

The Neotropical species of the genus *Eleusis* LAPORTE, 1835 with description of the new genus *Eleusima* (Coleoptera: Staphylinidae: Osoriinae)

With 36 figures and 2 keys

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Abstract

According to HERMAN (2001) 24 species of the genus *Eleusis* were known from the Neotropical region before this study. Among these, the following 11 species are newly synonymised: *E. cephalotes* BERNHAUER, 1904, and *E. puncticeps* BERNHAUER, 1921 are synonyms to *E. bicolor* (ERICHSON, 1840); *E. dubius* (SHARP, 1876), *Eleusis infima* SHARP, 1887, *E. marginicollis* BERNHAUER, 1921, *E. armuellensis* BIERIG, 1931 are synonyms to *E. nigerrima* FAUVEL, 1864; *E. pallidipennis* (FAUVEL, 1864), *E. corvina* SHARP, 1887, *E. flavipennis* SHARP, 1887, and *E. darlingtoni* BLACKWELDER, 1943 are synonyms to *E. interrupta* (ERICHSON, 1840); *E. mixta* SHARP, 1887 is synonym to *E. scita* SHARP, 1887. The new genus *Eleusima* is described with the new species *E. platysoma* spec. nov. The following new species of the genus *Eleusis* are described: *E. genieri* spec. nov., *E. castanea* spec. nov., *E. rufipennis* spec. nov., *E. ecuadoriensis* spec. nov., *E. andina* spec. nov., *E. boliviana* spec. nov., *E. hondurana* spec. nov., *E. nigrita* spec. nov., *E. elongata* spec. nov., *E. panamaensis* spec. nov., *E. peruviana* spec. nov., *E. struyvei* spec. nov., and *E. tenuis* (FAUVEL, 1864), formerly synonymised with *E. humilis*, was found to be a distinct species and named here *E. fauveli* spec. nov., *E. indica* KRAATZ, 1859, also synonymised with *E. humilis* (ERICHSON, 1840) is a distinct species as well, but not part of the Neotropical fauna. Overall, 24 *Eleusis* species are now known from the Neotropical region which can be separated into 3 species groups.

Nomenclatural acts

Eleusima – urn:lsid:zoobank.org:act:8E861E42-9378-477C-BD35-1B6D0697B867*Eleusima platysoma* spec. nov. – urn:lsid:zoobank.org:act:CCD6DF2B-5665-41ED-A2BA-55ED02C72A23*Eleusis andina* spec. nov. – urn:lsid:zoobank.org:act:23436043-BE8A-46AE-97E5-15BDAEECF02A*Eleusis boliviana* spec. nov. – urn:lsid:zoobank.org:act:63DF628A-E08F-4D9E-9518-B5C00599B8D8*Eleusis castanea* spec. nov. – urn:lsid:zoobank.org:act:3121AA37-99A7-4839-9172-A2A98F9E5372*Eleusis ecuadoriensis* spec. nov. – urn:lsid:zoobank.org:act:774F9A2D-25FE-426C-8A32-C52AB801876B*Eleusis elongata* spec. nov. – urn:lsid:zoobank.org:act:FD5048E3-6760-43B9-BB13-D5FC480530A1*Eleusis fauveli* spec. nov. – urn:lsid:zoobank.org:act:2C9C2952-39B3-4ECE-B7A9-CDE2E37B1E3E*Eleusis genieri* spec. nov. – urn:lsid:zoobank.org:act:BAA0CF84-6884-461A-877A-44CA8B6B544A*Eleusis hondurana* spec. nov. – urn:lsid:zoobank.org:act:BB492AC3-EF93-4F93-90E5-FD266A957102*Eleusis nigrita* spec. nov. – urn:lsid:zoobank.org:act:7786C482-50D4-419D-85FB-FB349801FD11

Eleusis panamaensis spec. nov. – urn:lsid:zoobank.org:act:7078364E-083E-4BC7-ADE2-045789D19FFA

Eleusis peruviana spec. nov. – urn:lsid:zoobank.org:act:819FB601-081E-4EEF-BAD3-2363C6D299CF

Eleusis rufipennis spec. nov. – urn:lsid:zoobank.org:act:B6989833-5DD4-492E-969F-DD1F4E6E97E9

Eleusis struyvei spec. nov. – urn:lsid:zoobank.org:act:0BB5EBEE-6C8F-49D9-9D90-7178E660227F

Key words

Osoriinae, key to species, new genus, new species, zoogeography, ecology

Zusammenfassung

Nach HERMAN (2001) sind 24 Arten der Gattung *Eleusis* aus der neotropischen Region bekannt. Unter diesen befinden sich die folgenden 11 Arten, die hier neu synonymisiert wurden: *E. cephalotes* BERNHAUER, 1904 und *E. puncticeps* BERNHAUER, 1921 sind synonym zu *E. bicolor* (ERICHSON, 1840); *E. dubius* (SHARP, 1876), *Eleusis infima* SHARP, 1887, *E. marginicollis* BERNHAUER, 1921 und *E. armuelliensis* BIERIG, 1931 sind synonym zu *E. nigerrima* FAUVEL, 1864; *E. pallidipennis* (FAUVEL, 1864), *E. corvina* SHARP, 1887, *E. flavipennis* SHARP, 1887, und *E. darlingtoni* BLACKWELDER, 1943 sind synonym zu *E. interrupta* (ERICHSON, 1840); *E. mixta* SHARP, 1887 ist synonym zu *E. scita* SHARP, 1887. Die neue Gattung *Eleusima* wird mit der neuen Art *E. platysoma* spec. nov. beschrieben. Die folgenden neuen Arten der Gattung *Eleusis* werden beschrieben: *E. genieri* spec. nov., *E. castanea* spec. nov., *E. rufipennis* spec. nov., *E. ecuadoriensis* spec. nov., *E. andina* spec. nov., *E. boliviana* spec. nov., *E. hondurana* spec. nov., *E. nigrita* spec. nov., *E. elongata* spec. nov., *E. panamaensis* spec. nov., *E. peruviana* spec. nov. und *E. struyvei* spec. nov., *E. tenuis* (FAUVEL, 1864), war bislang synonym mit *E. humilis*, ist aber eine distinkte Art und wird hier *E. fauveli* spec. nov. benannt. *E. indica* KRAATZ, 1859, war ebenso synonym mit *E. humilis* (ERICHSON, 1840), ist aber ebenfalls eine distinkte Art, gehört aber nicht zur neotropischen Fauna. Insgesamt sind 24 *Eleusis* Arten aus der neotropischen Region bekannt, die in 3 Artengruppen unterteilt werden können.

Introduction

According to HERMAN (2001), the genus *Eleusis* LAPORTE, 1835 is distributed with 200 species over all tropical regions worldwide. For the Neotropical region, 24 species were listed. The genus *Eleusis* represents the largest genus of the tribe Eleusini of the subfamily Osoriinae, which also includes the species-poorer genera *Renardia* MOTSCHULSKY, 1865 and *Zeoleusis* STEEL, 1950, which are also represented in the Neotropical region. Most species are dorsoventrally depressed as adaptation to their under-bark habitat. Regarding this dorsoventral depression, they resemble species of the subfamily Piestinae, which are found in the same habitat. This similarity certainly was the reason why SCHEERPELTZ (1952) transferred *E. interrupta* to the genus *Piestus* GARVENHORST, 1806. CARON et al. (2011) already noted this mistake and transferred it again to the genus *Eleusis*.

The present study of the Neotropical species shows that a high number of species are synonyms due to the infraspecific variance and sexual dimorphism. The head, in particular, shows a high variance in size, which may be based on sexual dimorphism, but may have also other reasons in several species. Among the 24 species described for the region, 13 species were synonymised. Additionally, to the 11 valid species already described, 13 were newly described here. The aim of the present study is to provide a key for the Neotropical species, find distributional patterns and ecological information from the collection data.

Material, methods, and morphological aspects

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

AMNH	American Museum of Natural History, New York, U.S.A.
BMNH	The Natural History Museum, London, United Kingdom
FMNH	Field Museum of Natural History, Chicago, U.S.A.
IRSNB	Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium
KNHM	University of Kansas, Museum of Natural History, Lawrence, Kansas, U.S.A.
MCZ	Museum of Comparative Zoology, Boston, U.S.A.
NMHU	Naturhistorisches Museum Wien, Wien, Austria
SDEI	Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany
ZMHU	Zoologisches Museum der Humboldt-Universität, Berlin, Germany
TSC	private collection of Tim Struyve, Mechelen, Belgium
UIC	private collection of author, Plön, Germany

The photographs were taken using a Makroskop M 420 (Wild, Herbrugg) in combination with a digital camera

Leica EC3. 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 here established species groups are mainly characterised by the differences in the pronotal structure. The humilis- and breviceps-groups with the highest number of species were mainly separated from the *E. bicolor*-species group by the interrupted lateral margin of the pronotum. The sides are usually narrowed in the posterior half, but have a differently deep emargination shortly behind the beginning of the convergent part. This leads to a tooth-like shape, which is additionally marked by a large setiferous puncture, often inserted in a distinct impression (Fig. 1E). In contrast to these groups, this interruption of the lateral margin is absent in the bicolor-group. The sides are continuously narrowed to the obtuse posterior angles. In the *E. bicolor*-group, the central part at the posterior margin of the pronotum is slightly prominent. This prominence is marked by short grooves on each side of the prominence with sharp ridges to the inner side to the disc. This structure makes this part slightly elevated compared to its direct adjacent parts (Fig. 1D). At the anterior angles of the pronotum, a second pair of grooves can be found. These grooves are differently deep and marked by few setiferous punctures. These grooves may cause a deep emargination at the anterior angles (Fig. 1B). Close to the anterior angles additional deep impressions may be developed marked by setiferous punctures, too (Fig. 1C).

In the genus *Eleusis*, the head is characterised by a supraocular groove, which begins at the anterior edge of eyes and ends at posterior angles in front of the neck (Fig. 1A). The beginning and the end of the groove is marked by a setiferous puncture, while the normal punctation is not pubescent. As the length of the eyes seems to be constant, the postocular space varies extremely. Eye length (EL) compared total head length (HL) is partly used for the description of the species.

The humilis-group, which is identical with the subgenus *Lissopiestus* SCHEERPELTZ (1952) (because *E. interrupta* is the type species for this subgenus) is characterised by special structures of the aedeagus with a central prominence at the central lobe. The endophallus rarely shows sclerotised structures which can be used for the identification of the species (e.g. Fig. 7a, b). Due to the dorsoventral depression of the species, the aedeagus is rotated. The normally ventral part of the central lobe comes into a lateral position, the parameres in an upper and lower position and not in a left and right position. The ventral part is usually covered by numerous sensillae; in particular, at the prominence in the species of the humilis-group.

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: Lee Herman (AMNH), Crystal Maier (FMNH), Max Barclay (BMNH), Yvonnik Gerard (IRSB), Zack Falin (KNHM), Harald Schillhammer (NMW), Stephan Blank, Lutz Behne (SDEI), Johannes Frisch, J. Willers (ZMHU), Philip Perkins (MCZ), Tim Struyve (Mechelen, Belgium), Manfred Verhaagh (Karlsruhe, Germany).

Description of new genus

Eleusima

Type specimen: *Eleusima platysoma*.

Description: Extremely depressed in dorsoventral direction; head without supraocular groove; at least three times wider than long with large prominent eyes; postocular sides directly narrowed behind eyes to wide neck; clypeus separated from vertex; deepened against vertex; pronotum extremely narrowed from middle to posterior angles; posterior margin less than half as wide as anterior margin; sides interrupted by short tooth; without grooves or deeply depressed punctures at anterior margin; sides of elytra divergent posteriad; abdomen wide and short; middle segments IV to VI wider than abdominal segment III.

The genus can be easily separated from the related genera *Eleusis*, *Zeoleusis* and *Renardia* by the stout, extremely depressed body. The supraocular grooves are also absent in *Zeoleusis* and *Renardia*, but species of these genera are much more elongate. Moreover, the wide head and the extremely narrowed pronotum are not found in these genera. The aedeagus also has specific characters. In *Eleusis*, *Zeoleusis* and *Renardia* the aedeagus is depressed in lateral direction as adaptation to its half rotation. In *Eleusima* the aedeagus is dorsoventrally depressed without rotation.

Key to genera of Eleusini and species groups of *Eleusis*

- 1 Head without supra-ocular groove, anterior margin of pronotum without depressed setiferous punctures or grooves (Figs 1F, G, H) 2
 - Head with supraocular groove (Fig. 1A), clypeus not distinctly separated from vertex, anterior margin of pronotum with deeply depressed setiferous punctures or grooves (Fig. 1B, C). *Eleusis* LAPORTE, 1835 4
- 2 Clypeus distinctly separated from vertex (Fig. 1F). *Eleusima* gen. nov.
 - Clypeus not distinctly separated from vertex 3
- 3 Pronotum narrowed to posterior margin (Fig. 1G). *Zeoleusis* STEEL, 1950
 - Pronotum evenly curved, anterior margin not wider than posterior margin (Fig. 1H) *Renardia* MOTSCHULSKY, 1865
- 4 Lateral margin in posterior half interrupted, interruption marked by deep setiferous puncture (Fig. 1E), at anterior margin of pronotum close to anterior angles with pair of deeply depressed setiferous punctures (Fig. 1C). 5
 - Lateral margin not interrupted in posterior half, continuously narrowed to posterior margin, deeply emarginate in front of posterior angles, pair of posterior grooves marked by ridges (Fig. 1D), at anterior margin of pronotum with pair of large not deeply depressed setiferous punctures (Fig. 1B). *E. bicolor*-group
- 5 Elytra with one pair of large setiferous punctures on central disc. *E. humilis*-group
 - Elytra with two pairs of large setiferous punctures; one pair in anterior half, one pair on central disc. *E. breviceps*-group

Eleusima platysoma spec. nov.

urn:lsid:zoobank.org:act:CCD6DF2B-5665-41ED-A2BA-55ED02C72A23

Figs 18A-C, 28A

Type material: male, Holotype: Panama: Panama Prov., Miramar (-82.19°W, 8.95°N), car net, 30.7.2014, leg. T. Struyve (UIC). Paratype: female, with same data as holotype (TSC).

Diagnosis: Only a single species of the genus is represented in the Neotropics. It can be easily differentiated from all Neotropical species of the genus *Eleusis* by the short and wide head with distinctly separated clypeus, the extremely posteriad widened shape of the elytra, and the absence of grooves in the anterior angles of the pronotum. Moreover, the structure of the parameres differs from all other Neotropical species by the absence of a widened apical transparent lobe.

Description: Length: 2.3 mm. Colouration: black, elytra yellow with dark spot at scutellum and indistinctly black posterior margin; clypeus light brown; posterior margin of abdominal segment slightly lighter than base; legs dark brown with light brown spot at femortibial connection; antennae light brown.

Head: 0.24 mm long, 0.58 mm wide; eyes prominent; slightly shorter than temples; temples continuously narrowed posteriad; without separate neck; no sexual dimorphism; antennae inserted directly in front of eyes; between base of antennae with transverse ridge separating vertex from lower elevated clypeus; front margin of clypeus straight; without supraocular groove and setiferous punctures; punctation coarse and dense;

on average, interstices between punctures as wide as diameter of punctures; between coarse punctation with micro-punctation; along midline impunctate or less densely punctate; without microsculpture; surface polished.

Antennae as long as head and pronotum combined; first antennomere thicker and longer than following antennomeres; curved; second antennomere one third as long as first and shorter than third; following antennomeres approximately equally long and wide; slightly longer than wide; antennomeres four to eleven weakly pubescent and with few long apical setae.

Pronotum: 0.33 mm long, 0.50 mm wide; widest close to anterior angles; anterior angles obtuse; in anterior half narrowed in smooth curve; in posterior have strongly narrowed to obtuse posterior angles; posterior margin 0.43 times as wide as anterior margin; lateral margin slightly interrupted in posterior third; punctation as deep than on head, but less dense; on average, interstices twice as wide than diameter of punctures; without setiferous punctures at anterior or lateral margin; without microsculpture; surface polished.

Elytra: 0.63 mm long, 0.68 mm wide; widest at posterior angles; distinctly convergent to humeral angles; at humeral angles 0.6 times as wide as at posterior angles; posterior margin smoothly rounded; triangularly retreated to suture; punctation extremely weak and sparse; without microsculpture; surface polished.

Abdomen polished; without microsculpture and punctation.

Aedeagus extremely depressed; central lobe with transverse rows of sensillae in apical half; parameres shorter than central lobe; without apical transparent widening.

Etymology: The species name is a combination of the Greek epithet *platy* meaning broad and *soma* meaning body and refers to the broad body.

Description of species of genus *Eleusis* LAPORTE, 1835

Eleusis humilis-group

Eleusis andina spec. nov.

urn:lsid:zoobank.org:act:23436043-BE8A-46AE-97E5-15BDAEECF02A

Figs 6A-C, 28B

Type material: male, Holotype: Peru: Tambopata Prov., Madre de Dios Dept., 15 km NE Puerto Maldonado, Reserva Cuzco Amazónico (12°33'S, 69°03'W), Plot Z1E7, 200 m elev., under bark, 9.7.1989, leg. J.S. Ashe & R.A. Leschen (KNHM); PARATYPE: Guatemala: Zapote, 4 males, 6 females, leg. Champion (9 BMNH, 1 UIC); Peru: Junín Dept., La Merced-Villa Rica Rd. (10°58.42'S, 75°18.18'W), 880 m elev., flight intercept trap, female, 15.-21.10.1999, leg. R. Brooks, #PERU1N99 (KNHM).

Diagnosis: Without dissection of the aedeagus, the species cannot be separated from the extreme similar *E. humilis*. In contrast to *E. humilis*, the male of *E. andina* has a larger head. The infraspecific variation is unknown. However, the characteristic lateral lobes at the apex of the aedeagus and the extremely widened parameres separates it from the related species of the *E. humilis*-group.

Description: Length: 3.0 mm. Colouration: dark brown; elytra light brown with posterior margin blackish; legs and antennae light brown to yellow.

Head: 0.44 mm long, 0.46 mm wide; eyes not prominent; slightly shorter than temples; temples behind eyes parallel; smoothly narrowed to wide neck; preocular sides parallel to base of antennae; anterior margin of clypeus sinuate to smoothly rounded apex; supraocular groove deep; parallel to side; punctation weak and irregularly sparse; interstices between punctures twice to eight times as wide as diameter of punctures; at each end of supraocular groove with setiferous puncture; long setae yellow; microsculpture moderately weak; on clypeus and vertex, meshes of microsculpture longitudinal; near neck transverse; surface moderately shiny.

Antennae slightly shorter than head and pronotum combined; first antennomere thicker and longer than following antennomeres; second antennomere half as long as and as wide as first; third antennomere slightly longer and wider than second; following antennomeres increasing in width and decreasing in length; fourth antennomere slightly longer than wide; tenth antennomere slightly wider than long; antennomeres four to eleven pubescent and with apical setae.

Pronotum: 0.37 mm long; 0.47 mm wide; widest at anterior angles; evenly narrowed to posterior angles; at

posterior angles only half as wide as at anterior angles; anterior angles smoothly rounded to anterior margin; at anterior margin close to anterior angles with three large setiferous punctures, long setae yellow; along lateral margin several setiferous punctures; lateral margin interrupted; interruption marked by setiferous puncture, punctation as deep and sparse as on head; microsculpture as weak as on head; meshes elongate; partly diagonal or circular at anterior angles; surface moderately shiny.

Elytra: 0.50 mm long, 0.48 mm wide; widest close to posterior margin; humeral angles smoothly rounded; punctation weaker, but denser than on head and pronotum; one large setiferous puncture on central disc; laterally, more setiferous punctures; microsculpture still weaker than on head and pronotum; partly invisible; meshes longitudinal; surface shinier than that of pronotum.

Abdomen with transverse weak microsculpture; irregular, dense punctation with differently long yellow setae.

Aedeagus broad; in apical half with wide lateral lobes; apex widely rounded; at midline with nearly semicircular process; few sensillae near apex; on process and basely with few more sensillae; parameres nearly as long as central lobe; with broad, nearly rectangular transparent lobe; on transparent lobe one long seta and numerous shorter setae; few sensillae at base of transparent lobe and at base of paramere.

Etymology: The species name derived from the region where the holotype was found: the foots of the eastern Andes.

Eleusis boliviana spec. nov.

urn:lsid:zoobank.org:act:63DF628A-E08F-4D9E-9518-B5C00599B8D8

Figs 5A-C, 28C

Type material: male, Holotype: Bolivia: Cochabamba Prov., Cochabamba, 109 km E Yungas (Cochabamba-Villa Tunari Rd.) (17°8.50'S, 65°42.29'W), flight intercept tap, 1.-6.2.1999, leg. F. Genier, #BOL1G99027 (KNHM); Paratypes: 3 males with same data as holotype (2 KNHM, 1 UIC).

Diagnosis: Regarding the small size, *E. boliviana* most closely resembles *E. fauveli*. *E. boliviana* is distinctly darker than *E. fauveli* and in this respect, it resembles *E. nigerrima*. In contrast to *E. fauveli* and *E. nigerrima*, the elytra are longer than wide and not quadrate or even wider than long. However, without dissection of the aedeagus, the separation from the other related species of the group is difficult. The long elongate prominence of the central aedeagal lobe clearly characterises the species.

Description: Length: 2.4 mm. Colouration: dark brown to blackish; elytra lighter brown with blackish posterior margin; legs and antennae light brown to yellow.

Head: 0.31 mm long, 0.36 mm wide; eyes large, prominent; nearly twice as long as temples; temples smoothly narrowed to neck; preocular sides shortly parallel to base of antennae; anterior margin of clypeus sinuate; apex widely curved; supraocular groove reaching from anterior edge of eyes to neck; punctuation moderately deep and irregularly sparse; interstices between punctures two to four times as wide as diameter of punctures; at each end of supraocular groove with large setiferous puncture; long setae yellow; microsculpture irregularly deep; on vertex deeper than on clypeus; striae elongate; on clypeus transverse; on vertex longitudinal; close to neck diagonal; surface slightly shiny.

Antennae slightly longer than head and pronotum combined; first antennomere thicker and longer than following antennomeres; second antennomere two third as long as first; third slightly shorter than second; following antennomeres increasing in width and decreasing in length; fourth antennomere slightly longer than wide; tenth antennomere quadrate; antennomeres four to eleven pubescent and with long apical setae.

Pronotum: 0.28 mm long, 0.34 mm wide; widest at anterior angles; anterior angles smoothly curved; sides in anterior half nearly parallel; in posterior half greatly narrowed; posterior margin half as wide as at anterior angles; punctuation similarly dense and deep as on vertex; more uniformly punctate than head; close to anterior angles with three larger setiferous punctures; long setae yellow; along lateral margin with few more setiferous punctures; lateral margin interrupted at middle; interruption marked by deep setiferous puncture; microsculpture similarly deep as on vertex; meshes elongate; on disc longitudinal; close to posterior angles diagonal; close to anterior angles nearly circular; surface slightly shiny.

Elytra: 0.46 mm long, 0.44 mm wide; widest close to posterior angles; humeral angles smoothly curved; punctuation weaker than on pronotum, but as dense as on pronotum; one large setiferous puncture on central disc; microsculpture as deep as on pronotum; meshes longitudinal; surface slightly shiny.

Abdomen densely punctate and pubescent; among short hairs several punctures with long setae.

Aedeagus moderately broad; close to apex slightly broader than at base; apex moderately acute; with long central process reaching apex of central lobe; at base of process with several sensillae; parameres slightly shorter than central lobe; with moderately wide apical transparent lobe; at apex of transparent lobe with numerous short setae; one long seta at outer central position; at base of parameres with few sensillae.

Etymology: The species name derived from the country's name, where it was found.

Eleusis castanea spec. nov.

urn:lsid:zoobank.org:act:3121AA37-99A7-4839-9172-A2A98F9E5372

Figs 11A-C, 29C

Type material: male, Holotype: Colombia: Cundinamarca, PNN Chingaza Bosque Palacio (73°45'W, 4°31'N), 2930 m elevation, Malaise trap, 5.-17.1.2001, leg. L. Cifuentes, L., #M 1222 (KNHM).

Diagnosis: *E. castanea* belongs to a group of four similar species with reddish elytra, which also includes *E. ecuatoriensis*, *E. genieri*, and *E. rufipennis*. *E. castanea* is one of the largest species of the *E. humilis*-group. The differences to *E. ecuatoriensis* are listed there. Compared to *E. genieri* and *E. rufipennis*, *E. castanea* has unicoloured dark reddish elytra and is larger than those two species. In contrast to *E. castanea*, *E. genieri* and *E. rufipennis* have partly darkened elytra, either at the base or at the apex. However, punctuation, microsculpture and overall shape is very similar to these species. It can be easily differentiated from the related *E. genieri* and *E. rufipennis* by the thick aedeagus with the thick central prominence.

Description: Length: 5.5 mm. Colouration: head and pronotum black; abdomen dark brown; elytra chestnut-reddish; legs and antennae light brown.

Head: 0.80 mm long; 0.80 mm wide; eyes not prominent; half as long as temples; temples shortly narrowed to distinct neck; sides in front of eyes shortly parallel to base of antennae; anterior margin of clypeus sinuate; prominent central part as wide as each lateral part; supraocular groove from anterior edge of eyes to beginning of neck; posterior part slightly wider than anterior part; pair of central impressions at posterior margin of clypeus; distance to lateral margin four times as wide as distance between impressions; punctuation moderately deep and dense; on average, interstices twice as wide as diameter of punctures; punctuation equally dense on vertex and clypeus; only small anterior stripe with weak and sparse punctuation; two large setiferous punctures on each side of prominent part of clypeus; dense microsculpture moderately deep; meshes longitudinal; on anterior part of clypeus weaker and transverse; surface at anterior edge of clypeus shiny; at posterior part of clypeus and vertex moderately matt.

Antennae as long as head and half of pronotum combined; first antennomere slightly longer and thicker than following antennomeres; second to sixth antennomeres longer than wide; second antennomere nearly half as long as first; third nearly as long as first; following antennomeres increasing in width and decreasing in length; fourth antennomere slightly longer than wide; tenth antennomere slightly wider than long; third to eleventh antennomere pubescent and with long apical setae. Pronotum: 0.58 mm long, 0.79 mm wide; widest in anterior half; smoothly rounded to anterior angles; strongly narrowed to posterior angles; posterior margin slightly less than half as wide as anterior margin; shortly behind

middle, sides denticulate; punctation as regular, deep and dense as on vertex; four large setiferous punctures at anterior margin on each side; along lateral margin few more large setiferous punctures; microsculpture similarly deep and dense as on vertex; in central part at anterior margin transverse; on disc longitudinal and at anterior angles diagonal; surface moderately matt.

Elytra: 1.01 mm long, 0.89 mm wide; sides slightly widened to posterior angles; humeral angles shortly rounded; punctation similarly dense and deep as on pronotum; punctures slightly more elongate; one large setiferous puncture in centre on each side of suture; few large setiferous punctures at base, posterior, and lateral margin; microsculpture longitudinally elongate; as dense and deep as on pronotum; surface moderately matt.

Abdomen with similar punctation as on elytra, but each segment with transverse rows of large setiferous punctures; microsculpture transversely striate; punctation similarly dense and deep as on elytra.

