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12-22-2017

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**FORGOTTEN *AULACOTHORAX* BOHEMAN, 1858, A SENIOR SYNONYM OF  
*ORTHALTICA* CROTCH, 1873 (COLEOPTERA: CHRYSOMELIDAE: GALERUCINAE:  
ALTICINI)**

JAN BEZDĚK

Mendel University, Department of Zoology  
Zemědělská 1, 61300 Brno, CZECH REPUBLIC  
bezdek@mendelu.cz

AND

ALEXANDER S. KONSTANTINOV

Systematic Entomology Laboratory, ARS, USDA  
c/o National Museum of Natural History, Smithsonian Institution  
P.O. Box 37012, MRC-168  
Washington, DC 20013-7012, USA  
alex.konstantinov@ars.usda.gov

**ABSTRACT**

Discovery of the holotype of *Aulacothorax exilis* Boheman, 1858, originally described in Scydmaeninae (Staphylinidae), in the collections of Naturhistoriska Riksmuseet Stockholm in Sweden revealed that this species is actually a leaf beetle (Chrysomelidae) belonging to the genus until now known as *Orthaltica* Crotch, 1873. Because *Aulacothorax* has been available since 1858 and *Orthaltica* only since 1873, we here synonymize *Orthaltica* with *Aulacothorax*. *Aulacothorax exilis* is redescribed and illustrated.

Key Words: taxonomy, senior synonym, leaf beetles, Boheman, Tahiti

DOI.org/10.1649/0010-065X-71.4.791

Zoobank.org/urn:lsid:zoobank.org:pub:40526675-8A33-4AD6-92C4-590EABFA2D03

The Swedish frigate “Eugenie” conducted a voyage around the world in the years 1851–1853. Several naturalists on board accumulated large collections of animals and plants from various localities, and the scientific results of the voyage were published in the three-volume publication “Kongliga Svenska Fregatten Eugenie's Resa omkring jorden under befäl af C. A. Virgin, åren 1851–1853” devoted to botany, zoology, and physics (Persson 1974). All of the insects were included in the first part of volume 2, published serially (Virgin 1858–1868). The taxonomy of the beetles was studied by C. H. Boheman (1858, 1859), resulting in the description of many new species. For a history of the voyage, itinerary, and comments on entomological results, see Persson (1974).

Among the new taxa, Boheman (1858) described a new genus and species that he called *Aulacothorax exilis* from Tahiti and placed it in Scydmaenidae (now Staphylinidae: Scydmaeninae). The description is accompanied by a relatively clear illustration (Fig. 4) of the beetle habitus. Sharp (1874), while looking at the illustration, recognized that this beetle did not belong to Scydmaeninae, but he did not transfer it. He suggested that it may be

placed in either Anthribidae, Bruchidae (now Chrysomelidae: Bruchinae), or Urodontidae (now Anthribidae: Urodontinae). Since then, *A. exilis* has not been treated in the Scydmaeninae literature nor included in any other beetle family and, therefore, disappeared from the entomological literature altogether.

While studying Chrysomelidae in Naturhistoriska Riksmuseet, Stockholm, Jan Bezděk discovered the type specimen of *A. exilis* in a box with unsorted Chrysomelidae. Because there is no evidence in the original description that Boheman had additional specimens, we treat this specimen as the holotype. We conclude that it is congeneric with the alticine genus *Orthaltica* Crotch, 1873, and because *Aulacothorax* is the oldest available name we here replace *Orthaltica* with it.

**MATERIAL AND METHODS**

While redescribing *A. exilis*, we used the same general format and character set as in Prathapan *et al.* (2013). We refrained from dissecting the only known specimen (female) of this species since it appears fragile. The specimen is also covered with

glue, so the ventral side of the beetle body and parts of the legs were not available for observation. Descriptive terminology follows Konstantinov (1998).

Observations and measurements were made with a Zeiss Stemi SV11 Apo microscope. Digital photographs were taken with an Axio Zoom V16 microscope with a AxioCam HRC digital camera attached to it.

### ***Aulacothorax* Boheman, 1858**

(Figs. 1–4)

*Aulacothorax* Boheman 1858: 35 (type species *Aulacothorax exilis* Boheman, 1858, by monotypy).

