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Additions to the Neotropical species of the genus *Osorius* GUÉRIN-MÉNEVILLE, 1829 (Coleoptera: Staphylinidae: Osoriinae)

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Abstract

The study of further types of the genus *Osorius* GUÉRIN-MÉNEVILLE, 1829 (Coleoptera: Staphylinidae: Osoriinae) from the British Museum of Natural History results in the following new synonymies: *Osorius ashei* IRMLER, 2010 (= *O. vicinus* SHARP, 1887), *O. paganus* IRMLER, 2010 (= *O. opacifrons* SHARP, 1887). In new material from the American Museum of Natural History, New York, the Kansas Natural History Museum, the Natural History Museum, Prague, and the British Museum of Natural History, London, seven new species were found and are herein described: *Osorius araguensis* (Venezuela), *O. clypealis* (Brazil), *O. clypeatus* (Venezuela), *O. cochabambae* (Bolivia), *O. crucei* (Costa Rica), *O. incultus* (Brazil), and *O. nobilis* (Brazil, Guyana). *Osorius opacifrons* SHARP, 1887 is recorded from Panama for the first time.

Key words: Coleoptera, Staphylinidae, Osoriinae, Neotropics, new species, synonymies.

Introduction

After the review of Neotropical species of *Osorius* GUÉRIN-MÉNEVILLE, 1829 was finished (IRMLER 2010), additional material has become available including several new species. Examination of the type series of *O. vicinus* SHARP, 1887 and *O. opacifrons* SHARP, 1887 resulted in new synonymies. The new species were available in single or very few specimens. The new findings make it necessary to complete the species descriptions of the Neotropical *Osorius* species, give new synonymies, and add the new species into the key to species published by IRMLER (2010).

Material and Methods

The material of the following museums and private collections has been studied:

AMNH	American Museum of Natural History, New York, USA (L. Herman)
BMNH	The Natural History Museum, London, UK (R. Booth)
KNHM	Kansas Natural History Museum, Snow Entomological collections, Lawrence, Kansas, USA (J.S. Ashe, Z. Falin)
NMPC	National Museum of Natural History, Prague, Czech Republic (M. Fikáček)
UIC	Private collection of U. Irmler, Plön, Germany

The photographs were taken using a Makroskop M 420 (Wild, Herbrugg) in combination with a digital camera Leica EC3. A set of 10–15 photos were taken and combined using the program CombineZ5. Length was measured along the midline of tagmata: head from clypeus to posterior edge, pronotum from anterior to posterior edge along midline, elytra from anterior edge at shoulders to posterior edge; width at the widest part of tagmata (head width includes eyes). In the measurement of the total length, the abdominal inter-segmental space was subtracted.

Results

Osorius vicinus SHARP, 1887

Osorius vicinus SHARP 1887: 67
Osorius ashei IRMLER 2010: 375 **syn.n.**

TYPE MATERIAL EXAMINED: Holotype ♀ (red label) and 1 paratype ♀ (blue label), Panama, Volcán Barú (Volcán de Chiriquí), 25–4000 feet, leg. Champion, Sharp coll. 1905 – 313 (BMNH); 1 ♀, 1 ♂ paratype (blue labels), Panama, Bugaba, leg. Champion (BMNH); 1 ♀ paratype (blue label), Panama, Caldera, 1200 ft., leg. Champion (BMNH).

The examination of the aedeagus of the male from Bugaba showed that *O. vicinus* and *O. ashei* are conspecific.

Osorius opacifrons SHARP, 1887

Osorius opacifrons SHARP 1887: 680
Osorius paganus IRMLER 2010: 395 **syn.n.**

TYPE MATERIAL EXAMINED: Holotype ♂, Mexico (BMNH).

ADDITIONAL MATERIAL EXAMINED:
PANAMA: 1 ex., Canal Zone, Barro Colorado, 79°50'W 09°09'N, XI.1930 (AMNH). First record for Panama.

The examination of the male type specimen showed that it is conspecific with *O. paganus*, although slight differences exist in size and shape of the pronotum. But these differences might be referred to the variability of the species. The aedeagus showed no difference to the specimens described as *O. paganus*.

Osorius araguensis sp.n.

TYPE MATERIAL: **Holotype** ♂: Venezuela: Aragua, Rancho Grande Biological Station, 10°21.0'N 67°41.0'W, 1100 m elevation, collected by flight intercept trap, 23.VI.–3.VII.1994, leg. T. Phillips, "#VEN1P94 006" (KNHM). **Paratypes**: 2 ♀♀: Venezuela, Aragua, Rancho Grande, 15.–29.VIII.1980, leg. M.G. Paoletti; 3 ♀♀: Venezuela, Aragua, Rancho Grande, Parque Pittier, cloud forest, soil, 1200 m elevation, II.1987, leg. M.G. Paoletti (AMNH, UIC).

DESCRIPTION (Figs. 1a, 10a–b, 17, 24): Length: 5.5 mm. Colouration: black; pronotum and elytra reddish brown, legs and antennae brown. Head: 0.94 mm long, 1.28 mm wide; eyes not prominent and small; temples 1.5 times as long as eyes; sides in front of eyes deeply concave; close to anterior angles nearly parallel; anterior edge of clypeus distinctly emarginate; front angles produced to broad teeth; at inner side of each angle with second tooth; distance between inner teeth 3 times as wide as distance between inner tooth and tooth-like angle; punctation and microsculpture irregularly deep and dense; lateral clypeal area impunctate, but with dense granulate microsculpture; vertex sparsely and weakly punctate; on average, interstices between punctures distinctly wider than diameter of punctures; isodiametric microsculpture extremely weak; near base of antennae impunctate and without microsculpture; surface polished; close to neck with central oval area impunctate and without microsculpture; on supraocular and postocular area with striate and coriaceous dense punctation; surface matt; on disc, two pairs of long yellow setae placed in square; front pair in front of eyes; posterior pair behind eyes. Antennae slightly longer than head; second antennomere ovate; third conical and nearly two times longer than second; following antennomeres more or less quadrate and slightly increasing in width; fifth to eleventh antennomeres with numerous setae. Pronotum: 1.16 mm long, 1.36 mm wide; widest at anterior angles; anterior angles obtuse and slightly prominent; sides narrowed posteriad in smooth curve; nearly without emargination in front of posterior angles; in anterior half less narrowed than in posterior half; lateral margin fine; in particular, shortly behind

anterior angles; slightly widened to posterior angles; punctation irregularly dense, but sparse and moderately deep; on average, interstices between punctures distinctly wider than diameter of punctures; between normal punctures with sparse micro-punctation; surface polished and shiny. Elytra: 1.38 mm long, 1.26 mm wide; with weak coriaceous ground sculpture; punctation sparse and fine; surface shiny, but less shiny than pronotum. Abdomen with extremely weak and sparse punctation; nearly impunctate; without microsculpture; surface polished and shiny. Aedeagus elongate; with long apical lobe; basal and apical lobes forming rectangular obtuse angle; apical lobe slightly curved to obtuse apex.