Aedeagus thick; apex obtusely rounded; triangular prominence at central part of central lobe large with numerous sensillae; adjacent to triangular prominence numerous sensillae; paramera nearly as long as central lobe; apical part widened to rectangular transparent lobe; transparent lobe at outer angles with short setae; several small sensillae at apical margin; few larger sensillae at base.

Etymology: The species name derived from the Latin word *castaneus* which means chestnut-brown and refers to the reddish-brown elytra.

Eleusis ecuadoriensis spec. nov.

urn:lsid:zoobank.org:act:774F9A2D-25FE-426C-8A32-C52AB801876B

Figs 14A-C, 29F

Type material: male, Holotype: Ecuador: Napo Prov., Cosanga env., Yanayacu-Rio Perdido Tr. (0°35'S, 77°53'W), 2100 m elev., under bark of dead tree, 26.11.2009, leg. L. Sekerka & K. Stajerová (BMNH).

Diagnosis: *E. ecuadoriensis* is still longer than *E. castanea*, which are both the largest species of the *E. humilis*-group. It resembles *E. castanea* not only in size and shape, but also in colouration. The elytra have the same reddish-brown colouration as in *E. castanea*. Punctation and microsculpture are also extremely similar. The antennae of *E. ecuadoriensis* are slightly longer than those of *E. castanea*. Whereas they are as long as head and pronotum combined in *E. ecuadoriensis*, in *E. castanea* they are only as long as head and half of pronotum combined. Without dissection of the aedeagus the separation of the two species is difficult. In *E. castanea* the aedeagus is stout, the apical part of the central lobe is short and the transparent lobe of the paramere is distinctly widened. In *E. ecuadoriensis*, the aedeagus is slenderer, the apical part is longer and the transparent lobe of the paramere is only slightly widened.

Description: Length: 6.3 mm. Colouration: black; elytra reddish-brown; legs light brown; antennae dark brown.

Head: 0.79 mm long, 0.83 mm wide; eyes slightly prominent; postocular part wider than preocular part; temples approximately twice as long as eyes; nearly parallel; preocular part to base of antennae parallel; anterior margin of clypeus convergent; supraocular groove deep and wide; punctation weak and irregularly dense; on average, interstices between punctures between two to four times as wide as diameter of punctures; setiferous puncture at each end of supraocular groove; another pair of setiferous punctures on each side of prominent central part of clypeus; elongate microsculpture dense, but not deep; transversely striate on clypeus; longitudinally striate on vertex; surface slightly shiny.

Antennae as long as head and pronotum combined; first antennomere slightly thicker than following antennomeres; more than twice as long as second; third antennomere one third longer than second; following antennomeres slightly increasing in width and decreasing in length; fourth to eighth antennomere longer than wide; ninth and tenth antennomere approximately quadrate; fourth to eleventh antennomere pubescent; all antennomeres with apical setae.

Pronotum: 0.70 mm long, 0.86 mm wide; widest shortly behind anterior angles; sides in posterior two third smoothly narrowed to posterior angles; in posterior third, interrupted by sharp emargination; posterior angles obtuse; short grooves at anterior angles; punctation as dense and deep as on head; two setiferous punctures in each groove at anterior angles; additional setiferous punctures along lateral margin; lateral interruption marked by setiferous puncture in moderately deep impression; at anterior margin close to anterior angles, with impressions and setiferous punctures on each side of midline; elongate microsculpture as deep and dense as on head; circularly striate at anterior angles; longitudinally striate on disc; surface slightly shiny.

Elytra: 1.07 mm long, 1.01 mm wide; humeral angles nearly rectangular; sides slightly divergent to posterior angles; posterior angles rounded; punctation and microsculpture as dense and deep as on head and pronotum; elongate microsculpture longitudinally striate; one setiferous puncture in central position on each side of suture; several setiferous punctures along lateral margin; surface slightly shiny.

Abdomen weakly punctate; on each segment, with row of setiferous punctures; isodiametric microsculpture moderately deep.

Aedeagus slender; in lateral aspect, continuously narrowed to nearly acute apex; in ventral aspect, parallel with triangular apex; in central position of central lobe with large approximately triangular prominence; few sensillae at apex; several sensillae at central prominence; parameres slightly shorter than central lobe; slender; apical transparent lobe nearly as wide as basal scape; long seta at apex of transparent lobe; without

short setose fringe; several minute sensillae close to transparent lobe and at base of scape.

Etymology: The species name derived from the country Ecuador, where it was collected.

Eleusis fauveli spec. nov.

urn:lsid:zoobank.org:act:2C9C2952-39B3-4ECE-B7A9-CDE2E37B1E3E

Figs 7A-C, 28E, 35a

Isomalus tenuis FAUVEL, 1864: 41 new synonymy

Type material examined: male, Lectotype: Venezuela: Caracas (IRSNB). A male and a female specimen are deposited in IRSNB with same the label "Caracas". The male specimen is labelled "tenuis" by Fauvel. I selected the male specimen as Lectotype.

Additional material examined: Costa Rica: Heredia, La Selva, Biol. Station nr. Puerto Viejo de Sarapiquí, male, 18.2.1985, leg. L. Herman (AMNH); 3 km S Puerto Viejo, OTS La Selva, 100 m, male, Sept. 1992, leg. P. Hanson (KNHM); same location and same collector, but female, Malaise trap, Dec. 1992 (KNHM); San Isidro de General, 700-800 m elevation, Aug. 1980, leg. L.H. Kraus (AMNH); Panama: Colon, Parque Soberania, Pipeline Rd. (9°07'N, 79°45'W), flight intercept trap, female, 18.-19.5.1995, J. Jolly & C. Chaboo (AMNH); Venezuela: Bolivar, between Sta. Elena de Uairen and Icabarú, 30.7.1987, leg. M.A. Ivie (KNHM); Suriname: Commewijne, Akintosoela, CELOS Camp, 39 km Se Suriname River bridge, road to Redi Doti (5°16.17'N, 54°55.15'W), 40 m elevation, under bark, female, 30.6.1999, leg. Z. Falin #SUR1F99 129 (KNHM); Sarmacca, West Suriname Road, 108 km WSW Zanderij Airport (5°13.37'N, 55°52.54'W), 30 m elev., under bark, 5 females, 9.7.1999, leg. Z. Falin, #SUR1F99 048 (4 KNHM, 1 UIC); French Guiana: nr. Eaux Claires, 3.5 mi N Saül (3°38-40'N, 53°13-14'W), 155-260 m elev., under bark, 3 males, 2 females, 5.-13.10.1995, leg L. Hermann, #2804 (4 AMNH, 1 UIC); Trinidad: Arimaq Valley, 800-1200 ft elev., female, 10.-22.2.1964, leg. Rozen & Wygodzinsky (AMNH); nr. Eaux Claires, 3.5 mi N Saül (53°13-14'W, 3°38-40'N), 155-260 m elevation, under bark of log, 2 females, 5.-13.10.1995, leg. L. Herman #2836 (AMNH); Trinidad: Arima Valley, 800-1200 ft. 10.-22.2.1964, Rozen & Wygodzinsky (AMNH); Peru: Tambopata, Prov., Madre de Dios Dept., 15 km NE Puerto Maldonado, Reserva Cuzco Amazónica (12°33'S, 69°03'W), 200 m elev., swamp trail, flight intercept trap, male, 17.7.1998, leg. J.S. Ashe & R.A. Leschen #485 (KNHM); same location, but under bark with fermenting sap, female, 3.7.1989, leg. J.S. Ashe & R. Leschen (KNHM) Brazil: Santa Rita, female, Aug. 1850 (BMNH); Amazonas, Rio Purus, female, 24.9.1874, leg. Trail (BMNH); São Paulo de Olivença (BMNH); Paraná, Rondon, female, 24.9.1952, leg. F. Plaumann (BMNH).

Diagnosis: The species was described as *Isomalus tenuis* by FAUVEL (1864), a name which was preoccupied by *E. tenuis* WALKER, 1859. It was later synonymised with *E. humilis* ERICHSON, 1840. It is, however, a distinct species, but extremely similar to *E. humilis*. It is significantly smaller than *E. humilis* and the central prominence of the aedeagus is still weaker and shorter. Moreover, *E. tenuis* is brown and the posterior margin of the elytra is only slightly darker, whereas in *E. humilis* the head and the posterior margin of the elytra are black.

Description: Length: 2.2 – 2.4 mm; Colouration: light brown, head darker brown, pronotum slightly lighter brown, elytra light brown, partly transparent; posterior margin of elytra slightly darker; legs and antennae yellow.

Head: 0.33 mm long, 0.41 mm wide; on average, slightly wider than long, without significant variance between specimens; no sexual dimorphism; temples smoothly rounded; preocular sides shortly parallel to base of antennae; anterior margin of clypeus sinuate to central prominence; supraocular groove short; weak punctation dense; on average, interstices as wide as to twice as wide as diameter of punctures; large setiferous puncture at each end of supra-ocular groove; elongate microsculpture deep; on clypeus with transverse striae; on vertex with semicircular striae; striae mirrored along midline; surface slightly shiny.

Antennae as long as head and pronotum combined; first antennomere slightly thicker and longer than following antennomeres; twice as long as second and third; following antennomeres increasing in width; fourth antennomere slightly longer than wide; tenth slightly wider than long; antennomere four to eleven pubescent and with few apical setae.

Pronotum: 0.26 mm long, 0.30 mm wide; widest close to anterior angles; continuously narrowed to posterior angles; anterior angles widely rounded; anterior margin sinuate; posterior margin widely rounded; punctation slightly deeper than on head, but similarly dense; close to anterior angles, two pairs of large setiferous punctures at anterior margin; in anterior half, few larger punctures with setae along lateral margin; lateral margin interrupted in posterior half; interruption marked by large setiferous puncture; elongate microsculpture similarly deep and dense as on head; striae curled close to anterior angles; on disc similarly semicircular as on head; mirrored along midline; surface slightly shiny.

Elytra: 0.49 mm long, 0.48 mm wide; widest close to posterior angles; posterior angles obtuse; punctation and microsculpture much weaker than on head and pronotum; nearly invisible; pair of setiferous punctures on central disc; one puncture on each side of suture; surface shiny.

Abdomen with transverse microsculpture; punctation as deep and dense as on fore-body; surface shiny.

Aedeagus with broad basal part of central lobe; in lateral aspect, apical half distinctly narrowed to obtuse apex;

in ventral aspect, apical half approximately parallel; endophallus with two differently long spurs; prominence at midline of central lobe extremely weak; with only few sensillae; on each side of prominence several more sensillae; paramere slightly shorter than central lobe; transparent lobe slightly widened; at apical margin of transparent lobe with one thick seta; at apical margin with minute sensillae; in central and basal scape with few larger sensillae.

Etymology: The species name honours A. Fauvel, who first described it as *Isomalus tenuis*.

Eleusis genieri spec. nov.

urn:lsid:zoobank.org:act:BAA0CF84-6884-461A-877A-44CA8B6B544A
Figs 12A-C, 29D

Type material: male, Holotype: Bolivia: Cochabamba, Cochabamba, 67.5 km NE Est. Biol. Valle del Saijta, Univ. de San Simon (64°47.52'W, 17°06.33'S), 300 m elev., flight intercept trap, 9-13.2.1999, leg. F. Genier, #BOL1G99068 (KNHM).

Diagnosis: *E. genieri* resembles *E. rufipennis* in size and colouration. It is distinctly smaller than *E. castanea* with similar colouration. It can be differentiated from *E. rufipennis* by the colouration of the elytra. *E. genieri* has a dark spot at the posterior margin of the elytra, whereas *E. rufipennis* has a triangular dark spot at the base of the elytra. However, the two species are mainly differentiated by the structure of the aedeagus. In lateral aspect, the aedeagus of *E. genieri* is thick with acute apex, whereas the aedeagus of *E. rufipennis* is distinctly curved of nearly semi-lunar shape.

Description: Length: 4.2 mm. Colouration: blackish; elytra light brown with darkened posterior half; legs and antennae light brown.

Head: 0.51 mm long, 0.54 mm wide; eyes slightly prominent; temples approximately as long as eyes; behind eyes shortly parallel; narrowed in wide smooth curve to neck; preocular sides shortly parallel to base of antennae; narrowed in sinuate curve to front margin of clypeus; supraocular groove nearly twice as long as eyes; with setiferous puncture at each end of groove; punctation deep and moderately dense; on average, interstices between punctures as wide as to twice as wide as diameter of punctures; elongate microsculpture deep; anterior clypeus diagonally striate; on posterior clypeus with wavy striae; on vertex longitudinally striate; surface slightly shiny.

Antennae as long as head and pronotum combined; first antennomere slightly longer and thicker than following antennomeres; second antennomere one third shorter than first; third antennomere slightly longer than second; following antennomeres increasing in width and decreasing in length; third antennomere longer than wide; tenth

antennomere wider than long; fourth to eleventh antennomere pubescent and with long apical setae.

Pronotum: 0.46 mm long, 0.57 mm wide; widest close to anterior angles; anterior half smoothly rounded; posterior half continuously narrowed to posterior angles; anterior and posterior angles obtuse; posterior margin approximately half as wide as at anterior angles; lateral margin interrupted in posterior half; interruption marked by deep setiferous puncture; on each side three setiferous punctures close to anterior angles; in anterior half along lateral margin few more setiferous punctures; punctation as deep, but slightly sparser than on head; on average, interstices between punctures two to three times as wide as diameter of punctures; with narrow impunctate midline; elongate microsculpture as dense and deep as on head; microsculpture on disc longitudinally striate; close to anterior angles, circular striae; surface slightly shiny.

Elytra: 0.74 mm long, 0.68 mm wide; sides slightly divergent to posterior angles; humeral angles nearly rectangular; posterior angles obtuse; punctation as deep and dense as on pronotum; on centre of disc, one setiferous puncture on each side of suture; elongate microsculpture deep and dense; striae elongate; surface slightly less shiny than on head and pronotum.

Abdomen with transverse microsculpture; punctation weak and sparse; few setiferous punctures on each segment in transverse row.

Aedeagus thick; in lateral aspect with apical process and thick prominence shortly in front of apex; in ventral aspect, approximately parallel; at thick process with numerous sensillae; parameres thick with widened apex and wide apical transparent lobe; at apical margin of transparent lobe with minute sensillae and one larger setiferous sensilla.

Etymology: the species name derived from its collector F. Genier, who collected extensively in the Andean region.

Eleusis hondurana spec. nov.

urn:lsid:zoobank.org:act:BB492AC3-EF93-4F93-90E5-FD266A957102
Figs 8A-C, 29B

Type material: male, Holotype: Honduras, El Paraíso, 6.8 km W Yuscarán, Cerro Monserrat (13°55'N, 86°24'W), 1760 m elev., under bark, 7.7.1994, leg. Ashe & Brooks, #019 (KNHM).

Diagnosis: Unfortunately, only the male holotype is known. Thus, the variation in size and colouration is unknown. Regarding the size, *E. hondurana* resembles *E. humilis* and *E. boliviana*. It is darker than *E. humilis*, which makes it similar to *E. nigerrima*. The elongate shape of the elytra and the colouration is similar as in *E. boliviana*. Without dissection of the aedeagus the species cannot be separated from the other related species of the group. In contrast to the related species, the central

lobe of the aedeagus is more elongate and bears a short acute tooth in the apical part.

Description: Length: 2.6 mm. Colouration: blackish; elytra light brown with base and posterior margin blackish; legs and antennae light brown.

Head: 0.39 mm long, 0.41 mm wide; eyes large, slightly prominent; as long as temples; temples smoothly narrowed to neck; preocular sides shortly parallel to base of antennae; anterior margin of clypeus sinuate; apically curved; deep supraocular groove reaching from anterior edge of eyes to posterior edge of temples; punctation moderately deep and irregularly sparse; interstices between punctures two to five times as wide as diameter of punctures; at each end of supraocular groove with large setiferous puncture; long setae yellow; elongate microsculpture deep; on clypeus partly diagonal; on vertex longitudinal and close to neck partly diagonal or transverse; surface slightly shiny.

Antennae as long as head and pronotum combined; first antennomere thicker and longer than following antennomeres; second antennomere half as long as first; third antennomere slightly longer than second; following antennomeres increasing in width and decreasing in length; fourth antennomere slightly longer than wide; tenth antennomere slightly wider than long; fourth to eleventh antennomere pubescent and with long apical setae.

Pronotum: 0.35 mm long, 0.39 mm wide; widest close to anterior angles; anterior angles rounded; sides in anterior half smoothly curved; nearly parallel; in posterior half evenly narrowed to posterior angles; at posterior margin approximately half as wide as at anterior angles; punctation similarly dense and deep as on head; at anterior margin close to anterior angles with three large setiferous punctures; long setae yellow; along lateral margin with several setiferous punctures; lateral margin interrupted; interruption marked by large setiferous puncture; microsculpture as deep as on head; striae elongate; on disc longitudinal; close to posterior angles diagonal; close to anterior angles nearly circular; surface slightly shiny.

Elytra: 0.49 mm long, 0.46 mm wide; widest close to posterior angles; slightly narrowed; smoothly curved humeral angles; punctation as dense and deep as on head and pronotum; one large setiferous puncture on central disc; microsculpture as deep as on pronotum; meshes longitudinal; surface slightly shiny.

Abdomen pubescent with several larger punctures with setae.

Aedeagus moderately broad with short transparent lobes in apical half; apex obtuse; in lateral aspect, central lobe curved with acute apex; at midline of apical half with short triangular process; on both sides of process and close to base of process with several sensillae; anterior of process few sensillae; parameres as long as central lobe; at apex with moderately wide transparent lobe; at outer side of transparent lobe with numerous short setae and one longer seta at apex.

Etymology: The species name derived from the country where it was collected.

Eleusis humilis (ERICHSON, 1840)

Figs 3A-C, 28D, 35a

Isomalus humilis ERICHSON, 1840: 839

Type material examined: female, Lectotype: Brazil: Blumenau (labelled as 'ex type' in IRSNB); the type specimen in IRSNB was selected as lectotype, because the holotype of *E. humilis* in ZMUH is lost.

Additional material examined: Brazil: Rio de Janeiro, female, leg. Squires (BMNH); Nova Teutonia, 2 males, 8 females, 17.7.1944, .2., 20.2., 24.2., 26.2., 6.3.1950, leg. F. Plaumann (BMNH); Paraguay: Cazaapa, Hermosa, prop. Sosa family, San Rafael Reserve (26°19.15'S, 55°44.55'W), 90 m elev., fermenting tree wound, 7 males, 9 females, 4.12.2000, 5.12.2000, leg. Z.H. Falin #PAR1F04 (14 KNHM, 2 UIC); Argentina: Tucumán, 19.12.1928, leg. H.E. Box (BMNH).

Diagnosis: *E. humilis* resembles *E. interrupta* in shape and colouration. It is slightly smaller and lighter than *E. interrupta*. Aedeagus slenderer and the medial triangular prominence more elongate. The species can be identified by the long setae of the apical transparent lobe of the paramere. A syntype of *E. indica* KRAATZ, 1859 was studied that was deposited in the IRSNB. Although the overall habitus of the species extremely resembles the other small species of the *E. humilis*-group, e.g. *E. humilis*, *E. fauveli*, *E. boliviana*, the aedeagus shows that *E. indica* is a valid species, distinctly different from the other species of the group (Fig. 10A). The medial process of the central lobe resembles that of *E. boliviana*, but is thicker and shorter.

Description: Length: 2.5 – 3.0 mm. Colouration: light brown; head darker brown; posterior margin of elytra indistinctly darker; legs and antennae yellow.

Head: 0.32 mm long, 0.31 mm wide; eyes large; slightly prominent; nearly twice as long as temples; on average, EL/HL = 0.34; temples shortly narrowed to neck in smooth curve; preocular sides shortly parallel to base of antennae; supraocular groove from anterior edge of eyes to neck; front edge of clypeus prominent; in sinuate curve to centre; punctation fine and irregularly sparse; interstices between punctures two to four times as long as diameter of punctures; on vertex, microsculpture with elongate striae; on clypeus with transverse striae; microsculpture on vertex much deeper than on clypeus; surface on vertex matt; on clypeus shiny.

Antennae as long as head and pronotum combined; first to sixth antennomeres longer than wide; first antennomere slightly thicker than following antennomeres; second to sixth antennomere decreasing in length; sixth

antennomere only slightly longer than wide; seventh antennomere quadrate; following antennomeres increasing in width; approximately quadrate; sixth to eleventh antennomere pubescent; all antennomeres with yellow apical setae.

Pronotum: 0.26 mm long, 0.31 mm wide; widest close to anterior angles; shortly rounded to anterior angles; anterior angles smoothly curved; posterior 2/3 rd evenly narrowed to posterior angles; posterior margin 0.7 times as wide as anterior margin; in dorsal aspect, lateral margin not visible; punctation similarly deep and sparse as on head; close to anterior angles on each side with three larger punctures; each puncture with long seta; some more punctures with setae along lateral margin; sides interrupted in posterior half; marked by deep setiferous puncture; in posterior half with indistinct midline; microsculpture with longitudinal striae; partly curved; surface slightly shiny.

Elytra: 0.41 mm long, 0.38 mm wide; widest close to posterior angles; continuously narrowed to rounded humeral angles; punctation thicker and denser than on head and pronotum; interstices between punctures as wide as to twice as wide as diameter of punctures; along lateral and anterior margin with large setiferous punctures; microsculpture with longitudinal striae; still finer than on pronotum; surface shiny.

Abdomen sparsely punctate; several setiferous punctures on each segment; few setae extremely long; nearly as long as segmental length; microsculpture weak; transverse; close to base of each segment with parts of isodiametric microsculpture.

Aedeagus slightly narrowed to apex; apex smoothly rounded; in central position of apical part with carinate prominence; along apical midline with row of sensillae; at carinate prominence sensillae denser than apically; more sensillae at lateral part of apex; paramere shorter than central lobe; widened to apical transparent lobe; transparent lobe with several extremely fine sensillae; one larger sensilla with longer seta.

Eleusis interrupta (ERICHSON, 1840)

Figs 2A-C, 28F, 35a

Isomalus interruptus ERICHSON, 1840: 839

Isomalus pallidipennis FAUVEL, 1864: 40 **new synonymy**

Eleusis corvina SHARP, 1887: 730 **new synonymy**

Eleusis flavipennis SHARP, 1887: 731 **new synonymy**

Eleusis darlingtoni BLACKWELDER, 1943: 156 **new synonymy**

Piestus interruptus (ERICHSON, 1840) – SCHEERPELTZ 1933: 994

Type material examined: female, Holotype: Columbia: Carthagena (ZMUH); lectotype of *I. pallidipennis*, male: Mexico: Teapa, Campeche (IRSNB); syntypes 1 male, 1 female, Teapa, leg. Pilate, coll. Chevrolat (BMNH); syntype, female, trouves chauves tabacs (IRSNB); syntype, female, Venezuela: Caracas (IRSNB) (with additional labels: *fasciata* Lee, *pallidipennis* Fvl., *indica* Kr.);

Three syntypes of *E. pallidipennis* are deposited in IRSNB, two specimens in BMNH. The male syntype of IRSNB was selected as lectotype for *E. pallidipennis*. Female, lectotype of *E. corvina*: Guatemala: Verapaz, Sinahu, leg. Champion (BMNH), female syntype with same data as lectotype. The two female syntypes are deposited in BMNH. The specimen with an additional “type” label was selected as lectotype; Cuba: male holotype of *E. darlingtoni* BLACKWELDER, 1942, Soledad, leg. Darlington (MCZ).

Additional material examined: Mexico: Plan del Rio, without more date (IRSNB); Guatemala: Senahu, female, coll. Münchemeyer without more data (NMW); Petén, Parque Nacional Ixpanpajul (–89.81834, 16.87380), under tight fresh bark, 160–300 m elev., 4 males, 4 females, 24.11.2016, leg. Z.H. Falin #GUAT1F16085 (6 NHMK, 2 UIC); same location, same collector, on/under fresh bark, 160 m elev. 2 females, 24.11.2016, #GUAT1F16701 (NHMK); same location, same collector, (–89.81512, 16.87341), under fresh bark, 160 m elev., 7 males, 5 females, #GUAT1F16074 (10 KNHM, 2 UIC); Honduras: Francisco Morazán, Zamorano (14°N, 87°W), 820 m elev., rotting bread fruit, male, 30.6.1994, leg. Ashe & Brooks, #258 (KNHM); Santa Barbara, La Fe, Finca La Roca, 5.3 km S. Peña Blanca (14°57'N, 80°02'W), 740 m elev., under bark, female, 21.6.1994, leg. Brooks & Ashe, #176 (KNHM); Nicaragua: Granada Dept., Reserva National Volcan Mombacho, entrance (11°50.5'N, 86°00.74'W), 375 m elev., under fermenting guacaste limber, 4 males, 5 females, 1.6.2002, 4.6.2002, leg. R. Brooks, Z. Falin & S. Chatzimanolis, #NIC1BFC02137 (7 KNHM, 2 UIC); Costa Rica: Heredia, 3 km S Puerto Viejo, OTS La Selva, 100 m elev., male, Sept. 1992, leg. P. Hanson (KNHM); Heredia, La Selva, 3.2 km SE Puerto Viejo, 100 m elev., light intercept trap, female, 3.2.1992, leg. W. Bell (KNHM); San Isidro de General, 700–800 m elev., Aug, 1980, leg. N.L.H. Kraus (AMNH); Ciudad Neily, above, Rd. Ciudad Neily > San Vito (8°39'–42'N, 82°56'W), 100–1000 m elev., car net, 16:15–16:46, devastated forest & plantation, 8.12.2012, leg. Schülke & Grünberg (MSC); Panama: Prov. Miramar (8.95N, 82.19W), car net, 1 male, 5 females, 30.7.2014, leg. T. Struyve (3 TSC, 3 UIC); French Guiana: Eaux Claires, 3.5 mi N Saül (3°38'–40'N, 53°13'–14'W), 155–260 m elev., under bark of log, 2 females, 5.–13.10.1995, leg. L. Herman # 2836 (AMNH).

Diagnosis: On average, slightly larger and darker than *E. fauveli*. The species also extremely resembles *E. humilis*. It can be separated from these two species only by the dissection of the aedeagus. On average, *E. interrupta* is slightly larger than *E. humilis*. But, size range of both species are overlapping. The aedeagus of *E. interrupta* is ticker and with an obtuse apex and not slender with approximately acute apex as in the other species of the *E. humilis*-group.

Description: Length: 2.8 – 3.1 mm. Colouration: dark, nearly black, elytra yellow with dark spot at scutellum and wide transverse stripe at posterior margin; legs light brown; two basal antennomeres yellow; antennomeres three to eleven brown to black.

Head: 0.45 mm long, 0.47 mm wide; eyes not prominent; as long as temples; on average, EL:HL-ratio = 0.29; postocular space shortly parallel; posteriad continuously narrowed to distinct neck; preocular sides shortly parallel to base of antennae; clypeus with slightly sinuate anterior margin; at each end of supraocular groove with yellow seta; nearly twice as long as eyes; punctuation moderately deep and irregularly sparse; interstices between punctures as wide as to four times as wide as diameter of punctures; microsculpture distinct; on clypeus with transverse, on vertex with longitudinal, slightly curved striae.

Antennae as long as head and pronotum combined; first antennomere thicker and slightly longer than second; following antennomeres decreasing in length; second and third antennomeres twice as long as wide; following antennomeres approximately quadrate; antennomeres four to eleven pubescent; all antennomeres with short apical setae.

