

Redescription of some South American species of *Belonuchus* (Coleoptera: Staphylinidae), with a checklist of the southern South American species of the genus

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Redescripción de algunas especies sudamericanas de *Belonuchus* (Coleoptera: Staphylinidae), con una lista de las especies del género del sur de América del Sur

■ **ABSTRACT.** Six species of *Belonuchus* Nordmann, 1837 from South America are redescribed and illustrated: *B. aluticollis* (Bernhauer, 1921), *B. castaneus* Chani-Posse, 2006, *B. flavicoxis* (Bernhauer, 1912), *B. multipunctatus* (Coiffait, 1981), *B. richteri* (Bernhauer, 1912) and *B. weiserianus* (Bernhauer, 1921). A checklist of the 23 species of *Belonuchus* currently known from southern South America is appended. A lectotype is designated for *B. richteri* Bernhauer, 1922.

KEY WORDS. *Belonuchus*. Philonthina. *Philonthus*. South America. Staphylininae. Taxonomy.

■ **RESUMEN.** Seis especies de *Belonuchus* Nordmann, 1837, de América del Sur se describen e ilustran: *B. aluticollis* (Bernhauer, 1921), *B. castaneus* Chani-Posse 2006, *B. flavicoxis* (Bernhauer, 1912), *B. multipunctatus* (Coiffait, 1981), *B. richteri* (Bernhauer, 1912) y *B. weiserianus* (Bernhauer, 1921). Se provee una lista de las 23 especies actualmente conocidas del sur de América del Sur. Se designa el lectotipo de *B. richteri* Bernhauer, 1922.

PALABRAS CLAVE. *Belonuchus*. Philonthina. *Philonthus*. América del Sur. Staphylininae. Taxonomía.

INTRODUCTION

The genus *Belonuchus* Nordmann, 1837 belongs to the subtribe Philonthina in the subfamily Staphylininae. Although attempts have been made to elucidate its phylogenetic relationships within the subtribe (Smetana, 1995), these have yet to be clarified (Smetana, 1995; Chani-Posse de Maus, 2008; Li & Zhou, 2010). The genus *Belonuchus* is distributed in all zoogeographical regions and accounts

for more than 200 species at present (Herman, 2001; Li & Zhou, 2010). Because most of its species are known to occur in the Neotropical and Oriental regions, Smetana (1995) has described the genus as primarily tropical. The number of species may change as poorly known tropical faunas are studied and such studies are used to evaluate the current classification.

The geographical area covered in this study, as in a previous work (Chani-Posse,

2010), is the southern portion of South America which comprises primarily the countries of Argentina, Chile, Paraguay and Uruguay. According to Herman (2001), 16 species of *Belonuchus* are known to occur in southern South America. Among these, nine species are known only from Argentina, six have a broader distribution in the Neotropical region and one (*B. rufipennis*) is widely distributed in the New World. Newton (2008) reported three more species of the genus for southern South America: *B. decipiens* Sharp, 1876, *B. haemorrhoidalis* (Fabricius, 1801) and *B. holisoides* Sharp, 1876. As a result of recent studies on the southern South American species of *Philonthus* Stephens, 1829 (Coleoptera: Staphylinidae) and allied genera (Chani-Posse, 2006, 2010; Chani-Posse de Maus, 2008), five more species were transferred to *Belonuchus*: *B. aluticollis* (Bernhauer, 1921), *B. flavicoxis* (Bernhauer, 1912), *B. multipunctatus* (Coiffait, 1981), *B. richteri* (Bernhauer, 1912) and *B. weiserianus* (Bernhauer, 1921).

Furthermore, *B. richteri* (Bernhauer, 1912) was found to be a senior secondary homonym of *B. richteri* Bernhauer, 1922 and a replacement name, *Belonuchus castaneus*, was assigned to the latter species (Chani-Posse, 2006).

The objectives of this study are to redescribe the six South American species of *Belonuchus* - for which new valid names were recently assigned (Chani-Posse, 2006, 2010; Chani-Posse de Maus, 2008) - by incorporating new characters from external morphology, including genitalia and to present a checklist of the 23 southern South American species of the genus.

MATERIAL AND METHODS

The material studied was obtained on loan from the following collections:

FMNH Field Museum of Natural History, Chicago, USA (Alfred F. Newton, Margaret K. Thayer).

IRSNB Institut Royale des Sciences Naturelles de Belgique (Yvonnick Gérard).

MACN Museo Argentino de Ciencias

Naturales Bernardino Rivadavia, Buenos Aires, Argentina (Arturo Roig Alsina).

MLPA Museo de La Plata, La Plata, Argentina (Analía Lanteri, Nora Cabrera).

NMPC National Museum (Natural History), Prague, Czech Republic (Jiří Hajek).

Preparation and examination of male and female genitalia follow Smetana (1982). Descriptions were made using a Leica MZ6 dissecting scope, and several genitalic features were examined with a Leitz Wetzlar compound microscope. Drawings were made with a camera lucida attached to the compound microscope or dissecting scope. Photographs were taken using a digital camera attached to the dissecting scope. Measurements (given in millimeters) were made with an ocular micrometer. Overall body length was measured from the apex of the labrum to the apex of the abdomen. Other measurements were taken and abbreviated as follows:

HW- maximum head capsule width (including eyes)

HL- length of head capsule, from anterior margin of frontoclypeus to neck constriction (along midline)

PW- pronotum maximum width

PL- pronotum length (along midline)

EL- eye length (seen from above)

TL- temple length (from the posterior margin of the eye to the nuchal groove; seen from above)

NW- neck maximum width

S1- first segment of hind tarsus length

S5- last segment of hind tarsus length

EtL- elytra length at sides (from humerus to apex; seen from above)

Etl-elytra length along suture

EtW-elytra width at base

Morphological terms mainly follow Smetana (1995) and Smetana & Davies (2000) with slight modifications and/ or inclusions already detailed by the author in previous studies (Chani-Posse, 2006; Chani-Posse de Maus, 2008).

The distribution given for each species is based strictly on the examined specimens.

Genus *Belonuchus* Nordmann, 1837

General remarks. The most recent and complete description of the genus, at least for America north of Mexico, is available in Smetana (1995). Li and Zhou (2010) also provide a complete diagnosis and indicate the existence of two lineages within *Belonuchus*, based on morphological differences in protarsi and genitalia: (1) protarsi in both sexes dilated, with some modified pale setae ventrally and paramere of aedeagus well developed, usually with peg setae on underside of paramere; (2) protarsi in both sexes simple, not dilated, lacking modified pale setae ventrally and paramere of aedeagus usually very small, without peg setae on underside of paramere. According to these authors, the former includes many Old World species and represents the genus *Trapeziderus* Motschulsky, 1860, a current synonym of *Belonuchus* that should be resurrected in the future, while the latter represents the "true *Belonuchus*" erected by Nordmann (1837). The reader must note that all available keys to the New World species of the genus (e.g. Blackwelder, 1943; Smetana, 1995; Downie & Arnett, 1996; Newton *et al.*, 2000; Navarrete-Heredia *et al.*, 2002) deal with *Belonuchus sensu* Nordmann.

