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# Three new species of *Pelidnota* MacLeay (Coleoptera, Scarabaeidae, Rutelinae) and new distributional records from northeast Brazil

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ABSTRACT

Three new species of *Pelidnota* MacLeay, 1819 are described from Brazil, *P. beckeri* **sp. nov.**, *P. nordestina* **sp. nov.**, and *P. pernambucana* **sp. nov**. The diagnostic characters of the new species are presented, and they are included in the previously published key to *Pelidnota*. Illustrations of the male genitalia and photographs of males and females of the new species are also provided. It is reported the first record of the genus for the Brazilian Caatinga (tropical seasonal forest). New records of four species and two subspecies of *Pelidnota* are presented, all from Bahia state, northeastern Brazil.



## Introduction

The American genus *Pelidnota* MacLeay, 1819, was included in subtribe Rutelina (Scarabaeidae: Rutelini) by Bouchard et al. (2011). The species of this genus can be recognized by the labrum and clypeus fused, frontoclypeal suture absent or incomplete, outer margin of mandible crenate or sinuous, antenna with 10 antennomeres, posterior margin of pronotum completely beaded (except in species of the group *Pelidnota lucida*), tarsal claws simple, and elytra margin non-membranous (Ohaus, 1934; Hardy, 1975).

*Pelidnota* is widely distributed in the Americas, with 154 species being known from South America (Ohaus, 1934; Soula, 2006, 2008, 2009, 2010, 2011). Sixty-five species and 25 subspecies are known from Brazil (Grossi and Vaz-de-Mello, 2017), but only 17 species and four subspecies have been collected in the northeastern region of that country (Machatschke, 1972, 1974; Soula, 2006, 2009, 2010, 2011).

We describe here three new species of *Pelidnota* from Brazil and present new records of four species and two subspecies in the northeastern region of Brazil. The new species here described were included in the *Pelidnota* key of Soula (2009). Illustrations of male genitalia are presented, as well as photographs of males and females of the new species. With the new species described here, the genus *Pelidnota* now presents 68 species described for Brazil. Regarding the number of species of the genus recorded for the Northeast of the country, with the new records of geographical distribution and new descriptions presented here, this number increases from 17 to 24 species and from four subspecies to six.

## Material and methods

This study was based on two hundred eighty-two species of *Pelidnota* of Bahia state and obtained from the following Brazilian collections:

CEIOC – Coleção Entomológica do Instituto Oswaldo Cruz do Rio de Janeiro, Rio de Janeiro, Brazil.

DZUP – Coleção Entomológica Pe. J. S. Moure, Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, PR, Brazil.

MZFS – Coleção Prof. Johann Becker, Museu de Zoologia da Universidade Estadual de Feira de Santana, Bahia, Brazil.

MNRJ – Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil.

The morphological terminology follows Beutel and Lawrence (2005; supplemented by Lawrence et al., 2010), and the body measurements, puncture density, puncture size and density of setae follows Jameson and Ratcliffe (2011). Color photos of the specimens were taken using a Sony DSC-HX1 digital camera and the male genitalia were photographed using a LEICA M205C digital camera.

Label information was recorded as follows: sex, COUNTRY, *State*: ("Locality"; "additional information") (Geographical Coordinates),

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Date, Collector's name (MUSEUM ACRONYM#record number) (MUSEUM ACRONYM where the specimen was deposited).

The identifications of the species were based on original descriptions by Burmeister (1844), Germar (1824), Ohaus (1905, 1912) and Soula (2009, 2010, 2011) and by direct comparison with identified specimens deposited at CEIOC, MNRJ, MZFS and DZUP.

## Results

### *Pelidnota beckeri* sp. nov.

Figs. 1–8

*Diagnosis*. Body dark brown; legs brown, lacking reflections. Black lateral spot lacking on pronotum. Elytron with three lateral black spots, one at the humeral knob, one on the elytral half, and one at apex (Figs. 3, 6). Second teeth of maxilla sawed. (Fig. 25). Surface area of pre-mentum excavated and lateral margin of post-mentum rounded (Fig. 29). External surface of metatibia densely punctuated, apical margin with two spurs interleaved by two spine-like setae on inner margin and a small spine-like setae on the outer margin (Fig. 53).

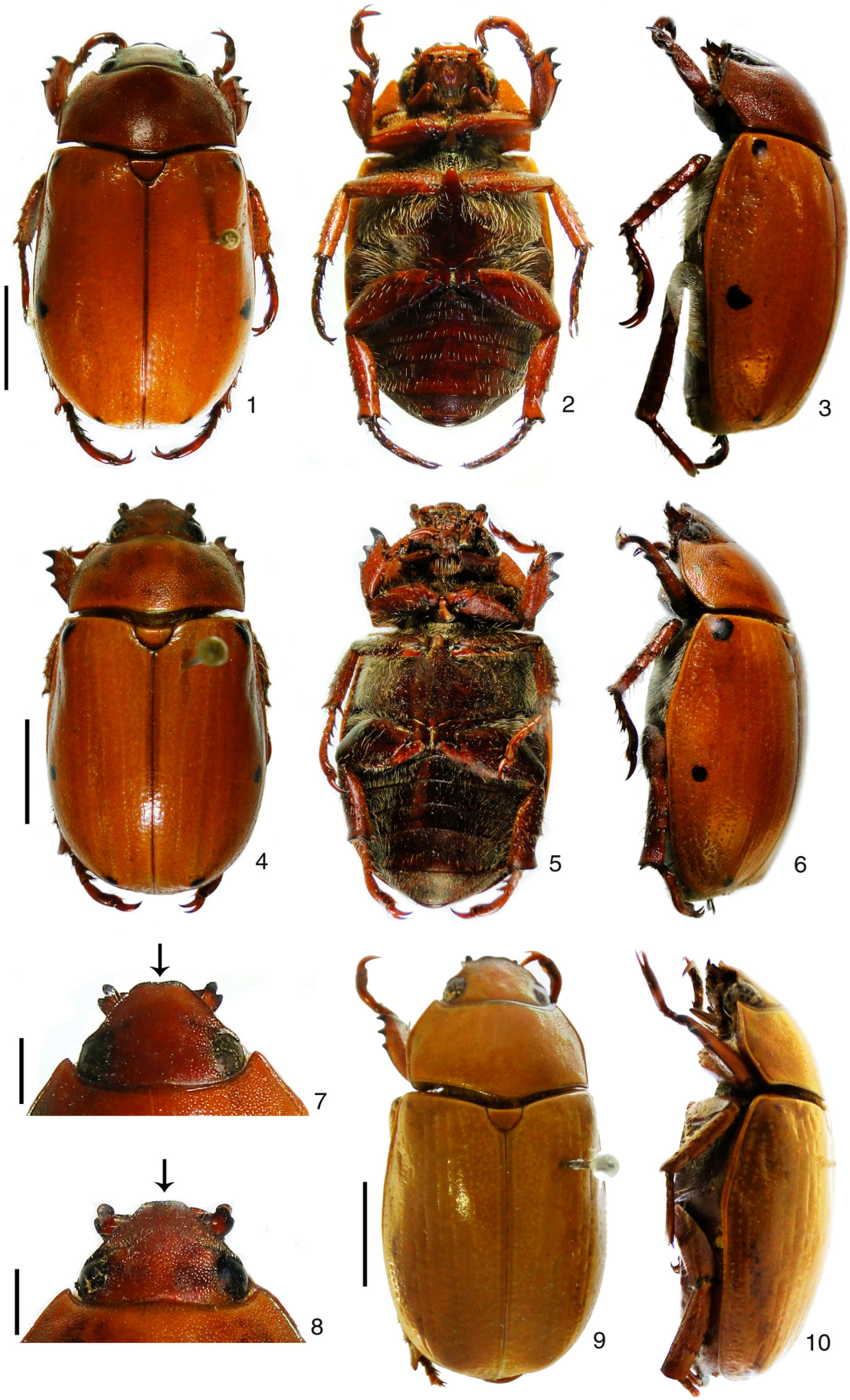
*Holotype male description* (Figs. 1–3). Total length 25.9 mm; width 12.6 mm. Body elongated-oval, slightly convex. *Color*: Head and pronotum dark brown. Frons brown, slightly darker than pronotum. Scutellum and elytron light brown; elytron slightly lighter in color than head, pronotum, and scutellum. Elytron with three lateral black spots, one at the humeral knob, one on the elytral half, and one at apex. Pygidium dark brown, slightly darker than the rest of the body, with greenish reflections when illuminated with fluorescent light. Legs and ventral surface dark brown, similar in color to the head and pronotum. *Head*: Antenna with 10 antennomeres, club composed of three antennomeres, scape elongated, longer than antennomeres 2–7. Clypeus trapezoidal, anterior margin dark and concave (Fig. 7), punctures dense and moderately large. Frontoclypeal suture not evident. Frons width at middle region 2–3 times larger than clypeus length; punctures dense and moderately large. A set of bristling setae surrounding the eye. Canthus half as long as eye. Interocular distance grather than 3 times the transverse eye diameters. Labrum transversely elongated and not fused to clypeus, with medial compression and small apical tooth, with bristling setae across on all surface (Fig. 17). Mandibles visible beyond anterior margin of the clypeus, outer margin black and with 2 teeth; apical tooth slightly larger than internal one; molar robust (Fig. 21). Maxilla, galea with 6 teeth, second sawed; palp with 4 palpomeres, segment IV fusiform (Fig. 25). Labium, apex of pre-mentum concave, palp inserted into a lateral and with 3 palpomeres, III elongated; post-mentum with elongated setae dorsally and lateral margin rounded, with elongated moderate setae (Fig. 29). *Pronotum*: Convex. 5.1 mm long, anterior width 7.6 mm, median width 11.8 mm, posterior width 11.7 mm. Punctures dense and moderately wide. Anterior margin concave, with anterior angles acute. Lateral margin rounded, with median portion convex. Posterior margins slightly convex. Membranous border surrounding of pronotum. *Scutellum*: Width 2.2 mm, total length 1.3 mm. Punctures dense and moderately large, posterior margin rounded; dark brown, with greenish reflections when exposed to fluorescent light; lacking setae. *Elytron*: humeral width 12.6 mm; total length 17.8 mm. Punctures sparse, small to moderate, slightly organized longitudinally, lacking setae. Membranous border present at anterior half. Slightly compressed laterally between humerus and medial portion of elytron. Apex with punctures dense, moderate to large. Elytral suture dark brown. Elytral apex truncated (Fig. 33). *Venter*: Punctures dense, moderate to large. Densely covered by brownish setae. Prosternum elongated in the shape of a tubercle but not extending beyond procoxa. Mesoventrite with anterior process, extending beyond mesocoxae. *Legs*: Punctures moderate to dense. Tibia with 3 external teeth, apical tooth slightly recurved, larger than the other two; inner apical spur present; dorsal surface with a row of 10 spine-like setae (Fig. 41); a tooth present on the larger tarsal claw (Fig. 47) Metacoxa with posterior projection beyond base of metatrochanter. Metafemur flattened medially. Mesotibia with setae moderate on the inner surface and with sparse spine-like setae on the outer surface; apical margin dark, inner margin with two spurs interleaved with two spine-like setae, and outer margin with 9 spine-like setae. Metatibia slightly enlarged in median region, with slight compression at apex of outer surface; apical margin dark, with two spurs interleaved by two spine-like setae on inner margin and a small spine-like setae on the outer margin; outer surface densely punctuated (Fig. 53). Tarsomere V elongated on all legs, with a ventral tooth. Tarsomeres II–IV with two inner spine-like setae on all legs. Tarsal claws simple on all legs, inner protarsal claw slightly recurved and visibly larger than outer claw. Outer claws of the meso- and metatarsus larger than inner claw. *Abdomen*: Abdominal ventrites convex, with punctures moderate to dense. Setae sparse to moderate. *Pygidium*: Slightly convex in lateral view. Surface with puncture striae, punctures dense and moderately large. Setae moderate to dense, brownish. Bristling setae present on posterior margin in ventral view. *Parameres*: (Figs. 57, 58, 65). Symmetrical, fused. Distal margin concave and gradually acute laterally; proximal margin slightly corrugated.