Pronotum: 0.38 mm long, 0.46 mm wide; widest close to anterior angles; anterior angles smoothly curved; evenly narrowed to posterior angles; in dorsal aspect, lateral margin not visible; anterior margin slightly sinuate; 1.5 times as wide as posterior margin; punctuation moderately deep and irregularly sparse; close to anterior angles with three large setiferous punctures; along lateral margin with several large setiferous punctures; lateral margin interrupted in posterior half; interruption marked by deep setiferous puncture; microsculpture distinct; transverse close to anterior margin; longitudinal on disc; laterad close to anterior angles circular; surface moderately shiny.

Elytra: 0.57 mm long, 0.53 mm wide; widest close to posterior angles; sides slightly convergent to humeral angles; humeral angles smoothly rounded; punctuation finer and denser than on pronotum; on average, interstices between punctures slightly wider than diameter of punctures; microsculpture distinct; striae elongate; diagonal from humeral angles to posterior end of suture; along lateral and posterior margin large setiferous punctures; setae yellow.

Abdomen sparsely punctate; each segment with several larger setiferous punctures; long setae yellow; setae partly as long as length of segment; microsculpture finer than on pronotum; transverse.

Aedeagus wide, thick; apex obtuse; at central midline with short triangular prominence; at prominence with several sensillae; adjacent to prominence several sensillae; apical margin thicker; angles rounded, slightly prominent; with transverse row of sensillae; parameres slightly shorter than central lobe; widened at apex and with transparent lobe; transparent lobe with minute sensillae and row of setae.

Eleusis nigerrima (FAUVEL, 1864)

Figs 4A-C, 28G, 32, 35b

Isomalus nigerrimus FAUVEL, 1864: 37

Isomalus dubius SHARP, 1876: 411 **new synonymy**

Eleusis infima SHARP, 1887: 731 **new synonymy**

Eleusis marginicollis BERNHAUER, 1921: 65 **new synonymy**

Eleusis armuellensis BIERIG, 1931: 426 **new synonymy**

Type material examined: male, Holotype: Brazil: Novo Friburgo (IRSNB). Two syntypes of *E. dubius*: Brazil: Amazonas, male, female (BMNH). The male syntype was selected as lectotype for *E. dubius*; male lectotype of *E. infima*, Nicaragua: Chontales, leg. Janson (BMNH); syntype female with same data as lectotype (BMNH). The two syntypes are deposited in the BMNH; the male syntype was selected as lectotype; male holotype of *E. marginicollis*: Columbia: Bang-Haas (FMNH); male holotype of *E. armuellensis*: Panama: Puerto Armuelles, 8.1930, leg. Bierig (No. Z-13812); females paratype and cotype: with same data as holotype (Z-13812) (FMNH).

Additional material examined: country not defined, pampas, 1 male, 1 female (IRSNB); Costa Rica: Heredia, La Selva, Bio. Sta. 3 km S Puerto Viejo (10°26'N, 84°01'W), female, 6.1991, leg. Hespeneide (KNHM); Panama: Canal Zone, Barro Colorado Is., under bark fermenting, 3 males, 5 females, 16.2.1976, leg. A. Newton (FMNH); Barro Colorado Island (9°11'N, 79°51'W), rotting *Gustavia superba* fruits, female, 26.7.2000, leg. S. Chatzimanolis #PAN1C0091 (KNHM); Canal zone, 4 mi. NW Gamboa, under bark, 7 females, 23.2.1975, leg. J.F. Lawrence (FMNH); Panama, Old Plantation Trail, km 3.5, Parque Soberania, 150 m elev., male, 4.7.1995, leg. A. Gillogly (KNHM); same location, but 4 km Parque Soberania, 175 m elev., 3 females, 1.-2.7.1995, leg. A. Gillogly (KNHM); Panama Prov., Canal Area, PN Soberania, 2.5 km N of Summit, Plantation Rd. km 0-1, beating, male, 31.8.2010, leg. Sekerka (BMNH); Colombia: without more data 2 males, 1 female (coll. Kraatz) (SDEI); Villa del Cauca, PNN Farallones de Cali, Anchicaya (76°46'W, 3°26'N), 900 m elevation, Malaise trap, female, 10.-25.10.2000, leg. S. Sarria #M1108 (KNHM); Amazonas, PNN Amacayacu Mata-mata (70°15'W, 3°41'N), 150 m elevation, Malaise trap, male, 11.-25.9.2000, leg. A. Parente #M846 (KNHM); French Guiana: Réserve Trésor (4°36.37'N, 52°16.44'W), ca. 225 m elev., window trap, female, 12.2009, leg. S. Brule (BMNH); Ecuador: Sucumbios, Sacha Lodge (76°27.35'W, 0°28.14'S), under bark, 2 males, 24.3.1999, leg. R. Brooks #ECU1B99031 (KNHM, UIC); Pastaza, Llandia, 17 km N Puyo, remnant rainforest, female, 16.7.1994, leg. F. Génier (KNHM); Chimborasso, 1000 ft. elev., female, 8.1896, leg. Rosenberg (IRSNB); Peru: Tambopata Prov., Madre de Dios Dpto., 15 km NE Puerto Maldonado, Reserva Cuzco Amazónico (69°03'W, 12°33'S), 200 m elevation, under bark, under bark with fermenting sap, camp, 31 males, 46 females, 30.6., 1.7.,

3.7., 9.7.1989, leg. J.S. Ashe, R.A. Leschen, #348, #356, #377, #449, #481A, #485 (67 KNHM, 14 UIC); same location, but cornestone polypore, 2 males, 18.7.1989, leg. R. Leschen #571 (KNHM); same location, swamp trail, flight intercept trap, female, 17.7.1989, leg. R. Leschen #485 (KNHM); Manabi, Yuyapichis, Panguana Biol. Station, female, 8.11.-6.12.1984, leg. M. Verhaagh (UIC); Pasco Dept., Villa Rica Rd. (10°47.6'S, 75°18.54'W), flight intercept trap, male, 15.10.1999, leg. R. Brooks, D. Brzoska #PERU1B99030C (KNHM); Loreto, 1.5 km N Teniente Lopez (2°35.66'S, 76°06.92'W), 210–240 m elev., flight intercept trap, male, 22.7.1993, leg. R. Leschen #164 (KNHM); Bolivia: Cochabamba, 16.7 km W Villa Tunari, Parque Machias (65°24.42'W, 16°58.20'S), 300 m elev., lowland rainforest, 1 male, 3 females, 12.2.1999, leg. R. Anderson, #BOL1A99037 (KNHM); Cochabamba, Cristalmayu, 1 male, 1 female, 28.8.1949, leg. L. Peña (NMW); Yuracarí, male, (IRSNB); Brazil: Blumenau, female, without more data (IRSNB); Santa Catarina, 1 male, 1 female coll. PE. Klimsch (NMW); Pebas, without more data male (BMNH); Paraguay: Cazaapa Hermosa, prop. Sosa family San Rafael Reserve (26°19.15'S, 55°44.55'W), 90 m elev., fermenting tree wound, 3 males, 4 females, 4.12., 5.12.2000, leg. Z.H. Falin #PAR1F00104 (5 KNHM, 2 UIC).

Diagnosis: The species is extremely variable in the male sex regarding shape of head and pronotum. It resembles *E. interrupta* and *E. humilis* in colouration and can be separated from these species only by dissection of the aedeagus. On average, *E. nigerrima* is slightly larger than *E. humilis*, even in the female sex. The shape of the aedeagus resembles that of *E. humilis* with an acute apex. However, the prominence of the central lobe of the aedeagus is larger and the apical transparent lobe of the paramere is wider and without the long thick apical seta. The fine setae at the apical part of the transparent lobe are longer than in *E. humilis*. The range of the head size in males is extremely variable, which certainly leads to the misinterpretation of Sharp, Bierig, and Bernhauer. I could find no differences in the female sex and no specific difference between the aedeagi of the described species. Moreover, various sizes in male head and pronotum were found in single populations with large number of specimens such as in Panama and in Peru. Therefore, I decided to synonymise the species.

Description: Length: 3.1 – 3.5 mm. Colouration: head and pronotum black; abdomen dark brown; elytra with dark spot at scutellum and dark stripe at posterior margin; lighter colouration of central elytra varying from light brown to dark brown; legs and antennae light brown; apical antennomeres darker brown.

Head: 0.47 mm long, 0.48 mm wide; eyes not prominent; small; on average, EL:HL ratio = 0.21; temples as long as eyes; behind temples continuously narrowed to neck; preocular sides shortly parallel to base of antennae; anterior margin of clypeus sinuate; central prominent

part wide and smoothly rounded; supraocular groove as long as eyes and temples; punctation moderately deep and irregularly sparse; interstices between punctures twice to four times as wide as diameter of punctures; microsculpture moderately deep; on clypeus with transverse striae; on vertex with longitudinal striae; surface moderately shiny.

Antennae as long as head and half of pronotum combined; first antennomere thicker than two following antennomeres; second and third antennomeres half as long as first antennomere; slightly longer than apical width; fourth to sixth antennomere quadrate; following antennomeres wider than long; tenth antennomere 1.5 times as wide as long; fourth to eleventh antennomere pubescent; all antennomeres with short apical setae.

Pronotum: 0.36 mm long, 0.45 mm wide; widest close to anterior angles; anterior angles shortly rounded; evenly narrowed to posterior angles; at posterior margin 0.6 times as wide as at anterior angles; punctation similarly deep and sparse as on head; close to anterior angles with three large setiferous punctures; lateral margin interrupted at beginning of posterior half; interruption marked by deep setiferous puncture; microsculpture similarly deep as on head and with longitudinal striae; at anterior angles curved; surface moderately shiny.

Elytra: 0.50 mm long, 0.52 mm wide; widest close to posterior angles; continuously narrowed to rounded humeral angles; punctation deeper and denser than on pronotum and head; interstices between punctures as wide as to twice as wide as diameter of punctures; microsculpture finer than on pronotum; longitudinally striate; surface shinier than on pronotum.

Abdomen sparsely punctate; microsculpture with weak transverse striae.

Aedeagus approximately parallel in ventral aspect; in lateral aspect, shortly narrowed to acute apex; in medial position of apical part with triangular prominence; along midline with row of sensillae; denser at triangular prominence; paramere shorter than central lobe; with wide transparent apical lobe; apical margin of transparent lobe with fringe of numerous setae and minute sensillae; some more sensillae along basal scape.

Eleusis nigrita spec. nov.

urn:lsid:zoobank.org:act:BB492AC3-EF93-4F93-90E5-FD266A957102

Figs 9A-C, 29A, 35a

Type material: male Holotype: Panama: Santa Fe, Piedra Alta (-81.13°W, 8.52°N), dead wood, 26.4.2014, leg. T. Struyve (UIC). PARATYPES: Costa Rica: Alajuela, E.B. San Ramón, RB San Ramón, 27 km N & 8 km W San Ramón (84°35.46'W, 10°13.4'N), 810 m elevation, under bark, 2 males, 3 females, 7.7.2000, leg. J. Ashe, R. Brooks, Z. Falin, #CR1ABF00072 (KNHM); Heredia, Selva Biol. Stat., nr. Puerto Viejo de Sarapiquí, male, 18.2.1985, leg. L. Herman, #2118 (AMNH); Panama: Santa Fé, Piedra Alta (-81.13°W, 8.52°N), dead wood, 7 males, 29 females,

26.4.2014, leg. T. Struyve (22 UIC, 13 TSC, 1 BMNH); Darién Prov., Mogué (-78.156°W, 8.24°N), litter layer, male, 10.8.2014, leg. T. Struyve (UIC); Veragua, Cerro Tute, 4 km W of Santa Fé, 850 m elev., male, 30.7.1995, leg. A. Gillogly (KNHM); Bocas de Toro, 7 km N. Boquete, La Culebra Trail (8°48'N, 82°26'W), 1050 m elev., 2 females, 15.8.1995, leg. A. Gillogly (KNHM); Chiriqui, La Fortuna, Cont. Divide Trail (8°46'N, 82°12'W), 1150 m elev. under bark, female, 9.6.1995, leg. J. Ashe, R. Brooks #158 (KNHM).

Diagnosis: The species resembles *E. nigerrima* in size and dark colouration. *E. nigrita* is still darker than *E. nigerrima*. Whereas the elytra of *E. nigerrima* are dark brown to light brown with darker posterior margin, elytra of *E. nigrita* are totally black. The species are also separated by the shape of the elytra. Whereas the elytra are quadrate in *E. nigerrima*, they are longer than wide in *E. nigrita*. The identification should be supported by dissection of the aedeagus. In contrast to *E. nigerrima*, the central lobe of the aedeagus is without central prominence. Only a slight swelling is visible. In lateral aspect, the apex is slightly curved, whereas it is straight in *E. nigerrima* and the transparent lobe of the paramere has no fringe of fine setae as in *E. nigerrima*. According to the sample from Panama with a large number of specimens, no sexual dimorphism such as in *E. nigerrima* was found. In both males and females, the head length and width was 0.56 ± 0.07 mm, 0.65 ± 0.07 mm (n=6) for males and 0.52 ± 0.06 mm, 0.62 ± 0.06 mm (n=26) for females, respectively (t-test: T=1.5, p=0.14).

Description: Length: 3.2 – 3.5 mm. Colouration: totally black; femoral base black; femoral apex, tibiae and tarsi brown; antennae brown.

Head: on average, 0.53 mm long, 0.62 mm wide; without sexual dimorphism; eyes not prominent; temples as long as eyes; slightly divergent; diagonally narrowed to neck; preocular sides parallel to base of antennae; anterior margin of clypeus sinuate with prominent central part; supraocular groove deep; slightly widened posteriad; irregular punctation moderately deep; sparse; on average, interstices between punctures three to four times as wide as diameter of punctures; setiferous puncture at each end of supraocular groove; several setiferous punctures along anterior margin of clypeus; elongate microsculpture dense; on clypeus weaker than on vertex; on clypeus with transverse striae, on anterior vertex with longitudinal striae; on posterior vertex with diagonal striae; surface slightly shiny.

Antennae nearly as long as head and pronotum combined; first antennomere thicker and longer than following antennomeres; second less than half as long as first; third half as long as first; following antennomeres increasing in width and decreasing in length; fourth antennomere 1.5 times as long as wide; tenth antennomere quadrate; fourth to eleventh antennomere pubescent and with long apical setae.

Pronotum: 0.39 mm long, 0.41 mm wide; widest close to anterior angles; anterior angles smoothly rounded to neck; posterior half continuously narrowed to posterior angles; posterior angles obtuse; posterior margin slightly rounded; punctation as deep as on head, but sparser; on average, interstices between punctures four to five times as wide as diameter of punctures; at anterior margin close to anterior angles, two large and deep punctures with setae; at anterior angles with short lateral impression; within impressions two large setiferous punctures; along lateral margin with few setae; lateral margin interrupted at beginning of posterior half; interruption marked by large setiferous puncture; elongate microsculpture as deep and dense as on head; close to anterior margin with transverse striae; at anterior angles with curled striae; on disc with longitudinal striae; close to posterior margin with diagonal striae; surface slightly shiny.

Elytra: 0.56 mm long, 0.53 mm wide; sides slightly divergent from obtuse humeral angles to posterior angles; posterior angles obtusely angled; punctation as deep and sparse as on pronotum; on central disc with pair of large setiferous punctures; several large setiferous punctures along lateral margin; elongate microsculpture as dense and deep as on head and pronotum; diagonally striate; pointing from humeral angles to suture; surface slightly shiny.

Abdomen with denser and deeper punctation as on elytra; segments with transverse rows of large setiferous punctures; microsculpture with isodiametric reticulation at base of segments; with elongate transverse striae in distal half of segments; basal surface of segments matt, distal surface shinier.

Aedeagus slender; apex slightly curved; along midline of central lobe without prominence; marked by concentration of sensillae; endophallus with two long spurs; one thick long spur and one thinner and shorter spur; paramere slightly shorter than central lobe; widened at apex to transparent lobe; apical margin of transparent lobe with minute sensillae, with only one seta; at base of scape with few sensillae.

Etymology: The species name derived from the Latin word *niger* meaning black and refers to the totally black colouration of the elytra.

Eleusis rufipennis spec. nov.

urn:lsid:zoobank.org:act:B6989833-5DD4-492E-969F-DD1F4E6E97E9

Figs 13A-C, 29E

Type material: male, Holotype: Costa Rica: Heredia, Volcán Brava, 2800 m elev., flight intercept trap, 11.-27.6.1997, leg. S. & J. Peck, #CR1P97020. Paratype: Cartago, 4 km NE Canon, Genesis II Cerro de la Muerte, 2350 m elev., malaise trap, female, 1.4.-30.5.1996, leg. P. Hanson, #CR1H95-96 14 (KNHM); Heredia, Cerro Chompipe, 10 km NNE Heredia, 2100 m elev., flight

intercept trap, male, 12.-27.6.1997, leg. S. & J. Peck, #CR1P97021 (UIC).

Diagnosis: The species mostly resembles *E. genieri* in size and colouration. It is mainly differentiated from that species by the shape of the aedeagus. More details for the differentiation are given in the diagnosis for *E. genieri*.

Description: Length: 3.4 mm. Colouration: black, elytra light reddish brown; along suture blackish, blackish spot largely widened at scutellum and shortly widened at posterior margin; legs light brown; antennae light brown at base, darkened to apex.

Head 0.54 mm long, 0.59 mm wide; eyes prominent; temples nearly twice as long as eyes; parallel; posterior angles shortly rounded to distinct neck; preocular sides shortly parallel to base of antennae; anterior margin of clypeus sinuate; central part prominent; supraocular groove deep; from anterior edge of eyes to posterior edge of temples; between eyes on anterior vertex with pair of impressions; with setiferous puncture; punctation deep and moderately sparse; on average, interstices between three to four times as wide as diameter of punctures; between larger punctures with sparse micro-punctuation; elongate microsculpture deep and dense; on clypeus partly diagonally striate; on vertex longitudinally striate; surface moderately matt.

Antennae slightly longer than head and half of pronotum combined; first antennomere elongate; second antennomere one third as long as first; third antennomere slightly longer than second; following antennomeres increasing in width and decreasing in length; fourth antennomere slightly longer than wide; tenth antennomere slightly wider than long; antennomeres four to eleven pubescent and with long apical setae.

Pronotum 0.46 mm long, 0.55 mm wide; widest close to anterior angles; anterior angles widely rounded; continuously narrowed posteriad to obtuse posterior angles; posterior margin only half as wide as at anterior angles; sides interrupted at middle; interruption marked by setiferous punctures; more setiferous punctures at anterior margin close to anterior angles and in anterior half along lateral margin; punctation similarly deep and dense as on head; narrow midline impunctate; with pair of weak longitudinal impressions on each side of midline; elongate microsculpture dense and deep; on disc, longitudinally striate; at central anterior margin, transversely striate; in lateral anterior half, partly diagonally striate; surface moderately matt.

Elytra 0.81 mm long, 0.74 mm wide; widest close to posterior angles; slightly convergent to humeral angles; humeral angles and posterior angles nearly rectangular; punctation similarly dense as on pronotum, but slightly weaker; one central larger setiferous puncture on each side of suture; elongate microsculpture dense; weaker than on pronotum; surface moderately shiny.

Abdomen deeply and densely punctate; with transverse row of setiferous punctures on each segment; deep elon-

gate microsculpture diagonally striate; at lateral base of segments netlike striate.

Aedeagus thick; in lateral aspect, strongly curved with shortly rounded, nearly acute apex; in ventral aspect, parallel with broad straight apex; at central midline with prominence; along midline and at prominence with numerous sensillae; few sensillae close to lateral apical angles; paramere thick with long transparent lobe; apical margin of transparent lobe irregularly lobed.

Etymology: The species name is a combination of the Latin words *rufus* meaning red and *pennis* meaning elytra and refers to the reddish colouration of the elytra.

Eleusis breviceps-group

Eleusis breviceps SHARP, 1887

Figs 15A-C, 30A-B, 35e

Eleusis breviceps SHARP, 1887: 731

Type material examined: female, Lectotype: Guatemala: Verapaz, Senahu, leg. Champion (BMNH). According to Sharp, two syntypes exist. One syntype labelled additionally with a type label was examined. This specimen was selected and labelled as lectotype.

Additional material examined: Costa Rica: Puntarenas Prov., Las Alturas Biol. Sta. (8°56.17'N, 82°50.01'W), 1660 m elev., under bark, male, 1.6.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa #CR1AFH04071 (KNHM); Cartago Prov., Tapanti Nat. Park, visitors cabin (9.76112 N, 83.7848 W), 1283 m elev., under bark, male, 17.3.2010, leg. Z.H. Falin, #CR10-0317-ZF13 (KNHM); Panama: Panama Prov., Santa Fé, Piedra Alta (8°52'N, 81°13'W), dead wood, 4 males, 5 females, 26.4.2014, leg. T. Struyve (4 TSC, 5 UIC).

Diagnosis: The species can be differentiated from the other two species of the group by its black colouration. In this respect, it resembles *E. frater* of the *E. bicolor*-group. However, *E. frater* has only one pair of elytral setiferous punctures and no interrupted pronotal lateral margin. *E. breviceps* is additionally differentiated from *E. scita* and *E. insignis* by the weak punctation and microsculpture of head and pronotum. The head shape described by SHARP (1987) based on the female specimen studied by SHARP. The higher number of specimens studied here shows that the head shape of *E. breviceps* varies extremely and is no valuable character separating the species from *E. scita* and *E. insignis*.

Description: Length: 3.9 mm long. Colouration: totally black, except abdominal segments VII and VIII dark yellow; legs brown; antennomeres 1-3 brown, 4-11 black.

Head: on average, females: 0.61 mm long, 0.96 mm wide; males: 0.78 mm long, 1.24 mm wide (sexual dimorphism statistically significant: t-test: $t=-3.8$, $p=0.004$); eyes not prominent; short; sides of temples divergent; in females, 1.5 times to more than two times longer than eyes; in males, 2.5 times as long as eyes; head width and length of temples varying; supraocular groove deep; straight; pointing to outer edge of neck; not parallel to outer line of temples; preocular sides sinuate; strongly narrowed in front of base of antennae; central part of clypeus prominent; punctation weak and sparse; on average, interstices between punctures, two to four times as wide as diameter of punctures; one setiferous puncture at each end of supraocular groove; another pair of setiferous punctures on each side of clypeal prominence; elongate microsculpture weak; on clypeus, transversely striate; on vertex, longitudinally striate; surface slightly shiny.

Antennae as long as head and pronotum combined; first antennomere thicker than following antennomeres; second antennomere only half as long as first; third antennomere nearly as long as first, but narrower; following antennomeres longer than wide; decreasing in length and increasing in width; fourth antennomere approximately twice as long as apical width; tenth antennomere only slightly longer than wide; fifth to eleventh antennomere pubescent; all antennomeres with long apical setae.

Pronotum: 0.58 mm long, 0.85 mm wide; widest close to anterior angles; continuously narrowed to posterior angles; lateral margin interrupted in posterior half by short emargination followed by a tooth-like prominence; posterior angles obtuse; close to anterior angles with deep and short groove; in front of groove deeply emarginate; narrowed to anterior angles; as weakly and sparsely punctate as on head; with several setiferous punctures; one in anterior groove, few along lateral margin, pair of deeply impressed setiferous punctures on each side of midline at anterior margin; elongate microsculpture as weak as on head; longitudinally striate; surface slightly shiny.

Elytra: 0.79 mm long; 0.79 mm wide; sides nearly parallel; humeral and posterior angles nearly rectangular; punctation slightly deeper than on pronotum, but as sparse as on pronotum; several setiferous punctures along lateral margin; on disc, two pairs of setiferous punctures; one pair in anterior half; one pair on central disc; elongate microsculpture slightly deeper than on pronotum; longitudinally striate; surface slightly shiny.

Abdomen weakly punctate; each segment with transverse row of setiferous punctures; elongate microsculpture transversely striate.

Aedeagus thick; in lateral aspect, ventral edge approximately straight; apex with deep incision; apex with fringe of short setae; in ventral aspect, approximately parallel; apical opening rectangular; in apical half with numerous sensillae; parameres approximately as long as central lobe; slightly widened to apex; transparent lobe elongate; with numerous apical setae.

Eleusis insignis SHARP, 1887

Figs 16A-C, 29H

Eleusis insignis SHARP, 1887: 732

Type material examined: female, Holotype: Guatemala: Quiche Mts., 7000-9000 ft., leg. Champion (BMNH).

Additional material examined: Mexico: Chiapas, Vulcan Tacana, Sumidero, San Antonio, leaf litter beside Rio Mala, 1760 m elev., 3 males, 20.12.1976, leg. H. Frania, D. Proctor (2 AMNH, 1 UIC); same location, but NE slope Volcan Tacana, rocky edge of Rio Mala, Sumidero San Antonio, 1760 m elev., 17.12.1975, leg. H. Frania #165-75 (AMNH); Oaxaca, 4.6 km S. Suchixtepec, 2150 m elev., riparian alder forest leaf litter, berlese, female, 23.7.1992, leg. R. Anderson #92-023 (KNHM); Guatemala: El Progreso, Cerro Pinalón (15.0835 N, 89.9444 W), 2575 m elev., cloud forest and treefall gap, female, 29.4.-5.5.2000, #LLAMA09 Ft-B-01-1-01 (KNHM); San Marcos, Parque Municipal Refugio del Quetzal (14.9391 N, 91.8729 W), 1810 m elev., cloud forest, flight intercept trap, sifted cloud forest litter, 1 male, 1 female, 4.-11.6.2015, 4.11.2015, leg. Z. Falin, R. Anderson #GUAT1F15099, #GUAT1A15103 (1 KNHM, 1 UIC).

Diagnosis: The species resembles *E. scita* in size and colouration. Beside the dense and deep punctation of head and pronotum already mentioned in the description of Sharp, the shape of the pronotum differs from *E. scita* by the thick tooth interrupting posterior convergence. In the few specimens examined, the head is convergent directly behind eyes, whereas it is mostly widened in *E. scita*. The central opening of the aedeagus is a triangular incision. Due to the few specimens examined, no sufficient information can be given concerning the infraspecific variance. However, the density of the punctation on head and pronotum seems to vary slightly, but is never as sparse and weak as in *E. scita*.

Description: Length: 6.4 mm. Colouration: head black; pronotum reddish brown; elytra yellow with indistinctly darker spot along suture and posterior margin; abdomen yellow with wide central stripe brown; legs dark yellow; antennomeres 1 – 4 yellow; 5 – 11 brownish.

Head: 0.75 mm long, 1.20 mm wide (male specimen: 0.63 mm long, 1.07 mm wide); eyes not prominent; postocular sides narrowed to neck in continuously smooth curve; preocular side slightly narrowed to base of antennae; anterior margin of clypeus sinuate; wide central part prominent; anterior margin straight; supraocular groove curved; parallel to curved lateral side; punctation on clypeus sparse; nearly absent; on vertex extremely deep and dense; nearly coriaceous; narrow midline impunctate; temples on both sides of supraocular grooves and along neck impunctate; two setiferous punctures at anterior and posterior end of supraocular groove; one setiferous puncture on each side of central prominence;

with elongate microsculpture; on clypeus transversely striate; on vertex with longitudinal striae; surface moderately shiny.