DIAGNOSIS: The species can be easily identified by the specific structure of the clypeal front edge with two lateral teeth. In this respect, it resembles *O. tschirnhausi* IRMLER, 2010 and *O. cochabambae* sp.n., but both latter species are much larger (10 mm).

ETYMOLOGY: The specific name refers to the Province of Aragua in Venezuela, where the species was found.

Osorius clypealis sp.n.

TYPE MATERIAL: **Holotype** ♂: Brazil: São Paulo, "Bras. Mráz, lgt, Mus. Pragense" without additional data, leg. J. Mráz (NMPC). **Paratypes**: 3 ♀♀, same data as holotype (NMPC, UIC).

DESCRIPTION (Figs. 7a, 14a–b, 21, 28): Length: 8.4 mm. Colouration: black. Head: 1.25 mm long, 1.67 mm wide; eyes not prominent; shorter than temples; with few short postocular striae; sides of fore-head in front of eyes slightly sinuate; clypeus with obtuse, prominent angles; anterior margin emarginate in smooth concave curve; clypeus and vertex with moderately dense and irregular punctation; neck without punctation; on average, interstices between punctures at least as wide as diameter of punctures; clypeus with setiferous punctures; central punctures with very short setae; lateral punctures with longer setae; several supraocular setiferous punctures and two pairs of setiferous punctures on vertex; distance between anterior setiferous punctures shorter than between posterior pair of punctures; microsculpture moderately deep and dense; isodiametric meshes; surface matt. Antennae slightly longer than head; second antennomere oval; third conical and not longer than second; following antennomeres slightly increasing in width; fourth antennomere slightly longer than wide; penultimate antennomeres globular. Pronotum: 1.43 mm long, 1.69 mm wide; widest shortly behind anterior angles; anterior angles shortly produced to triangular teeth; sides evenly narrowed in anterior half; in posterior half more strongly narrowed and slightly sinuate in front of posterior angles; posterior angles obtuse, but nearly rectangular; lateral margin widened to posterior angles; posterior edge margined; anterior edge not margined; punctation moderately deep and sparse; sparser than on head; on average, interstices between punctures two to three times as long as diameter of punctures; few setiferous punctures along anterior edge and sides; two pairs of setiferous punctures in posterior half of disc; anterior pair of setiferous punctures close to lateral margin; posterior pair closer to middle; distance between punctures as wide as distance to sides; microsculpture moderately deep; slightly less deep than on head; isodiametric; surface moderately shiny. Elytra: 1.76 mm long, 1.66 mm wide; widest in posterior half, but sides nearly parallel; shoulders rectangular; ground sculpture weakly coriaceous; punctation irregularly dense. Abdomen sparsely and weakly punctate; tergites with transverse row of setiferous punctures; microsculpture weak, except basal impression with dense microsculpture, microsculpture netlike; surface more shiny than fore-body. Aedeagus thick; with nearly circular basal lobe; apical lobe with broad, obtuse apex; in lateral aspect, ventral side of apical lobe straight; only close to apex slightly curved.

DIAGNOSIS: Regarding the shape, sparse and weak punctation and isodiametric microsculpture of the pronotum, the species most closely resembles *O. costaricensis* BERNHAUER, 1942 and *O. dubius* SHARP, 1887. *Osorius dubius* is distinctly longer (9.0–10.0 mm), *O. costaricensis* is

distinctly shorter (6.5–7.8 mm). Moreover, the pronotal microsculpture of both species is deeper than in *O. clypealis* and the surface is matt. The apical lobes of the aedeagi are ending in an acute apex in *O. dubius* and *O. costaricensis*, but in an obtuse broad apex in *O. clypealis*. Additionally, the aedeagi of *O. costaricensis* and *O. dubius* are strongly curved, whereas it is nearly straight in *O. clypealis*.

ETYMOLOGY: The species was found labelled as "*O. clypealis* n.sp." by Bernhauer in the collection of NMPC.

Osorius clypeatus sp.n.

TYPE MATERIAL: **Holotype** ♂: Venezuela: Prov. Amazonas, Cerro Duida (3º19'N, 65º38'W), 20.XI.1929, "Ao. 29500", leg. Tate, No. 113 (AMNH).

DESCRIPTION (Figs. 2a, 8a–b, 15, 22): Length: 11.3 mm. Colouration: black. Head: 1.6 mm long, 2.4 mm wide; eyes slightly prominent and as long as temples; sides of clypeus deeply emarginate and narrowed to obtusely rounded anterior angles; anterior edge slightly emarginate; anterior angles produced into long teeth; close to outer teeth with second shorter and smaller teeth; between both teeth with yellow seta; clypeus sparsely, weakly, and irregularly punctate, but with dense and deep isodiametric microsculpture; surface still slightly shiny; vertex with weak, but dense, nearly coriaceous punctures; interstices between punctures less wide than half diameter of punctures; surface of punctures and interstices with isodiametric microsculpture; surface matt; sparsely punctate clypeus and densely punctate vertex divided by large shiny areas at base of antennae without punctures and microsculpture; neck sparsely punctate and without microsculpture; surface shiny; temples and posterior supraocular area with longitudinal striae. Antennae slightly longer than head; second antennomere oblong; third conical, twice as long as second; fourth to sixth antennomeres slightly longer than wide and wider than preceding antennomeres; seventh to tenth antennomeres globular; antennomeres 3–4 with long apical setae; antennomeres 5–11 totally covered by long yellow setae. Pronotum: 2.1 mm long, 2.7 mm wide; widest at anterior angles; anterior angles produced to distinct triangular teeth; in dorsal aspect, lateral margin visible throughout its total length; widened to posterior angles; slightly emarginate in front of posterior angles; posterior angles obtuse; punctation even; moderately dense and deep; on average, interstices between punctures twice as wide as diameter of punctures; between normal punctures with sparse micro-punctation; midline impunctate and deeply impressed; netlike microsculpture extremely weak; surface shiny; with pair of round depressions close to lateral margin, at level of beginning of lateral emargination. Elytra: 2.6 mm long, 2.7 mm wide; with coarse and coriaceous ground sculpture; without punctation. Abdomen with segments III–VI impressed at baseline; anterior segments with dense microsculpture; posterior segments with weak microsculpture. Protibia with nine spines at outer edge; three basal spines inserted on long teeth. Aedeagus elongate; apical lobe forming rectangular angle with oblong basal lobe; apical lobe wide at base and narrowed to acute apex behind middle.

