antennae light brown.

Head: 0.84 mm long, 0.69 mm wide; eyes extremely small; PS : E ratio 5.0; postocular sides slightly divergent; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation dense and moderately deep; on average, interstices between punctures 1–1.5 times as wide as diameter of punctures; narrow midline impunctate; surface without microsculpture; polished. Antennae with first antennomere half-length of head; second and third antennomere longer than wide; conical; combined slightly shorter than half-length of first antennomere; third slightly shorter than second; following antennomeres twice as wide as long; increasing in width; antennomere 4–11 pubescent. Pronotum: 1.00 mm long, 0.62 mm wide; widest at anterior third; anterior narrowed in smooth curve; sides posteriorly slightly convergent; posterior angles sub-rectangular;

posterior margin slightly convex; setiferous punctation finer and sparser than on head; wide midline impunctate; adjacent to midline with irregular row of 20 punctures; surface without microsculpture, polished. Elytra: 0.68 mm long, 0.72 mm wide; humeral angles nearly absent; sides posteriorly divergent to sub-rectangular posterior angles; posterior margin retreated to suture; setiferous punctation as dense and deep as on head; surface partly with irregular fine ground sculpture; less shiny than head and pronotum. Abdomen with similarly dense and deep setiferous punctation as elytra; surface with transversely reticulate microsculpture; slightly shiny; posterior margin of male sternite VII with weak triangular incision; posterior margin of male tergite VII slightly convex. Aedeagus oval; cones at apical orifice moderately long; C : A ratio 0.15; sclerotised endophallus in most parts broad and covered by minute teeth; at base with several large teeth; inner lobe of parameres slender; much longer than cones; at inner face with row of long setae; outer lobe short.

**Etymology:** The species name refers to the brown colouration

*Somoleptus cavicola* (BLACKWELDER, 1943) comb. nov.

Figs 16a, b; 46 H

*Lithocharodes cavicola* BLACKWELDER, 1943: 499

**Type material examined:** male, holotype: Trinidad: deep in cave of Aripo Valley, ca. 2600 feet elev., 18.4.1935, leg. N.A. Weber (MCZ).

**Diagnosis:** Among the brown species of the genus, *S. cavicola* can be distinguished by the yellowish-brown humeral angles of the elytra. Furthermore, the aedeagus is characteristic by the small endophallus and the parameres, which are broad at base and narrowed to an acute apex.

**Description:** Length: 5.2 mm Colouration: Dark brown; base of elytra lighter, yellowish brown; legs and antennae yellow-brown.

Head: 0.87 mm long, 0.68 mm wide; long-oval; posteriorly, slightly divergent to nearly semi-circular posterior margin; eyes small; PS : E ratio 4.6; praecular sides slightly emarginate to base of mandibles; interantennal furrows weak; reaching anterior third of eyes; umbilicate punctation weak and sparse; on average, interstices between punctures 10 times as wide as diameter of punctures; surface without microsculpture polished. Antennae geniculate; first antennomere slightly longer than half-length of head; second and third antennomere triangular and slightly longer than wide; following antennomeres wider than long and increasing in width; fourth antennomere nearly twice as wide as long; tenth antennomere 2.5 times as wide as long; all antennomeres with

long setae; antennomeres 4–11 pubescent. Pronotum: 1.01 mm long, 0.63 mm wide; widest at anterior third; anteriorly, convergent to neck in wide convex curve; posteriorly, slightly convergent in central third, nearly parallel in posterior third; posterior margin straight; posterior angles shortly rounded; setiferous punctation distinctly denser and larger than on head; narrow midline impunctate; irregular line of punctures adjacent to midline with approximately 18 punctures; surface without microsculpture; polished. Elytra: 0.88 mm long, 0.79 mm wide; humeral angles nearly rectangular; sides posteriorly nearly parallel; posterior angles nearly rectangular; posterior margin curved; posterior margin widely retreated to suture; setiferous punctation dense and moderately deep; on average; interstices between punctures as wide as diameter of punctures; surface with irregular coriaceous ground sculpture; less shiny than head and pronotum. Abdomen densely covered by setiferous punctation; setae pointing posteriorly; surface with weak isodiametric microsculpture; male sternite VII and tergite VII simply rounded at posterior margin; posterior margin of male sternite VII slightly more prominent than that of tergite VII. Aedeagus round oval; cones at apical orifice short; C : A ratio 0.08; endophallus small; straight in anterior half; with loop in posterior half; teeth of endophallus small; in anterior half slightly larger than in posterior half; inner lobe of parameres long; nearly half as long as total length of aedeagus; triangular with acute apex; without setae, but numerous sensillae; outer lobe irregularly triangular and transparent.

*Somoleptus columbicus* BERNHAUER 1915

Figs 30a–d; 46 I

*Somoleptus columbiensis* BERNHAUER, 1915: 13

*Somoleptus columbicus* BERNHAUER, 1915 (see HERMAN 2001: 3750, SCHEERPELTZ 1933: 1304)

**Type material examined:** male, holotype: Columbia, leg. Hummler (FMNH).

**Diagnosis:** The species is characterised by its small eyes, the absence of hind wings and humeral angles. In this respect it resembles *S. agricola* and *S. brunneus*. It is separated from *S. agricola* by the brown colouration and from *S. brunneus* from the larger eyes and the postocular parallel sides. Additionally, males can be easily distinguished from these two species by the long triangular tooth at posterior margin of male sternite VII and the long cones at the apical orifice of the aedeagus.

**Description:** Length: 4.1 mm. Colouration: Brown; pronotum and elytra lighter brown; elytra at base indistinctly darkened.

Head: 0.73 mm long, 0.53 mm wide; eyes small; PS : E ratio 8.0; approximately parallel; posterior angles shortly rounded; posterior margin nearly straight; inter-



antennal lines weak; setiferous punctation moderately dense and deep; on average, interstices between punctures slightly wider than diameter of punctures; without impunctate midline; only on clypeus a narrow central space impunctate; surface with extremely weak irregular microsculpture; shiny. Antennae geniculate; first antennomere slightly longer than length of head; second and third antennomere triangular; second antennomere 1.5 times as long as third; third antennomere as long as apical width; following antennomere thick; wider than long and increasing in width; fourth antennomere approximately twice as wide as long; tenth antennomere nearly 2.5 times as wide as long; antennomeres 4–11 pubescent; all antennomeres with setae. Pronotum: 0.91 mm long, 0.54 mm wide; widest at middle; anteriorly convexly narrowed; posteriorly, nearly parallel; posterior angles shortly rounded; posterior margin nearly straight; setiferous punctation as dense and deep as on head except wide impunctate midline; adjacent to midline with irregular line of 12–13 punctures; without microsculpture; shiny. Elytra: 0.64 mm long, 0.63 mm wide; humeral angles absent; sides posteriorly divergent; posterior angles nearly rectangular; posterior margin v-shaped; umbilicate punctation dense and deep; denser than on head and pronotum; on average, interstices between punctures slightly shorter than diameter of punctures; surface with irregularly weak microsculpture; less shiny than head and pronotum. Abdomen with weaker and finer setiferous punctation than on forebody; transversely reticulate microsculpture deeper than on elytra; still less shiny; male sternite VII with long acute triangular process; male tergite VII at posterior margin straight. Aedeagus oval; anteriorly sub-rectangular; cones at apical orifice long; C : A ratio 0.45; endophallus slender; with one narrow loop in posterior half; covered by large lobes; lobes widest in central part; smaller in posterior part; parameres with slender inner lobe and outer lobe as large plate with concave inner side and rounded apex; inner lobe slightly curved; digit-like; covered with numerous sensillae; without setae; digit inserted at middle of outer edge of plate-like outer lobe.

*Somoleptus curtipennis* spec. nov.

urn:lsid:zoobank.org:act:CA403F62-42E7-410F-B533-661C0B64A73B  
Figs 31a–d; 48 F

**Type material:** male, Holotype: Guatemala, El Progreso, Cerro Pinalón (15.08528, -89.95095), 2465 m elev., leaf litter, cloud forest, sifted, 2.5.2009, leg. Kansas Museum, #LLAMA09 Wm-B-01-1-07 (KNHM). Paratypes: Mexico: Chiapas, 1 female, Cerro Huitepec, ca. 5 km W San Cristobal, 2700 m elev., oak forest litter, 14.9.1992, leg. R.S. Anderson #92-100 (KNHM); 2 females, San Cristobal de las Casas, Res. Huitepec (92°40.70'W, 16°45.84'N), 2450 m elev., cloud forest lit., 11.7.2003, leg. R. Anderson #MEX1A03 108 (KNHM); 8 females, 3 males, Mpio: Huixtán, Bazóm (92°29.18'W, 16°44.19'N), 2450 m elev.,

oak forest litter, 9.7.2003, leg. R. Anderson #MEX1A03 107 (9 KNHM, 2 UIC); 1 female with same data but mixed magnolia/oak forest litter (KNHM); 1 male, 2 females, Tenajapa, Cerro Tzontehuitz (92°35.033'W, 16°48.683'N), 2864 m elev., mixed cloud forest litter, 29.7.2005, leg. R. Anderson #MEX1A05-014 (KNHM); 1 female, Angel Albino Corzo Reserva El Triunfo, Pico El Triunfo (92°48.70'W, 15°40.16'N), 2400 m elev., cloud for. litter, 16.-21.11.2001, leg. R. Anderson #MEX1A01 204 (KNHM); 4 females, Chalchihuitan, Cerros de Chalchihuitan (92°37.13'W, 16°59.20'N), 2050 m elev., cloud forest litter, 24.7.2003, leg. R. Anderson #MEX1A03 120 (KNHM); 1 female, P.N. Solhistaucan, Reserva La Yerba Buena (92°53.52'W, 17°11.00'N), 1850 m elev., oak/pine/liquidambar forest litter, 22.7.2003, leg. R. Anderson #MEX1A03 117 (KNHM); 1 female, Tapalapa, Cerro El Calvario, nr. Tapalapa (93°07.21'W, 17°11.11'N), 2200 m elev., wet cloud forest litter, 23.7.2003, leg. R. Anderson #MEX1A03 118 (KNHM); Guatemala: 4 males, 1 female with same data as holotype (KNHM); 2 males, 1 female, same region, habitat, and collectors, but (15.08392, -89.93013) 2750 m elev., 1.5.2009 (KNHM); 1 male, 1 female, same data, but (15.08411, -89.93239) 2715 m elev. (KNHM); 16 males, 13 females, same region, habitat, and collectors, but (15.08731, -89.94405) 2550 m elev., 30.4.2009 (26 KNHM, 3 UIC); 10 males, 13 females, same data, but (15.08407, -89.94548) 2560 m elev. (22 KNHM, 1 UIC); 3 males, 8 females, same region, habitat, and collectors, but (15.08350, -89.95319) 2500 m elev., 2.5.2009 (KNHM); 2 males, 1 female, same region, habitat, and collectors, but (15.08432, -89.93801) 2640 m elev., 1.5.2009 (2 KNHM, 1 UIC); 6 males, 6 females, El Progreso, Cerro Pinalón (-89.94548, 15.08407), 2560 m elev., sifted leaf litter, cloud forest, 30.4.2009, leg. Anonymus #LLAMA09 Wa-B-01-1-all (10 KNHM, 2 UIC); 4 males, 4 females, same data as holotype, but (-89.93492, 15.08467), (-89.9301, 15.08392), 2680 m elev., 2750 m elev., 1.5., 4.5.2009 (KNHM); 3 females, Quetzaltenango, Volcan Siete Orejas, summit rd. (-91.5844, 14.7948), 2911 m elev., 3072 m elev., sifted cloud forest litter/oak forest litter 5.6.2015, leg. R. Anderson #GUAT1A15 112 (KNHM).

**Diagnosis:** Among the species with short elytra and absent humeral angles, *S. curtipennis* mostly resembles *S. alticola* from the same region by the extremely short elytra and the black colouration. The apical cones of the aedeagus are similarly short. In *S. alticola* the posterior margin of the elytra is more retreated to the suture than in *S. curtipennis*. The smaller endophallus of the aedeagus is covered by large spines in *S. curtipennis*; whereas it is broader and covered by minute teeth in *S. alticola*.

**Description:** Length: 5.2 mm. Colouration: Black, legs light brown; antennae slightly darker brown. Head: 0.85 mm long, 0.65 mm wide; eyes short; PS : E ratio 7.9; postocular sides divergent; posterior angles combined with posterior margin approximately

semi-circular; setiferous punctation moderately deep and dense; on average, interstices between punctures as wide as diameter of punctures; on posterior vertex interstices slightly wider; between eyes with small impunctate area; surface with extremely weak isodiametric microsculpture; moderately shiny. Antennae with first antennomere half-length of head; second and third antennomere longer than wide; conical; combined half-length of first antennomere; following antennomeres wider than long and increasing in width; 1.5 times as wide as long; antennomeres 4–11 pubescent. Pronotum: 1.08 mm long, 0.71 mm wide; widest at anterior third; anteriorly, sides convergent to neck; posteriorly approximately parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation as dense and deep as on head; wide midline impunctate; surface without microsculpture; polished. Elytra: 0.71 mm long, 0.80 mm wide; humeral angles absent; sides slightly divergent; posterior angles rectangular; posterior margin retreated to suture; setiferous punctation much denser than on head and pronotum; on average, interstices between punctures half as wide as diameter of punctures; surface with extremely weak microsculpture; moderately matt. Abdomen with finer setiferous punctation than on fore-body, as dense as on pronotum; posterior margin of sternite and tergite VII of male centrally prominent. Aedeagus oval; cones at apical orifice short; C : A ratio 0.07; sclerotised endophallus elongate with torsions and long spines; parameres slender; nearly half as long as total length of central lobe; at inner edge with row of paired setae.

**Etymology:** The species name is a combination of the Latin words *curtus* (meaning short) and *pennis* (meaning elytra) and refers to the short elytra of the species.

*Somoleptus curtulus* spec. nov.

urn:lsid:zoobank.org:act:4FC0C167-057B-41E4-BCB3-576DC2B47F32

Figs 12a–d; 46 J

**Type material:** male, holotype: Panama: Chiriqui, El Mirador, Finca Collins, nr Boquete, 6000 ft elev., cloud forest litter, Berlese, 25.4.1976, leg. A. Newton (FMNH). Paratypes: Costa Rica: 6 males, 6 females, Puntarenas, Valle de Silencio, Bajando, Cerro Quemado, Cerro Frantzius (82°59.01'W, 9°03.43'N), 2202 m elev., mixed oak forest litter, 27.2.2005, leg. R. Anderson (10 KNHM, 2 UIC); 2 females, Limon, Valle de Silencio, Estación (82°57.43'W, 9°06.37'N), 2473 m elev., oak forest litter, 26.–27.2.2005, leg. R. Anderson (KNHM); 2 females, Heredia, Vara Blanca, 6 km ENE Vara Blanca (84°07'W, 10°11'N), 2100 m elev., montane forest litter, 15.–22.4.2002, leg. R. Anderson #CR2A02 04 (KNHM); 1 female, Puntarenas, San Vito, Estac. Biol. Las Alturas, Alturas, 2 km NE (82°50.4'W, 8°58.26'N), 1720 m elev., Berlese leaf litter, 21.6.1998, leg. R. Anderson #CR1A98 106 (KNHM); Panama: 4 males, 2 females, Chiriqui, Finca Lerida, near Boquete, 5650 ft elev., forest floor litter at base of stump,

14.3.1959, leg. H. Dybas (5 FMNH, 1 UIC); 23 males, 25 females, Chiriqui, 27.7 km W Volcan, Hartmann's Finca (82°44.36'W, 8°51.42'N), 1500 m elev., oak forest litter, 16.6.1995, leg. R. Anderson (40 KNHM, 2 UIC); 3 females, 5.9 km N Cerro Punta, Parc. Nac. Volcan Baru (82°34.0' W, 8°22.0'N), 2400 m elev., bamboo forest litter, 14.6.1995, leg. R. Anderson (KNHM); 1 female, 5.6 km N Boquete, La Culebra Trail (8°49.23'N, 82°25.18'W), 1800 m elev., cloud forest litter, 15.6.1996, leg. R. Anderson, #PAN2A 96-131E (KNHM); 12 males, 34 females, 12 km NE Santa Clara, Cerro Pando (82°54.44'W, 8°54.44'N), 2000 m, 1850 m elev., cloud forest litter, oak forest litter, 17.6., 18.6.1996, leg. R. Anderson (44 KNHM, 2 UIC); 16 males, 17 females, 8.4 km NW Boquete, Volcan Baru (82°28.0'W, 8°48.0'N), 1860 m elev., dry oak forest litter, 18.6.1996, leg. R. Anderson (42 KNHM, 2 UIC).

**Diagnosis:** The species is conspicuous among the species with short elytra by the large size. Moreover, the structure of the aedeagus is specific by the absence of a sclerotised endophallus. It can be separated from the similar *S. admirabilis* only by the aedeagus. Compared to *S. admirabilis*, the aedeagus of *S. curtulus* is smaller and the apical orifice with cones is retreated.

**Description:** Length: 6.2 mm. Colouration: Black; legs and antennae light brown.

Head: 0.89 mm long, 0.77 mm wide; eyes moderately short; PS: E ratio 5.4; slightly divergent; posterior angles combined with posterior margin nearly semi-circular; except short straight part in front of neck; setiferous punctation deep and dense; on average, interstices between punctures as wide as or slightly shorter than diameter of punctures; vertex with narrow impunctate midline; on anterior head with wider impunctate midline; at posterior head with contiguous punctation; surface without microsculpture; shiny. Antennae with first antennomere distinctly longer than half-length of head; second and third antennomere conical; combined half as long as first antennomere; following antennomeres wider than long; fourth antennomere slightly wider than long; tenth antennomere nearly twice as wide as long; antennomeres 4–11 pubescent. Pronotum: 1.18 mm long, 0.72 mm wide; parallel; widest at anterior fifth; shortly narrowed in convex curve; posteriorly continuously narrowed to sub-rectangular hind angles; posterior margin slightly convex; setiferous punctation deep and dense, but slightly less dense than on head; on average, interstices between punctures as wide as or slightly wider than diameter of punctures; wide midline impunctate; Elytra: 0.71 mm long, 0.82 mm wide; without humeral angles; sides slightly divergent to posterior sub-rectangular angles; without hindwings; posterior margin triangularly retreated to suture; setiferous punctation still denser than on head; interstices between punctures distinctly shorter than diameter of punctures; partly coriaceous; surface with irregular ground sculpture; partly with micro-punctation; matt. Abdomen with setiferous

punctuation as dense as on elytra, but less deep; surface with isodiametric microsculpture; matt; posterior margin of male sternite VII with deep triangular incision; posterior margin of male tergite VII straight. Aedeagus nearly circular; without sclerotised endophallus; cones at large orifice in relation to aedeagus large; C : A ratio 0.25; parameres as long as two third of total length of aedeagus; hook-like with curved apical part; not divided in inner and outer lobe; few short setae at inner face; few setae on shaft.

**Etymology:** The species name is the diminutive of the Latin word *curtus* (meaning short) and refers to the short elytra.

*Somoleptus elongatulus* spec. nov.

urn:lsid:zoobank.org:act:1ECB0C9B-33DF-43A8-B418-7FB573C1DC49

Figs 5a–d, 48 D

**Type material:** male, holotype: Peru, Huanuco, Biological Station Panguana, rainforest, February, 1975, leg. W. Hanagarth (UIC). Paratype: female, Peru, Huanuco, Biological Station Panguana (74°56'W, 9.37'S), inundation forest, 6.5.1976, leg. W. Hanagarth (UIC).

**Diagnosis:** Among the similarly large species of approximately 6 mm length, the elytra of *S. elongatulus* are longer than wide. Additionally, the black colouration is characteristic for the species. Males can be easily identified by the specific structure of the aedeagus with the triangular cones at apical orifice placed on short styli.

**Description:** Length: 6.01 mm. Colouration: Black; legs and antennae dark brown.

Head: 0.94 mm long, 0.72 mm wide; eyes moderately small; PS : E ratio 4.1; parallel; posterior angles combined with posterior margin nearly semi-circular; setiferous punctuation irregularly sparse and moderately deep; on average, interstices between punctures 1.5 to 2 times as wide as diameter of punctures; without traces of impunctate midline; surface without microsculpture; polished. Antennae with first antennomere distinctly longer than half-length of head; second and third antennomere each twice as long as wide; combined as long as first antennomere; following antennomeres wider than long and increasing in width; fourth twice as wide as long; tenth 2.2 times as wide as long; antennomere 4–11 pubescent. Pronotum: 1.18 mm long, 0.74 mm wide; widest at anterior third; narrowed anteriorly in smooth convex curve; posteriorly nearly parallel; posterior angles subrectangular; posterior margin slightly convex; setiferous punctuation similarly dense and deep as on head, but with moderately wide midline impunctate; surface without microsculpture; polished. Elytra: 1.04 mm long, 0.98 mm wide; humeral and posterior angles subrectangular; sides posteriorly slightly divergent; posterior margin slightly retreated to suture; setiferous punctuation

distinctly denser than on head and pronotum; on average, interstices between punctures as wide as diameter of punctures or slightly shorter; surface without microsculpture, but less polished than pronotum. Abdomen with still denser setiferous punctuation than elytra; setiferous punctuation partly coriaceous; posterior margin of male sternite and tergite VII straight. Metatibia with four subapical ctenidia. Aedeagus oval; cones short; C : A ratio 0.22; placed on short styli in short distance from the apical orifice; distinctly triangular; sclerotised endophallus with two torsions and irregular teeth; at basal end with long spine; parameres broad; shape spoon-like; at apex acute; at base narrower than at middle; at outer edge with numerous cannulate sensillae; on inner edge at apex with one seta.

**Etymology:** The species name is the diminutive of the Latin word *elongatus* which, among others, means distant from and refers to the specific structures of the apical cones of the aedeagus, which are shortly away from the apical orifice.

*Somoleptus gigas* spec. nov.

urn:lsid:zoobank.org:act:64813C41-0EEB-419F-852D-21FE5DD7338C

Figs 32a, b, 48 F

**Type material:** male, holotype: Costa Rica: Puntarenas Prov., Las Alturas Biol. Sta. (8°56.17'N, 82°50.01'W), 1660 m elev., flight intercept trap, 31.5–3.6.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa, #CR1AFH04 092 (KNHM). Paratypes: Mexico: male, Veracruz, 4.0 km S Jalapa, leaf litter along stream, 1350 m elev., 30.5.1991, leg. J.S. Ashe (KNHM); 1 female, 1.1 km S Jalapa, Coatepec rd., leaf litter in ravine, 1280 m elev., 12.7.1992, leg. J.S. Ashe (KNHM); 2 males, 1 female, 2.3 km S Jalapa, 1320 m elev., forest litter, deep litter in rock cracks, 13.7.1992, 18.7.1992, leg. J.S. Ashe #64, #66 (KNHM); Chiapas, 2 males, 2 females, 10 km W El Bosque, pine/cloud forest, 1475 m elev., 15.9.1992, leg. R. Anderson (KNHM); 1 male, 1 female, 17.3 km NW Bochil, rotten tree base litter, 1800 m elev., 24.9.1992, leg. R. Anderson (1 KNHM, 1 UIC); 2 males, 1 female, Mpio, Huixtán, Bazóm (92°29.18'W, 16°44.19'N), 2450 m elev., oak forest litter, 6.7.2003, leg. R. Anderson #MEX1A03 107 (KNHM); 1 male, 1 female, Tenejapa, Cerro Tzontehuitz (92°35.03'W, 16°48.68'N), 2864 m elev., mixed cloud forest litter, 29.7.2005, leg. R. Anderson #MEX1A05-014 (KNHM); Guatemala: Zacapa, 1 male, 2 females, 2 km SE La Unión (14.95442, -89.27662), 1430 m elev., cloud forest, flight intercept trap, 12.–15.5.2009, #I LAMA09 Ft-B-03-2-02 (KNHM); 4 females, 3.5 km SE La Unión, 1500 m elev., flight intercept trap, 23.–25.6.1993, leg. R. Brooks & J. Ashe (3 KNHM, 1 UIC); Baja Verapaz, 4.8 km E Purulha, 1680 m elev., flight intercept trap, 29.6.–3.7.1993, leg. J. Ashe, R. Brooks, #190 (KNHM); Honduras: 1 female, Lempira, 13.1 km NE & 7.3 km E Gracias, Mt. Puca (14°41'N, 88°31'W), liquidambar



litter, 1600 m elev., 18.6.1994, leg. R. Anderson, #123E (KNHM); Costa Rica: 1 female, Puntarenas Prov., Monteverde Biol. Sta. (10°19.672'N, 84°49.141'W), cloud forest, flight intercept trap, 10.-17.6.2001, leg. S. & J. Peck, #CR1P01 002 (KNHM); female from same region, but 1570 m elev., Berlese, 16.5.1989, leg. J. Ashe, R. Brooks, R. Leschen (KNHM); 1 female from same region, but (10°19.10'N, 84°48.57'W), 1730 m elev., montane forest, litter, 12.6.2001, leg. R. Anderson, #CR1A01 107 (KNHM); 3 males from same region, habitat and collector, but (10°18.53'N, 84°47.49'W) 1600, 1650 m elev., 13.6., 14.6.2001, #CR1A01 111, 113 (KNHM); 4 females, 1 male, San José, Zuruqui de Moravia (10°3.0'N, 84°1.0'W), 1600 m elev., malaise trap, Apr.-May 1993, 1.-30.4., 1.-30.11., 1.-30.12.1995, leg. P. Hanson (KNHM); 1 female, San José, 26 km N San Isidro, 2100 m elev., Sept.-Oct. 1992, leg. P. Hanson.

**Diagnosis:** *Somoleptus gigas* is the largest known species of the genus. With 6.6 mm length it is even larger than *S. maximus*. In contrast to *S. maximus*, the head is very densely punctate and the shape is more triangular; wider at posterior angles than at front. In *S. maximus*, the punctation is finer and the shape of head is oval without posterior angles. Moreover, the pronotum is narrowed in central half, whereas it is nearly parallel in *S. gigas*.

**Description:** Length: 6.6 mm. Colouration: Black, legs and antennae dark brown.

Head: 1.16 mm long, 0.91 mm wide; eyes moderately long; PS : E ratio 2.4; postocular sides slightly divergent posteriad; posterior angles combined with posterior margin nearly semi-circular; setiferous punctation extremely dense and deep; partly coriaceous; between eyes with irregularly wide impunctate midline; surface without microsculpture; shiny. Antennae with first antennomere slightly longer than half-length of head; second and third antennomere longer than wide; conical; combined as long as half-length of first antennomere; following antennomeres wider than long; increasing in width; approximately twice as wide as long; all antennomeres pubescent. Pronotum: 1.31 mm long, 0.81 mm wide; widest at anterior third; convergent to neck in smooth curve; sides posteriorly nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation sparser than on head; wide midline impunctate; surface without microsculpture; polished. Elytra: 1.31 mm long, 1.19 mm wide; humeral and posterior angles sub-rectangular; sides slightly divergent posteriad; posterior margin triangularly retreated to suture; setiferous punctation deep and dense; on average, interstices between punctures as wide as diameter of punctures; surface without microsculpture; shiny. Abdomen with setiferous punctation as dense but less deep than on elytra; setae long; pointing posteriad; surface without microsculpture; moderately shiny; posterior margin of male sternite VII slightly emarginate; posterior margin of male tergite VII slightly prominent (similar as

in Fig. 44c, d). Aedeagus oval with sub-rectangular anterior angles; cones at apical orifice long; C : A ratio 0.28; sclerotised endophallus with torsion in longitudinal direction; covered by lobes; parameres divided into two lobes; outer lobe plane; approximately half as long as inner lobe; inner lobe triangular; only slightly longer than cones; at inner edge with row of paired long setae.

**Etymology:** The species name is derived from the Greek word *gigas* meaning huge and refers to the large size of the species.

*Somoleptus grandiconus* spec. nov.

urn:lsid:zoobank.org:act:4207AA34-F874-44F2-83CA-00973148C3EE

Figs 37a, b; 49 A

**Type material:** male, holotype: Mexico, Chiapas, Yerbabuena Reserve, 2.1 km NW Pueblo Nuevo, Solistahuacan, 2100 m elev., cloud forest litter, 23.9.1992, leg. R.S. Anderson #92-114 (KNHM). Paratypes: 3 males with same data as holotype (2 KNHM, 1 UIC); male, 5 km NNW Coapilla (-93.15179, 17.18224), malaise trap, mesophile forest, 1910 m elev., 25-28.5.2008, leg. Anonymous #LLAMA08 Ma-A-04-2-01 (KNHM); 1 male, 8.9 km NW Rayon, 1500 m elev., cloud forest litter, 19.9.1991, leg. R. Anderson #91-109 (KNHM); 1 male, 24.7.2003, Chalhuitan (92°37.13'W, 16°59.2'N), 2050 m elev., cloud forest litter, 24.7.2003, leg. R. Anderson #MEX1A03 120 (KNHM).

**Diagnosis:** The main character to separate *S. grandiconus* from other *Somoleptus* species is the large conus at the apical orifice of the aedeagus.

