

Description of a New Species of Globicornis from China (Coleoptera: Dermestidae: Megatominae) with Comparison to Related Species

Authors: Háva, Jiří, and Kadej, Marcin

Source: Florida Entomologist, 97(3) : 1081-1084

Published By: Florida Entomological Society

URL: <https://doi.org/10.1653/024.097.0312>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

DESCRIPTION OF A NEW SPECIES OF *GLOBICORNIS* FROM CHINA (COLEOPTERA: DERMESTIDAE: MEGATOMINAE) WITH COMPARISON TO RELATED SPECIES

JIRÍ HÁVA¹ AND MARCIN KADEJ^{2,*}

¹Department of Forest Protection and Entomology, Faculty of Forestry and Wood Sciences,
Czech University of Life Sciences, Kamýcká 1176, CZ-165 21, Prague 6 - Suchbát, Czech Republic

²Department of Invertebrate Biology, Evolution and Conservation, Institute of Environmental Biology,
Faculty of Biological Science, University of Wrocław, Przybyszewskiego 63/77, PL-51-148 Wrocław, Poland

*Corresponding author; E-mail: marcin.kadej@uni.wroc.pl

ABSTRACT

Globicornis (Pseudomesalia) emeii Háva & Kadej, **sp. nov.** is described from China. The habitus, antenna and genitalia are illustrated and compared with those of related species.

Key Words: taxonomy, new species, Coleoptera, Dermestidae, *Globicornis*, China

RESUMEN

Se describe *Globicornis (Pseudomesalia) emeii* Háva y Kadej, **sp. nov.** de China. Se ilustran y comparan el habitus, la antena y la genitalia con especies cercanas.

Palabras Clave: taxonomía, nueva especie, Coleoptera, Dermestidae, *Globicornis*, China

Genus *Globicornis* Latreille in Cuvier, 1829 is one of the 62 genera established in the skin beetle family (Dermestidae) so far. It has been divided into five subgenera so far: *Dearthrur* LeConte, 1861; *Elania* Mulsant and Rey, 1868; *Globicornis* Latreille in Cuvier, 1829; *Hadrotoma* Erichson, 1848; and *Pseudomesalia* Ganglbauer in Bodemeyer, 1900 (Kadej & Jaroszewicz 2013, Háva 2007, 2014). Morphological characteristics of adults that distinguish *Globicornis* from related genera were given by Peacock (1993) and Herrmann et al. (2011). The same has been provided by Beal (1967), Peacock (1993) and Kadej & Jaroszewicz (2013) for larval stages. In this paper, a new species of *Globicornis* from China is described.

MATERIALS AND METHODS

Morphological structures were boiled for 3–10 minutes in 10% KOH, and placed in distilled water for about 1 hour to clean and soften the cuticle. For taking the photos all structures were placed on drop of glycerin and then deposited in micro vials filled with glycerin. Morphological structures were examined with a Nikon Eclipse E 600® (Tokyo, Japan) phase contrast microscope, and a Nikon SMZ–800® (Tokyo, Japan) binocular microscope. Photographs were taken with a Canon 500D® (Taiwan) and a Nikon D5100® (To-

kyo, Japan) camera under a Nikon Eclipse 80i® (Tokyo, Japan) and/or a Nikon SMZ–800® (Tokyo, Japan). Image stacks were processed using Combine ZM® (Hadley 2010).

The terminology used in this paper follows Herrmann et al. (2011). The distribution and classification used follow the world catalogues of Háva (2007).

The following abbreviations were used in this study:

HNMB Naturhistorisches Museum, Basel, Switzerland.

JHAC Private Entomological Laboratory & Collection, Jiří Háva, Prague-west, Czech Republic.

The types are labelled in red, with a printed label bearing the text as follows: “HOLOTYPE [ALLOTYPE/PARATYPE respectively] *Globicornis (Pseudomesalia) emeii* **sp. n.** J. Háva & M. Kadej det. 2014”.