*Dimensions in mm (male/female, n = 20, 10 males and 10 females).* Total length 22.9–26.3/24.8–28.5; pronotum length 5.1–6.3/5.6–7.2; anterior width of pronotum 6.9–8.7/7.2–8.2; median width of pronotum 9.8–11.6/10.8–12.8; posterior width of pronotum 9.8–11.6/10.6–12.7; humerus width 11.0–12.8/11.5–13.9; elytron length 15.5–17.8/15.2–18.3.

*Female (Paratype)* (Figs. 4–6). Similar to male, but differing with respect to some characters. Clypeus trapezoidal to triangular, border black, medial section of anterior border straight (Fig. 8). Mandible more developed than in males; pronotum with lateral margin slightly rounded to slightly convex. Pygidium convex, with anterior margin concave. Venter with dense setae, sometimes denser than in males. Tarsal claws simple, first inner tarsal claw larger than outer, and weakly recurved. Outer tarsal claw of meso- and metatarsus slightly larger than inner claw. Spines-like setae on outer surface, and inner setae of inner surface of metatibia moderately dense, sometimes denser than males. The posterior corner of the metacoxa extends beyond of the base of trochanter. Last abdominal ventrite triangular, extending to posterior margin of pygidium.

*Paratypes.* Similar to holotype. Dark spots on side of elytron can be faint. Smaller spines-like setae on apical margin of last tibia ranging from 8 to 10. Apical spur on outer edge of last tibia present or not. Spines-like setae on outer surfaces and setae on inner surfaces of meso- and metatibia moderate to dense. Ventral setae moderate to dense.

*Type material.* Holotype male, BRAZIL, *Bahia*: ("Una, Fazenda Reunidas Unacau"); XI.1984, G.V. dos Santos col. (MZFS#55573) (MZFS) (Figs. 69–71). *Paratypes.* 1 female ("Santa Terezinha, Pedra Branca"; "430 m") (12°50′S/39°30′W), 10.V.2001. E. Neto col. (MZFS#2308) (MZFS); 5 males ("Ituberá, Michelin"); 17.XI.2007, João, Zafira & Daniela col. (MZFS#33533; 33862 (MZFS); 33863; 33864 (DZUP)). 1 male ("São Félix do Coribe, Coribe – Km 24, "493 m") (13°33′S/44°15′W), 07.XII.2007, FB, TZ, NA & JRA col. (MZFS#41178) (MZFS). 6 males and 2 females ("Itamaraju"), 28.X.1985, J. Becker col. (MZFS#55574; 55575; 55576; 55577; 55578; 55579; 55580; 55581) (MZFS). 3 males and 11 females ("Itamaraju"), VIII.1985, Roppa & J. Becker col. (MNRJ). 3 females ("Camacan, RPPN Serra Bonita"), 28–29.XII.2012, M. L. Monné col. (MNRJ).




**Figs. 1–10.** *Pelidnota*. 1–8, *Pelidnota beckeri* sp. nov.; 1–3, male holotype (dorsal, ventral, lateral); 4–6, female paratype (dorsal, ventral, lateral); 7–8, clypeus in dorsal view (male, female); 9–10, *P. unicolor* (Drury, 1778) (dorsal, lateral). Scale bars: Figs. 1–6 = 9.0 mm, Figs. 7–8 = 2.5 mm, Figs. 9–10 = 8.2 mm.

*Distribution*. BRAZIL: Bahia state (Una, Santa Terezinha, Ituberá, São Félix do Coribe, Itamaraju, Camacan).

*Etymology*. This species was named in honor of Johann Becker who collected a large number of specimens used as paratypes.

*Remarks*. *Pelidnota beckeri* is distinguished as follows (*P. unicolor* (Drury, 1778) characters in brackets): elytra with dark spots (Figs. 1–3) (without dark spots (Figs. 9, 10)); second tooth on the inner margin of maxila small and less acute (Fig. 21) (large and more acute (Fig. 22)); second teeth of maxillary galea sawed, and IV palpomere fusiform (Fig. 25) (teeth sawed absent, and IV palpomere cylindrical (Fig. 26)); surface area of pre-mentum and insertion area of labial palp less excavated, and lateral margin of post-mentum more rounded (Fig. 29) (surface area and insertion palp more excavated, and lateral margin less rounded (Fig. 30)); elytral apex truncated (Fig. 33) (rounded (Fig. 34)); externodistal tooth of protibia large and strongly curved (Fig. 41) (small and slightly curved (Fig. 42)); anteroexternal angle of metacoxa acute (Fig. 37) (rounded (Fig. 38)); apical tubercle of protarsal claw small and rounded (Fig. 47) (large and acute (Fig. 48)); female with metatibial apex straight and with spine-like setae (Fig. 51) (apex with a acute angle and without spine-like setae (Fig. 52)); external surface of metatibia densely punctuated (Fig. 53) (moderately punctuated (Fig. 54)); parameres distal margin acute laterally, and with proximal margin slightly corrugated (Figs. 57, 58, 65) (distal margin rounded laterally, and proximal margin strongly corrugated (Figs. 59, 60, 66)).

*Comments*. *Pelidnota beckeri* is found in different ecoregions (Instituto LIFE, 2015) in Bahia state. The new species was collected in rainy coastal forest sites (Atlantic Rain Forest) in the municipalities of Ituberá, Una, Itamaraju, and Camacan; one of the paratypes was collected in a transition zone between rainy and semi-deciduous forests, 100 km inland from the coast (Pedra Branca, municipality of Santa Terezinha); one paratype was collected in a dry forest site (Caatinga) in the municipality of São Félix do Coribe near Santa Maria da Vitoria in western Bahia.

### ***Pelidnota nordestina* sp. nov.**

(Figs. 11–13)

*Diagnosis*. Labrum triangular (Fig. 19). Second teeth on the inner margin of mandible larger than first and third (Fig. 23). Second teeth of maxillary galea sawed (Fig. 27). Surface area of pre-mentum excavated and lateral margin of post-mentum slight rounded (Fig. 31). Anteroexternal coxal angle of metacoxa rounded and little acute (Fig. 39). Pygidium dark brown, with reddish reflections on disk, with slight metallic green reflections only on lateral portion of basal margin (Fig. 45). Six spine-like setae on the external longitudinal carinae and six setae on the inner longitudinal carinae of metatibia (Fig. 55).