**Description:** Length: 4.6 mm. Colouration: Black; legs and antennae dark yellow.

Head: 0.77 mm long, 0.55 mm wide; eyes moderately large; PS : E ratio 4.0; postocular sides shortly parallel; posterior angles combined with posterior margin semi-circular; interantennal furrows absent; setiferous punctation moderately deep and dense; on average interstices between punctures 1.5–2 times as wide as diameter of punctures; without impunctate midline, except short interocular part; surface without microsculpture; shiny. Antennae with first antennomere slightly longer than half-length of head; antennomeres 2 and 3 longer than wide; combined slightly longer than half-length of first antennomere; antennomeres 4–10 wider than long and approximately 1.5 times as wide as long; antennomeres 4–11 pubescent. Pronotum: 0.88 mm wide, 0.54 mm wide; widest shortly behind anterior third; anteriorly convergent to neck; posteriad nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation similarly deep and dense as on head; wide midline impunctate; irregular row of punctures adjacent to midline with approximately 15 punctures; surface without microsculpture; shiny. Elytra: 0.70 mm



long, 0.63 mm wide; humeral and posterior angles sub-rectangular; sides approximately parallel; posterior margin slightly retreated to suture; setiferous punctation as deep as on head and pronotum but distinctly denser; on average, interstices between punctures as wide as diameter of punctures; surface with weak isodiametric microsculpture; matt. Abdomen with setiferous punctation as dense as on elytra but weaker; setae pointing posteriad; at base of segments with netlike microsculpture; at apex of segments microsculpture isodiametric and extremely fine; shiny; posterior margin of male sternite VII broadly prominent; posterior margin of male tergite VII with short semi-circular prominence as in Fig. 31c, d). Aedeagus oval with sub-rectangular anterior angles; cones at apical orifice extremely large and broad; C : A ratio 0.60; endophallus slightly curved; broad; covered by teeth; teeth at apex longer than at base; parameres divided into plate-like outer lobe and slender inner lobe; nearly as long as total aedeagus; inner lobe with row of setae at inner edge and several sensillae.

**Etymology:** The species name is a combination of the Latin words *grandis* (meaning large) and *conus* referring to the large cones at the apical orifice of the aedeagus.

*Somoleptus humicola* spec. nov.

urn:lsid:zoobank.org:act:FF992A61-25BA-4E8B-9079-E89182E39F91

Figs 41a, b; 50 B

**Type material:** male, holotype: Mexico: Oaxaca, 32 km SW Valle Nacional, km 85, 1650 m elev., trans/cloud forest leaf litter, Berlese, 26.7.1992, leg. R.S. Anderson #92-030 (KNHM). Paratypes: 1? (abdomen lacking), 1 male, same data as holotype (KNHM); 1 male, same region as holotype but 40 km SW, km 93, 1900 m elev., oak forest leaf litter, Berlese, 26.7.1992, leg. R.S. Anderson #92-031 (UIC).

**Diagnosis:** *Somoleptus humicola* resembles *S. obscurus* in size and colouration. Even the aedeagi are very similar. It can be separated from *S. obscurus* by the different shape of the head. The postocular sides of the head of *S. obscurus* are divergent, egg shaped. In contrast, the postocular sides of *S. humicola* are parallel or even slightly convergent. The slender outer lobe of paramere is longer compared to the outer plate-like lobe in *S. obscurus*.

**Description:** Length: 4.8 mm. Colouration: Brown, abdomen, legs, and antennae slightly lighter brown. Head: 0.77 mm long, 0.53 mm wide; eyes long; prominent; PS : E ratio 2.25; postocular sides slightly convergent; posterior angles combined with posterior margin nearly semi-circular; interantennal furrows distinct; setiferous punctation deep; irregularly dense; on average, interstice between punctures as wide as diameter of punctures; on posterior vertex interstices slightly wider; between eyes much closer; narrow midline impunctate; surface

without microsculpture; shiny. Antennae with first antennomere longer than half-length of head; second and third antennomere longer than wide; combined longer than half-length of first antennomere; antennomeres 4 to 10 wider than long and slightly increasing in width; fourth twice as wide as long; tenth 1.5 times as wide as long; antennomeres 4 to 11 pubescent. Pronotum: 0.86 mm long, 0.49 mm wide; widest at anterior third; sides anteriorly convergent to neck; in posterior half nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; slightly weaker than on head; as dense as on posterior vertex; wide midline impunctate; irregular row of punctures adjacent to midline with approximately 16 punctures; surface without microsculpture; shiny. Elytra: 0.98 mm long, 0.82 mm wide; humeral angles sub-rectangular; sides posteriorly slightly divergent; posterior angles smooth; posterior margin largely convex; deeply retreated to suture; setiferous punctation as deep and dense as on pronotum; surface with weak isodiametric microsculpture; slightly less shiny than pronotum. Abdomen with finer setiferous punctation than forebody; microsculpture at base of segments transversely reticulate; segments apically without microsculpture; shiny; posterior margin of male sternite VII convexly rounded; posterior margin of male tergite VII straight (similar as in Fig. 21c, d). Aedeagus oval; widest near base; anterior angles nearly absent; cones moderately long; C : A ratio 0.21; endophallus with two torsions; weakly sclerotised; partly transparent; with short teeth; basically, with few thicker teeth; parameres longer than half-length of central lobe; divided into two lobes; outer lobe circular plate; inner lobe slender; elongate; along at inner edge with row of numerous setae.

**Etymology:** The species name is derived from the Latin noun *humus* (meaning soil or decomposing organic litter) and the verb *colere* (meaning inhabiting) and refers to the habitat of the species, the litter layer of deciduous woods.

*Somoleptus laevis* BERNHAUER, 1908

Figs 2a–d; 47 A

*Somoleptus laevis* BERNHAUER 1908: 325

**Type material examined:** female, holotype: Brazil: São Paulo, X.1907, leg. A. Barbiellini (FMNH).

**Additional material examined:** Brazil: Mato Grosso; 2 males, 9 females, Primavera do Leste (54°146'W, 15°266'S), in soil (0–10 cm depth) of pasture, 7.4., 24.4.2014, leg. K. Peña (UIC); 6 males, 11 females, Campo Verde, Santa Luzia farm (55°209'W, 15°433'S), in soil (0–10 cm depth) of agricultural field, pasture, forest, 7.4., 26.3.2014, leg. K. Peña (UIC); 1 male, 2 females, same region but Rio Engano farm (54°507'W, 15°232'S), in soil of (0–10 cm depth) agr. field, pasture 13.3.2014, leg. K. Peña (UIC); 4 females, Santa Catarina, Nova Teutonia, July 1941,

Dec. 1952, Dec. 1953, leg. F. Plaumann (FMNH); Linha Facao, male, May 1954, leg. F. Plaumann (KNHM); Paraguay: Guaira, Melgarejo, Tacuara Creek, flood detritus, 1 male, 4 females, 20.10.1994, leg. U. Drechsel (KNHM); 2 females, Cazaapa Hermosa, prop. Lopez family, San Rafael Reserve (55°44.29'W, 26°18.56'S), 80 m elev., gilled fungus, 3.12.2000, leg. Z.H. Falin #PAR1F00 093 (KNHM); Argentina: Misiones, Reserva Vida Silvestre Uruguay-1 (54°11'W, 25.97'S), 400 m elev., 15.-17.12.2003, leg. B. Brown, G. Kung, L. Gonzalez #MT9 (KNHM).

**Diagnosis:** The species can be easily separated from the other species of the genus by the yellowish colouration with nearly black elytra and darker head. Furthermore, the structure of the aedeagus is specific by the long angled parameres and the long slender cones at the apical orifice.

**Description:** Length: 4.6 mm. Colouration: Head blackish-brown; elytra darker blackish with yellowish posterior margin and slightly darker humeral angles, pronotum and abdomen yellowish-brown; legs light brown.

Head: 0.74 mm long, 0.54 wide; eyes large; PS : E ratio 3.2; nearly parallel; posteriad widely rounded to nearly semi-circular posterior margin; inter-antennal furrows deep; setiferous punctation deep and moderately dense; on average, interstices between punctures 1.5–2 times as wide as diameter of punctures; on central vertex with impunctate midline; surface without microsculpture; polished. Antennae with first antennomere distinctly longer than half-length of head; second and third antennomere longer than wide; combined half-length of first antennomere; third antennomere nearly twice as long as wide; following antennomeres wider than long; fourth antennomere twice as wide as long; tenth antennomere nearly three times as wide as long; all antennomeres pubescent. Pronotum: 0.81 mm long, 0.47 mm wide; widest at anterior third; sides anteriorly convergently narrowed to neck; posterior half nearly parallel; posterior angles obtuse; posterior margin slightly convex; setiferous punctation as deep and dense as on head; with wide impunctate midline; adjacent to midline with irregular row of approximately 14–15 punctures; surface without microsculpture; polished; Elytra: 0.73 mm long, 0.74 mm wide; humeral and posterior angles sub-rectangular; sides slightly divergent posteriad; posterior margin nearly straight; weakly retreated at suture; setiferous punctation slightly deeper and denser than on head and pronotum; on average, interstices between punctures as wide as diameter of punctures; surface with indistinct isodiametric microsculpture; shiny. Abdomen with lightly denser, but finer setiferous punctation; surface without microsculpture; polished; posterior margin of male sternites and tergite VII straight. Metatibia with two subapical ctenidia. Aedeagus oval with sub-rectangular anterior angles; cones at apical orifice long; C : A ratio 0.42; sclerotised endophallus broad divided into at least two strings covered by moderately large lobes; parameres as long as total length of central lobe; obtusely angled.

*Somoleptus longiceps* spec. nov.

urn:lsid:zoobank.org:act:852FE924-DE95-473A-B6D1-9D5B5BFCB258

Figs 39a, b; 49 H

**Type material:** male, holotype: Costa Rica: San José/ Cartago, km 89, Int. Amer. Hwy., Cerro Buenavista (83°45.30'W, 9°33.0'N), 3300 m elev., Berlese forest litter, 8.6.1997, leg. R. Anderson #CR1A97 010C (KNHM). Paratypes: Costa Rica: 1 male with same data as holotype (KNHM); 1 male, Heredia Prov., 6 km ENE Vara Blanca (84°07'W, 10°11'N), 2000 m elev., montane for. leaf litter, 15.-22.4.2002, leg. R. Anderson #CR2A02 05 (KNHM); Panama: 3 males, 3 females, Chiriqui, 20 km N Gualaca, Finca La Suiza (82°12.0'W, 8°39.0'N), 1450–1600 m elev., oak forest litter, 11.6.1995, leg. R. Anderson #PAN2A95 18E (4 KNHM, 1 UIC); 1 female, 5.9 km N Cerro Punta, Par. Nac. Volcan Baru (82°34.0'W, 8°22.0'N), 2400 m elev., bamboo forest litter, 14.6.1995, leg. R. Anderson #PAN2A95 21C (KNHM).

**Diagnosis:** Among the species with short eyes and elytra, *S. longiceps* resembles *S. brunneus* and *S. ovatus* in size and colouration. It can be distinguished from these two species mainly by the shape of the head. In *S. brunneus*, the shape of the head is posteriorly slightly divergent, in *S. ovatus* the sides of the head are curved giving the head a distinctly oval shape. In *S. longiceps*, the head has a parallel shape, which results in a longer length : width ratio of 1.34 compared to 1.22 in *S. brunneus*. Additionally, the cones at the apical orifice of the aedeagus are longer with C : A ratio of 0.33 compared to 0.15 in *S. brunneus* and 0.22 in *S. ovatus*. Furthermore, the posterior margin of male sternite VII of *S. brunneus* is straight, whereas it is with triangular process in *S. longiceps* and *S. ovatus*.

**Description:** Length: 5.1 mm. Colouration: Light brown; elytra darker brown; legs and antennae lighter brown than head and pronotum.

Head: 0.83 mm long, 0.62 mm wide; eyes short, not prominent, PS : E ratio 5.4; postocular sides nearly parallel; posterior angles sub-rectangular; posterior margin centrally straight; interantennal furrows weak; setiferous punctation moderately dense and deep; on average, interstices between punctures as wide as diameter of punctures; narrow midline impunctate; surface without microsculpture; shiny. Antennae with first antennomere half-length of head; antennomeres 2 and 3 longer than wide; combined longer than half-length of first antennomere; antennomeres 4 to 10 wider than long; at least twice as wide as long; increasing in width; antennomeres 4–11 pubescent. Pronotum: 0.97 mm long, 0.60 mm wide; widest slightly behind anterior third; anteriorly, narrowed in smooth convex curve; posteriad, nearly parallel; posterior angles sub-rectangular; posterior margin straight; setiferous punctation as deep and dense as on head; wide midline impunctate; irregular line of punctures adjacent to midline with approximately 17–18 punctures. Surface without microsculpture; shiny. Elytra:

0.66 mm long, 0.70 mm wide; without humeral angles; sides slightly divergent posteriad; posterior angles obtuse; posterior margin convexly curved; deeply retreated to suture; setiferous punctation deeper and denser than on pronotum; on average, interstices between punctures less wide than diameter of punctures; surface with weak isodiametric microsculpture; less shiny than pronotum. Abdomen with setiferous punctation as dense as on elytra but much finer; posterior margin of male sternite VII triangularly prominent; posterior margin of male tergite VII straight (similar as in Fig. 21a, d). Aedeagus oval; cones at apical orifice long and relatively slender; C : A ratio 0.33; sclerotised endophallus partly transparent with scattered teeth; partly with thick lobes; parameres one third longer than cones; divided into two lobes; outer lobe circular with row of short spines; inner lobe slender with row of long setae in apical half.

**Etymology:** The species name is derived from the Latin words *longus* (meaning long) and *-ceps* (short form of *caput*, meaning head).

*Somoleptus longicollis* (LECONTE, 1863) comb. nov.

Figs 21 a–d; 48 l

*Leptacinus longicollis* LECONTE, 1863: 41

*Lithocharodes longicollis* in SMETANA 1982

**Material examined:** USA: 4 females, 1 male, Kansas, Douglas Co. Clinton Lake, 1 km SW dam, off E 900 Rd. (38.901N, -95.334W), sifting leaf litter, 16.10.2010, leg. Z.H. Falin (KNHM); 1 female, same region but 3.2 km N Baldwin, Breidenthal Reserve (38°41.1'N, 95°1.0'W), flight intercept trap, 25.7.-5.8.1996, leg. M. Panaras (KNHM); 4 females, 2 males, same region but 2 mi N Baldwin, leaf litter, 4.10.1986, leg. J. Pakaluk; Kansas, Miami Co., La Cygne Wildlife Area, ~ 3 km E US Hwy. 69 on 399<sup>th</sup> (38.403N, -94.651W), sifted leaf litter, female, 19.11.2010 (KNHM); 1 male, same region but Miami County State Park, upper hillside (38.421N, -94.787W), sifting leaf litter, 1.10.2010, leg. Z.H. Falin (KNHM); 3 females, Kansas, Jefferson Co., The Falin Property, 1.5 km N jct. 95<sup>th</sup> St. & Kingman Rd. (38.133N, -95.242W), near lower meadow, flight intercept or malaise trap, 24.7.-2.8.2005, 1.-8.8.2004, leg. J.H. Falin (KNHM); 4 females, 2 males, Kansas, Riley Co., Tuttle Creek Lake Project, wooded cove nr. Shady Ln (39.334N, -96.677W), sifted detritus around base of white oak, 4.5.2009, leg. Z.H. Falin (5 KNHM, 1 UIC); 4 females, Kansas, Marshall Co. Alcove Springs State Park (39.749N, -96.676W), sifting leaf litter, 4.4.2011, leg. Z.H. Falin (KNHM); New Jersey, Hillsdale, 1 female, 1 male, Oct. 1939, leg. Quirsfeld (KNHM); Mexico: 1 male, 1 female, Veracruz, 2.3 km S Jalapa, deep litter in rock cracks or forest litter, 1320 m elev., 18.7.1992, leg. J.S. Ashe, #64, #66 (KNHM); 1 female, 4 mi N, Huatusco, cloud forest litter at base of tree, sifted, 25.4.1977, leg. J.S. Ashe

(FMNH); 4 females, Queretaro, Pinal de Amoles, San Pedro Escanela, 2 km W (21°07.2'N, 99°32.6'W), dry oak ridge forest litter or mixed oak forest litter, 1780 m and 1620 m elev., 29.7.2006, leg. R.S. Anderson, #MEX1A06-027 (KNHM); 8 males, 9 females, 2 (?), Tamaulipas, Ciudad Victoria, Altas Cumbres, 1 km W (23°36.0'N, 99°12.9'W), oak forest litter, 1350 m elev., 14.7.2006, leg. R.S. Anderson, #MEX1A06-003 (16 KNHM, 3 UIC); 6 males, Tamaulipas, San Carlos (24°31.7'N, 98°57'W), dry oak forest litter, 1100 m elev., 22.7.2006, leg. R.S. Anderson, #MEX1A06-12 (5 KNHM, 1 UIC); 1 female, Tamaulipas, Gomez Farias, Rancho del Cielo, nr. cabins (23°06.06'N, 99°11.5'W), mixed oak forest litter, 1200 m elev., 17.7.2006, leg. R.S. Anderson #MEX1A06-005 (KNHM); 2 females, Mpo. Gomez Faria, Atlas Cimas, leaf litter, 1000 m elev., 16.3.1989, leg. R.W. Jones (FMNH); 2 males, Gomez Faria, 2 km SW San José, leaf litter, 1350 m elev., 16.3.1988, leg. PW Kowarik (FMNH); 2 females, Chiapas, Nahá (16.962N, -91.593W), sifted leaf litter, mesophile forest, 13.6.2008, 17.6.2008, #LLAMA08 Wm-A-07-all (KNHM); 1 male, Chiapas, Sierra Morena (16.159N, -93.605W), sifted leaf litter, mesophile forest, 1360 m elev., 12.5.2008 (KNHM); 2 males, Chiapas, 8.9 km E Rayon, cloud forest litter, 1500 m elev., 19.9.1991, leg. R. Anderson (KNHM); 2 females, 2.6 mi S Rayon, Hwy 195, cloud forest, sifting litter along stream, 1700 m elev., 5.5.1977, leg. J.S. Ashe (FMNH); 1 male, 1 female, Chiapas, Lagunas de Montebello, Cinco Lagoas, oak/pine/liquidamber forest litter, 21.9.1991, leg. R. Anderson (KNHM); 40 males, 42 females, Monterey, Chipinque Mesa, forest soil & litter, 5400 ft elev, Berlese, 22.6.1969, leg. S. & J. Peck (79 FMNH, 2 UIC); 4 females, 1 male, SLP, 20 km W Xilitla, cloud forest litter, Berlese, 12.6.1983, leg. S. & J. Peck (FMNH); 2 males, 2 females, Quere-taro, 17-18 mi E Landa de Matamoros, 5300 ft elev., leaf litter forest floor, 28.-30.1973, leg. A. Newton (FMNH); 2 males, 4 females, NL 29 km W Linares, S Rosa Can., oak forest litter, Berlese, 3.6.1983, leg. J. & S. Peck (FMNH); 1 male, 2 females, Nuevo Leon, 5.3 mi S La Escondida, leaf litter, 8.7.1986, leg. PW Kowarik (FMNH); Honduras: 3 males, F. Morazan Dept., Res. Biol. El Chile, nr. Guaimaca (14°21'N, 86°52'W), upper montane forest litter, 1600 m elev., 8.5.2002, leg. R. Anderson #RSA2002-011 (KNHM).

**Remarks:** The species was sufficiently described by SMETANA (1982), according to whom it is widely distributed in eastern USA up to the Canadian border. The concentration of records in north-eastern USA may be due to higher collection intensity compared to southern USA. The new records from Mexico and Honduras show that the species also occurs in high mountain sites under a generally warmer climate. The study of the parameres of the aedeagus exhibit that the species has a bilobed paramere with slender inner and plate-like outer lobe. The outer lobe is approximately half as long as the slender inner lobe. The slender inner lobe has 6 setae partly arranged in pairs.

*Somoleptus loretensis* spec. nov.

urn:lsid:zoobank.org:act:598891A6-252E-4F7E-943C-B72D55B03813

Figs 11a–d; 50 D

**Type material:** male, holotype: Peru: Loreto Prov., Iquitos, leaf litter in the forest, 90 m elev., 8.5.1992, leg. J. Danoff-Berg (KNHM). Paratypes: Peru, 2 males, 1 female with same data as holotype (2 KNHM, 1 UIC).

**Diagnosis:** Among the species of medium size (5.0–5.5 mm) with long elytra and large eyes, *S. loretensis* is conspicuous by the triangular shape of the head. The parameres of the aedeagus are conspicuous by the bilobed structure with both lobes of nearly equal length.

**Description:** Length: 5.4 mm. Colouration: Brown; anterior half of pronotum light brown; legs and antennae still lighter brown to dark yellow.

Head: 0.55 mm long, 0.49 mm wide; eyes large; slightly prominent; PS : E ratio 2.2; postocular sides distinctly divergent; posterior angles shortly rounded; central part of posterior margin straight; interantennal furrows nearly extinct; supraocular, transverse carina pointing to central vertex; setiferous punctation weak and sparse; on average, interstices between punctures at least twice as wide as diameter of punctures; narrow midline impunctate; surface without microsculpture; shiny. Antennae with first antennomere slightly longer than half length of head; second and third antennomere conical; elongate; nearly twice as long as wide; following antennomeres wider than long and increasing in width; fourth antennomere 1.3 times as wide as long; tenth antennomere twice as wide as long; antennomeres 4–11 pubescent. Pronotum: 0.63 mm long, 0.40 mm wide; widest in anterior third; anteriorly, conically narrowed to neck; posteriorly, slightly narrowed in central third and even less narrowed in posterior third; setiferous punctation as weak and sparse as on head; wide midline impunctate; irregular line of punctures adjacent to midline with 13 to 15 punctures; surface without microsculpture; shiny. Elytra: 0.54 mm long, 0.54 mm wide; humeral angles obtuse; sides distinctly divergent; posterior angles shortly rounded; nearly rectangular; posterior margin approximately straight with short incision at suture; setiferous punctation much denser and slightly deeper than on pronotum; surface with weak isodiametric microsculpture; less shiny than pronotum. Abdomen with setiferous punctation as deep as on elytra but still denser; surface without microsculpture; shiny; male sternite VII with straight posterior margin and short central incision; male tergite VII straight. Mesotibia with three, metatibia with two subapical ctenidia. Aedeagus oval; at apex indistinctly rectangular with emargination at base of parameres on each side of central orifice; cones at apical orifice short; C : A ratio 0.08; endophallus with apical knot and posterior wide stripe densely covered by minute teeth; stripe posteriorly folded; parameres elongate; bilobed; outer lobe nearly as long and wide as inner lobe; inner lobe

curved; with numerous short and fine setae at inner face; setae at base distinctly longer than at apex.

**Etymology:** The species name is derived from the Peruvian province, where the holotype was collected.

*Somoleptus maximus* spec. nov.

urn:lsid:zoobank.org:act:7D7BD9DE-0207-4E2B-B3E5-8D84225777B2

Figs 23a, b; 47 B

**Type material:** male, holotype: Ecuador: Pichincha, 16 km E Sto. Domingo, Tinalandia, 680 m elev., rain-forest, Malaise trap, 4.5.-25.7.1985, leg. S. & J. Peck (FMNH). Paratype: female with same data as holotype (FMNH); 1 female, Pichincha, Otongachi Nat. Res., leaf litter, 26.08.2009, leg. Ramon (UIC).

**Diagnosis:** Among the large species of more than 6 mm size and long elytra, *S. maximus* can be recognized by the sparse punctation of head and pronotum.

**Description:** Length: 6.2 mm. Colouration: Black; legs and antennae brown.

Head: 0.90 mm long, 0.62 mm wide; eyes moderately large; PS : E ratio 3.7; postocular sides approximately parallel; posterior half semi-circular; without rudiments of posterior angles; setiferous punctation moderately deep; sparse; on average, interstices between punctures at least twice as wide as diameter of punctures; on central and anterior vertex sparser; between eyes with impunctate midline; surface without microsculpture; polished. Antennae with first antennomere distinctly longer than half-length of head; second and third antennomere longer than wide and equal in length; combined slightly shorter than half length of first antennomere; following antennomeres twice as wide as long; increasing in width; antennomeres 4–11 pubescent. Pronotum: 1.04 mm long, 0.60 mm wide; widest at anterior third; anteriorly narrowed to neck in smooth convex curve; posterior half nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation as deep and dense as on head; moderately wide midline impunctate; surface without microsculpture; polished. Elytra: 0.98 mm long, 0.90 mm wide; humeral and posterior angles sub-rectangular; sides divergent to posterior margin; posterior margin triangularly retreated to suture; setiferous punctation much deeper and denser than on head and pronotum; on average, interstices between punctures shorter than diameter of punctures; surface without microsculpture; shiny. Abdomen with setiferous punctation as dense as on elytra, but much finer; surface without microsculpture; shiny; posterior margin of male sternite and tergite VII straight (similar as in Fig. 22c, d). Aedeagus long oval with anterior angles sub-rectangular; cones at apical orifice short; C : A ratio 0.16; sclerotised endophallus small; parameres elongate; curved in apical third; not divided into inner and outer lobe.



**Etymology:** The species name is the superlative of the Latin word *magnus* (meaning large) and refers to the large size.

*Somoleptus melanarius* spec. nov.

urn:lsid:zoobank.org:act:E5CB8799-D5AC-4D5D-876C-29E45C953438

Figs 35a–d: 48 J

**Type material:** male, holotype: Honduras: Santa Barbara, Mt. Santa Barbara, 11.5 km S & 5.6 km W Peña Blanca (14°57'N, 88°05'W), 1800 m elev., cloud forest litter, 20.6.1994, leg. R. Anderson (KNHM). Paratypes: Mexico, 1 female, Oaxaca, 40 km SW Valle Nacional, km 93 1900 m elev., oak forest leaf litter, Berlese, 26.7.1992, leg. R.S. Anderson #92-031 (KNHM); Honduras: 23 males, 26 females with same data as holotype (47 KNHM, 2 UIC); 16 males, 23 females, same region, habitat, and collector, but 1870 m elev., 24.8.1994 (37 KNHM, 2 UIC).

**Diagnosis:** *Somoleptus melanarius* is characterised by its long head with semi-circular posterior part. The parameres at the apical orifice of the aedeagus are relatively large and thick, only slightly smaller than in *S. grandiconus*. Both species are similar in the black colouration but *S. melanarius* is distinctly larger than 5.0 mm, whereas *S. grandiconus* is only 4.6 mm.

**Description:** Length: 5.0–5.4 mm. Colouration: Black, legs and antennae dark brown.

Head: 0.92 mm long, 0.70 mm wide; eyes small, eyes not prominent; short; PS : E ratio 3.7; slightly convex; posterior angles combined with posterior margin semi-oval; interantennal furrows present; setiferous punctation moderately deep and sparse; on average, interstices between punctures as wide as diameter of punctures; anteriorly with narrow impunctate midline; surface without microsculpture; polished. Antennae with first antennomere as long as half-length of head; second and third antennomere elongate; combined as long as half-length of first antennomere; following antennomeres wider than long; increasing in width; fourth antennomere 1.5 times as wide as long; tenth antennomere twice as wide as long; antennomeres 4–11 pubescent. Pronotum: 1.13 mm long, 0.67 mm wide; widest slightly behind anterior third; anteriorly, convergent to neck; posteriorly, approximately parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation similarly deep and dense as on head; wide midline impunctate; surface without microsculpture; polished. Elytra: 0.88 mm long, 0.88 mm wide; humeral and posterior angles rectangular; sides approximately parallel; posterior margin slightly retreated to suture; setiferous punctation deeper than on pronotum; on average, interstices as wide as diameter of punctures; surface without microsculpture; shiny. Abdomen with setiferous punctation finer than on elytra, but as dense; setae pointing posteriorly; base of segments with deep netlike micro-

sculpture; apically without microsculpture; posterior margin of male sternite VII prominent; posterior margin of male tergite VII straight. Aedeagus oval with anterior angles sub-rectangular; cones at apical orifice broad; C : A ratio 0.29; sclerotised endophallus with numerous transverse lobes; parameres 0.6 times as long as central lobe; bilobed; outer lobe plate-like; inner lobe slender with few scattered short setae.

