

***Tropicus mareki* sp. nov. from Mexico (Insecta: Coleoptera: Heteroceridae)**

Stanislav SKALICKÝ

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

Taxonomy, new species, Coleoptera, Heteroceridae, *Tropicus*, Mexico

Abstract. *Tropicus mareki* sp. nov. from Mexico is described, illustrated and compared with similar species in the present paper. The occurrence of *Heterocerus mexicanus* Sharp, 1882 in the Mexican state Chiapas is confirmed.

INTRODUCTION

Heteroceridae (Coleoptera) with 9-segmented antennae inhabiting the Nearctic and Neotropical Regions belongs to the genus *Tropicus* Pacheco, 1964, which is subdivided into three species groups (*pusillus*, *imperator* and *minutus*) based mainly on the shape of spiculum gastrale and the aedeagus (Pacheco 1964). All species live on sandy and muddy water banks in tunnels a few millimetres under the surface. Currently, 67 species of genus *Tropicus* have been known; the last check list is presented in Skalický (2008). The last checklist of Mexican Heteroceridae (21 species in total) is in Mascagni (2020), their distribution in Mexican states is shown in Skalický (2018); only 4 species of *Tropicus* are currently known to occur in Mexico: *T. balli* Skalický, 2006 known only from the Mexican states Chiapas, Nuevo León and Tamaulipas, (Skalický 2006); *T. bilineatus* (Chevrolat, 1864) known from Costa Rica, Cuba, Nicaragua and from the Mexican state Guerrero (Mascagni & Monte 2010); *T. hevelorum* Skalický, 2007 known only from the Mexican states Oaxaca, Sonora and Tamaulipas (Skalický 2007) and *T. pusillus* (Say, 1832) widespread from the Canadian border to the southern US, Costa Rica, Cuba, Honduras, Jamaica, Panama and from the Mexican states Sinaloa, Tamaulipas, Tabasco, Morelos, Nayarit, Nuevo León, Oaxaca, San Luis Potosí, Sonora and Veracruz (King & Lago 2012, Pacheco 1961, 1964).

During the study of a small group of Heteroceridae that I collected at one Mexican locality, I identified an unidentifiable female of *Tropicus* sp. (28 spec.), 4 specimens of *Heterocerus mexicanus* Sharp, 1882 (1 ♂, 3 ♀♀), and four specimens of *T. mareki* sp. nov. (2 ♂♂, 2 ♀♀) as a new to science. This species is described in the present paper.

MATERIAL AND METHODS

Specimens were studied using a Meiji techno RZ stereomicroscope with coaxial vertical illuminator. Photographs of habitus, spiculum gastrale and aedeagus were taken with a photo attachment with 1.9 and 3.3 magnification objective lens in conjunction with Canon EOS 70D camera. Pictures are assembled using Helicon Focus 5.3 software, then traced and repainted

in Corel draft 9 Software. Genitalia of the holotype were mounted in Canada balsam. An iPhone 5s was used to determine GPS coordinates.

Separate labels are indicated by double slashes, locality data are cited verbatim in “quotation marks”. Author’s remarks are given in square brackets.

All specimens are deposited in author’s collection.