Recognition. According to Smetana (1995), the genus can be recognized by the combination of the following characters: last segment of labial palpus longer and narrower than segment 2; lateral puncture of pronotum bearing long macroseta separated from superior line of pronotal hypomeron by a distance at least three times as large as diameter of puncture (Fig. 8); front tarsus shorter than front tibia, first segment shorter than segments 2 and 3 combined; first four segments of front tarsus in both sexes simple, not dilated, with ventral face bearing only regular marginal setae (Figs. 1, 20); all tibiae spinose on lateral face; sternum 9 of male genital segment with basal portion more or less asymmetrical and the paramere of aedeagus without sensory peg setae.

Regarding the South American species here treated, the only characters to be modified from Smetana's list are the front

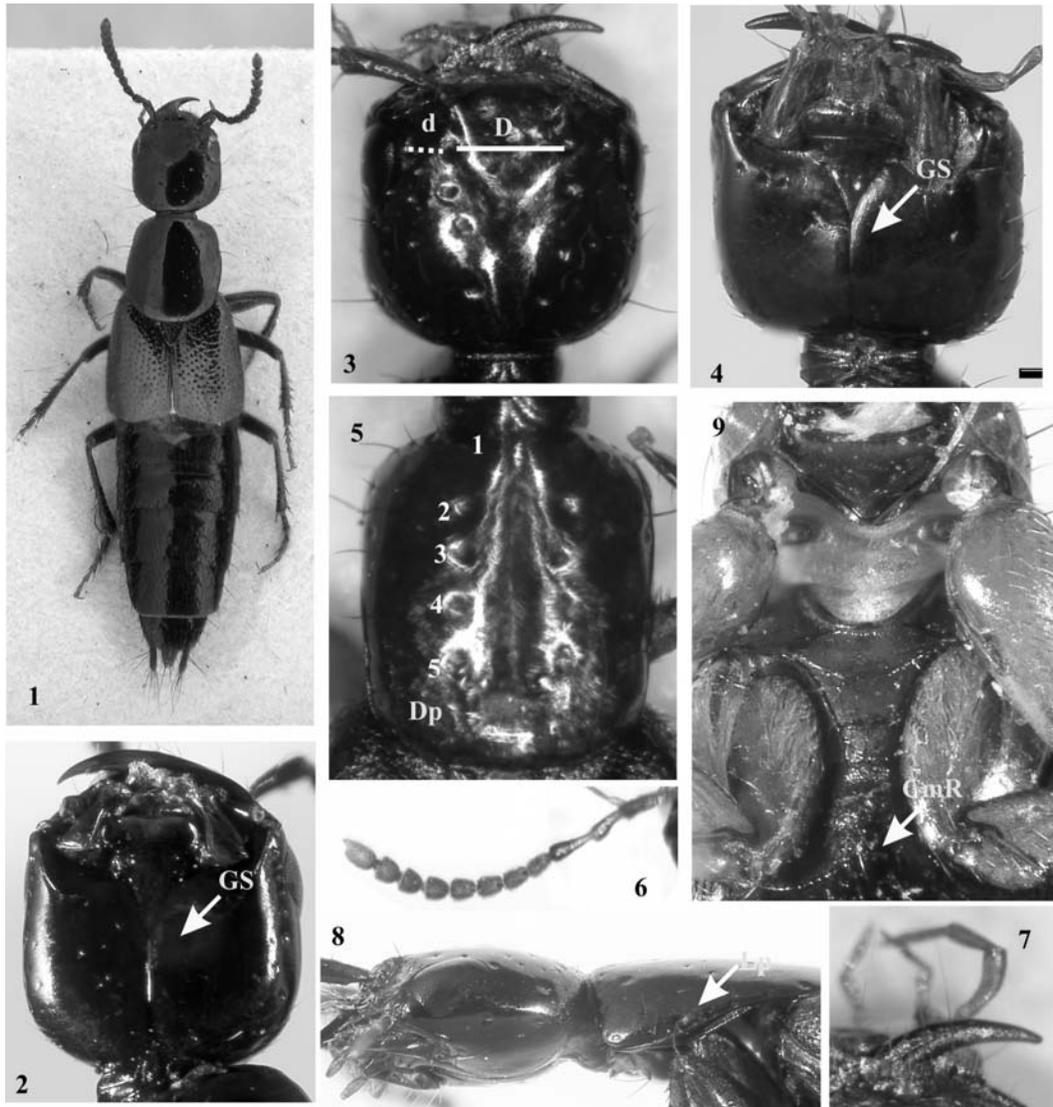
tarsus as long as (*B. aluticollis*, *B. flavicoxis*) to shorter than the front tibia, and the first tarsal segment as long as (*B. weiserianus*) to shorter than the second and third tarsal segments combined. In any case, it must be noted that these characters are continuous, and as such, may give ambiguous results when discretized by different authors (see also Chani-Posse, 2010).

Other characters common to the six species of *Belonuchus* here described are the following: head with hind angles subangulate and at basal third as wide as distal third, with exception of *B. castaneus*; antennae with segment 1 as long as segments 2 and 3 combined, segment 4 elongate, segments 9-10 transverse (Figs. 6, 14); eyes moderately to distinctly shorter than temples (EL/TL= 0.8–0.4) seen from above (Figs. 1, 3, 13, 19, 20); maxillary and labial palpi with the last segment subcylindrical to fusiform, not acutely narrowed apically (Figs. 7, 15); maxillary palpus with segment 2 longer than segment 3 (Figs. 7, 15); posterior arms of gular sutures joined before neck (Figs. 2, 4); dorsal surface of pronotum with two rows of punctures, each with five to eight punctures; basisternum with medial longitudinal carina slightly developed; middle tarsus as long as middle tibia; abdominal terga 2 and 3 with posterior basal line straight medially (Figs. 1, 10, 11, 18); male sternum 7 with apical margin straight; styli of tergum 9 simple, moderately stout; sternum 8 with two long subapical macrosetae at each side, with exception of *B. multipunctatus*; tergum 10 with two subapical setae (Figs. 22, 27, 31, 34, 38, 39); paramere entire and reduced, completely fused to median lobe (Figs. 23, 28, 33, 35); male unknown for *B. richteri* and *B. weiserianus*).

RESULTS

Belonuchus aluticollis (Bernhauer, 1921)
(Figs. 1, 2, 21–25)

Philonthus aluticollis „Bernhauer in litt.“;
Bruch, 1915: 444 (catalog). Nomen
nudum.



