

Description of six new species of Heteroceridae (Coleoptera) from Bolivia

STANISLAV SKALICKÝ

Dukla 322, CZ-56201 Ústí nad Orlicí, Czech Republic; e-mail: s.skalicky@wo.cz

SKALICKÝ S. 2019: Description of six new species of Heteroceridae (Coleoptera) from Bolivia. *Acta Musei Moraviae, Scientiae biologicae* **104(2)**: 121–137. – Five new species of *Tropicus* Pacheco, 1964: *T. banari* sp. nov., *T. eliskae* sp. nov., *T. mikolaseki* sp. nov., *T. nastenkae* sp. nov., *T. tobiassi* sp. nov., and one new species of *Heterocerus* Fabricius, 1792, *H. lenkae* sp. nov., all from Bolivia, are described, illustrated and compared with similar species. *Tropicus bartolozzii* Mascagni, 1994, *T. trifidus* Skalický, 2007 and *T. tuberculatus* Pacheco, 1964 are reported from Bolivia (Department of Santa Cruz) for the first time. Distributional notes on Bolivian Heteroceridae are provided.

Key words. Taxonomy, Coleoptera, Heteroceridae, *Tropicus*, *Heterocerus*, new species, new record, Bolivia

Introduction

Twenty-one representatives of Heteroceridae (10 species of *Heterocerus* Fabricius, 1792 and 11 species of *Tropicus* Pacheco, 1964) are currently known to occur in Bolivia. A distribution list by individual Bolivian administrative department has been provided by SKALICKÝ (2015).

In the course of an expedition organized by Czech entomologists in collaboration with the Museo de Historia Natural “Noel Kempff Mercado”, Santa Cruz de la Sierra, Bolivia, large numbers of Coleoptera were collected using light traps. Some 10,229 specimens of Heteroceridae were determined from these collections, including six new species (*Tropicus banari* sp. nov., *T. eliskae* sp. nov., *T. mikolaseki* sp. nov., *T. nastenkae* sp. nov., *T. tobiassi* sp. nov., and *Heterocerus lenkae* sp. nov.). In addition, three species (*T. bartolozzii* Mascagni, 1994, *T. trifidus* Skalický, 2007 and *T. tuberculatus* Pacheco, 1964) were confirmed for Bolivia for the first time. The new species are described and illustrated below, together with faunistic data for certain other specimens.

Material and methods

The following abbreviations are used in the text to indicate where the examined material is deposited:

CSU	Stanislav Skalický collection, Ústí nad Orlicí, Czechia
MMBC	Moravian Museum, Brno, Czechia
NMW	Naturhistorisches Museum Wien, Vienna, Austria
BMNH	The Natural History Museum, London, United Kingdom
PBSC	Petr Baňář collection, Strážnice, Czechia
TMVC	Tomáš Mikolášek collection, Vrané nad Vltavou, Czechia
UASC	Museo de Historia Natural “Noel Kempff Mercado”, Santa Cruz de la Sierra, Bolivia

Separate labels are indicated by double slashes, locality data are cited verbatim in quotation marks [...]. Author's remarks appear in square brackets. Most of the paratypes for newly-described species are mounted in groups of five specimens on single rectangular cards. Body length is measured from the apex of the elytra to the apical margin of the labrum.

Taxonomy

Tropicus banari sp. nov.

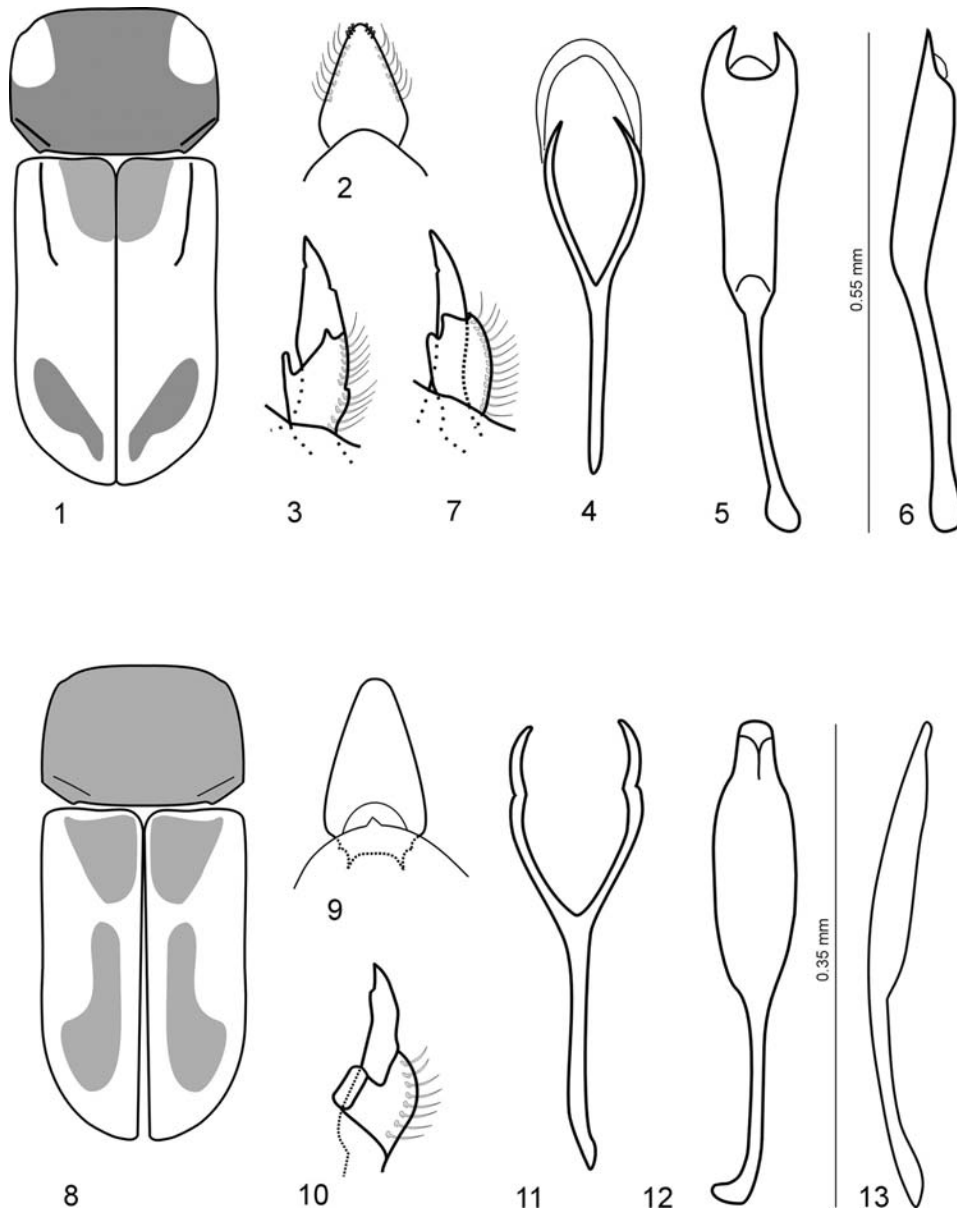
(Figs 1–7, 43–44)

Type material. Holotype ♂: “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňar lgt” // “Holotype *Tropicus banari* Skalický det. Skalický 2019” [red label] (UASC); Paratype (Allotype) (♀): the same locality data as holotype, the second red label is: “Allotype *Tropicus banari* Skalický det. Skalický 2019” (MMBC); Paratypes: 324 specimens (102♂♂, 222♀♀): the same locality data as holotype, the second red label is: “Paratype *Tropicus banari* Skalický det. Skalický 2019” (10♂♂, 20♀♀ UASC; 40♂♂, 102♀♀ MMBC; 32♂♂, 100♀♀ PBSC; 20♂♂ CSU).