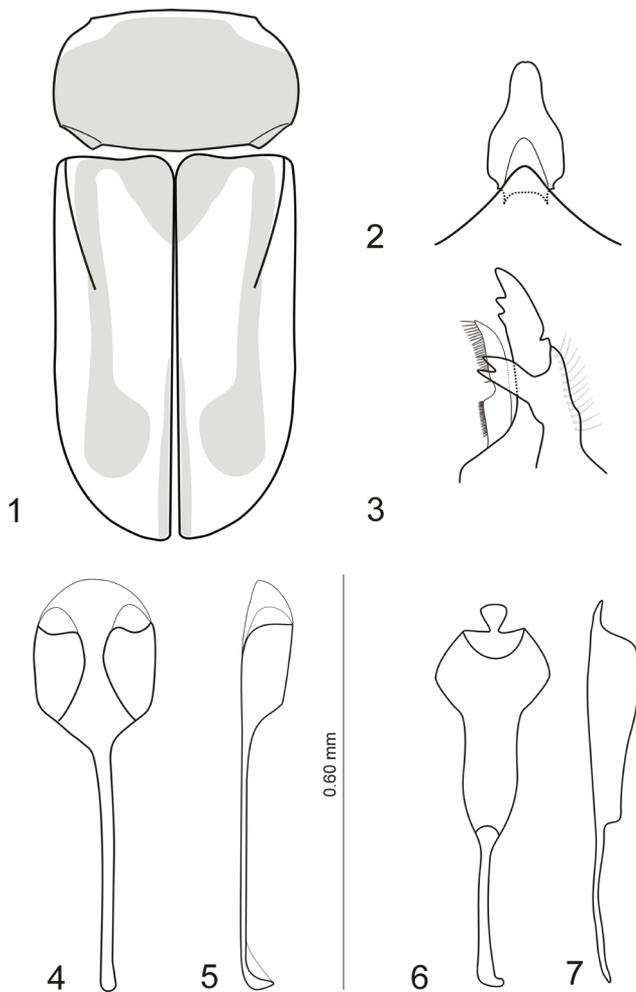
RESULTS

Tropicus mareki sp. nov.

(Figs. 1-7)

Type material. Holotype (♂): “MEXICO Chiapas, Parque Natural Montes Azules 17°19’49’’N 91°55’37’’W , near Ocosingo Municipality 9.xi.2019, S. Skalický lgt.”, the second red label is: “Holotype *Tropicus mareki* Skalický det. Skalický 2020” [red label]. Allotype (♀): the same locality data as holotype, the second red label is: “Allotype *Tropicus mareki* Skalický det. Skalický 2020” [red label]. Paratypes: (1 ♂, 1 ♀): the same locality data as holotype, the second red label is: “Paratype *Tropicus mareki* Skalický det. Skalický 2020. Male paratype is partly damaged.

Description. Holotype ♂: Total length 2.85 mm (to apex of labrum); elytra 1.55 mm long, 0.95 mm wide across shoulders. Ground colour pale brown, elytra with darker diffuse spots situated as in Fig. 1. Pronotum dark brown with pale brown anterior margin. Head black, to brown. Labrum black, apex pale brown. Legs pale brown, protibia dark brown laterally. Ventral surface brown. Body lustrous. Labrum (Fig. 2), visible part twice as wide as long, anterior angles softly serrate in median portion, surface densely granulate, setae dense, semierect, yellowish, intermixed with long erect ones. Mandibles (Fig. 3) slightly bent, bluntly dentate, dorsal subapical tooth short, rounded. Process of the dorsal lobe long, apex deeply emarginate, anterior margin with series of long spines. Prostheca with indicated prosternal notch, series of teeth at interior side sparse and long in apex of prostheca, dense and short in basal part. Labial palpi with surface slightly roughened. Clypeus pointed, triangular, finely granulate, with dense, short, pale setae. Antennae oblong, serrate, 9-segmented, scape triangular with long setae. Head finely punctate, punctures separated by approximately more than one diameter, setae dense, short with intermixed long erect setae above eyes. Pronotum 1.75 times wider than long, slightly wider than base of elytra; pronotal base completely rimmed; lateral margins slightly tapered anteriorly, anterolateral angles acute, posterolateral angles rounded. Surface of pronotum finely regularly granulate without longer punctures; pubescence yellowish, concentrated near the anterior margin, several long setae project laterally near the anterior angles. Scutellum pointed, triangular, glabrous, its margins obscured by fine pubescence along its borders. Elytra oblong, without longitudinal furrows; humeral depressions extending obliquely almost to quarter of elytra; scutellar depressions only indicated; surface very finely granulate with intermixed bigger punctures; pubescence of elytra squamiform intermixed with longer erect setae. Epipleural ridge absent. Metaventricle without post-mesocoxal ridge. Mesoventrite with small spines in front of each mesocoxa. Post-metacoxal line absent. Stridulatory arch marked with striae. Ventral surface very finely granulate, setae sparse. Protibia with 9 stout spines, meso- and metatibia with uncertain number of thin spines. Spiculum gastrale 0.60 mm long; Y-shaped, as in Figs. 4-5 well sclerotized. Aedeagus simple, 0.55 mm long, shape as in Figs. 6-7.