DIAGNOSIS: The species resembles *O. peruvianus* BERNHAUER, 1908 and *O. integer* SHARP, 1876 in size, punctation and microsculpture of the pronotum. It can be differentiated from *O. peruvianus* by the sparser and finer punctation of the pronotum and the distinctly deeper impressed midline. Whereas the midlines of *O. peruvianus* and *O. integer* are only slightly impressed in the posterior half, the impressed midline of *O. clypeatus* is deeper and much longer: from close to front margin to close to posterior margin. In particular, the punctation and the microsculpture of the head are much different from the two other species. In *O. peruvianus* and *O. integer*, the punctation and the microsculpture of the head is continuous on the entire head and not differing between clypeus and vertex like in *O. clypeatus*. Furthermore, the aedeagi in *O. peruvianus* and *O. integer* are more or less circular, whereas it is elongate in *O. clypeatus*.

ETYMOLOGY: The specific name refers to the characteristic separation of the clypeus from the vertex by the absence of the coriaceous punctation and the deep isodiametric microsculpture.

Osorius cochabambae sp.n.

TYPE MATERIAL: **Holotype** ♂: Bolivia: Cochabamba Prov., Cochabamba, 124 km E Yungas, (Cochabamba Villa Tunari Road), 730 m elevation, 17°03.54'S 65°38.43'W, 6.–8.II.1999, leg. R. Hanley, "BOL 1H99 047", ex flight intercept trap (KNHM) (antennae of holotype: lost at left side and last two antennomeres of right side). **Paratypes**: 2 ♀♀: Bolivia, Cochabamba Prov., 124 km E Yungas, (Cochabamba Villa Tunari Road), 700 m elevation, 17°03.45'S 65°38.38'W, 1.–6.II.1999, leg. R. Genier, "BOL 1G99 031", ex flight carrion trap (KNHM, UIC).

DESCRIPTION (Figs. 3a–b, 9a–b, 16, 23): Length: 10.0 mm. Colouration: Black, legs and antennae dark brown. Head: 1.3 mm long, 1.9 mm wide; eyes not prominent and as long as temples; sides of clypeus emarginate; in anterior half more or less parallel; front angles long and produced to long teeth; with second smaller tooth adjacent to outer one; central part deeply emarginate; punctation irregular; clypeus densely punctate; laterally denser than in centre; posteriad with triangular area more sparsely punctate; close to neck with transverse oval area impunctate; triangular supraocular area with denser and larger punctures; microsculpture on clypeus and vertex isodiametric and dense; oval impunctate area with weak transverse microsculpture; at base of antennae, small area impunctate and without microsculpture; surface polished; surface of clypeus and vertex matt, except oval impunctate area more shiny; supraocular area with numerous granulate punctures and behind eyes with short striae. Antennae with second antennomere oval; conical third only slightly longer than second; antennomeres 4–6 slightly longer than wide; following antennomeres approximately quadrate. Pronotum: 1.9 mm long, 2.2 mm wide; widest in anterior half; anterior angles produced to long acute teeth; thus, front edge deeply emarginate; sides in anterior half more or less parallel; in posterior half slightly narrowed to obtuse posterior angles; nearly without emargination; in dorsal aspect, lateral margin visible throughout its entire length; in anterior half very narrow; in posterior half slightly widened to posterior angles; posterior edge margined; punctation deep and moderately dense; distance between punctures slightly shorter or as wide as diameter of punctures; between normal punctures with extremely fine micro-punctation; wide midline impunctate; netlike microsculpture weak; surface shiny. Elytra: 2.2 mm long, 2.2 mm wide; with more or less rectangular shoulders and weak coriaceous ground sculpture; coarse punctation distinctly visible; surface shiny. Abdomen with impressed baseline at segments III to VI; punctures sparser and finer than on fore body; without microsculpture, surface polished. Protibia with 7 spines at outer edge; apical spines 3–5 inserted on long teeth. Aedeagus oblong; basal lobe globular; apical lobe triangular; apical lobe rounded in lateral aspect and with elongate acute apex.

DIAGNOSIS: As *O. clypeatus*, *O. cochabambae* resembles *O. peruvianus* and *O. integer* in size, punctation, and microsculpture of pronotum. It differs from those three species in the long second teeth at the outer angles of the clypeus, which is similar to the clypeal front structure of *O. tschirnhausi*. Moreover, the nearly absent lateral emargination in front of the pronotal posterior angles is characteristic for the species as well as the long acute apical lobe of the aedeagus

ETYMOLOGY: The specific name refers to the Bolivian province of Cochabamba, where the species was collected.

Osorius crucei sp.n.

TYPE MATERIAL: **Holotype** ♂: Costa Rica, Puntarenas Prov., Las Cruces Biol. Stat., 82°57.58'W 8°47.14'N, 1300 m elevation, flight intercept trap, 28.–30.V.2004, leg. J.S. Ashe, Z. Falin & I. Hinojosa, "#CR1AFH04059" (KNHM).

DESCRIPTION (Figs. 4a–b; 11a–b, 18, 25): Length: 5.4 mm. Colouration: head and pronotum dark red brown; elytra reddish; abdomen light red; legs and antennae light brown. Head: 0.93 mm long, 1.10 mm wide; eyes small and not prominent; temples nearly 1.5 times as wide as eyes; fore-head deeply emarginate; sides at anterior angles parallel; anterior angles produced to broad thick prominences; anterior edge widely emarginate between prominence and with short wide central prominences; punctation fine and sparse; interstices between punctures at least three times as wide as diameter of punctures; punctures on clypeus setiferous; on vertex, eight setiferous punctures placed in two squares; anterior punctures of quadrates in front of anterior edge of eyes; posterior punctures close to neck; on supraocular areas with numerous setiferous punctures; netlike microsculpture weak; surface shiny. Antennae slightly longer than head; second antennomere oblong as long as conical third antennomere; following antennomeres increasing in width and with numerous long setae; fifth antennomere quadrate; tenth antennomere 1.5 times as wide as long. Pronotum: 1.02 mm long, 1.16 mm wide; widest at acutely prominent anterior angles; evenly narrowed to posterior angles; slightly emarginate in front of posterior angles; lateral margin fine at anterior angles; distinctly widened to posterior angles; sparsely and finely punctate; on average, interstices between punctures at least three times as wide as diameter of punctures; netlike microsculpture slightly deeper than on head, but still weak; surface shiny. Elytra: 1.36 mm long, 1.14 mm wide; punctation nearly invisible in coriaceous ground sculpture; four setiferous punctures on disc placed in two squares. Abdomen with dense setiferous punctation; punctation much denser and deeper than on fore-body. Aedeagus nearly globular and thick; with broad apical lobe ending in widely rounded apex; thick central grain marking apex.