Description. Male: Measurements of the holotype (Fig. 43) – total length 2.75 mm; elytra 1.55 mm long, 0.95 mm wide across shoulders. Ground colour pale brown, elytron with darker diffuse spots situated as in Fig.1. Labrum and eyes black, head black to brown. Labrum (Fig. 2): triangular apex with series of stout spines. Surface of labrum finely granular, setae semi-erect, dense, intermixed with long, erect. Mandibles (Fig. 3) slightly bent, sharp, with only one small interior tooth. Process of the dorsal lobe with well-developed single tooth, anterior margin with series of long spines. Prosthema without prosthecal notch, with a series of teeth. Antennae serrate, 9-segmented; antennomeres rectangular. Antennomeres I and II with long setae. Head finely punctate, punctures separated by slightly more than one diameter, setae dense, short with intermixed long, erect setae above eyes. Clypeus triangular, surface with dense, yellowish setae. Pronotum 1.6 times wider than long, wider than base of elytra; pronotal base without rim; lateral margins slightly tapering towards the front, all angles rounded. Surface of pronotum finely and regularly granular, without longer punctures; setae semi-erect, yellowish, becoming longer laterally. Scutellum pointed, triangular. Elytra without longitudinal furrows; humeral depressions extending obliquely almost to mid-length of elytra, without scutellar depressions; surface very finely granular, with larger punctures; setae of elytra as on pronotum. Epipleural ridge absent. Metaventricle without post-mesocoxal ridge. Mesoventrite with small spines in front of each mesocoxa. Post-metacoxal line incomplete. Stridulatory arch marked with striae. Ventral surface very finely granular, setae sparse. Protibia with 10 stout spines, meso- and metatibia with uncertain number of thin spines. Spiculum gastrale 0.45 mm long, Y-shaped, as in Fig. 4. Aedeagus 0.55 mm long, shape as in Figs 5–6.

Female: Measurements of the paratype (Fig. 44) – total length 2.95 mm; elytra 1.80 mm long, 0.60 mm wide across shoulders. Pronotum as wide as base of elytra. Mandibles without dorsal ridge process. Externally similar to male.

Differential diagnosis. Judging by the shape of aedeagus and spiculum gastrale, *Tropicus banari* sp. nov. belongs to the *T. imperator* group *sensu* PACHECO (1964).



Figs 1–13. 1–7. *Tropicus banari* sp. nov., male holotype: 1 – elytra and pronotum, dorsal view; 2 – labrum, dorsal view; 3 – right mandible, dorsal view; 4 – spiculum gastrale, dorsal view; 5 – aedeagus, dorsal view; 6 – aedeagus, lateral view; 7 – *Tropicus banari* sp. nov., male paratype, right mandible, dorsal view. 8–13. *Tropicus eliskae* sp. nov., male holotype: 8 – elytra and pronotum, dorsal view; 9 – labrum, dorsal view; 10 – right mandible, dorsal view; 11 – spiculum gastrale, dorsal view; 12 – aedeagus, dorsal view; 13 – aedeagus, lateral view. Figs 1–3 and 7–10 not to scale.

The new species is partially similar to *T. imperator* Pacheco, 1964, from Argentina, Bolivia, Brazil and Paraguay (PACHECO 1964, SKALICKÝ 2002). It differs from the latter in elytral pattern, in the shape of the male mandibles and in the morphology of the spiculum gastrale and male genitalia. Compare Figs 423–430 in PACHECO (1964) and Figs 1–7 herein.

Variability. Size: length 2.00–3.00 mm (both sexes). Some male samples have partially modified mandibles: the tooth on the process of the dorsal ridge is not developed (Fig. 7). No other substantial morphological variability was observed in the type series.

Etymology. Dedicated to my friend Dr. Petr Baňář (Strážnice, Czechia), who collected the type specimens.

Tropicus eliskae sp. nov.

(Figs 8–13, 45)

Type material. Holotype ♂: “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” // “Holotype *Tropicus eliskae* Skalický det. Skalický 2019” [red label] (UASC); Paratype (Allotype) (♀): the same locality data as holotype, the second red label is: “Allotype *Tropicus eliskae* Skalický det. Skalický 2019” (MMBC); Paratypes: 315 specimens (276 ♂♂, 39 ♀♀): the same locality data as holotype, the second red label is: “Paratype *Tropicus eliskae* Skalický det. Skalický 2019” (20 ♂♂, 5 ♀♀ UASC; 89 ♂♂, 20 ♀♀ MMBC; 100 ♂♂, 14 ♀♀ PBSC; 5 ♂♂ NMW; 5 ♂♂ BMNH; 57 ♂♂ CSU).

Description. Male: Measurements of the holotype (Fig. 45) – total length 2.05 mm; elytra 1.15 mm long, 0.50 mm wide across shoulders. Ground colour light brown, elytra with diffuse darker pattern, as in Fig. 8. Eyes and basic part of labrum black. Labrum (Fig. 9) almond-shaped, apex fine-serrate; surface finely granular, without larger intermixed punctures; setae fine, adjacent, intermixed with longer, erect setae. Mandibles (Fig. 10) strong, teeth of the dental lobe rounded, process of the dorsal ridge ending in two projections forming a U-shape, anterior margin with a series of stout spines. Prosthema without prosthecal notch, with only series of teeth. Antennae serrate, 9-segmented; antennomeres rectangular, antennomeres I and II with long setae. Head finely punctate, setae short, dense with long, erect setae above eyes. Clypeus triangular, surface with long, dense, erect, yellowish setae. Pronotum 1.50 times wider than long, as wide as base of elytra; pronotal base without rim. Surface of pronotum finely granular without longer punctures, setae sparse, semi-erect, yellowish; no longer setae. Scutellum triangular, pointed. Elytra without longitudinal furrows; humeral depressions extending obliquely almost to mid-length of elytra, without scutellar depressions. Surface of elytra more coarsely granular, punctures approximately as large as eye facets. Setae of elytra short, semi-erect, yellowish. Epipleural ridge absent. Metaventricle without post-mesocoxal ridge. Mesoventricle neither spinose nor tuberculate in front of each mesocoxa. Transverse ridge of mesosternum U-shaped. Post-metacoxal line incomplete. Stridulatory arch marked with striae. Ventral surface very finely granular, setae sparse. Protibia with 9 stout spines, meso- and metatibia with uncertain number of thin spines. Spiculum gastrale 0.40 mm long; Y-shaped, as in Fig. 11. Aedeagus 0.35 mm long, shape as in Figs. 12–13.