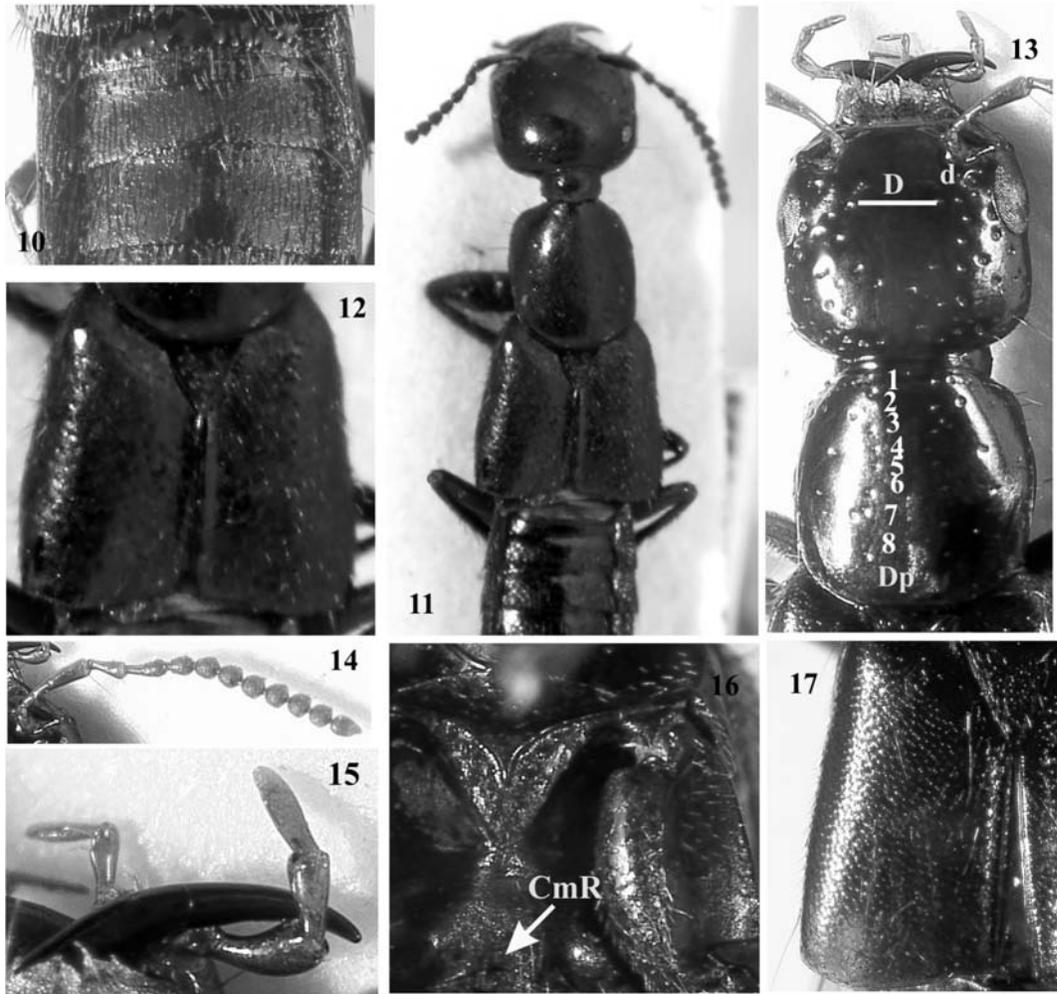
Figs. 1-9. *Belonuchus aluticollis*. 1, Lectotype, male, dorsal view; 2, head, ventral view (GS= posterior arms of gular sutures). *B. castaneus*: 3, head, dorsal view (D=distance separating medial interocular punctures, d=distance separating medial punctures from lateral punctures); 4, head, ventral view (GS= posterior arms of gular sutures), 5, pronotum (Dp=dorsal rows of punctures); 6, left antenna; 7, maxillary and labial palpi; 8, head and pronotum, lateral view (Lp= lateral puncture of pronotum); 9, prosternum, mesosternum and metasternum (in part) (CmR= circum- mesocoxal ridge).

Philonthus aluticollis Bernhauer, 1921: 107; Scheerpeltz, 1933: 1332 (catalog); Blackwelder, 1944: 132 (list); Herman, 2001: 2747 (catalog); Chani-Posse, 2004: 230 (list).

Belonuchus aluticollis; Chani-Posse, 2010: 8, 9 (new combination).

Diagnosis. *Belonuchus aluticollis* may be

identified by its head as long as wide, the second antennal segment shorter than the following segment, the pronotum slightly narrowed anteriorly and the front tarsus as long as the front tibia. It differs from *B. weiserianus* by the transverse distance between punctures on elytra distinctly larger than the diameters of punctures and the first segment of hind tarsus as long as the last segment.



Figs. 10-17. *B. castaneus*. 10, First three visible abdominal tergites. *B. flavicoxis*: 11, lectotype, female, dorsal view; 12, elytra. *B. multipunctatus*: 13, head and pronotum, dorsal view (D=distance separating medial interocular punctures, d=distance separating medial punctures from lateral punctures, Dp=dorsal rows of punctures); 14, left antenna; 15, maxillary and labial palpi; 16, mesosternum and metasternum (in part) (CmR= circum- mesocoxal ridge); 17, right elytrum.

Redescription. Length of the body 7.5–7.8 mm. Coloration. Head and thorax castaneous-brunneous to castaneous-piceous; elytra castaneous-brunneous to castaneous; abdominal segments castaneous to castaneous-piceous; antennae, palpi and legs brunneous to castaneous-brunneous. Head as long as wide (HW/HL= 1.0) (Figs. 1, 2), about as wide as pronotum (HW/PW= 0.92–1.02); dorsal surface coarsely and moderately punctate, with four to six postocular punctures and four epicranial

punctures; distance separating medial interocular punctures on frons about three times as large as distance separating medial punctures from lateral punctures; infraorbital ridge present, reaching postgenal ridge; postmandibular ridge present. Antennae with segment 2 shorter than segment 3, segments 5-6 quadrate, segments 8-10 transverse. Maxillary palpus with last segment 1.4–1.8 times as long as preceding segment. Labial palpus with last segment 1.4–1.8 times as long as preceding segment. Neck no more than 0.5 times as wide as head at widest

point (NW/HW= 0.5). Pronotum about as long as wide (PW/PL= 0.95–1.0), slightly narrowed anteriorly, dorsal surface of pronotum with two rows of punctures, each with five punctures (Fig. 1). Basisternum with medial longitudinal carina slightly developed. Metaventrite with circum-mesocoxal ridge broadly rounded medially. Elytra at sides moderately longer (EtL/PL=1.3) and at suture distinctly shorter (EtL/PL=0.65) than pronotum at midline; transverse distance between punctures distinctly larger than diameters of punctures (Fig. 1). Front tarsus as long as front tibia; first segment of hind tarsus as long as last segment (S1/S5= 1.0). Abdominal terga moderately punctate basally, distance separating punctures distinctly larger than diameters of punctures; terga 2 and 3 with elevated area between basal lines impunctate, posterior basal line straight medially.

Male genitalia. Sternum 8 moderately emarginate medio-apically. Sternum 9 moderately emarginate apically with three long apical setae at each side (Fig. 21). Tergum 10 subtruncate medio-apically (Fig. 22), with 2-6 short apical setae. Aedeagus with median lobe gradually narrowed from apical third; apex of median lobe subacute (in dorsal view) and straight in its apical fourth (in lateral view) (Figs. 23, 24).

Female genitalia. Tergum 10 similar to that of male. Second gonocoxite with one basal strong seta and one long apical seta, without stylus (Fig. 25).

Geographical distribution. *Belonuchus aluticollis* is currently only known from northwestern Argentina (Jujuy).