**Etymology:** The species name is derived from the same Latin word meaning black and refers to the black colour.

*Somoleptus mexicanus* spec. nov.

urn:lsid:zoobank.org:act:B83AEAEF-5D44-4D1B-B22A-2D898B620EDF

Figs 24a, b: 48 F

**Type material:** male, holotype: Mexico: Veracruz, 5.5 mi S Huatusco, and 4.8 mi W on microodus road, cloud forest, 5900 ft. elev., sifting litter at base of tree, 25.4.1977, leg. J.S. Ashe (FMNH). Paratypes: Mexico: 1 male, 2 females, Queretaro, Mpio. Pinal de Amoles, San Pedro Escanela (99°31.47'W, 21°07.29'N), 1620 m, 1750 m elev., sifted litter, mixed oak forest, 28.7., 29.7.2006, leg. P.J. Horsley #MEX1H06 015A (KNHM); same date but collector R. Anderson #MEX1A06-026; 2 females, Veracruz, 1.1 km S Jalapa, on Coatepec rd., under fungus bark, 1280 m elev., 12.7.1992, leg. J.S. Ashe #54 (KNHM); 2 males, 3 females, 2.3 km S Jalapa, 1320 m elev., leaf litter in ditch, 13.7.1992, leg. J.S. Ashe #65 (4 KNHM, 1 UIC); 1 female, Chiapas, Mpio. Tenejapa, Ojo de Agua (92°26.33'W, 16°49.06'N), mixed cloud/pine forest litter, 1800 m elev., 21.7.2003, leg. R. Anderson #MEX1A03 114 (KNHM); 1 female, 10 km W El Bosque, 1475 m elev., pine/cloud forest litter, 15.9.1992, leg. R. Anderson #92-103 (KNHM); 1 male, 4 females, 40 km SW Valle Nacional, km 93, 1900 m elev., oak forest leaf litter, Berlese, 26.7.1992, leg. R. Anderson, #92-131 (KNHM); 1 male, same region but km 85, 1650 m elev., trans/cloud forest leaf litter, Berlese, 26.7.1992, leg. R.S. Anderson #92.030 (KNHM); 1 female, Yerbabuena Reserve, 2.1 km NW Pueblo Nuevo, Solistahuacan, 2100 m elev., cloud forest litter, 23.9.1992, leg. R.S. Anderson #92-114 (KNHM); 1 female, same region but (92°53.52'W, 17°1.00'N), 1950 m elev., oak/pine/liquidambar forest litter, 22.7.2003, leg. R. Anderson #MEX1A03 116 (KNHM); 1 male, 15.1 km N Bochil, 1930 m elev., oak/pine/Liquidamber forest litter, 24.9.1992, leg. R. Anderson #92-116 (UIC); 1 female, 5.9 km E Bochil, 1300 m elev., riparian mesophytic forest litter, 15.9.1992, leg. R. Anderson #92-104 (KNHM); 1 male, Lagos de Montebello, Cinco Lagos, 1500 m elev., Liquidamber/oak/pine forest litter, 22.9.1992, leg. R. Anderson #92-113 (KNHM); 1 female Mpio. Chalchihuitan, Cerros de Chalchihuitan (92°37.13'W, 16°59.20'N), cloud forest litter, 2050 m elev., 24.7.2003, leg. R. Anderson #MEX1A03 120 (UIC); 2 males, 3 females, 10 km W El Bosque, 1475 m elev., pine/cloud forest litter, 15.9.1992, leg. R. Anderson

#92-103 (KNHM); 1 male, 2 females, Hidalgo, 13.1 km NE Jacala, 1760 m elev., montane oak forest, Berlese, 9.6.1987, leg. R. Anderson; 2 females, Oaxaca, 40 km SW Valle Nacional, km 93, 1900 m elev., oak forest leaf litter, Berlese, 26.7.1992, leg. R. Anderson #92-031 (KNHM); Guatemala: 1 female, Quiche, Reserva de Recuerdas (-90.75887, 15.45220), 1398 m elev., sifted evergreen forest litter, 16.6.2015, leg. R. Anderson #GUAT1A15 152 (KNHM); Panama: 1 female, El Copé (80°35'W, 8°37'N), 730 m elev., flight intercept trap, 20.5.-7.6.1995, leg. J. Ashe #140 (KNHM); 1 female, Quetzaltenango, 12.5 km SE Zunil (91°27.5'W, 14°41.7'N), 1520 m elev., berlesate oak forest litter, 20.6.1993, leg. Anderson & Ashe #93-9B (KNHM).

**Diagnosis:** The species can be distinguished from the other species of the longicollis-group by the dark colouration combined with the triangular shape of the head and the small eyes. The aedeagus has no conspicuous characters with intermediate large cones and parameres.

**Description:** Length: 4.8 mm. Colouration: Totally black; legs and antennae light brown.

Head: 0.67 mm long, 0.56 mm wide; eyes moderately large; PS : E ratio 4.2; postocular sides divergent to posterior sub-rectangular angles; posterior margin approximately straight; setiferous punctation deep and dense; on average, interstices between punctures less wide than diameter of punctures; on anterior vertex denser than on posterior vertex; narrow midline impunctate; surface without microsculpture; polished. Antennae with first antennomere slightly longer than half-length of head; second and third antennomere 1.5 times longer than wide; combined slightly shorter than half-length of first antennomere; following antennomeres wider than long; fourth antennomere nearly twice times as long as wide; tenth slightly more than twice times as long as wide; antennomeres 4–11 pubescent. Pronotum: 0.82 mm long, 0.54 mm wide; widest at anterior third; anteriorly, continuously convergent to neck; posteriorly, slightly convergent to sub-rectangular posterior angles; posterior margin slightly convex; setiferous punctation sparser and less deep than on head; on average, interstices between punctures twice as wide as diameter of punctures; wide midline impunctate; adjacent to midline with irregular row of punctures; interstices between punctures less wide than laterally; surface without microsculpture; polished. Elytra: 0.64 mm long, 0.59 mm wide; humeral and posterior angles sub-rectangular; sides posteriorly slightly divergent; posterior margin slightly retreated to suture; setiferous punctation as dense and deep as on vertex; on average, interstices between punctures as wide as diameter of punctures; surface without microsculpture; shiny. Abdomen with setiferous punctation slightly denser than on elytra, but finer; setae pointing posteriorly; at base of segments with deep transversely reticulate microsculpture; apical part of segments without microsculpture; moderately shiny; posterior margin of male

sternite VII triangularly prominent; posterior margin of male tergite VII straight (similar as in Fig. 21 c, d). Aedeagus oval with anterior angles sub-rectangular; cones at apical orifice moderately large; C : A ratio 0.31; sclerotised endophallus narrow, u-shaped; parameres divided in slender inner lobe and plate-like outer lobe; inner lobe with row of setae on inner face.

**Etymology:** The species is named after the country where it was collected.

*Somoleptus montanus* spec. nov.

urn:lsid:zoobank.org:act:1CB5C136-E50A-4001-A42E-DDFE38450986

Figs 18a–d, 50 A

**Type material:** male, holotype: Venezuela: Trujillo, Paramo La Cristalina, Old Trujillo Rd. km 9.7 (70°17.51'W, 9°21.21'N), 2400 m elev., elfin forest litter, 20.5.1998, leg. R. Anderson #VEN1A98 022D (KNHM). Paratypes: 2 females with same data as holotype (1 KNHM, 1 UIC); 1 female, Trujillo, 19 km Se Boconó, Páramo de Guaramacal (70°12'W, 9°12'N), 2950 m elev., bamboo litter, 4.3.1995, leg. R. Brooks, #42 (KNHM).

**Diagnosis:** Among the large species of more than 6.0 mm length with quadrate elytra, *S. montanus* can be distinguished from the similar *S. strigulata* by the small eyes. The similar species *S. strigulata* is known only from the island of Hispaniola and has still smaller eyes. Among the laevis-group, *S. montanus* is characterised by the broad uni-lobed parameres with central swelling.

**Description:** Length: 6.2 mm. Colouration: Black; legs and antennae light brown.

Head: 0.97 mm long, 0.81 mm wide; eyes small; not prominent; P : E ratio 5.9; postocular sides nearly parallel; posterior angles combined with posterior margin semi-circular; interantennal furrows weak; setiferous punctation moderately dense and deep; on average, interstices between punctures as wide as or slightly wider than diameter of punctures; without impunctate midline; on clypeus with small impunctate spot; surface with extreme weak isodiametric microsculpture; shiny. Antennae with first antennomere half-length of head; second and third antennomere longer than wide; combined half-length of first antennomere; antennomeres 4 to 10 wider than long; increasing in width; fourth antennomere twice as wide as long; tenth antennomere slightly wider than twice as wide as long; antennomeres 4–11 pubescent. Pronotum: 1.19 mm long, 0.77 mm wide; widest in anterior third; anteriorly, narrowed in smooth convex curve; in posterior half nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; moderately wide midline impunctate; setiferous punctation denser and deeper than on head; on average, interstices between punctures as wide as diameter of punctures; partly slightly shorter; irregular line of punctures adjacent

to midline with approximately 20 punctures; without microsculpture; polished. Elytra: 0.86 mm long, 0.87 mm wide; without humeral angles; sides posteriorly divergent; posterior angles sub-rectangular; posterior margin triangularly retreated to suture; setiferous punctation deep and dense; on average, interstice between punctures half as wide as diameter of punctures; surface with irregular ground-sculpture; matt. Abdomen with dense and weak setiferous punctation; surface with transverse reticulate microsculpture; slightly shiny; male sternite and tergite VII with straight posterior margin. Aedeagus oval with anterior angles sub-rectangular; cones partly inside apical orifice; moderately long; C : A ratio 0.21; sclerotised endophallus with two torsions; at base covered by minute teeth; apically with larger lobes; parameres broad; broadest in central part; apically narrowed to acute apex; with two spots of sensillae; on at apex; second in central part.

**Etymology:** The species name is derived from the same Latin word (meaning montane) and refers to the high elevation, where it was collected in Venezuela.

*Somoleptus nitidus* (SHARP, 1876)

Figs 15 a–d, 50 E

*Leptacinus nitidus* SHARP, 1876: 204

**Type material examined:** male, holotype: Brazil, Tefé (Ega) without more information (BMNH).

**Diagnosis:** Unfortunately, only the male type specimen was in the collections examined.

**Description:** Length: 4.0 mm. Colouration: Dark brown; anterior half of pronotum slightly lighter, posterior angles of elytra still lighter; nearly yellow.

Head: 0.72 mm long, 0.54 mm wide; eyes large; slightly prominent; postocular sides nearly parallel; PS : E ratio 2.4; posterior angles widely rounded; combined with posterior margin nearly semi-circular; interantennal space at anterior margin extremely short; divided by triangular process; on both sides of process with deep groove; setiferous punctation sparse and moderately weak; interstices between punctures three to four times as wide as diameter of punctures; surface without microsculpture; polished. Antennae with first antennomere two third of head length; antennomere two and three conical; as long as their apical width; following antennomeres much wider than long; antennomere four nearly twice as wide as long; antennomere ten three times as wide as long; all antennomeres pubescent. Pronotum: 0.86 mm long, 0.50 mm wide; widest slightly behind anterior third; conically narrowed to neck; approximately parallel in posterior third; posterior angles widely rounded; combined with posterior margin nearly semi-circular; setiferous punctation moderately deep and sparse; adjacent to impunctate

midline with irregular line of 16–17 punctures; surface without microsculpture; polished. Elytra: 0.83 mm long, 0.77 wide; humeral angles approximately rectangular; sides slightly divergent to rectangular posterior angles; posterior margin slightly convexly curved with incision at suture; setiferous punctation deeper and larger than on head and pronotum; interstices between punctures approximately as wide as diameter of punctures; surface without microsculpture; polished. Abdomen with setiferous punctation as dense as on elytra but much finer; weak microsculpture transversely reticulate; surface shiny; male sternite VII deeply emarginate; on the inner edge of emargination with longitudinal process; male sternite VII straight; only with slight central projection. Aedeagus long oval; pair of cones at inner side of apical orifice; weak and with fine spines or hairs; C : A ratio 0.17; parameres broad and long; two third as long as central lobe; curved; in ventral view, shape like a forceps; short apical part parallel; in lateral view shape more triangular; in central part with numerous sensillae.

*Somoleptus obscurus* SHARP, 1885

Figs 36a, b; 47 D

*Somoleptus obscurus* SHARP, 1885: 496

**Type material examined:** female, holotype: Panama: Peña Blanca, 3000–4000 ft. elev., leg. Champion (BMNH).

**Additional material examined:** Mexico: 1 male, Oaxaca, 6 mi S Valle Nacional, 2000 ft elev., leaf litter, 19.5.1971, leg. S. Peck (FMNH); 1 male, Chiapas, 6.6 mi W El Bosque, 4800 ft elev., cloud forest pine litter, Berlese, 29.8.1973, leg. A. Newton (FMNH); Guatemala: 1 female, Alta Verapaz, nr. Purulha (Old Salama Rd.) (-90.2995, 15.2405), 1640 m elev., sifted open oak forest litter, 20.9.2008, leg. R. Anderson #LLAM08 RSA141 (KNHM); Costa Rica: 1? (dest.) Alajuela, E.B. San Ramon, R.B. San Ramon, 27 km N & 8 km W San Ramon (84°35.3'W, 10°13.3'N), 1120 m elev., wet montane for. litter, 29.6.-6.7.1999, leg. R. Anderson #CR1A99-109C (KNHM); Puntarenas, 1 female, San Vito, Est. Biol. Las Alturas, 1500 m elev., May 1992, leg. P. Hanson (KNHM); 1 female, Monteverde Reserve (trail near lab) flight intercept trap, 1.6.1993, leg. C. Michalski (KNHM); 1 female, Monteverde, Rio Guacimal, 1400 m elev., washing biophytes on rocks, 15.5.1989, leg. J. Ashe, R. Leschen #202 (KNHM); Panama: 1 female, Bocas del Toro, Fortuna/Chiriqui, Grand road (8°47'N, 82°11'W), 500 m elev., tropical wet forest, sifting litter, 16.-18.7.1987, leg. D.M. Olson (FMNH); 1 female, Cerro Campana, 3200 ft elev., Berlese, cloud forest, 14.-23.2.1976, leg. A. Newton (FMNH); 1 male, 2 females, Darién, Cana Biological Station, Serrania de Pirre (77°41.6'W, 7°45.1'N), 1200, 1450 m elev., flight intercept trap, 4.-7.6., 7.-9.6.1996, leg. J. Ashe, R. Brooks #PAN1AB96 109 (2 KNHM, 1 UIC); 1 female same data except 1560 m elev. 5.-6.6.1996, leg. Gillogly (KNHM);

1 female, Colon, Parque Nac. Soberania, Pipeline Rd. km 5.3 (79°45'W, 9°07'N), 40 m elev., flight intercept trap, 29.-31.5.1995, leg. J. Ashe #086 (UIC); Venezuela: 1 male, Aragua, Rancho Grande Biological Station La Cumbre (67°41.11'W, 10°21.15'N), 1450 m elev., cloud forest litter, 12.5.2008, leg. R. Anderson #VEN1A98 001F (KNHM); 1 female, same date except 1550 m elev., 14.5.2008 (KNHM); 2 males, same region, but Pico Periquitos (67°41.0'W, 10°21.0'N), 1300 m elev., cloud forest litter, 13.5.1998, leg. R. Anderson #VEN1A98 005F (1 KNHM, 1 UIC); 9 females, 3 males, Lara, La Sanare, 10 km SE, Yacambu N.P. (69°38.57'W, 9°41.51'N), 1500 m, 1650 m, 1790 m, 1800 m, 1850 m elev., cloud forest litter, 16.5., 17.5., 1.6.1998, leg. R. Anderson #VEN1A98 056D (10 KNHM, 2 UIC); 1 female, same data except 1510 m elev., flight intercept trap, 18.5.-1.6.1998 (KNHM); Colombia: 2 females, Magdalena, 2 km NW San Pedro (74°03'W, 10°55'N), 1200 m elev., leaf litter, 16.8.1985, leg. J. Longino (KNHM); 1 female, Cañaveral, 200 m elev., leaf litter, 11.8.1985, leg. J. Longino (KNHM).

**Diagnosis:** Unfortunately, the single type specimen is a female. Males were only found among the specimens from Venezuela. Thus, a clear differentiation from the similar *S. obsoletus*, *S. sparsus* and *S. pecki* is difficult. It seems that *S. obscurus* is larger in size and the elytra are shorter than in the three similar species. It can be distinguished from *S. obsoletus* by the distinct sub-rectangular angles of the head and from *S. pecki* by the larger eyes. In contrast to *S. sparsus*, the punctuation of the head is much denser. Whereas interstices between punctures in *S. obscurus* are as wide as diameter of punctures, interstices between punctures in *S. sparsus* are nearly twice as wide as diameter of punctures. The aedeagi of all four species are very similar. Parameres are straight in *S. obscurus* and *S. pecki*, but curved in *S. obsoletus* and *S. sparsus*.

**Description:** Length: 4.4 mm. Colouration: Blackish; legs and antennae light brown.

Head: 0.69 mm long, 0.52 mm wide; eyes large; PS : E ratio 2.4; postocular sides nearly parallel; posterior angles combined with posterior margin nearly semi-circular; setiferous punctuation deep and dense; on average, interstices as wide as diameter of punctures; moderately narrow; impunctate midline on posterior vertex absent; surface without microsculpture; polished. Antennae with first antennomere slightly shorter than half-length of head; antennomeres 2–3 longer than wide; combined slightly shorter than half-length of first antennomere; antennomeres 4–10 wider than long and increasing in width; antennomere 4, 1.5 times wider than long; antennomere 10 twice as wide as long; antennomere 4–11 pubescent. Pronotum: 0.76 mm long, 0.49 mm wide; widest shortly in front of middle; anteriorly, continuously narrowed to neck in smooth convex curve; posteriorly nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous

punctuation as dense and deep as on head; wide midline impunctate; surface without microsculpture; polished. Elytra: 0.79 mm long, 0.68 mm wide; humeral and posterior angles sub-rectangular; sides nearly parallel; posterior margin slightly convex; shortly retreated at suture; setiferous punctuation as dense and deep as on head and pronotum; surface without microsculpture; shiny. Abdomen with setiferous punctuation much denser, but finer than on elytra; setae pointing posteriorly; posterior margin of male sternite VII with triangular process (as in Fig. 21c, d); posterior margin of male tergite VII straight. Metatibia with two subapical ctenidia. Aedeagus oval with sub-rectangular anterior angles; cones at apical orifice moderately short; C : A ratio 0.19; parameres divided into two lobes; a plate-like outer lobe and a straight slender inner lobe; approximately half as long as total length of aedeagus; both lobes nearly equal in length; inner lobe with row of partly long setae at inner face.

*Somoleptus obsoletus* SHARP, 1885

Figs 28a, b; 47 E

*Somoleptus obsoletus* SHARP, 1885: 496

**Type material examined:** male, holotype; Guatemala: near the city, Aceituno, leg. Champion (BMNH).

**Additional material examined:** Mexico: 1 female, San Luis Potosi, 11 mi W El Naranjo, 3200 ft elev., litter Liquidambar hollow trunk, 25.6.1973, leg. A. Newton (FMNH); 1 female, same region, 14 mi W Xilitla, 4800 ft elev., on fungi, 20-28.6.1971, leg. A. Newton (FMNH); 1 male, Oaxaca, 6 mi S Valle Nacional, 2000 ft elev., leaf litter, 19.5.1971, leg. S. Peck (FMNH); 1 male, Chiapas, 9.7 mi S Solusuchiapa, Hwy. 195, 530 m elev., montane tropical litter along stream, sifting, 5.5.1977, leg. J.S. Ashe (FMNH); 2 males, 10 km W El Bosque, 1475 m elev., pine/cloud forest litter, 15.9.1992, leg. R.S. Anderson #92-103 (1 KNHM, 1 UIC); 3 males, 8.9 km E Rayon, 1500 m elev., cloud forest litter, 19.9.1991, leg. R. Anderson #91-106 (2 KNHM, 1 UIC); 1 female, Hidalgo, 66.6 mi SW Chapalhuacán, 3900 ft elev., cloud forest leaf litter, Berlese, 5.7.1976, leg. ? (FMNH); 1 female, Tamaulipas, La Presita, Cañon de Coyote, Municipio Tula, 1900 m elev., in leaf litter, 16.3.1987, leg. P. Kovarik, R. Jones & R. Trevine (FMNH); 1 female Guerrero, 10.3 km SW Filo de Caballo, 2700 m elev., oak/pine/fir forest leaf/log litter, 15.7.1992, leg. R. Anderson #92008 (KNHM); Guatemala: 1 female, Zacapa, Matasano, ESE Zacapa (-89.42022 W, 14.92799 N), 1325 m elev., sifted cloud forest litter, 21.6.2015, leg. R. Anderson #GUAT1A15 161 (KNHM); Honduras: 3 females, Yoro Dept., P.N. Pico Pijol (87°37.6'W, 15°09.4'N), 1300 m elev., upper montane forest litter, 11.5.2002, leg. R. Anderson (KNHM); Costa Rica: 1 male, 1 female, Puntarenas, Las Alturas Biol. Stat. (82°50.01'W, 8°56.17'N), 1660 m



elev., flight intercept trap, 31.5.-3.6.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa #CR1AFH04 094 (2 KNHM, 1 UIC); 1 male, Altamira Biol. Stat. (83°00.49'W, 9°01.76'N), 1510-1600 m elev., flight intercept trap, 4.-7.6.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa #CR1AFH04 144 (KNHM); 1 female, San Vito, Estac. Biol. Las Alturas, Alturas, 2 km NE (82°50.4'W, 8°58.26'N), 1720 m elev., Berlese leaf litter, 21.6.1998, leg. R. Anderson #CR1A98 106 (KNHM); 1 male, same region but 1500 m elev., Jun. 1992, leg. P. Hanson (KNHM); 1 male, Monteverde, 1570 m elev., Berlese, 16.5.1989, leg. J. Ashe, R. Brooks, R. Leschen (KNHM); 1 male, same region but Boehme house, 1400 m elev., flight intercept trap, 15.5.1989, leg. J. Ashe, R. Leschen, R. Brooks #201 (KNHM); 1 female, Reserva Biológica Carara (84°36'W, 9°47'N), 500 m elev., litter sample, 25.-26.7.1985, leg. J. Longino #606-5 (KNHM); Panama: 1 male, 2 females, Chiriqui, nr. Nueva California; Finca Palo Santo, 4900 ft elev., army ants?, 6.3.1959, leg. H.S. Dybas (FMNH); 7 females, Escopete (N), along Rio Escopete, 860 m elev., riddled stage III log in coffee plantation, 9.1.1981, leg. W. Suter (6 kmNH), 1 UIC); 3 females, Darién, Cana Biological Station, Serrania de Pirre (77°41.6'W, 7°45.18'N), 1450 m elev., flight intercept trap, 7.-9.6.1996, leg., J. Ashe, R. Brooks #PAN1AB96 112 (KNHM); Columbia: 1 male, Magdalena, 2 km NW San Pedro (74°03'W, 10°55'N), 1200 m elev., leaf litter, 16.8.1985, leg. J. Longino #811-5 (KNHM).

**Diagnosis:** The species closely resembles *S. obscurus* in dense punctation and sexual characters. It can be separated from that species by the smaller size (3.8 mm), surface covered by weak microsculpture, elytra having a yellow apical margin. At the aedeagus, the outer lobe of the parameres seems to be slightly shorter than in *S. obscurus* and with fewer setae at inner edge of the slender inner lobe.

**Description:** Length: 3.8 mm. Colouration: Blackish brown; posterior margin of elytra yellowish; legs and antennae yellow.

Head: 0.65 mm long, 0.49 mm wide; eyes large, PS : E ratio 2.9; postocular sides slightly curved; postocular angles combined with posterior margin nearly semi-circular; setiferous punctation deep and dense; on average, interstices between punctures as wide as diameter of punctures; moderately narrow impunctate midline absent on posterior vertex; surface partly with micro-punctation; moderately shiny. Antennae with first antennomere as long as half-length of head; second and third antennomere longer than wide; third slightly shorter than second; combined slightly longer than half-length of first antennomere; following antennomeres wider than long and increasing in width; fourth antennomere twice as wide as long; tenth 2.5 times as wide as long; antennomeres 4–11 pubescent. Pronotum: 0.80 mm long, 0.48 mm wide; widest distinctly behind anterior third; anteriorly, convergent to neck; posteriorly, nearly parallel; posterior

angles sub-rectangular; posterior margin slightly convex; setiferous punctation as dense and deep as on head; wide midline impunctate; surface with weak isodiametric microsculpture; moderately shiny. Elytra: 0.79 mm long, 0.67 mm wide; humeral and posterior angles sub-rectangular; sides approximately parallel; posterior margin convex; deeply retreated to suture; setiferous punctation as dense and deep as on pronotum; surface with weak isodiametric microsculpture; moderately shiny. Abdomen with setiferous punctation as dense and deep as on elytra; setae pointing posteriorly; surface with distinct transversely reticulate microsculpture; moderately matt; posterior margin of male sternite VII triangularly prominent; posterior margin of male tergites VII straight (as in Fig. 21c, d). Metatibia with two subapical ctenidia. Aedeagus oval with sub-rectangular anterior angles; C : A ratio 0.25; sclerotised endophallus narrow; covered by minute teeth; in basal half with two torsions; in apical half straight; parameres divided in slender inner lobe and broad outer lobe; inner lobe with row of five setae at inner face.

*Somoleptus oculatus* spec. nov.

urn:lsid:zoobank.org:act:F86FF6E7-81A2-48A1-B4F9-882CA4EE9213

Figs 39a, b; 49 G

**Type material:** male, holotype: Mexico: Chiapas, 8.9 km E Rayon, 1500 m elev., cloud forest litter, 19.9.1991, leg. R. Anderson #91-109 (KNHM). Paratypes: 6 males, same data as holotype (5 KNHM, 1 UIC).

**Diagnosis:** The species is unique within the genus by the characteristic shape of the head with convergent postocular sides. The large cones of the aedeagus resemble those of *S. grandiconus* but the shape of the head is totally different between these two species. The aedeagus also resembles that of *S. melanarius*, but *S. melanarius* is much longer with 5.0–5.4 mm.

**Description:** Length: 3.7 mm. Colouration: Blackish to dark brown; abdomen slightly lighter brown; legs and antennae light brown.

Head: 0.63 mm long, 0.48 mm wide; eyes large, prominent; PS : E = 1.7; postocular sides convergent to sub-rectangular posterior angles; interantennal furrows irregular; weak; setiferous punctation deep and moderately dense; on average, interstices between punctures as wide as diameter of punctures; impunctate midline indistinct; partly absent; surface without microsculpture; shiny. Antennae with first antennomere distinctly longer than half-length of head; antennomeres 2 and 3 longer than wide; combined half as long as first antennomere; antennomeres 4–10 wider than long; increasing in width; approximately twice as wide as long; antennomeres 4–11 pubescent. Pronotum: 0.75 mm long, 0.43 mm wide; widest slightly in front of anterior third; anteriorly, conically narrowed to neck; posteriorly, nearly parallel;

posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation dense but weak; irregular line of punctures adjacent to wide impunctate midline with 15 to 16 punctures; surface without microsculpture; shiny. Elytra: 0.80 mm long, 0.69 mm wide; humeral and posterior angles sub-rectangular; sides slightly divergent posteriad; posterior margin convexly curved; deeply retreated to suture; setiferous punctation dense and moderately deep; on average, interstices between punctures slightly shorter than diameter of punctures; surface with weak microsculpture; less shiny than head and pronotum. Abdomen with setiferous microsculpture weaker but as dense as on elytra; surface with weak netlike microsculpture; shiny; posterior margin of male sternite VII convexly rounded; posterior margin of male tergite VII with weak emargination (similar as in Fig. 31c, d). Aedeagus oval with sub-rectangular anterior angles; cones large;  $C : A = 0.41$ ; endophallus transparent; weakly covered by short teeth; with few torsions; parameres twice as long as cones; divided into two lobes; outer lobe broad; as long as cones; inner lobe slender; slightly longer than outer lobe; in apical half with row of 5 paired setae.

**Etymology:** The species name is derived from the Latin word *oculus* (meaning eye) and refers to the large prominent eyes of the species.

*Somoleptus ovatus* spec. nov.

urn:lsid:zoobank.org:act:901264F7-4008-4083-8E90-FC364B7CF3C1

Figs 44a, b; 49 I

**Type material:** male, holotype: Costa Rica: male, San José/Cartago, km 55 Int., Amer. Hwy., 3 km S Empalme (83°57'W, 9°42.3'N), 2350 m elev., Berlese, forest litter, 8.6.1997, leg. R. Anderson #CR1A97 008B (KNHM). Paratype: 1 female, Cartago, 2.0 km E Villa Mills (9°34'N, 83°41.5'W), 2750 m elev., oak forest litter, 15.2.1998, leg. R. Anderson, #CR2A98 002 (KNHM); 1 male, Chiriqui, 20 km N Gualaca, Finca La Suiza (82°12.0'W, 8°39.0'N), oak forest litter, 1450–1600 m elev., 11.6.1995, leg. R. Anderson #PAN2A95 18E (UIC); 1 female, 20.4 km N San Felix (81°46.0'W, 8°22.0'N), 950 m elev., Berlese forest litter, 8.6.1995, leg. R. Anderson #PAN2A95 09A (KNHM); 2 females, 5.9 km N Cerro Punta, Parc. Nac. Volcan Baru (82°34.0'W, 8°22.0'N), 2400 m elev., bamboo forest litter, 14.6.1995, leg. R. Anderson #PAN2A95 21C (KNHM).