Female: Measurements of the paratype – total length 1.85 mm; elytra 1.00 mm long, 0.55 mm wide across shoulders. Pronotum as wide as base of elytra. Mandibles without process of the dorsal ridge. Externally similar to male.

Differential diagnosis. Judging by only the shapes of aedeagus and spiculum gastrale, *T. eliskae* sp. nov. belongs to the *T. minutus* group *sensu* PACHECO (1964). *T. eliskae* sp. nov. is probably related to *T. taghavianii* Skalický, 2006 from Bolivia, (Department of Beni, “Santisima Trinidad”), from which it differs in the shape of the male mandibles, size (1.65–2.10 mm in *T. eliskae*; 2.30 to 2.35 mm in *T. taghavianii*), in elytral patterns, and in the shape of the aedeagus and spicules gastrale (compare Figs 21–24 in SKALICKÝ (2006) and Figs. 8–13 in this paper).

Variability. Size: length 1.65–2.10 mm. Two projections in dorsal ridge of male mandibles may not form a “U”, but consist of only a lustrous plate. No other substantial morphological variability observed in the type series.

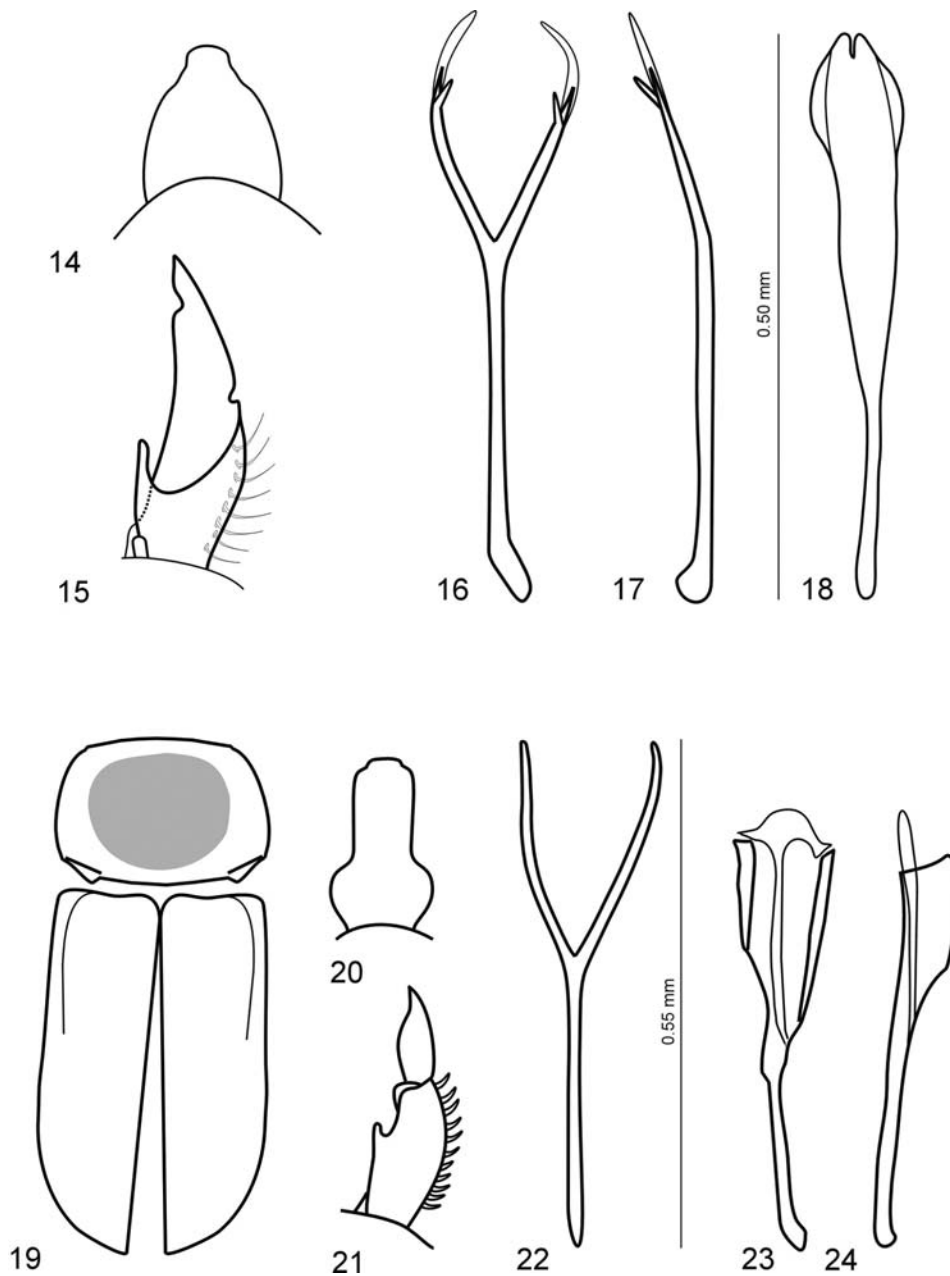
Etymology. The new species is dedicated to collector’s daughter Eliška Baňářová (Strážnice, Czechia).

***Tropicus mikolaseki* sp. nov.**

(Figs 14–18, 47–48)

Type material. Holotype ♂: “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi.2013 S17°29′02″W63°40′54″ at light, P. Baňář lgt” // “Holotype *Tropicus mikolaseki* Skalický det. Skalický 2019” [red label] (UASC); Paratype (Allotype) (♀): the same locality data as holotype, the second red label is: “Allotype *Tropicus mikolaseki* Skalický det. Skalický 2019” (MMBC); Paratypes: 860 specimens (583 ♂♂, 233 ♀♀): the same locality data as holotype, the second red label is: “Paratype *Tropicus mikolaseki* Skalický det. Skalický 2019” (40 ♂♂, 15 ♀♀ UASC; 5 ♂♂ NMW; 262 ♂♂, 118 ♀♀ MMBC; 200 ♂♂, 100 ♀♀ PBSC; 5 ♂♂ BMNH; 112 ♂♂ CSU; 1 ♂ (TMVC); 2 specimens (♂♂): “BOL/Nov 2013 – light BOLIVIA COCHABAMBA department Villa Tunari env.; river bank S16°57′57″W65°25′29″; at light 255m, 25.xi.2013; P. Baňář lgt, the second red label is: “Paratype *Tropicus mikolaseki* Skalický det. Skalický 2019” (MMBC).