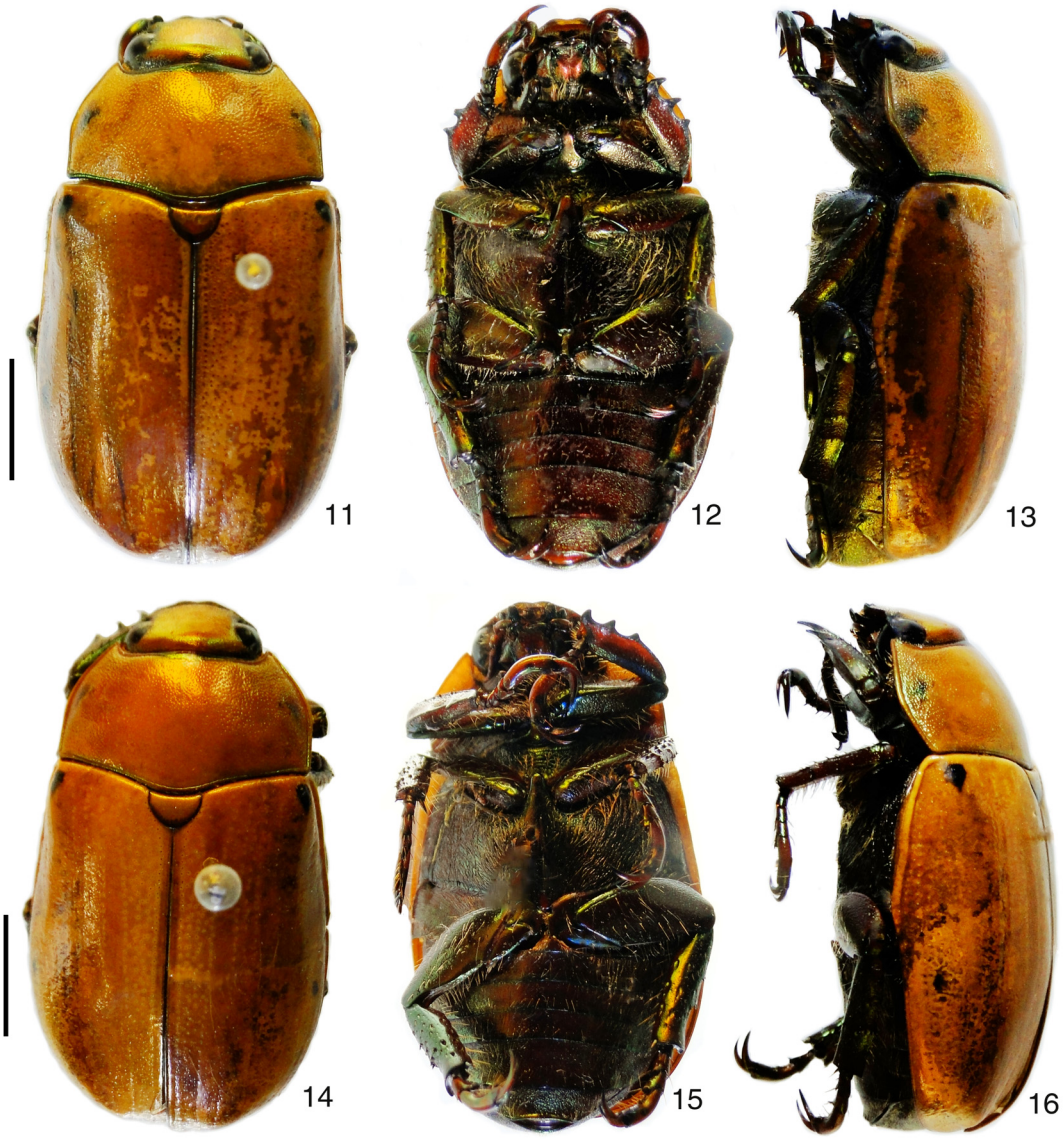
*Holotype male description*. Total length 25.7 mm, width 13.1 mm. Body elongated-oval, slightly convex. *Color*: Head golden-brown, with black margin. Pronotum, scutellum, and elytra golden-brown and with metallic green reflections. Anterior margin of pronotum and scutellum dark. Pronotum with one and elytra with two lateral black spots. Pygidium dark brown, with reddish reflections in middle, with slight metallic green reflections only on lateral portion of basal margin. Ventral surface and legs of same color as pygidium, and with metallic green reflections. *Head*: Antenna with 10 antennomeres; club composed by three antennomeres; scape elongated, shorter than antennomeres II–VII. Clypeus trapezoidal, puncture dense and large to moderately large; anterior margin concave. Frontoclypeal suture not evident. Frons width at middle region 2–3 times length of clypeus; punctures moderate to dense and moderately wide. Ocular canthus not reaching the middle of the eye. Interocular distance 3 times the transverse eye diameters. Labrum triangular and transversely elongated (Fig. 19), not fused to clypeus, with medial compression; acuminate anterior margin and posterior convex. Mandibles partially visible in dorsal view, outer margin black, with 2 exposed, recurved, outer teeth; 3 smaller teeth on inner margin, II larger than others; molar robust (Fig. 23). Maxilla with galea bearing 6 teeth, first and second sawed; palp with 4 palpomeres, IV elongated and fusiform (Fig. 27). Labium, mentum with apex concave; post-mentum with elongated dense setae laterally; palp inserted into a lateral cavity in pre-mentum, with 3 palpomeres, III elongate (Fig. 31). *Pronotum*: Convex. Length 6.3 mm, anterior width 7.6 mm, mean width 11.5 mm, posterior width 11.5 mm. Punctures dense and moderately wide. Anterior margin concave, with anterior angles acute. Posterior margin convex. Lateral margin rounded. Membranous border produced weakly anterior to the anterior marginal bead. *Scutellum*: Width 0.3 mm, total length 1.0 mm. Punctures moderate and moderately large. Posterior margin rounded. Lacking setae. *Elytron*: Humeral width 12.9 mm, total length 17.2 mm. Surface smooth (punctures sparse to moderate, and small to moderate, slightly organized longitudinally), lacking setae. Membranous border present at the anterior half. Two dark spots present, one in humerus and other in lateral margin. Apex with punctures moderate and moderately wide. Elytra with dark brown suture and truncate apex (Fig. 35). *Venter*: Punctures dense and moderately wide. Moderately covered by brown setae. Prosternum elongated in the shape of a tubercle but not extending beyond procoxae. Mesoventrite with anterior process between mesocoxae. Mesoventrite medial area with sparse setae. *Legs*: Punctures dense. Protibia with dark outer margin and 3 teeth, apical tooth slightly recurved and larger than the other two; inner apical spur present; dorsal longitudinal ridge present and with a row of 8 brown setae (Fig. 43); inner protarsal claw slightly recurved and larger than outer claw (Fig. 49). Metacoxa with posterior projection beyond base of metatrochanter; anteroexternal angle rounded and slightly sharp (Fig. 39). Metafemur flattened medially. Mesotibia with setae moderate on inner surface, spine-like setae sparse on outer surface; apical margin dark, inner margin with two larger spurs interleaved with two smaller spine-like setae, outer margin with 10 smaller spine-like setae. Metatibia with apical margin dark, inner margin with two larger spurs interleaved with two smaller spine-like setae, outer margin with one small spine-like setae; external longitudinal carinae with six spinae-like setae and inner longitudinal carinae with six setae present (Fig. 55). Tarsomeres with small ventral tooth, most evident on meso- and metatarsomeres V. Tarsomeres 2–4, with two inner spine-like setae on all legs. Tarsal claws simple. Outer claws of meso- and metatarsus larger than inner claws. *Abdomen*: Abdominal ventrite convex and punctures moderate to dense, and with sparse setae. Ventrite VI ending before posterior margin of pygidium. *Pygidium*: (Fig. 45) slightly convex in lateral view. Surface densely striate and with moderately dense setae. Setae whitish, moderately dense. A gradual concavity present on posterior margin. *Parameres*: (Figs. 61, 62, 67) symmetrical, fused; distal margin V-shaped, gradually acute laterally; proximal margin gradually semi-quadrate.

*Type material*. Holotype male, BRAZIL, *Pernambuco*: ("Bonito, Cachoeira Véu da Noiva", "510 m") (8°32′32.4″S/35°42′53.9″W), 25.III.2015. E.M. Menezes col. (MZFS#55726) (MZFS) (Figs. 72–74).

*Distribution*. Known only from type locality.

*Etymology*. The specific epithet *nordestina* refers to its origin from northeastern Brazil.

*Remarks*. *Pelidnota nordestina* is distinguished as follows (*Pelidnota beckeri* characters in brackets): golden-brown with metallic green reflections, especially on the pronotum and ventral surface, and a black spot is present on both sides of pronotum, with two black spots on the elytron (Figs. 11, 13) (pronotum and ventral body surface dark brown, with no spots on pronotum but three black spots on elytron (Figs. 1, 3)); labrum triangular (Fig. 19) (transversal (Fig. 17)); inner teeth of mandible more acuminate and larger (Fig. 23) (small (Fig. 21)); first and second teeth of maxillary galea




**Figs. 11–16.** *Pelidnota*. 11–13, *Pelidnota nordestina* sp. nov., male holotype (dorsal, ventral, lateral); 14–16, *P. pernambucana* sp. nov., male holotype (dorsal, ventral, lateral). Scale bars: Figs. 11–13 = 5.5 mm, Figs. 14–16 = 5.0 mm.

sawed, and IV palpomere more elongated (Fig. 27) (only second teeth sawed, and IV palpomere less longer (Fig. 25)); excavated area on the surface of pre-mentum larger, and lateral margin of post-mentum less rounded and with elongated dense setae (Fig. 31) (excavated area small, lateral margin more rounded, and with moderate setae (Fig. 29)); anteroexternal angle of metacoxa rounded and slightly sharp (Fig. 39) (acute (Fig. 37)); protarsal tubercle of male located more on the claw apex (Fig. 49) (located not so on the claw apex (Fig. 47)); external surface of metatibia less punctuated, and inner longitudinal carinae with six setae (Fig. 55) (more punctuated and with more than six setae (Fig. 53)); shapes of the parameres distal margin, any less acute laterally (Figs. 61, 67) (apex more acute (Figs. 57, 65).

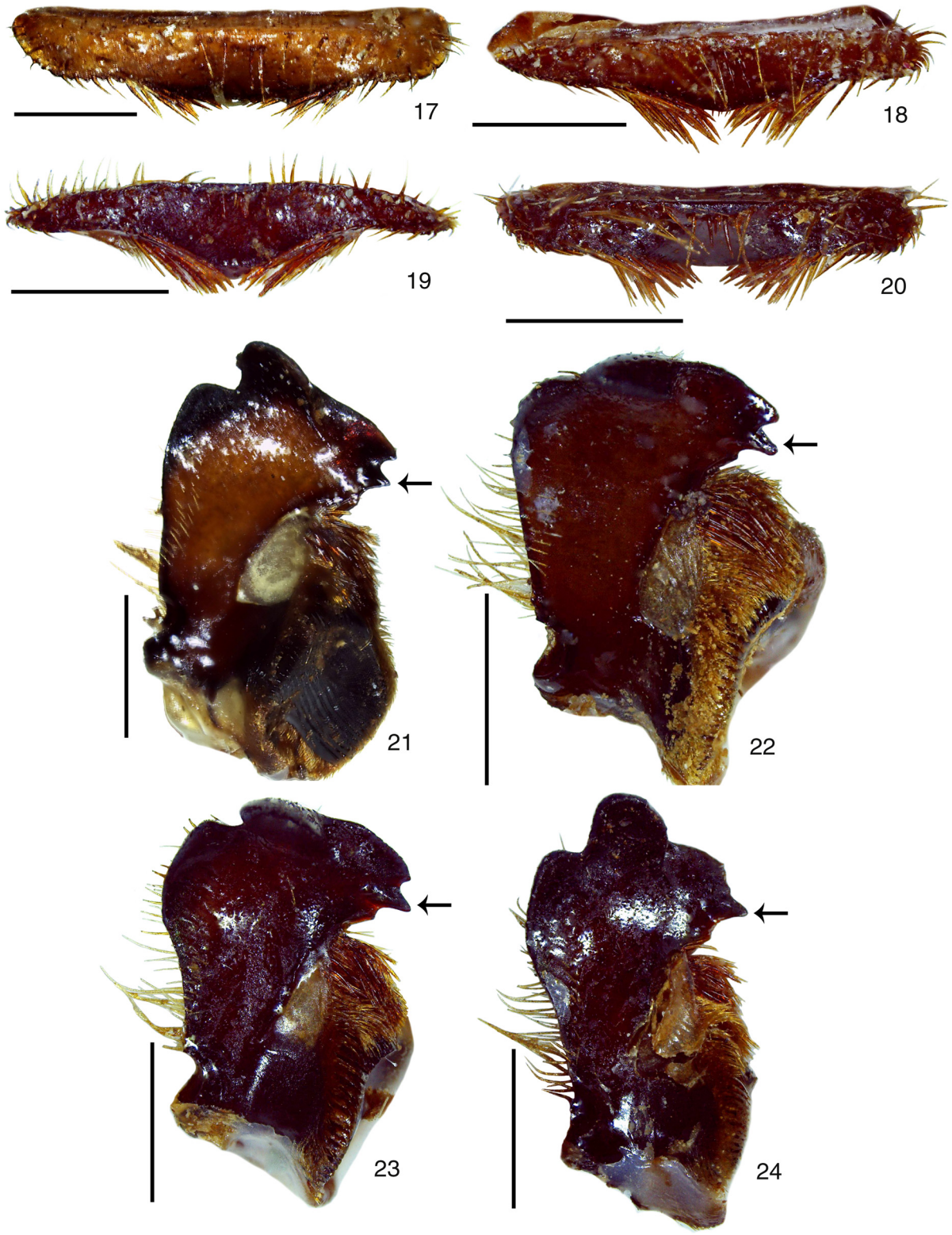
*Comments.* The specimen was collected in a tropical forest in an enclave in the Caatinga ecoregion (Instituto LIFE, 2015).