DIAGNOSIS: The species resembles *O. costaricensis* BERNHAUER, 1942 in the small size, shape and sparse punctation of the fore-body. It is still distinctly smaller than *O. costaricensis* and can be easily identified by the setiferous punctation of the red coloured abdomen. In this respect, it resembles species of the genus *Osoriellus* FAGEL, 1959 and *Antillosorius* IRMLER, 2010 with usually setiferous punctation on fore-body and abdomen or only on abdomen. All other known species of the genus *Osorius* GUÉRIN-MÉNEVILLE, 1829 have only few scattered setae.

ETYMOLOGY: The specific name refers to the type locality, Las Cruces (Costa Rica).

***Osorius incultus* sp.n.**

TYPE MATERIAL: **Holotype** ♂: Brazil, Goias, Jataí, XI.1972, leg. F.M. Oliveira (AMNH). **Paratypes**: 1 ♂, 1 ♀, same data as for the holotype (AMNH, UIC).

DESCRIPTION (Figs. 5a, 12a–b, 19, 26): Length: 6.0 mm. Colouration: Dark brown; legs and antennae slightly lighter brown. Head: 0.97 mm long, 1.26 mm wide; eyes large, but not prominent; longer than temples; sides of fore-head sinuate to widely rounded anterior angles of clypeus; anterior edge of clypeus widely emarginate; punctation moderately dense and deep; punctures with extremely small scaly hairs; on clypeus, two to three setiferous punctures on each side; on supraocular area with five setiferous punctures; punctures on supraocular area partly granulate; isodiametric microsculpture distinct; surface matt. Antennae as long as head and half of pronotum combined; second antennomere twice as long as wide and slightly shorter than conical third; following antennomeres slightly increasing in width, but more or less quadrate. Pronotum: 1.21 mm long, 1.52 mm wide; widest at anterior angles; evenly narrowed to posterior angles; lateral margin wide; at posterior angles much wider than at anterior angles; in dorsal aspect, visible throughout its entire length; punctation sparse and fine; on average, interstices between punctures at least twice as wide as diameter of punctures; isodiametric microsculpture moderately weak; surface more shiny than on head. Elytra: 1.44 mm long, 1.45 mm wide; with deep and sparse punctation; punctures nearly invisible in coarse and coriaceous ground sculpture; longitudinal row of three setiferous punctures on each side. Abdomen on tergite III

with deep microsculpture; microsculpture degrading on following tergites; last tergites polished; each tergite with pair of setiferous punctures. Aedeagus slender; apical lobe widely rounded and ending in acute apex.

DIAGNOSIS: The species resembles *Osorius verhaaghi* IRMLER, 2010 from Peru in size, shape of pronotum and punctation and microsculpture of head and pronotum. In *O. verhaaghi* the eyes are larger and distinctly prominent, whereas they are not prominent in *O. incultus*. Additionally, the microsculpture of *O. incultus* is weaker than that of *O. verhaaghi*.

ETYMOLOGY: The specific name *incultus* (Latin) means "without decoration".