Description. Male: Measurements of the holotype (Fig. 47) – total length 2.55 mm; elytra 1.45 mm long, 0.85 mm wide across shoulders. Ground colour pale brown, without darker spots. Labrum (Fig. 14) almond-shaped, apex fine-serrate; surface finely granular, without larger intermixed punctures; setae fine, adjacent, intermixed with longer, erect setae. Mandibles (Fig. 15) straight, sharp, with only one small interior tooth. Process of the dorsal lobe with well-developed single tooth, anterior margin with series of strong spines. Prostheca without prosthecal notch, with a series of teeth. Antennae serrate, 9-segmented; antennomeres rectangular. Antennomeres I and II with long setae. Head finely punctate, setae dense, short with intermixed long, erect setae above eyes. Clypeus triangular with broadly-rounded apex, surface with dense yellowish setae. Pronotum 1.55 times wider than long, as wide as base of elytra; pronotal base without rim; lateral margins slightly tapering towards the front, all angles rounded. Surface of pronotum finely and regularly granular, without longer punctures; setae semi-erect, short, yellowish, becoming longer laterally. Scutellum pointed, triangular. Elytra with five conspicuous longitudinal furrows; humeral depressions extending obliquely to one-third length of elytron, without scutellar depressions; surface very finely granular with



Figs 14–24. 14–18. *Tropicus mikolaseki* sp. nov., male holotype: 14 – labrum, dorsal view; 15 – right mandible, dorsal view; 16 – spiculum gastrale, dorsal view; 17 – the same, lateral view; 18 – aedeagus, dorsal view. 19–24. *Tropicus nastenkae* sp. nov., male holotype: 19 – elytra and pronotum, dorsal view; 20 – labrum, dorsal view; 21 – right mandible, dorsal view; 22 – spiculum gastrale, dorsal view; 23 – aedeagus, dorsal view; 24 – aedeagus, lateral view. Figs 14, 15 and 19–21 not to scale.

intermixed punctures approximately twice as large as eye facets. Setae of elytra as on pronotum. Epipleural ridge absent. Metaventricle without post-mesocoxal ridge. Mesoventrite neither spinose nor tuberculate in front of each mesocoxa. Post-metacoxal line incomplete. Stridulatory arch marked with striae. Ventral surface very finely granular, setae sparse. Protibia with 10 stout spines, meso- and metatibia with uncertain number of thin spines. Spiculum gastrale 0.55 mm long; Y-shaped, as in Figs 16–17; arms separated at apex. Aedeagus 0.50 mm long, simple, without internal structures, with short parameres; shape of aedeagus as in Fig. 18.

Female: Measurements of the paratype (Fig. 48) – total length 2.45 mm; elytra 1.50 mm long, 0.90 mm wide across shoulders. Elytra without longitudinal furrows. Mandibles simple, without process of the dorsal lobe. Externally similar to male.

Differential diagnosis. Judging by the shape of aedeagus and spiculum gastrale, *Tropicus mikolaseki* sp. nov. belongs to the *T. minutus* group *sensu* PACHECO (1964). *T. mikolaseki* is probably related to *T. eliskae* sp. nov., from which it differs in the shape of the male mandibles, different size (2.40–2.85 mm in *T. mikolaseki*; 1.65–2.10 in *T. eliskae*), presence of elytral spots in *T. eliskae*, and in the shape of aedeagus and spicules gastrale (see Figs 8–13 and Figs 14–18 in this paper).

Variability. Size: length 2.40–2.85 mm (both sexes). Longitudinal elytral furrows are indistinct in some paratypes. No other substantial morphological variability observed in the type series.

Etymology. The new species is dedicated to my friend Tomáš Mikolášek (Vrané nad Vltavou, Czechia).

***Tropicus nastenkae* sp. nov.**

(Figs 19–24, 49–50)

Type material. Holotype ♂: “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” // “Holotype *Tropicus nastenkae* Skalický det. Skalický 2019” [red label] (UASC); Paratype (Allotype) (♀): the same locality data as holotype, the second red label is: “Allotype *Tropicus nastenkae* Skalický det. Skalický 2019” (MMBC); Paratypes: 217 specimens the second red label is: “Paratype *Tropicus nastenkae* Skalický det. Skalický 2019” (175♂♂, 10♀♀): the same locality data as holotype, (10♂♂, 2♀♀ UASC; 5♂♂ NMW; 61♂♂, 4♀♀ MMBC; 80♂♂, 4♀♀ PBSC; 5♂♂ BMNH; 46♂♂ CSU).

Description. Male: Measurements of the holotype (Fig. 49)–total length 2.30 mm; elytra 1.30 mm long, 0.80 mm wide across shoulders. Ground colour pale brown, pronotum with diffuse darker spot, shape as in Fig. 19; eyes black, labrum black to brown. Labrum (Fig. 20) with visible part about 1.6 times longer than wide, lateral angles rounded in basal part, surface densely granulated, setae yellowish, dense, semi-erect, intermixed with long, erect ones. Mandibles (Fig. 21) straight, sharp, with only one small interior tooth. Process of the dorsal lobe with pair of rounded spines and one strong, short spine. Protheca without prosthecal notch, with a series of teeth. Antennae 9-segmented. Antennomeres I and II with long setae. Head finely punctate, setae dense, short intermixed with long, erect setae above eyes. Clypeus oblong, surface with dense, yellowish setae. Pronotum 1.45 times wider than long, slightly wider than base of elytra;

pronotal base not rimmed; lateral margins slightly tapering towards the front, all angles rounded. Surface of pronotum finely and regularly granular without longer punctures; setae adjacent, sparse, short, yellowish, becoming longer laterally. Scutellum pointed, triangular. Elytra with five conspicuous longitudinal furrows; humeral depressions extending obliquely to one-third of length of elytron, without scutellar depressions; surface very finely granular without intermixed, larger punctures. Setae semi-erect, short, yellowish. Epipleural ridge absent. Metaventrite without post-mesocoxal ridge. Mesoventrite neither spinose nor tuberculate in front of each mesocoxa. Post-metacoxal line incomplete. Stridulatory arch marked with striae. Ventral surface very finely granular, setae sparse. Protibia with 10 stout spines, meso- and metatibia with uncertain number of thin spines. Spiculum gastrale 0.55 mm long, Y-shaped, as in Fig. 22. Aedeagus 0.40 mm long, simple, without internal structures and parameres; shape of aedeagus as in Figs 23–24.

Female: Measurements of the paratype (Fig. 50) – total length 2.00 mm; elytra 1.10 mm long, 0.70 mm wide across shoulders. Mandibles simple, without process of the dorsal lobe. Externally similar to male.

Differential diagnosis. Judging by the shape of aedeagus and spiculum gastrale, *Tropicus nastenkae* sp. nov. belongs to the *T. imperator* group *sensu* PACHECO (1964). *T. nastenkae* sp. nov. is probably related to *T. carus* Pacheco, 1964 (distribution in Brazilian state of Rondônia) from which it differs in the shape of male mandibles, presence of darker pronotal spot (absent in *T. carus*) and mainly in the shape of aedeagus and spicules gastrale (compare Figs 431–438 in PACHECO (1964) and Figs 19–24 in this paper).

Variability. Size: length 1.80–2.75 mm (both sexes). Longitudinal elytral furrows indistinct in some male paratypes. No other substantial morphological variability observed in the type series.