**Diagnosis:** Among the species with short eyes and elytra, *S. ovatus* resembles *S. brunneus* and *S. longiceps* in size and colouration. The separating characters are described under *S. longiceps*.

**Description:** Length: 5.3 mm. Colouration: Dark brown; legs and antennae lighter brown.

Head: 0.89 mm long, 0.68 mm wide; eyes short; PS : E ratio 6.6; postocular sides convexly curved; posterior angles combined with posterior margin semi-circular; interantennal furrows absent; setiferous punctation deep and moderately dense; on average, interstices between punctures as wide as diameter of punctures; on posterior vertex partly denser; between eyes with impunctate midline; surface without microsculpture; shiny. Antennae with first antennomere slightly longer than half-length of head; antennomere 2 and 3 longer than wide; combined half-length of first antennomere; antennomeres 4 to 10 wider than long and increasing in width; fourth antennomere 1.5 times as wide as long; tenth antennomere twice as wide as long; antennomeres 4–11 pubescent. Pronotum: 1.09 mm long, 0.66 mm wide; widest at anterior third; anteriorly narrowed to neck in smooth convex curve; posteriad nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex with straight centre; setiferous punctation as deep and dense as on head but with wide impunctate midline; irregular line adjacent to midline with 22 to 23 punctures; surface without microsculpture; shiny. Elytra: 0.67 mm long, 0.73 mm wide; without humeral angles; posterior angles rectangular; posterior margin deeply retreated to suture; setiferous punctation as deep and dense as on pronotum; surface with isodiametric ground-sculpture; less shiny than head and pronotum. Abdomen with similar setiferous punctation as on elytra but deeper microsculpture; posterior margin of male sternite VII triangularly prominent; posterior margin of male tergite VII slightly convex (similar as in Fig. 21c, d). Aedeagus oval with sub-rectangular anterior angles; cones at apical orifice slightly curved;  $C : A$  ratio 0.22; sclerotised endophallus with basal torsion; partly transparent with sparse minute teeth, partly with thick dark lobes; parameres bilobed in plate-like outer lobe and slender inner lobe; outer lobe with few long setae at outer edge; inner lobe with numerous short and fine setae.

**Etymology:** The species name derived from the Latin word *ovalis* meaning oval and refers to the oval shape of the head.

*Somoleptus pallipes* SHARP, 1885

Fig. 47 F

*Somoleptus pallipes* SHARP, 1885: 497

**Type material examined:** female, holotype: Guatemala, San Geronimo, leg. Champion (BMNH).

**Diagnosis:** Unfortunately, the single type specimen is a female. As no other specimen was clearly identified as *S. pallipes*, the differentiation from the similar *S. obscurus* and *S. obsoletus* is unclear. However, the species can

be identified by the long hind legs with extremely long metatarsi.

**Description:** Length: 4.6 mm; Colouration: Black, legs and antennae yellow.

Head: 0.75 mm long, 0.59 mm wide; eyes moderately small; PS : E ratio 4.3; postocular sides slightly divergent posteriad; posterior angles combined with posterior margin semi-circular; setiferous punctation deep and dense; on average interstices between punctures as wide as diameter of punctures; narrow midline impunctate; on posterior vertex midline absent; surface without microsculpture; polished. Antennae with first antennomere slightly longer than half-length of head; antennomere 2 and 3 longer than wide; equal in length; 1.5 times as long as wide; combined as long as half-length of first antennomere; following antennomeres wider than long and increasing in width; twice as wide as long; all antennomeres pubescent. Pronotum: 0.85 mm long, 0.51 mm wide; widest shortly in front of middle; anteriad, continuously convergent to neck; posteriad, approximately parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation as dense and deep as on head; wide midline impunctate; surface without microsculpture; polished; Elytra: 0.86 mm long, 0.71 mm wide; humeral and posterior angles sub-rectangular; sides approximately parallel; posterior margin triangularly retreated to suture; setiferous punctation as deep as on head, but much denser; on average, interstices between punctures half as wide as diameter of punctures; surface partly with isodiametric microsculpture; moderately matt. Abdomen with setiferous punctation finer than on fore-body but similarly dense; surface at base of segments with transverse microsculpture; apically without microsculpture; shiny. Metatibia with three subapical ctenidia; metatarsi combined nearly as long as metatibia.

*Somoleptus parvulus* SHARP, 1885

Figs 26a, b; 47 G

*Somoleptus parvulus* SHARP, 1885: 496

**Type material examined:** 2 females, syntypes: Guatemala: Vera Paz, San Geronimo, leg. Champion; Panama, Los Remedios, leg. Champion (BMNH).

**Additional material examined:** Mexico: 1 female, Chiapas, 4.7 km N Finca Prucia, 24.6 km S Jaltinango de las Pas, 1050 m elev., oak-pine-montane trop. transition, litter along stream, 3.7.1979, leg. J. Ashe (FMNH); 1 female, Truqui, Fry coll., (FMNH); 4 males, 1 female, Sierra Morena (-93.6053, 16.1595), 1360 m elev., mesophil forest, 12.5.2008, leg. Anonymus, #LLAM0839273 (3 KNHM, 1 UIC); 1 male, 5.9 km E Bochil, 1300 m elev., riparian mesophytic forest litter, 15.9.1992, leg. R. Anderson (KNHM); 1 male, Nahá (-91.5861,

16.9802) 860 m elev., mesophil forest, sifted leaf litter, 12.6.2008, leg. ? #LLAMA08 MGB856 (KNHM); 1 male, 10 km W El Bosque, 1475 m elev., pine/cloud forest litter, 15.9.1992, leg. R. Anderson (KNHM); 1 female, 19.3 km E Santa Isabel, at Rio Zoyalténco, fig-fall and litter, 9.6.1991, leg. J. Ashe (KNHM); 1 male, 6 km S Ocosingo, 1400 m elev., wet oak/pine forest litter, 16.9.1992, leg. R.S. Anderson (KNHM); 1 female, Sierra Morena (-93.6053, 16.1595), 1360 m elev., mesophil forest, sifted leaf litter, 12.5.2008, leg. ?, #LLAMA08 Wm-A-01-1 (KNHM); 1 female, Lagos de Montebello, Cinco Lagos, 1500 m elev., Liquidambar/oak/pine forest litter, 22.9.1992, leg. R.S. Anderson, #92-113 (KNHM); 1 male, Hidalgo, 13.1 km NE Jacala, 1760 m elev., montane oak forest, Berlese, 9.6.1987, leg. R. Anderson (KNHM); male, 1 male, Hidalgo, 13.1 km NE Jacala, 1760 m elev., montane oak forest, 9.6.1987, leg. J. Anderson (KNHM); 1 male, 55 km NE Jacala, 1190 m elev., Berlese, cloud for. litter, 4.6.1987, leg. R. Anderson (KNHM); 1 male, Guerrero, 78.5 km N jct. Rte. 200, on Re 134 to Ciudad Altamirano, 1770 m elev., leaf litter at cliff base and in ravine, 30.7.1992, leg. J.S. Ashe, H. Frania (KNHM); 1 male, Veracruz, 3.5 km S Jalapa, 1400 m elev., sifted leaf litter, 27.5.1991, leg. J. Ashe (KNHM); 1 female, same region, habitat, and collector, but 1370 m elev., 26.5.1991 (KNHM); 1 female, San Luis Potosi, 2.5 km W unpaved rd. at El Limon, 15.2 km N, 200 m elev., litter, 7.7.1990, leg. J. Ashe, K.J. Ahn, R. Leschen (KNHM); Guatemala: 2 females, Suchitepéquez, 5 km S Vol. Atitlán (-91.18815, 14.54074), 1400 m elev. leaf litter cloud forest, sifted, 18.6.2009, leg. Anonymus #LLAMA09 Wm-B-09-2-07 (KNHM); 1 male, same data except Ref. Quetzal, 1660 m elev., wet montane forest, flight intercept trap, 14.-18.11.2016, leg. Z.H. Falin, F. Carillo #GUAT1F16 016.5 (KNHM); 1 female, same data but cloud forest, flight intercept trap, 16.-18.2015 #GUAT1F15 161 (KNHM); 1 male, Quetzaltenango, 12.5 km SE Zunil (91°27.5' W, 14°41.7'N), 1520 m elev., berlesate oakleaf litter, 20.6.1993, leg. Anderson & Ashe (KNHM); Honduras: 1 female, Lempira, 13.1 km NE & 7.3 km E Gracias, Mt. Puca (88°31'W, 14°41'N), 1600 m elev., liquidambar litter, 18.6.1994, leg. R. Anderson (KNHM); 2 females, Francisco Morazán, 7.6 km N Guairnaca (86°49'W, 14°36'N), 1030 m elev., pine, oak/liquidambar litter, 26.6.1994, leg. R. Anderson (KNHM); 1 female, Olancho La Muralla, 14 km N La Union (86°42'W, 15°06'N), 1450 m elev., wet montane evergr. Forest, Berlese, 16.-17.8.1994, leg. R. Anderson (KNHM); 1 male, 1 female, Atlantida, Yaruca, 9 km S (86°40'W, 15°35'N), 950 m elev., montane rainforest leaf litter, 2.1.2008, leg. P.S. Ward #LLAMA07 PSW16029 (KNHM); Nicaragua: 1 male, Matagalpa, Dept., 16 km N Matagalpa (85°56.1'W, 13°02.7'N), 1385 m elev., montane secondary forest litter, 22.5.2002, leg. R. Anderson #RSA2002-029; (KNHM); 1 female, Jinotega, RN Cerro Kilambé (-85.69785, 13.5541), 1310 m elev., Malaise trap, pasture/cloud forest edge,



22-26.5.2011, leg. Anonymus #LLAMA11 Ma-D-05-1-01 (KNHM); Costa Rica: 1 female, Rio Virillo, Feb. 1935, leg. A. Bierig (BMNH); male, San José, 1937, leg. A. Bierig (BMNH); 1 male, Puntarenas, Monte Verde, 1400 m elev., in fungal mat, 12.5.1989, leg. J. Ashe, R. Brooks, R. Leschen (KNHM); 1 female, same region and collectors, but leaf litter & fruit fall, 1400 m elev., 5.5.1989 (KNHM); 1 female, 1570 m elev., berlese, 16.5.1989 (KNHM); female, 1240 m elev., 10.5.1989 (KNHM); 1 female, same region, but trail near lab, flight intercept trap, 30.5.1993, leg. C. Michalski (KNHM); 1 female, same region, but Monte's woods, sifting, May 1992, leg. S. Lingafelter (KNHM); 1 male, Est. Biol. Las Alturas, 2 km NE Alturas (82°50.01'W, 8°56.56'N), 1520 m elev., upper montane cloud forest trans. litter, 10.7.1999, leg. R. Anderson #CR1A99-126A (KNHM); 1 female, 11 km SW Est. Biol. Las Cruces (83°01.50'W, 8°46.43'N), 1450 m elev., wet cloud forest litter, 9.7.1997, leg. R. Anderson (KNHM); 1 male, same region but (82°57.58'W, 8°47.14'N), 1330 m elev., *Odontomachus* ant refuse pile, 29.5.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa #CR1AFH04 031 (KNHM); 1 female, Puntarenas, Monteverde, Campbell's Woods, 1550 m elev., Bromeliads, 21.5.1989, leg. J. Ashe, R. Leschen, R. Brooks, #335 (KNHM); 1 female, same region and collectors, but 1520 m elev., army ants pile, 26.5.1989, #510 (KNHM); 1 female, same region and collectors, but 1240 m elev., Berlese, upper streambed in sand #095 (KNHM); 1 female, Altamira Biol. Stat. (83°00.49'W, 9°01.76'N), 1510-1600 m elev., pyrethrum fogging, moss-covered clay bank, 7.6.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa #CR1AFH04 151 (KNHM); 1 male, Alajuela, E.B. San Ramon, R.B. San Ramon, 27 km N & 8 km W San Ramon (84°35.30'W, 10°13.30'N), Berlese forest litter, 950 m elev., 15.6.1997, leg. R. Anderson (KNHM); Panama: 1 male, 3 females, Cerro Campana, 3200 ft elev., Berlese, cloud forest litter, 14.-23. Feb. 1976, leg. A. Newton (FMNH); 1 female, Chiriqui, Prov. Qda, Laguna, nr. San Felix, 725 m elev., litter, on sand, pocket S. bank, 19.1.1981, leg. W. Suter (FMNH); 1 female, 24 km W El Hato del Volcan, 3800 ft elev., Berlese, cloud forest leaf litter, 26.-27.6.1976, leg. A. Newton (FMNH); 4 females, 2 km S Cuernavaca, Camp. Rincon Vly, 750 m elev., litter on semi-cleared hillside between rock & log, 16.1.1981, leg. W. Suter (FMNH); 1 female, Bocas del Toro, Qda. Gato, 1300 m elev., litter, 21.1.1981, leg. W. Suter (FMNH); 1 female, 20 km N Gualaca, Finca La Suiza (82°12.0'W, 8°39.0'N), 1200 m elev., oak forest litter, 10.6.1995, leg. R. Anderson #PAN1A95 16C (KNHM); 2 females, Escopete (N), along Rio Escopete, 860 m elev., riddled stage III log in coffee plantation, 9.1.1981, leg. W. Suter (FMNH); 1 male, Cerro Colorado, 1220 m elev., under bamboo, 7.1.1981, leg. W. Suter (FMNH); nr. Nueva California, Finca Palo Santo, 4900 ft elev., army ants (?) under log, 6.3.1959, leg. H.S. Dybas (FMNH); Chiriqui, 20 km Gualaca, Finca La Suiza (82°12'W, 8°39'N), 1200 m

elev., oak forest litter, male, 10.6.1995, leg. Anderson (KNHM); 1 male, 1 female, Darién, Estacion Ambiente Cana, Cerro Pirre (77°41.6'W, 7°45.2'N), 1450 m elev., cloud forest litter, 6.6.1996, leg. R. Anderson #PAN2A96-112C (KNHM); 1 female, same region but cloud forest transition litter, 6.6.1996, leg. R. Anderson #PAN2A96 96-113 (KNHM).

**Diagnosis:** The species resembles *S. obsoletus* in its small size. It is even smaller than that species. In *S. parvulus*, the elytra are shorter than the pronotum and the yellow posterior margin is absent or very small, while they are as long as the pronotum and the yellow margin is broader in *S. obsoletus*. Moreover, the cones at the apical orifice are distinctly longer, one third as long as total aedeagus, whereas they are only one fourth as long as the aedeagus in *S. obsoletus*.

**Description:** Length: 3.2 mm. Colouration: Dark brown; pronotum slightly lighter brown; elytra blackish-brown; legs and antennae yellow.

Head: 0.64 mm long, 0.54 mm wide; eyes large, PD : E ratio 2.5; postocular sides slightly divergent to widely rounded posterior angles; posterior margin slightly convex with straight central part; setiferous punctation deep and dense; on average, interstices between punctures as wide as diameter of punctures; narrow impunctate midline absent on posterior vertex; surface without microsculpture; polished. Antennae with first antennomere half-length of head; second antennomere longer than wide; third nearly quadrate; following antennomeres wider than long; approximately 2.3 times as wide as long; antennomeres 4–11 pubescent. Pronotum: 0.82 mm long, 0.53 mm wide; widest behind anterior third; narrowed to neck in smooth convex curve; posteriad, sides nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation as deep and dense as on head; wide midline impunctate; surface without microsculpture; polished. Elytra: 0.76 mm long, 0.72 mm wide; humeral and posterior angles sub-rectangular; posteriad, sides slightly divergent; posterior margin triangularly retreated to suture; setiferous punctation as dense as on head, but slightly finer; surface with indistinctly weak microsculpture; shiny. Abdomen with denser setiferous punctation than on elytra; setae pointing posteriad; surface as on elytra; posterior margin of male sternite VII triangularly prominent; posterior margin of male tergite VII straight (similar as in Figs 21c, d). Metatibia with three subapical ctenidia. Aedeagus oval with anterior angles sub-rectangular; C : A ratio 0.20; sclerotised endophallus with vertical torsions; partly with small lobes; partly with longer teeth; near apex transparent; parameres slightly longer than apical cones; divided into slender inner lobe and plate-like outer lobe; outer lobe approximately two third as long as inner lobe; inner lobe with row of six setae along inner face.



*Somoleptus pecki* spec. nov.

urn:lsid:zoobank.org:act:4224A157-EA8D-4633-8AA1-F137A8787758

Figs 25a, b; 47 H

**Type material:** male, holotype: Mexico: Veracruz, 7 km E Huatusco, cloud forest litter, Berlese, 22.6.1983, leg. Peck & Anderson (FMNH). Paratypes: Mexico: 1 male, 3 females, with same data as holotype (3 FMNH, 1 UIC); 1 female with same data as holotype but 25.4.1977 (FMNH); 1 female, from same region as holotype but wooded pasture, 1400 m elev., litter in rock cracks, along stream (FMNH); 2 males, 3.5 km S Jalapa, 1400 m elev., sifting leaf litter along stream, 29.5.1991, leg. J. Ashe #29 (KNHM); 2 females, Chiapas, 2.6 mi S Rayon, Hwy. 195, cloud forest, 1700 m elev., sifting litter along stream, 5.5.1977, leg. J.S. Ashe (FMNH); 11 females, Chiapas, 8.9 km E Rayon, 1500 m elev., cloud forest litter, 19.9.1991, leg. R. Anderson, #91-109 (10 KNHM, 1 UIC); 1 male, 10 km W El Bosque, 1475 m elev., pine/cloud forest litter, 15.9.1992, leg. R.S. Anderson #92 103 (KNHM); 1 male, 15.1 km N Bochil, 1930 m elev., oak/pine/Liquid-amber forest litter, 24.9.1992, leg. R. Anderson #92-116 (KNHM); 1 male, 4 females, 5.9 km E Bochil, 1300 m elev., riparian mesotrophic forest litter, 15.9.1992, leg. R.S. Anderson #92-104 (KNHM); Lagos de Montebello, Cinco Lagos, 1500 m elev., Liquidamber/oak/pine forest litter, 22.9.1992, leg. R.S. Anderson #92-113 (KNHM); 1 female, Oaxaca, 22.6 mi S Valle National, Hwy. 175, cloud forest, 2010 m elev., sifting litter along stream, 27.4.1977, leg. J.S. Ashe (FMNH); 1 female, 32 km SW Valle Nacional, km 85, 1650 m elev., trans./cloud leaf litter, Berlese, male, 26.7.1992, leg. R. Anderson (KNHM); 2 females, 34.4 km N Tuxtlaahuaca Hwy., 131, 1800 m elev., forest litter and wood chips, 19.7.1992, leg. J. Ashe #98 (KNHM); 2 females, 14.9 km N Sola de Vega, 1820 m elev., leaf litter in ravine, in rock cracks, 20.7.1992, leg. J.S. Ashe #104 (KNHM); 3 females, Tamaulipas, Cerro del Diente, Municipio San Carlos, 3000 ft. elev., leaf litter, 13.3.1988, leg. P.W. Kovarik (FMNH); 1 female, Puebla, 5 mi N Texiutlan, 5000 ft. elev., leaf litter cloud forest, Berlese, 17.-19.7.1973, leg. A. Newton (FMNH); 1 male, Mpio., Gomez Farias, Rancho El Cielo, along road (99°12.19'W, 23°05.65'N), 1120 m elev., sifted litter, mixed oak forest, 18.7.2006, leg. P.J. Horsley #MEX1H06 005B (KNHM); 1 female, Hidalgo, 7 mi NE Jacala, sifting, 23.4.1975, leg. L.E. Watrous (FMNH); 1 female, 3 km SE Custepeque (-92.93922, 15.71603), 1660 m elev., mesophil forest stream, 17.5.2008, leg. Anonymus #LLAMA08 Ma-A.02-2-02 (KNHM); 1 female, 4.6 km S Suchixtepec, 2150 m elev., riparia alder forest leaf litter, Berlese, 23.7.1992, leg. R. Anderson #92-023 (KNHM); 1 male, Queretaro, Mpio., Pinal de Amoles, Huazquilico (99°34.45'W, 21°09.65'N), 1750 m elev., sifted litter, oak forest, 28.7.2006, leg. P.J. Horsley #MEX1H06 013A (KNHM); 1 male, Veracruz, 16 km S Orizaba, on rd. to Tlaquila, 1630 m elev., litter in sinkhole, 15.7.1992, leg. J. Ashe #70 (KNHM); 1 female, 2.5 km S Jalapa, 1370 m elev., sifted from litter along stream, 25.5.1991, leg.

J. Ashe #3 (KNHM); 1 male, 1 female, Guerrero, 10.3 km SW Filo de Caballo, 2700 m elev., oak/pin/fir forest, leaf/log litter, Berlese, 13.7.1992, leg. J. Anderson #92-002 (KNHM); Honduras: 2 males, 2 females, Cortés, P.N. Cusuco, 18.7 km N Cofradia, 5.4 km W Buenos Aires, Cerro Jilincó (88°14'W, 15°31'N), 1650 m elev., liquidambar forest, Berlese, 26.8.1994, leg. R. Anderson, #224E (KNHM); 4 males, Olancho, La Muralla, 14 km N La Unión (86°42'W, 15°06'N), 1530 m elev., cloud forest litter, Berlese, 16.-17.8.1994, leg. R. Anderson (KNHM); 4 males, 2 females, same region and collector, but 1450 m elev., wet montane evergr. litter, 25.6.1994 (KNHM); 4 males, 6 females, El Paraíso, 6.9 km W Yusu-carán, Cerro Monserrat (86°24'W, 13°44'N), 1760 m elev., forest litter, Berlese, 10.6., 7.7., 27.7.1994, leg. Anderson (9 KNHM, 1 UIC); 2 females, same region and collector, but 11 km SE Zamarano & 10 km SE Galeras "Los Lavaderos", (86°55'W, 13°24'N), 1450 m elev., pine/oak/liquidambar, 11.6.1994, leg. R. Anderson (KNHM); 3 males, 7 females, Francisco Morazán, Yerba Buena, 36.9 km W Tegucigalpa (87°34'W, 14°05'N), 1920 m elev., oak/cloud forest litter, 28.6.1994, leg. R. Anderson (8 KNHM, 2 UIC); 2 females, same region, habitat, and collector, but (86°49'W, 14°36'N), 26.6.1994 (KNHM); 1 male, 1 female, same region and collector, but Res. Biol. El Chile, nr. Guaimaca (86°52'W, 14°21'N), 1600 m elev., upper montane forest litter, 8.5.2002, #RSA2002-011 (KNHM); 2 females, Santa Barbara, La Fe, Finca La Roca, 5.3 km S Peña Blanca (88°02'W, 14°57'N), 740 m elev., montane evergr. forest, 19.6.1994, leg. R. Anderson (KNHM); 4 females, Lempira, 13.1 km NE & 7.3 km E Gracias, Mt. Puca (88°31'W, 14°41'N), 1600 m elev., liquidambar litter, 18.6.1994, leg. R. Anderson (3 KNHM, 1 UIC); 1 female, 3.5 km S Jalapa, 1400 m elev., sifting leaf litter along stream, 29.5.1991, leg. J. Ashe (KNHM); Guatemala: 1 male, Quiché, Cerro del Amay (-90.73669, 15.45793), 1689 m elev., sifted cloud forest litter, 16.6.2016, leg. R. Anderson #GUAT1A15 151 (KNHM); 1 male, Alta Verapaz, nr. Purulha, (Old Salama Road) (-90.29958, 15.24055), 1640 m elev., sifted open oak forest litter, 20.9.2008, leg. R. Anderson # LLAMA08 RSA141 (KNHM); 2 males, San Marcos, Parque Municipal Refugio del Quetzal (-91.87296, 14.93916), 1818 m elev., sifted cloud forest litter, leg. R. Anderson #GUAT1A15 103 (1 KNHM, 1 UIC); 1 male, Zacapa, Alejandrina, nr. Finca Lucas (-89.62475, 15.13491), 2122 m elev., sifted oak forest litter, 19.6.2015, leg. R. Anderson #GUAT1A15 155 (KNHM); 1 female, 20 km N Estancia de la Virgen, Sierra de las Minas (89°44.5'W, 15°5.7'N), berlesate forest litter, 1900 m elev., 8.6.1991, leg. Anderson #55 (KNHM); 2 females, Alta Verapaz, nr. Purulha (Old Salama Road) (-90.29958, 15.24055), 1640 m elev., sifted open oak forest litter, 20.9.2008, leg. R. Anderson #LLAMA08 RSA 141 (KNHM); 1 female, Suchitepéquez, Volcán Atitlán, Ref. El Quetzal (-91.19235, 14.55067), 1670 m elev., cloud forest, flight intercept trap, 16.-18.6.2015, leg. Z.H. Falin #GUAT1F15 161 (KNHM); Honduras: 4 females, Cortés, Yojoa Lake, Deer Island (87°58'W, 14°55'N), 670 m elev.,

flight intercept trap, 19.-21.6.1994, leg. J. Ashe, R. Brooks (KNHM); 1 female, Francisco Morazán, 21.3 km N Tegucigalpa, La Tigra (86°06'W, 14°12'N), 1950 m elev., forest litter berlese, 29.6.1994, leg. R. Anderson #139B; 1 female, same region but 1900 m elev., leaf litter by trail, 8.6.1994, leg. Ashe & Brooks #044 (KNHM); 1 female, F. Morazán Dept., Res. Biol. El Chile, nr. Guaimaca (86°52'W, 14°21'N), 1600 m elev., 8.5.2002, leg. R. Anderson #RSA 2002-011 (KNHM); Nicaragua: 4 females, Matagalpa Dept., 16 km N Matagalpa (85°56.1'W, 13°02.7'N), 1385 m elev., montane secondary forest litter, 22.5.2002, leg. R. Anderson #RSA2002-029 (KNHM); Panama: 1 male, Chiriqui, 8.4 km NW Boquete, Volcan Baru (82°28.0'W, 8°48.0'N), 1860 m elev., dry oak forest litter, 18.6.1995, leg. R. Anderson #PAN2A95 34E (KNHM); 1 female, Grenada Dept., Volcan Mombacho Res. Nat. (85°58.8'W, 11°50.0'N), 150 m elev., elfin cloud forest litter, 2.-5.6.2002, leg. R. Anderson #RSA2002-033 (KNHM).

**Diagnosis:** *Somoleptus pecki* closely resembles *S. parvulus* and *S. obsoletus* in size. It can be distinguished from *S. parvulus* by the slightly larger size and the smaller eyes. In *S. parvulus* the eyes are more prominent and the postocular sides are 3.5 times as long as eyes, whereas in *S. pecki* the eyes are less prominent and the postocular sides are 4.1 times as long as eyes. Moreover, the inner lobe of the parameres in *S. pecki* are straight and twice as long as the cones. In *S. parvulus*, the inner lobe of the parameres is curved and one third longer than the cones. Both species can be separated from *S. obsoletus* by the sub-rectangular posterior angles of the head. In *S. obsoletus* the shape of head is more oval without posterior angles.

**Description:** Length: 3.8 mm. Colouration: Black; legs and antennae brown.

Head: 0.60 mm long, 0.42 mm wide; eyes small, PS : E ratio 4.1; postocular sides slightly curved to sub-rectangular posterior angles; posterior margin straight; setiferous punctation deep and moderately dense; on average, interstices between punctures as wide as diameter of punctures; on anterior vertex denser than on posterior vertex; impunctate midline close to neck absent; surface without microsculpture; polished. Antennae with first antennomere shorter than half-length of head; second antennomere slightly longer than wide; third approximately quadrate; following antennomeres approximately 2.5 times as wide as long; increasing in width; antennomeres 4–11 pubescent. Pronotum: 0.71 mm long, 0.46 mm wide; widest at anterior fourth; convergent to neck in smooth curve; posteriad, slightly narrowed to sub-rectangular angles; posterior margin slightly convex; setiferous punctation finer and sparser than on head; on average, interstices between punctures 1.5 to 2 times as wide as diameter of punctures; wide midline impunctate; surface without microsculpture; polished. Elytra: 0.58 mm long, 0.55 mm wide; humeral and posterior

angles sub-rectangular; sides slightly divergent posteriad; posterior margin slightly retreated to suture; setiferous punctation deep and moderately dense; on average, interstices between punctures as wide as diameter of punctures; surface without microsculpture; polished. Abdomen with setiferous punctation finer and sparser than on elytra; surface without microsculpture; polished; posterior margin of male sternite VII triangularly prominent; posterior margin of male tergite VII straight (similar as in Figs 21c, d). Aedeagus oval; anterior angles sub-rectangular; C : A ratio 0.30; sclerotised endophallus with torsions in basal half; straight in apical half; parameres divided into inner slender lobe and plate-like outer lobe; inner lobe twice as long as cones; at inner face with row of setae; outer lobe transparent; three forth as long as inner lobe.