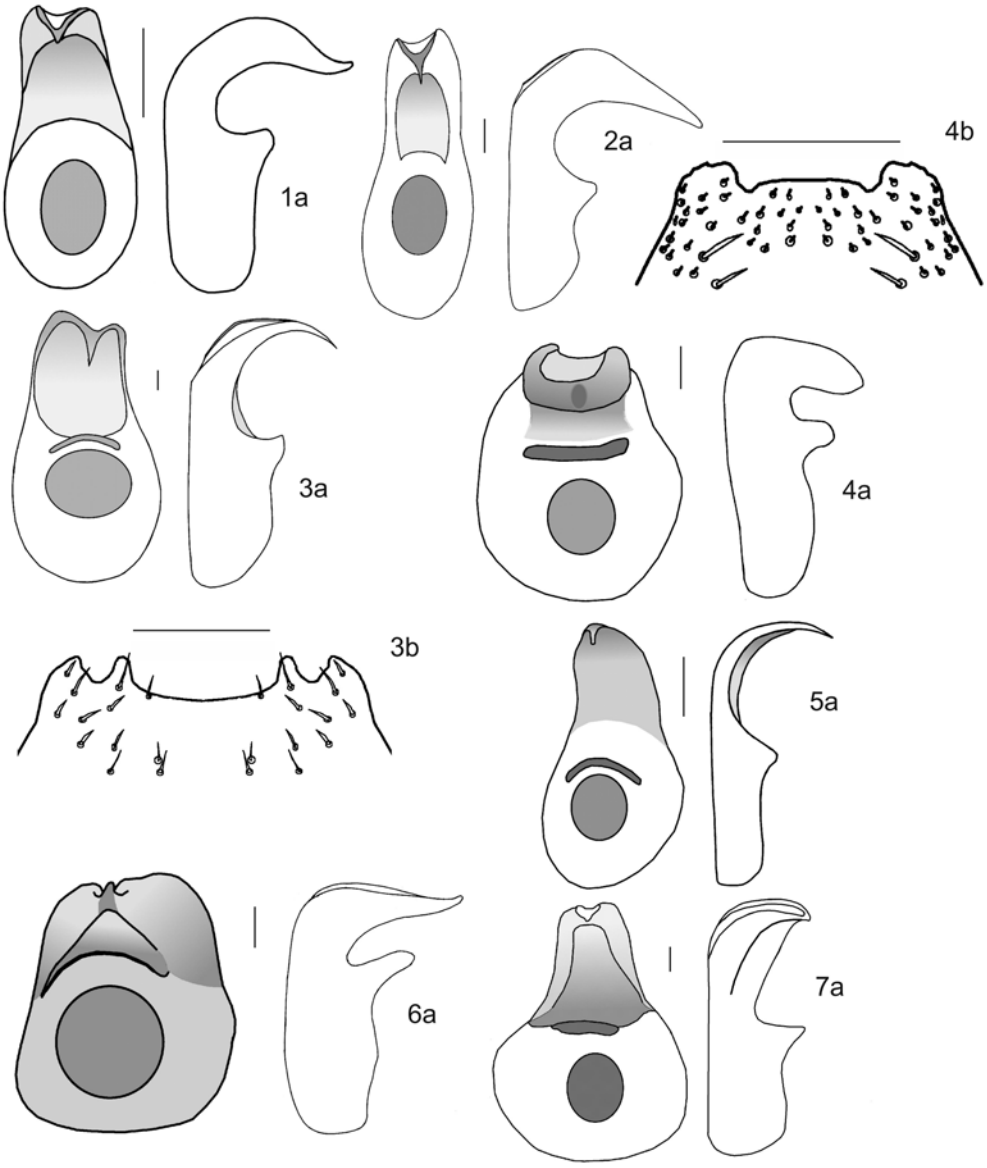
***Osorius nobilis* sp.n.**

TYPE MATERIAL: **Holotype** ♂: Brazil, Amazonas, Adolfo Ducke Forest Reserve, 26 km NE Manaus, flight intercept trap, 1995–1996 "(BMNH, #2003-84)". **Paratype**: 1 ♀: Guyana, Bartica District, 8.V.1924, leg. W. Beebe (AMNH).

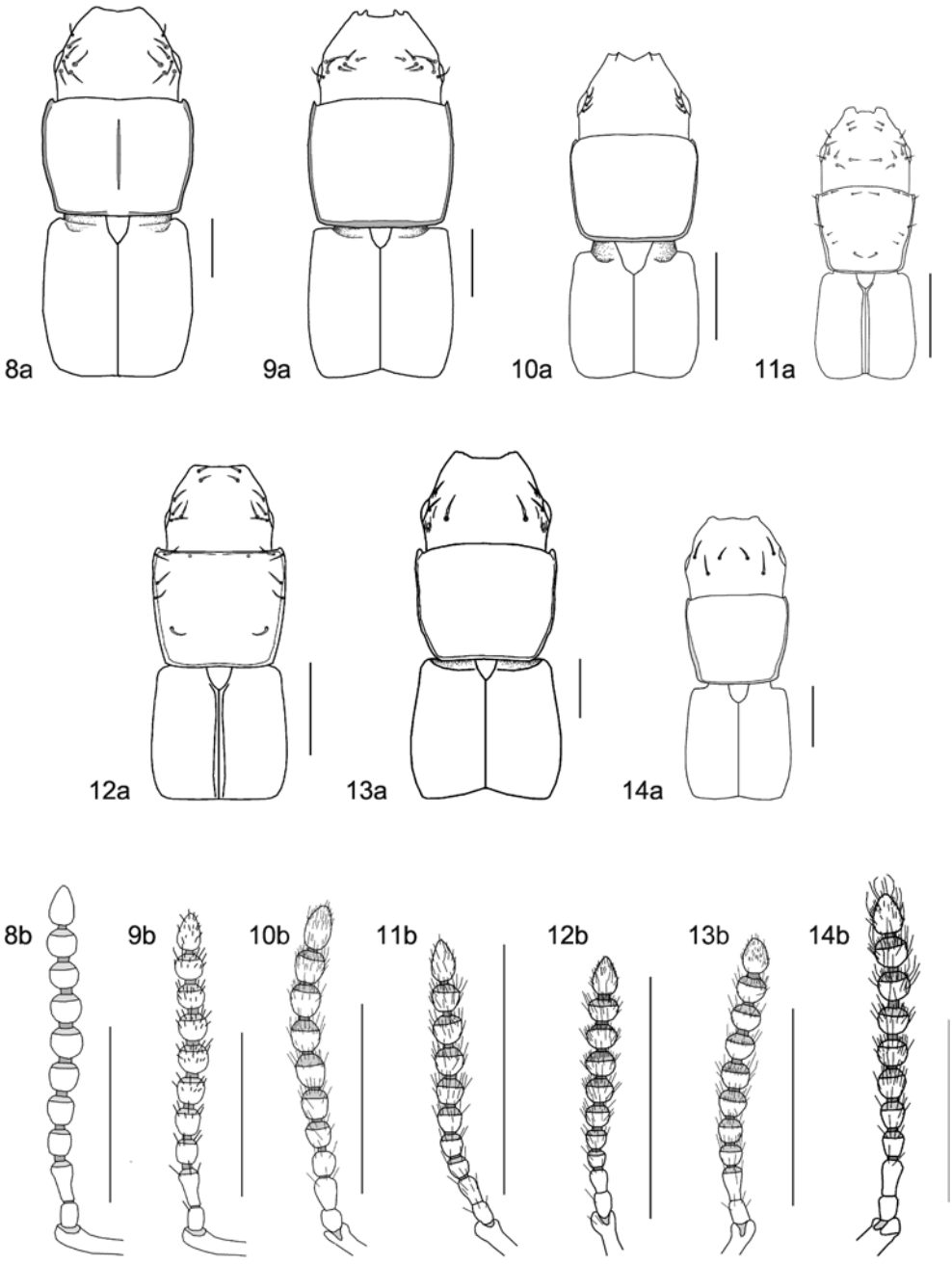
DESCRIPTION (Figs. 6a, 13a–b, 20, 27): Length: 11.0 mm. Colouration: Black, legs and antennae dark brown. Head: 1.61 mm long, 2.29 mm wide; eyes not prominent; as long as temples; sides of fore-head narrowed in slight concave curve to anterior angles of clypeus; anterior angles of clypeus produced to broad lobes; anterior edge of clypeus deeply emarginate; punctation irregularly dense; clypeus laterally and vertex deeply and partly coriaceously punctate; centre of vertex and clypeus with sparser and less deep punctation; small area at base of antennae impunctate; on supraocular area with granulate punctures; postocular area with striae; surface partly polished without microsculpture; partly with weak netlike isodiametric microsculpture; surface shiny. Antennae slightly longer than head; second antennomere rectangular; third antennomere conical and nearly twice a long as second; antennomeres four and five longer than wide; following antennomeres globular and with numerous long yellow setae. Pronotum: 1.97 mm long, 2.55 mm wide; widest at anterior angles; anterior angles produced to acute teeth; sides in anterior half slightly narrowed posteriad; in posterior half more strongly narrowed; in anterior half with slight lateral emargination; lateral margin widened to posterior angles; in dorsal aspect, lateral margins visible throughout their entire length; punctation moderately deep and dense; interstices between punctures at least as wide as diameter of punctures; partly wider, up to twice as wide as diameter of punctures; without microsculpture, but with fine micro-punctation between normally large punctures; surface polished and shiny. Elytra: 2.42 mm long, 2.68 mm wide; widest in posterior third; with deep coriaceous ground-sculpture; punctation not visible in coarse ground-sculpture. Aedeagus thick and oval; apical lobe triangular, with acute apex; apical lobe forming rectangular angle with basal lobe.