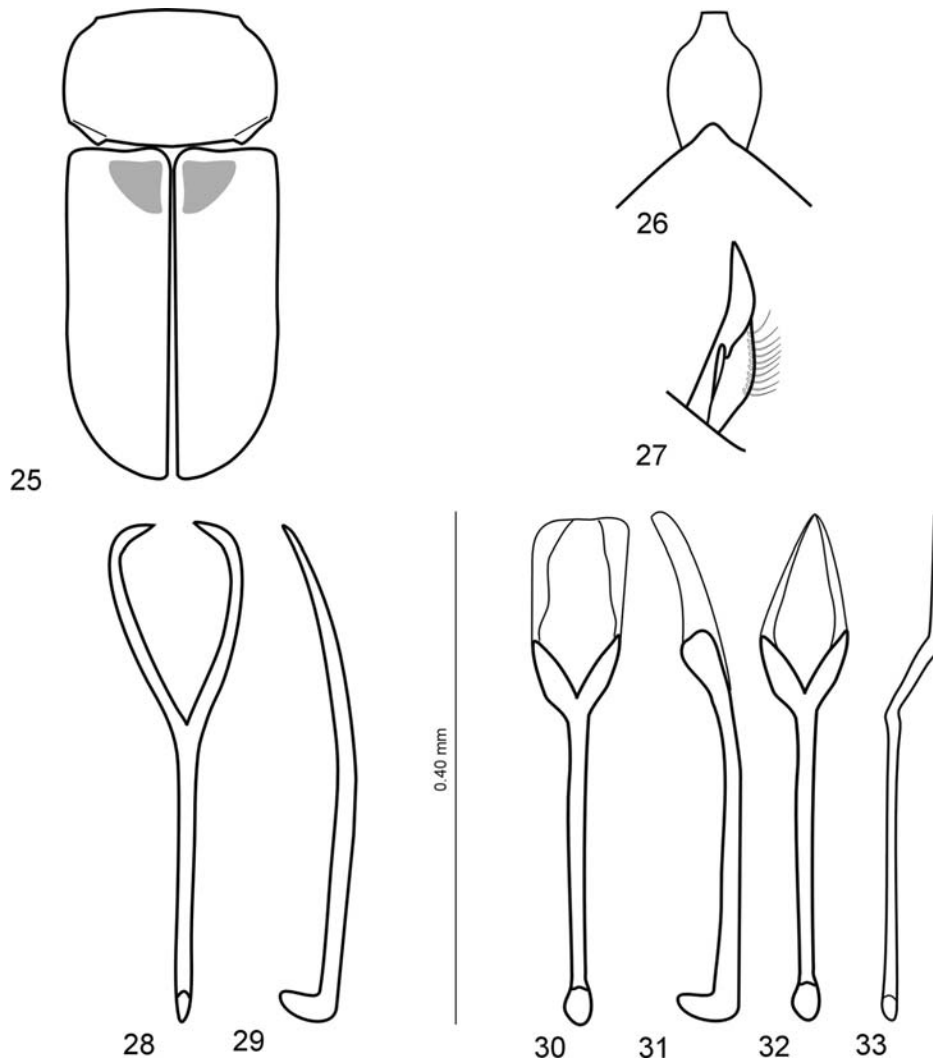
Etymology. The new species is named after my niece's cat, Nastěnka.

***Tropicus tobiasi* sp. nov.**

(Figs 25–33, 46)

Type material. Holotype ♂: “BOL/Nov 2013, 01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” // “Holotype *Tropicus tobiasi* Skalický det. Skalický 2019” [red label] (UASC); Paratype (Allotype) (♀): the same locality data as holotype, the second red label is: “Allotype *Tropicus tobiasi* Skalický det. Skalický 2019” (MMBC); Paratypes: 767 specimens (311 ♂♂, 393 ♀♀): the same locality data as holotype, the second red label is: “Paratype *Tropicus tobiasi* Skalický det. Skalický 2019” (15 ♂♂, 25 ♀♀ UASC; 86 ♂♂, 168 ♀♀ MMBC; 100 ♂♂, 200 ♀♀ PBSC; 5 ♂♂ NMW; 5 ♂♂ BMNH; 100 ♂♂ CSU); 63 specimens (26 ♂♂, 37 ♀♀): “BOL/Nov 2013 – light BOLIVIA COCHABAMBA department Villa Tunari env.; river bank S16°57'57"W65°25'29"; at light 255m, 25.xi.2013; P. Baňář lgt” // “Paratype *Tropicus tobiasi* Skalický det. Skalický 2019” (23 ♂♂, 37 ♀♀ MMBC; 3 ♂♂ CSU).

Description. Male: Measurements of the holotype (Fig. 46) – total length 2.15 mm; elytra 1.10 mm long, 0.70 mm wide across shoulders. Ground colour pale brown, elytra with diffuse darker pattern, as in Fig. 25, eyes and basal part of labrum black to brown. Labrum (Fig 26) oval, apex serrate; surface very coarsely granular, setae long, erect. Mandibles (Fig. 27) strong, with only one small interior tooth, process of the dental lobe with one strong spine. Prostheca without prosthecal notch, with a series of teeth. Clypeus



Figs 25–33. 25–31. *Tropicus tobiasi* sp. nov., male holotype: 25 – elytra and pronotum, dorsal view; 26 – labrum, dorsal view; 27 – right mandible, dorsal view; 28 – spiculum gastrale, dorsal view; 29 – the same, lateral view; 30 – aedeagus, dorsal view; 31 – aedeagus, lateral view. 32–33. *Tropicus tobiasi* sp. nov., male paratype: 32 – aedeagus, dorsal view; 33 – aedeagus, lateral view. Figs 25–27 not to scale.

triangular, pointed; coarsely granular, setae long, erect. Head finely granular with long, erect setae above eyes. Antennae 9-segmented; antennomeres I and II with long setae. Pronotum oval, 1.40 times wider than long, as wide as base of elytra; pronotal base without rim; surface of pronotum finely microgranular without longer punctures; setae sparse, short, adjacent, intermixed with long erect ones. Scutellum triangular, pointed. Elytra without longitudinal furrows, without scutellar depressions, humeral depressions shallow, short; surface finely microgranular with intermixed punctures approximately as large as eye facets. Setae of elytra short, sparse, semi-erect. Epipleural ridge absent. Metaventricle without post-mesocoxal ridge. Mesoventrite neither spinose nor tuberculate in front of each mesocoxa. Transverse ridge of mesosternum V-shaped. Post-metacoxal line incomplete. Stridulatory arch marked with striae. Protibia with 9 stout spines, meso- and metatibia with uncertain number of thin spines. Spiculum gastrale 0.40 mm long, Y-shaped, as in Figs 28–29. Aedeagus 0.40 mm long, shape as in Figs 30–31.

Female: Measurements of the paratype – total length 1.85 mm; elytra 0.95 mm long, 0.60 mm wide across shoulders. Mandibles simple, without process of the dorsal lobe. Externally similar to male.

Differential diagnosis. Judging by the shape of the aedeagus and spiculum gastrale, *Tropicus tobiasi* sp. nov. belongs to the *T. minutus* group *sensu* PACHECO (1964). The new species is partially similar to the Bolivian *T. taghavianii* Skalický, 2006 from which it differs in the shape of male mandibles, in the elytral pattern, total length (2.30–2.45 mm in *T. taghavianii*) and mainly in the shape of aedeagus and spicules gastrale (Compare Figs 21–24 in SKALICKÝ 2006) and Figs 25–33 in this paper).