Antennae slightly longer than head and pronotum combined; first antennomere thicker than following antennomeres; slightly longer than second, third antennomere slender; as long as first; following antennomeres shorter; decreasing in length and increasing in width; fourth to seventh antennomere longer than wide; following antennomeres approximately quadrate; sixth to eleventh antennomere pubescent; all antennomeres with long apical setae.

Pronotum: 0.70 mm long, 1.00 mm wide; widest in anterior third; continuously narrowed to posterior margin; in posterior third with thick tooth interrupting lateral margin; anterior half narrowed to anterior margin; at obtuse angles with wide deep groove; in front of groove deeply emarginate; punctation nearly as dense and deep as on vertex; few setiferous punctures at anterior margin and along lateral margin; at anterior margin, elongate microsculpture transversely striate; on disc with longitudinal striae.

Elytra: 1.25 mm long, 1.33 mm wide; sides divergent to posterior angles; humeral and posterior angles nearly rectangular; punctation distinctly weaker than on head and pronotum; interstices between punctures at least two to three times as wide as diameter of punctures; two pairs of setiferous punctures on disc; one pair in anterior half; one pair in approximately central position; on setiferous punctures on each side of scutellum and few setiferous punctures along posterior margin; elongate microsculpture with longitudinal striae.

Abdomen with weak punctation; on each segment with transverse row of setiferous punctures; microsculpture isodiametric at base; transversely striate close to posterior margin of each segment.

Aedeagus thick; in lateral aspect, ventral edge of central lobe slightly curved; apex obtuse; apical opening with central incision; in ventral aspect, approximately parallel; with several sensillae in central part: paramere slightly longer than central lobe; with curved widened transparent lobe; apical margin of transparent lobe with fringe of short setae and one longer and thicker seta.

Eleusis scita SHARP, 1887

Figs 17A-C, 29G, 34, 35c

Eleusis scita SHARP, 1887: 731

Eleusis mixta SHARP, 1887: 732 **new synonymy**

Type material examined: female, Lectotype: Guatemala: Capetillo, leg. Champion (BMNH); 2 female syntypes with same data as holotype. Three syntypes are deposited in the BMNH. The syntype specimen with an additional type label was selected as lectotype. Male lectotype of *Eleusis mixta*: Guatemala: San Geronimo, leg. Champion (BMNH); female syntype with same data (BMNH). Two

syntypes are deposited in the BMNH. The male syntype was selected as lectotype.

Additional material examined: Mexico: Chiapas, Union Juárez, n.w. slope Volcan Tacana, Barranca Providencia, ex. rotting cut vegetation, montane trop. forest, 1600 m elev., 1 male, 2 females, 25.12.1976, leg. H. Frania (1 AMNH, 1 UIC); Veracruz, 2.5 km S Jalapa, 1370 m elev., under bark, 21 males, 20 females, 26.5.1991, leg. J.S. Ashe, #6 (35 KNHM, 6 UIC); same location, sifted from litter, female, 26.5.1991, leg. J. Ashe, #9 (KNHM); Guerrero, 71 km NE Atoyac de Alvarez, 1700 m elev., flight intercept trap, male, 26.7.1992, leg. J. Ashe, #127 (KNHM); Honduras: Comayagua, 9 km E Comayagua (14.44362, -87.55492), 1710 m elev., veg. pine-oak forest clearing, beating, male, 17.5.2010 (KNHM); Ocotepeque, 24 km E Ocotepeque, El Guisayote (14°25'N, 89°04'W), 2170 m elev., under bark, 1 male, 3 females, 14.6.1994, leg. J.S. Ashe #100 (KNHM); Francisco Morazán, 12 km W Zamorano, Cerro Uyuca (14°02'N, 87°05'W), 1870 m elev., grass trimmings, under bark, flight intercept trap, 5 males, 5 females, 6.6., 9.6.1994, leg. Ashe, Brooks, #052 (8 KNHM, 2 UIC); Guatemala: San Marco, Parque Municipal, Refugio del Quetzal (14.93916, -91.87296), 1810 m elev., cloud forest, flight intercept trap, male, 4.-11.6.2015, leg. Z.H. Falin, #GUAT1F15099 (KNHM); Baja Verapaz, 4 km S Purulhá, 1650 m elev., under bark, 2 males, 7 females, 2.7.1993, leg. J.S. Ashe, R.W. Brooks, #181 (6 KNHM, 2 UIC); Quetzaltenango, 8 km SE Zunil (14°46.1'N, 91°26.9'W), 2460 m elev., berlesate bamboo litter, 3 females, 21.6.1993, leg. Anderson & Ashe, #93-10C (KNHM); Sacatepéquez, Antigua, SE Finca El Pilar (-90.59125, 14.52143), under bark, 2500-2600 m elev., female, 17.11.2016, leg. Z.H. Falin #GUAT1F16002 (KNHM); El Progreso, Cerro Pinalón (-89.94548, 15.08407), 2560 m elev. sifted leaf litter, cloud forest, 1 male, 1 female, #LLAMA09Wa-B-01-1-all (KNHM); Costa Rica: San José, 31 km N San Isidro del General, 7600 ft elev., near 105 km Marker, Rt.2, litter, 4 females, 11 males, 26.2.1985, leg. L. Herman (12 AMNH, 3 UIC); km 117 Pan-Am. Hwy. 19 km N San Isidro (9°28.0'N, 83°42.2'W), 1800 m elev., flight intercept trap, 1 male, 2 females, 20.-25.6.1997, leg. S. & J. Peck, #CR1P97023 (KNHM); 26 km N San Isidro, 2100 m elev., male, VIII-IX.1991, leg. P. Hanson (KNHM); Villa Mills, Estac. Biol., Cuerici (9°34'N, 83°40'W), 2600 m elev., male, XII, 1999, leg. P. Hanson (KNHM); 2.4 km ENE Sn Gerardo de Riveras, Cloudbridge Reserve, House Environs (9°28.36'N, 83°34.51'W), 1700 m elev., flight intercept trap, 2 males, 8.-11.6.2005, leg. J.S. Ashe, Z. Falin, I. Hinojosa, #CR1AFH04199 (KNHM); Genesis II, Reserve (9°42.57'N, 83°54.64'W), 2360 m elev., under bark, 15 males, 31 females, 14., 16.6.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa, #CR1AFH04232 (KNHM); Zuruquí de Moravia (10°3'N, 84°1'W), 1600 m elev., malaise trap, 6 males, 2 females, IV-V.1993, V.1994, 1.-30.1.1995, 1.-30.5.1995, leg. P. Hanson, #CR1H93-9513 (7 KNHM, 1 UIC); Pan Americ. Hwy., km 80.5, 9 km SSW

Albergue de Montana Savegre, Upper Quebrada-Las Robles Trails (9°32'56"N, 83°48.9'W), on and under bark, female, 23.7.2000, leg. J. Ashe, R. Brooks, Z. Falin, #CR1ABF00237 (KNHM); Pan Americ. Hwy., km 80.5, 7 km SSW Cabinas de Quetzal (9°33.53'N, 83°48.5'W), 2150 m elev., under bark, female, 22.7.2000, leg. J. Ashe, R. Brooks, Z. Falin, #CR1ABF00218 (KNHM); 19 km S Empalme, Mirador Quetzal, 2600 m elev., female, VI.2000, leg. P. Hanson (KNHM); km 45 Int. Amer. Hwy., 6 km NE Empalme (9°45'N, 83°58.3'W), flight intercept trap, 1 male, 2 females, 8.-26.6.1997, leg. S. & J. Peck, #CR1P97019 (KNHM); Heredia Prov., 2 km N Sacramento, Rd. to Volcan Barba, 8000 ft elev., litter near stream, male, 15.3.1991, leg. L. Herman, #2491 (AMNH); San Antonio de Escazu, 2000 m elev., flight intercept trap, female, 1.9.-30.10.1996, C. Flores & P. Hanson, #CR1H95-9610 (KNHM); Paso Llano, Falda, S.O. Volcán Barva, 2300 m elev, female, 3.4.1991, leg. H.J. Lezama (KNHM); San José/Cartago, km 69, Int. Amer. Hwy., nr. Tres de Junio (9°39.3'N, 83°51.3'W), 2600 m elev., flight intercept trap, 2 males, 7.-19.6.1997, leg. S. & J. Peck, #CR1P97017 (KNHM); Cartago, 4 km, NE Canon, Genesis II, Cerro de la Muerte, 2300 m elev., malaise trap, 3 males, I.1995, 2 females, 1.2.-30.3.1995, male, 1.-30.5.1995, 2 females, 1-30.6.1995, 1 male, 4 females, 1.-30.7.1995, 1 male, 2 females, 1-30.8.1995, 1 male, 2 females, 1.-30.9.1995, female, 1.-30.1.1996, male, leg. P. Hanson, #CR1H93-9517/27 (15 KNHM, 4 UIC); same location, 3100 m elev., male, V.-VI.2000, leg. P. Hanson (KNHM); Rd. to Cerro de la Muerte, bet. Km mark 100 & 101, Rt2, 8700 ft. elev., leaf litter from stream crossing road, female, 26.3.1991, leg. L. Herman #2538 (AMNH); P.N. Tapanti (9°45.41'N, 83°47.5'W), 1100 m elev., under bark, male, 19.7.2000, leg. J. Ashe, R. Brooks, Z. Falin, #CR1ABF00180 (KNHM); P.N. Tapanti (9°43.55'N, 83°46.45'W), 1350 m elev., flight intercept trap, 1 male, 17.-20.7.2000, leg. J. Ashe, R. Brooks, Z. Falin, #CR1ABF00193 (KNHM); Puntarenas, La Reserva de Monteverde, ca. 4 km E Monteverde, 5000-5500 ft elev., 4 males, 4 females, 4.3.1985, leg. L. Herman, #2150 (4 AMNH, 2 UIC); Monte Verde, Reserva Biologica de Monte Verde, nr. Quebrada Cueba on Sendero Rio, 1580 m elev., ex. fungi, male, 13.5.1989, leg. J. Ashe, R. Brooks, R. Leschen, #149 (KNHM); same location (10°19.671'N, 84°49.141'W), cloud forest, flight intercept trap, 1 male, 1 female, 10-17.6.2001, leg. S. & J. Peck, #CR1P01002 (KNHM); Monteverde Reserve (trail near lab), flight intercept trap, 1.6.1993, leg. C. Michalski (KNHM); Monteverde Biol. Stat. (10°19.67'N, 84°49.14'W), cloud forest, 1515 m elev., flight intercept trap, female, 10.-17.6.2001, leg. S. & J. Peck, #CR1P01002 (KNHM); Monteverde, 1800 m elev., female, 8.5.1989, leg. R. Brooks, R. Leschen (KNHM); Monteverde, 1400 m elev., flight intercept trap, female, 14.-15.7.1989, leg. R.E. Beer (KNHM); Puntarenas, Las Cruces Botanical Garden, nr. San Vito, 3500 ft elev., 4 females, 27.-28.2.1985, leg. L. Herman, #2136 (AMNH); Puntarenas Prov., Rd. to Cerro de la

Muerte, bet. km mark 100 & 101, Rt.2, 8700 ft elev. leaf litter from stream crossing road, female, 26.3.1991, leg. L. Herman, #2538 (AMNH); Puntarenas, Cerro Amigos, 1800 m elev., wind-swept ridge, female, 7.5.1989, leg. J. Ashe, R. Brooks, R. Leschen, #039 (KNHM); Peninsula de Osa, 27 km S Puerto Jimenez, Rio Piro, 75 m elev., male, X.1990, leg. P. Hanson (KNHM); Altamira Biol Sta. (9°01.76'N, 83°00.49'W), 1510-1600 m elev., flight intercept trap, female, 4.-7.6.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa, #CR1AFH 04144 (KNHM); Puntarenas-Guanacaste border, Monte Verde, Cerro Amigo, 1760 m elev., flight intercept trap, 1 male, 1 female, 12.5.1989, leg. J. Ashe, R. Brooks, R. Leschen, #124 (KNHM); Las Alturas Biol. Sta. (8°56.17'N, 82°50.01'W), 1660 m elev., under bark, 1 male, 1 female, 1., 2.6.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa, #CR1AFH04071 (KNHM); same location, same collectors, 1660 m elev., flight intercept trap, female, 31.5.-3.6.2004 (KNHM); San Vito, Estac. Biol. Las Alturas, 1875 m elev., 2 males, 1 female, IX-XI 1991, leg. P. Hanson (KNHM); Guanacaste, Cacao Biol. Stat (10°55.38'N, 85°27.7'W), 1050 m elev., under bark, male, 10.7.2000, leg. J. Ashe, R. Brooks, Z. Falin, #CR1ABF00086 (KNHM); Alajuela, P.N. Volcán Poas (10°11.3'N, 84°14'W), 2500 m elev., flight intercept trap, female, 6.-28.6.1997, leg. S. & J. Peck, #CR1P97016 (KNHM); Panama: Chiriqui Prov., Cerro Punta, Mont Baru (8.846°N, -82.536°W), dead wood, 4 females, 1.5.2014, leg. T. Struyve (2 UIC, 2 TSC); same location (8.848°N, -82.528°W), flight intercept trap, 20.7.2014, leg. T. Struyve (TSC); Chiriqui, Finca Palo Santo, 4900 ft elev., male, 5.3.1959, leg. H. Dybas (AMNH); Bocas del Torro, 5 km N Boquete, La Cueba Trail (8°48'N, 82°26'W), 1500 m elev., flight intercept trap, 2 males, 15.-17.5.1995, A.R. Gillogly (KNHM); Vara Blanca, 2000 m elev., 2 males, 8.1938, leg. A. Bierig (BMNH); Los Nubles, 2 females, 19.2.1939, leg. A. Bierig (BMNH).

Diagnosis: *Eleusis scita* is extremely variable regarding the shape of the head and colouration of pronotum, elytra, and abdomen. This certainly was the reason, why Sharp described also *E. mixta* with slightly different shape and punctuation of the head. Although only *E. mixta* is represented by a male in the type series, I selected *E. scita* as species name, because it was described by Sharp one page before *E. mixta*. In spite of the high variance among the specimens, I found no differences in the structures of the aedeagus. The endophallus is weakly sclerotised, but its specific structure is constant. It can be differentiated from the similar *E. insignis* by the less deep and dense punctuation of the head. Moreover, the approximately circular opening of the apex differs from the approximately quadrate opening in *E. insignis*.

Description: Length: 3.5 – 5.1 mm. Colouration: extremely variable; head always black; pronotum blackish brown, brown or red; elytra yellow to yellow brown; hind wings shining partly blackish under transparent elytra; abdomen yellowish brown; yellow with central brown

stripe or darker brown; legs and first three antennomeres yellow; antennomeres four to eleven dark brown to blackish brown.

Head: 0.45 – 0.88 mm long, 0.68 – 1.30 mm wide; head size extremely variable; on average, head width of males wider (0.99 mm) than head width of females (0.92 mm) ($t=2.53$, $n=54/47$, $p=0.01$); shape extremely variable; temples either directly convergent to neck or widened behind eyes and then abruptly narrowed to neck or nearly parallel behind eyes and then shortly narrowed to neck; supraocular groove from anterior edge of eyes to beginning of neck; either straight or slightly sinuate; neck separated from vertex by transverse line; preocular sides sinuate to prominent central part of clypeus; punctation moderately deep and dense; on average, interstices between punctures as wide as to three times as wide as diameter of punctures; at each end of supraocular groove with setiferous puncture; another pair of setiferous punctures on each side of prominent part of clypeus; elongate microsculpture moderately deep and dense; on clypeus, transversely striate; on vertex, longitudinally striate; surface moderately shiny.

Antennae slightly longer than head and pronotum combined; first antennomere slightly thicker and longer than following antennomeres; second antennomere nearly half as long as first; third antennomere longer than second; fourth antennomere as long as second; following antennomeres decreasing in length and increasing in width; fifth antennomere longer than wide; tenth antennomere as long as wide.

Pronotum: on average, 0.52 mm long, 0.74 mm wide (width variable corresponding to total length; shape not variable); widest close to anterior angles; posteriad convergent to posterior angles; at posterior angles only half as wide as at anterior angles; sides interrupted in posterior half; at anterior angles shortly emarginate and narrowed in concave curve to anterior angles; between both angles with short, posteriorly convergent groove; punctation similar to that of head; laterally with setiferous puncture at interruption of sides; another setiferous puncture in anterior groove; at anterior margin close to anterior angles, two pairs of setiferous punctures; deeply impressed; elongate microsculpture as dense and deep as on head; striae approximately longitudinal; partly diagonal; surface slightly more shiny than head.

Elytra: 0.88 mm long, 0.86 mm wide (size varies corresponding to total size); widest close to posterior angles; humeral angles and posterior angles nearly rectangular; punctation similarly dense and deep as on pronotum; pair of setiferous punctures on each side of suture; position of punctures and interstices between punctures variable; anterior pair in anterior half close to base or nearly in central position; posterior pair shortly behind centre; elongate microsculpture as deep and dense as on pronotum; striae longitudinal; surface slightly shiny.

Abdomen with weak punctation; transverse row of setiferous punctures on each segment; microsculpture at

base of segments more isodiametric; at posterior margin of segments more transverse; surface shiny.

Aedeagus thick; in lateral aspect, slightly curved; in ventral aspect, parallel; apical opening circular; endophallus with wavy structures; in central part with numerous sensillae; parameres nearly as long as central lobe; with slightly widened transparent lobe; at apex of paramere with short hairs; at base of transparent lobe with few sensillae.

Eleusis-bicolor group

Eleusis adusta (FAUVEL, 1864)

Figs 23A-C, 30D

Isomalus adustus FAUVEL, 1864: 33

Type material examined: male, Holotype: Brazil: Novo Friburgo (IRSNB).

Additional material examined: Paraguay: Cazaapá, Hermosa prop. Sosa family, San Rafael Reserve (26°19.15'S, 55°44.55'W), 90 m elev., fermenting tree wound, male, 5.12.2000, leg. Z.H. Falin #PAR1F00116 (KNHM); Brazil: Pará (Belém), Marco da Legua (-48.43, -1.45), without more data male, (IRSNB); Minas Gerais, Barreira de Piquete, Sierra Mantiqueira, 1500 m elev., 2 males, 1 female, Dec. 1957, leg. H. Schubart (UIC); Rio de Janeiro, Teresopolis, male, Dec. 1957, leg. M. Alvarenga (UIC); Rio de Janeiro, male, leg. Squires (BMNH); Cachoeirinha-Una (-41.20 W, -12.19S), Bahia, without more data (NMW).

Diagnosis: Referring to the few specimens studied, the size and head shape of the species seem to be constant in contrast to those of *E. bicolor* and *E. struyvei*. Colouration is similar as in *E. bicolor* and *E. struyvei* with black or dark brown head and pronotum and reddish anterior half of elytra. In contrast to those species, the anterior abdominal segments are dark and posterior segments yellow, whereas anterior abdominal segments are lighter in *E. bicolor* and *E. struyvei*. It can be additionally differentiated from these two species by the sparser microsculpture and the more continuous punctation of the head as well as the absence of grooves at the anterior angles of the pronotum. Moreover, in ventral aspect the aedeagus is slenderer than that of *E. bicolor* and *E. struyvei*.

Description: Length: 5.5 – 6.0 mm. Colouration: head and pronotum black; elytra orange with posterior margin dark brown; abdomen dark brown except posterior two segments orange; legs and antennae dark brown; tarsi yellow.

Head: 0.95 mm long, 1.05 mm wide; temples parallel; approximately twice as long as eyes; posterior angles obtusely narrowed to wide neck; supraocular groove wide; widened posteriad; preocular sides shortly parallel to base of antennae; anterior angles obtuse; continuously

narrowed to centre of clypeus; at anterior edge, setiferous puncture in supraocular groove; second one at posterior edge; pair of setiferous punctures at centre of anterior margin; deep and moderately dense punctation; interstices between punctures varying between as wide as diameter of punctures and twice as wide as diameter of punctures; on clypeus, elongate microsculpture deep and dense; on lateral vertex, weaker and sparser; absent on central vertex; dense in supraocular grooves; surface of clypeus and vertex shiny; surface of supraocular groove matt.

Antennae as long as head and half of pronotum combined; first antennomere slightly thicker than following antennomeres; second approximately half as long as first; as long as apical width; third antennomere distinctly longer than second, but slightly shorter than first; following antennomeres slightly increasing in width; tenth approximately quadrate; fifth to eleventh antennomere pubescent; with few longer apical setae.

Pronotum: 0.89 mm long; 1.04 mm wide; in anterior half, sides parallel; in posterior half continuously narrowed to posterior margin; anterior angles shortly rounded to wide anterior margin; without distinct groove at anterior angles; posterior angles obtuse; central part slightly prominent posteriad; deep groove bordering posterior central part margined by sharp ridge; punctation as deep as on head, but slightly sparser; on average, interstices between punctures at least twice as wide as diameter of punctures; remains of elongate microsculpture; denser at posterior grooves than on disc; surface moderately shiny.

Elytra: 1.08 mm long, 1.17 mm wide; slightly widened to posterior angles; posterior angles obtusely rounded; humeral angles obtusely angled, punctation as dense and deep as on pronotum; several coarser punctures at lateral margin; on each side of suture, one setiferous deep puncture in central position; elongate microsculpture weaker, but denser than on pronotum; surface moderately shiny. Abdomen sparsely punctate with transverse row of setiferous punctures on each abdominal segment; transversely striate microsculpture as deep as on elytra; surface moderately shiny.

Aedeagus in lateral view broadly curved; wide apex rounded; stronger sclerotised ventral plate with diagonal striae; with numerous sensillae; slender parameres shorter than central lobe; apical transparent lobe only slightly wider than scape of parameres; few sensillae at apex and on scape; in ventral view, central lobe slender; sides parallel; apex of ventral sclerotised plate deeply emarginate.

Eleusis bicolor (ERICHSON, 1840)

Figs 19A-C, 30E, 31C, 33, 35d

Isomalus bicolor ERICHSON, 1840: 839

Eleusis cephalotes BERNHAUER, 1904: 218 **new synonymy**

Eleusis puncticeps BERNHAUER, 1912: 26 **new synonymy**

Type material examined: female, Holotype: Mexico: coll. Chevrolat (BMNH); female holotype, male cotype of *Eleusis cephalotes*: Mexico: leg. Koltze (FMNH, NMW); male type of *Eleusis puncticeps*: Columbia: Cali, Alto de las Cruces, 2200 m elev. Rio Vitaco, Sept. 1908, leg. Fassl (FMNH); 1 male, 1 female cotypes: Rio Aquatal, 1800 m elev. Oct. 1908, leg. Fassl (FMNH, NMW). According to the description of Erichson, the type specimen was labelled "Habitat in Mexico" with the addition "Dom Chevrolat". The type specimen was deposited in the collection of Chevrolat and transferred via Sharp to the BMNH.

Additional material examined: Mexico: Mexico, without more data, female (IRSNB); 1 male, 2 females, ded. Koltze without more data, (NMW); 200 m elevation, coll. Kraatz, without more data, 3 females (SDEI); Hidalgo, 19.4 km S san Luis Potosi, Hidalgo border, Hwy. 85, 1200 m elev., 1 male, 1 female, under bark, 11.7.1990, leg. J.S. Ashe, K.J. Ahn, R. Leschen (KNHM); Veracruz, 2.5 km S Jalapa, 1370 m elev., under bark, 2 males, 13 females, 26.5.1991, leg. J.S. Ashe #6 (12 KNHM, 3 UIC); Veracruz, 2.3 km S Jalapa, 1320 m elev., under bark, 13.7.1991, leg. J.S. Ashe #58 (KNHM); Chiapas, Volcan Tacana, Sumidero San Antonio, under thin bark fresh cut log, montane trop. forest, 1760 m elev., female, 26.12.1976, leg. H. Frania (AMNH); Jalapa, male, leg. Schneider (NMW); Orizaba, 1 male, 1 female, 5.5.1871, Nov. 1871, leg. Bilimek (NMW); Aruna, male, April 1867, leg. Bilimek (NMW); Guatemala: Senahu, male, 1 female, col. Münchemeyer without more date (NMW); Sacatepéquez, Antigua, SE Finca El Pilar (-90.59125, 14.52143), 2500-2600 m elev., under bark, 2 males, 9 females, 17.11.2016, leg. Z.H. Falin #GUAT1F16002 (10 KNHM, 2 UIC); 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., under bark, decaying slash, 3 females, 20.6.1994, leg. R. Brooks, J.S. Ashe, #167 (KNHM); Morazan, 30 km E Tegucigalpa, Cerro Uyúca (14°02'N, 87°05'W), 1800 m elev., malaise trap, male, 10.6.1994, H. & A. Howden (KNHM); Francisco Morazán, 10 km W Zamorano, Cerro Uyúca (14°02'N, 87°05'W), 1910 m elev., cloud forest beating, male, 18.7.1994, leg. R. Anderson #211 (KNHM); Francisco Morazán, 12 km W Zamorano, Cerro Uyúca (14°02'N, 87°05'W), 1870 m elev., under bark, 4 males, 4 females, 6.6.1994, leg. Ashe & Brooks, Colln#002 (6 KNHM, 2 UIC); 1 male, 2 females from same location and collectors, but 9.7.1994 (KNHM); El Paraiso, 6.9 km W Yuscarán, Cerro Monserrat (13°55'N, 86°24'W), 1760 m elev., under bark, 4 males, 4 females, 7.6.1994, leg. Ashe, Brooks, #019 (6 KNHM, 2 UIC); 2 males from

same location and same collectors, but flight intercept trap, 11.-27.6.1994 (KNHM); Paraiso, Cerro Monserrat, 7 km SW Yuscarán (13°55'N, 86°54'W), 1800 m elev., malaise trap, female, 30.5.1994, leg. H. & A. Howden (KNHM); female from same location and same collectors, but 8.6.1994 (KNHM); Ocotepeque, 24 km E Ocotepeque, El Guisayote (14°25'N, 89°04'W), 2170 m elev., roadside slash, male, 14.6.1994, leg. J. Ashe, R. Brooks (KNHM), #099 (KNHM); Guatemala: Baja Verapaz, 4 km S Purulhá, 1650 m elev., under bark, 7 males, 6 females, 2.7.1993, leg. J.S. Ashe, R.W. Brooks, #181 (10 KNHM, 3 UIC); Baja Verapaz, 8 km S Purulhá, 1660 m elev., on dead *Cecropia*, male, 20.6.1993, leg. R. Anderson, #03-30 (KNHM); 3 females from same location and same collector, but 1650 m elev., *Cecropia* treefall 29.6.1993, #149 (KNHM); Sactatepeguez, 5 km SE Antigua (14.52779°, -90.68971°), 2350 m elev., sifted, leaf litter, oak forest, female, 6.6.2009, #LLAM09Wa-B-08-2-all (KNHM); San Marcos, Parque Municipal Refugio del Quetzal (14.93946°, -91.87296°), 1810 m elev., cloud forest, flight intercept trap, female, 4.-11.6.2015, leg. Z.H. Falin, #GUAT1F15099 (KNHM); Quetzaltenango, 14.4 km SW Zunil, 1340 m elev., crustose fungi, 20.6.1993, leg. J. Ashe, R. Brooks (KNHM); Nicaragua: Matagalpa Dept., 6 km N Matagalpa, Selva Negra Hotel (12°59.99'N, 85°54.53'W), 1350 m elev., 1 male, 1 female, *Heliconia* fruits, 20.5.2002, 1 female, under bark, 21.5.2002, leg. R. Brooks, Z. Falin, S. Chatzimanolis, #NIC1BFC02023 (KNHM); Costa Rica: Cartago Prov., Tapanti Nat. Park, tributary river channel (9.69922°N, 83.78233°W), 1600 m elev., primary forest, under bark, 2 males, 3 females, 18.3.2010, leg. Z.H. Falin (3 KNHM, 2 UIC); same location (9°45.41'N, 83°47.5'W), 1150 m elev., under bark, 1 male, 1 female, 18.7.2000, leg. J. Ashe, R. Brooks, Z. Falin, #CR1ABF00167 (KNHM); same location (9°45.41'N, 83°47.5'W), flight intercept trap, female, 17.-20.7.2000, leg. J. Ashe, R. Brooks, Z. Falin, #CR1ABF00192 (KNHM); 4 km NE Canon, Genesis II, Cerro de la Muerte, 2350 m elev., malaise trap, 1 male, 2 females, 1.2.-30.3.1995, 1.-30.6.1996, leg. P. Hanson #CR1H95-9611 (KNHM); San José, Zuruqui de Moravia (10°03'N, 84°01'W), 1600 m elev., 2 males, 1 female, Feb.1993, P. Hanson (KNHM); same location, same collector, malaise trap, 3 males, 1.-30.4.1995, 1.-30.5.1995, 1.-30.10.1995, #CR1H95-9628/12/02 (2 KNHM, 1 UIC); 26 km N San Isidro, 2100 m elev., Feb.-May 1992, leg. P. Hanson (KNHM); Dulce Noviembre, Vivero "Linda Vista", 1300 m elev., malaise trap, female, June-August 1993, leg. P. Hanson (KNHM); 31 km N San Isidro del General, near 105 km Marker Rt. 2, 7600 ft. elev., litter, 3 males, 4 females, 26.2.1985, leg. L. Herman (AMNH); Puntarenas Prov., Altamira Biol. Sta. Trail to Valle de Silencio (9°01.76'N, 83°00.49'W), 1600-1700 m elev., under bark, 2 males, 3 females, 6.6.2004, leg. J. Ashe, Z. Falin, I. Hinojosa, #CR1AFH04127 (4 KNHM, 1 UIC); Puntarenas, San Vito, Estac. Biol. Las Alturas, 1875 m elev., 2 males, Sept.-Nov.1992, leg. P. Hanson (KNHM); La Reserva de Monteverde, ca. 4 km E Monteverde, 5000-5500 ft. elev., 4 males, 4 females, 4.3.1985, leg. L. Herman