**Etymology:** The species name honours S. Peck, who found it on one of his numerous expeditions to Latin America.

*Somoleptus peruanus* spec. nov.

urn:lsid:zoobank.org:act:842A0E8D-ED87-4AC1-9207-C4D7B730C7B3

Figs 11a, b; 49 J

**Type material:** male, holotype: Peru: Dept. Loreto, 1.5 km N Teniente Lopez (76°06.92'W, 2°35.66'S), 210–240 m elev., flight intercept trap, 22.7.1993, leg. R. Leschen #166 (KNHM). Paratypes: Peru: Dept. Loreto, 2 males, 5 females, Campamento San Jacinto (75°51.77'W, 2°18.75'S), 175–215 m elev., flight intercept trap, 7.7., 8.7., 10.7.1998, leg. R. Leschen #43 (5 KNHM, 2 UIC); Ecuador: Napo, 400 m Jatun Sacha Biol. Station (21 km E Puerto Napo), lowland rain for., flight intercept trap, 18.7., 20.7.1994, leg. Levy & Génier (KNHM); 2 females, Sucumbios, Sacha Lodge (76.5°W, 0.5°S), 270 m elev., Malaise trap, 4.-14.4.1994, 25.7.-3.8.1994, leg. Hibbs (KNHM).

**Diagnosis:** The species extremely resembles *S. struyvei* in size, punctation and structure of the aedeagus. It may be the sister species of *S. struyvei* from the Guayanas on the East slope of Amazonian Andes. Without study of the aedeagus, both species can hardly be separated. The cones at the apical orifice of the aedeagus in *S. peruanus* are much longer and the apical part of the parameres is wider than in *S. struyvei*.

**Description:** Length: 4.6 mm. Colouration: Dark brown; pronotum only very slightly lighter; legs and antennae light brown.

Head: 0.81 mm long, 0.64 mm wide; eyes moderately large; not prominent; PS : E ratio 3.0; postocular sides parallel; posterior angles combined with posterior margin nearly semi-circular; only short central part straight; without interantennal furrows; setiferous punctation weak and sparse; on average, interstices between

punctures 2 to 3 times as wide as diameter of punctures; surface without microsculpture; shiny. Antennae with first antennomere half-length of head; antennomeres 2 and 3 as long as apical width; antennomere 4 to 10 wider than long and increasing in width; antennomere 4 twice as wide as long; antennomere 10 1.5 times as wide as long; antennomeres 4–11 pubescent. Pronotum: 0.92 mm long, 0.60 mm wide; widest in front of anterior third; anteriorly, narrowed to neck in short convex curve; posteriorly, sides nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation slightly deeper and denser than on head; on average, interstices between punctures twice as wide as diameter of punctures; wide midline impunctate; irregular row of punctures adjacent to midline with 13 to 14 punctures; surface without microsculpture; shiny. Elytra: 0.86 mm long, 0.75 mm wide; humeral and posterior angles sub-rectangular; sides slightly divergent posteriorly; posterior margin slightly convex; widely retreated to suture; setiferous punctation deep and dense; on average, interstices between punctures half as wide as diameter of punctures; surface without microsculpture; shiny. Abdomen with fine and sparse setiferous punctation; surface without microsculpture; shiny; posterior margin of male sternite and tergite VII slightly convex (similar as in Figs 19c, d). Aedeagus oval with sub-rectangular anterior angles; apical orifice on short prominence; cones at interior edge of apical orifice; relatively long; C : A ratio 0.29; sclerotised endophallus with longitudinal torsion; covered with long teeth and lobes; parameres long; straight and wide at base; shortly curved interiorly to acute apex; apex with numerous sensillae with extremely short setae; on basic shaft with one long seta.

**Etymology:** The species is named after the country, where it was found.

*Somoleptus pulcher* BERNHAUER, 1935

Figs 8a–d; 47 I

*Somoleptus pulcher* BERNHAUER, 1935: 90

**Type material examined:** male, cotype: Brazil: without more data, don. Arrow (FMNH).

**Additional material examined:** Brazil: 1 female, Linha Facão, Santa Catarina, May, 1954, leg. F. Plaumann (KNHM); Paraguay: 5 females, Guairá, Melgarejo, Tacuara Creek, flood detritus, 20.10.1994, leg. U. Drechsel (KNHM); 2 females, Cordillera Altos, soil trap, 16.8.1991, leg. U. Drechsel (1 KNHM, 1 UIC).

**Diagnosis:** Among the similarly large species between 4 and 5 mm, *S. pulcher* is characterised by the light brown, nearly yellow pronotum. In this respect, it resembles *S. laevis*. In contrast to nearly absent posterior angles

of head in *S. laevis*, the posterior angles of the head are more sub-rectangular in *S. pulcher*. *Somoleptus pulcher* is mainly characterised by the triangular shape of the parameres and the broad structure of the apical cones of the aedeagus. The aedeagus resembles that of *S. recurvatus*, but *S. recurvatus* is much darker and the pronotum less polished than in *S. pulcher*.

**Description:** Length: 4.8 mm. Colouration: Brown; head and elytra dark brown; nearly black; pronotum light brown; slightly darkened anteriorly; legs and antennae light brown to nearly yellow.

Head: 0.88 mm long, 0.67 mm wide; long oval; eyes large; PS : E ratio 2.5; posterior angles widely rounded; posterior margin convex; interantennal furrows weak; setiferous punctation moderately dense and deep; on average, interstices between punctures twice as wide as diameter of punctures; surface without microsculpture; shiny. Antennae with first antennomere as long as half-length of head; second and third antennomere triangular; elongate; at least twice as long as apical width; following antennomeres wider than long; fourth antennomere 1.5 times as wide as long; antennomere 10 twice as wide as long; antennomere 4–11 pubescent. Pronotum: 0.94 mm long, 0.58 mm wide; widest shortly behind anterior third; anteriorly, convexly narrowed to neck; posteriorly, slightly narrowed in central third and nearly parallel in posterior third; posterior angles shortly rounded; posterior margin slightly convex; setiferous punctation sparse; wide midline impunctate; irregular line adjacent to midline with 17–18 punctures; laterally, punctation sparser; surface without microsculpture; polished. Elytra: 0.85 mm long, 0.81 mm wide; humeral angles nearly rectangular; posteriorly, sides slightly divergent; posterior angles nearly rectangular; posterior margin slightly convex; shortly retreated to suture; setiferous punctation moderately dense and deep; on average, interstices between punctures 1.5 times as wide as diameter of punctures; surface with irregular weak ground sculpture; less shiny than head and pronotum. Abdomen with setiferous punctation as dense as on elytra; microsculpture transversely reticulate; less shiny than forebody; male sternite VII and tergite VII with straight posterior margin. Aedeagus shortly oval with sub-rectangular anterior part; pair of apical cones moderately large; C : A ratio 0.31; parameres short; forming triangular plate with numerous sensillae; sensillae without setae.

*Somoleptus punctulatus* SHARP, 1885

Figs 27a, b; 47 J

*Somoleptus punctulatus* SHARP, 1885, 497

**Type material examined:** female?, holotype: Guatemala: near the city, Aceituno, leg. Champion (BMNH).



**Additional material examined:** Mexico: 1 male, Jalapa, leg. F. Schneider (ZMHB); 1 female, Queretaro, 16 mi. E Landa de Matamoros, 5300 ft elev., under oak bark, 18.-19.7.1970, leg. A. Newton (FMNH); 1 male, Jalisco, Puerto los Mazos, 10 mi SW Autlán, 4400 ft elev., Berlese, litter, oak-tropical deciduous forest, 25.9.1973, leg. A. Newton (FMNH); 1 female, Chiapas, 12 mi NW Ocozacoautla, 3200 ft elev., 3200 ft elev., under bark, 4.-5.9.1973, leg. A. Newton (FMNH); 1 male, 5.9 km E Bochil, 1300 m elev., riparian mesophytic forest litter, 15.9.1992, leg. R. Anderson #92-104 (KNHM); 4 males, Oaxaca, 14.9 km N Sola de Vega, leaf litter in ravine, 1820 m elev., 20.7.1992, leg. J.S. Ashe #104 (3 KNHM, 1 UIC); 1 female, Tamaulipas, San Carlos (98°57.637'W, 24°31.782'N), 1100 m elev., dry oak forest litter, 22.7.2006, leg. R. Anderson #MEX1A06-012 (KNHM); 1 male, Veracruz, 1.1 km S Jalapa, on Coatepec rd., under fungusy bark, 12.7.1992, leg. J. Ashe #54 (KNHM); 1 male, 4.0 km S Jalapa, 1350 m elev., leaf litter along stream 30.5.1991, leg. J.S. Ashe #40 (KNHM); Guatemala: 2 females, Huehuetenango: Huehuetenango (5 km S), leaf litter, 6.8.1991, leg. P. Kovarik & T.K. Philipps (FMNH); Costa Rica: Punta. Prov., Monte Verde Biol. Stat. (84°49.141'W, 10°19.672'N), 1515 m elev., cloud forest, flight intercept trap, 10.-17.6.2001, leg. S. & J. Peck #CR1P01 002 (KNHM).

**Diagnosis:** Unfortunately, the abdomen of the single type specimen is destroyed. Therefore, it is uncertain if it is a male or a female and a study of the sexual structures in the last abdominal segments was impossible. The description of the male characters, therefore, is based on the non-type specimens. The species is very similar to *S. parvulus* in size and colouration. *Somoleptus punctulatus* may be separated from *S. parvulus* by the denser and deeper punctation of the elytra and the presence of microsculpture. It may be that both species are conspecific. However, this problem can only be solved if more specimens, in particular, more males are collected.

**Description:** Length: 3.7 mm (estimated). Colouration: Reddish brown; head and elytra darker, blackish; base and apical margin of elytra lighter than the central parts.

Head: 0.61 mm long, 0.41 mm wide; eyes moderately large; PS : E ratio 2.5; postocular sides twice as long as eyes; approximately parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation deep and dense; without distinct impunctate midline; extremely narrow parts on anterior and posterior vertex impunctate; on average, interstices between punctures 0.5 times as wide as diameter of punctures; surface without microsculpture; polished. Antennae with first antennomere half-length of head; second antennomere longer than wide; third approximately quadrate; combined half-length of first antennomere; following antennomeres nearly 2.5 times as wide as long; increasing in width; antennomere 4-11 pubescent. Pronotum:

0.76 mm long, 0.48 mm wide; widest at anterior third; anteriorly, continuously convergent to neck; posteriorly, nearly parallel; posterior angles sub-rectangular; posterior margin slightly convex; setiferous punctation nearly as dense and deep as on head but with wide impunctate midline; surface without microsculpture; polished. Elytra: 0.75 mm long, 0.64 mm wide; humeral and posterior angles sub-rectangular; posteriorly, sides slightly divergent; posterior margin slightly retreated to suture; setiferous punctation still deeper and denser than on head and pronotum; on average, interstices between punctures shorter than 0.5 times as wide as diameter of punctures; surface with isodiametric microsculpture; moderately matt. Abdomen weak and sparse with setiferous punctation; distinctly weaker and sparser than on fore-body; posterior margin of male sternite VII with central triangular prominence; posterior margin of male tergite VII straight (similar as in Figs 21c, d). Aedeagus oval; apical cones short; C : A ratio 0.15; sclerotised endophallus narrow with wide torsion; parameres divided into slender inner lobe and plate-like outer lobe; inner lobe curved with few setae on inner face; transparent outer lobe two third as long as inner lobe.

*Somoleptus recurvatus* spec. nov.

urn:lsid:zoobank.org:act:527B3680-EA00-4C31-AEF6-3F7C6A9E5576

Figs 9a, b; 48 C

**Type material:** male, holotype: Brazil, Mato Grosso, Campo Verde, Santa Luzia farm (55°209'W, 15°433'S), dry forest litter, 25.3.2014, leg. K. Peña Peña (UIC). Paratypes: French Guiana: 1 male, 1 female, Caussade (-52.57 W, 5.10 N), 6.11.2001, leg. T. Struyve (TSC).

**Diagnosis:** The species resembles many black species of similar size between 4 and 6 mm and can be hardly separated without study of the aedeagus. The broad triangular parameres and the recurvate cones at the apical orifice are specific and can be used to distinguish the species from all other species of the genus.

**Description:** Length: 5.2 mm. Colouration: Black, legs light brown; antennae darker brown.

Head: 0.77 mm long, 0.58 mm wide; eyes moderately long; PS : E ratio 2.5; posterior angles combined with posterior margin semi-circular; interantennal furrows weakly present; weak transverse furrows from anterior edge of eyes to central vertex; setiferous punctation moderately deep and dense; on average, interstices between punctures 1.5 to 2 times as wide as diameter of punctures; surface without microsculpture; polished. Antennae with first antennomere slightly longer than half-length of head; second and third antennomere triangular; nearly twice as long as apical width; combined slightly longer than half-length of first antennomere; following antennomeres wider than long and increasing in width; fourth 1.5 times as wide as long; tenth twice as wide as long; antennomeres 4-11



pubescent. Pronotum: 0.88 mm; 0.52 mm wide; widest slightly in front of anterior third; shortly convergent in smooth curve to neck; posteriad, slightly narrowed; nearly parallel; posterior angles combined with posterior margin convexly curved; setiferous punctation as dense and deep as on head; wide midline impunctate; surface without microsculpture; polished. Elytra: 0.75 mm long, 0.76 mm wide; humeral and posterior angles sub-rectangular; sides slightly divergent posteriad; posterior margin slightly retreated to suture; setiferous punctation dense and moderately deep; with irregular ground-sculpture; moderately matt. Abdomen with setiferous punctation finer than on elytra; without microsculpture; shiny; posterior margin of male sternite VII approximately semi-circular and slightly elevated; posterior margin of male tergite VII straight (similar as in Figs 9c, d), but with slight prominent centre. Metatibia with two subapical ctenidia. Aedeagus oval with sub-rectangular anterior angles; anterior angles at central orifice slightly prominent; cones at apical orifice short and broad; C : A ratio 0.18; kneed, but at apex approximately parallel; parameres short; triangular; at base extremely broad; in basic third abruptly narrowed to nearly acute apex; inner and outer face with numerous cannulate-sensillae.

**Etymology:** The species name is derived from the Latin word *recurvare* (meaning to bend backwards) and refers to the specific structure of the cones at the apical orifice.

*Somoleptus sparsus* SHARP, 1885

Figs 33a, b, 48 H

*Somoleptus sparsus* SHARP, 1885: 497

**Type material examined:** male, holotype: Guatemala: near the city, Aceituno, leg. Champion (BMNH).

**Additional material examined:** Mexico: 3 females, Chiapas, Sierra Morena (-93.6053, 16.1595) 1360 m elev., mesophile forest, sifted litter, 12.5.2008, leg. ? #LLAMA08 Wm-A.01-1 (2 KNHM, 1 UIC); 1 male, Chiapas, Naha (91°35.155'W, 16°58.45'N), 1000 m elev., sifted mixed montane wet forest litter, 15.7.2007, leg. R. Anderson #LLAMA07 RSA013 (KNHM); 1 male, 1 female, El Bosque, 1475 elev., pine/cloud forest litter, 15.9.1992, leg. R. Anderson #92-103 (KNHM); 1 male, 2 females, Mpio, Ocozocuatla, Laguna Belgica, Sendero Montana (93°27.14'W, 16°52.40'N), 1080 m elev., oak forest litter, 8.7.2003, leg. R. Anderson #MEX1A03 103 (KNHM); 1 female, Oaxaca, 14.9 km N Sola de Vega, 1820 m elev., deep leaf litter in rock cracks, 20.7.1992, leg. J.S. Ashe #102 (KNHM); 1 male, Veracruz, 2.3 km S Jalapa, 1320 m elev., litter nr. river, 13.7.1992, leg. J.S. Ashe #67 (KNHM); Guatemala: 3 females, Alta Verapaz, nr. Purulha (Old Salama Road) (-90.2995, 15.2405) 1640 m elev., sifted open oak forest litter, 20.9.2008,

leg. R. Anderson #LLAMA08 RSA141 (KNHM); Petén, 13 km NW Machaquilá (-89.5498, 16.4456) 400 m elev., leaf litter tropical moist forest, 27.5.2009, leg. ? #LLAMA09 Wa-B-06-1-all (KNHM); Honduras: 4 males, Atántida, Yaruca, 9 km S (15°35'N, 86°40.1'W), 950 m elev., montane rainforest leaf litter, Winkler extractor, 2.1.2008, leg. P.S. Ward, #LLAM07 PSW 16029 (3 KNHM, 1 UIC); 2 females, El Paraiso, 6.9 km W Yuscarán, Cerro Monserrat (86°24'W, 13°55'N), 1760 m elev., forest litter, Berlese, 7.7.1994, leg. R. Anderson #103F (KNHM); 1 male, Olancho, La Muralla, 14 km N La Union (86°42'W, 15°06'N), 1450 m elev., wet montane everg. litter, 25.6.1994, leg. R. Anderson #130E (KNHM); 1 male, 1 female, Morazan, Dept. Res. Biol. El Chile, nr. Guaimaca (86°52'W, 14°21'N), 1600 m elev., upper montane forest litter, 8.5.2002, leg. R. Anderson #RSA2002-011 (KNHM); 2 females, Yoro, Dept. P.N. Pico Pijol (87°37.6'W, 15°09.4'N), 1300 m elev., upper montane forest litter, 11.5.2002, leg. R. Anderson #RSA2002-017 (KNHM); Costa Rica: 2 males, Punt. Prov., Monteverde, Biol. Stat. (84°49.14'W, 10°19.67'N), 1515 m elev., cloud forest, flight intercept trap, 10.-17.6.2001, leg. S. & J. Peck #CR1P01 002 (KNHM); 2 females, Monteverde, 1240 m elev., 10.5.1989, leg. J. Ashe, R. Brooks, R. Leschen (KNHM); 1 female, Puntarenas, San Vito Estac. Biol. Las Alturas, 1500 m elev., Jan. 1992, leg. P. Hanson (KNHM); 1 male, 1 female, San José, km 117 Pan-Amer. Hwy., 19 km N San Isidro (83°42.2'W, 9°28.0'N), 1800 m elev., 20.-25.6.1997, leg. S. & J. Peck #CR1P97 023 (KNHM); Panama: 1 female, Colon, Parque Nac. Soberania, Pipeline Rd., km 2.0 (79°45'W, 9°07'N), flight intercept trap, 23.-25.5.1995, leg. J. Jolly, C. Chaboo (KNHM); 1 female, Chiriqui, 20 km N Gualaca, Finca La Suiza (82°12'W, 8°39'N), 1200 m elev., oak forest litter, 10.6.1995, leg. R. Anderson #PAN2A95 16D; 1 male, Hornito, Finca La Suiza (82°12'W, 8°39'N), flight intercept trap, 3.6.2000, leg. H. & A. Howden (KNHM); 2 females, Darién, Cana Biological Station, Serrania de Pirre (77°45.18'W, 7°45.18'N), 1450 m elev., flight intercept trap, 4.-7., 7.-9.1996, leg. J. Ashe, R. Brooks #PAN1AB96 108 (KNHM); 1 female, Estac. Ambiental Cana, Cerro Pirre (77°41.6'W, 7°45.2'N), 1450 m elev., cloud forest litter, 6.6.1996, leg. R. Anderson #PAN2A96-112D (KNHM); Venezuela: 2 males, Aragua, Rancho Grande Biol. Stn, (67°41'W, 10°21'N), Berlese leaf litter, 1390-1420 m elev. 27.2.1997, leg. R. Brooks #004 (1 KNHM, 1 UIC).

**Diagnosis:** *Somoleptus sparsus* closely resembles *S. obsoletus* and *S. obscurus* in size, colouration, and large eyes. It is slightly larger than *S. obsoletus* and smaller than *S. obscurus*. It can be separated from *S. obsoletus* by the obtusely angulate posterior angles of the head. Compared to *S. obscurus*, the smaller size and the slightly smaller eyes are characteristic for *S. sparsus*.

**Description:** Length: 4.0 mm. Colouration: Black; legs and antennae brown.

Head: 0.76 mm long, 0.54 mm wide; eyes large; prominent; PS : E ratio 2.6; postocular sides nearly parallel; posterior angles sub-rectangular; posterior margin convex with short central part straight; interantennal furrows present; setiferous punctation moderately deep and dense; on average, interstices between punctures at least as wide as diameter of punctures; partly wider; midline impunctate; surface without microsculpture; shiny. Antennae with first antennomere half-length of head; second and third antennomere conical; slightly longer than wide; following antennomeres wider than long; increasing in width; fourth antennomere 1.5 times as wide as long; tenth antennomere nearly 2 times as wide as long; antennomeres 4–11 pubescent. Pronotum: 0.81 mm long, 0.46 mm wide; widest at anterior third; anteriorly, widely narrowed in convex curve; posteriorly, shortly narrowed in concave curve; in posterior third nearly parallel; posterior angles sub-rectangular; posterior margin weakly convex; setiferous punctation as deep and dense as on head; punctures in row adjacent to impunctate midline with shorter interstices; surface without microsculpture; shiny. Elytra: 0.77 mm long, 0.63 mm wide; humeral and posterior angles sub-rectangular; sides nearly parallel; posterior margin convexly curved; triangularly retreated to suture; setiferous punctation as deep and dense as on pronotum; surface without microsculpture; shiny. Abdomen with setiferous punctation as dense but finer than on elytra; setae pointing posteriorly; posterior margin of male sternite VII triangularly prominent; posterior margin of male tergite VII straight (similar as in Figs 21c, d). Aedeagus oval with anterior angles sub-rectangular; cones at apical orifice moderately long; C : A ratio 0.25; sclerotised endophallus with longitudinal torsion; covered by moderately long teeth; parameres bilobed with plate-like outer lobe and slender inner lobe; outer lobe approximately half as long as inner lobe; inner lobe with row of long setae at inner edge.

*Somoleptus strigulata* (BLACKWELDER, 1943)

Figs 48 A

*Lithocharodes strigulata* BLACKWELDER, 1943: 498

**Type material examined:** female, holotype: Dominican Republic: Loma Rucilla & mts. N., 5–8000 feet elev., June 1938, leg. Darlington (MCZ). Paratypes: Dominican Republic: 2 females, Loma de la Peña, NW Constanza, 5000 feet, 7000 feet elev., August 1938, leg. Darlington; 1 female, cloud forest, vic. Valle Nuevo, 6000 feet elev., August 1938, leg. Darlington; Haiti: 1 female, La Visite & La Selle Range, 5–7000 feet elev., 16.–30. Sept. 1934, leg. Darlington (MCZ).

**Additional material studied:** Dominican Republic: 1 female not labelled as paratype: Loma Rucilla, 8–10000 feet elev., June 1938, leg. Darlington (MCZ).

**Diagnosis:** Unfortunately, all type specimens are females. *Somoleptus strigulata* is large, similarly large as *S. curtulus*. Although the aedeagus of the species is unknown, which makes a certain assignment to the genus *Somoleptus* uncertain, the structure of the pronotum fits better to *Somoleptus* than to *Lithocharodes* (see IRMLER 2021). It can be distinguished from *S. curtulus* by the longer elytra. In *S. strigulata* the elytra are approximately quadrate, whereas they are distinctly shorter than long in *S. curtulus*. Moreover, the punctation of the head is denser and the microsculpture on the pronotum deeper than in *S. curtulus*.

**Description:** Length: 6.1 mm Colouration: Dark brown; elytra indistinctly lighter brown; legs and antennae light brown.

Head: 0.98 mm long, 0.75 mm wide; long oval; eyes short; PS : E ratio 7.7; sides nearly parallel; posterior margin nearly semi-circular; interantennal furrows weak; setiferous punctation sparse and moderately deep; on average, interstices between punctures twice as wide as diameter of punctures; surface with weak isodiametric microsculpture; moderately matt. Antennae with first antennomere approximately as long as half-length of head; second and third antennomere triangular; nearly twice as long as apical width; following antennomeres wider than long and increasing in width; fourth antennomere nearly twice as wide as long; tenth antennomere 2.2 times as wide as long; antennomeres 4–11 pubescent; all antennomeres with setae. Pronotum: 1.14 mm long, 0.75 mm wide; widest in central third; anteriorly, narrowed to neck in wide convex curve; posteriorly, slightly narrowed in central third; posterior third nearly parallel; posterior angles shortly rounded to nearly straight posterior margin; setiferous punctation as dense and deep as on head; adjacent to narrow impunctate midline with irregular line of approximately 19 punctures; surface with wavy reticulate microsculpture; as matt as head. Elytra: 0.71 mm long, 0.73 mm wide; humeral angles obtuse; posteriorly, sides divergent; posterior angles nearly rectangular; posterior margin triangularly retreated to suture; setiferous punctation slightly denser than on pronotum; setae pointing posteriorly; surface with isodiametric microsculpture; as matt as on pronotum. Abdomen slightly finer and sparser punctate than forebody; setae pointing posteriorly; surface with transverse reticulate microsculpture; moderately matt. Aedeagus unknown.

*Somoleptus struyvei* spec. nov.

urn:lsid:zoobank.org:act:9F3627D1-41A2-412E-9EE2-C9B6971BFFDC

Figs 19a–d; 49 C

**Type material:** male, holotype: French Guiana: Montagne de Cheveaux (–52.24, 4.43), 15.2.2013 (UIC). Paratypes: French Guiana: 1 male, 3 females, with same data as holotype (2 TSC, 1 UIC); 1 male, 5 females, Roura, 27.4 km SSE (52°13.25'W, 4°44'20"N), 280 m elev., flight

intercept trap, 23.-24.5.1997, 10.6.1997, leg. J. Ashe, R. Brooks #FG1AB97 177 (4 KNHM, 1 UIC); 1 female, Saül, 7 km N, 3 km NW Les Eaux Claires, Mt. La Fumée (53°13.19'W, 3°39.46'N), 490 m elev., flight intercept trap, 1.-8.6.1997, leg. J. Ashe, R. Brooks #FG1AB97 162 (KNHM); 4 females, from same location but 30 m elev., 220 m elev., 300 m elev., 30.5.-4.6.1997, 4.-8.6.1997; 1 female, Saül. Mt. Galbao summit (53°16.42'W, 3°37.18'N), 740 m elev., flight intercept trap, 5.-7.6.1997, leg. J. Ashe, R. Brooks #FG 1AB97 154 (KNHM); 4 females, Cayenne, 33.5 km S and 8.4 km NW of Hwy N2 on Hwy D5 (52°28.41'W, 4°48.18'N), 30 m elev., flight intercept trap, 26.5.-28.5.1997, 29.5.-9.6.1997, leg. J. Ashe, R. Brooks #FG1AB97 171 (3 KNHM, 1 UIC); Suriname: 5 females, Sipaliwini District, Camp 1: on Kutari River (56°47.24'W, 2°10.52'N), 228 m elev., flight intercept trap, 19.-24.8.2010, leg. Larsen & Short #SR10-0819-TN1 (KNHM); 2 female, same data except Camp 2: on Sipaliwini River, 27.8.-1.9.2010 (KNHM); 2 females, Marowijne, Perica, 70 km E Paramaribo, on East-West Road (54°36.31'W, 5°40.28'N), 5 m elev., flight intercept trap, 29.5.-31.5., 31.5.-5.6.1999, leg. Z. Falin, B. DeDijn #SUR1F99 034 (KNHM).

**Diagnosis:** Regarding size, colouration and structure of the elytra and the aedeagus, *S. struyvei* closely resembles *S. peruanus*. The eyes of *S. struyvei* are larger and more prominent than in *S. peruanus*. In particular, the cones at the apical orifice are much shorter in *S. struyvei* than in *S. peruanus* and the parameres are different (see description of *S. peruanus*). The aedeagus of *S. struyvei* also resembles that of *S. brevisculus* but the cones in *S. brevisculus* are much shorter. In contrast to *S. struyvei*, the elytra of *S. brevisculus* are also much shorter.

**Description:** Length: 4.9 mm. Colouration: Black; legs and antennae brown.

Head: 0.78 mm long, 0.61 mm wide; eyes large, prominent; PS : E ratio 2.4; approximately parallel; postocular angles combined with posterior margin semi-circular; interantennal furrows weak; setiferous punctation weak and sparse; on average, interstices between punctures 2–3 times as wide as diameter of punctures; small midline impunctate except two punctures in interocular area; surface without microsculpture, polished. Antennae with first antennomere distinctly longer than half-length of head; antennomeres 2 and 3 longer than wide; combined half as long as first antennomere; antennomeres 4–10 twice as wide as long and increasing in width; antennomeres 4–11 pubescent. Pronotum: 0.90 mm long, 0.52 mm wide; widest at anterior third; anteriorly, narrowed in convex curve; posteriorly, slightly narrowed; in posterior third approximately parallel; posterior angles combined with posterior margin semi-circular; setiferous punctation slightly denser than on head but similarly deep; on average, interstices between punctures twice as wide as diameter of punctures; wide midline impunctate; irregular line adjacent to midline

with 14–15 punctures; surface without microsculpture; polished. Elytra: 0.87 mm long, 0.80 mm wide; humeral and posterior angles sub-rectangular; sides slightly divergent posteriorly; posterior margin curved; slightly retreated to suture; setiferous punctation similarly dense and deep as on pronotum; surface without microsculpture; polished. Abdomen with setiferous punctation as dense as on elytra; slightly finer; posterior margin of male sternite and tergite VII straight. Aedeagus approximately hexagonal with obtuse angles; C : A ratio 0.19; retreated from apex; apically with transverse setae; apical orifice on each side with two teeth; sclerotised endophallus covered partly by moderately large teeth, partly by minute teeth; in these parts transparent; parameres straight and broad; in apical part abruptly narrowed to acute apex; with numerous sensillae; at inner edge with few short setae.