Variability. Size: length 1.70–2.25 mm. Some paratypes have a partially modified aedeagus (a membrane extension of the parameres is formed at the tip in dorsal view and in lateral view takes the shape of a “Z”, as in Figs 32–33). No other substantial morphological variability observed in the type series.

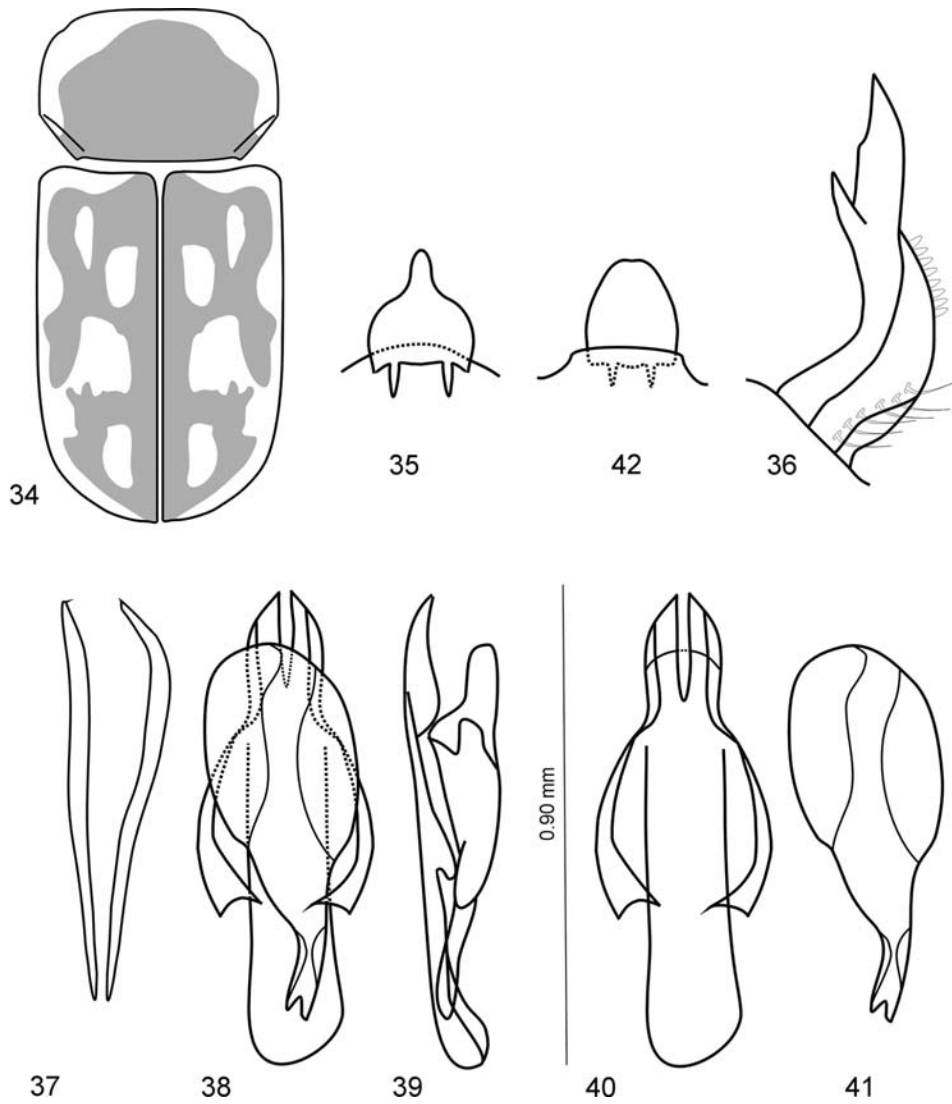
Etymology. The new species is named after my niece’s cat, Tobiáš.

Heterocerus lenkae sp. nov.

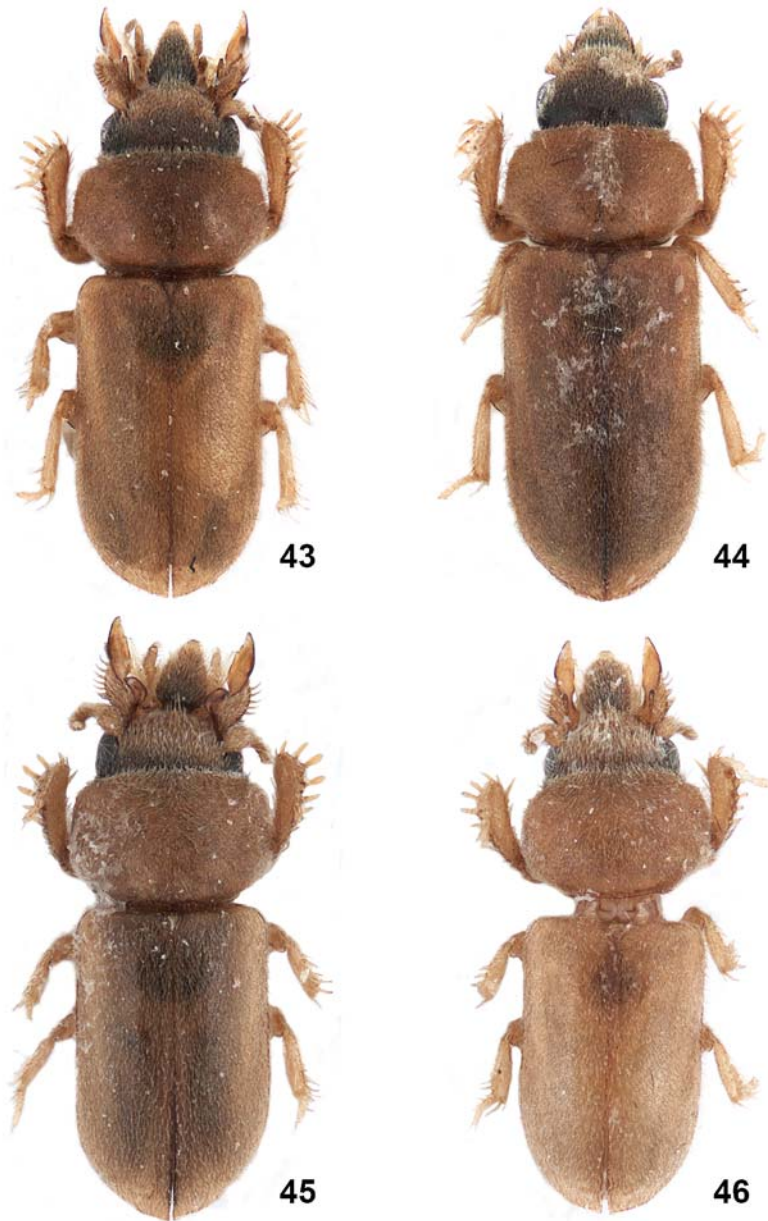
(Figs 34–42, 51–52)

Type material. Holotype ♂: “BOL/Nov 2013, 01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29’02”W63°40’54” at light, P. Baňář lgt” // “Holotype *Heterocerus lenkae* Skalický det. Skalický 2019” [red label] (UASC); Paratype (Allotype) (♀): the same locality data as holotype, the second red label is: “Allotype *Heterocerus lenkae* Skalický det. Skalický 2019” (MMBC); Paratypes: 27 specimens (15 ♂♂, 12 ♀♀): the same locality data as holotype, the second red label is: “Paratype *Heterocerus lenkae* Skalický det. Skalický 2019” (1 ♂, 1 ♀ UASC; 3 ♂♂, 5 ♀♀ MMBC; 4 ♂♂, 5 ♀♀ PBSC; 7 ♂♂, 1 ♀ CSU).