DIAGNOSIS: The species resembles *O. peruvianus* BERNHAUER, 1908 in size and shape of the pronotum. However, concerning the absence of the pronotal microsculpture, it also resembles *O. laevigatulus* SCHUBERT, 1911 and *O. wasmanni* BERNHAUER, 1920. *Osorius nobilis* can be differentiated from the latter two species by the wider pronotum and from *O. peruvianus* by the polished pronotum. It can be easily identified by the specific shape of the pronotum that is only slightly narrowed, nearly parallel in the anterior two thirds and more strongly narrowed in the posterior third. Thus, the sides form an obtuse but distinct angle in the posterior third. Among the species known from the Guyanas, it can be also confused with *O. guianensis* IRMLER, 2010. It can be separated from that species by the presence of the pronotal micro-punctation and the specific shape of the pronotum. In *O. guianensis* the pronotal sides are evenly narrowed in smooth curve from anterior to posterior angles as in *O. peruvianus*.

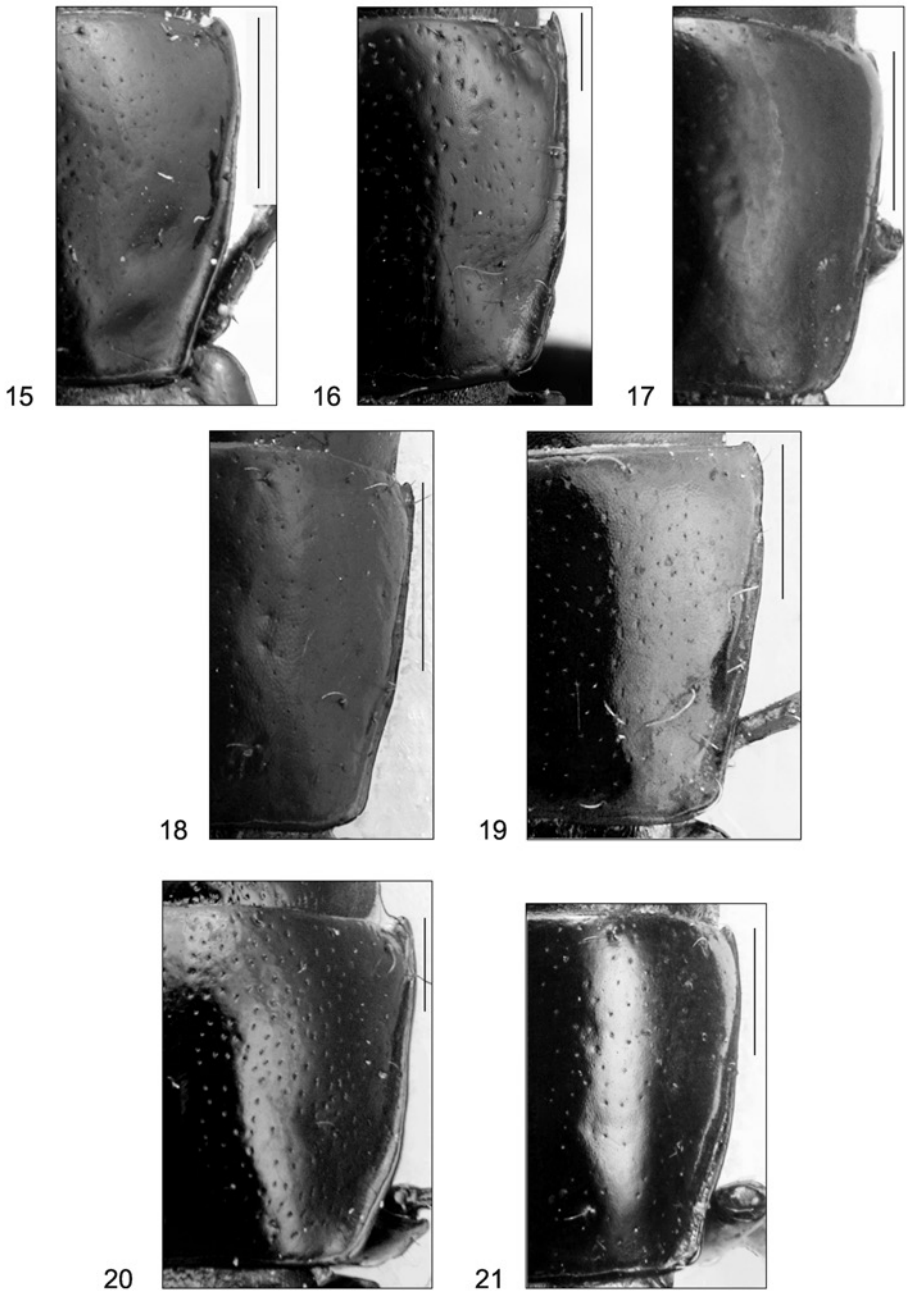
ETYMOLOGY: The specific name "nobilis" (Latin) means "distinct", "famous", "celebrated".