*Orthaltica* Crotch 1873: 69 (type species *Crioceris copalina* Fabricius, 1801, by subsequent designation of Scherer 1974). **New synonymy.**

*Leptotrix* Horn 1889: 249 [not Menge 1868 (Arachnida)] (type species *Haltica recticollis* J. L. LeConte, 1861, by monotypy). **New synonymy.**

*Micrantipha* Blackburn 1896: 88 (*Micrantipha paradoxa* Blackburn, 1896, by monotypy). Reid 1990: 205 (synonymy). **New synonymy.**

*Livolia* Jacoby 1903: 15 (type species *Livolia sulcicollis* Jacoby, 1903, by subsequent designation of Scherer 1974: 66 (synonymy). **New synonymy.**

*Leptotrichaltica* Heikertinger 1925: 68 (replacement name for *Leptotrix* Horn, 1889). Scherer 1974: 66 (synonymy). **New synonymy.**

*Micrepitrix* Laboissière 1933: 205 (type species *Micrepitrix coomani* Laboissière, 1933, by monotypy). Scherer 1971: 10 (synonymy). **New synonymy.**

*Serraticollis* B. White 1942: 17 [type species *Serraticollis rhois* B. White, 1942 (= *Orthaltica recticollis* J. L. LeConte, 1861), by original designation]. Arnett 1963: 938 (as synonymy). **New synonymy.**

*Epithrella* Medvedev 1993: 17 (type species *Epithrella philippina* Medvedev, 1993, by original designation). Konstantinov and Prathapan 2008: 406 (synonymy). **New synonymy.**

*Livoliella* Medvedev 1997: 100 (type species *Livoliella luzonica* Medvedev, 1997, by original designation). Konstantinov and Prathapan 2008: 406 (synonymy). **New synonymy.**

### ***Aulacothorax exilis* Boheman, 1858**

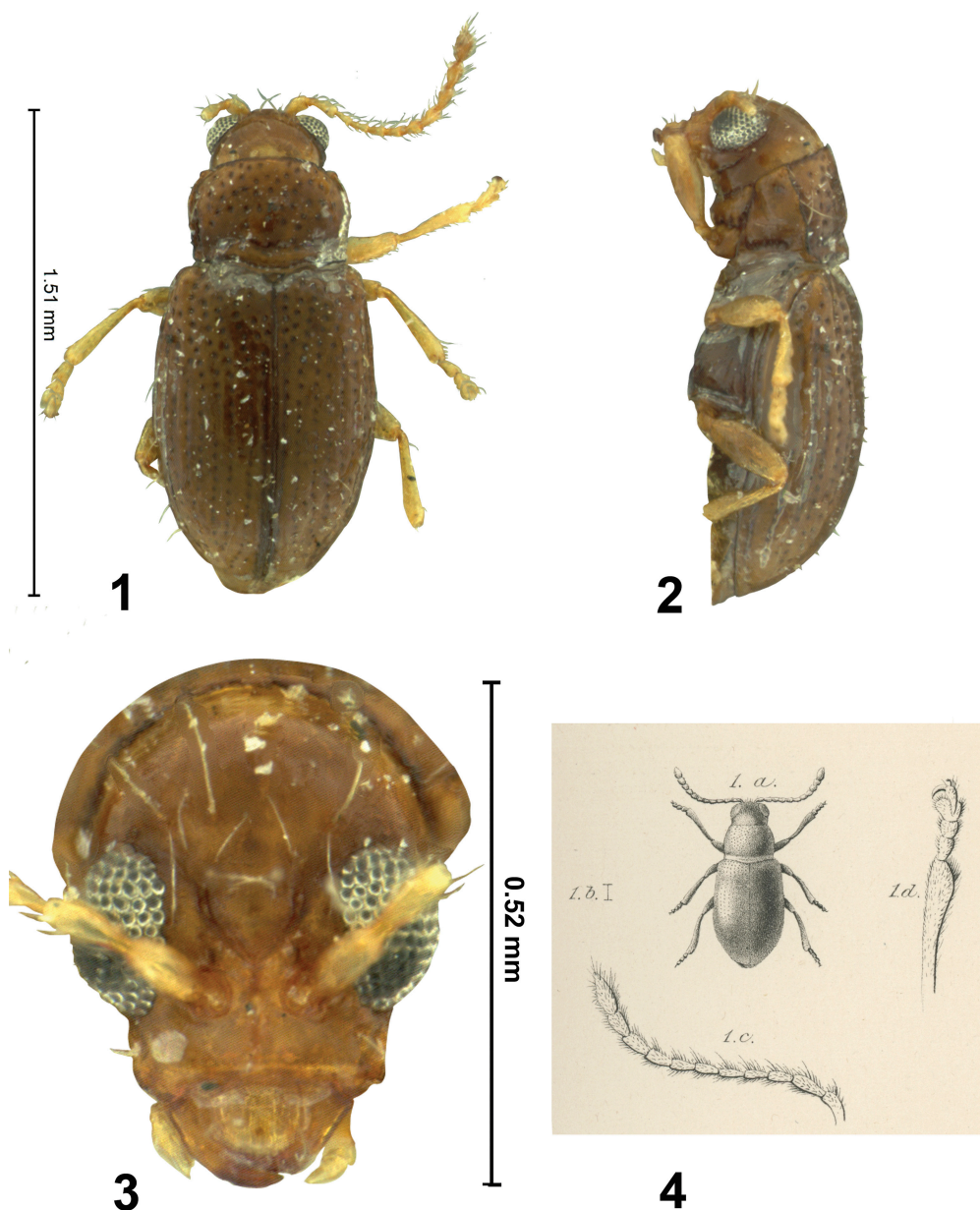
(Figs. 1–4)