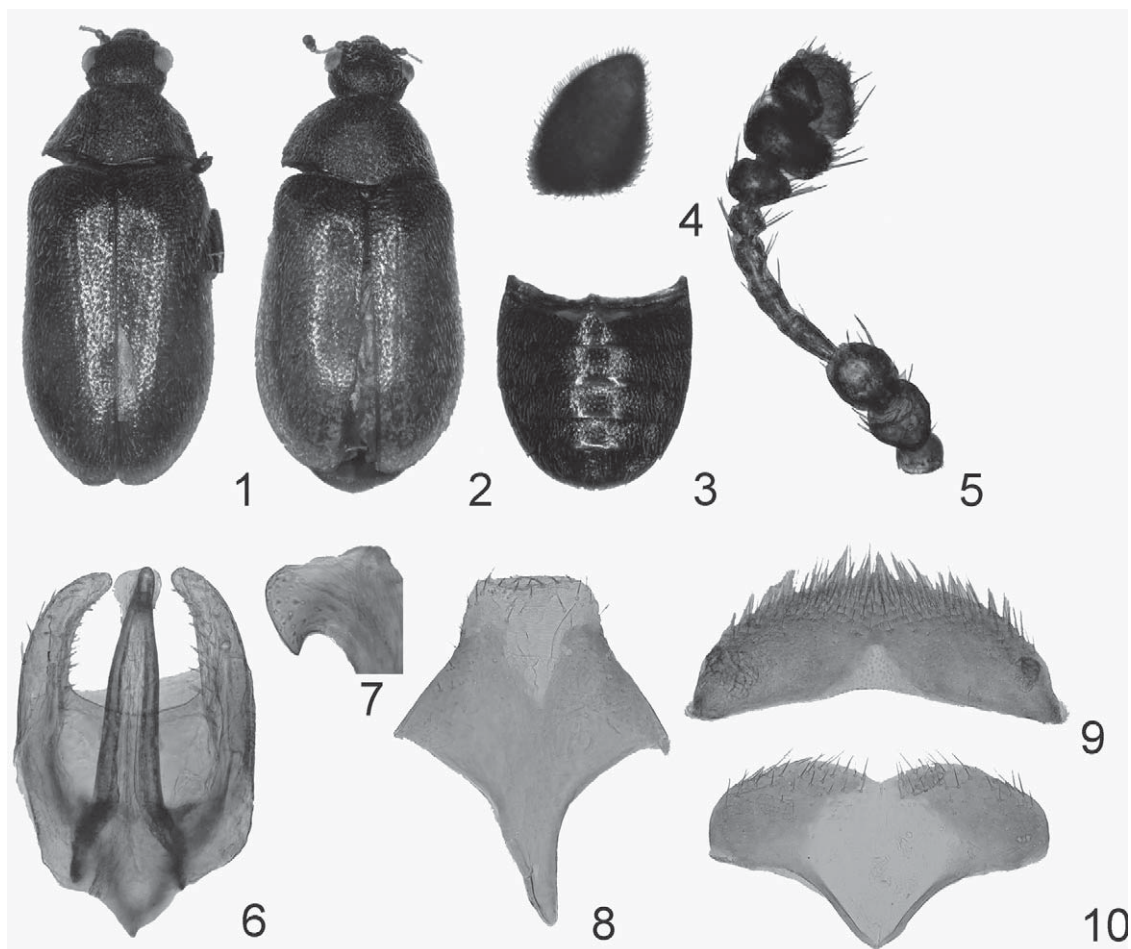
RESULTS

Subfamily Megatominae Leach, 1815

Tribe Megatomini Leach, 1815

Genus *Globicornis* Latreille in Cuvier, 1829

Globicornis (Pseudomesalia) emeii **sp. nov.** (Figs 1-10)



Figs. 1-10. *Globicornis (Pseudomesalia) emei* **sp. nov.** 1, habitus (dorsal, holotype); 2, habitus (dorsal, allotype); 3, abdominal sternites I-V (holotype); 4, last antennomeres of male (holotype); 5, left antenna of female (allotype); 6, male genitalia (holotype); 7, apex of penis (median lobe, lateral); 8, abdominal sternite IX; 9, abdominal sternite VII; 10, abdominal sternite VIII.