Type material. Lectotype (Fig. 1), male, with labels: "Iturbe/ 3700m", "Jujuy/10.XI.919/Weiser", "*aluticollis* Bernh./ Typus" (yellow label), "Chicago NHMus. /M. Bernhauer Collection" "Lectotype *Philonthus aluticollis* Bernhauer, 1921/ Des. Chani-Posse de Maus 2008" (FMNH). Paralectotypes: 1 male, 1 female, with labels: "Jujuy/10.XI.919/Weiser", "Cueva Iturbe/ 3700m", "Paralectotype *Philonthus aluticollis* Bernhauer, 1921/ Des. Chani-Posse de Maus 2008" (MACN); the

female individual with additional labels: "*Philonthus aluticollis* Bernh." (in Bernhauer handwriting), "Cotypus" (green label). Note: Chani-Posse (2010: 8) designated the lectotype.

Additional material examined.
ARGENTINA: Jujuy: Hornadita, 10.20, Weiser, 3400m, 2 males, one with additional pink label "cotypus", *Philonthus aluticollis* det. Bernh (NMPC).

Belonuchus castaneus Chani-Posse 2006
(Figs. 3–10, 26–29)

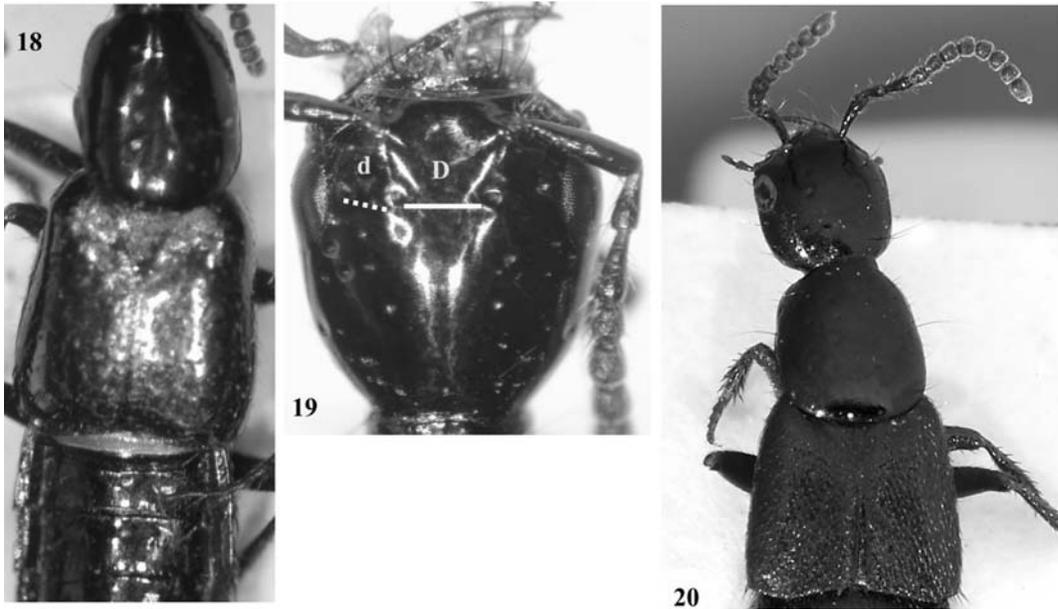
Belonuchus richteri Bernhauer, 1922: 15;
Scheerpeltz, 1933: 1379.

Belonuchus castaneus Chani-Posse, 2006:
366 [new name for *richteri* (Bernhauer,
1922)].

Diagnosis. *Belonuchus castaneus* may be identified by the head wider than long, the transverse distance between punctures on elytra about equal to the diameters of punctures and the median lobe of aedeagus gradually narrowed from the base of paramere. It differs from *B. aluticollis* and *B. flavicoxis* by the eighth antennal segment quadrate, the pronotum longer than wide, the front tarsus shorter than the front tibia and the distance between punctures on abdominal terga about equal to the diameters of punctures.

Redescription. Length of the body 6.2–6.8 mm. Coloration. Head castaneous-piceous; thorax and elytra castaneous; abdominal segments castaneous to castaneous-piceous; antennae, palpi and legs testaceous-brunneous to brunneous.

Head moderately wider than long (HW/HL= 1.2) (Fig. 3), moderately wider than pronotum (HW/PW= 1.3); dorsal surface coarsely and moderately punctate, with four to six postocular punctures and four epicranial punctures; distance separating medial interocular punctures on frons about three times as large as distance separating medial punctures from lateral punctures (Fig. 3); infraorbital ridge present, reaching



Figs. 18-20. *B. richteri*. 18, Pronotum, elytra and first two visible abdominal tergites; 19, head, dorsal view. *B. weiserianus*: 20, lectotype, female.

postgenal ridge; postmandibular ridge absent. Antennae with segment 2 shorter than segment 3, segment 5 elongate, segment 6-8 quadrate, segments 9-10 transverse (Fig. 6). Maxillary palpus with last segment 1.4-1.8 times as long as preceding segment (Fig. 7). Labial palpus with last segment 1.4-1.8 times as long as preceding segment (Fig. 7). Neck no more than 0.5 times as wide as head at widest point (NW/HW= 0.4) (Fig. 3).

Pronotum slightly longer than wide (PW/PL= 0.9), slightly broadened anteriorly, dorsal surface of pronotum with two rows of punctures, each with six punctures (Fig. 5). Basisternum with medial longitudinal carina slightly developed (Fig. 9). Metaventricle with circum-mesocoxal ridge broadly rounded medially (Fig. 9). Elytra at sides moderately longer (EtL/PL=1.2) and at suture distinctly shorter (EtL/PL=0.7) than pronotum at midline; transverse distance between punctures about equal to diameters of punctures. Front tarsus shorter than front tibia; first segment of hind tarsus as long as last segment (S1/S5= 1.0). Abdominal terga moderately punctate basally, distance separating punctures about equal to diameters of punctures; terga 2