**Type Material.** Holotype: ♀, “Taiti. [= Tahiti] [white label, printed] // Kinb. [= Kinberg (collector), white label, printed] // *Aulacothorax exilis* Bhn. [white label, Boheman’s handwriting]”, (deposited in Naturhistoriska Riksmuseet, Stockholm).

**Redescription.** Body length 1.52 mm, width 0.67 mm. Body pale brown with antennae and legs paler. **Head:** Vertex with 10 long setae (5 on each side) including 4 setae situated along orbital sulcus. Supracallinal sulci straight, forming acute angle with each other. Supraorbital sulcus short, shallow. Orbital sulcus long, deep. Suprafrontal sulcus poorly developed, appearing as frontal ridge merging with antennal calli. Antennal calli narrow, separated by sharp midfrontal sulcus, without setiferous pores. Frontal ridge parallel-sided, narrow, reaching anterofrontal ridge. Anterofrontal ridge slightly wider than frontal ridge, evenly high, sloping abruptly towards clypeus. Labrum as wide as space between outer edges of eyes. Setiferous pores on dorsal surface of labrum small, not possible to count. Relative proportions of antennomeres as follows: 13:13:7:8:10:8:10:10:10:10:15. **Pronotum:** Widening anteriorly, widest slightly anterior to middle, 1.35X as wide as long. Sides slightly uneven with small denticles bearing long setae. Antebasal transverse impression well-developed. Pronotal surface densely covered with large punctures, their diameter about as large as distance between punctures. **Elytra:** Sparsely and unevenly pubescent, with setae visible along lateral margin. Elytral punctures arranged in striae placed in shallow grooves. Stria 7 incomplete, not reaching elytral base. Humeral calli well-developed. **Legs:** Pro- and mesotibiae lacking spurs. Claw appendiculate.

### **DISCUSSION**

The taxonomy of *Orthaltica* and its synonyms was discussed by Scherer (1971, 1974) and Konstantinov and Prathapan (2008). While assessing the taxonomic relationships of *Orthaltica* with *Epithrella* and *Livoliella*, we considered the following combination of character states as diagnostic for it (Konstantinov and Prathapan 2008): vertex shiny, covered with up to 14 symmetrically placed punctures each bearing a long, erect seta; antennal calli narrow, oblique, and connected with the appearance of a “V”; antero-frontal ridge low, much lower than frontal ridge; fascial part of head short; pronotum covered with large and deep punctures, their diameter as great as distance between them; lateral margin of pronotum with small projections bearing characteristic setiferous pores; pronotal antero-frontal collosity short, facing antero-laterally with setiferous pore in its middle; procoxal cavities closed behind; elytral punctures regularly arranged, interstices more or less convex, epipleuron subvertical, humerus strongly raised, with depression posteriorly; metafemur without apical spur. *Aulacothorax* shares all of these character states and, therefore, is undoubtedly congeneric with *Orthaltica*.