**Etymology:** The species honours its collector, Tim Struyve (Belgium), who found it on his excursion to French Guiana.

*Somoleptus subtilis* (ERICHSON, 1839) comb. nov.

Figs 3a–d; 48 B

*Leptacinus subtilis* ERICHSON, 1839: 337

*Somoleptus subtilis* (ERICHSON, 1939) in SHARP (1885: 495)

**Type material examined:** 4 syntypes: Venezuela: Aragua, coll. Moritz, 2 females, 2 males, one of the males was selected and labelled as lectotype (ZMHU).

**Additional material examined:** Honduras: 2 males, Francisco Morazán, Zamorano (14°N, 87°W), 820 m elev., fallen rotten figs, 30.6.1994, leg. Ashe, Brooks, #259 (KNHM).

**Diagnosis:** *Somolpetus subtilis* is similarly small as *S. parvulus* and *S. obsoletus*. The short size of the elytra resembles those of *S. parvulus* but they are unicoloured in *S. subtilis*, whereas they have lighter spots in *S. parvulus*. In addition, the structure of the aedeagus is totally different from that of *S. obsoletus* and *S. parvulus*. The cones are extremely long continuing into the central lobe, whereas they are much shorter and placed at the apical orifice in *S. obsoletus* and *S. parvulus*. The parameres are triangular in *S. subtilis*, but divided into two lobes with slender inner lobe in the other two species. Overall, the structure of the long cones and the specific endophallus are unique in the genus.

**Description:** Length: 3.3 mm. Colouration: Light brown; head and pronotum slightly lighter than elytra and abdomen; legs and antennae still lighter; nearly yellowish.

Head: 0.62 mm long, 0.45 mm wide; eyes large; slightly prominent; PS : E ratio 2.6; parallel; posterior angles rounded but nearly rectangular; posterior margin

slightly convex; setiferous punctation weak and sparse; on average, interstices between punctures 2 to 3 times as wide as diameter of punctures; surface without microsculpture; polished. Antennae with first antennomere distinctly longer than half-length of head; antennomere 2 and 3 triangular; nearly twice as long as their apical width; following antennomeres wider than long and increasing in width; fourth antennomere nearly quadrate; tenth antennomere 1.5 times wider than long; antennomeres 4–11 pubescent; all antennomeres with short setae. Pronotum: 0.74 mm long, 0.42 mm wide; widest closely behind anterior third; anteriorly, narrowed in smooth curve to neck; posteriorly, shortly narrowed; nearly parallel in posterior third; posterior angles obtuse; posterior margin slightly convex; setiferous punctation as weak and sparse as on head; wide midline impunctate; surface without microsculpture; polished. Elytra: 0.67 mm long, 0.62 mm wide; humeral angles nearly rectangular; sides slightly divergent to obtuse rounded posterior angles; posterior margin straight; setiferous punctation as weak and sparse as on pronotum; surface with extremely weak ground sculpture; nearly polished. Abdomen slightly denser punctate than fore-body; weak transverse microsculpture, surface shiny; male sternite VII and tergite VII without process; simply convex to nearly straight. Aedeagus oval; at apical orifice with pair of long cone-like process; increasing in width from base to apex; C : A ratio 0.47; endophallus divided into two sclerotised stripes covered by minute teeth; forming a loop of two circles; parameres triangular; not divided into two lobes; at inner edge with several cannulate sensillae; at outer edge and on basal plate more sensillae.

*Somoleptus triangulus* spec. nov.

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Figs 42a, b; 50 C

**Type material:** male, holotype: Guatemala: Zacapa, Alejandria, nr. Finca Lucas (-89.6247, 15.1349), 2122 m elev., sifted oak litter, 19.6.2015, leg. R. Anderson #GUAT1A15 155 (KNHM). Paratypes: Mexico, 1 female, Chiapas, Cerro Huitepec, ca. 5 km W San Cristobal, oak forest litter, 2700 m elev., 14.9.1992, leg. R. Anderson #92-100 (KNHM); 1 female, Chiapas, Coapilla, 7.3 km NE (93°97'W, 17°11'N), 2200 m elev., cloud forest leaf litter, Winkler trap, 12.7.2007, leg. M.G. Brandstetter #LLAM07 MGB641 (KNHM); 2 females, Guerrero, 10.3 km SW Filo de Caballo, 2700 m elev., oak/pine/fir forest leaf/log litter, 13./15.7.1992, leg. R. Anderson #92-008/002 (1 KNHM, 1 UIC).

**Diagnosis:** *Somoleptus triangulus* has short elytra and short eyes. Among the similarly large species, e.g. *S. brunneus*, *S. longiceps*, and *S. ovatus*, *S. triangulus* is conspicuous by the divergent postocular sides of the head, which is found also in *S. brunneus*. Compared to *S. brunneus*, the eyes of *S. triangulus* are still shorter. In

contrast to *S. brunneus*, the male sternite VII is prominent and not emarginate.

**Description:** Length: 4.0 mm. Colouration: Light brown; elytra, legs, and antennae lighter brown.

Head: 0.67 mm long, 0.56 mm wide; eyes short; not prominent; PS : E ratio 5.9; postocular sides divergent; posterior angles sub-rectangular; posterior margin straight; inter-antennal furrows extremely weak; setiferous punctation moderately deep and irregularly dense; on average, interstices between punctures 1–2 times as wide as diameter of punctures; on posterior vertex sparser than on anterior vertex; wide midline impunctate; surface without microsculpture; polished. Antennae with first antennomere slightly longer than half-length of head; second and third antennomere longer than wide; second 1.5 times as long as third; antennomeres 4 to 10 wider than long and increasing in width; fourth antennomere twice as wide as long; tenth antennomere 2.2 times as wide as long; antennomeres 4 to 11 pubescent. Pronotum: 0.83 mm long, 0.54 mm wide; widest shortly behind anterior third; anteriorly narrowed in smooth curve; sides in posterior half nearly parallel; posterior angles sub-rectangular; posterior margin nearly straight; setiferous punctation as dense and deep as on head; wide midline impunctate; irregular line of punctures adjacent to midline with approximately 16–17 punctures; surface without microsculpture; polished. Elytra: 0.55 mm long, 0.61 mm wide; humeral angles absent; sides posteriorly slightly divergent; posterior angles rectangular; posterior margin triangularly retreated to suture; setiferous punctation as deep but slightly denser than on pronotum; on average, interstices between punctures as wide as diameter of punctures; surface without microsculpture; shiny. Abdomen with setiferous punctation as dense as on elytra but less deep; with weak transversely reticular microsculpture; shiny; posterior margin of male sternite VII triangularly prominent; posterior margin of male tergite VII straight (similar as in Figs 21c, d). Aedeagus oval with anterior angles sub-rectangular; C : A ratio 0.19; endophallus with long sclerotised spines at base; anteriorly more transparent and without teeth or spines; parameres nearly twice as long as cones; divided into two lobes; outer lobe plate-like; inner lobe slender; nearly twice as long as outer lobe; with row of few setae at inner edge; another row of four setae near base.

**Etymology:** The species name is derived from the same Latin word (meaning triangle) and refers to the triangular shape of the head.

*Somoleptus tschirnhausi* spec. nov.

urn:lsid:zoobank.org:act:6E414D13-7488-4C5F-83A7-B5C3C54E015B

Figs 45a–d; 46 A

**Type material:** male, holotype: Venezuela: Maracay, Pitter Nacional Park, 10.7.1995, leg. M. v. Tschirnhaus (UIC).



Paratypes: Panama: 1 female Panama Prov., El-Llano-Cani Rd., km 7.5, 350 m elev., flight intercept trap, 5.6.1995, leg. A.R. Gillogly (KNHM); 1 ? (abdomen lost) San Blas, Nusagandi Reserve (78°59'W, 9°21'N), 350 m elev., flower fall litter, 16.5.1995, leg. J. & A. Ashe #009 (KNHM); Venezuela: 2 males, 8 females, Aragua, Rancho Grande Biological Station (10°21'N, 67°41'W), 1150 m, 1200 m, 1250 m, 1450 m elev., montane forest litter, 12.5.1998, leg. R. Anderson, #VEN1A98 003B (9 KNHM, 1 UIC); 1 female, same region, 1550 m elev. (10°21.38'N, 67°41.38'W), flight intercept trap, 12.-14.5.1998, leg. J. Ashe, R. Brooks, R. Hanley, #VEN1ABH98 029 (KNHM); 6 females, Trujillo, Paramo La Cristalina, Old Trujillo Rd. km 9.7 (9°21.21'N, 70°17.51'W), elfin forest litter, 20.5.1998, leg. R. Anderson, #VEN1A98 0022B (KNHM); 1 female, Merida, Laguna Negra, Sierra Nevada Natl. Park (8°47.14'N, 70°48.31'W), 3300 m elev., elfin forest litter, 23.5.1998, leg. R. Anderson, #VEN1A98 028A (KNHM); 1 female, Paramo de Mucuchies, Alto de Timotes (8°51.24'N, 70°49.3'W), 4020 m elev., dead leaves, 23.5.1998, leg. R. Anderson, #VEN1A98 029 (KNHM).

**Diagnosis:** Among the large species of  $\geq 6$  mm length with long elytra, *S. tschirnhausi* is characterised by the absence of distinct posterior angles of the head. Moreover, the parameres of the aedeagus differ by the more elongate shape from the similarly large *S. elongatus* with sub-rectangular posterior angles of the head. In *S. elongatus*, the parameres are much broader and plate-like.

**Description:** Length: 6.0 mm. Colouration: Black; elytra dark brown; indistinctly lightened at base; with small yellow spot at posterior angles; legs and antennae light brown; last antennomere with yellow apex.

Head: 0.78 mm long, 0.54 mm wide; eyes moderately large; not prominent; PS : E ratio 3.2; shape approximately oval; postocular sides slightly divergent; posterior angles widely rounded; interantennal furrows deep; reaching mid of eyes; setiferous punctation irregularly distinct and sparse; on average, interstices

between setiferous punctures 3 to 4 times as wide as diameter of punctures; vertex with impunctate midline; surface without microsculpture; shiny. Antennae first antennomere half-length of head; antennomere 2 and 3 conical; elongate; following antennomeres transverse; second and third antennomere each as long as fourth and fifth antennomere combined; antennomere 10 twice as wide as long; antennomeres 4–11 pubescent; antennomeres 4 to 10 with apical crown of short setae. Pronotum: 0.83 mm long, 0.54 mm wide; widest in anterior third; anteriorly, convergent to neck in smooth curve; sides in posterior third approximately parallel; posterior angles obtusely rounded; punctation moderately dense and deep; narrow midline impunctate; irregular line of punctures adjacent to smooth midline with 12 to 14 punctures; along sides several setiferous punctures; between normal punctation with weak micro-punctures; surface slightly matt. Elytra: 0.76 mm long, 0.71 mm wide; widest at posterior angles; posterior angles sub-rectangular; humeral angles distinct; sides slightly divergent to posterior angles; posterior margin retreated to suture; punctation distinctly deeper and denser than on head and pronotum; in parts nearly coriaceous; on average, interstices between puncture as wide as or shorter than diameter of punctures; between large punctures with weak micro-punctures; surface slightly matt. Abdomen densely covered by setiferous punctation; male sternite VII with minute triangular incision at posterior margin; posterior margin of male tergite VII straight. Mesotibia with 4, metatibia with 3 subapical ctenidia. Aedeagus oval with sub-rectangular anterior angles; cones at apical orifice short; C : A ratio 0.11; endophallus with two strings of large teeth; like a zip-fastener; combined to a wide stripe covered by knobs; twisted posteriorly and bent back to front; parameres triangular; elongate; covered by several sensillae.

**Etymology:** The species is named in honour of its collector, Michael v. Tschirnhaus, who sampled it on his trip to Venezuela.

### Key to species

1. Elytra shorter than wide, length : width ratio maximum 0.94, eyes shorter, PS : E ratio minimum 4.0 ..... 2
  - Elytra longer than wide or at least nearly quadrate, length : width ratio minimum 0.97, eyes longer; PS : E ratio maximum 4.6 ..... 12
2. Large species of minimum 6.0 mm length, aedeagus with transparent endophallus ..... 3
  - Smaller species of maximum 5.2 mm length ..... 5
3. Eyes extremely short, postocular sides 7–10 times longer than eyes; endophallus sclerotized . *S. andersoni* spec. nov.
  - Eyes larger; postocular sides approximately 5 times longer than eyes; endophallus totally transparent ..... 4
4. Aedeagus larger, with short central tooth at apical orifice, in dorsal aspect cones not covered by apical orifice, parameres relatively shorter, one fourth as long as total length of aedeagus ..... *S. admirabilis* spec. nov.

- Aedeagus smaller, without central tooth at apical orifice, cones covered by large apical orifice; parameres relatively longer, two third as long as total length of aedeagus ..... *S. curtulus* spec. nov.
- 5. Eyes extremely short, PS : E ratio at least 5.0, colouration brown ..... 6
- Eyes longer, PS : E ratio shorter than 5.0 colouration black or dark brown ..... 9
- 6. Head slightly divergent posteriad; cones at apical orifice of aedeagus shorter; C : A ratio maximum 0.2 ..... 7
- Head nearly parallel or oval with semi-circular posterior part; C : A ratio at least 0.22 ..... 8
- 7. Eyes slightly larger; PS : E ratio 5.0; posterior margin of male sternite VII triangularly emarginate .....  
..... *S. brunneus* spec. nov.
- Eyes slightly shorter; PS : E ratio 5.9; posterior margin of male sternite VII triangularly prominent .....  
..... *S. triangulus* spec. nov.
- 8. Head parallel; only very slightly curved; cones at apical orifice long; C : A ratio 0.33; posterior margin of male sternite VII triangularly prominent ..... *S. longiceps* spec. nov.
- Head oval with semi-circular posterior part; cones at apical orifice of aedeagus shorter; C : ratio 0.22 .....  
..... *S. ovatus* spec. nov.
- 9. Smaller species of maximum 4.6 mm length, postocular sides parallel ..... 10
- Larger species of at least 5.2 mm length, postocular sides of head slightly divergent ..... *S. curtipennis* spec. nov.
- 10. Smaller, 3.9 mm long, dark brown, cones at apical orifice of aedeagus longer, C : A ratio 0.19 .....  
..... *S. brevipennis* nov. spec.
- Larger, 4.3 to 4.6 mm long; cones at apical orifice much shorter, C : A ratio maximum 0.1 ..... 11
- 11. Smaller, 4.3 mm long; head and pronotum light reddish; cones extremely short; C : A = 0.04 .....  
..... *S. brevisculus* nov. spec.
- Larger, 4.6 mm long, black, cones larger; C : A ratio 0.10 ..... *S. alticola* SHARP, 1885
- 12. Large species of at least 6.0 mm length ..... 13
- Smaller species of maximum 5.6 mm length ..... 18
- 13. Elytra quadrate; without humeral angles, eyes short, PS : E ratio between 6 and 8 ..... 14
- Elytra longer than wide; humeral angles present; eyes longer; PS : E ratio 2.4–4.1 ..... 15
- 14. Eyes shorter; PS : E ratio 7.7; elytra slightly shorter than long, length : width ratio 0.97, pronotum 1.6 times longer than elytra ..... *S. strigulata* (BLACKWELDER, 1943)
- Eyes longer; PS : E ratio 5.9; elytra slightly longer; length : width ratio 0.99; pronotum shorter, 1.4 times as long as elytra ..... *S. montanus* spec. nov.
- 15. Head densely punctate; interstices between punctures less than half as wide as diameter of punctures; postocular sides slightly divergent ..... *S. gigas* spec. nov.
- Head more sparsely punctate; interstices between punctures at least as wide as diameter of punctures; postocular sides parallel ..... 16
- 16. Eyes prominent; head egg-shaped with elongate semi-circular posterior part ..... *S. maximus* spec. nov.
- Eyes not prominent; head with sub-rectangular posterior angles or shortly semi-circular shape ..... 17
- 17. Posterior angles of head sub-rectangular, without interantennal furrows; parameres of aedeagus broad, cones at apical orifice triangular ..... *S. elongatus* spec. nov.
- Posterior angles of head indistinct; posterior part shortly semi-rectangular, parameres slenderer, cones at apical orifice extremely short; not triangular. .... *S. tschirnhausi* spec. nov.
- 18. Smaller, distinctly shorter than 4.0 mm ..... 19
- Larger, between 4.0 mm and 5.6 mm length ..... 24

|   |  |
|---|--|
| 19. Head pentagonal; behind eyes convergent; eyes distinctly prominent .....  | <i>S. oculatus</i> spec. nov.          |
| – Postocular sides parallel or only slightly triangular, posterior angles more widely rounded, semi-circular; eyes not or very slightly prominent .....   | 20                                     |
| 20. Eyes relatively short, PS : E ratio 4.1, pronotum longer than elytra, colouration black .....   | <i>S. pecki</i> spec. nov.             |
| – Eyes longer, elytra as long as pronotum, at least pronotum lighter brown .....  | 21                                     |
| 21. Eyes large; prominent, postocular side 2.5 times as long as eyes; cones at apical orifice long, most part within central lobe .....   | <i>S. subtilis</i> (ERICHSON 1839)     |
| – Eyes shorter, PS : E ratio minimum 2.9, cones at apical orifice outside central lobe .....  | 22                                     |
| 22. Head without sub-rectangular angles; angles combined with posterior margin semi-circular, 3.8 mm long .....   | <i>S. obsoletus</i> SHARP, 1885        |
| – Head with sub-rectangular angles .....  | 23                                     |
| 23. Larger, 3.7 mm long, elytra as long as pronotum, punctures deeper .....   | <i>S. punctulatus</i> SHARP, 1885      |
| – Smaller, 3.2–3.3 mm long, pronotum longer than elytra, punctation finer .....   | <i>S. parvulus</i> SHARP, 1885         |
| 24. Eyes short, PS : E ratio at least 4.6 .....   | 25                                     |
| – Eyes larger, PS : E ratio maximum 4.0 .....   | 26                                     |
| 25. Postocular sides parallel, elytra totally light brown, posterior margin of male sternite VII straight, cones at apical orifice long, nearly half as long as total length of aedeagus (C : A ratio 0.45) ..... | <i>S. columbicus</i> BERNHAUER, 1915   |
| – Postocular sides divergent, elytra dark with light brown base, posterior margin of male sternite VII triangularly prominent, cones at apical orifice of aedeagus minute, C : A ratio 0.08 .....                 | <i>S. cavicola</i> (BLACKWELDER, 1943) |
| 26. Unicoloured, black, or dark brown .....   | 29                                     |
| – Bicoloured, at least pronotum light yellow or yellow-brown, elytra black or darker brown .....  | 27                                     |
| 27. Totally yellow-brown with elytra slightly darker, cones at apical orifice of aedeagus short, posterior margin of sternite VII of male triangularly prominent, paramere bilobed with slender inner lobe .....  | <i>S. longicollis</i> (LECONTE, 1863)  |
| – Pronotum yellow, head and elytra darker blackish or black, cones at apical orifice much longer, posterior margin of male sternite VII straight, paramere not bilobed .....                                      | 28                                     |
| 28. Pronotum light yellow, postocular sides long, PS : E ratio 3.2, parameres extremely long, nearly as long as total length of aedeagus .....  | <i>S. laevis</i> BERNHAUER, 1908       |
| – Pronotum yellow-brown, postocular sides shorter, 2.5 times as long as eyes, parameres shorter, triangular .....   | <i>S. pulcher</i> BERNHAUER, 1935      |
| 29. Eyes large, prominent, PS : E ratio 2.4 to 2.8 .....  | 30                                     |
| – Eyes relatively smaller, PS : E ratio 3.3 to 4.3 .....  | 39                                     |
| 30. Head elongate; length : width ratio 1.4 .....   | <i>S. agraeformis</i> SHARP, 1885      |
| – Head shorter; length : width ratio maximum 1.33 .....   | 31                                     |
| 31. Smaller, 4.0–4.2 mm long .....  | 32                                     |
| – Larger species of minimum 4.4 mm .....  | 33                                     |
| 32. Totally dark brown; posterior margin of male sternite VII triangularly prominent, paramere bilobed with slender inner lobe .....  | <i>S. sparsus</i> SHARP, 1885          |
| – Elytra lighter brown with posterior angles of nearly yellow, margin of male sternite VII with triangular emargination combined with pair of long processes .....  | <i>S. nitidus</i> (SHARP, 1876)        |
| 33. Larger, 5.2 mm .....  | 34                                     |
| – Smaller than 5.0 mm .....   | 35                                     |

34. Postocular sides parallel; posterior margin of male sternite VII semi-circular, parameres not bi-lobed, triangular ..... *S. recurvatus* spec. nov.
- Postocular sides divergent; posterior margin of male sternite VII straight, parameres bilobed, elongate ..... *S. lorentensis* spec. nov.
35. Head densely punctate, interstices between punctures approximately as wide as diameter of punctures, posterior margin of male sternite VII semi-circular or with short triangular acute prominence ..... 36
- Head sparsely and finely punctate, interstices between punctures at least twice as wide as diameter of punctures, posterior margin of male sternite VII straight ..... 37
36. Head egg shaped, posteriorly divergent, posterior margin of male sternite VII with triangular acute prominence ..... *S. obscurus* SHARP, 1885
- Head parallel or slightly convergent posteriorly, posterior margin of male sternite VII semi-circular ..... *S. humicola* spec. nov.
37. Smaller 4.3 mm long, postocular sides slightly divergent; posterior margin of male sternite VII straight ..... *S. beniensis* spec. nov.
- Larger, at least 4.6 mm long; postocular sides parallel ..... 38
38. Larger, 4.9 mm long, eyes larger and prominent; PS : E ratio 2.4; cones at apical orifice of aedeagus shorter; C : A ratio 0.19 ..... *S. struyvei* spec. nov.
- Smaller, 4.6 mm long; eyes shorter and not prominent; PS : E ratio 3.0; cones at apical orifice of aedeagus longer; C : A ratio 0.29 ..... *S. peruanus* spec. nov.
39. Head distinctly triangular, close to neck, 1.2 times wider as at eyes, punctation of head deep and dense ..... *S. mexicanus* spec. nov.
- Head parallel or oval ..... 40
40. Postocular sides curved, totally black, C : A ratio 0.29 ..... *S. melanarius* spec. nov.
- Head approximately parallel or with semi-circular posterior part ..... 41
41. Metatarsi long, nearly as long as metatibia ..... *S. pallipes* SHARP, 1885
- Metatarsi shorter, not nearly as long as metatibia ..... 42
42. Smaller species of 4.6 mm length; elytra slightly longer than wide; with weak microsculpture; matt; posterior margin of male sternite VII with broad triangular prominence ..... *S. grandiconus* spec. nov.
- Large species of more than 5 mm length, elytra without microsculpture, shiny ..... 43
43. Smaller, 5.1 mm; paramere of aedeagus elongate, divided into two lobes, sides of head slightly convexly curved, posterior margin of male sternite VII triangularly prominent, cones small, C : A ratio 0.18 ..... *S. ashei* spec. nov.
- Larger, 5.5 mm long, parameres not divided into two lobes, posterior margin of male sternite VII emarginate ..... 44
44. Postocular sides parallel, ventral cover of aedeagus oval, parameres shorter, triangular ..... *S. aenescens* SHARP, 1885
- Sides of head behind eyes slightly divergent; ventral cover of aedeagus circular, parameres longer, hook-like ..... *S. brooksi* spec. nov.

## Discussion

According to HERMAN (2001), 22 species of the genus *Somoleptus* are known from the Neotropical and Oriental region. Regarding the new combinations listed in IRMLER (2021) and given here, at present, 45 species of the genus *Somoleptus* are known from the Neotropical region. According to the rarefaction analysis with the 45 species,

only few additional species can be expected, because the individual/species curve approach a steady state (Fig. 51a). The chao-1 analysis estimates the number of species between 46 and 56 species for the Neotropical region. Most of the species are restricted to Central America. In total, 31 species were recorded from Central



America and 24 species (77 %) were restricted to this region. In contrast, only 19 species were recorded from South America with 12 species (63 %) restricted to this region. Thus, the diversity centre of the genus lies in Central America. *Somoleptus strigulata* is the only species found on a West Indian island. No records are known from any other island except Trinidad, which is extremely close to the South American mainland.

The species (except few species known only from female specimens) can be roughly assigned into two large groups due to the structure of the parameres, the male sternite and tergite VII, and the cones at the apical orifice of the aedeagus. These two groups are the laevis-group and the longicollis-group. Regarding the laevis-group with 20 species, in total, 36 records were found in South America, whereas only 18 records are located in Central America. In contrast, the 26 species of the longicollis-group occur in Central America with 73 records and only 9 records in South America. However, few intermediate species exist, where the characters of both groups are mixed. Regarding the structure of the parameres and the male sternites and tergites, the variability is much higher in the laevis-group.

Among both groups, subgroups with certainly closer relation are found: 1) the aenescens-subgroup with the species *S. aenescens* SHARP, 1885, *S. beniensis* spec. nov., *S. pulcher* BERNHAUER, 1935, and *S. recurvatus* spec. nov. These species have a very similarly structured cone at the apical orifice of the aedeagus (see Fig. 1d), significantly different from all other species of the genus. The four species have 8 records in Central America and 11 records in South America (Fig. 51b). Three species of the subgroup were only recorded from South America, whereas *S. aenescens* mainly occurs in Central America with only one record from the South American country Ecuador. Thus, the species of this subgroup seem to have their centre in South America but spread to Central America. The two closely related sister-species of the admirabilis-subgroup characterised by absent sclerotised endophallus and cone-like processes at apical orifice of the aedeagus only occurs in southern Central America. They are endemic in the high mountain cloud forests between 1500 and 2500 m elevation of the Talamanca-Chiriqui region of Costa Rica and Panama (Fig. 51c). The closer related four species, *S. peruanus*, *S. montanus*, *S. brevisculus*, and *S. struyvei*, occur from northern South America to Central America with widely separated endemic incidences (Fig. 51c, d). *Somoleptus brevisculus* and *S. montanus* are additionally characterised by the absence of hind wings and short elytra. They occur in restricted mountain regions at more than 2500 m elevation, while *S. struyvei* is restricted to the Guyana region with a high percentage of endemic species (IRMLER & ASENJO 2018) and *S. peruanus* to the western Andean slope in northern Peru and Ecuador. In the large area of the lowland Amazonian rainforest, only two species seem to exist: *S. nitidus* and *S. recurvatus*.

Thus, compared to other regions of the Neotropics, the lowland rainforest seems to be species-poor.

The longicollis- and alticola-subgroups are mainly restricted to Central America. Only *S. obscurus*, *S. obsoletus*, and *S. columbicus* from the longicollis-subgroup were also recorded from adjacent South-American regions in Columbia and Venezuela. The species of the longicollis-subgroup are mainly distributed in northern Central America (Mexico, Guatemala) with *S. longicollis* widely distributed in North America.

None of the *Somoleptus* species is distributed throughout whole Central and South America as in other staphylinid groups (IRMLER & ASENJO 2018). Many species have reduced elytra and are restricted to high mountain regions. This is not only true for the three species *S. brevisculus* and *S. montanus* or the admirabilis-subgroup, but also for numerous other species: *S. alticola*, *S. andersoni*, *S. brevipennis*, *S. brunneus*, *S. columbicus*, *S. curtipennis*, *S. longiceps*, *S. ovatus*, *S. strigulata*, and *S. triangulus*. All these species are not only characterised by short elytra, but also by reduced eyes. Many of them also have an endemic distribution restricted to small mountain regions at high elevations, e.g., *S. brevipennis* and *S. brunneus*. In conclusion, the genus *Somoleptus* has a high number of endemic species, mostly in high mountain regions. The cause for this high endemism might be the soil dwelling life-form. Nearly all species were found in the litter layer or similar habitats of forests. Nothing is known about the soil depth, where the species were collected. It is known from other species of staphylinids that the soil dwelling living in mountain regions is a precondition for an endemic distribution.