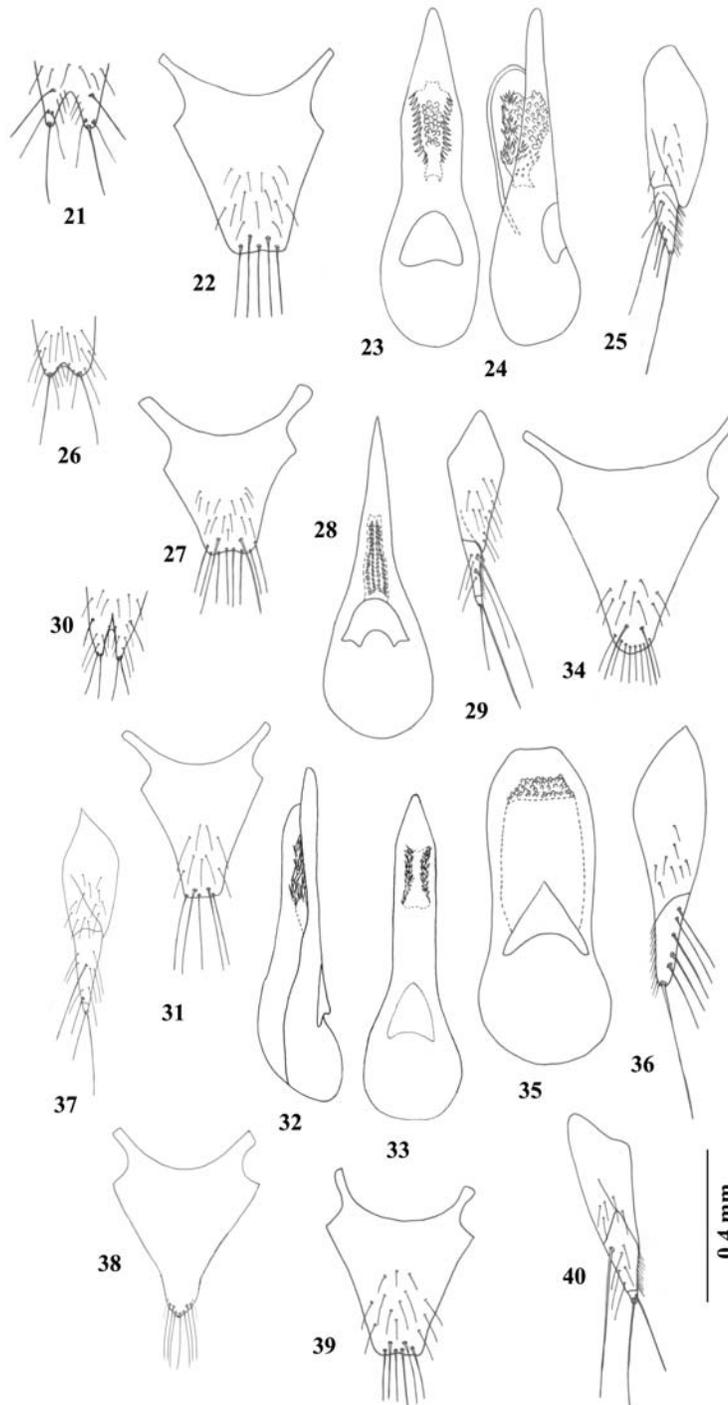
and 3 with elevated area between basal lines punctate, posterior basal line straight medially (Fig. 10).

Male genitalia. Sternum 8 moderately emarginate medio-apically. Sternum 9 slightly emarginate apically with one long apical setae at each side (Fig. 26). Tergum 10 subtruncate medio-apically (Fig. 27), with 8-10 short apical setae. Aedeagus with median lobe gradually narrowed from base of paramere; apex of median lobe subacute (in dorsal view) and straight in its apical fourth (in lateral view) (Fig. 28).

Female genitalia. Tergum 10 similar to that of male. Second gonocoxite with 2-5 strong setae along its outer margin, and stylus with two long apical setae (Fig. 29).

Geographical distribution. *Belonuchus castaneus* is currently known from Argentina and Brazil (new record).

Type material. Lectotype, male, with labels: "Rep. Argentina/PROV. MISIONES/RICHTER / 19", "*richteri* Bernh. / Typus" (yellow label), "Chicago NHMus. / M. Bernhauer Collection", "Lectotype *Belonuchus richteri*



Figs. 21-40. *Belonuchus aluticollis*. 21, Sternum 9; 22, tergum 10, male; 23, aedeagus, dorsal view; 24, aedeagus, lateral view; 25, gonocoxites of female genital segment. *B. castaneus*: 26, sternum 9; 27, tergum 10, male; 28, aedeagus, dorsal view; 29, gonocoxites of female genital segment. *B. flavicoxis*: 30, sternum 9; 31, tergum 10, male; 32, aedeagus, dorsal view; 33, aedeagus, lateral view. *B. multipunctatus*: 34, tergum 10, male; 35, aedeagus, dorsal view; 36, gonocoxites of female genital segment. *B. richteri*: 37, gonocoxites of female genital segment; 38, tergum 10. *B. weiserianus*: 39, tergum 10; 40, gonocoxites of female genital segment.

Bernhauer, 1922 / Des. Chani-Posse 2011". (FMNH). Paralectotypes: one male and one female, "Rep. Argentina / PROV. MISIONES / RICHTER / 19", "*richteri* Berh. / Cotypus" (yellow label), "Chicago NHMus. / M. Bernhauer Collection", "Paralectotype *Belonuchus richteri* Bernhauer, 1922 / Des. Chani-Posse 2011" (FMNH).

Notes: Although the type locality and both male and female characters are given in the original description, there is no indication about how many specimens were examined by Bernhauer (1922). All the specimens here studied agree with the original description. Of them, the male individual in better condition is the lectotype hereby designated.

Additional material examined. Twelve specimens (4 males, 3 females, 5 unsexed). **ARGENTINA: Misiones:** Richter, in green card „Cotypus“, Bernhauer determ., in Bernhauer handwriting „*Philonthus richterianus* Brnh.“, 5 (MLPA); C. Richter, in Bernhauer handwriting „*tenebrosus* B“ det. Bernhauer, Museo Pragense, Chicago NHMus Bernhauer Collection, 1 male (FMNH). **BRAZIL: Sao Paulo:** Mraz LGT, Museo Pragense, Chicago NHMus Bernhauer Collection, 3 males, 3 females (FMNH).

Belonuchus flavicoxis (Bernhauer, 1912)
(Figs. 11, 12, 30–33)

Philonthus flavicoxis Bernhauer, 1912: 43; Bernhauer and Schubert, 1914: 338 (catalog); Bruch, 1915: 444 (catalog); Blackwelder, 1944: 133 (list); Herman, 2001: 2823 (catalog); Chani-Posse, 2004: 230 (list).

Belonuchus flavicoxis; Chani-Posse, 2010: 8, 9 (new combination).

Diagnosis. *Belonuchus flavicoxis* may be identified by the pronotum as long as wide, the eighth antennal segment transverse, the front tarsus as long as the front tibia and the median lobe of aedeagus gradually narrowed from its apical fourth. It differs from *B. castaneus* by the circum-mesocoxal ridge of metaventricle narrowly rounded medially and the transverse distance between punctures

on elytra distinctly larger than the diameters of punctures.

Redescription. Length of the body 6.2 mm. Coloration. Head, thorax and abdomen castaneous-brunneous; elytra castaneous-piceous; antennae, palpi and legs brunneous.

Head moderately wider than long (HW/HL= 1.2) (Fig. 11), about as wide as pronotum (HW/PW= 1.1); dorsal surface coarsely and moderately punctate, with three postocular punctures and two to three epicranial punctures; distance separating medial interocular punctures on frons about three times as large as distance separating medial punctures from lateral punctures; infraorbital ridge present, reaching postgenal ridge; postmandibular ridge absent. Antennae with segment 2 shorter than segment 3, segment 5 elongate, segment 6 quadrate, segments 8–10 transverse (Fig. 11). Maxillary palpus with last segment 1.4–1.8 times as long as preceding segment. Labial palpus with last segment 1.4–1.8 times as long as preceding segment. Neck no more than 0.5 times as wide as head at widest point (NW/HW= 0.4) (Fig. 11).

Pronotum about as long as wide (PW/PL= 1.0), slightly broadened anteriorly, dorsal surface of pronotum with two rows of punctures, each with six punctures. Basisternum with medial longitudinal carina slightly developed. Metaventricle with circum-mesocoxal ridge narrowly rounded medially. Elytra at sides moderately longer (EtL/PL=1.3) and at suture distinctly shorter (EtL/PL=0.7) than pronotum at midline; transverse distance between punctures distinctly larger than diameters of punctures (Fig. 12). Front tarsus as long as front tibia; first segment of hind tarsus as long as last segment (S1/S5= 1.0). Abdominal terga moderately punctate basally, distance separating punctures distinctly larger than diameters of punctures; terga 2 and 3 with elevated area between basal lines impunctate, posterior basal line straight medially (Fig. 11).