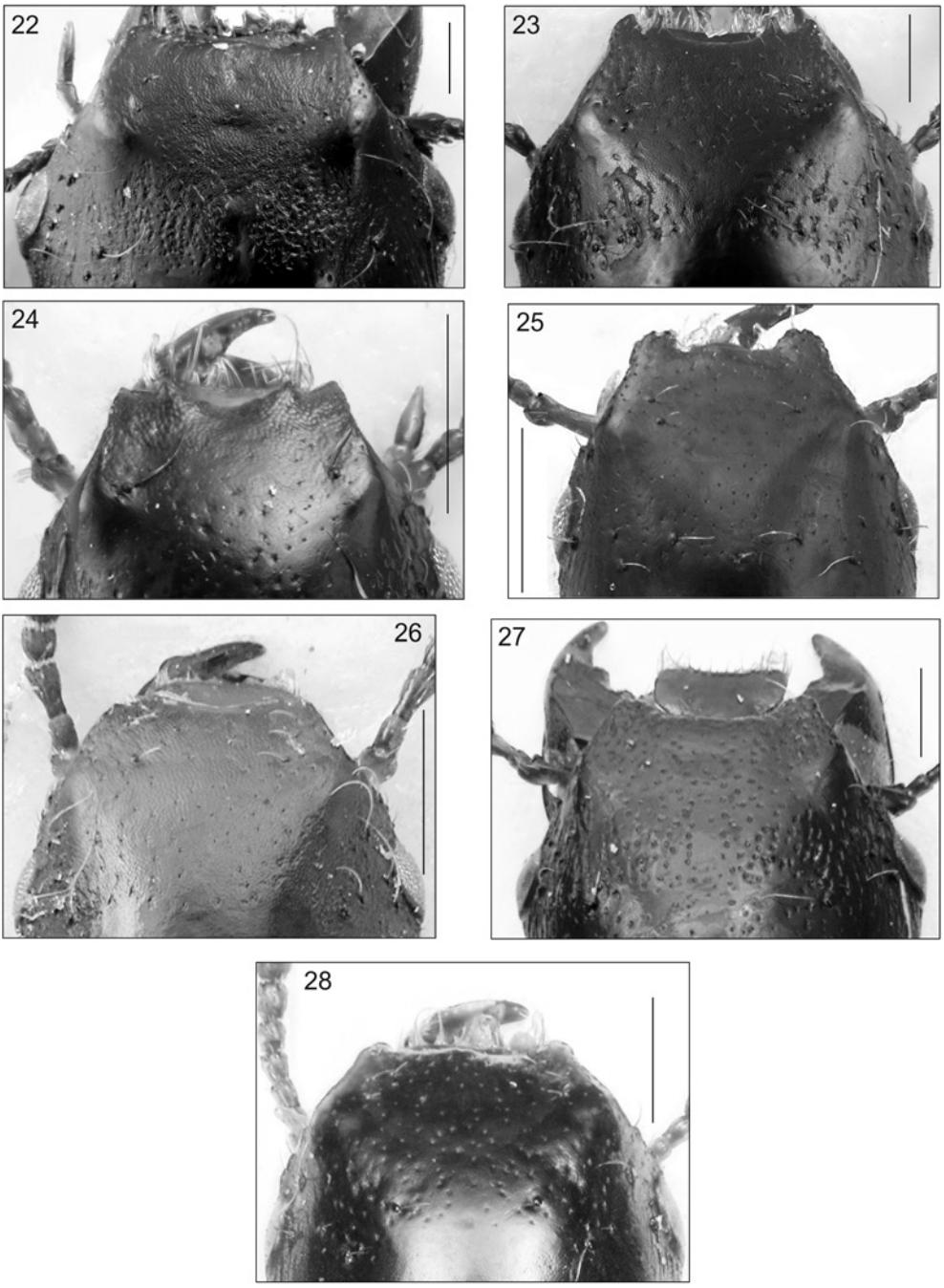
Figs. 1–7: Aedeagus in ventral and lateral aspect; clypeus: 1) *Osorius araguensis*, 2) *O. clypeatus*, 3) *O. cochabambae*, 4) *O. crucei*, 5) *O. incultus*, 6) *O. nobilis*, 7) *O. clypealis*; aedeagus (a), anterior edge of clypeus (b); scale bars: A – 0.1 mm, B – 0.4 mm.



Figs. 8–14: Fore body (A) and antenna (B): 8) *Osorius clypeatus*, 9) *O. cochabambae*, 10) *O. araguensis*, 11) *O. crucei*, 12) *O. incultus*, 13) *O. nobilis*, 14) *O. clypealis*; fore-body (a), antenna (b); scale bar: 1 mm.



Figs. 15–21: Punctation and microsculpture of pronotum: 15) *Osorius clypeatus*, 16) *O. cochabambae*, 17) *O. araguensis*, 18) *O. crucei*, 19) *O. incultus*, 20) *O. nobilis*, 21) *O. clypealis*; scale bar: 0.5 mm.



Figs. 22–28: Punctation and microsculpture of head: 22) *Osorius clypeatus*, 23) *O. cochabambae*, 24) *O. araguensis*, 25) *O. crucei*, 26) *O. incultus*, 27) *O. nobilis*, 28) *O. clypealis*; scale bar: 0.5 mm.

Additions to the key to the Neotropical species of *Osorius*

In the following couplets the new species are added to the key of *Osorius* published by IRMLER (2010).

10 Body small, not longer than 8.0 mm 10a
– Body larger than 8.5 mm 18
10a Abdomen red and with setiferous punctation, 5.4 mm long ..... *crucei* sp.n.
– Abdomen black and without setiferous punctation 11
11 Pronotum with dense and deep microsculpture, surface matt or slightly shiny 12
– Pronotum with weak microsculpture and micro-punctation, surface shiny 12a
12a Anterior angles of clypeus produced to long slender teeth ..... *dentatus* BERNHAUER, 1920
– Anterior angles of clypeus produced to short broad teeth and additional teeth at each inner side on front edge ..... *araguensis* sp.n.

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13 Microsculpture of pronotum dense, but not deep, surface slightly shiny, head with postocular striae 13a
– Microsculpture of pronotum dense and deep, surface matt, head without postocular striae 14
13a Smaller, 6.5–7.8 mm long, isodiametric microsculpture of pronotum denser, slightly iridescent ..... *costaricensis* BERNHAUER, 1942
– Larger, 8.4 mm long, isodiametric microsculpture wider, not iridescent ..... *clypealis* sp.n.
14 Sides of pronotum evenly narrowed to posterior angles, not sinuate in front of posterior angles. 14a
– Sides of pronotum more strongly narrowed to posterior angles and slightly sinuate in front of posterior angles ..... *opacifrons* SHARP, 1887
14a Eyes large and slightly prominent, shoulders nearly rectangular ..... *verhaaghi* IRMLER, 2010
– Eyes smaller and not prominent, shoulders obtuse ..... *incultus* sp.n.

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21 With numerous supraocular and postocular striae, linear impression of pronotal midline extending to anterior half 21a
– With few supraocular striae, linear impression of pronotal midline only in posterior half…… ..... *vicinus* SHARP, 1887
21a Pronotum distinctly wider than long, length/width ratio less than or equal to 0.80 ..... *nobilis* sp.n.
– Pronotum more slender, nearly quadrate, length/width ratio more than 0.85 22
22 Pronotum with irregular punctation and indistinct transverse depression in the middle .... *laevigatulus* SCHUBERT, 1911
– Pronotum regularly punctate and without transverse depression ..... *wasmanni* BERNHAUER, 1920

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23 Anterior angles of clypeus with second long tooth on both sides adjacent to the normal thick prominence; sides of pronotum in front of posterior angles without emargination..... ..... *cochabambae* sp.n.