#2150 (AMNH); Las Alturas Field Station, 20 km N San Vito de Hava, 1400 m elev., malaise trap, male, 10.-31.7.1992, leg. Snyder (AMNH); Las Alturas Field Station, 1400 m elev., malaise trap, male, 17.-21.6.1991, leg. DeVries (AMNH); Puntarenas-Guanacaste border, Monte Verde, Cerro amigos, 1760 m elev., flight intercept trap, female, 12.5.1989, leg. J. Ashe, R. Brooks, R. Leschen, #123 (KNHM); Guanacaste, Cacao Biological Station (10°55.38'N, 85°27.7'W), 1050 m elev., under bark of fermenting tree, female, 11.7.2000, leg. J. Ashe, R. Brooks, Z. Falin #CR1ABF00104 (KNHM); Heredia, Cerro Chompipe, 2 km N Monte de la Cruz (10°05.2'N, 84°04.3'W), 2000 m elev., berlese forest litter, 1 male, 2 females 12.6.1997, leg. R. Anderson, #CR1A97012J (KNHM); La Selva, 3.2 km SE Puerto Viejo, 100 m elev., flight intercept trap, female, 27.3.1992, leg. W. Bell (KNHM); Paso Llano, Falda 5.0 Volcan Barva, 2300 m elev., male, 4.3.1991, leg. H.J. Lzama (KNHM); Guanacaste Prov., 8 km NE Sta. Elena, Sta. Elena Forest Res. (10°20.70'N, 84°47.89'W), 1640 m elev., flight intercept trap, female, 11.-17.6.2001, S & J Peck, #CR1P01004 (KNHM); PanAmerican Hwy, km 80.5, 9 km SSW Albergue de Montana Savegre, Upper Quebrada -Las Robles Trails (9°32.56'N, 83°48.9'W), 2200-2300 m elev., under bark, 1 male, 1 female, 23.7.2000, leg. J. Ashe, R. Brooks, Z. Falin #CR1ABF00234 (1 KNHM, 1 UIC); Panama: Chiriqui, 6.0 km NE Boquete (8°48.0'N, 82°26.0'W), 1550 m elev., flight intercept trap, male, 14.-19.6.1996, leg. J. Ashe, R. Brooks, #PAN1AB96179B (KNHM); 27.7 km W Volcan, Hartmann's Finca (8°45'N, 82°48'W), 1450 m elev., under bark, 1 male, 3 females, 14.6.1995, leg. J. Ashe, R. Brooks, #211 (KNHM); 5.9 km N Cerro Punta, Par. Nat. Volcan Baru (8°22'N, 82°34'W), 2150 m elev., alder forest litter, male, 14.6.1995, leg. R. Anderson #PAN2A9522A (KNHM).

Diagnosis: The species is extremely varying in size and colouration. In particular the size of the head is varying without developing a sexual dimorphism. Whereas the length of the eyes seems to be approximately constant, the length of temples varies extremely. Specimens exist with temples directly narrowed behind eyes or with long parallel temples. Thus, in some specimens the eyes are shorter than temples, in other specimens, temples are more than twice as long as eyes. The species resembles *E. struyvei* in colouration and shape of head and pronotum. On average, it is smaller than the similar *E. struyvei*. More differences are described in *E. struyvei*.

Description: Length: 4.5 – 8.0 mm; Colouration: extremely variable; head and pronotum black; elytra black or with varying large yellow spot in anterior half, at least posterior quarter blackish; abdomen yellow with abdominal segments VII partly, VIII, and IX totally black or central parts of all abdominal segments brown and last segments darker brown; legs dark yellow; antennae dark brown.

Head: on average, 1.12 mm long, 1.24 mm wide; varying corresponding to total length (Fig. 33); eye length constantly 0.18 mm; length of temples varying; sides of temples approximately parallel; preocular sides shortly parallel to base of antennae; anterior margin of clypeus sinuate with central part prominent; supraocular groove reaching from anterior edge of eyes to posterior edge of temples; size and density of punctation irregular; triangular space between eyes with coarse and dense punctation; on clypeus and posterior vertex punctation weaker and sparser; at each end of supraocular groove with setiferous puncture; second pair of setiferous punctures at prominent part of clypeus; elongate microsculpture irregularly dense; longitudinally striate; surface shiny.

Antennae slightly shorter than head and pronotum combined; in specimens with short head as long as head and pronotum combined; first antennomere longer and thicker than following antennomeres; second antennomere half as long as first; third antennomere longer than second but shorter than first; length of following antennomeres decreasing; width increasing; shape of penultimate antennomeres triangular; at apex, as wide as long; antennomere five to eleven with long black setae.

Pronotum: on average, 0.70 mm long, 0.79 mm wide; size varying corresponding to total size; widest close to anterior angles; sides in anterior half parallel; narrowed in posterior half in smooth convex curve or directly narrowed in wide convex curve to posterior angles; short groove at anterior angles; another pair of short grooves close to posterior angles, margined by indistinct ridge; punctation as dense and deep as on vertex; three to four setiferous punctures at anterior margin close to each anterior angle; two setiferous punctures in anterior lateral grooves; several setiferous punctures along lateral margin; weak longitudinal microsculpture; with wide polished areas on disc; surface shiny.

Elytra: on average, 1.01 mm long, 0.98 mm wide, size varying corresponding to total size; sides slightly widened to posterior angles; humeral angles distinct; punctation similarly dense and deep as on pronotum; one setiferous punctures on central disc on each side of suture; several setiferous punctures along lateral margin and close to posterior angles; longitudinal microsculpture weak; surface shiny.

Abdomen nearly impunctate except few setiferous punctures in transverse row of each abdominal segment.

Aedeagus in lateral aspect slender with obtusely rounded apex; ventral plate more sclerotised than remaining central lobe; small plate at apex darker; ventral plate with numerous sensillae; in ventral aspect, approximately parallel; parameres as long as central lobe; widened at apex in transparent lobe; few sensillae and short setae at apex.

Eleusis elongata spec. nov.

urn:lsid:zoobank.org:act:FD5048E3-6760-43B9-BB13-D5FC480530A1

Figs 27A-C, 31C

Type material: male, Holotype: Costa Rica: Cartago, P.N. Tapanti (9°45.41'N, 83°47.5'W), 1150 m elev. flight intercept trap, 17.-20.7.2000, leg. J. Ashe, R. Brooks, Z. Falin, #CR1ABF00192 (KNHM). Paratype: Costa Rica: San José, Zuruqui de Moravia, 1600 m elev., malaise trap, female, 1.-30.8.1995, leg. P. Hanson #CR1H93-9514 (KNHM).

Diagnosis: The species is unique regarding its elongate shape. In contrast to all other *Eleusis* species, *E. elongata* is not depressed. Concerning the colouration, *E. elongata* resembles *E. bicolor* and *E. struyvei*. The aedeagus, too, resembles that of *E. bicolor*. The long projecting mandibles with a molar-like tooth at left mandible are also unique for the known Neotropical *Eleusis* species.

Description: Length: 7.6 – 7.8 mm. Colouration: head and pronotum black; anterior half of elytra orange; posterior half blackish; abdominal segments III-VI yellow, VII and VIII black; legs light brown; antennae dark brown.

Head: 1.34 mm long, 0.93 mm wide; eyes not prominent; temples parallel; extremely long; more than four times as long as eyes; neck nearly as wide as vertex; preocular sides parallel; distinctly longer than eyes; anterior margin of clypeus indistinctly sinuate; central part of clypeus shortly prominent; supraocular groove deep; reaching from anterior edge of eyes to posterior edge of temples; supraocular ridge indistinct; parallel to sides from antennal base to neck; mandibles projecting; as long as distance from anterior margin of clypeus to posterior edge of eyes; left mandible with thick molar tooth; right mandible with acute tooth; punctation deep and irregularly dense; interstices between punctures varying between as wide as diameter of punctures to four times as wide as diameter of punctures; at each end of supraocular groove with setiferous puncture; pair of setiferous punctures on each side of clypeal prominence; elongate indistinct microsculpture; longitudinally striate; surface moderately shiny.

Antennae slightly longer than head; first antennomere thick; not elongate; second antennomere distinctly shorter and narrower; third antennomere slightly longer than second; slightly longer than apical width; following antennomeres increasing in width; fourth antennomere longer than wide; tenth antennomere as long as wide; antennomeres four to eleven pubescent and with long apical setae.

Pronotum: 1.11 mm long, 0.93 mm wide; widest close to anterior angles; slightly narrowed to posterior third; posterior third strongly convergent to posterior angles; posterior margin half as wide as anterior margin; long groove at anterior angles; inner margin bordered by distinct ridge ending at posterior third; second indistinct triangular groove at inner side bordered at lateral side

by indistinct ridge; outer ridge and inner ridge running convergent to anterior angles; punctation similar to head punctation; setiferous punctures: in outer groove close to anterior angles, at obtuse angle at beginning of convergence, at inner border of triangular groove at anterior margin; elongate microsculpture weak; longitudinally striate; surface moderately shiny.

Elytra: 1.34 mm long, 1.07 mm wide, sides nearly parallel; humeral angle obtuse; posterior angles nearly rectangular; punctation like that of head and pronotum; on central disc, two pairs of setiferous punctures; additional setiferous punctures along lateral margin; elongate microsculpture weak; longitudinally striate; surface moderately shiny.

Abdomen sparsely and weakly punctured; few setiferous punctures; partly with long setae; at lateral margin; microsculpture transversely striate; weak; surface moderately shiny.

Aedeagus in lateral aspect moderately thick; apex rounded; with indistinct longitudinal and transverse ridges in front of apex; ventral plate with few central sensillae; in ventral aspect, nearly parallel, but slightly widened at middle; apex obtuse; numerous sensillae; paramere slightly shorter than central lobe; with moderately wide apical transparent lobe; few micro-sensillae in transparent lobe; extremely fine setae at apical margin; on scape, few sensillae.

Etymology: The species name derived from the Latin word *elongatus* meaning elongate and refers to the extreme elongate, slender shape which is untypical for the usually flattened shape of *Eleusis* species.

Eleusis fenestrata SHARP, 1887

Figs 21A-C, 30D

Eleusis fenestrata SHARP, 1887: 730

Type material: male, Holotype: Guatemala: Cerro Zunil, leg. Champion (BMNH).

Diagnosis: *Eleusis fenestrata* resembles *E. adusta* in the dark colouration with light reddish-yellow spot on the elytra and the deep punctation. *E. fenestrata* is smaller and the central prominence at the posterior margin of the pronotum is absent. Moreover, the microsculpture is more regularly longitudinal than in *E. adusta*. The aedeagus of *E. fenestrata* is distinctly thicker and curved. In this respect, it can be easily differentiated from similarly coloured *E. bicolor* specimens. *E. bicolor* specimens of similar colouration can be separated from *E. fenestrata* by the punctation of the head. Whereas *E. bicolor* has coarse punctures on the vertex compared to clypeus, head punctation of *E. fenestrata* is uniform on vertex and clypeus.

Description: Length: 4.7 mm. Colouration: black; elytra with large humeral yellowish spot; legs and antennae dark brown.

Head: 0.75 mm long, 0.75 mm wide; eyes not prominent; temples slightly longer than eyes; approximately parallel; preocular sides short and parallel; anterior margin of clypeus narrowed to central slightly prominent part; supraocular groove parallel to sides; punctation deep and dense; size of punctures irregularly large; interstices between punctures irregularly wide; on average, interstices between punctures as wide as to twice as wide as diameter of punctures; setiferous puncture at each end of supraocular groove; elongate microsculpture deep; longitudinally striate; interstices between striae shiny.

Antennae as long as head and half of pronotum combined; first antennomere thicker than following antennomeres; 1.5 times as long as second; third slightly longer than second, but shorter than first; following antennomeres decreasing in length and increasing in width; fourth antennomere longer than wide; tenth quadrate; fourth to eleventh antennomere pubescent; all antennomeres with apical setae.

Pronotum: 0.66 mm long, 0.76 mm wide; widest close to anterior angles; sides in anterior half approximately parallel; in posterior half continuously narrowed to posterior angles; posterior angles obtuse; at anterior angles with short groove; punctation as deep and dense as on head; few setiferous punctures in grooves at anterior angles; few additional setiferous punctures along lateral margin; at beginning of posterior convergence, one setiferous puncture deeply impressed; elongate microsculpture slightly less deep than on head; longitudinally striate; surface moderately shiny.

Elytra: 0.83 mm long, 0.79 mm wide; sides approximately parallel; humeral angles nearly rectangular; posterior angles rounded; punctation as deep and dense as on head and pronotum; one setiferous puncture in central position on each side of suture; few additional setiferous punctures along lateral margin; longitudinal microsculpture as deep and dense as on head and pronotum; surface slightly shiny.

Abdomen with moderately dense punctation; on each segment with transverse row of setiferous punctures; microsculpture deep; transversely striate.

Aedeagus stout and thick; in lateral aspect, with broad apex; curved; in ventral aspect, parallel with widely rounded apex; numerous sensillae on apical central lobe; paramere slightly shorter than central lobe; sinuate; apical transparent lobe moderately widened and slightly curved; with distinct apical seta and few minute sensillae.

Eleusis frater (FAUVEL, 1864)

Figs 26A-C, 31A

Isomalus frater FAUVEL, 1864: 35

Isomalus agilis SHARP, 1876: 410 **new synonymy**

Eleusis brasiliana WENDELER, 1955: 188 **new synonymy**

Type material examined: female, Holotype: Venezuela: Caracas, without more data (IRSNB). Holotype of *E. brasiliana*: Brazil: Espírito Santo, Affonso Claudio, Laranja de Terra, female, 27.9.1928, leg. Condé (ZMH). Two syntypes of *E. agilis*: Brazil: Amazonas, Tefé (Ega), 1 male, 1 female (BMNH).

Additional material examined: Venezuela: Caracas, without more date, male (coll. Kraatz) (SDEI); Peru: Paso Dept. Villa Rica Rd. (10°47.6'S, 75°18.54'W), 1475 m elev. flight intercept tap, male, 15.-18.10.1999, leg. R. Brooks, D. Brzoska #PERU1B99030C (KNHM).

Diagnosis: With 4.3 mm length, the species is smaller than the other species of the group except the equally sized *E. panamaensis*. It also differs from the other species by the totally black or dark brown colouration which corresponds with the colouration of *E. panamaensis*. The *E. agilis* types are slightly lighter brown. However, this might be referred to the teneral stage of the specimens, because the aedeagus shows no difference to the totally black specimen from Peru. In contrast to *E. panamaensis*, the head has only remains of microsculpture. The punctation is deeper and denser, and the aedeagus is distinctly shorter and thicker.

Description: Length: 4.3 mm. Colouration: totally black; elytra, abdomen, legs and antennae dark brown.

Head: 0.57 mm long, 0.60 mm wide; eyes not prominent; postocular sides twice as long as eyes; preocular sides parallel; anterior margin of frons widely triangular; central part very slightly prominent; supraocular groove deep; punctation moderately dense and deep; uniform; interstices between punctures twice to three times as wide as diameter of punctures; setiferous puncture at each end of supraocular groove; another pair of setiferous punctures on each side of central frons; in supraocular grooves and adjacent areas close to base of antenna and close to neck with remains of microsculpture; most parts of vertex and frons without microsculpture; surface shiny.

Antennae slightly longer than head; first antennomere slightly thicker than three following antennomeres; fourth to tenth antennomere slightly increasing in width; fourth slightly longer than wide; tenth quadrate; eleventh antennomere nearly twice as long as tenth; fifth to eleventh antennomere pubescent; all antennomeres with apical setae.

Pronotum: 0.52 mm long, 0.60 mm wide; widest at anterior angles; in anterior half nearly parallel; in posterior half narrowed in continuous curve to posterior angles;

anterior angles sharply rounded; at posterior margin, central part slightly prominent and margined by short ridges; without distinct angles; at anterior angles without short grooves; punctation sparser and weaker than on head; interstices between punctures three to four times as wide as diameter of punctures; several setiferous punctures along lateral margin; pair of setiferous punctures at anterior margin close to anterior angles; punctures inserted in deep impression; surface nearly polished; with remains of weak microsculpture at anterior angles and along lateral margin.

Elytra: 0.74 mm long, 0.74 mm wide; continuously divergent from humeral angles to posterior angles; humeral angles nearly rectangular; posterior angles widely rounded; punctation as sparse and deep as on pronotum; in central position at each side of suture with setiferous punctures; at lateral margin, remains of microsculpture; disc nearly without microsculpture; polished.

Abdomen weakly punctate; on each segment transverse row of setiferous punctures; transversely striate microsculpture weak; surface shiny.

Aedeagus in lateral aspect thick; shortly narrowed to obtuse apex; in ventral aspect, central lobe nearly parallel; numerous sensillae in central and apical area; parameres slender; shorter than central lobe; apical transparent lobe only slightly widened; few microsensillae at apex.

Eleusis panamaensis spec. nov.

urn:lsid:zoobank.org:act:7078364E-083E-4BC7-ADE2-045789D19FFA

Figs 25A-C, 30H

Type material: male, Holotype: Panama: Panama Prov., Santa Fé, Piedra Alta (8.52°N, -81.13°W), dead wood, 26.4.2014, leg. T. Struyve (UIC). Paratype: female with same data as holotype (TSC).

Diagnosis: The species closely resembles *E. frater* in size, shape, and colouration. It is certainly the sister species of *E. frater* in Panama. It can be easily differentiated from *E. frater* by the microsculpture of the head and the elongate aedeagus. Whereas the head *E. frater* has only remains of microsculpture with large parts polished, the head of *E. panamaensis* is totally covered by microsculpture. The head of *E. panamaensis* is impunctate, whereas the head of *E. frater* is distinctly punctate. The eyes are smaller and temples longer in *E. frater* than in *E. panamaensis*. The central lobe of the aedeagus is nearly twice as long in *E. panamaensis* as in *E. frater*.

Description: Length: 4.5 mm. Colouration: totally black; sides of abdominal segments lighter brown; legs light brown; antennae dark brown.

Head: 0.54 mm long, 0.57 mm wide; eyes large; slightly prominent; temples slightly shorter than eyes; behind eyes shortly parallel; posterior angles obtuse; preocular

sides nearly as long as temples; anterior margin of frons continuously narrowed to short straight central part; central prominent part slightly emarginate; supraocular groove deep; anterior part parallel to side; slightly curved in posterior part; impunctate except setiferous puncture at each end of supraocular groove; another pair of setiferous punctures on each side of central clypeal prominence; elongate microsculpture weak, but dense; longitudinally striate; surface slightly matt.

Antennae slightly shorter than head and pronotum combined; first antennomere slightly thicker than following antennomeres; second antennomere only half as long as first; third slightly longer than second; following antennomeres decreasing in length and increasing in width; fourth antennomere triangular; slightly longer than wide; tenth antennomere 1.6 times wider than long; fourth to eleventh antennomere pubescent; all antennomeres with long apical setae.

Pronotum: 0.52 mm long; 0.59 mm wide; widest close to anterior angles; sides in anterior half parallel; in posterior half narrowed to posterior margin in even curve; anterior angles shortly rounded; at posterior margin, central part slightly prominent; prominent part marked by deep impression margined at inner side by ridge; close to anterior angles, at anterior margin two deep impressions with setiferous punctures; another deeply impressed setiferous puncture at beginning of posterior half and at posterior margin close to ridge; very finely and sparsely punctate; elongate microsculpture similar to that of head, but midline and few parts on disc without microsculpture; longitudinally striate; surface shinier than on head.

Elytra: 0.73 mm long, 0.73 mm wide; humeral angles shortly rounded; sides slightly divergent to widely rounded posterior angles; on each side of suture, posterior margin convex; punctuation weak and sparse; similar to pronotum; along lateral margin with setiferous punctures; on each side of suture setiferous puncture on central disc; elongate microsculpture weak; with shiny interstices; transversely striate.

Abdomen finely punctate; each segment with transverse row of four setiferous punctures; elongate microsculpture weak; transversely striate.

Aedeagus elongate; apical part of central lobe much longer than basal part; in lateral aspect, apex acute, but obtusely rounded; in ventral aspect, central lobe parallel; apex widely rounded; sensillae concentrating along apical midline; at apex, denser than closer to base; parameres shorter than central lobe; transparent lobe narrow; with few sensillae.

Etymology: The species name derived from the country's name Panama, where the species was collected by Tim Struyve.

Eleusis peruviana spec. nov.

urn:lsid:zoobank.org:act:819FB601-081E-4EEF-BAD3-2363C6D299CF

Figs 24A–C, 30G

Type material: male, Holotype: Peru: Prov. Tama, Dept. Of Junin, Utcuyacu & Agua Dulce, III 1948, leg. F. Woytkowski (AMNH). Paratype: Bolivia: male, Yuracaris, corticale saillant a la base (bark not attached at base) (IRSNB).

Diagnosis: The species is closely related to *E. bicolor* and *E. struyvei* regarding colouration. Because only two specimens are known, the variation of colouration is unknown. However, the different colour of the abdomen between holotype and paratype may indicate that the variation of the colour might be as large as in the other two species. The species can be separated from *E. bicolor* and *E. struyvei* by the uniform punctuation of the head and the dense microsculpture that is still denser than in *E. struyvei*. The aedeagus resembles that of *E. struyvei* by its longitudinal shape. It is still more elongate than in *E. struyvei*. The apex is slightly sinuated in lateral aspect, whereas it is straight in *E. struyvei*. Moreover, the central groove of central lobe margined by weak ridges is absent in *E. struyvei* and the parameres are more elongate than in *E. struyvei*.

Description: Length: 11.0 – 13.0 mm. Colouration: head and pronotum black; elytra orange with blackish posterior margin; size of blackish spot slightly varying; abdomen orange with posterior abdominal segments dark brown or abdomen totally dark brown; legs light brown; antennae black.

Head: 1.29 mm long, 1.14 mm wide; eyes short; not prominent; temples more than twice as long as eyes; supraocular groove reaching from anterior edge of eyes to posterior edge of temples; preocular sides shortly parallel to base of antennae; front margin of clypeus slightly sinuate; central part prominent; punctuation moderately deep and dense; size of puncture not varying; interstices between punctures between twice as wide as to four times as wide as diameter of punctures; at each end of supraocular groove with setiferous puncture; another pair of setiferous punctures at each side of prominent part of clypeus; elongate microsculpture dense, but not deep; on clypeus and vertex longitudinally striate; surface moderately matt.

Antennae as long as head and half of pronotum combined; first antennomere slightly thicker than following antennomeres; second antennomere short, approximately half as long as third; following antennomeres slightly decreasing in length; forth slightly longer than wide; tenth approximately quadrate; fourth to eleventh antennomere with long yellow setae.

Pronotum: 1.07 mm long, 1.19 mm wide; in anterior half, sides parallel; in posterior half, sides smoothly narrowed in convex curve to posterior angles; posterior margin only half as wide as anterior margin; slightly

prominent; in front of posterior margin, with pair of parallel short grooves bordering prominent central part; anterior angles at grooves shortly emarginate; anterior margin sinuate; punctation as dense and deep as on head; two setiferous punctures in anterior grooves; several setiferous punctures along lateral margin; two pairs of setiferous punctures at anterior margin close to anterior angles; elongate microsculpture as dense and deep as on head; longitudinally striate; surface moderately matt.

Elytra: 1.32 mm long, 1.26 mm wide; sides slightly divergent posteriad; humeral angles and posterior angles obtusely angled; punctation as dense and deep as on pronotum; several setiferous punctures along lateral margin; one setiferous puncture in central position on each side of suture; dense elongate microsculpture weaker as on head and pronotum; surface shinier than on head and pronotum.

Abdomen with weak punctation; few setiferous punctures in transverse line of each abdominal segment; microsculpture weak; surface still shinier than on elytra.

Aedeagus elongate; moderately thick; in lateral aspect, with broad base and shortly acute apex; ventral side in front of apex slightly concave; sclerotised ventral plate of central lobe with several sensillae; in ventral aspect, slightly widened in upper central part; in apical opening with oval lobe; along midline with indistinct groove margined by weak ridges; on each side of groove with numerous sensillae; parameres slender; nearly as long as central lobe; transparent widening at apex short and narrow; with few micro-sensillae and one setiferous sensilla.

Etymology: The species is named according to the country's name, where the holotype was found.

Eleusis rufula SHARP, 1887

Figs 22A-C, 31B

Eleusis rufula SHARP, 1887: 729

Type material examined: male, Lectotype: Panama: Bugaba, leg. Champion (BMNH); Syntype: female, with same labels as lectotype (BMNH). Two syntypes are deposited in the BMNH. Although the female syntype was additionally labelled as type, I selected the male as lectotype.