***Pelidnota pernambucana* sp. nov.**

(Figs. 14–16)

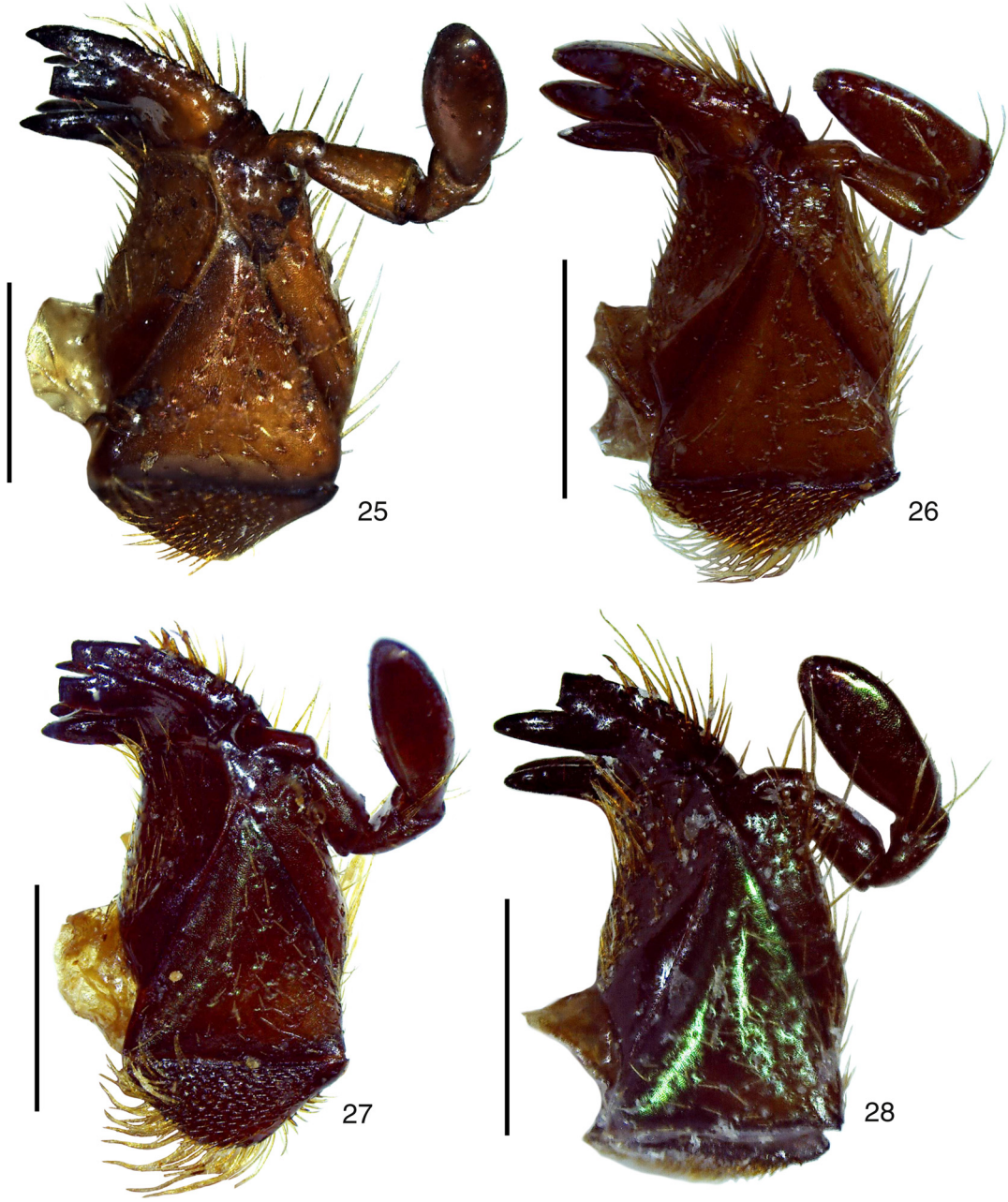
*Diagnosis.* Second teeth on the external margin of mandible four times than first; second teeth of inner margin bigger than others (Fig. 24). First teeth of maxillary galea sawed and IV palpomere elongated (Fig. 28). Surface area of pre-mentum excavated and lateral margin of post-mentum rounded (Fig. 32). Elytral apex truncated and slightly acute (Fig. 36). Anteroexternal angle of metacoxa strongly acute (Fig. 40). Pygidium green with metallic reflections (Fig. 46).

*Holotype male description.* Total length 23.3 mm, width 11.2 mm. Body elongated-oval, slightly convex. *Color*: Head, pronotum, scutellum, and elytron golden-brown. Posterior margin of vertex black. Anterior margin of pronotum dark brown. Medial portion of posterior margin of pronotum, posterior margin of scutellum with metallic green reflections. Pronotum with one and elytra with two lateral black spots. Pygidium dark brown. Ventral surface and legs same color as pygidium. Pygidium, ventral surface and legs with metallic green reflections. *Head*: Antenna with 10 antennomers; club composed by three antennomeres; scape elongated, shorter than II–VII. Clypeus trapezoidal, punctures dense and large to moderately large; anterior margin concave. Frontoclypeal suture not evident. Frons width at meddle region 2–3 times length of clypeus; punctures moderate to dense and moderately wide. Ocular canthus



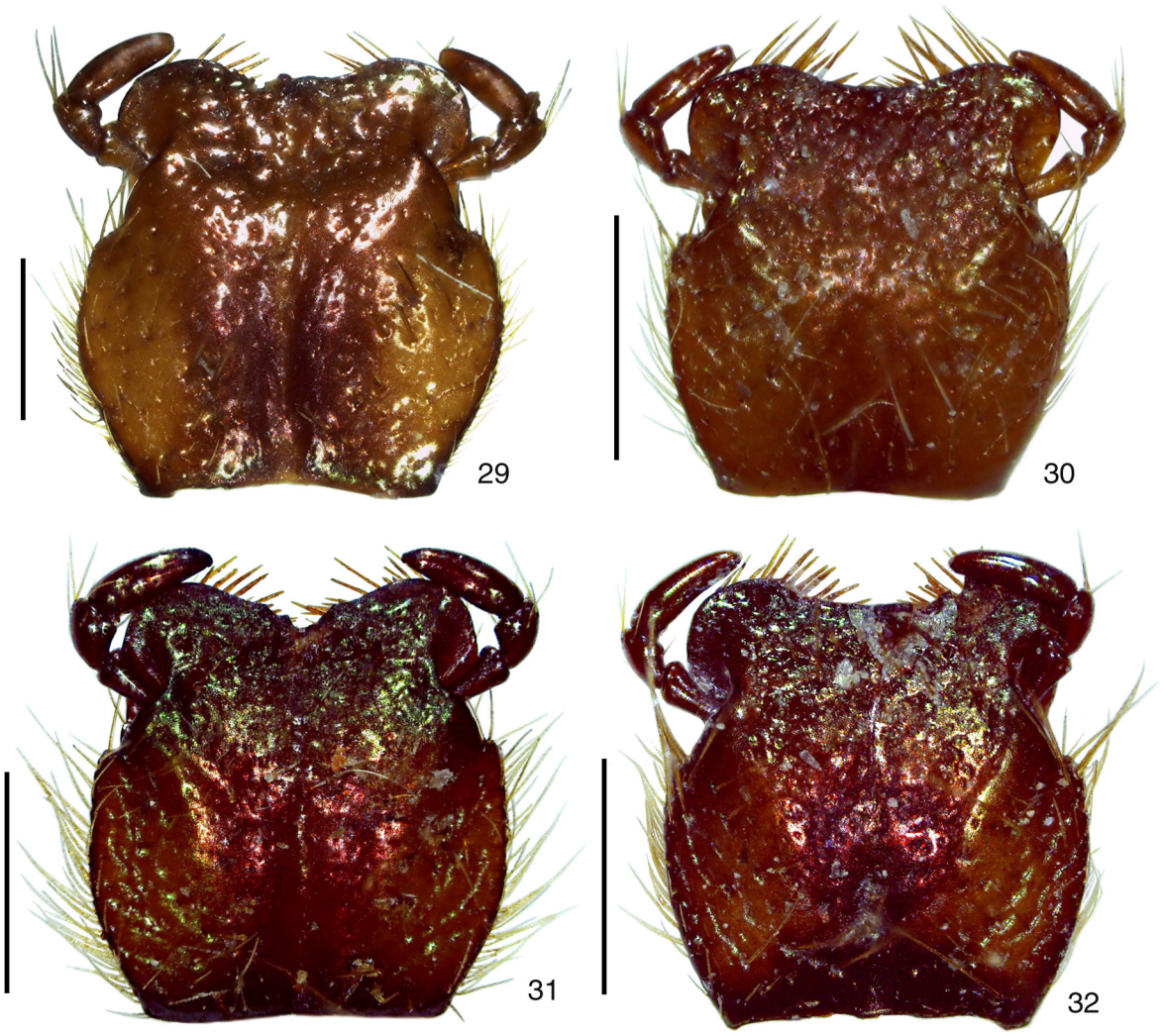

**Figs. 17–24.** Mouthparts. 17–20, labrum in frontal view; 17, *P. beckeri* sp. nov.; 18, *P. unicolor* (Drury); 19, *P. nordestina* sp. nov.; 20, *P. pernambucana* sp. nov.; 21–24, left mandible in dorsolateral view; 21, *Pelidnota beckeri* sp. nov.; 22, *P. unicolor* (Drury); 23, *P. nordestina* sp. nov.; 24, *P. pernambucana* sp. nov. Scale bars: Figs. 17–24 = 2.0 mm.

not reaching the middle of the eye; interocular distance 4 times the transverse eye diameters. Labrum transversal (Fig. 20) not fused to clypeus, with medial compression, setae on the entire surface; anterior and posterior margin straight. Mandibles extend beyond apical margin of clypeus, outer margin black, with 2 exposed, recurved, outer teeth, and 3 teeth on internal, the first worn and second acute (Fig. 24); molar robust. Maxilla with galea bearing 6 teeth, first sawed; palp with 4 palpomeres, IV elongated (Fig. 28). Labium, post-mentum with elongate moderate setae; mentum with apex concave; palp inserted into a lateral cavity in the pre-mentum, with 3 palpomeres, III elongate, equal I–II together (Fig. 32). *Pronotum*: Convex. Length 4.8 mm, anterior width 5.9 mm, mean width




**Figs. 25–28.** Mouthparts. 25 and 26, left maxilla in dorsal view; 25, *P. beckeri* sp. nov.; 26, *P. unicolor* (Drury); 27–28, left maxilla in dorsal view; 27, *Pelidnota nordestina* sp. nov.; 28, *P. pernambucana* sp. nov. Scale bars: Figs. 25–28 = 2.0 mm.