Male genitalia. Sternum 8 moderately emarginate medio-apically. Sternum 9 deeply emarginate apically with two long

apical setae at each side (Fig. 30). Tergum 10 subtruncate medio-apically (Fig. 31), with 2-6 short apical setae. Aedeagus with median lobe gradually narrowed from apical fourth; apex of median lobe subacute (in dorsal view) and straight in its apical fourth (in lateral view) (Figs. 32, 33).

Female genitalia. Unknown.

Geographical distribution. *Belonuchus flavicoxis* is currently only known from northwestern Argentina (Tucumán).

Type material. Lectotype, female, with labels: "Rep. Argentina/ Prov. Tucumán/20.1.1908/ C. Bruch", "*flavicoxis* Bernh./ Typus" (yellow label), "Chicago NHMus. /M. Bernhauer Collection" "Lectotype *Philonthus flavicoxis* Bernhauer, 1912/ Des. Chani-Posse de Maus 2008" (FMNH).

Note: Chani-Posse (2010: 8) designated the lectotype.

Belonuchus multipunctatus (Coiffait, 1981)

(Figs. 13–17, 34–36; Figs. 17–21 in Chani-Posse de Maus, 2008)

Endeius multipunctatus Coiffait, 1981: 297; Herman 2001: 2584.

Belonuchus multipunctatus; Chani-Posse de Maus, 2008: 386 (new combination).

Diagnosis. *Belonuchus multipunctatus* may be identified by its head distinctly wider than long, the antennal segments 7-10 transverse, and the distance separating punctures on abdominal terga distinctly larger than the diameters of punctures. It differs from other *Belonuchus* species by the last segment of both maxillary and labial palpi not more than slightly longer than the preceding segment and the anterior angles of pronotum subrectangular.

Redescription. Length of the body 7.9–9.8 mm. Coloration. Head castaneous-piceous to black; thorax castaneous; elytra brunneous; abdomen castaneous-piceous to brunneous apically; first three antennal

segments castaneous-brunneous, other segments castaneous-piceous, palpi and legs castaneous-brunneous.

Head distinctly wider than long (HW/HL= 1.4) (Fig. 13), about as wide as pronotum (HW/PW=1.1); dorsal surface coarsely and moderately punctate, with four to six postocular punctures and five to six epicranial punctures; distance separating medial interocular punctures on frons about three times as large as distance separating medial punctures from lateral punctures (Fig. 13); infraorbital ridge present, reaching postgenal ridge; postmandibular ridge present. Antennae with segments 2 and 3 subequal in length, segment 5 elongate, segment 6 quadrate, segments 7-10 transverse (Fig. 14). Maxillary palpus with last segment slightly longer than preceding segment (Fig. 15). Labial palpus with last segment slightly longer than preceding segment (Fig. 15). Neck more than 0.5 times as wide as head at widest point (NW/HW= 0.6) (Fig. 13).

Pronotum slightly longer than wide (PW/PL= 1.1), slightly broadened anteriorly, with anterior angles subrectangular, dorsal surface of pronotum with two rows of punctures, each with eight punctures (Fig. 13). Basisternum with medial longitudinal carina slightly developed. Metaventricle with circum-mesocoxal ridge broadly rounded medially (Fig. 16). Elytra at sides moderately longer (EtL/PL= 1.3) and at suture distinctly shorter (EtL/PL= 0.65) than pronotum at midline; transverse distance between punctures distinctly larger about equal to diameters of punctures (Fig. 17). Front tarsus shorter than front tibia; first segment of hind tarsus as long as last segment (S1/S5= 0.8). Abdominal terga moderately punctate basally, distance separating punctures distinctly larger than diameters of punctures; terga 2 and 3 with elevated area between basal lines punctate, posterior basal line straight medially.

Male genitalia. Sternum 8 deeply emarginate medio-apically and three long subapical macrosetae at each side. Sternum 9 slightly emarginate apically with three long apical setae at each side. Tergum 10 subangulate medio-apically (Fig. 34), with 8-10 short apical setae. Aedeagus with median lobe

broad and gradually narrowed from apical third; apex of median lobe subrectangular-shaped (in dorsal view) and straight in its apical fourth (in lateral view) (Figs. 35).

Female genitalia. Tergum 10 similar to that of male. Second gonocoxite with five setae along its outer margin and one long apical seta, without stylus (Fig. 36).

Geographical distribution. *Belonuchus multipunctatus* is currently only known from Isla Santa Cruz (Galapagos Islands).

Type material. Holotype, male, with labels: "Galapagos: I. Santa Cruz vers S. E., basse altitude (à la lumière) XI/ XII.1964, N & J. Leleup", "R. I. Sc. N. B. I. G. 25692", "TYPE", "Endeius multipunctatus H. Coiffait 1980", "Belonuchus multipunctatus (Coiffait, 1981) new comb. det. Chani Posse 2007", (in IRSNB). Fifty-eight paratypes with same data, including 10 males, 13 females and 35 unsexed (IRSNB).

Belonuchus richteri (Bernhauer, 1912)
(Figs. 18, 19, 37, 38; Figs. 11, 12 in Chani-Posse, 2006)

Philonthus (Chroaptomus) richteri Bernhauer, 1912: 44.

Chroaptomus richteri; Bernhauer & Schubert, 1914: 366 ; Bruch, 1915: 503; Blackwelder, 1944: 136 ; Herman, 2001: 2582.

Belonuchus richteri; Chani-Posse, 2006: 365, 366 (new combination).

Diagnosis. *Belonuchus richteri* may be identified by its coloration and general habitus and the distance separating medial interocular punctures on frons less than twice as large as the distance separating medial punctures from lateral punctures. It differs from other southern South American species of *Belonuchus* by the head with rather obtuse hind angles, the transverse distance between punctures on elytra distinctly larger than the diameters of punctures and the abdominal terga slightly punctuate basally.

Redescription. Length of the body 7.0 mm.

Coloration. Head, thorax and abdominal segments piceous-black; shiny pink elytra; antenna, palpi and legs castaneous-piceous. Head about as long as wide (HW/HL= 1.0) and at basal third narrower than at distal third, about as wide as pronotum (HW/PW= 1.0); dorsal surface coarsely and moderately punctate, with four postocular punctures and four epicranial punctures; distance separating medial interocular punctures on frons less than twice as large as distance separating medial punctures from lateral punctures (Fig. 19); infraorbital ridge present, reaching postgenal ridge; postmandibular ridge present. Eyes distinctly shorter than temples (EL/TL= 0.7) seen from above (Fig. 19). Antennae with segment 1 as long as segments 2 and 3 combined, segments 2 and 3 subequal in length (Fig. 19), segments 4 and 5 elongate, 6 quadrate, segments 7–10 transverse. Maxillary palpus with last segment twice as long as preceding segment. Labial palpus with last segment slightly longer than preceding segment. Neck no more than 0.5 times as wide as head at widest point (NW/HW= 0.5).