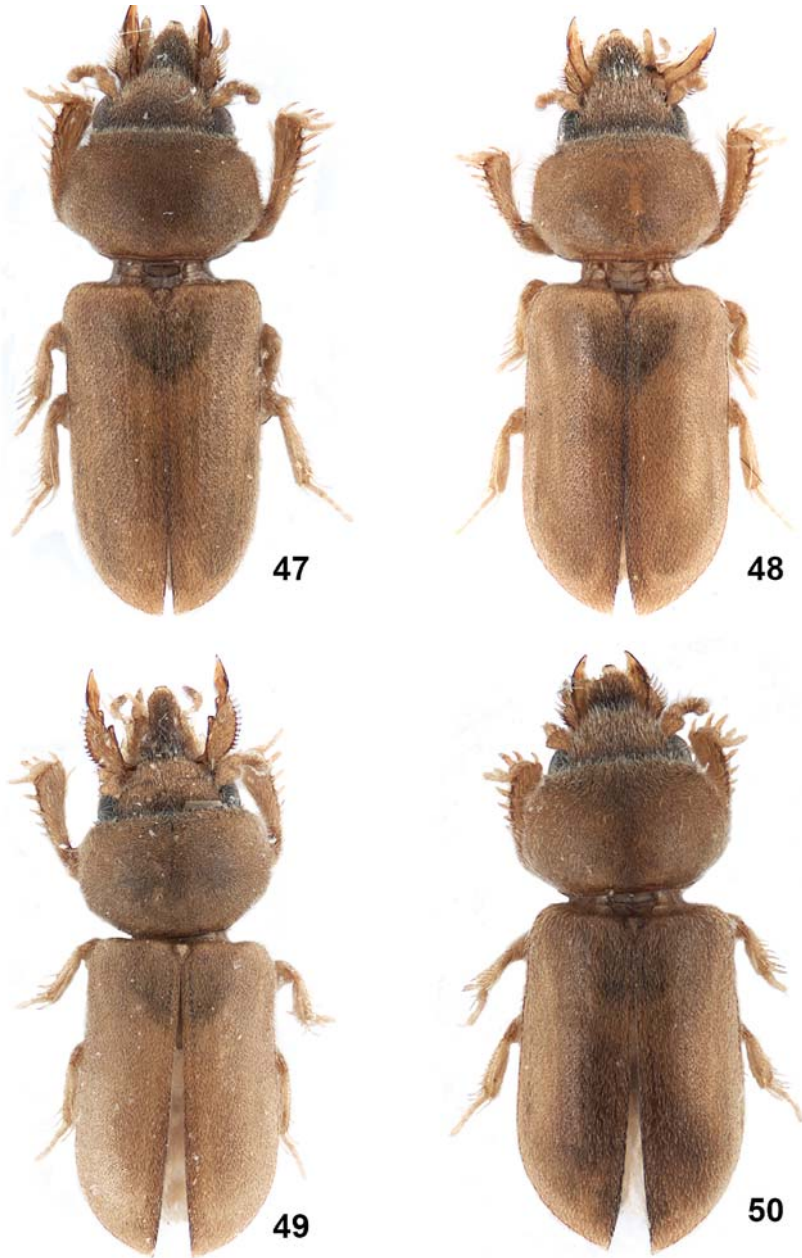
Description. Male: Measurements of the holotype (Fig. 51) – total length 5.65 mm; elytra 3.20 mm long, 1.15 mm wide across shoulders. Ground colour brown to black, elytra and pronotum with pale brown pattern, as in Fig. 34; legs and ventral surface laterally pale brown; Body lustrous. Labrum coarsely granular with long, erect setae; shape as in Fig. 35. Mandibles (hypermandibulates) robust (Fig. 36), with acute dorsal process of the dental lobe. Prostheca without central tooth but with a series of sparse



Figs 34–42. 34–41. *Heterocerus lenkai* sp. nov., male holotype: 34 – elytra and pronotum, dorsal view; 35 – labrum, dorsal view; 36 – right mandible, dorsal view; 37 – spiculum gastrale, dorsal view; 38 – aedeagus, dorsal view; 39 – the same, lateral view; 40 – phallobase, dorsal view; 41 – aedeagus, dorsal view. 42 – *Heterocerus lenkai* sp. nov., female allotype, labrum, dorsal view. Figs 34–36 and 42 not to scale.



Figs 43–46. *Tropicus* species, dorsal habitus. 43 – *Tropicus banari* sp. nov., male holotype (total body length 2.75 mm); 44 – *Tropicus banari* sp. nov., female allotype (total body length 2.95 mm); 45 – *Tropicus eliskae* sp. nov., male holotype (total body length 2.05 mm); 46 – *Tropicus tobiasi* sp. nov., holotype (total body length 2.15 mm).



Figs 47–50. *Tropicus* species, dorsal habitus. 47 – *Tropicus mikolaseki* sp. nov., male holotype (total body length 2.55 mm); 48 – *Tropicus mikolaseki* sp. nov., female allotype (total body length 2.45 mm); 49 – *Tropicus nastenkae* sp. nov., male holotype (total body length 2.30 mm); 50 – *Tropicus nastenkae* sp. nov., female allotype (total body length 2.00 mm).



Figs 51–52. *Heterocerus lenkae* sp. nov., dorsal habitus. 51 – male holotype (total body length 5.65 mm); 52 – female allotype (total body length 5.20 mm).

teeth. Clypeus lacking pair of anterior horns, anterior margin shallow emarginate, surface with dense, yellowish setae. Head finely granular with long, erect setae above eyes. Antennae 11-segmented, with 7-segmented club; antennomeres I and II with long setae. Pronotum 1.90 times wider than long, slightly wider than base of elytra; pronotal base completely rimmed, anterior angles rounded. Surface of pronotum with dense, granular punctures approximately as wide as eye facets, without longer punctures; setae sparse, semi-erect, yellowish. Scutellum triangular, about twice as long as wide. Elytra with a few slight longitudinal furrows, without scutellar depressions, humeral depressions shallow, extending obliquely almost to mid-length of elytra. Surface of elytra densely microgranular with intermixed, larger punctures approximately as large as eye facets; setae short, semi-erect, yellowish and sparse. Epipleural ridge absent. Metaventricle with post-mesocoxal ridge. Mesoventrite with five short spines in front of each mesocoxa. Transverse ridge of mesosternum V-shaped. Post-metacoxal line incomplete. Stridulatory arch marked with striae. Protibia with 11 stout spines, mesotibia with 10 thin spines and metatibia with uncertain number of thin spines. Spiculum gastrale 0.80 mm long, V-shaped, as in Fig. 37, arms connected by membrane apically. Aedeagus 0.90 mm long, shape as in Figs 38–41.