Type Material

Holotype (male): China, Sichuan pr., Emei Mt., 500 m, 4-20.v.1989 Vít Kubáň leg., (HNMB) [both antenna broken, both antennal clubs incomplete and together with three legs glued on the label; tarsi broken]. Allotype: (female): the same data as holotype, (HNMB) [tarsi broken, antennal club of right antenna glued on the label—the rest of the antenna lost]; Paratypes: (1 male [both antenna broken, antennal clubs incomplete and together with three legs glued on the label; tarsi broken], 3 females [tarsi broken, antennal club lost]): China, Sichuan, Emei Mt., 600-1050 m, 5.19.v.1989, Lad. Bocák lgt., (2 females HNMB, male and female JHAC).

Description

Body convex and elongated (nearly 2.5 times as long as wide); measurements: body length

from anterior margin of pronotum to apex of elytron 2.25-2.85 mm, median pronotal length 0.5-0.6 mm, maximum width of pronotum 1.15 mm, maximum width of elytron 1.25 mm, median length of visible abdominal sternites I-V 1.25 mm, maximum width of visible abdominal sternites I-V 11.25 mm. Dorsal and ventral pubescent recumbent, entirely light golden brown (in transparent light seems to be grayish, Figs. 1-3). Head visible from above; integument of head is dark-brown (almost black); densely punctured (Figs. 1 and 2). Eyes are tan/light-brown, large, and convex without internal emargination. Ratio of length of antennal fossa to length of lateral margin of pronotum (hypomeron) is 0.5:1.0. Median ocellus is present. Antenna has 9 antennomeres (Fig. 5). Antennal club with three antennomeres; shorter than the flagellum (Fig. 5). Terminal antennomere in male elongated and subtriangular (Fig. 4), while in female flat-

TABLE 1. COMPARISON BETWEEN SOME OF *GLOBICORNIS* SPECIES.

Characteristics\species	<i>Globicornis (P.) bodemeyeri</i> (Ganglbauer in Bodemeyer, 1900)	<i>Globicornis (P.) emeii</i> sp. nov.	<i>Globicornis (P.) maculatus</i> Háva, 2004	<i>Globicornis (P.) quadriguttatus</i> (Reitter, 1878)
Morphology of antennae	All antennomeres dark brown or black; terminal antennomere oval, incised and flat	antennomeres I-VI brown, VII-IX brownish-black; terminal antennomere subtriangular and convex	All antennomeres light brown; terminal antennomere oval and flat	All antennomeres dark brown or black; terminal antennomere oval and flat
Dorsal patterns	Bicolorous—on brown elytra four orange-reddish spots (two under the hemeral calli and two above the apices) present	Unicolours – elytra entirely brown	Bicolours – on dark brown elytra two orange fasciae connected together along the suture present	Bicolorous or unicolorous—on dark brown (or black) elytra four orange-reddish spots (two under the hemeral calli and two above the apices) present, rarely elytra only with two apical spots, or entirely black or dark brown
Distribution	Turkey; Iran; Syria	China: Sichuan	Afghanistan; Iran	Armenia; Azerbaijan; Turkey; Egypt; Afghanistan;; Iran; Iraq; Kazakhstan; Kyrgyzstan; Russia; Syria; Tadzhikistan;; Turkmenistan; Uzbekistan

tened (Fig. 5). Antennomeres I-VI brown, while antennomeres VII-IX brownish-black (Fig. 5); all antennomeres are covered with erect brown hairs. Pronotum dark-brown (almost black) with punctuation deeper than those on head. Pronotal dorsal rim of antennal fossa of male slightly visible from above, while in female is less visible. Scutellum triangular and small. Elytra brown, only anterior parts (above humeri calli) and margins along suture are dark-brown; entire area is sparsely punctured and covered by tan light brown pubescence (Figs. 1 and 2). Sternites I-V with surfaces of integument dark-brown, sparsely punctured, and covered by light brown (tan) pubescence (Fig. 3). Visible sternite I without two oblique striae on each side extending from anterior margin of ventrite. Legs brown; trochanters, coxae, and femora are dark-brown; tibiae and tarsi are brighter than other parts. Dorsal surface is covered with light golden brown pubescence. Tibiae without tibial teeth on dorsal margin. Tarsus has two slightly curved claws. Male genitalia symmetrical (Fig. 6). Ratio of length to width like 1.5:1.0. Penis (median lobe) reaching apices of parameres, distinctly extending beyond bridge, apex of penis in lateral view appears hook-like, acute, and strongly curved (Fig. 7); bridge of parameres slightly arcuate to phallobase, poorly sclerotized; parameres has few scattered, short, erect setae on inner subapical parts; apex of parameres is slightly curved inward (Fig. 6). Abdominal sternite IX appears like a trapeze with distinct extension at half of total length; few prominent setae are located on apical margin and on lateral margins to half/two-third their length, a few setae are also present on central part of flat area below apex (Fig. 8). Abdominal sternites VII and VIII as in Figs. 9 and 10.