Additional material examined: Nicaragua: Rio San Juan Dept., 60 km SE San Carlos, Refugio Bartola (10°58'40"N, 84°20'30"W), 100 m elev., on bark, downed log, female, 25.5.2002, leg. R. Brooks, Z. Falin, S. Chatzimanolis #NIC1BFC02068 (KNHM); Costa Rica: Heredia, La Selva Biol. Station nr. Puerto Viejo de Sarapiquí, 26 males, 20 females 18.2.1985, leg. L. Herman # 2117, #2112, #2118 (38 AMNH, 8 UIC); 10 males, 22 females, same

location, same collector and date, but under log bark #2108 (26 AMNH, 6 UIC); F. La Selva, 3 km S Pto. Viejo (10°26'N, 84°01'W), male, 29.7.1976, leg. H.A. Hespeneheide (KNHM); same location, but 80 m elev., flight intercept trap, female, 18.-20.6.2001, leg. S. Chatzimanolis CR1C01057 (KNHM); Sto. Domingo del Heredia, INBio Cafetal, 1100 m elev., flight intercept trap, female, 25.-28.6.1997, leg. S. & J. Peck #CR1P97027 (KNHM); Puntarenas, Las Alturas Field Station, 20 km S San Vito de Hava, 1400 m elev., malaise trap, 20.-24.5.1991, leg. DeVries (AMNH); Las Alturas Biol. Sta. (8°56.17'N, 82°50.01'W), 1660 m elev., under bark, 6 males, 4 females, 1.6., 2.6.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa #CR1AFH04086, 071 (8 KNHM, 2 UIC); R.F. Golfo Dulce, 24 km W Piedras Blancas, 200 m elev., malaise trap, 1 male, 2 females, Oct., Dec. 1990, leg. P. Hanson (KNHM); Las Cruces Biol. Sta. (8°47.14'N, 82°57.58'W), 1330 m elev., pyrethrum fogging fresh log, 1 male, 2 females, 30.5.2004, leg. J.S. Ashe, Z. Falin, I. Hinojosa #CR1AFH04050 (KNHM); Corcovado National Park, Sirena Stn., upper Ollas Trail (8°29.7'N, 83°34.39'W), 140 m elev., flight intercept trap, 1 male, 1 female, 24.-28.6.2000, leg. Z.H. Falin CR1ABF00036 (KNHM); Rincon de Osa (8°41.14'N, 83°31.11'W), rain forest, stream side, 40 m elev., flight intercept trap, male, 23.-26.6.2001, leg. S. & J. Peck #CR1P01007 (KNHM); Guanacaste, Patilla Biological Station (10°59.22'N, 85°25.33'W), 610 m elev., on and under bark, female, 14.7.2000, leg. J. Ashe, R. Brooks, Z. Falin #CRI1ABF00128 (KNHM); Cacao Biological Station (10°55.38'N, 85°27.7'W), 1050 m elev., under bark, female, 11.7.2000, leg. J. Ashe, R. Brooks, Z. Falin #CRI1ABF00098 (KNHM); Alajuela, E.B. San Ramon, 27 km N & 8 km W San Ramon (10°13.4'N, 84°35.46'W), 810 m elev., under bark, 2 males, 4 females, 7.7.2000, leg. J. Ashe, R. Brooks, Z. Falin #CRI1ABF00072 (5 KNHM, 1 UIC); Peñas Blancas, 850 m elev., under bark, 1 male, 1 female, 18.5.1989, leg. J. Ashe, R. Brooks, R. Leschen #255 (KNHM); same location, same collectors, barking, 19.5.1989, #294; Limon, 2 km W Puerto Viejo, 20 m elev., rotting cocoa pods, 15.5.1993, leg. J.S. & A.K. Ashe (KNHM); Panama. Santa Fe, Piedra Alta (8°52'N, 81°13'W), dead wood, 17 females, 12 males, 26.4.2014, leg. T. Struyve (15 TSC, 14 UIC); Darién Prov., Mogué (8°247'N, 78°156'), litter layer, 2 females, 10.8.2014, leg. T. Struyve (1 TSC, 1 UIC); Cana Biological Station, Serrania de Pirre (7°45.28'N, 77°41.6'W), 1250 m elev., under bark, 2 males, 5 females, 4.6., 5.6.1996, leg. J. Ashe, R. Brooks #PAN1AB96041 (6 KNHM, 1 UIC); Coclé, 7.2 km Ne El Copé (8°42'N, 80°35'W), 730 m elev., female, 20.6.1995, leg. J. Ashe & R. Brooks #254 (KNHM); Coclé Prov., La Mesa, N El Valle, 800 m elev., 1 male, 1 female, 23.8.1995, leg. A.R. Gillogly (KNHM); Veraguas, Cerro Tule, 4 km W of Santa Fé, 850 m elev., 2 males, 30.7.1996, leg. A.R. Gillogly (KNHM); French Guiana: Eaux Claires, 3.5 mi N Saül (3°38-40'N, 53°13-14'W), 155-260 m elev., under bark of log, 5.-13.10.1995, leg. L. Herman #2836 (AMNH); Bolivia: Yuracarís, male (IRSNB).

Diagnosis: The species resembles *E. bicolor* and *E. struyvei* in shape and colouration. On average, it is smaller than these two species, in particular compared to *E. struyvei*. It can be separated from these species by the light reddish colour of the pronotum and the yellow abdomen. Colouration of the abdomen of *E. bicolor*, however, is varying in the teneral stages. Therefore, black last abdominal segments can be also absent in *E. bicolor*. The microsculpture of the head of *E. rufula* is denser than in *E. bicolor*. It resembles that of *E. struyvei*. Thus, the surface of the head in *E. bicolor* is shinier than in *E. rufula*. The aedeagus is extremely similar to that of *E. bicolor*, but the number of sensillae in *E. bicolor* seems to be higher than in *E. rufula*.

Description: Length: 3.7 – 4.7 mm. Colouration: head dark brown to blackish; pronotum red; elytra orange-red with posterior half blackish; abdomen red to orange with central stripe dark brownish; legs dark yellow; antennae brown.

Head: 0.68 mm long, 0.63 mm wide; eyes not prominent; temples parallel; approximately twice as long as eyes; preocular sides parallel; anterior margin of clypeus narrowed to prominent centre; central part triangularly emarginate; supraocular groove reaching from anterior edge of eyes to posterior edge of temples; punctuation irregularly dense and deep; clypeus and posterior vertex finer and sparser punctate than interocular area; setiferous puncture at each end of supraocular groove; another pair of setiferous punctures on each side of central clypeal prominence; elongate microsculpture dense; longitudinally striate; surface moderately matt.

Antennae as long as head and half of pronotum combined; first antennomere thicker and longer than following antennomeres; second antennomere half as long as first antennomere; third antennomere slightly longer than second; following antennomeres decreasing in length and increasing in width; fourth antennomere slightly longer than wide; tenth antennomere slightly wider than long; antennomeres four to eleven pubescent and with long apical setae.

Pronotum: 0.61 mm long, 0.63 mm wide; sides of anterior half parallel; sides of posterior half strongly narrowed to posterior angles; posterior margin less than half as wide as anterior margin; punctuation as dense as on posterior vertex; short groove at anterior angles; pair of short grooves in posterior half; margined by ridges; on average, interstices between punctures three to four times as wide as diameter of punctures; setiferous punctures in groove at anterior angles, at anterior margin on each side of middle close to anterior angles, and along lateral margin; weak elongate microsculpture; longitudinally striate on disc; close to lateral margin, partly diagonally striate; surface shinier than head.

Elytra: 0.77 mm long, 0.74 mm wide, sides slightly divergent to posterior angles; humeral angles and posterior angles obtusely angled; weak punctuation as dense as on pronotum; weak elongate microsculpture longitudinally

striate; on each side of suture, one setiferous puncture in central position; few more setiferous punctures along lateral margin; weak elongate microsculpture longitudinally striate; surface shiny.

Abdomen impunctate except few setiferous punctures in transverse row on each abdominal segment; weak elongate microsculpture transversely striate, surface shiny.

Aedeagus in lateral aspect broadly curved; apex broadly rounded; at apex with small sclerotised plate; large sclerotised plate of central lobe with few sensillae at base; in ventral aspect, central lobe broadly parallel; with pincer-like sclerotised structure at apex; paramere approximately as long as central lobe; at apex with wide transparent lobe; several sensillae on transparent lobe.

Eleusis struyvei spec. nov.

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Figs 20A-C, 30F, 31E, 35d

Type material: male, Holotype: Panama: Chiriqui Prov., Cerro Punta, Mont Baru (8.846°, -82.536°), dead wood, 1.5.2014, leg. T. Struyve (UIC). Paratypes: Mexico: Chiapas, Volcan Tacana, Sumidero, San Antonio, leaf litter beside Rio Mala, 1760 m elev., male, 20.12.1976, leg. H. Frania, D. Proctor (AMNH); Chiapas, Union Juarez, NE slope of Vulcan Tacaná, 1760 m elev., Sumidero San Antonio, male, 17.12.1975, leg. H. Frania (AMNH); Guatemala: Dpto. San Marcos, between Sivinal & Union Juarez (Chiapas) w. slope Volcan Tacana, Barranca Rio Lu Laja, under bark, fresh cut log, 2100 m elev., 2 males, 31.12.1976, leg. H. Frania, D. Proctor (AMNH); San Marcos, Parque Municipal Refugio del Quetzal (14.9391°, -91.8729°), 1800–1830 m elev., under fermenting bark, female, 4.6.2015, leg. ZH Falin #GUAT1F15006 (KNHM); Baja Verapaz, 4 km S Purulha, 1650 m elev., under bark, 1 male, 1 female, 2.7.1993, J.S. Ashe, R. Brooks #181 (KNHM); Costa Rica: San José Prov., Genesis II Reserve (9°42.57'N, 83°54.64'W), 2360 m elev., under bark, 4 males, 1 female, 13.6., 14.6.2004, leg. J.S. Ashe, R.Z. Falin, I. Hinojosa, #CR1AFH04232 (3 KNHM, 2 UIC); PanAmerican Hwy, km 80.5, 7 km SSW, Cabinas de Quetzal (9°33.53'N, 83°48.5'W), 2150 m elev. under bark, male, 22.7.2000, leg. J. Ashe, R. Brooks, Z. Falin #CR1ABF00218 (KNHM); PanAmerican Hwy, km 80.5, 9 km SSW Albergue de Montana Savegre, Upper Quebrada –Las Robles Trails (9°32.56'N, 83°48.9'W), 2200–2300 m elev., under bark, female, 23.7.2000, leg. J. Ashe, R. Brooks, Z. Falin #CR1ABF00234 (KNHM); Vara Blanca, 2000 m elev., 1 male, 1 female, 8.1938, leg. R. Brooks (BMNH); Panama: 2 males, 2 females, with same data as holotype (2 UIC, 2 TSC); Chiriqui Prov., P. Armistad, Las Nubles continental divide, 2000 m elev., 1 male, 1 female, 13.7.1995, leg. R. Gillogly (KNHM); 2 males, 2 females, same data as holotype (2 TSC, 2 UIC); Venezuela: without more data from coll. Chevrolat (BMNH).

Diagnosis: The species is extremely similar to *E. bicolor*. On average, *E. struyvei* is larger. Mean length (without abdomen) is 4.6 ± 0.8 mm, whereas mean length in *E. bicolor* is 3.9 ± 0.6 (significant t-test: $t=3.7$, $n=21/32$, $p<0.001$). However, size overlapping specimens exist (Fig. 34d). It can be clearly differentiated from *E. bicolor* by the more elongate aedeagus. As colouration in both species seems to vary extremely, colouration cannot be used to differentiate the species. Mostly, the anterior abdominal segments are clear yellow in *E. bicolor*, whereas a brown central stripe exists in *E. struyvei*. The elongate microsculpture of the head is denser in *E. struyvei* than in *E. bicolor*. In *E. bicolor* the ridges between the micro-striae are shinier. Thus, the surface of the head seems to be shinier than in *E. struyvei*.

Description: Length: 5.6 – 9.4 mm. Colouration: extremely varying; head and pronotum black; elytra yellow with posterior third dark brown to blackish or totally blackish; abdominal segments yellowish with central part brown, except posterior two segments totally dark brown or totally yellowish; legs brownish; tarsi yellow; antennae dark brown.

Head: on average, 1.33 mm long, 1.44 mm wide; no sexual dimorphism in head size; length of temples varying between as long as and more than twice as long as eyes; preocular sides shortly parallel; narrowed to anterior margin of clypeus in sinuate curve; central part of anterior margin prominent; slightly emarginate; supraocular groove from anterior edge of eyes to posterior angles; punctation irregularly dense and deep; between eyes triangular area with deep and coarse punctures; clypeus and posterior vertex with sparser and weaker punctures; at each end of supraocular groove with setiferous puncture; pair of setiferous punctures on each side of central prominence; elongate microsculpture dense; longitudinally striate; surface moderately matt.

Antennae as long as head and half of pronotum combined; first antennomere longer and slightly thicker than following antennomeres; three times as long as

second; third antennomere nearly twice as long as second; following antennomeres shorter than third and increasing in width; fourth antennomere nearly twice as long as apical width; tenth as long as apical width; fourth to eleventh antennomeres pubescent and with few long apical setae.

Pronotum: on average, 1.28 mm long, 1.43 mm wide; sides in anterior half parallel; in posterior half continuously narrowed to posterior angles; at posterior angles only half as wide as at anterior angles; short groove at each side margined by sharp ridge; central part slightly prominent posteriad; at anterior angles with deep short groove; anterior angles emarginate; depth of emargination varying corresponding to depth of groove; punctation as deep and sparse as on posterior vertex of head; on average, interstices between punctures three times as wide as diameter of punctures; setiferous punctures in anterior grooves, along lateral margin, and one large setiferous puncture at beginning of posterior third; pairs of setiferous punctures at anterior margin close to anterior angles; elongate microsculpture similarly dense and deep as on head; surface moderately matt.

Elytra: on average, 1.52 mm long, 1.52 mm wide; slightly widened to posterior angles; humeral angles obtusely angled; punctation similarly dense and deep as on pronotum; setiferous punctures along lateral margin; one setiferous puncture in central position on each side of suture; elongate microsculpture as dense and deep as on pronotum; surface moderately matt.

Abdomen impunctate except transverse rows of setiferous punctures on each abdominal segment; transverse reticulate microsculpture weak; surface shiny.

Aedeagus elongate; in lateral view aspect, shortly acute; central lobe in anterior half with numerous sensillae and in apical third with minute diagonal striae; in ventral aspect, apex slightly emarginate; parameres slightly shorter than central lobe; with widened transparent apical lobe; at apical margin with minute setae; few sensillae on transparent apical lobe and at base of scape.

Etymology: The species name honours Tim Struyve, who found the species in Panama.

Key to species of the genus *Eleusis*

1	Sides of pronotum interrupted by a short emargination followed by short tooth.	2
–	Sides not interrupted; posterior half continuously narrowed to posterior angles.	16
2	Elytra with at least two pairs of setiferous punctures.	14
–	Elytra with one pair of setiferous punctures.	3
3	Larger than 5.0 mm, elytra reddish brown.	4
–	Not longer than 4.5 mm, elytra reddish or light brown to yellowish with dark posterior margin or totally dark brown to blackish.	5
4	Antennae shorter, as long as head and half of pronotum combined, aedeagus thick and stout, in ventral aspect, apex rounded.	<i>E. castanea</i> spec. nov.

- Antennae longer, as long as head and pronotum combined; aedeagus slenderer, in ventral aspect, apex triangular. *E. ecuadoriensis* spec. nov.
- 5 Elytra light reddish brown, with dark spot along suture, pronotum with narrow impunctate midline, elytra distinctly longer than wide. 6
- Elytra dark brown without darker spot or pale with darker posterior margin and sides; pronotum without impunctate midline, elytra quadrate, wider than long or only slightly longer than wide. 7
- 6 Head and pronotum with pairs of impressions, slightly smaller, 3.8 – 4.0 mm long. *E. rufipennis* spec. nov.
- Head and pronotum without impressions; slightly larger, 4.2 mm long. *E. genieri* spec. nov.
- 7 First antennomere black; prominence of aedeagus short and close to apex. *E. hondurana* spec. nov.
- First antennomere yellow; prominence of aedeagus in central position, triangular or extremely elongate. 8
- 8 Prominence of aedeagus slender and elongate; nearly as long as apex of parameres. *E. boliviana* spec. nov.
- Prominence of aedeagus widely triangular or nearly absent. 9
- 9 Aedeagus stout and broad; apical half of central lobe as wide as or wider than basal half; apex broadly obtuse. 10
- Aedeagus slender; apical half of central lobe smaller than or equally wide as basal half; apex semicircular or slightly acute. 11
- 10 Apex of aedeagus broadly obtuse. *E. interrupta* (ERICHSON, 1840)
- Apex of aedeagus with wide lobes. *E. andina* spec. nov.
- 11 Smaller, 2.2 – 2.9 mm long, elytra yellow to light brown with blackish posterior margin, with at least slight central prominence of aedeagus. 13
- Larger, 3.1 – 3.5 mm long. 12
- 12 Elytra as black as head and pronotum, central prominence of aedeagus nearly absent, only marked by concentration of sensillae, apex of paramere without sensillae. *E. nigrita* spec. nov.
- Elytra dark brown to yellowish with black posterior margin, central prominence of aedeagus large, nearly semicircular, apex of paramere with fringe of short setae. *E. nigerrima* FAUVEL, 1864
- 13 Smaller, 2.2 – 2.4 mm, head and pronotum brown, central prominence of aedeagus extremely weak. *E. fauveli* spec. nov.
- Larger, 2.5 – 2.9 mm, head and pronotum blackish, central prominence of central lobe weak, apex of parameres without marginal setae. *E. humilis* ERICHSON, 1840
- 14 Totally black, punctuation of head weak. *E. breviceps* SHARP, 1887
- At least with few yellow parts, extremely variable in colouration, but never totally black. 15
- 15 Head coarsely punctate, interstices between punctures less than half as wide as diameter of punctures. *E. insignis* SHARP, 1887
- Punctuation of head weaker, interstices between punctures at least as wide as diameter of punctures. *E. scita* SHARP, 1887
- 16 Slender species, not depressed in dorso-ventral direction; left mandible with broad and thick tooth. *E. elongata* spec. nov.
- Species depressed in dorso-ventral direction, left mandible with acute tooth. 17
- 17 Totally black. 18
- Only partly black, variable in colouration, but never totally black. 19
- 18 Head with dense microsculpture and without punctuation. *E. panamaensis* spec. nov.
- Head with polished parts and distinctly punctate. *E. frater* (FAUVEL, 1865)
- 19 Pronotum reddish, elytra in anterior half reddish, in posterior half dark, smaller than 5.0 mm. *E. rufula* SHARP, 1887

– Pronotum black, elytra and abdomen varying in colouration, mostly larger than 5.0 mm.	20
20 Basal segments of abdomen black, only elytra with large reddish spot.	21
– Basal segments of abdomen at least partly yellowish or light brown.	22
21 Smaller, 4.7 mm long, head with deep longitudinal microsculpture, anterior angles of pronotum with short groove.	<i>E. fenestrata</i> SHARP, 1887
– Larger, 5.5 – 6.0 mm, head with weaker microsculpture, anterior angles of pronotum without groove.	<i>E. adusta</i> (FAUVEL, 1865)
22 Large species of 11.0 – 13.0 mm, punctuation of head uniform, without spot of larger punctures on vertex.	<i>E. peruviana</i> spec. nov.
– Smaller species, not longer than 10.0 mm, punctuation of head irregular, with spot of larger punctures on vertex, separated from finer clypeal and posterior vertex punctuation.	23
23 Head with dense longitudinal microsculpture, in lateral aspect, apex of aedeagus slenderer, apex in ventral aspect broadly obtuse.	<i>E. struyvei</i> spec. nov.
– Head with small parts polished or weak, longitudinal microsculpture; in lateral aspect, apex of aedeagus obtuse, apex in ventral aspect rounded.	<i>E. bicolor</i> (ERICHSON, 1840)

Discussion

According to the results of this study 24 species of the genus *Eleusis* are known from the Neotropical region. The rarefaction analysis using the 1004 specimens identified revealed a still continuous increase in the number of species (Fig. 35f). According to these results the number of species will increase by 3 to 4 species per approximately 500 newly collected specimens. Several of the specimens collected were only found in one to few specimens. A lot of species were only found by flight intercept traps or malaise traps. This unspecific collecting method gives no information about the origin of the species. It is supposed that species only found by this type of traps were dispersing animals looking for new habitats or for mating and normally live in habitats that are hardly to discover by collectors in the rainforest, such as the canopy. The collection of a new genus even revealed that not only all genera of the tribe are known from the Neotropical region and new genera can be expected.

The species of the tribe Eleusini are extremely depressed in dorso-ventral direction, except for *E. elongata*, and belong to the under-bark fauna of rotten or decaying logs. This habitat is inhabited by a lot of other Osoriinae genera from other tribes such as the Leptochirini, Thoraophorini and Osoriini. Piestinae are also depressed in dorso-ventral direction and belong to the under-bark fauna. While Osoriini have a more tube-like shape, Leptochirini and several species of Thoracophorini genera are also depressed species. But none species of these genera are as strongly depressed as the species of the Eleusini. One exception among the Eleusini is the newly described *E. elongata*, which has a tube-like elongate shape as the species of the Osorini tribe and shows that Eleusini species also likely inhabit ecological niches of this group.

Many species of the Neotropical Eleusini are extremely variable regarding size, shape of head, and colouration (Figs 32, 33, 34). Some species such as *E. nigerrima* and *E. breviceps* show distinct sexual dimorphism with larger males and enlarged male heads, on average (Figs 35a, e). However, the variance between males and females is great and a wide zone of overlapping size exists. In other species such as *E. scita* a great variance exists without relation to sexual dimorphism. No explanation for this high variance can be given here. It was noted that on many labels fresh bark or sapping bark was pronounced as collecting habitat. Thus, the nourishment of the different specimens might be the cause for the variable size. It might be that a food source with high sugar content promotes the growth and the allometric growth (heterauxesis) of the head. Nevertheless, the large variance of colouration such as in *E. bicolor* or *E. scita*, cannot be explained by the food resource.

As far as known today, the Eleusini tribe avoid the Central Amazonian lower rain forest region with only few exceptions such as *E. frater* or *E. fauveli* (Fig. 36). The *E. breviceps*-group is only distributed in Central America, whereas the *E. humilis*-group, and the *E. bicolor*-group are also represented with few species in the south-eastern South-America in the Atlantic rainforest, e.g. *E. humilis* and *E. adusta*. The Eleusini have their main distribution in southern Central-America and north-western South-America along the Andean range. Only one species, i.e. *E. interrupta*, was found on the West Indian island of Cuba. The collection of new species in only one or few specimens from the South American Andes by malaise traps or flight intercept traps reveals that new species can be expected in this region and by these methods, in particular. Nevertheless, the distribution let suppose that the biodiversity hotspot of *Eleusis* is located in Central America and north-western South America.

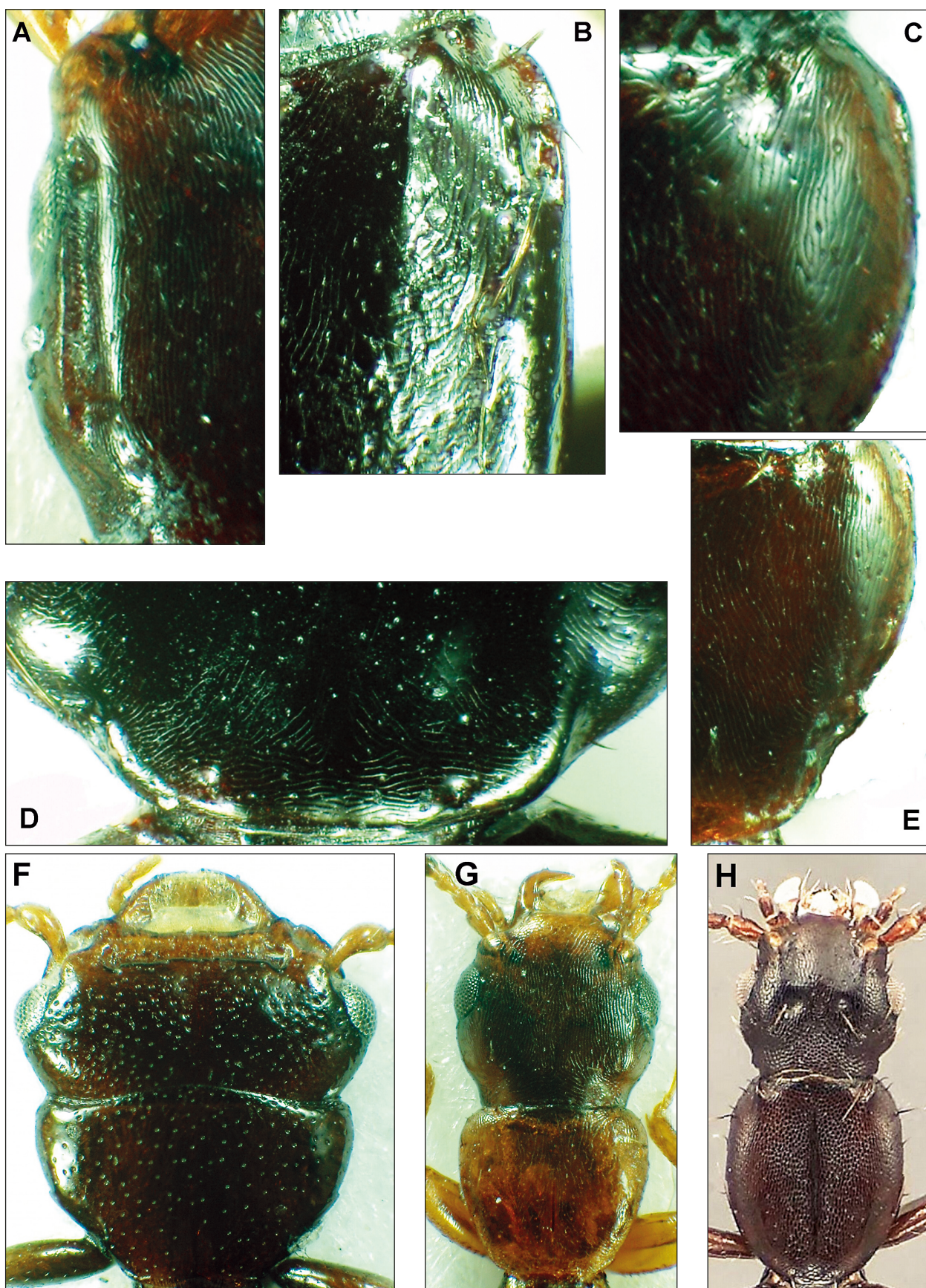


Fig. 1: Supraocular groove of *E. andina* (A), groove at anterior angle of *E. bicolor* (B), pair of setiferous punctures at anterior angles of pronotum of *E. andina* (C), elevated plate at posterior edge of *E. bicolor* (D), interrupting tooth at lateral margin of *E. andina* (E); head and pronotum of *Eleusima platysoma* (F), *Zeoleusis semirufus* (G), and *Renardia nigella* (H, Photograph: Field Museum of Natural History, Division of Insects, Arachnids and Myriapods, Grainger Digital Initiative. Photographer: KELSEY KEATON. Modified).