10.3 mm, posterior width 10.22 mm. Punctures dense and moderately wide. Anterior margin concave, with anterior angles acute. Posterior margin convex. Lateral margin rounded. Membranous border surrounding pronotal disk. *Scutellum*: Width 0.3 mm, total length 1.2 mm. Punctures moderate and moderately wide. Posterior margin rounded. Lacking setae. *Elytron*: Humeral width 11.2 mm, elytral length 16.4 mm. Surface smooth (punctures sparse to moderate, small to moderate, slightly organized longitudinally), lacking setae. Membranous border present at the anterior half. Two dark spots present, one in humerus and other in lateral margin. Apex with punctures sparse and moderately wide. Elytra with suture dark brown and truncated, and slightly acute apex (Fig. 36). *Venter*: Punctures dense and moderately wide. Moderately covered by yellow setae. Prosternum with anterior process, but not extending beyond procoxa. Mesoventrite with anterior process between mesocoxae. Mesoventrite lateral area with moderate setae. *Legs*: Punctures dense. Protibia with dark outer margin and 3 teeth, apical tooth slightly recurved and larger than the other two; apical spur present; dorsal longitudinal ridge present and with a row of 8 brown setae (Fig. 44). Metacoxa with posterior projection extending beyond base of metatrochanter; anteroexternal angle strongly acute (Fig. 40). Metafemur flattened medially. Mesotibia with moderate setae on inner surface, spines and sparse spine-like setae on outer surface; apical margin dark, inner margin with two larger spurs interleaved with two small spine-like setae, outer margin with 10 spine-like setae. Metatibia with apical margin dark, inner margin with two larger spines interleaved with two smaller spines, outer margin with one small spine-like setae; four spine-like setae on external longitudinal carinae (Fig. 56). Tarsomeres with small ventral tooth, most evident on meso- and metatarsomeres V. Tarsomeres 2–4, with two inner spine-like setae on all legs. Tarsal claws simple, inner protarsal claw slightly recurved and larger than




**Figs. 29–32.** Mouthparts. 29–32, labium in dorsal view; 29, *P. beckeri* sp. nov.; 30, *P. unicolor* (Drury); 31, *P. nordestina* sp. nov.; 32, *P. pernambucana* sp. nov. Scale bars: Figs. 29–32 = 2.0 mm.

outer claw (Fig. 50). Outer claws of meso- and metatarsus larger than inner claws. *Abdomen*: Abdominal ventrite convex, punctures moderate to dense, and with moderate setae. Sternite VI ending before posterior margin of pygidium. Margins of abdominal ventrites darker than the rest of the ventrites. *Pygidium*: (Fig. 46) convex in lateral view. Surface densely striate and with moderately to dense brown setae. Posterior margin slightly concave. *Parameres*: (Figs. 63, 64, 68) symmetrical, fused; apex concave, distal margin slightly rounded laterally; proximal margin straight and truncated.

*Type material.* Holotype male, BRAZIL, *Pernambuco*: ("Bonito, Cachoeira Véu da Noiva", "510 m") (8°32′32.4″S/35°42′53.9″W), 25.III.2015. E.M. Menezes col. (MZFS#55727) (MZFS) (Figs. 75–77).

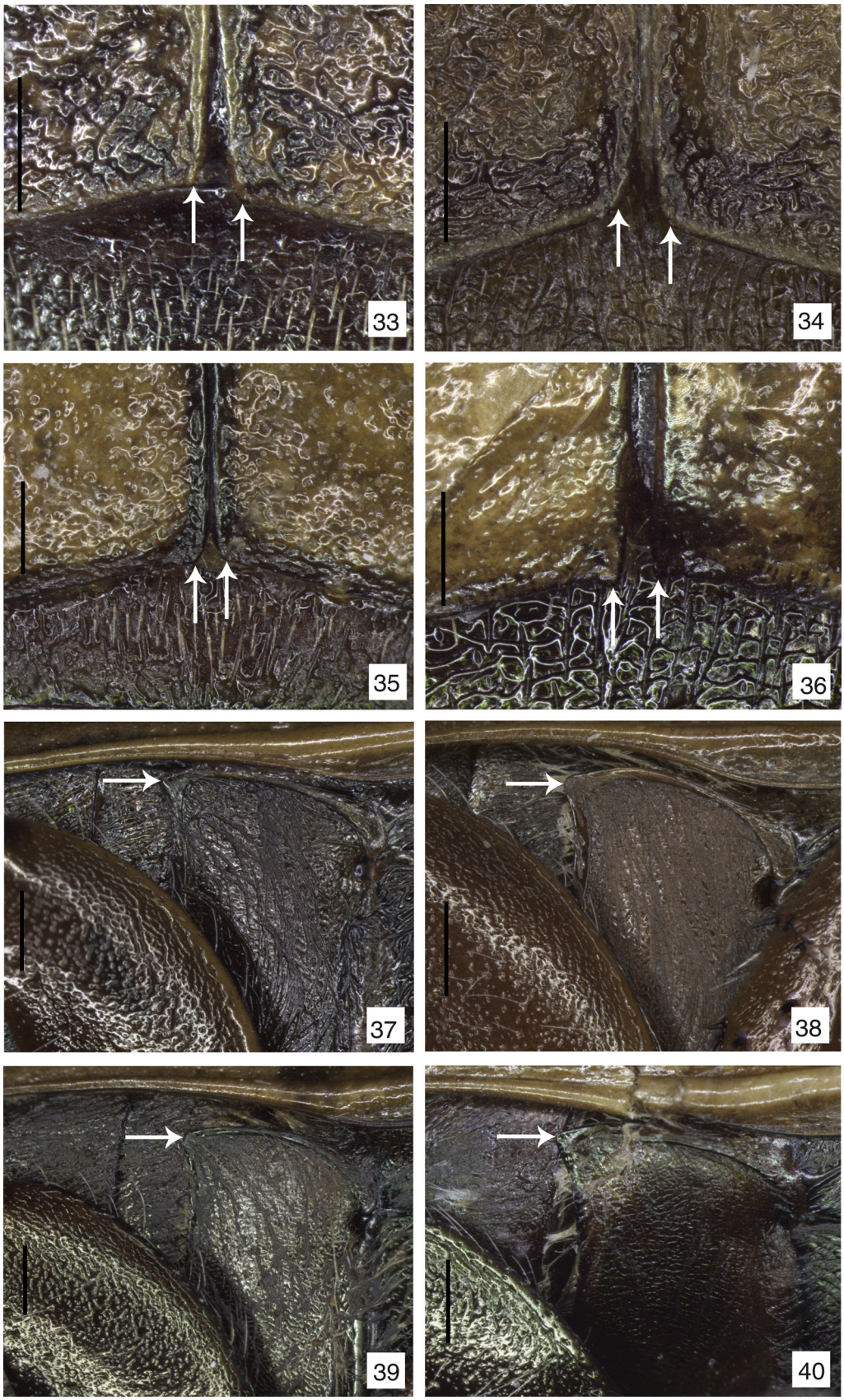
*Distribution.* Known only from type locality.

*Etymology.* The specific epithet *pernambucana* refers to Pernambuco state where the holotype was collected.

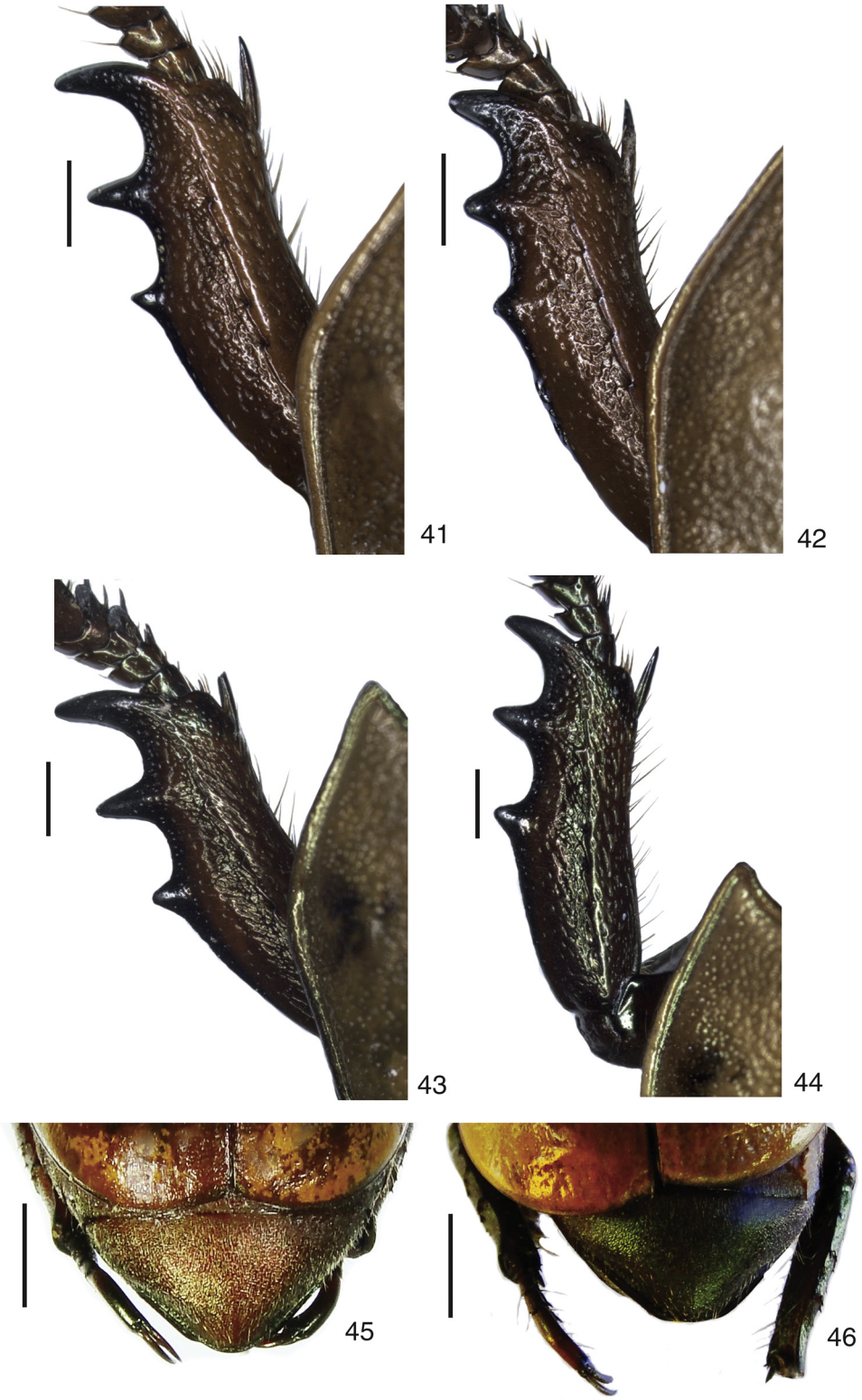
*Remarks. Pelidnota pernambucana* is distinguished as follows (*Pelidnota nordestina* characters in brackets): posterior margin of head less black (black dark); mandibles small, not exceeding the lateral margin of the clypeus (exceeding the lateral margin of the clypeus; labrum transversal (Fig. 20) (triangular (Fig. 19)); inner teeth of mandible larger (Fig. 24) (small (Fig. 23)); first teeth of maxillary galea sawed, IV palpomere of maxilla, more elongated and insertion area of palp more excavated (Fig. 28) (first and second teeth sawed and IV palpomere less elongated (Fig. 27)); surface area of pre-mentum and insertion area of palp more excavated, lateral margin of post-mentum less rounded, and with elongated moderate setae (Fig. 32) (less excavated, more rounded, and with elongate dense setae (Fig. 31)); external teeth of protibia small and slightly curved (Fig. 44) (larger and sharply curved (Fig. 43)); elytra apex truncated (Fig. 36) (slightly more acute (Fig. 35)); anteroexternal angle of metacoxa strongly acute (Fig. 40) (rounded and slightly sharp (Fig. 39)); pygidium dark brown with strong metallic green reflections around pygidium (Fig. 46) (dark brown with reddish reflections around pygidium, and slight metallic green reflections only on the sides of the posterior margin of pygidium (Fig. 45)); small apical spurs and cuticle projection-shaped spur of metatibia; six spine-like setae on external longitudinal carinae, and six setae on inner longitudinal carinae of metatibia (Fig. 56) (larger; more than six (Fig. 55); parameres distal margin slightly rounded, and proximal margin straight and truncated (Figs. 63, 64, 68) (distal margin V-shaped and gradually acute laterally, and proximal margin gradually semi-quadrate (Figs. 61, 62, 67)).