Pronotum longer than wide (PW/PL= 0.8), dorsal surface of pronotum with two rows of punctures, each with five punctures (Fig. 3). Basisternum with medial longitudinal carina slightly developed. Metaventricle with circum-mesocoxal ridge acutely rounded medially. Elytra at sides as long as to moderately longer (EtL/PL=1.3) and at suture distinctly shorter (EtL/PL= 0.7) than pronotum at midline; transverse distance between punctures distinctly larger than diameters of punctures. Front tarsus shorter than front tibia; middle tarsus as long as middle tibia; first segment of hind tarsus shorter than last segment (S1/S5= 0.8). Abdominal terga slightly punctuate basally, distance separating punctures distinctly larger than diameters of punctures (Fig. 18).

Male genitalia. Unknown

Female genitalia. Tergum 10 subacute medio-apically, with two short subapical setae and seven long apical macrosetae (Fig. 38). Second gonocoxite with one strong seta and stylus with two apical setae (Fig. 37).

Geographical distribution. *Belonuchus richteri* is currently only known from northwestern Argentina (Tucumán).

Type material. Holotype, female, with labels: "Rep. Arg., Prov. Tucuman, R. Richter", "402", "*richteri* Brh, typus unicus.", "Chicago, M. Bernhauer Collection", "*Belonuchus richteri* (Bernhauer, 1912) new comb. det. Chani Posse 2005", (FMNH).

Belonuchus weiserianus (Bernhauer, 1921)
(Figs. 20, 39, 40)

Philonthus weiserianus „Bernhauer in litt.“; Bruch, 1915: 445 (catalog). Nomen nudum.

Philonthus weiserianus Bernhauer, 1921: 106; Scheerpeltz, 1933: 1368 (catalog); Blackwelder, 1944: 135 (list); Herman, 2001: 3003 (catalog); Chani-Posse, 2004: 232 (list).

Belonuchus weiserianus; Chani-Posse, 2010: 8, 9 (new combination).

Diagnosis. *Belonuchus weiserianus* may be identified by the distance separating medial interocular punctures on frons less than twice as large as the distance separating medial punctures from lateral punctures, and the second and third antennal segments subequal in length. It differs from *B. aluticollis* and *B. flavicoxis* by the transverse distance between punctures on elytra as large as the diameters of punctures and the first segment of hind tarsus longer than the last segment.

Redescription. Length of the body 6.8 mm. Coloration. Head black; thorax and abdomen castaneous to castaneous-piceous; elytra castaneous-brunneous to castaneous; antennae, palpi and legs brunneous to castaneous-brunneous.

Head as long as wide (HW/HL= 1.1) (Fig. 20), about as wide as pronotum (HW/PW= 1.0); dorsal surface coarsely and moderately punctate, with four to six postocular punctures and two to three epicranial punctures; distance separating medial interocular punctures on frons less

than twice as large as distance separating medial punctures from lateral punctures (Fig. 20); infraorbital ridge present, extending not far beyond postgenal ridge; postmandibular ridge present. Antennae with segments 2 and 3 subequal in length, segments 5-6 quadrate, segments 8-10 transverse (Fig. 20). Maxillary palpus with last segment 1.4–1.8 times as long as preceding segment. Labial palpus with last segment 1.4–1.8 times as long as preceding segment. Neck more than 0.5 times as wide as head at widest point (NW/HW= 0.6) (Fig. 20).

Pronotum about as long as wide (PW/PL=0.9), slightly narrowed anteriorly, dorsal surface of pronotum with two rows of punctures, each with five punctures. Basisternum with medial longitudinal carina slightly developed. Metaventrite with circum-mesocoxal ridge broadly rounded medially. Elytra at sides moderately longer (EtL/PL=1.0) and at suture distinctly shorter (EtL/PL=0.7) than pronotum at midline; transverse distance between punctures about as large as diameters of punctures. Front tarsus shorter than front tibia; first segment of hind tarsus as long as segments 2 and 3 combined, and longer than last segment (S1/S5= 1.4). Abdominal terga moderately punctate basally, distance separating punctures about as large as diameters of punctures; terga 2 and 3 with elevated area between basal lines punctate, posterior basal line straight medially.

Male genitalia. Unknown.

Female genitalia. Tergum 10 subtruncate medio-apically, with 4-6 short apical setae (Fig. 39). Second gonocoxite with one strong seta basally and stylus with two long apical setae (Fig. 40).

Geographical distribution. *Belonuchus weiserianus* is currently only known from northwestern Argentina (Jujuy).

Type material. Lectotype, female, with labels: "Rep. Argentina/ Prov. Jujuy/30. XI.1919/ C. Bruch", "Hornadita/3400/ Weiser", "*weiserianus* Bernh./ Typus " (yellow label), "Chicago NHMus. /M. Bernhauer Collection" "Lectotype *Philonthus weiserianus* Bernhauer, 1921/ Des. Chani-

Posse de Maus 2008" (FMNH).

Note: Chani-Posse (2010: 8) designated the lectotype.

Additional material examined.

ARGENTINA: Jujuy: Hornadita, 10.20, Weiser, 3400m, 1 female, (NMPC).

Checklist of southern South American species of *Belonuchus* Nordmann, 1837 (Coleoptera: Staphylinidae)

The following list of species is based on Herman (2001)¹, Newton (2008)² and Chani-Posse (2006, 2010). In the case of widespread species (*B. rufipennis* Fabricius), only Neotropical synonyms are given.

¹ I refer the reader to Herman (2001) for references up to that time.

² new distributional data given by Newton (2008).

aluticollis Bernhauer, 1921: 107 (*Philonthus*; Type locality: Argentina: Jujuy, Cueva Iturbe, 3700 m).

— Chani-Posse, 2004: 230 (*Philonthus*; list).

— Newton, 2008: 47 (*Philonthus*; catalog)

— Chani-Posse, 2010: 8 (*Belonuchus*; new combination).

Distribution: Argentina.

argentinus Bernhauer, 1916: 278 (*Belonuchus*; Type locality: Argentinien: Misiones;

Brasilien: Espirito Santo, Rio de Janeiro).

— Fernández *et al.*, 2007: 32 (*Belonuchus*; catalog).

— Newton, 2008: 9 (*Belonuchus*; catalog).

Distribution: Argentina, Brazil, Bolivia².

- Argentina (Misiones, MLPA)

boxi Bernhauer, 1934: 212 (*Belonuchus*; Type locality: Argentinien: Tucuman).

— Newton, 2008: 10 (*Belonuchus*; catalog).

Distribution: Argentina.

bruchi Bernhauer, 1912b: 175 (*Belonuchus*; Type locality: Argentinien: Prov. Buenos Aires).

— Newton, 2008: 10 (*Belonuchus*; catalog).

Distribution: Argentina.

- Argentina (Buenos Aires, MACN)

bruchianus Bernhauer, 1911: 413 (*Belonuchus*; Type locality: Argentinien: Misiones).

— Newton, 2008: 10 (*Belonuchus*; catalog).

Distribution: Argentina, Brazil².

castaneus Chani-Posse, 2006: 366 (*Belonuchus*; replacement name for *richteri* Bernhauer, 1922).

— Newton, 2008: 10 (*Belonuchus*; catalog).

Distribution: Argentina, Brazil (new record).

- Argentina (Misiones, MLPA)

richteri Bernhauer, 1922: 15 (*Belonuchus*; [preoccupied]; Type locality: Argentinien: Misiones).