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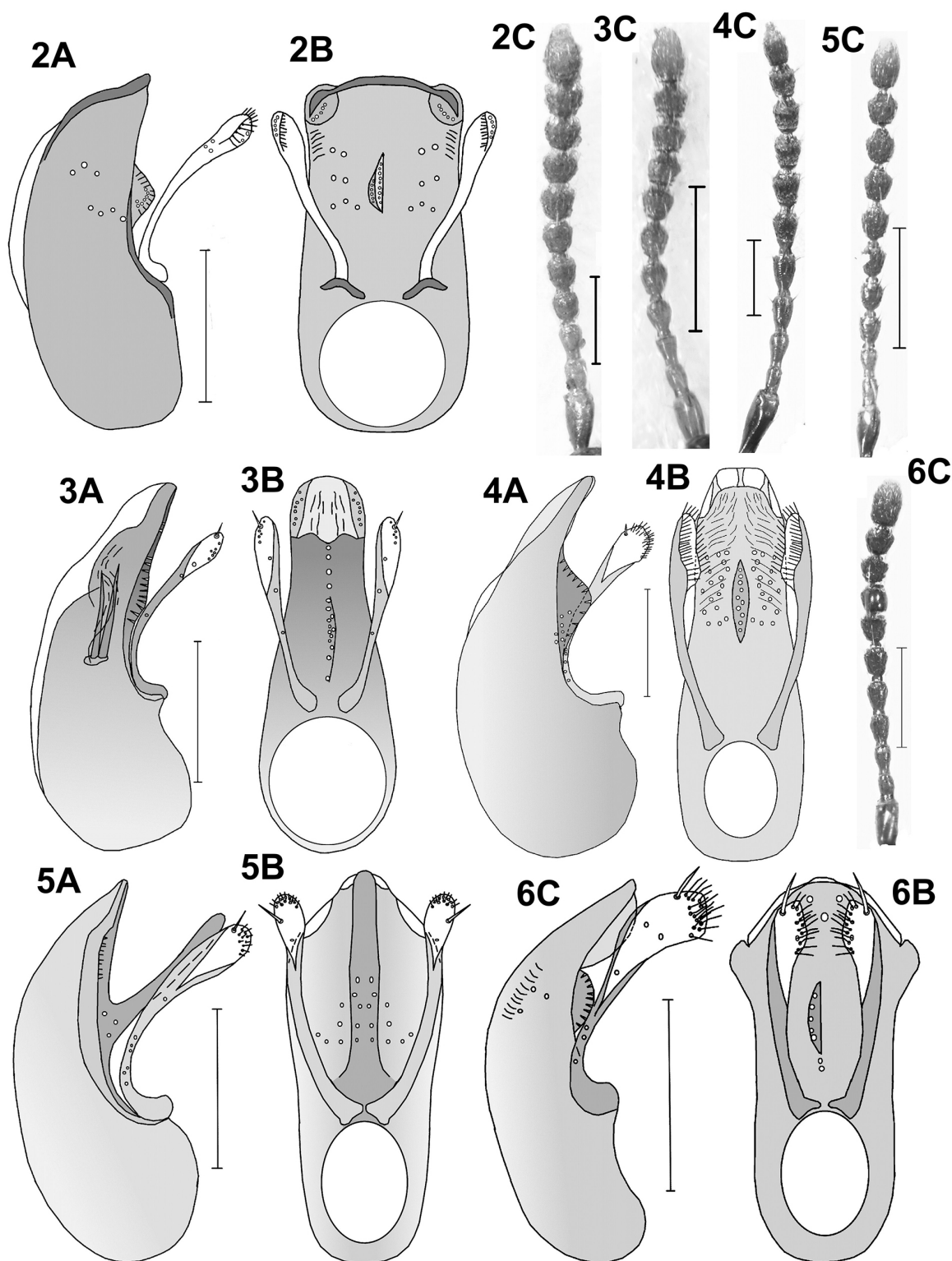


Fig. 2–6: *Eleusis interrupta* (2), *E. humilis* (3), *E. nigerrima* (4), *E. boliviana* (5), *E. andina* (6); aedeagus in lateral (A) and ventral (B) aspect and antenna (C); scale bar A, B: 0.1 mm, C: 0.2 mm.

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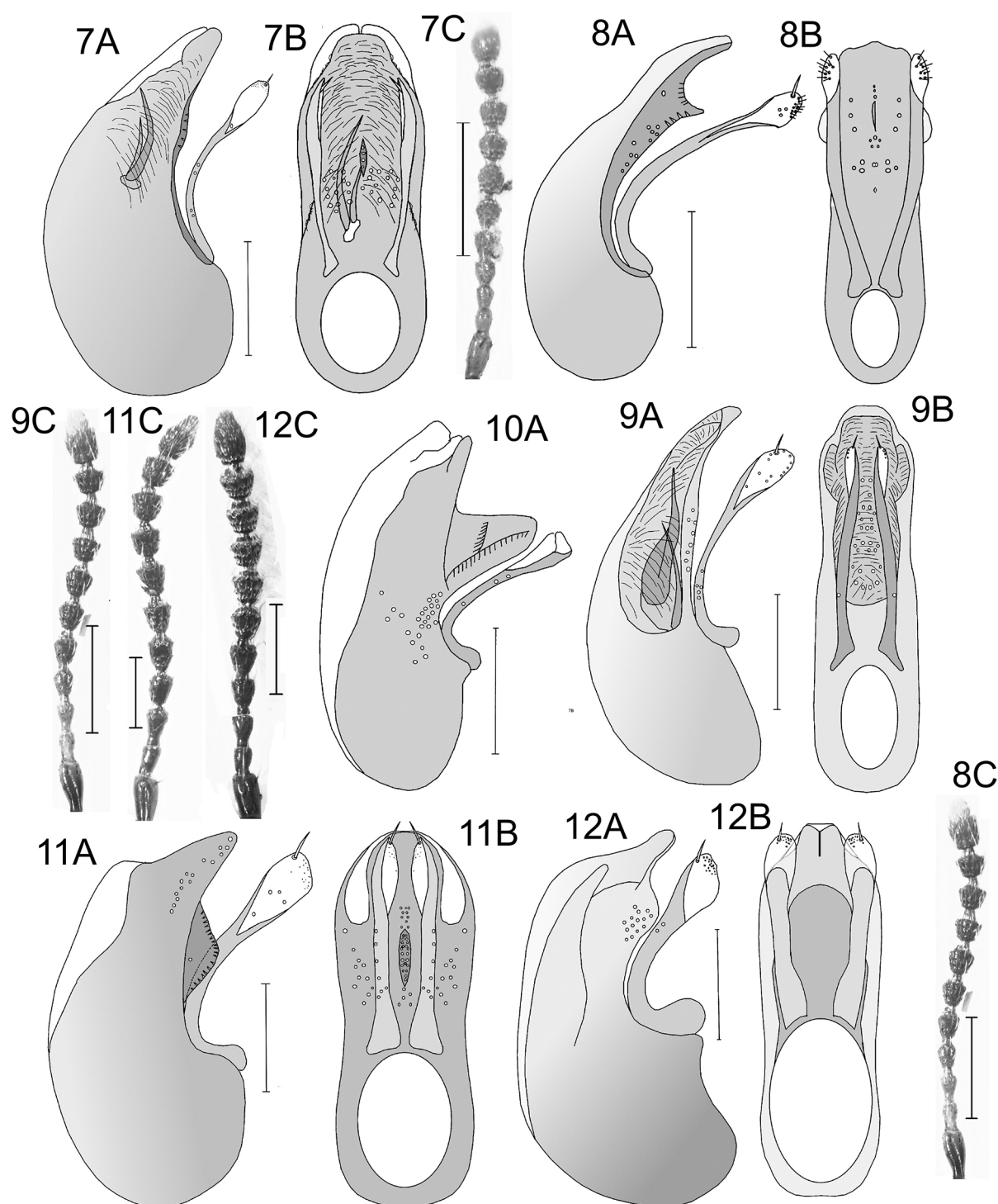


Fig. 7–12: *Eleusis fauvei* (7), *E. hondurana* (8), *E. nigrita* (9), *E. indica* (10), *E. castanea* (11), *E. genieri* (12); aedeagus in lateral (A) and ventral (B) aspect and antenna (C); scale bar A, B: 0.1 mm, C: 0.2 mm.

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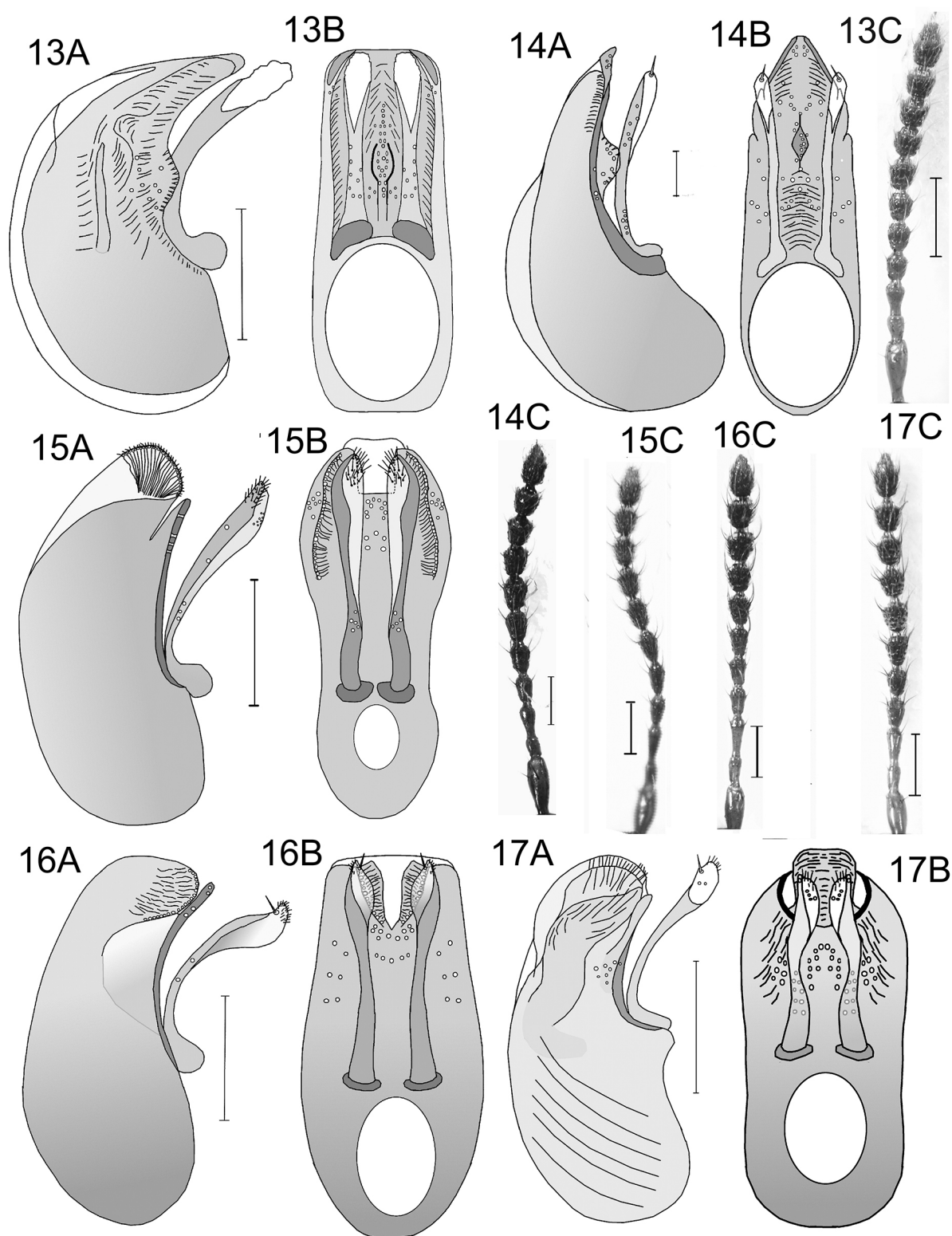


Fig. 13–17: *Eleusis rufipennis* (13); *E. ecuadoriensis* (14), *Eleusis breviceps* (15), *E. insignis* (16), *E. scita* (17); aedeagus in lateral (A) and ventral (B) aspect and antenna (C); scale bar A, B: 0.1 mm, C: 0.2 mm.

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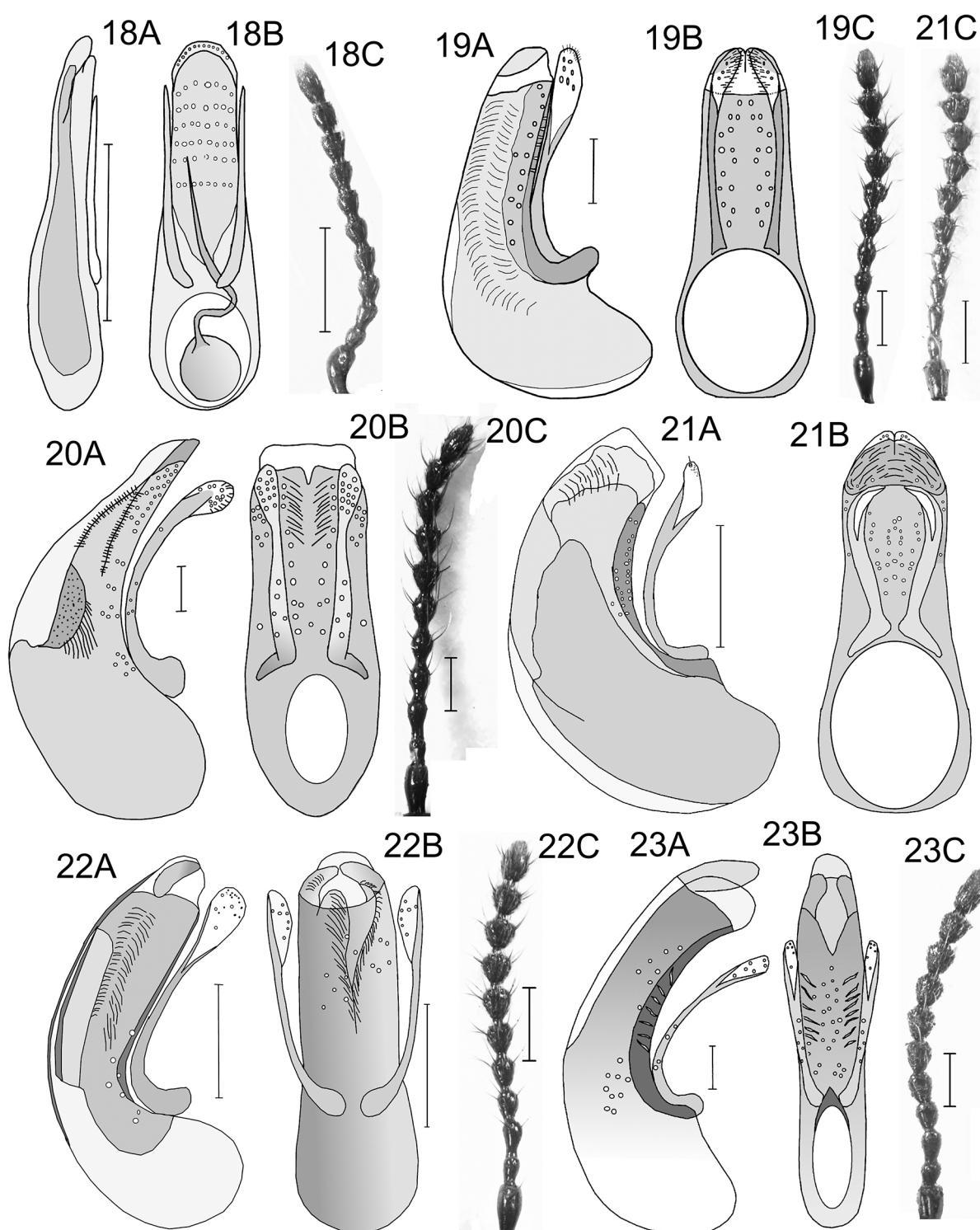


Fig. 18–23: *Eleusis platysoma* (18), *E. bicolor* (19), *E. struyvei* (20), *E. fenestrata* (21), *E. rufula* (22), *E. adusta* (23): aedeagus in lateral (A) and ventral (B) view, antenna (C), head (D), colouration of elytra (E); scale bar A, B: 0.1 mm, C: 0.2 mm, D, E: 1.0 mm.

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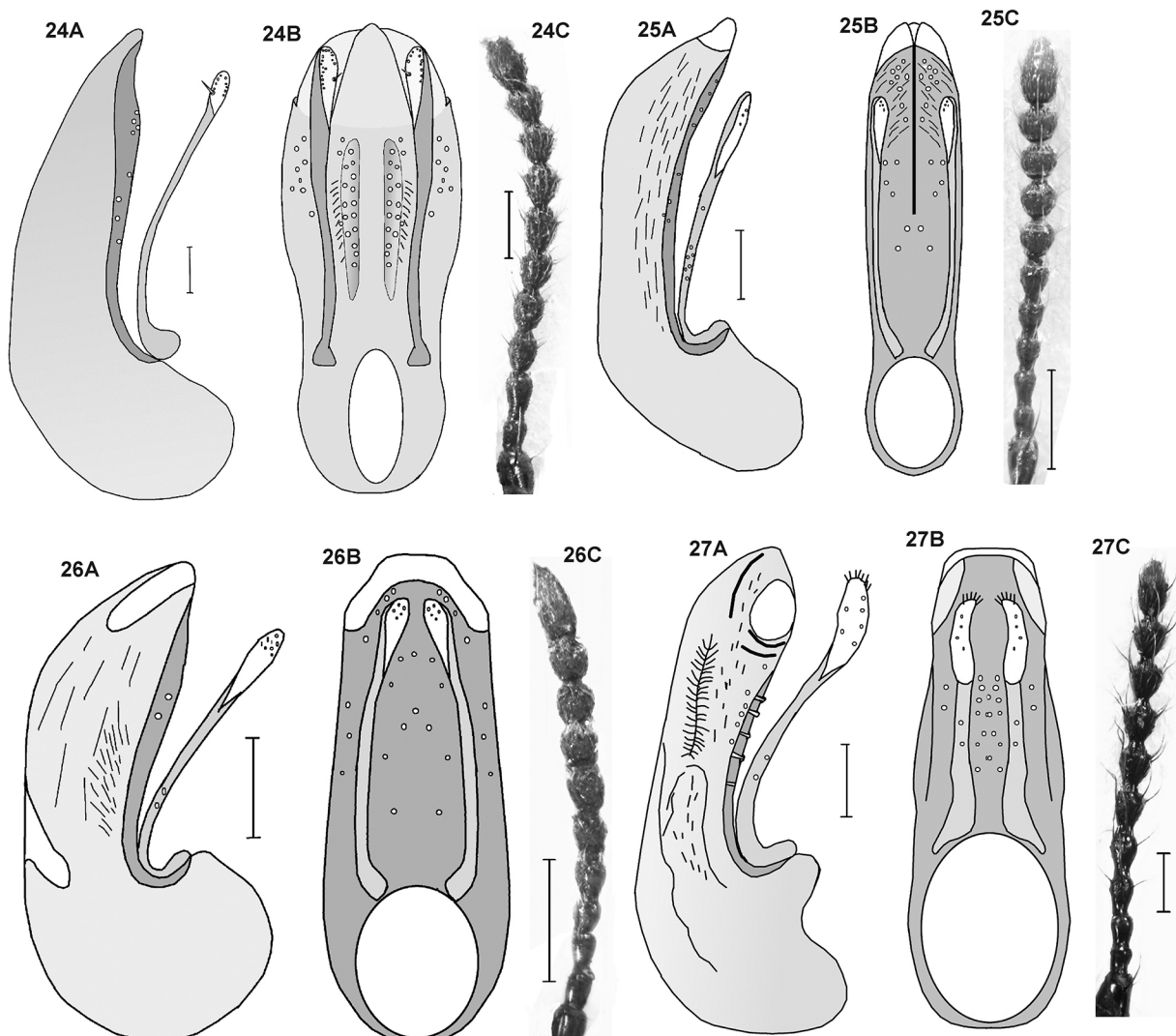


Fig. 24–27: *E. peruviana* (24), *E. panamaensis* (25); *E. frater* (26), *E. elongata* (27): aedeagus in lateral (A) and ventral (B) view, antenna (C); scale bar A, B: 0.1 mm, C: 0.2 mm, D, E: 1.0 mm.

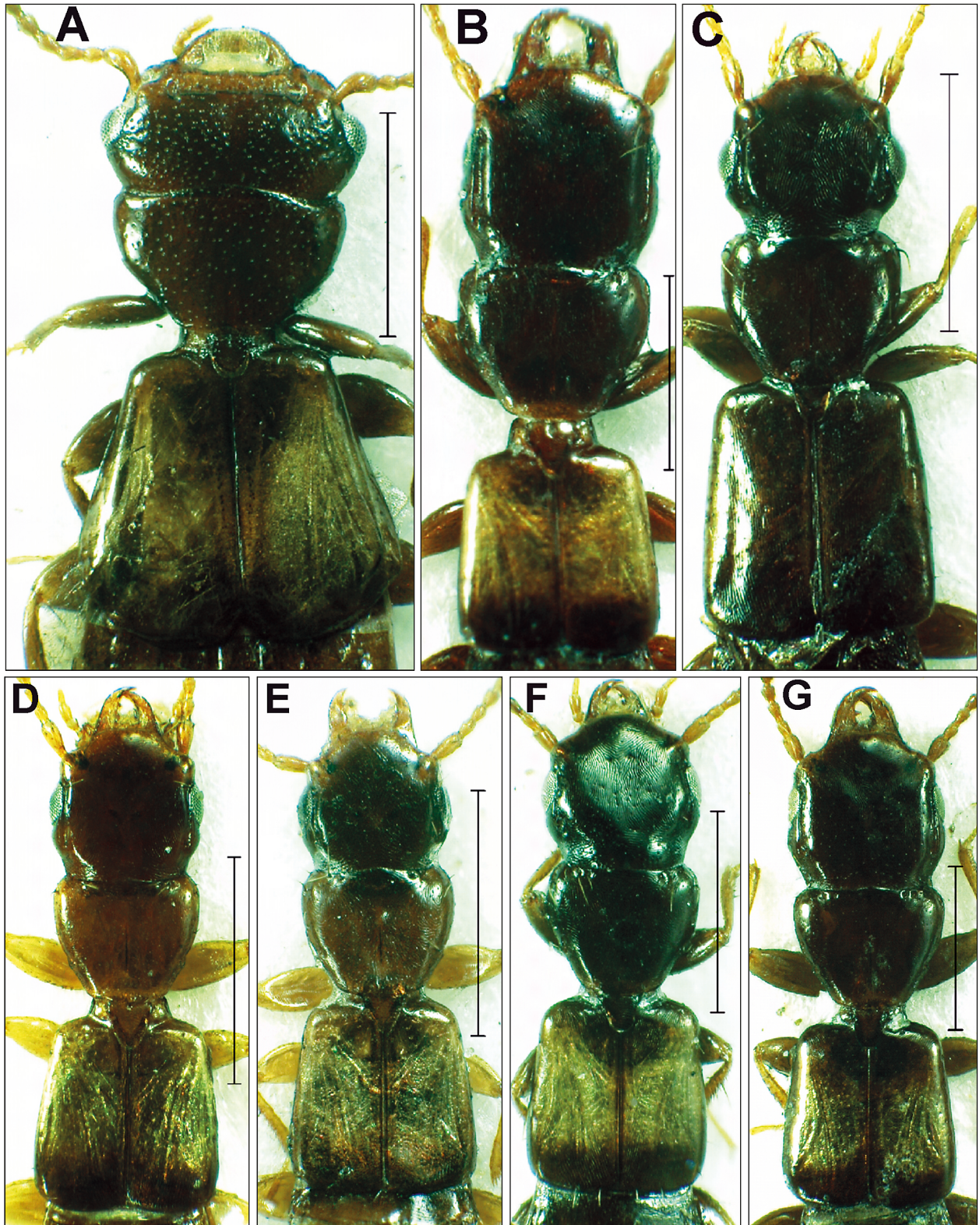


Fig. 28: Fore-body showing shape and colouration of *Eleusis platysoma* (A), *E. andina* (B), *E. boliviana* (C), *E. humilis* (D), *E. fauveli* (E), *E. interrupta* (F), *E. nigerrima* (G) (scale bar: 0.5 mm).

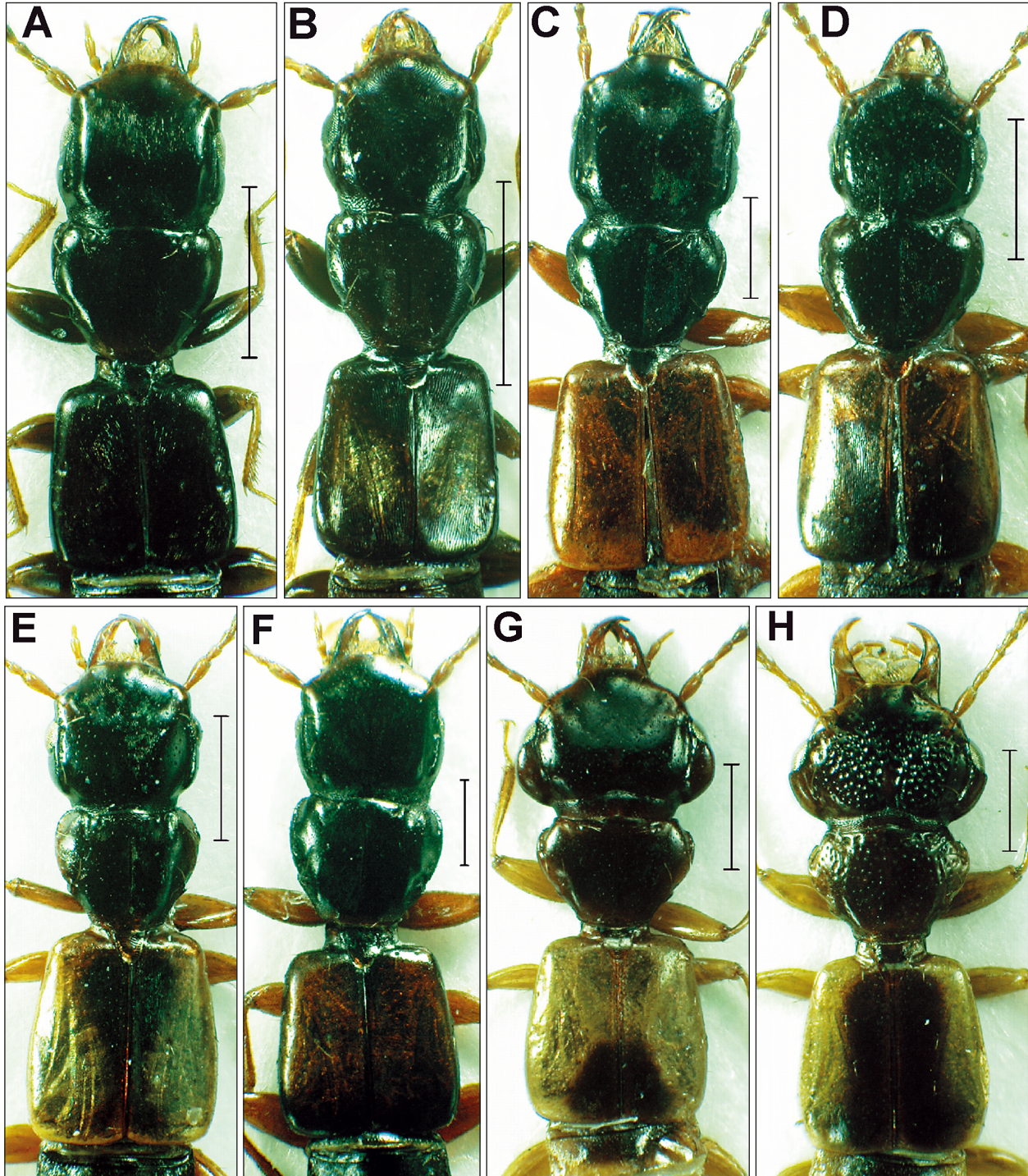


Fig. 29: Fore-body showing shape and colouration of *Eleusis nigrita* (A), *E. hondurana* (B), *E. castanea* (C), *E. genieri* (D), *E. rufipennis* (E), *E. ecuadoriensis* (F), *E. scita* (G), *E. insignis* (H) (scale bar: 0.5 mm).