*Comments.* The specimen was collected in a tropical forest in an enclave in the Caatinga ecoregion (Instituto LIFE, 2015).

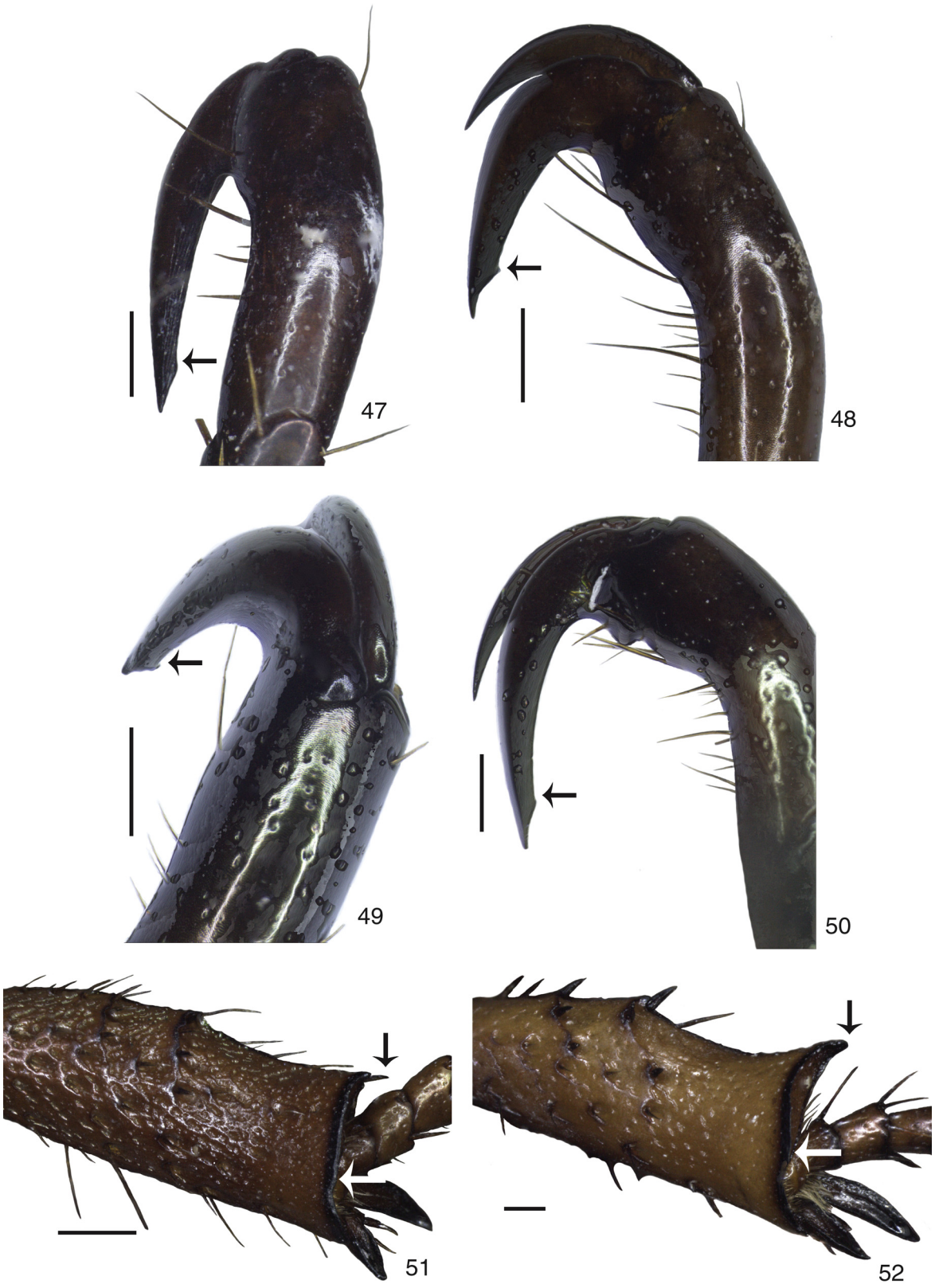
*Identification key. Pelidnota beckeri*, *P. nordestina* and *P. pernambucana* were included in couplet 48 of the identification key for the



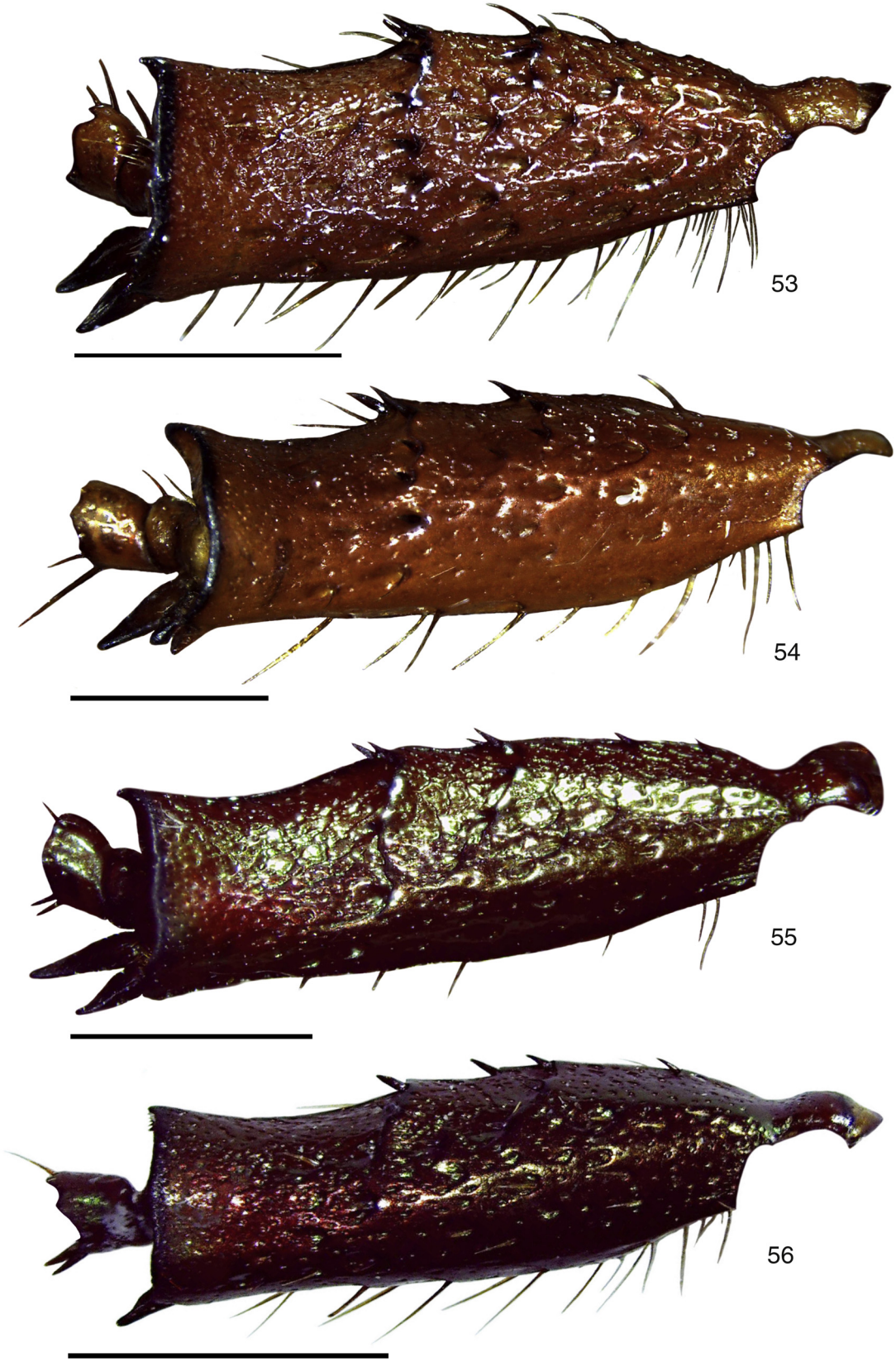

**Figs. 33–40.** Elytral apex in frontal view and anteroexternal coxal angle of right metacoxa in lateral view. 33–36, Elytral apex; 33, *Pelidnota beckeri* sp. nov.; 34, *P. unicolor* (Drury); 35, *P. nordestina* sp. nov.; 36, *P. pernambucana* sp. nov.; 37–40, anteroexternal coxal angle of right metacoxa; 37, *P. beckeri* sp. nov.; 38, *P. unicolor* (Drury); 39, *P. nordestina* sp. nov.; 40, *P. pernambucana* sp. nov. Scale bars: Figs. 33–36 = 0.500 mm, Figs. 37–40 = 1.0 mm.



