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Nemozoma gymnosternalis sp. nov., a new anomalous species of Trogossitidae from Brazil

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Abstract

Nemozoma gymnosternalis **sp. nov.**, a new member of the tribe Trogossitini (Trogossitidae) from southeastern Brazil is described. The species is distinct in its morphological characters, namely the shortened elytra, abdominal tergites enwound with projected folds of ventrites, and modified structure of extremely shortened ovipositor. Léveillé's assignment of *Airora quadrimaculatus* Léveillé, 1894 to the genus *Corticotomus* Sharp, 1891 is confirmed. The systematics of brachelytric species of *Nemozoma* Latreille, 1804 is briefly discussed. The presence of two projecting cranial horns, a structure that occurs in several unrelated beetle groups with a similar biology, is also mentioned.

Key words: Coleoptera, Cleroidea, Trogossitidae, *Nemozoma*, *Corticotomus*, new species, Brazil

Introduction

Nemozoma Latreille is a widely distributed genus with 23 described species, most of which occur from southern Brazil to southwestern Canada though six species, including the type of the genus, *N. elongatum* Linnaeus, are distributed in the western Palaearctic, i.e., Europe, Caucasus, Near East, and north Africa. The biology of some European species is relatively well known because they are often associated with economically important Scolytinae (e.g., Baier 1994, Dippel 1996, Mamaev 1976, Nikitsky 1974, Wigger 1996). Adults live together with larvae under the bark of deciduous and coniferous trees and shrubs where they hunt, especially for bark beetles.
Since its description, *Nemozoma* has always been classified within Trogossitidae. Due to its characteristic cylindrical habitus *Nemozoma* was often treated, together with genera of the present Egoliini, as a separate higher taxon (i.e., Nemozomini within Trogossitinae or Nemosomatinae within Trogossitidae) within classic works (Reitter 1876, Léveillé 1910). Recently, it has been classified within the tribe Trogossitini (Kolibáč 2006, 2008). Morphology of some species and synonymy within the genus has been treated by Barron (1971) and Kolibáč (2005). A list of valid species and their synonyms can be found in Hallan (2007–2012) while a review of the genus including a key to Trogossitini and a catalogue of species are provided by Kolibáč (2013).

A new species of *Nemozoma* from Brazil with several unusual morphological characters is described herein.

Material and methods

Separated body parts (head, abdomen and front legs) of softened beetles were briefly boiled in 10% KOH solution. Mouth parts were dissected from the head capsule in a drop of glycerol. Female copulatory organs were stained with Congo red. After examination, all dissected body parts (legs, male and female copulatory organs, wings, mouth parts, abdominal segments) were mounted in a drop of dimethyl hydantoin formaldehyde on a card and pinned below the specimen.

Ink drawings were made using a camera lucida and a compound microscope (Olympus BX41). Detailed photographs of small, semi-transparent body parts were also taken with the Olympus BX41 fitted with an Olympus C5060 digital camera. Other photographs of specimens were taken with the Leica Z16Apo. Body parts were

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Another interesting feature of *Nemozoma gymnosternalis* **sp. nov.**, as well as all other species of *Nemozoma*, is the head with two projecting horns. Such structures are also found in some unrelated groups of predaceous beetles hunting in galleries of small wood borers, namely scolytines, bostrichids or ptinids. Examples of such species are in Figs 5D–F: *Niponius osorioceps* Lewis (Histeridae), *Tillodenops plagiatus* Fairmaire (Cleridae), *Thione championi* Sharp (Monotomidae). The horns may be a functional adaptation for moving in narrow galleries often filled with a powder but a functional morphology of the structure has perhaps been not studied yet.

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References

Baier, P. (1994) Untersuchungen zur abundanzdynamischen Relevanz der Beifange von Nemosoma elongatum (L.) (Col., Ostomidae) in Chalcoprax bekoderten Flugbarrierefallen für Pityogenes chalcographus (L.) (Col., Scolytidae). *Journal of Applied Entomology*, 117 (1), 51–57.
http://dx.doi.org/10.1111/j.1439-0418.1994.tb00706.x

Barron, J.R. (1971) A revision of the Trogositidae of America North of Mexico (Coleoptera: Cleroidea). *Memoirs of the Entomological Society of Canada*, 75, 1–143.
http://dx.doi.org/10.4039/entm10375fv

Dajoz, R. (1991) Une espèce nouvelle de Cylidrella de Californie. Son intérêt écologique et biogéographique. *Nouvelle Revue Entomologique* (n.s.), 7, 245–250.