Differential Diagnosis

The new species belongs to the subgenus *Pseudomesalia* because of presence of 9-segmented antennae and bicolorous dorsal surfaces. It differs from the other known species of *Pseudomesalia* by the characteristics given in Table 1 below.

The new species closely resembles unicolorous species *G. (G.) nigripes*, but differs from it by the number of antennomeres: in *G. (P.) emeii* sp. nov. antenna with 9 antennomeres, whilst in *G. (G.) nigripes* with 10 antennomeres.

Etymology

Named after the Emei Mt. (Sichuan Province), the place where the species was discovered.

Distribution

China: Sichuan Province.

CONCLUSIONS

The new species has been classified in subgenus *Pseudomesalia* which is placed between such subgenera as: *Globicornis* s. str. (18 species), *Hadrotoma* (seven species), *Elania* (two species) and *Socotrarnis* (with one species). In spite of the fact that most *Globicornis* species have a primarily Palaearctic distribution, so far no *Globicornis* species has been recorded from China, thus the newly described *G. emeii* is the first. It is more than likely that in the near future (parallel with the intensification of taxonomical studies) another new species will be found and described.

ACKNOWLEDGMENTS

We are grateful to Michel Brancucci (NHMB) for loaning the interesting material. Sincere thanks to anonymous reviewers for a critical reading of this paper. This research was supported by the Internal Grant Agency (IGA n.20124364), Faculty of Forestry and Wood Sciences, Czech University of Life Sciences Prague and Department of Invertebrate Biology, Evolution and Conservation, Institute of Environmental Biology, Faculty of Biological Science, University of Wrocław (project no. 1076/S/IBS/2014).

REFERENCES CITED

- BEAL, R. S. 1967. A Revisionary Study of the North American Dermestid Beetles Formerly Included in the Genus *Perimegatoma* (Coleoptera). Misc. Publ. Entomol. Americana 5: 281-312.
- HADLEY, A. 2010. Combine ZM Software, new version. A. Hadley, Derby, UK. Available from <http://www.hadleyweb.pwp.blueyonder.co.uk/CZP/News.htm>. Accessed 14-1-2013.
- HÁVA, J. 2007. Dermestidae pp. 57, 299-320 In I. Löbl and A. Smetana [eds.], Catalogue of Palaearctic Coleoptera. Vol. 4. Elateroidea - Derodontoidea - Bostrichoidea - Lymexyloidea - Cleroidea - Cucujoidea. Stenstrup: Apollo Books, 935 pp.
- HÁVA, J. 2014. Dermestidae, Derodontidae, Jacobsoniidae, Nosodendridae In P. Zahradník and J. Háva [eds.], Catalogue of the world genera and subgenera of the superfamilies Derodontidae and Bostrichoidea (Coleoptera: Derodontiformia, Bostrichiformia). Zootaxa 3754: 301-352.
- HERRMANN, A., HÁVA, J., AND KADEJ, M. 2011. A new species of *Globicornis* Latreille in Cuvier (Coleoptera: Dermestidae: Megatominae) from Switzerland. Studies and reports of District Museum Prague-East Taxon. Series 7(1-2): 141-145.
- KADEJ, M., AND JAROSZEWCZ, S. 2013. Detailed morphological description of the mature larva of *Globicornis corticalis* (Eichhoff, 1863) (Dermestidae: Megatominae) with comparisons to related species. Zootaxa 3686(5): 556-564.
- PEACOCK, E. R. 1993. Adults and larvae of hide, larder and carpet beetles and their relatives (Coleoptera: Dermestidae) and of derodontid beetles (Coleoptera: Derodontidae). Handbooks for the Identification of British Insects 5: 1-144.