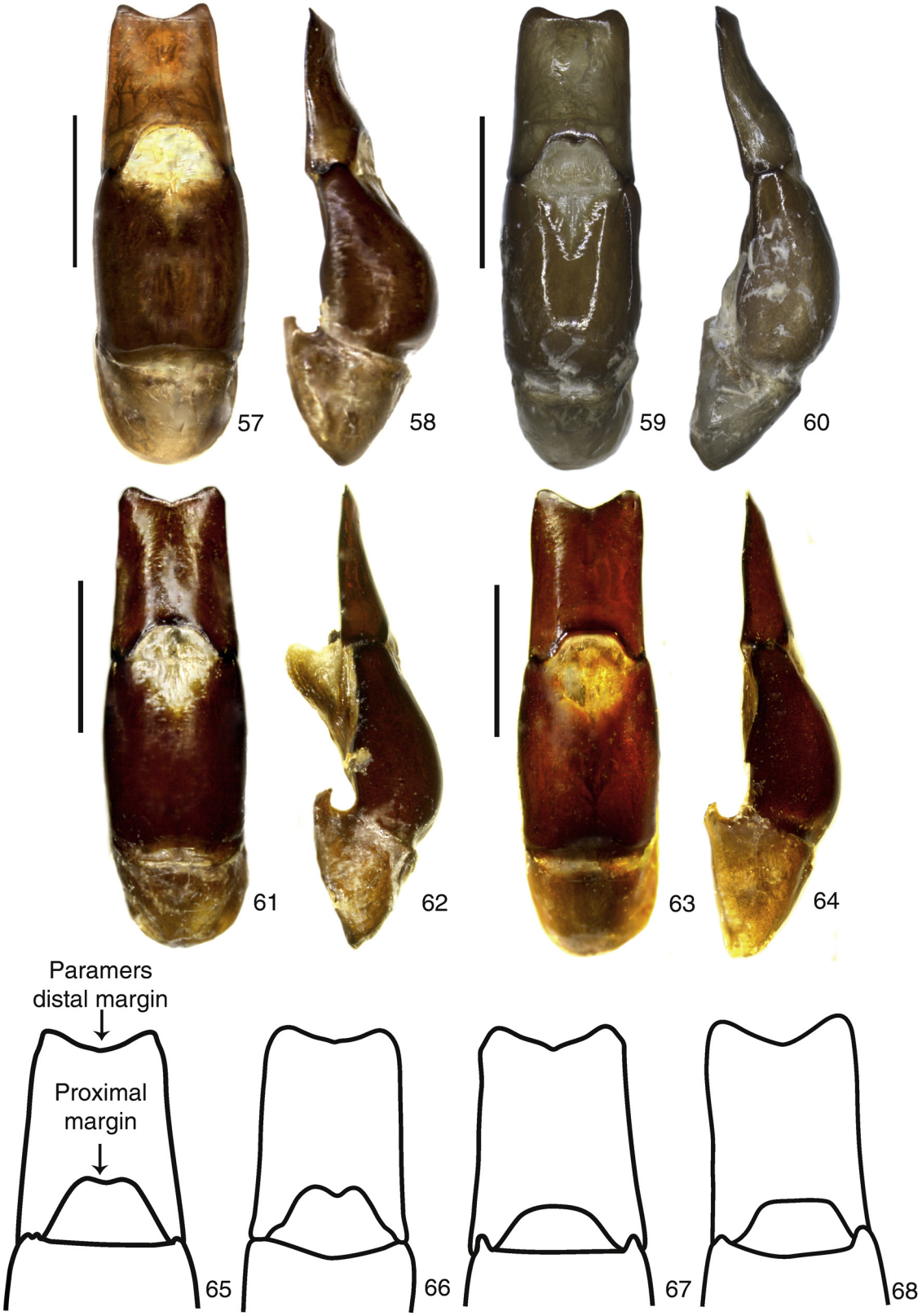

**Figs. 41–46.** Protibia and pygidium in dorsal view. 41–44, left protíbia; 41, *Pelidnota beckeri* sp. nov.; 42, *P. unicolor* (Drury); 43, *P. nordestina* sp. nov.; 44, *P. pernambucana* sp. nov.; 45–46, pygidium; 45, *P. nordestina* sp. nov.; 46, *P. pernambucana* sp. nov. Scale bars: Figs. 41–42 = 1.0 mm, Figs. 45–76 = 2.7 mm.



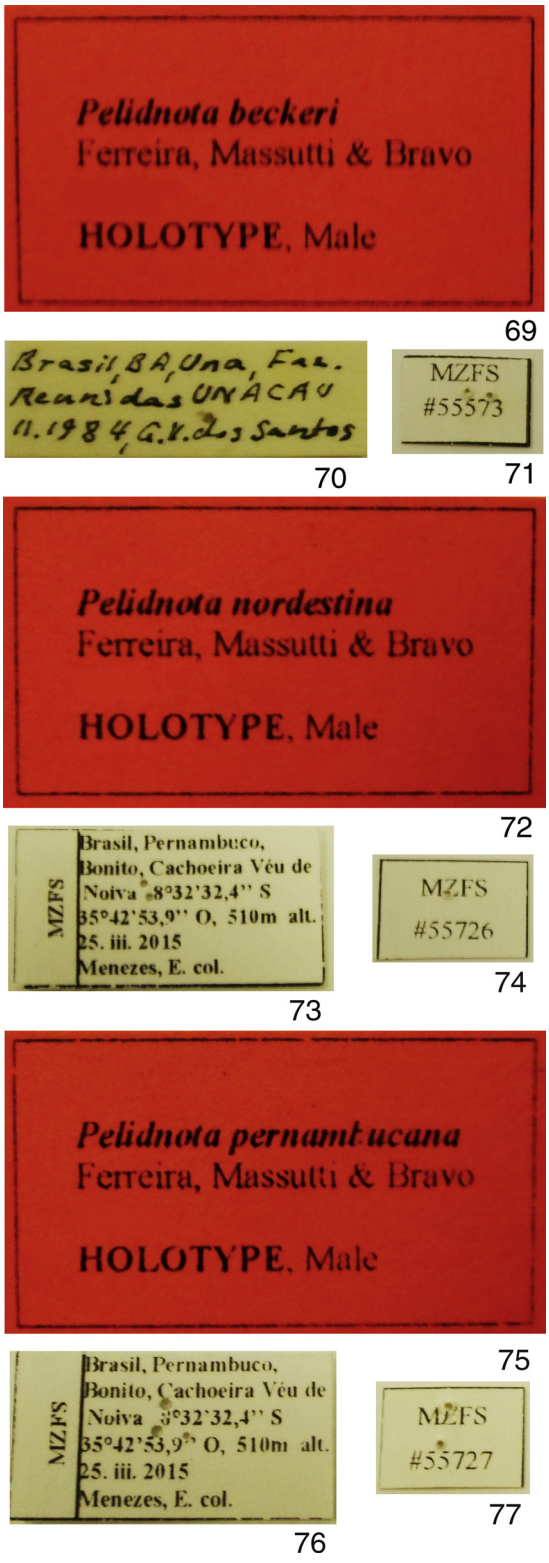

**Figs. 47–52.** Anterior tarsal claws of male and left metatibia of female in lateral view. 47–50, anterior tarsal claws of male; 47, *Pelidnota beckeri* sp. nov.; 48, *P. unicolor* (Drury); 49, *P. nordestina* sp. nov.; 50, *P. pernambucana* sp. nov.; 51 and 52, metatibia of female; 51, *P. beckeri* sp. nov., a spine-like seta; 52, *P. unicolor* (Drury), a spine (cuticular projection). Scale bars: Figs. 47–50 = 0.500 mm, Figs. 51 and 52 = 1.0 mm.




**Figs. 53–56.** Right metatibia of male in lateral view. 53, *Pelidnota beckeri* sp. nov.; 54, *P. unicolor* (Drury); 55, *P. nordestina* sp. nov.; 56, *P. pernambucana* sp. nov. Scale bars: Figs. 53–56 = 2.0 mm.




**Figs. 57–68.** Male genitalia and paramers margin drawing. 57–64, male genitalia; 57 and 58, *Pelidnota beckeri* sp. nov. (dorsal, lateral); 59 and 60, *P. unicolor* (Drury) (dorsal, lateral); 61 and 62, *P. nordestina* sp. nov. (dorsal, lateral); 63 and 64, *P. pernambucana* sp. nov. (dorsal, lateral); 65–68, paramers margin drawing; 65, *P. beckeri* sp. nov.; 66, *P. unicolor* (Drury); 67, *P. nordestina* sp. nov.; 68, *P. pernambucana* sp. nov. Scale bars: Figs. 57–64 = 2.5 mm.




**Figs. 69–77.** Labels attached to the hotypes. 69–71, *Pelidnota beckeri* sp. nov.; 72–74, *P. nordestina* sp. nov.; 75–77, *P. pernambucana* sp. nov.

species of *Pelidnota* (Soula, 2009). Key modified and translated from Soula (2009: 30–34).