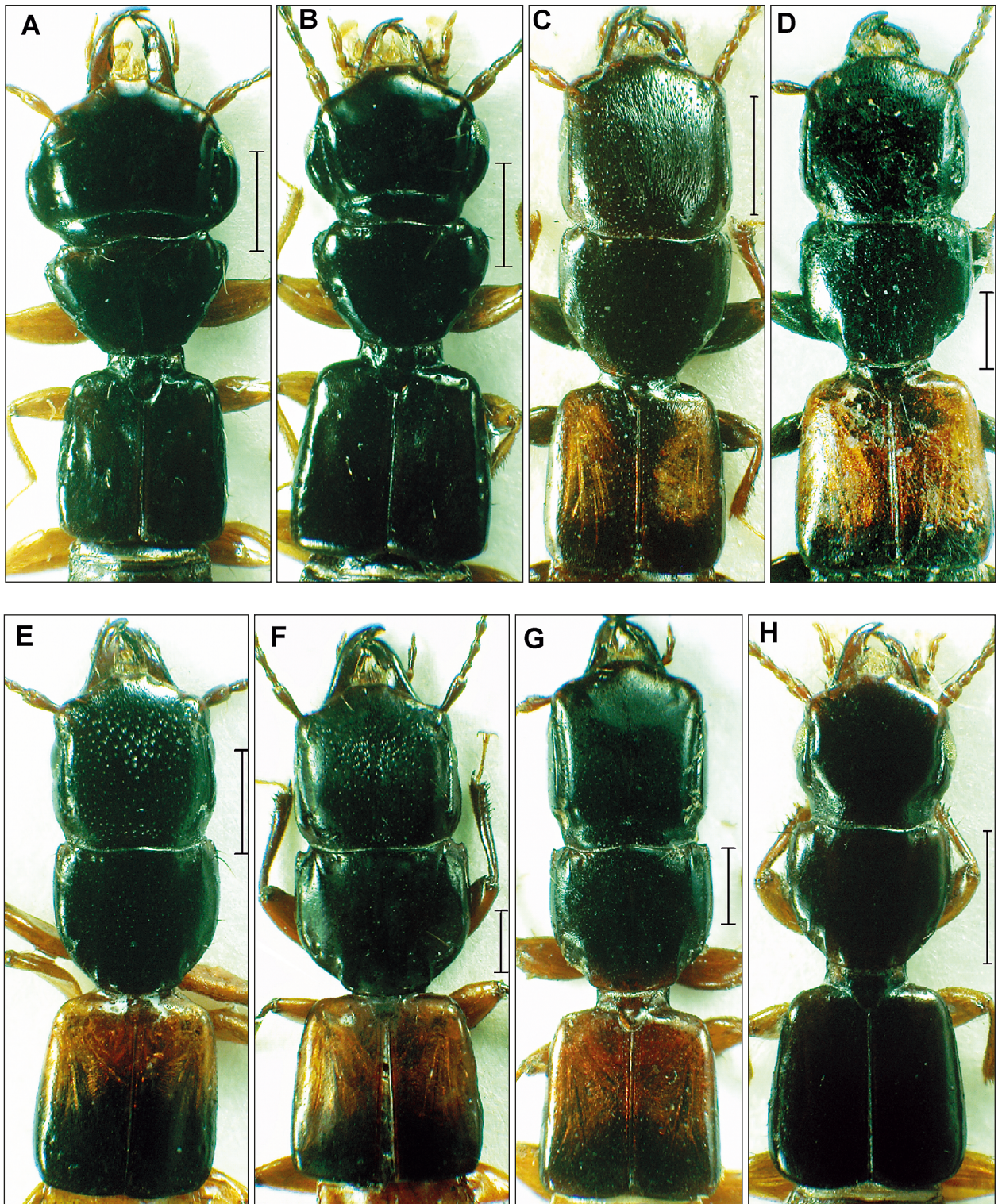


Fig. 30: Fore-body showing shape and colouration of *Eleusis breviceps* (A: male, B: female), *E. fenestrata* (C), *E. adusta* (D), *E. bicolor* (E), *E. struyvei* (F), *E. peruvianus* (G), *E. panamaensis* (H) (scale bar: 0.5 mm).

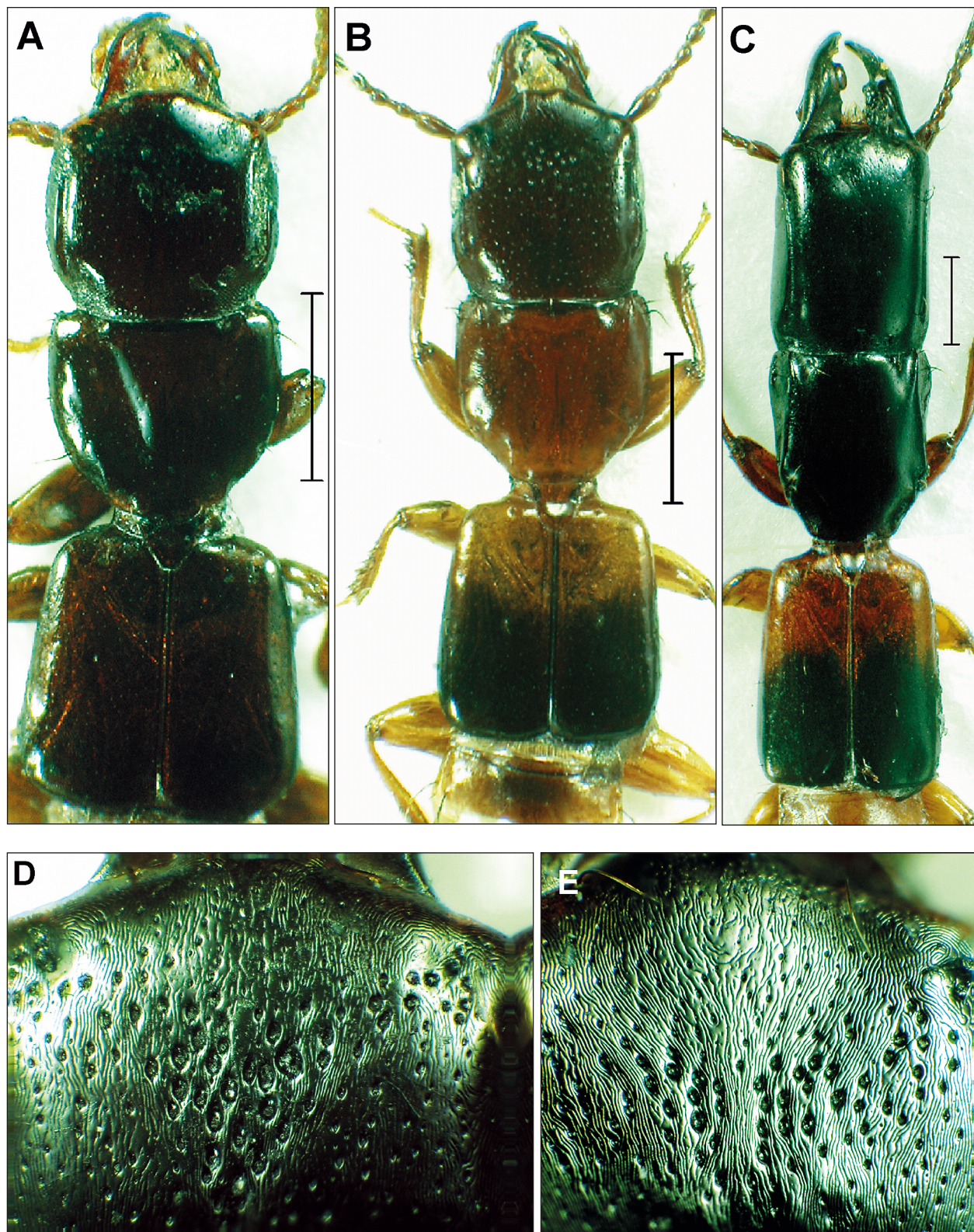


Fig. 31: Fore-body showing shape and colouration of *Eleusis frater* (A), *E. rufula* (B), *E. elongata* (C); microsculpture of head of *E. bicolor* (D) and *E. struyvei* (E) (scale bar: 0.5 mm).

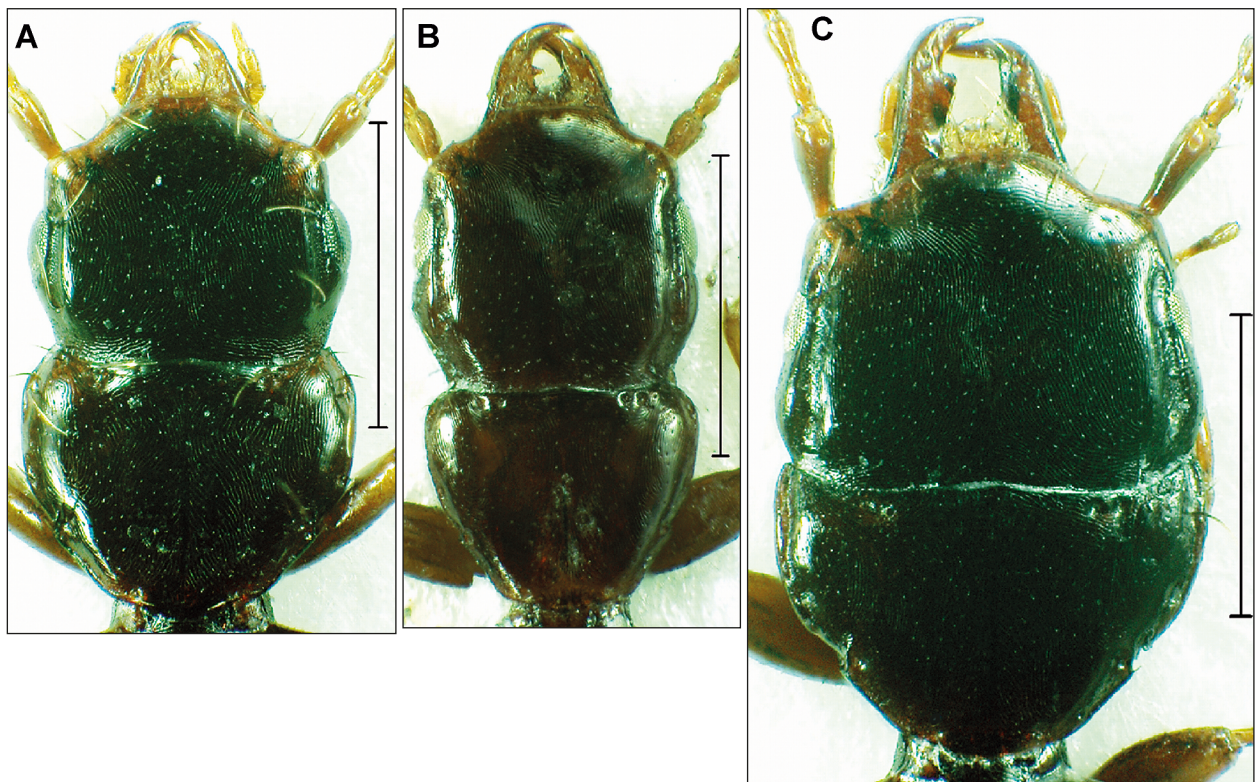


Fig. 32: Head and pronotum of *E. nigerrima* showing different head shape between females (A, B) and males (C); scale bar: 0.5 mm.

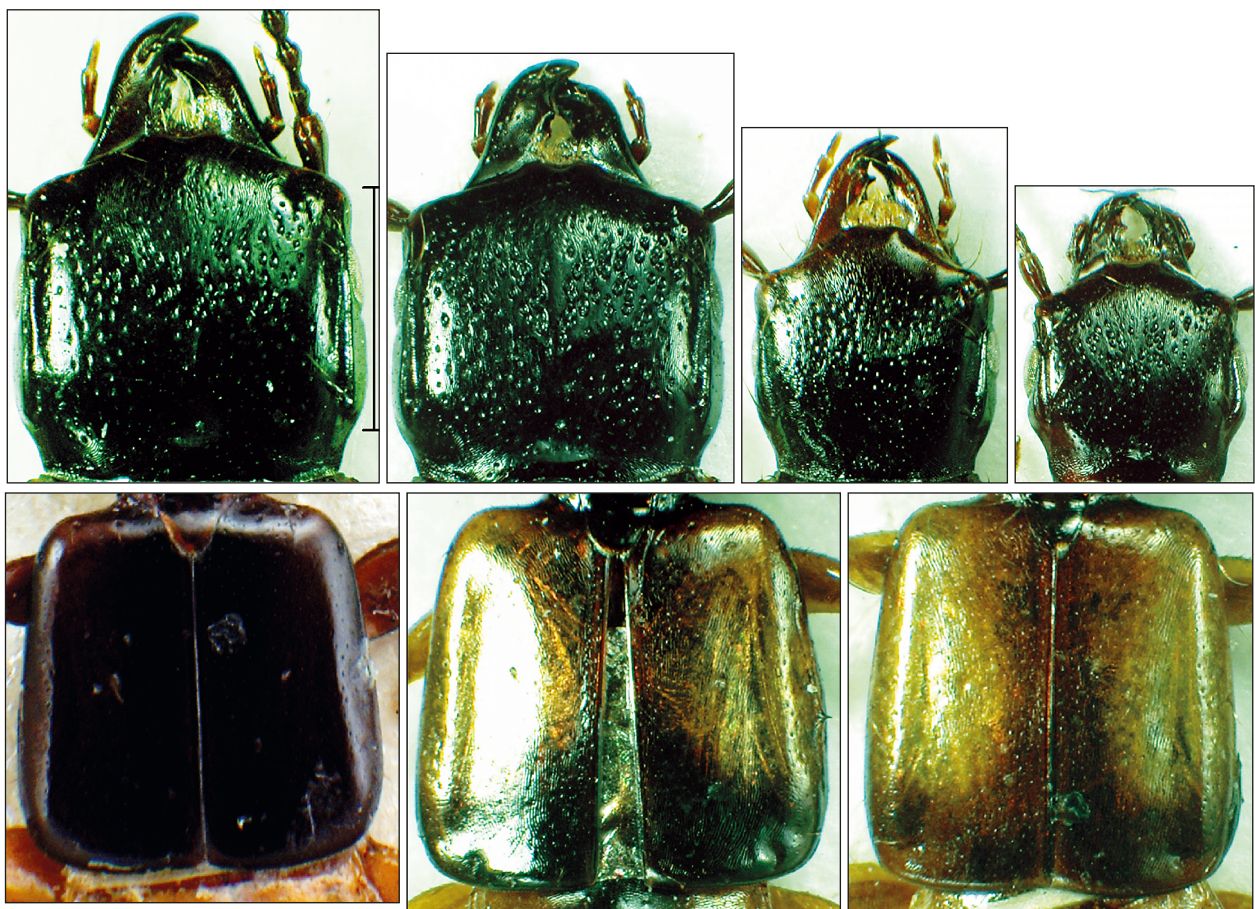


Fig. 33: Head and elytra of *E. bicolor* showing variance among head size (upper row) and colouration of elytra (lower row); scale bar: 0.5 mm.

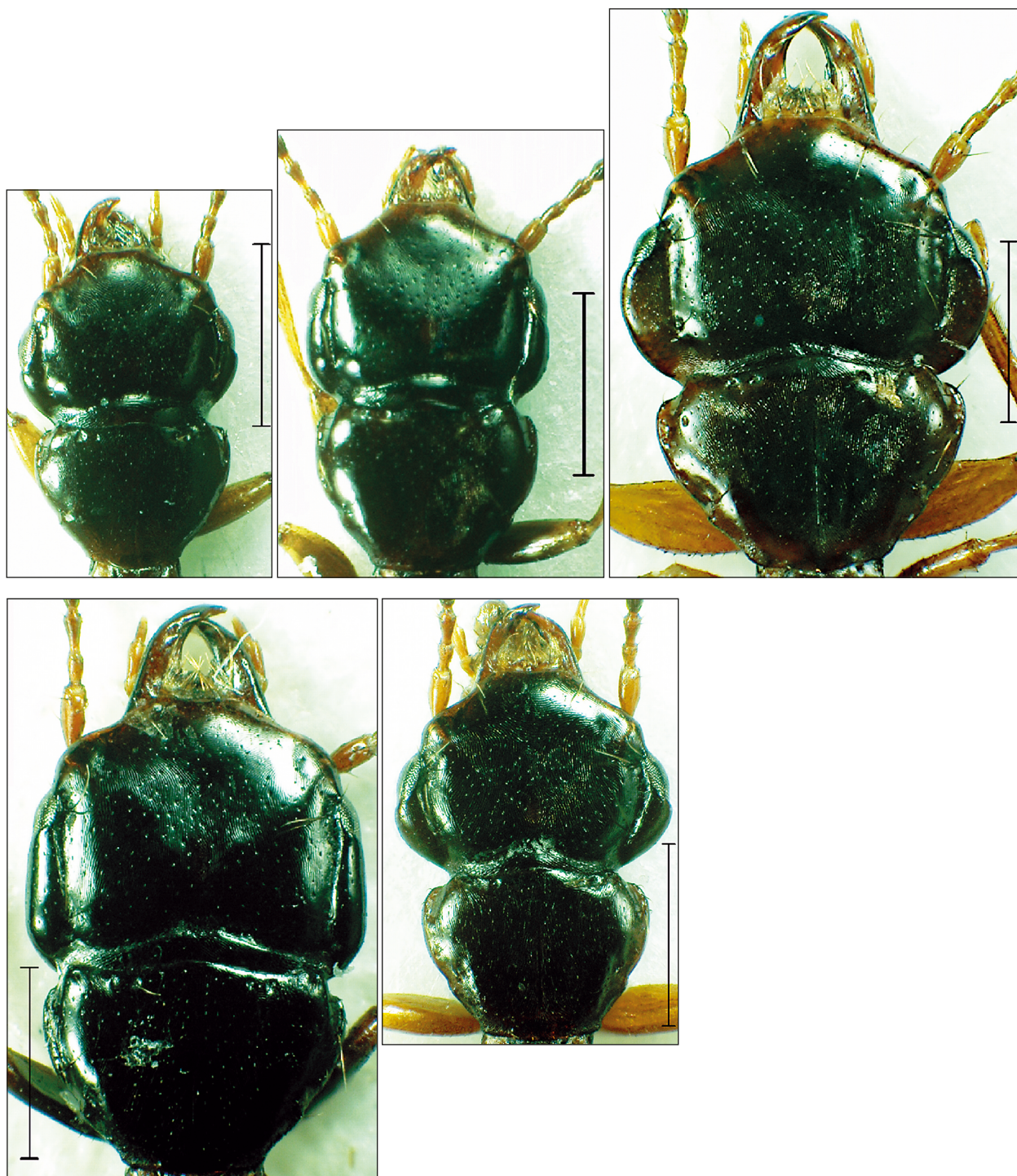


Fig. 34: Head and pronotum of *E. scita* showing variance of head shape; scale bar: 0.5 mm.

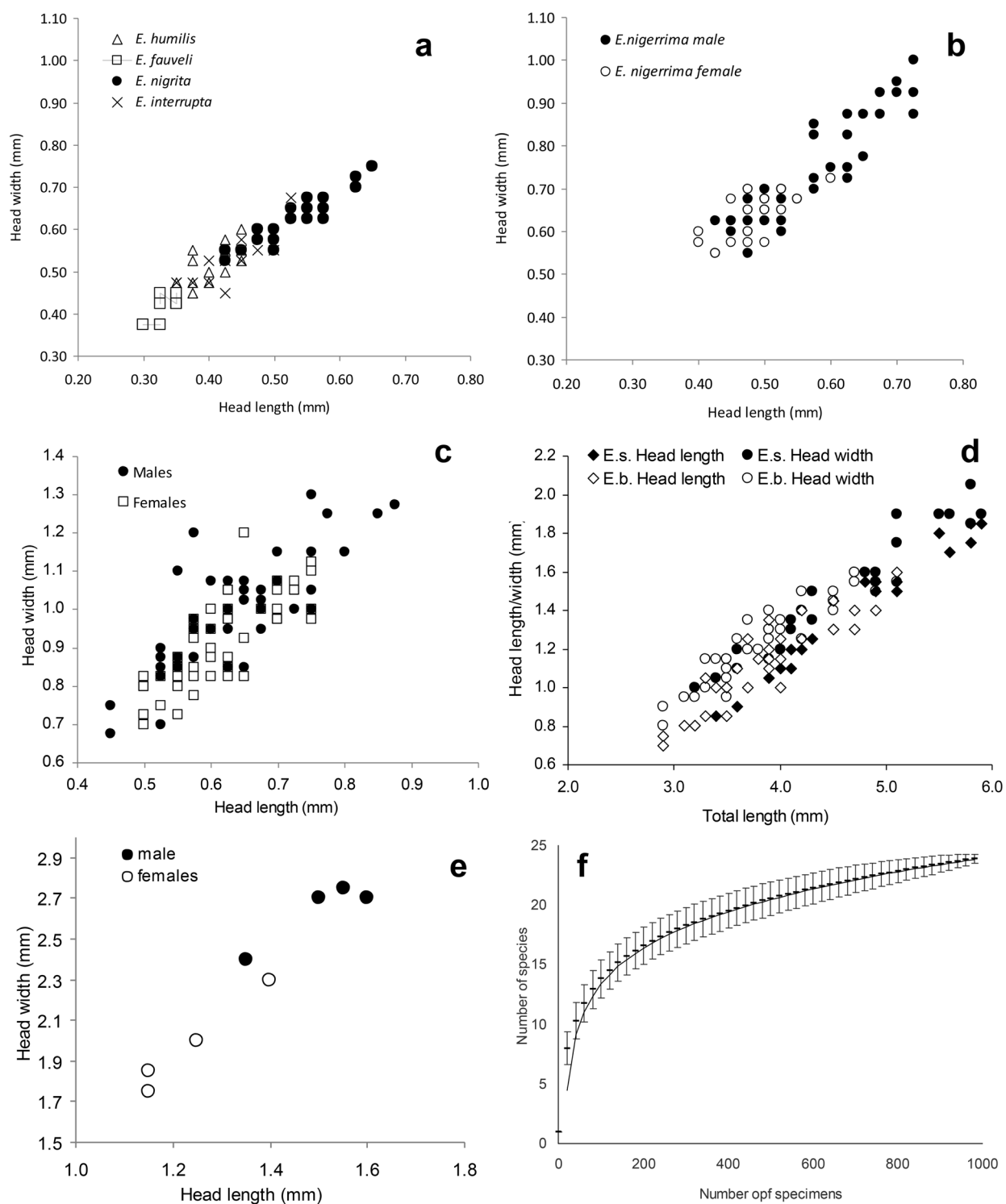


Fig. 35: Relation between head length and width of four closely related *Eleusis* species of the *E. humilis*-group (a), males and females of *E. nigerrima* (b), males and females of *E. scita* (c); relation between total length (without abdomen) and both head length and width, respectively, for *E. bicolor* (E.b.: open marks) and *E. struyvei* (E.s.: filled marks) (d); head length and width of males and females for *E. breviceps* (e); results of rarefaction analysis with all specimens found in the Neotropical region (f).

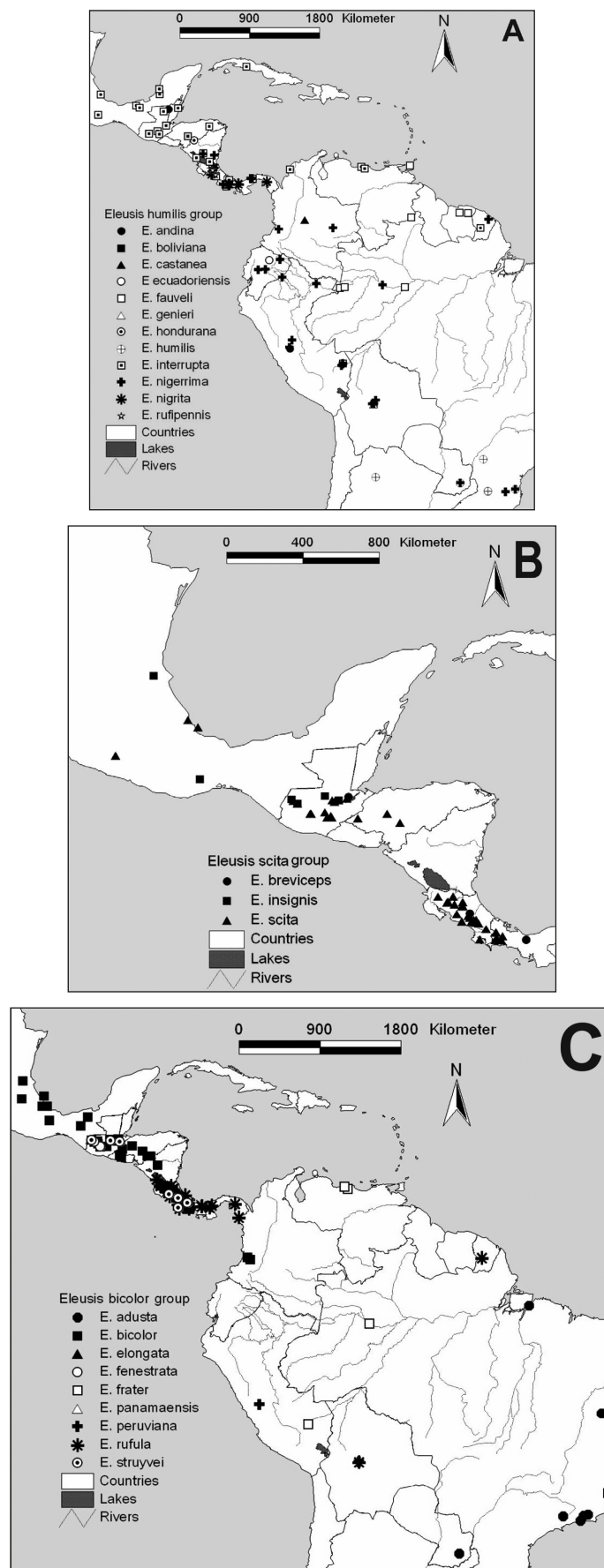


Fig. 36: Geographic distribution of the species groups of *E. humilis* (A), *E. scita* (B), and *E. bicolor* (C).