— Herman, 2001: 2532 (*Belonuchus*; catalog).

cognatus Sharp, 1885: 429 (*Belonuchus*; Type locality: British Honduras, Belize; Guatemala, El Reposo, Las Mercedes, San Isidro, Mirandilla; Nicaragua, Chontales; Panama, Bugaba).

— Navarrete Heredia *et al.* 2006: 33 (*Belonuchus*; current status).

— Newton, 2008: 10 (*Belonuchus*; catalog).

Distribution: West Indies, Costa Rica², Belize, Guatemala, Nicaragua, Panama, Colombia, Venezuela, Argentina, Brazil².

- Argentina (Buenos Aires, MLPA)

cribriceps Bernhauer, 1921: 172 (*Belonuchus*; Type locality: Corrientes: San Roque).

— Newton, 2008: 10 (*Belonuchus*; catalog).

Distribution: Argentina.

- Argentina (Corrientes, MLPA)

- Argentina (Corrientes, Santa Fé, MACN)

decipiens Sharp, 1876: 159 (*Belonuchus*; Type locality: Ega).

— Newton, 2008: 11 (*Belonuchus*; catalog).

Distribution: Brazil; Argentina², Paraguay²; Madagascar²; Indonesia (Lombok)².

- Argentina (Misiones, MACN)

- Paraguay (Santa Trinidad, MACN)

duplicatus Blackwelder, 1944: 137 (*Belonuchus*; replacement name for *bruchii* Bernhauer).

— Newton, 2008: 11 (*Belonuchus*; catalog).

Distribution: Argentina.

bruchii Bernhauer, 1934b: 213 (*Belonuchus*; [preoccupied]; Type locality: Argentinien: Prov. Tucuman).

— Blackwelder, 1944: 137 (*Belonuchus*; synonym of *duplicatus*).

flavicoxis Bernhauer, 1912a: 43 (*Philonthus*; Type locality: Argentinien: Prov. Tucuman).

— Chani-Posse, 2004: 230 (*Philonthus*; list).

— Newton, 2008: 59 (*Philonthus*; catalog).

— Chani-Posse, 2010: 8 (*Belonuchus*; new combination).

Distribution: Argentina.

flavocaudatus Bernhauer, 1921: 170 (*Belonuchus*; Type locality: Argentinien: Prov. Jujuy, Hornadita, 3400 m).

— Newton, 2008: 11 (*Belonuchus*; catalog).

DISTRIBUTION: Argentina.

- Argentina (Catamarca, Jujuy, MACN)

haemorrhoidalis Fabricius, 1801: 596 (*Staphylinus*; [preoccupied]; Type locality: America meridionalis).

— Newton, 2008: 11 (*Belonuchus*; catalog).

Distribution: Brazil, Colombia, Venezuela, French Guiana; Paraguay², Bolivia², Argentina².

- Argentina (Misiones, Santiago del Estero, Buenos Aires, MLPA)

- Argentina (Misiones, Catamarca, Tucumán,

Buenos Aires, MACN)

- Paraguay (Santa Trinidad, MACN)

holisoides Sharp, 1876: 161 (*Belonuchus*; Type locality: Ega).

— Newton, 2008: 11 (*Belonuchus*; catalog).

Distribution: Brazil, Argentina².

meridionalis Bernhauer, 1916: 269 (*Belonuchus*; subgenus *Musicoderus*; Type locality: Bolivien: Chaco).

Bolivien: Chaco).

— Newton, 2008: 12 (*Belonuchus*; catalog).

Distribution: Argentina, Bolivia.

mexicanus Solsky, 1864: 440 (*Belonuchus*; Type locality: Mexique).

— Navarrete Heredia *et al.* 2006: 33 (*Belonuchus*; current status).

— Newton, 2008: 12 (*Belonuchus*; catalog).

Distribution: Mexico, Brazil, Argentina.

- Argentina (Misiones, MLPA)

mordens Erichson, 1840: 422 (*Belonuchus*; Type locality: Brasilia).

— Newton, 2008: 12 (*Belonuchus*; catalog).

Distribution: Brazil, Argentina, Bolivia², Peru².

- Argentina (Misiones, MLPA, MACN)

paradoxipunctatus Bernhauer, 1921c: 171 (*Belonuchus*; Type locality: Corrientes: San Roque).

— Newton, 2008: 12 (*Belonuchus*; catalog).

Distribution: Argentina, Brazil².

- Argentina (Corrientes, MLPA, MACN)

rufipennis Fabricius, 1801: 597 (*Staphylinus*; Type locality: America meridionalis).

— Márquez-Luna, 2001: 118 (*Belonuchus*; necrophilous).

— Navarrete Heredia *et al.* 2002: 432 (*Belonuchus*; characters, key, illustrated guide, Mexico).

— Márquez, 2003: 74 (*Belonuchus*;

ecological patterns).

— Frank, 2004: 92 (*Belonuchus*; native species, Florida).

— Navarrete-Heredia *et al.* 2006: 33 (*Belonuchus*; current status).

— Mise *et al.*, 2007: 362 (*Belonuchus*; necrophilous).

— Newton, 2008: 13 (*Belonuchus*; catalog).

— Brunke *et al.* 2009: 1116 (*Belonuchus*; generalist predator).

— Frank and Barrera, 2010: 92 (*Belonuchus*; associated with *Heliconia* spp).

Distribution: Hawaii, Galapagos Islands, Argentina, Brazil, French Guiana, Venezuela, Colombia, Panama, Nicaragua, El Salvador, Guatemala, Belize², Mexico, West Indies, USA, Canada.

- Argentina (Misiones, Tucumán, MLPA) *formosus* Gravenhorst, 1806: 72 (*Staphylinus*; Type locality: Carolina; [Note: See lectotype designation by Smetana, 1995e]).

— Cabrera-Walsh and Chani-Posse 2003: 45 (*Belonuchus*; coprophilous predator).

— Navarrete-Heredia *et al.* 2006: 33 (*Belonuchus*; synonym of *rufipennis*).

richteri Bernhauer, 1912a: 44 (*Philonthus*; subgenus *Chroaptomus*; Type locality: Argentinien: Prov. Tucuman).

— Chani-Posse, 2006: 365 (*Belonuchus*; new combination).

— Newton, 2008: 13 (*Belonuchus*; catalog).

Distribution: Argentina.

tremolerasi Bernhauer, 1912a: 40 (*Belonuchus*; Type locality: Uruguay).

— Newton, 2008: 13 (*Belonuchus*; catalog).

Distribution: Uruguay, Paraguay, Argentina.

- Argentina (Buenos Aires, MACN)

tucumanensis Bernhauer, 1934: 213 (*Belonuchus*; Type locality: Argentinien: Tucuman).

— Newton, 2008: 14 (*Belonuchus*; catalog).

Distribution: Argentina.

weiserianus Bernhauer, 1921: 106 (*Philonthus*; Type locality: Argentinien: Prov. Jujuy, Hornadita, 3400 m).

— Chani-Posse, 2004: 232 (*Philonthus*; list).

— Newton, 2008: 89 (*Philonthus*; catalog).

— Chani-Posse, 2010: 8 (*Belonuchus*; new combination).

Distribution: Argentina.

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