43(38) Andean species; light brown, fairly large and elongated body (length 19–24 mm, width 12–14 mm) . . . . . 44

- Sub-Andean species, southernmost; usually smaller individuals (length 15–24 mm, width 9–13 mm) bodies, brown dorsally; legs uniformly brown and robust; pronotum densely covered by ventral bristles. Bolivia, Argentina, and southern Brazil . . . . . 45
- Species of the Atlantic Forest and Caatinga ecoregions, Northeastern Brazil. Body uniformly brown or dark brown with dark spots present or not on pronotum, humeral angle and lateral elytra . . . . . **48**

48(43) Dorsal surface uniformly brown . . . . . A
- Head, pronotum and scutellum dark brown; elytra brown. Distribution: Brazilian Atlantic Forest and deciduous forest (Caatinga), states of Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro . . . . . *Pelidnota chalcothorax* Perty

A(48) Black spots present on elytra or pronotum . . . . . B
- Black spots absent on elytra and pronotum absent (Figs. 9, 10), legs more or less brown, body darker than head, pronotum, and elytra. Distribution: Argentinian to Pernambuco state. . . . . *Pelidnota unicolor* (Drury)

B(A) Body brown; legs dark brown with metallic green reflections; one black lateral spot on pronotum and two on elytron (one at humerus of elytral and one on lateral half); elytral apex truncated, slightly acute or not . . . . . C
- Body dark brown; legs brown, lacking metallic reflections; pronotum without spots; three black spots laterally on elytron (one at humerus and two on lateral half) (Figs. 1, 3); elytral apex truncated (Fig. 33); parameres distal margin apex gradually acute laterally (Figs. 57, 58, 65). Distribution: Brazil, Bahia state. . . . . *Pelidnota beckeri* **sp. nov.**

C(B) Labrum triangular (Fig. 19); teeth on inner margin of mandible small (Fig. 23)); first and second teeth of maxillary galea sawed and IV palpomere less elongated (Fig. 27); surface area of pre-mentum and insertion area of palp less excavated, lateral margin of post-mentum more rounded, and with elongated dense setae (Fig. 31)); elytra apex truncated and slightly acute (Fig. 35); metacoxa with anteroexternal angle rounded and slightly acute (Fig. 39); protibia with distal external tooth large and strongly recurved (Fig. 43); pygidium dark brown, with reddish reflections on disk, with slight metallic green reflections on lateral area of posterior margin (Fig. 45); parameres distal margin acute laterally (Figs. 61, 62, 67). Distribution: Brazil, Pernambuco state. . . . . *Pelidnota nordestina* **sp. nov.**
- Labrum transversal (Fig. 20); teeth on inner margin of mandible larger (Fig. 24); only first teeth of maxillary galea sawed, IV palpomere of maxilla, more elongated (Fig. 28); surface area of pre-mentum and insertion area of palp more excavated, lateral margin of post-mentum less rounded, and with elongate moderate setae (Fig. 32); elytral apex truncated and slightly acute (Fig. 36); anteroexternal angle of metacoxa strongly acute (Fig. 40); distal external tooth of protibia slightly recurved (Fig. 44); pygidium green and with metallic reflections (Fig. 46); parameres distal margin rounded and slightly acute laterally (Figs. 63, 64, 68). Distribution: Brazil, Pernambuco state. . . . . *Pelidnota pernambucana* **sp. nov.**

52(37) Andean or Sub-Andean species; more or less uniformly green, elytron green and body ochre; punctures of the pronotum small to large . . . . . 53
- Amazonian or Atlantic Forest species; color distinctly more ochre . . . . . 58

## New records

***Pelidnota alliacea*** (Germar, 1824). Material examined. 1 male and 4 females, BRAZIL, *Bahia*: ("Itamaraju"), VIII.1985. Roppa & J. Becker col. (MNRJ).

This species was reported for the Brazilian Atlantic Forest (states of Santa Catarina to Espírito Santo) (Germar, 1824; Soula, 2009), and is recorded here for the first time for the Atlantic Forest in Bahia state (Itamaraju).

***Pelidnota crassipes*** (Ohaus, 1905). Material examined. 1 female, BRAZIL, *Bahia*: ("São Félix do Coribe, Coribe"), 07.XII.2007. F.B., T.Z., A.N. & J.B., A. (MZFS/#41204).

This species was described for Argentina, but is currently also recorded from Bolivia, Paraguay and Brazil (Minas Gerais and Goiás) (Blackwelder, 1944; Ohaus, 1905, 1918; Soula, 2006). It is reported here for first time for Bahia state in the semiarid region of Brazil.

***Pelidnota lagoi*** Soula, 2011. Material examined. Material examined. 3 males, BRAZIL, *Bahia*: ("Mucugê"), 09.XI.2002. F. Bravo col. (MZFS/#2250; 3635; 3637). 1 male ("Santa Terezinha, Pedra Branca, Serra da Jiboia", "430 m") (12°50′S/39°30′W), 07.III.2001. Betânia col. (MZFS/#2258). 1 male, 15–16.V.1999. F. Bravo col. (MZFS/#3729). 1 male ("430 m"), 18–19.XI.2000. I. Castro col. (MZFS/#3775). 1 male, XI.2004. Raimunda. col. (MZFS/#5401). 1 female, 27.III.2001. E. Neto col. (MZFS/#28009). 1 male, 20.XI.2008. Zacca, T. & S. Bastos col. (MZFS/#44288). 2 male ("Lençóis, Km 4 NW", "781 m") (12°50′S/39°30′W), XII.2001. V. Silva & E.C. Pereira col. (MZFS/#2310; 27759). 2 males ("Pousada Aguiar"), 22–23.XI.2014. Menezes, E. et al. col. (MZFS/#54896; 54897). 1 female ("Alagoinhas"), 23.VI.2000. Elinaldo col. (MZFS/#4894). 2 males and 2 females ("Elísio Medrado/Santa Terezinha, Margem Direita BA 120″), XI.2004. Raimunda col. (MZFS/#5402; 5403; 5404; 5406). 1 male ("Cachoeira, Vila Rial"), 29.VI.2004. F. Bravo col. (MZFS/#7421). 16 males and 37 females ("São Félix do Coribe, Coribe, Km 24"; "493 masl"); 13°33′S/44°15′W), 07.XII.2000. FB, TZ, NA & JRA col. (MZFS/#41084–41095; 41150–41164; 41166–41171; 41173–41179; 41180–41185; 41187–41193; 41194–41196). 1 female ("Itaparica, Ilha Vera Cruz"), 02.VI.2011. A. Silva-Neto & E.F. Nascimento col. (MZFS/#54892). 1 male ("Dendê, Ituberá/Nilo Peçanha"), 05.II.2010. M.D. Silva et al. col. (MZFS/#54893). 1 male ("Ibicoara, Fazenda Igarashi, Cozinha/Alojamento"), 26.XI.2014. A.S. Ferreira col. (MZFS/#54898). 1 female ("Aracatu, Fazenda Lagoa do Tamburí, Km 400, BA 262 Sentido Vitória da Conquista/Brumado") (14°30.961′S/041°27.512′W), 29.XI.2014. A.S. Ferreira col. (MZFS/#54899). 2 females ("Campo Formoso"), XII.1968 (DZUP/#236320; 236321). 21 males and 2 female ("Jequié"), 11.XI.1964. C & T. Elias col. (DZUP/#236326–236349). 1 male and 2 females ("Salvador, Rio Vermelho"), 11.IV.1944. J. Becker col. (MNRJ).

This species was described for Brazil (Goiás state) (Soula, 2011) and is reported here for the first time for Bahia state. This species was collected in various ecoregions (Instituto LIFE, 2015): 1) Atlantic Rain Forest (Itamaraju, Salvador, Itaparica, Dendê, and Cachoeira); 2) Brazilian Semiarid region with tropical forest enclaves (Santa Terezinha); 3) rocky fields ("Campos Rupestres") in the Chapada Diamantina Mountains (Mucugê, Lençóis, and Ibicoara); and 4) Caatinga dry forest (Aracatu, São Félix do Coribe, Campo Formoso, and Alagoinhas).

***Pelidnota instabilis*** Ohaus, 1912. Material examined. 2 males and 6 females ("Camacan, RPPN Serra Bonita"), 28–29.XII.2012. M.L. Monné col. (MNRJ).

This species was reported for the Brazilian southeast region (São Paulo, Rio de Janeiro and Espírito Santo) (Blackwelder, 1944; Krajcik, 2008; Machatschke, 1972; Ohaus, 1912, 1918, 1934; Soula, 2006). It is reported here for the first time for the Atlantic Rain Forest of Bahia state, in the municipally of Camacan.

***Pelidnota rugulosa rugulosa*** (Burmeister, 1844). Material examined. 1 male, BRAZIL, *Bahia*: ("Porto Seguro, Estação Vera Cruz"), 05.II.2002. I. Castro col. (MZFS/#2227). 1 male ("Santa Terezinha, Serra da Jiboia"; "820 m") (12°50′S/39°30′W), 22–23.XI.2000. I. Castro col. (MZFS/#2229). 1 male and 2 females, 1–2.II.2002. I. Castro col. (MZFS/#2231; 2232; 2235). 1 male and 1 female ("Camacan, RPPN Serra Bonita"), 28–29.XII.2012. M.L. Monné col. (MNRJ).

This subspecies was reported for the Brazilian Atlantic Rain Forest (Rio de Janeiro and São Paulo) (Burmeister, 1844; Soula, 2006). It is reported here for the first time for the Atlantic Rain Forest of Bahia state, in the municipally of Santa Terezinha.

***Pelidnota semiaurata semiaurata*** Burmeister, 1844. Material examined. 1 female, BRAZIL, *Sergipe*: ("Poço Verde, Divisa com a Bahia"), XI.2005. C. Oliveira, C. col. (MZFS/#7430). 1 female, *Bahia*: ("Santa Terezinha, Serra da Jiboia, Pedra Branca"), 13.I.2014. A.V. Sousa col. (MZFS/#4579). 1 male, 1–2.I.2002. I. Castro col. (MZFS/#2230). 2 females (12°52′215″S/39°28′565″W), 13.I.2004. A.V. Sousa col. (MZFS/#55383). 07.XI.2010. A.M. Silva-Neto col. (MZFS/# 55385). 1 female ("Coração de Maria"), 06.VI.2002. F. Bravo & I. Castro col. (MZFS/#2233). 3 females (12°13′42.2″S/38°45′13.4″W), 30.IV.2003. LASIS. col. (MZFS/#5882; 5891; 5893). 1 female ("Ituberá, Michelin"), 17.XI.2007. João, Zafira & Daniela. col. (MZFS/#33861). 1 male ("Porto Seguro, Estação Vera Cruz"), 05.II.2002. I. Castro col. (MZFS/#2226). 1 male, 27.X.2010. L. Rego col. (MZFS/#2236). 1 female ("Fazenda Reunidas Unacau"), I.1981. A.V. Santos col. (MZFS/#55384). 5 males and 5 females ("Itamaraju"), 28.X.1985. J. Becker col. (MZFS/#55424–55433). 1 male ("Belmonte/Barrolândia, Fazenda Prosperidade"), 04.I.1977. J. Becker col. (MNRJ).

This subspecies was reported from Brazil (the states of Santa Catarina and Rio Grande do Sul) (Burmeister, 1844; Machatschke, 1972; Ohaus, 1934; Soula, 2009) and is reported here for the first time for the Atlantic Rain Forest of Bahia and Sergipe states (Porto Seguro, Belmonte/Barrolândia, Ituberá, Itamaraju, and Coração de Maria).

## Conflicts of interest

The authors declare no conflicts of interest.

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