Dippel, C. (1996) Investigations on the life history of Nemosoma elongatum L. (Col., Ostomidae), a bark beetle predator. *Journal of Applied Entomology*, 120 (7), 391–395.
http://dx.doi.org/10.1111/j.1439-0418.1996.tb01626.x

Flechtmann, C.A.H. & Costa, V.A. (2012) *Pseudochramesus acuteclavatus (Hagedorn), a hitherto little known Scolytinae (Curculionidae) from Brazil*, 1 pp. *In*: Congresso Brasileiro de Entomologia, 24, 2012, Curitiba. Anais Curitiba: Sociedade Brasileira de Entomologia. Available from: http://www.cbe2012.com.br (accessed 4 June 2014)

Hallan, J. (2007–2012) *Biology Catalogue.* Texas A&M University. (Last updated: March 24, 2008. Available from: http://insects.tamu.edu/research/collection/hallan/test/Arthropoda/Insects/Coleoptera/Family/Trogossitidae.txt (accessed 1 April 2014)

Kolibáč, J. (2005) A review of the Trogositidae. Part 1: Morphology of the genera (Coleoptera, Cleroidea). *Entomologica Basiliensia et Collectionis Frey*, 27, 39–159.

Kolibáč, J. (2006) A review of the Trogossitidae. Part 2: Larval morphology, phylogeny and taxonomy (Coleoptera, Cleroidea). *Entomologica Basiliensia et Collectionis Frey*, 28, 105–153.

Kolibáč, J. (2008) Morphology, taxonomy and phylogeny of Phloiophilus edwardsi Stephens, 1830 (Coleoptera, Cleroidea). *Entomologica Basiliensia et Collectionis Frey*, 30, 105–133.

Kolibáč, J. (2013) Trogossitidae: A review of the beetle family, with a catalogue and keys. *ZooKeys*, 366, (special issue), 1–194.
http://dx.doi.org/10.3897/zookeys.366.6172

Latreille, P.A. (1804) *Histoire naturelle, générale et particulière des crustacés et des insectes. Tome onzième*. F. Dufart, Paris, 424 pp.

Léveillé, A. (1894) Les descriptions de dix especès nouvelles de Coleoptères de la famille de Temnochilides. *Bulletin de la Société entomologique de France*, 1894, cxliii–cxlix.

Léveillé, A. (1910) *Temnochilidae. In*: Schenkling, S. (Ed.), *Coleopterorum Catalogus 11*. W. Junk, Berlin, 40 pp.

Mamaev, B.M. (1976) Review of larvae of the family Trogossitidae (Coleoptera) in the fauna of the USSR. *Zoologicheskiy Zhurnal*, 55, 1648–1658.

Nikitsky, N.B. (1974) Morphology of larvae and mode of life of Nemosoma (Coleoptera, Trogossitidae), predator of bark beetles in the Nort-west Caucasus. *Zoologicheskiy Zhurnal*, 53, 563–566.

Reitter, E. (1876) Systematische Eintheilung der Trogositidae. (Familia Coleopterorum). *Verhandlungen des naturforschenden Vereines in Brünn*, 14, 3–66.

Schaeffer, C.F.A. (1918) On some genera and species of the family Ostomidae. *Journal of the New York entomological Society*,

26, 190–201.
Sharp, D. (1891) *Fam. Nitidulidae, Trogositidae, Synteliidae. In: Godman FD, Salvin O (Eds) Biologica Centrali-Americana. Zoologica. Insects. Coleoptera. Vol. II. Part 1.* Dulau and Co., London, xii + 717 + 1 pp., 19 pls.
Wickham, H.F. (1916) A new brachyelytrous trogositid beetle from Colorado. *Psyche*, 23, 146–148. http://dx.doi.org/10.1155/1916/35697
Wigger, H. (1996) Population-dynamics and predator-prey-interaction between the predator Nemosoma elongatum and the bark beetle species Pityogenes chalcographus (Coleoptera: Ostomidae, Scolytidae). Populationsdynamik und Rauber-Beute-Beziehung zwischen dem Borkenkäfer-Rauber Nemosoma elongatum und dem Kupferstecher Pityogenes chalcographus (Coleoptera: Ostomidae, Scolytidae). *Entomologia Generalis*, 21 (1–2), 55–67. http://dx.doi.org/10.1127/entom.gen/21/1996/55