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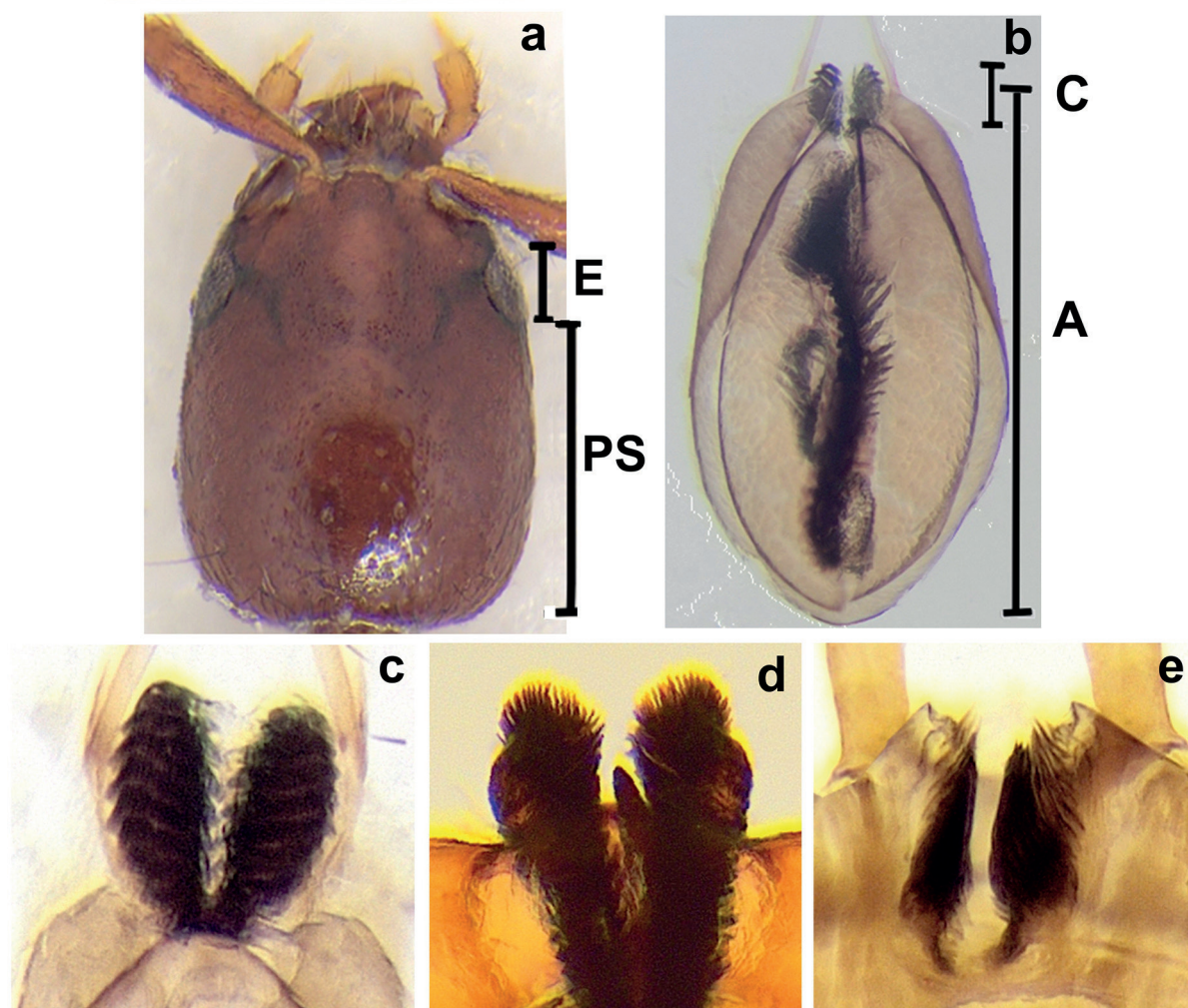


Fig. 1: (a) Ratios at head used (*S. longicollis*): Length of eyes (E) versus length of postocular sides (PS); (b) length of process at apical orifice of aedeagus (C) versus length of central lobe of aedeagus (A); structure of process at apical orifice: type in longicollis-group (c), type in aenescens-subgroup (d), type in struyvei-subgroup (e).



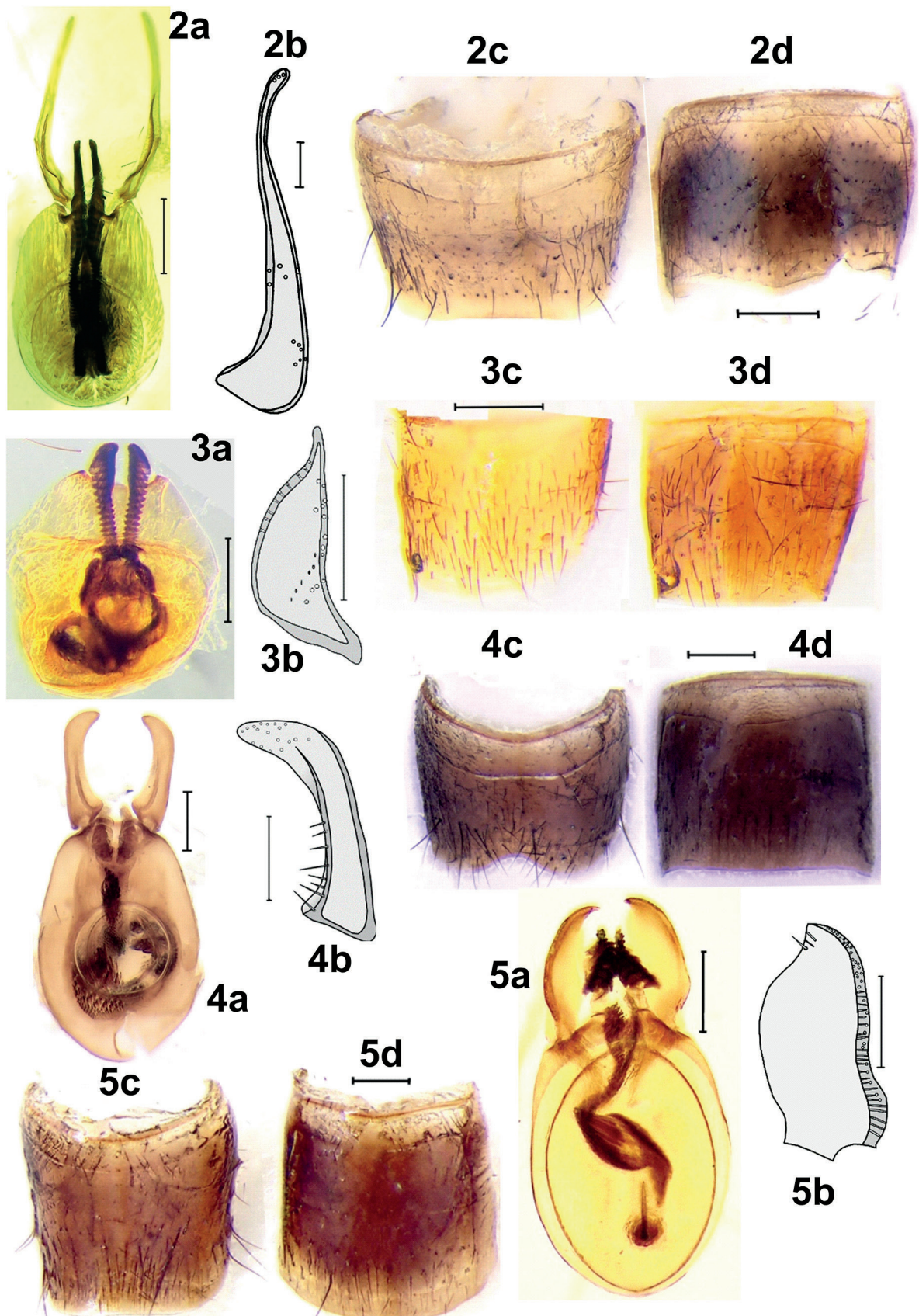


Fig. 2–5: *Somoleptus laevis* (2), *S. subtilis* (3), *S. brooksi* (4), *S. elongatulus* (5), aedeagus (a), paramere (b), sternite VII of male (c), tergite VII of male (d); scale bars: a, c, d = 0.2 mm; b: 0.1 mm.



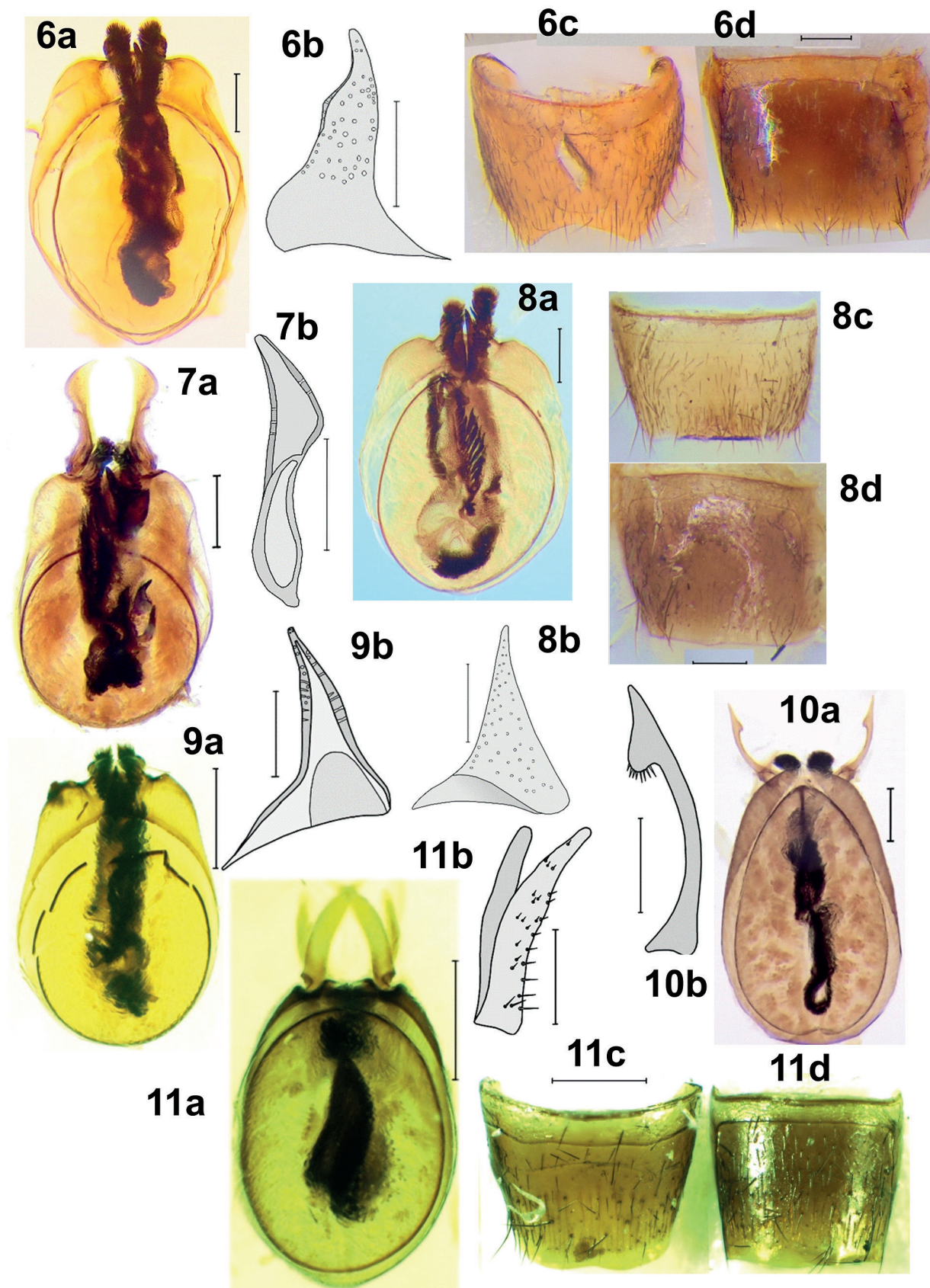


Fig. 6–11: *Somoleptus aenescens* (6), *S. beniensis* (7), *S. pulcher* (8), *S. recurvatus* (9), *S. andersoni* (10), *S. lorentensis* (11); aedeagus (a), paramere (b), sternite VII of male (c), tergite VII of male (d); scale bars: a, c, d = 0.2 mm; b: 0.1 mm.



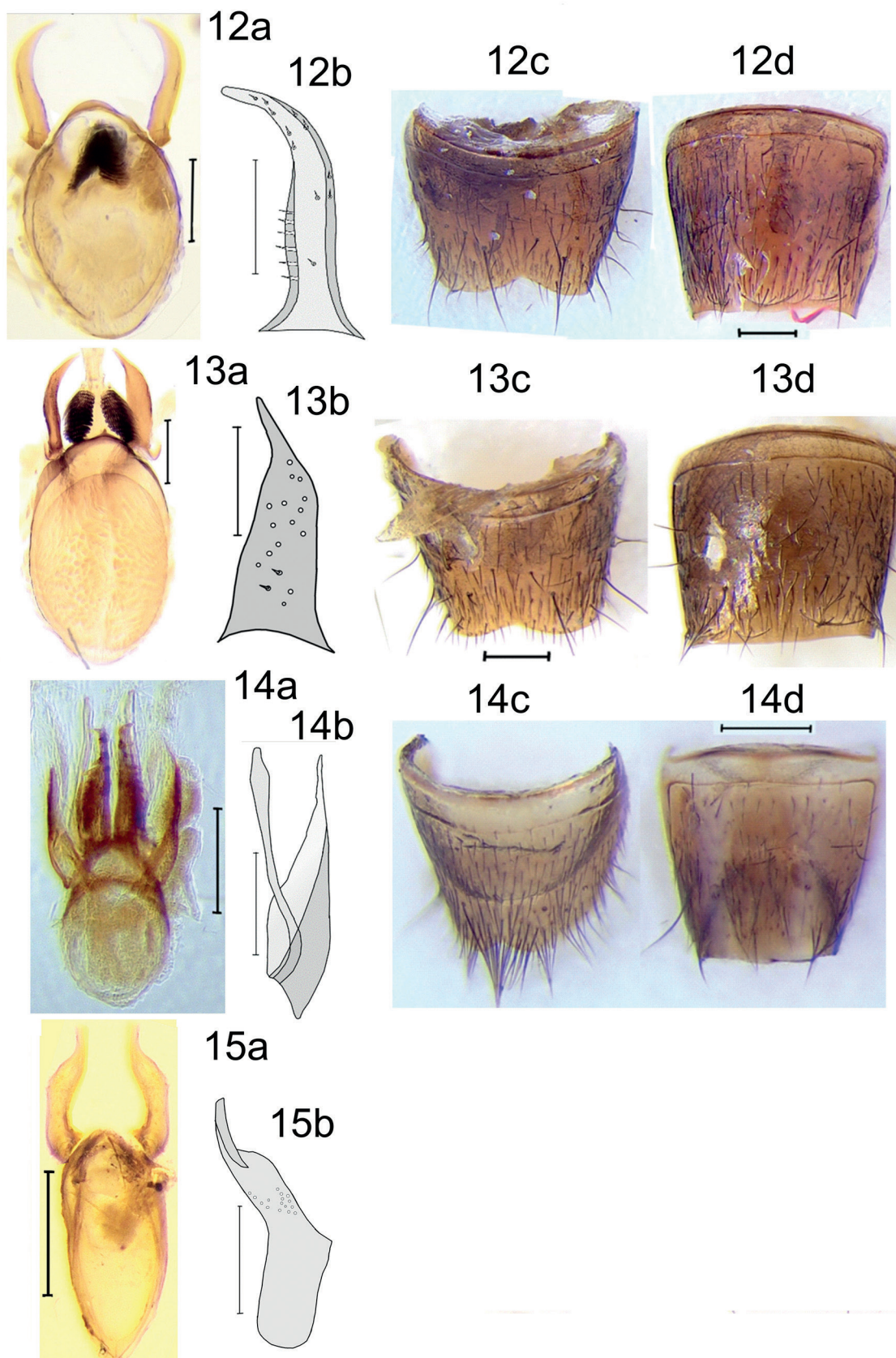


Fig. 12–15: *Somoleptus curtulus* (12), *S. admirabilis* (13), *S. agraeformis* (14), *S. nitidus* (15), aedeagus (a), paramere (b), sternite VII of male (c), tergite VII of male (d); scale bars: a, c, d = 0.2 mm; b: 0.1 mm.

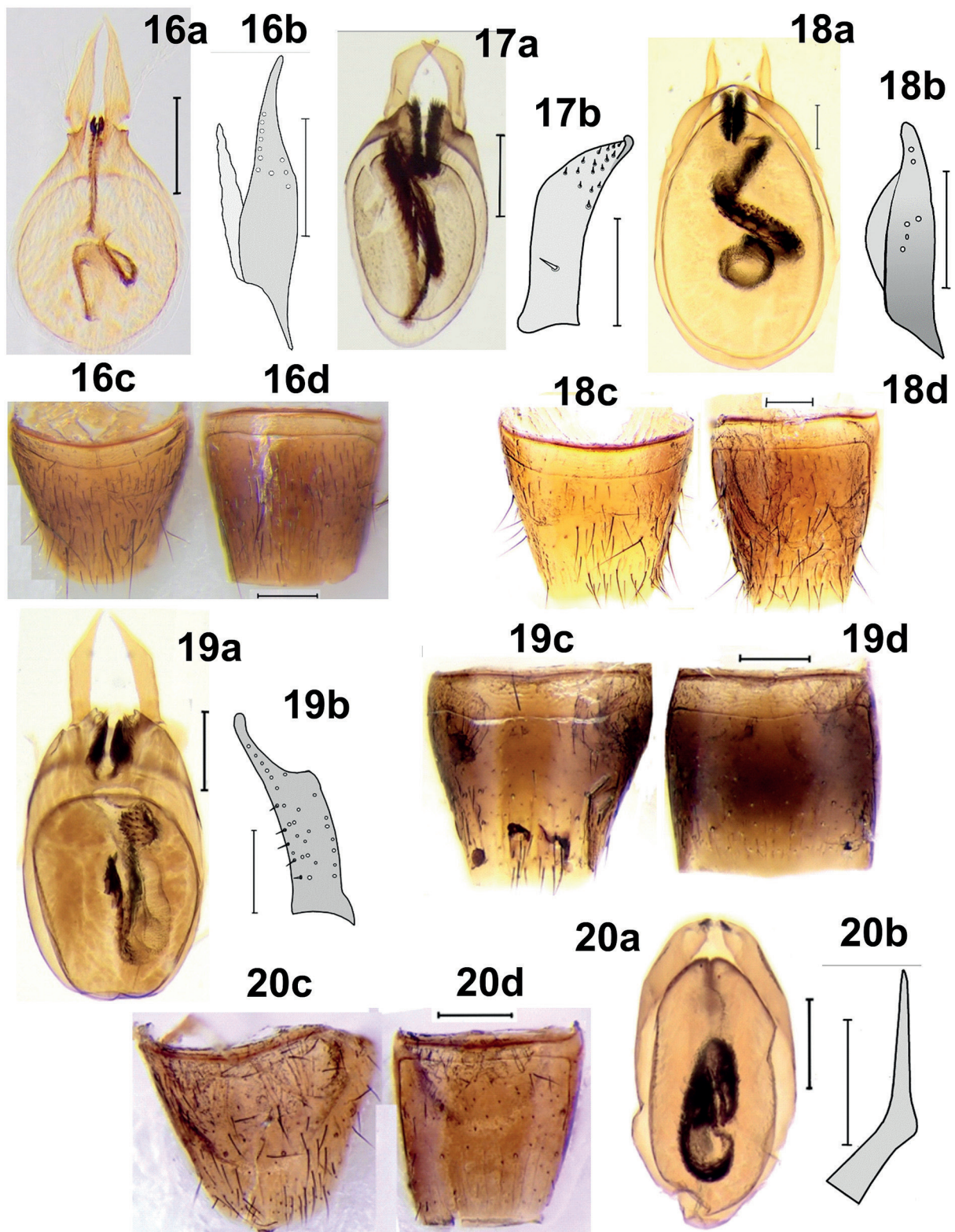


Fig. 16–20: *Somoleptus cavicola* (16), *S. peruanus* (17), *S. montanus* (18), *S. struyvei* (19), *S. brevisculus* (20); aedeagus (a), paramere (b), sternite VII of male (c), tergite VII of male (d); scale bars: a, c, d = 0.2 mm; b: 0.1 mm.



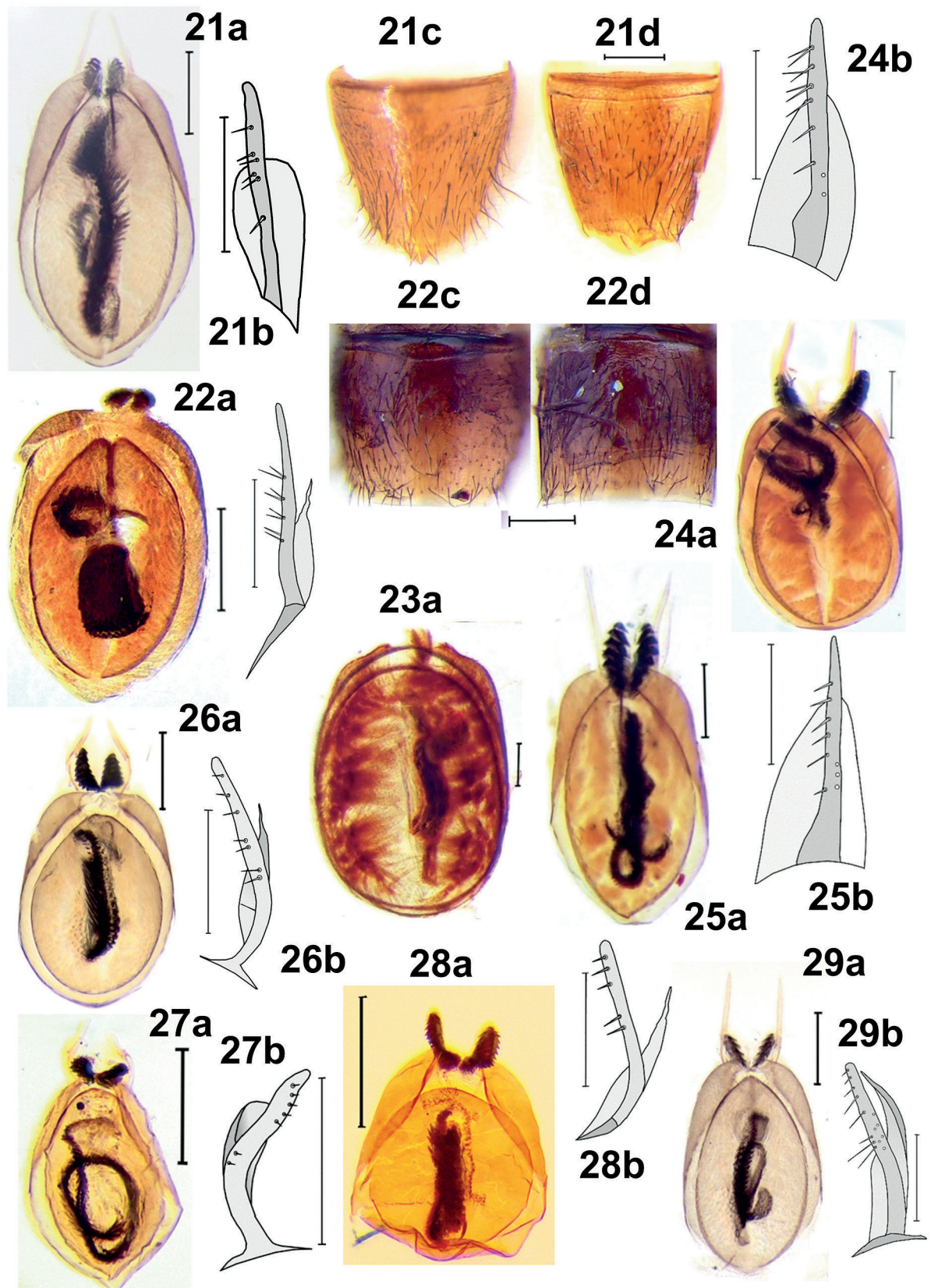


Fig. 21–29: *Somoleptus longicollis* (21), *S. alticola* (22), *S. maximus* (23), *S. mexicanus* (24), *S. pecki* (25), *S. parvulus* (26), *S. punctulatus* (27), *S. obsoletus* (28), *S. obscurus* (29); aedeagus (a), paramere (b), sternite VII of male (c), tergite VII of male (d); scale bars: a, c, d = 0.2 mm; b = 0.1 mm.



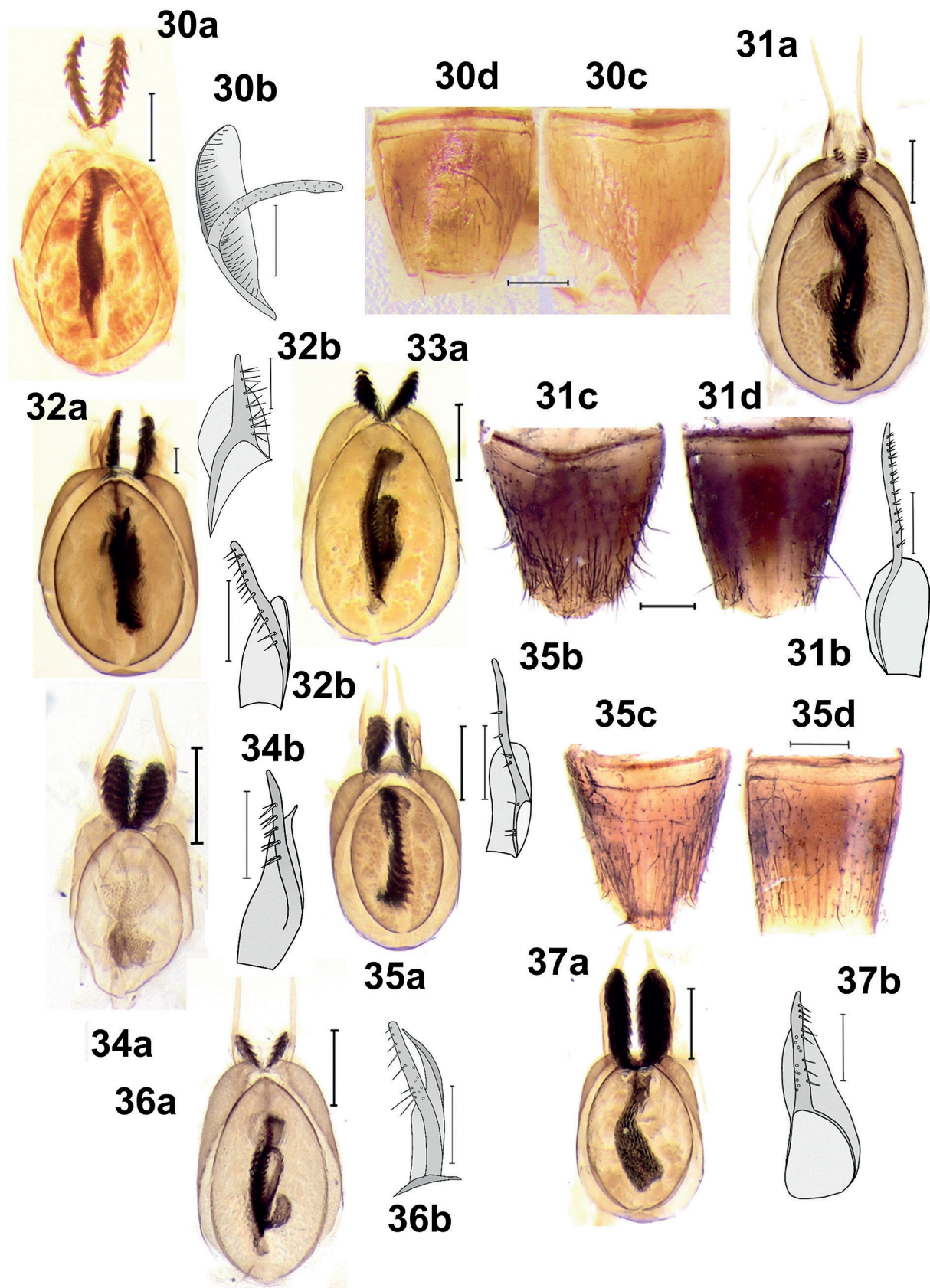


Fig. 30–37: *Somoleptus columbicus* (30), *S. curtipennis* (31), *S. gigas* (32), *S. sparsus* (33), *S. oculatus* (34), *S. melanarius* (35), *S. obscurus* (36), *S. grandiconus* (37); aedeagus (a), paramere (b), sternite VII of male (c), tergite VII of male (d); scale bars: a, c, d = 0.2 mm; b: 0.1 mm.