Figs. 1-7: *Tropicus mareki* sp. nov., holotype: 1- pronotum and elytra, dorsal view; 2- labrum, dorsal view; 3- prostheca and mandible, dorsal view; 4- spiculum gastrale, dorsal view; 5- the same, lateral view; 6- aedeagus, dorsal view; 7- the same, lateral view. Figs. 1-3 not to scale.

Female. Allotype ♀: Total length 2.50 mm (to apex of labrum); elytra 1.55 mm long, 0.95 mm wide across shoulders. Pronotum as wide as base of elytra. Mandibles without process of the dorsal ridge. Externally similar to male.

Differential diagnosis. Due to the shape of its aedeagus and spiculum gastrale, *T. mareki* sp. nov. belongs to the *T. pusillus* group sensu Pacheco (1964) and it is probably related to *T. triangulus* Skalický, 2002 from Paraguay (Alto Paraguay). It differs from the latter in the elytral pattern, total length (2.40 mm in *T. triangulus*), shape of clypeus and in morphology of male genitalia (compare Figs. 48-53 in Skalický (2002) and Figs. 1-7 in this paper).



Fig. 8: Type locality of *Tropicus mareki* sp. nov. Mexico, department Chiapas, Parque Natural Montes Azules. (photo by author).

Etymology. The new species is named in honour of a prominent entomologist (Nitidulidae, Coleoptera) Oldřich Marek † 1986 (Žamberk, Czech Republic). My study in Heteroceridae began 45 years ago thanks to his gift of several boxes with specimens of this family.

Distribution. Mexico, known only from the type locality.

ACKNOWLEDGEMENTS. I wish to express my thanks to Miloslav Rakovič (Dobřichovice, Czech Republic) for valuable comments and improving the English text.

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* 0275: 1-53.
- MASCAGNI A. & MONTE C. 2010: Three new species and new records of Heteroceridae from the Neotropical Region (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* 80: 159-166.
- MASCAGNI A. 2020: Two new species of *Heterocerus* Fabricius, 1792 from Mexico (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* 90: 253-256.
- PACHECO F. 1961: Estudio preliminar del la taxonomia de los Heteroceridos de Mexico. (Coleoptera, Heteroceridae). *Folia Entomologica Mexicana* 1: 1-17.

- PACHECO F. 1964: *Sistemática, filogenia y distribución de los Heteroceridos de América (Coleoptera: Heteroceridae)*. Monografías del Colegio de Post-Graduados: No. 1. Chapingo, México: Escuela Nacional de Agricultura, Colegio de Post-Graduados, 209 pp.
- SKALICKÝ S. 2002: New species and new records of Heteroceridae from Argentina and Paraguay (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* 72: 169-182.
- SKALICKÝ S. 2006: Description of six new species of genus *Tropicus* Pacheco 1964 (Coleoptera: Heteroceridae). *Entomologica Basiliensia* 28: 73-82.
- SKALICKÝ S. 2007: New species of Heteroceridae from the New World (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* 77: 171-178.
- SKALICKÝ S. 2008: New species of *Tropicus* Pacheco, 1964 from Paraguay and Ecuador (Coleoptera: Heteroceridae). *Entomologica Basiliensia* 30: 27-34.
- SKALICKÝ S. 2018: *Heterocerus evzeni* nov. sp. from Mexico (Coleoptera, Heteroceridae). *Linzer Biologische Beiträge* 50(2): 1657-1660.

Received: 1.11.2020
Accepted: 30.11.2020
Printed: 31.3.2021