Female: Measurements of the paratype (Fig. 52) – total length 5.20 mm; elytra 3.25 mm long, 1.05 mm wide across shoulders. Labrum as in Fig. 42. Mandibles normally developed without dorsal process of the dental lobe. Externally similar to male.

Differential diagnosis. The shape of aedeagus (basal piece and parameres attached to one another, medius lobe without projectable processus), indicate that *Heterocerus lenkae* sp. nov. may be compared with *H. intermuralis* (Pacheco, 1964), with distribution in Dominican Republic, Louisiana, Mississippi and Texas (KING, J. G. & LAGO P. K. 2012). It differs from the latter in the shape of the elytral pattern, absence of a prosthecal tooth (present in *H. intermuralis*), presence of post-mesocoxal ridge in metasternum (absent in *H. intermuralis*) and in the morphology of the male genitalia (compare PACHECO 1964: Figs 214–224; KING & LAGO 2012: Figs 12, 34 vs. Figs 34–42 in this paper).

Variability. Size: length 4.70–5.85 mm. In some paratypes, the process of the dorsal ridge in the mandible only indicated. No other substantial morphological variability observed in the type series.

Etymology. The new species is dedicated to the collector's wife, Lenka Baňářová (Strážnice, Czechia).

Distributional notes on some Bolivian Heteroceridae

Heterocerus meridianus (Pacheco, 1975)

Material examined. 3 spec. (♂ ♀♀): “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” (MMBC).

Distribution. Bolivia, Brazil, Dominican Republic (PACHECO 1975, MASCAGNI & MONTE 2010).

H. similis Grouvelle, 1892

Material examined. 8 spec. (5 ♂♂, 3 ♀♀): “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” (MMBC).

Distribution. Argentina, Bolivia, Brazil, Chile, Paraguay, Uruguay, Venezuela (PACHECO 1964, MASCAGNI & MONTE 2010, SKALICKÝ 2002).

Tropicus bartolozzii Mascagni, 1994

Material examined. 304 spec. (♂♂♀♀): “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” (260 spec. MMBC, 17 spec. UASC, 27 spec. CSU).

Distribution. Ecuador, Paraguay, Peru (MASCAGNI 1994, SKALICKÝ 2002, 2009) Reported from Bolivia (Department of Santa Cruz) for the first time.

***T. tuberculatus* Pacheco, 1964**

Material examined. 363 spec. (♂♂♀♀): “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” (320 spec. MMBC, 19 spec. UASC, 24 spec. CSU).

Distribution. Brazil, Paraguay (PACHECO 1964, SKALICKÝ 2016) Reported from Bolivia (Department of Santa Cruz) for the first time.

***T. manni* Skalický, 2008**

Material examined. 2449 spec. (♂♂♀♀): “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” (2200 spec. MMBC, 106 spec. UASC, 143 spec. CSU).

Distribution. Bolivia, Paraguay (SKALICKÝ 2008, 2016).

***T. squamosus* Pacheco, 1964**

Material examined. 1 spec. (♂): “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” (MMBC).

Distribution. Argentina, Bolivia, Paraguay (PACHECO 1964, MASCAGNI & MONTE 2010).

***T. trifidus* Skalický, 2007**

Material examined. 2827 spec. (♂♂♀♀): “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” (2600 spec. MMBC, 95 spec. UASC, 132 spec. CSU).

Distribution. Ecuador, Peru (SKALICKÝ 2007) Reported from Bolivia (Department of Santa Cruz) for the first time.

***Tropicus* spp. (females)**

Material examined. 1752 spec.: 1728 spec.: “BOL/Nov 2013/01 – light BOLIVIA Santa Cruz dep. Ca 3km SW of Buena Vista, 332m, 20.–21.xi 2013 S17°29'02"W63°40'54" at light, P. Baňář lgt” (MMBC); 24 spec.: “BOL/Nov 2013 – light BOLIVIA COCHABAMBA department Villa Tunari env.; river bank S16°57'57"W65°25'29"; at light 255m, 25.xi.2013; P. Baňář lgt” (MMBC).

Note. samples (size 1.60–2.40 mm): these females most probably belong to *T. eliskae* sp. nov. and *T. tobiassi* sp. nov. The external markings are fairly similar, and it is not possible to distinguish between them.

Acknowledgements

I wish to thank Petr Baňář (Strážnice) and Jiří Kolibáč (Brno) for the loans and gifts of Heteroceridae, their valuable comments, and for reading the manuscript as well as three anonymous reviewers for their valuable comments.

References

- KING, J. G. & LAGO, P. K. 2012: The variegated mud-loving beetles (Coleoptera: Heteroceridae) of Mississippi and Alabama with discussion and keys to the species occurring in the southeastern United States. *Insecta Mundi* **275**: 1–53; <http://digitalcommons.unl.edu/insectamundi/788>
- PACHECO, F. 1964: *Sistematica, filogenia y distribucion de los Heteroceridos de America (Coleoptera: Heteroceridae)*. Monografias del Colegio de Post-Graduados: No. 1. Chapingo, México: Escuela Nacional de Agricultura, Colegio de Post-Graduados, 209 pp.
- PACHECO, F. 1975: Descripción de dos especies sudamericanas de *Efflagitatus* Pacheco (Coleoptera: Heteroceridae) y notas acerca de la distribución de otras tres especies. *Folia Entomológica Mexicana* **31–32**: 117–126.
- MASCAGNI, A. 1994: Descrizione di una nuova specie di *Tropicus* Pacheco dell' Ecuador (Coleoptera: Heteroceridae). *Bollettino della Società entomologica italiana* **126 (2)**: 134–136.
- MASCAGNI, A. & MONTE, C. 2010: Three new species and new records of Heteroceridae from the Neotropical Region (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* **80**: 159–166.
- SKALICKÝ, S. 2002: New species and new records of Heteroceridae from Argentina and Paraguay (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* **72**: 169–182.
- SKALICKÝ, S. 2006: New species of Heteroceridae from Bolivia (Coleoptera: Heteroceridae). *Entomological Problems* **36(2)**: 85–90.
- SKALICKÝ, S. 2007: New species of Heteroceridae from the New World (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* **77**: 171–178.
- SKALICKÝ, S. 2008: *Tropicus manni* n.sp. from Bolivia (Coleoptera: Heteroceridae). *Mitteilungen Internationalen Entomologischen Vereins* **33(1/2)**: 17–25.
- SKALICKÝ, S. 2009: New species and new records of Heteroceridae from Peru (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* **79**: 273–277.
- SKALICKÝ, S. 2015: *Tropicus kolouseki* sp.n. from Bolivia (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* **85**: 239–242.
- SKALICKÝ, S. 2016: New species and new records of *Tropicus* PACHECO, 1964 from Paraguay (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* **86**: 213–222.