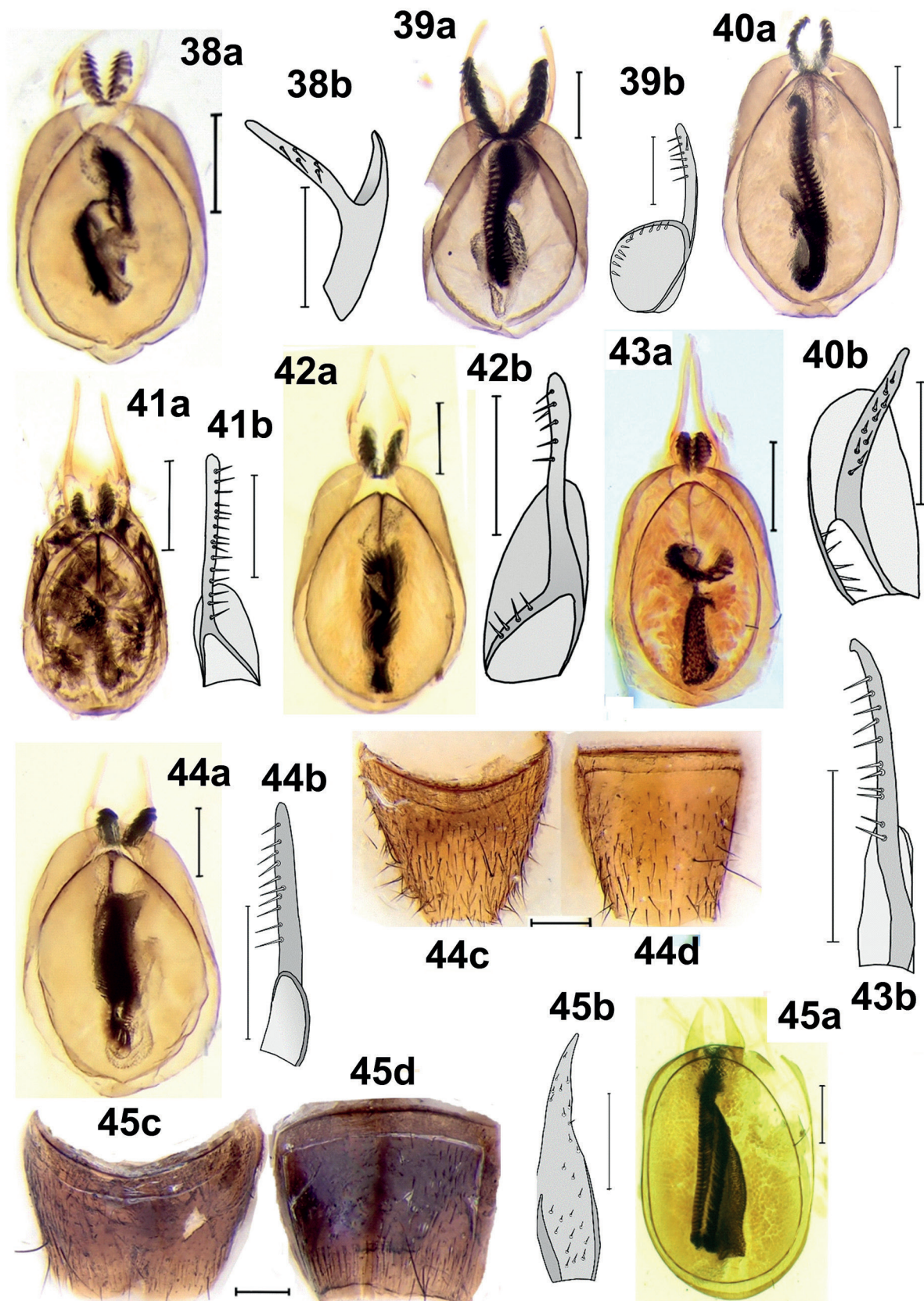


Fig. 38–45: *Somoleptus brevipennis* (38) *S. longiceps* (39), *S. ovatus* (40), *S. humicola* (41), *S. triangulus* (42), *S. ashei* (43), *S. brunneus* (44); *S. tschirnhausi* (45); aedeagus (a), paramere (b), sternite VII of male (c), tergite VII of male (d); scale bars: a, c, d = 0.2 mm; b: 0.1 mm.



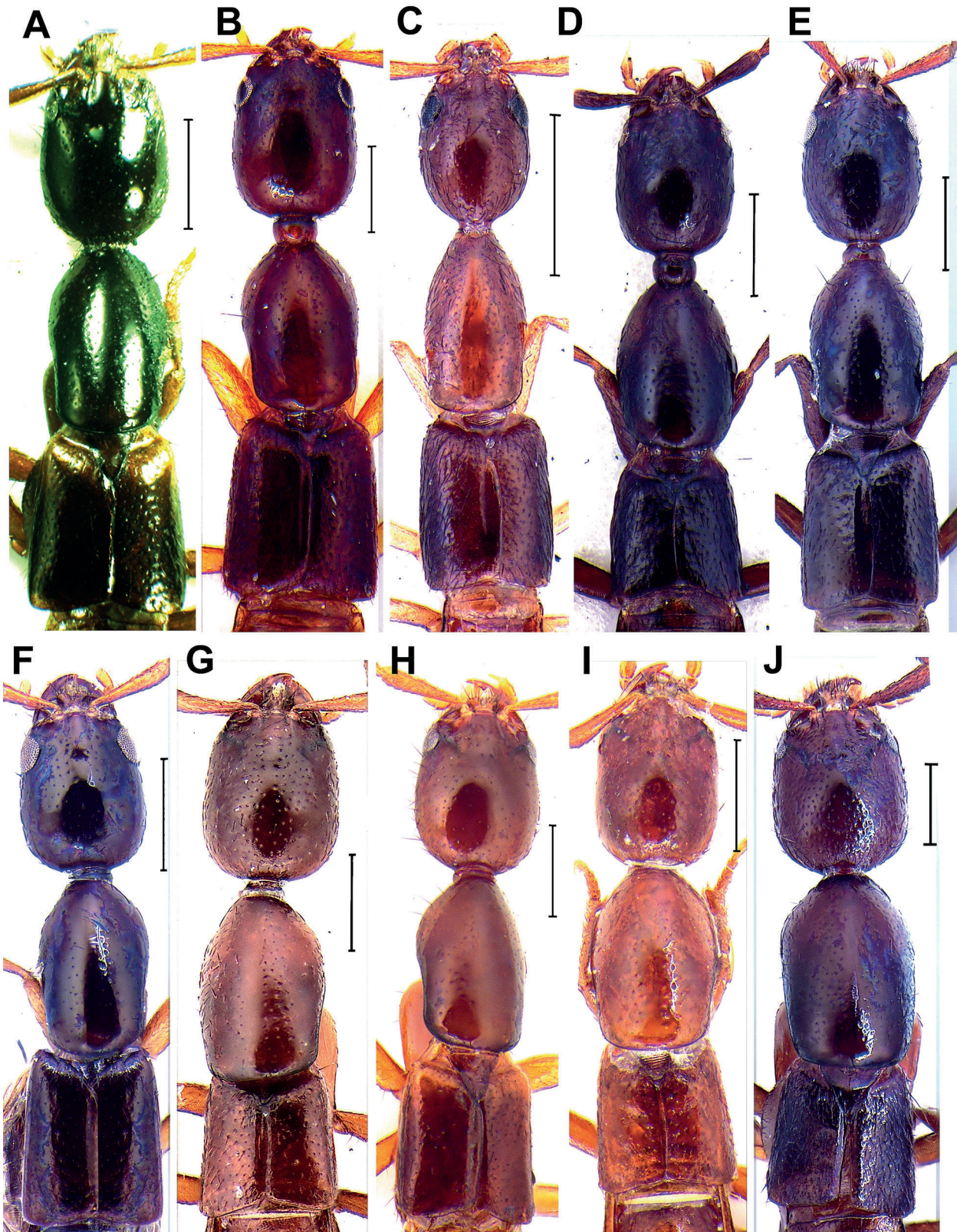


Fig. 46: *Somoleptus tschirnhausi* (A), *S. aenescens* (B); *S. agraeformis* (C); *S. alticola* (D); *S. ashei* (E); *S. beniensis* (F), *S. brunneus* (G), *S. cavicola* (H), *S. columbicus* (I), *S. curtulus* (J); scale bars: 0.5 mm.



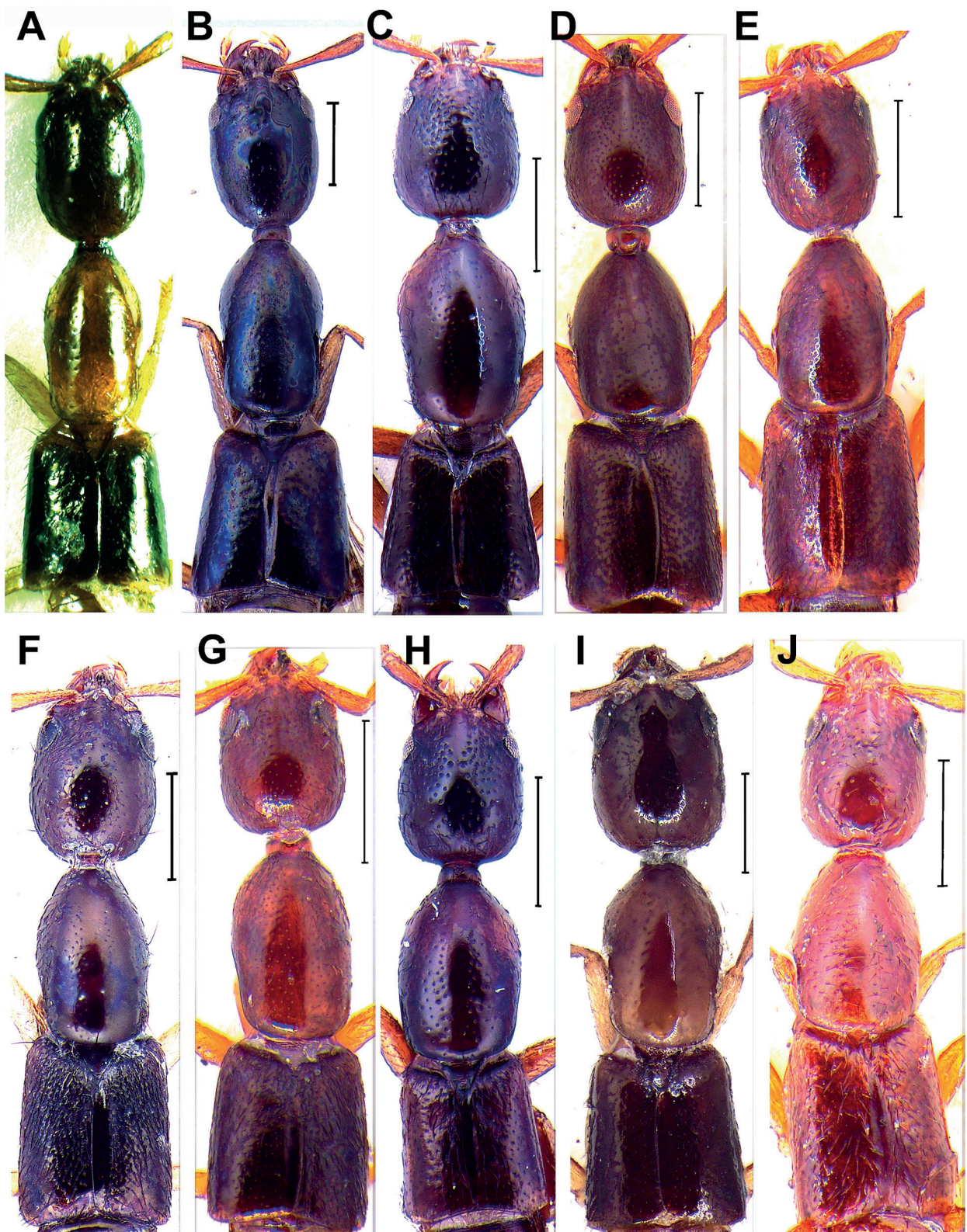


Fig. 47: *Somoleptus laevis* (A), *S. maximus* (B); *S. mexicanus* (C); *S. obscurus* (D); *S. obsoletus* (E); *S. pallipes* (F), *S. parvulus* (G), *S. pecki* (H), *S. pulcher* (I), *S. punctulatus* (J); scale bars: 0.5 mm.



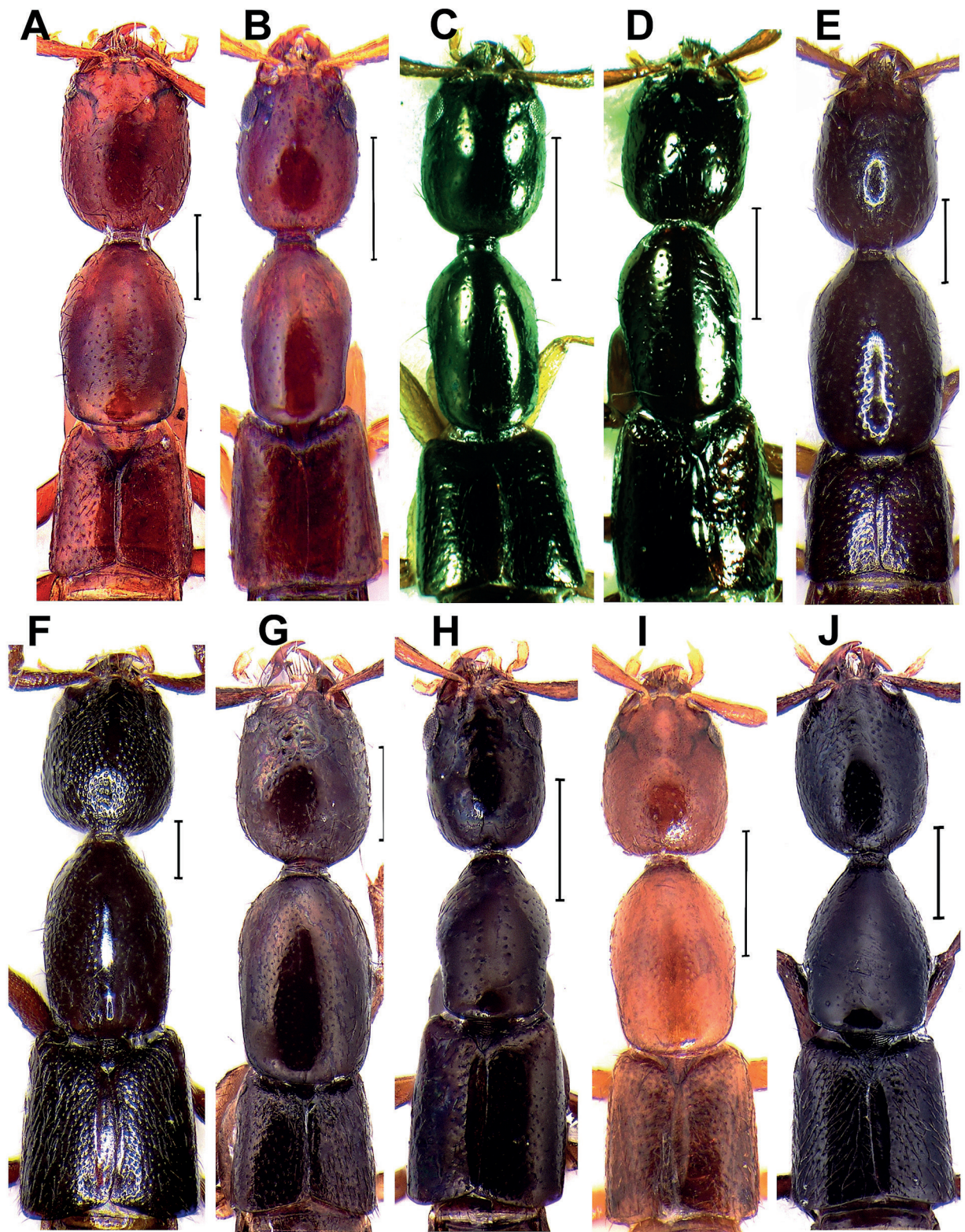


Fig. 48: *Somoleptus strigulata* (A), *S. subtilis* (B); *S. recurvatus* (C); *S. elongatulus* (D); *S. curtipennis* (E); *S. gigas* (F), *S. admirabilis* (G), *S. sparsus* (H), *S. longicollis* (I), *S. melanarius* (J); scale bars: 0.5 mm.



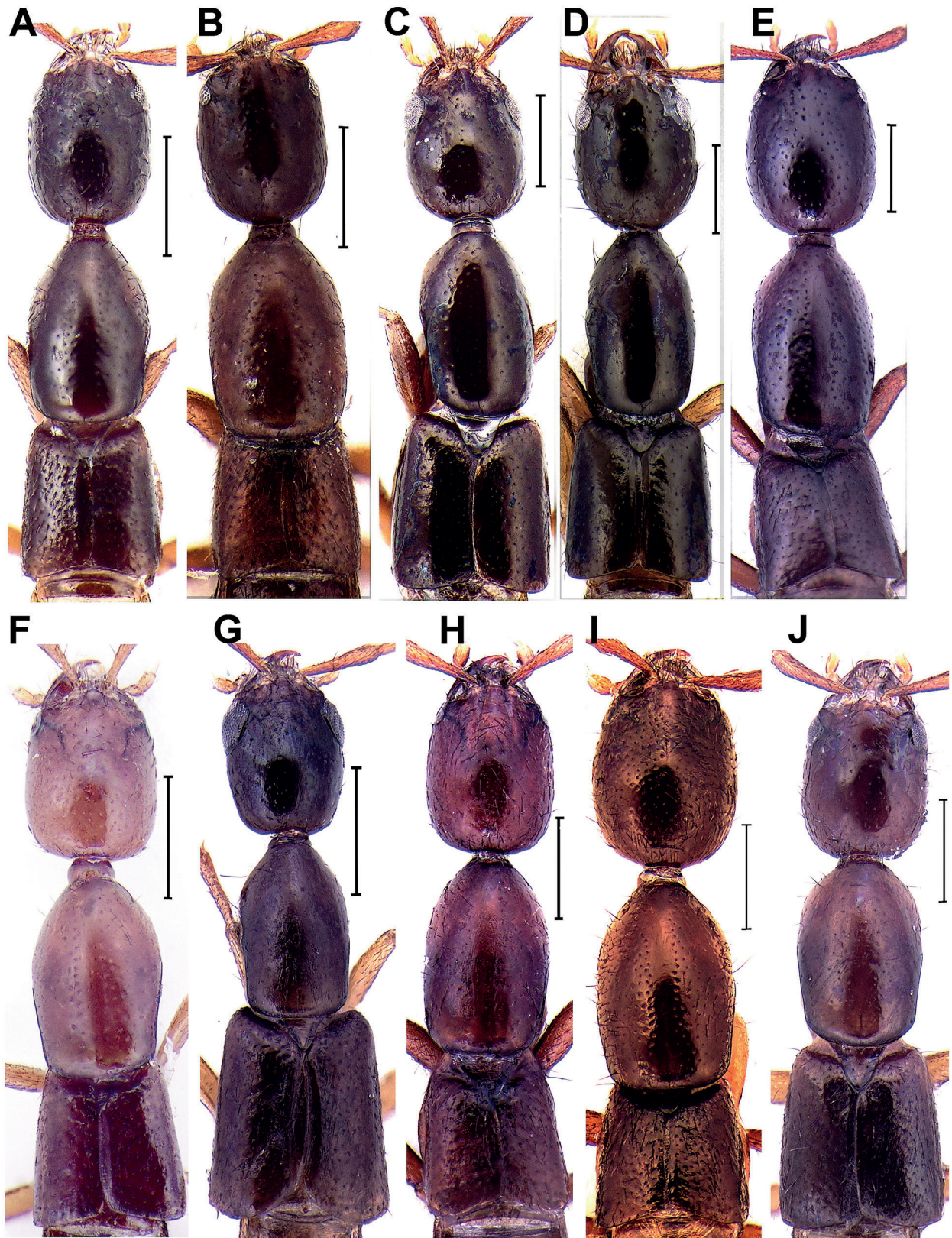


Fig. 49: *S. grandiconus* (A), *S. brevipennis* (B); *S. struyvei* (C); *S. brooksi* (D); *S. andersoni* (E); *S. brevisculus* (F), *S. oculatus* (G), *S. longiceps* (H), *S. ovatus* (I), *S. peruanus* (J); scale bars: 0.5 mm.



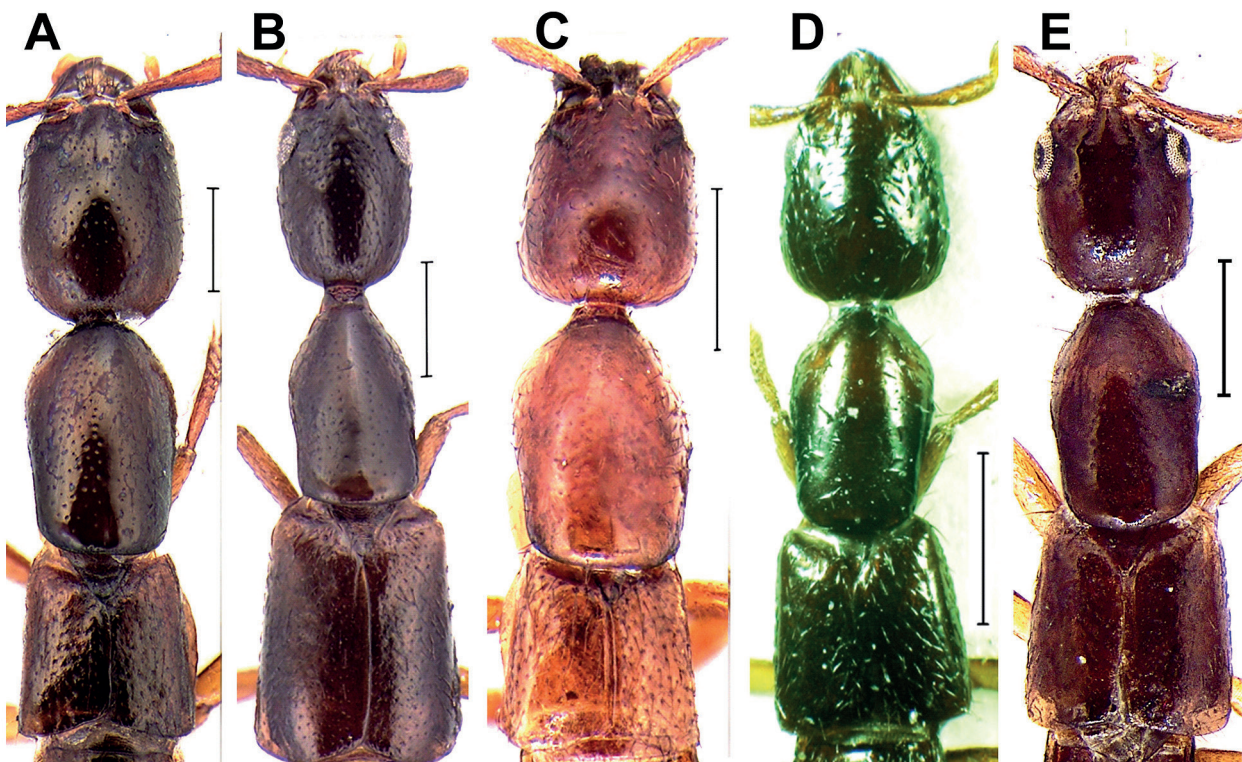


Fig. 50: *Somoleptus montanus* (A), *S. humicola* (B); *S. triangulus* (C); *S. loretensis* (D); *S. nitidus* (E); scale bars: 0.5 mm.

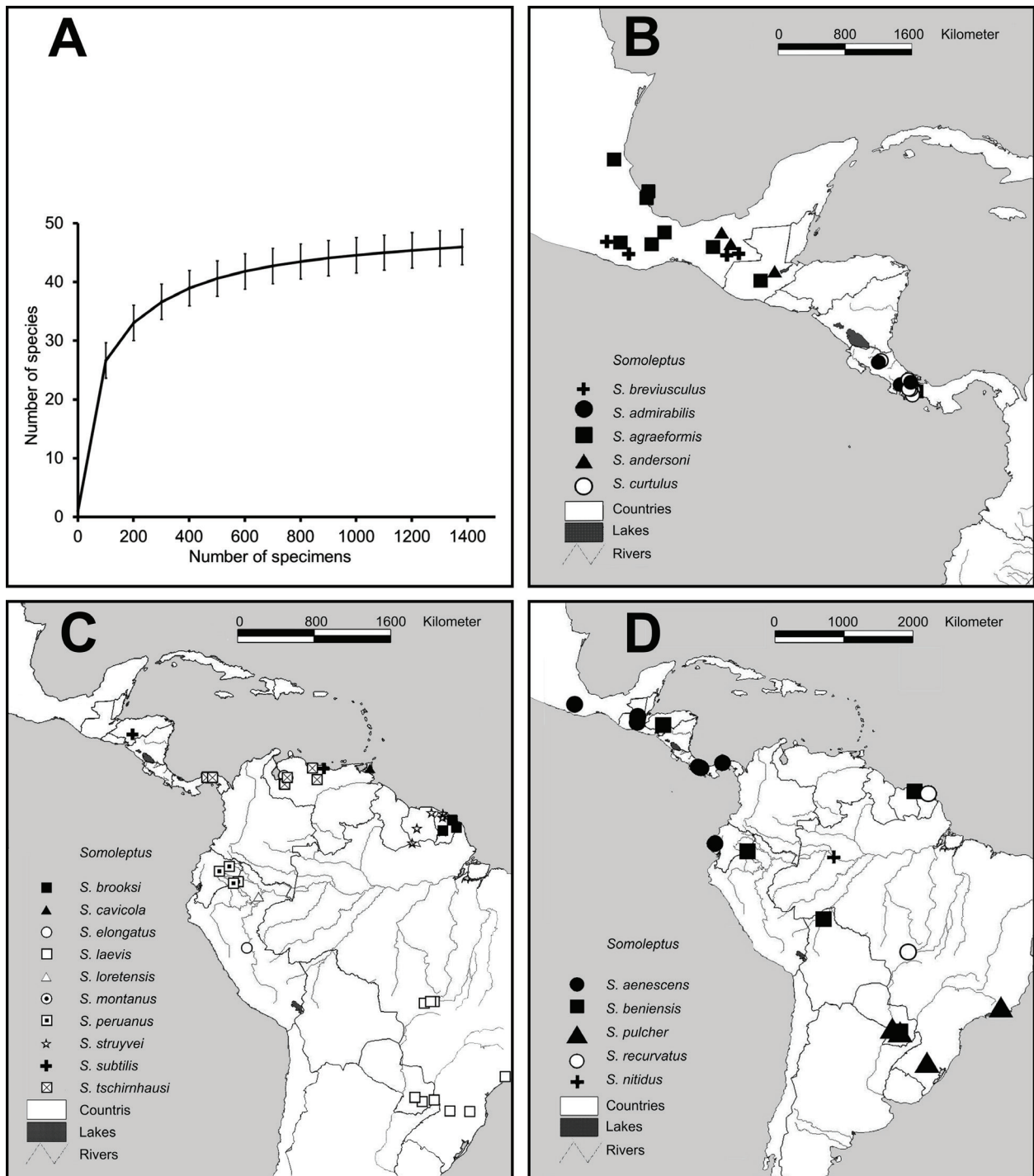


Fig. 51: Results of the rarefaction analysis with number of specimens per species of the included dataset (A); distribution of species of the laevis-group: curtulus-subgroup (B), laevis-subgroup (C), and aenescens-subgroup (D).

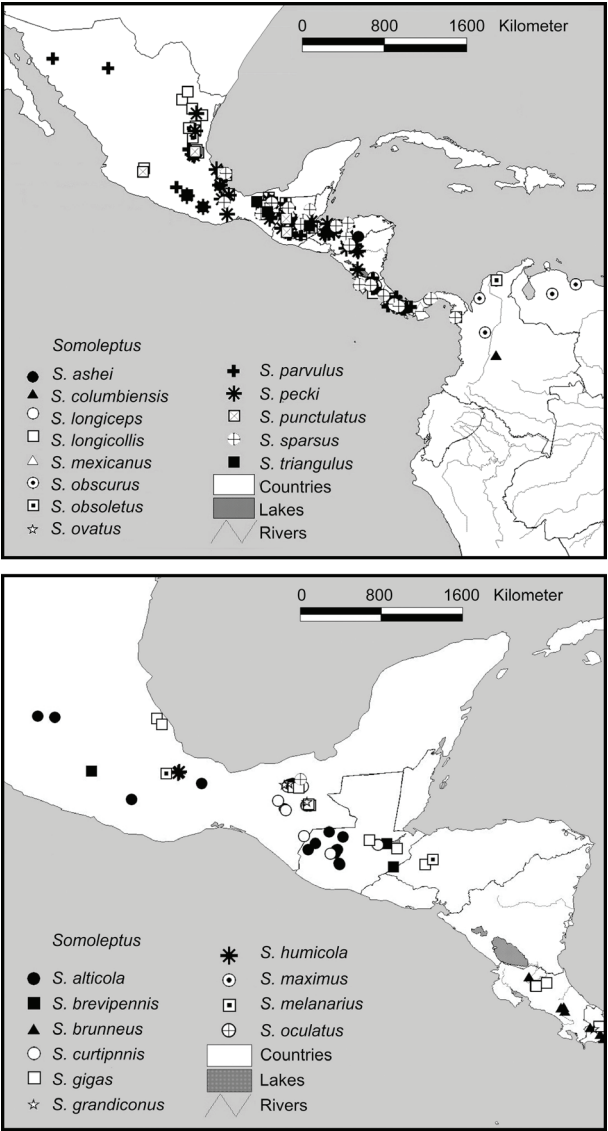


Fig. 52: Distribution of species of the longicollis-group.



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Autor(en)/Author(s): Irmeler Ulrich

Artikel/Article: [The Neotropical species of the genus Somoleptus Sharp, 1885 \(Coleoptera: Staphylinidae: Staphylininae: Xantholinini\) 123-178](#)