– Anterior edge of clypeus only with normal thick prominences at outer angles; sides of pronotum in front of posterior angles distinctly emarginate..... 23a

23a Pronotum more slender, nearly quadrate, length/width ratio more than 0.85; punctation of head even and evenly distributed on clypeus and vertex, microsculpture weak, surface shiny… ..... *integer* SHARP, 1876

– Pronotum distinctly wider than long, length/width ratio less than or equal to 0.80; microsculpture deep and dense, surface matt..... 23b

23b Punctation of head even, not differing between clypeus and vertex; midline of pronotum shortly impressed in posterior half ..... *peruvianus* BERNHAUER, 1908

– Punctation on clypeus weaker and sparser than on vertex; impression of midline on pronotum longer, extending to anterior half..... *clypeatus* sp.n.

Discussion

The new species described in this study are from Venezuela (2 spp.), Bolivia (1 sp.), Brazil (3 spp.), Guyana (1 sp.), and Costa Rica (1 sp.). Only *Osorius nobilis* was found in two distant localities, while the others are known so far from single locations only.

IRMLER (2010) counted 35 species of the genus *Osorius* in the Neotropical Region. If the two synonymies and the seven new species are considered, the Neotropical *Osorius* fauna accounts to 42 species. Among these species, *O. clypeatus* was found already in 1929 in a very isolated region in Venezuela. This region is today a National Park to protect the Yanomami Indian tribe. Although it has been rarely visited to collect arthropods, in particular in those early times, the new species shows that more species can be expected in such isolated regions. *Osorius clypealis*, also found in the beginning of the 20th century, was collected near São Paulo, today a very populated region. It shows, that even civilised Brazilian regions may provide new species or that species frequently collected in former times might be extinct or at least rare and endangered today.

Several of the new species were collected in isolated and restricted areas, some were collected by flight intercept traps.

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References

IRMLER, U. 2010: The Neotropical species of the genus *Osorius* Guérin-Méneville, 1829 with remarks to the Neotropical osoriid complex (Coleoptera: Staphylinidae: Osoriinae). – Beiträge zur Entomologie 60: 263–426.

SHARP, D. 1887: Fam. Staphylinidae, pp. 145–824, pls. 5–19. – In Godman, F. & Salvin, O. (eds.): Biologia Centrali-Americana. Insecta, Coleoptera. Vol. 1 (2). – London: Taylor & Francis.

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Buchbesprechung

YEE, D.A. (Hrsg.) 2014: Ecology, Systematics, and the Natural History of Predaceous Diving Beetles (Coleoptera: Dytiscidae). – Dordrecht: Springer, vii–xviii + 468 pp.

Etwa 80 Seiten mit Farbtafeln. Verlagspreis: eBook: € 208,24, Hardcover (23,4 × 15,6 cm): € 273,90.

Neben dem Vorwort (pp. vii–xiii) von A.N. Nilsson und dem Geleitwort (pp. xv–xvi) des Herausgebers enthält das hier besprochene Buch 11 Kapitel von insgesamt 15 Autoren:

Das autobiographisch gefärbte Vorwort enthält eine Fülle von wertvollen Informationen zur Entwicklung der weltweiten Vernetzung der Daten über die Biodiversität der Dytiscidae. Nebenbei erfährt man auch, dass der Autor seine Sammlung jüngst dem Naturhistoriska riksmuseet in Stockholm geschenkt hat.

Kapitel 1 berichtet unter anderem über jene viel zitierte Story, wonach Charles Darwin 1831 an Bord der Beagle 45 Meilen vor der Küste Uruguays einen *Rhantus signatus* [fälschlich als *Colymbetes signatus* angegeben] fing, wobei jedoch meines Wissens keinesfalls erwiesen ist, dass dieses Tier tatsächlich von der Küste bis zu dieser Stelle geflogen ist. Viel wahrscheinlicher erscheint mir, dass dieses Exemplar in irgendeiner Ritze an Deck vom Festland aus mitgeschleppt wurde. Abbildung 1.3 zeigt eine historische Schachtel mit zahlreichen Käfern, die Darwin bei Cambridge gesammelt hat. Die Abbildungslegende weist darauf hin, dass es sich bei den größeren Dytisciden um "*Cybister* sp." handeln könnte. Abgesehen davon, dass es in England sowieso nur eine *Cybister*-Art gibt, wäre es wohl ein Leichtes gewesen, die Tiere aus dieser historisch so bedeutsamen Aufsammlung (die Lade ist im Schaubereich des Zoological Museum, University of Cambridge, ausgestellt) auf Artniveau zu identifizieren. Der Autor berichtet, dass Dytiscidae üblicherweise in stehendem und nur manchmal in fließendem Wasser zu finden seien. Abgesehen von der ökologisch zu sehr vereinfachten Darstellung der beiden oft sehr eng miteinander verknüpften Lebensräume (siehe dazu ausführliche Ausführungen im Kapitel 7) gibt es zahlreiche Publikationen, die belegen, dass in vielen Gebieten die Anzahl der eindeutigen Fließwasser-Arten deutlich überwiegt (z.B. LARSON 1997). Auch die Feststellung, dass Dytiscidae neben Süßwasserhabitaten nur "slightly saline habitats" bewohnen steht im Widerspruch zu Kapitel 7 (pp. 330). Auf insgesamt fast drei Seiten (pp. 6–9) bemüht sich der Autor zu beweisen, dass Dytiscidae zu den am meisten vernachlässigten Gruppen aquatischer Insekten zählen! Dies ist fürwahr weit übertrieben und steht im Widerspruch zu den Angaben in den Kapiteln 2, 3 und 11! Die Argumentation ist schwer nachvollziehbar; man kann Dytiscidae keinesfalls mit monotypischen Familien (z.B. Meruidae) vergleichen und einzelne Familien nicht mit ganzen Ordnungen (Ephemeroptera, Odonata, Plecoptera, Trichoptera) in einen Topf werfen. Nimmt man etwa die Anzahl der gegenwärtig aktiven taxonomischen Autoren der sechs größten Wasserkäferfamilien, so haben die Dytiscidae eindeutig die Nase vorn. (Fortsetzung auf Seite 192)