**Figs. 1–4.** *Aulacothorax exilis*. 1) Dorsal habitus; 2) Lateral habitus; 3) Head, frontal view; 4) Original illustration (Boheman 1858, plate I, fig. 1).

As currently understood, there are 48 species of *Aulacothorax* in the world. Among biogeographic regions, they are distributed as follows: Afrotropical Region – two species; Australian Region – five species; Nearctic Region – five species; Oriental Region – 35 species; and a single species in the Palearctic – *Aulacothorax arabica* (Medvedev, 1997) from Saudi Arabia. Although there are some

doubts about the actual geographic origin of some species described by Boheman in 1858 and 1859, it is very possible that Tahiti is the true type locality for *A. exilis*. Our preliminary work on a world flea beetle species database lists only three species of flea beetles known to be described from Tahiti.

*Aulacothorax* species that were available for our study [*Aulacothorax bakeri* (Konstantinov, 1995),

*Aulacothorax borneoensis* (Konstantinov, 1995), *Aulacothorax coomani* (Laboissiere, 1934), *Aulacothorax copalina* (Fabricius, 1801) - the type species of *Orthaltica*, *Aulacothorax melina* (Horn, 1889), *Aulacothorax mindanaoensis* (Konstantinov, 1995), *Aulacothorax minutiuscula* (Csiki, 1939), *Aulacothorax okinawana* (Gressitt and Kimoto, 1966), *Aulacothorax orientalis* (Konstantinov, 1995), *Aulacothorax pahangi* (Konstantinov, 1995), *Aulacothorax recticollis* (LeConte, 1861), *Aulacothorax syzygium* (Prathapan and Konstantinov, 2013), and *Aulacothorax terminalia* (Prathapan and Konstantinov, 2013)] show that *A. exilis* is clearly more similar to the Oriental species than the Nearctic species. Many Oriental species [e.g., *A. minutiuscula*, *A. okinawana*, *A. pahangi*] share a number of character states: relatively small, light or dark brown body; vertex with 6–12 setiferous pores; small denticles on the sides of the pronotum; and incomplete 7<sup>th</sup> elytral stria. As the result of comparing *A. exilis* with species in the US National Museum of Natural History collection, we consider the following *A. exilis* characters as unique: vertex with 10 long setae (five on each side) including four setae situated along orbital sulcus; supracallinal sulci straight, forming acute angle with each other; supraorbital sulcus short, shallow; relative proportions of antennomeres 13:13:7:8:10:8:10:10:10:10:15.

#### ACKNOWLEDGMENTS

This research received support from the Synthesis Project SE-TAF-3534 financed by the European Community – Research Infrastructure Action under the Seventh Framework Programme. Special thanks are due to Johannes Bergsten for his assistance during Jan Bezdek's studies at the Naturhistoriska Riksmuseet Stockholm.

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#### REFERENCES CITED

- Arnett, R. H. 1963. The Beetles of the United States. The Catholic University of America Press, Washington, DC.
- Blackburn, T. 1896. Further notes on Australian Coleoptera with descriptions of new genera and species. Transactions of the Royal Society of South Australia 20 (1895–1896): 35–109.
- Boheman, C. H. 1858. Coleoptera. Species novae descriptae [pp. 1–112, pls I–II]. In: Kongliga Svenska Fregatten Eugenies Resa omkring jorden under befäl af C. A. Virgin, åren 1851–1853. Vetenskapliga Iakttagelser på H. M. Konung Oscar den Förstes befallning utgifna af K. Svenska Vetenskaps Akademien. II. Zoologi. 1. (C. Virgin, editor). P. A. Norstedt & Söner, Stockholm, Sweden.
- Boheman, C. H. 1859. Coleoptera. Species novae descriptae [pp. 113–218, pl. III]. In: Kongliga Svenska Fregatten Eugenies Resa omkring jorden under befäl af C. A. Virgin, åren 1851–1853. Vetenskapliga Iakttagelser på H. M. Konung Oscar den Förstes befallning utgifna af K. Svenska Vetenskaps Akademien. II. Zoologi. 1. (C. Virgin, editor). P. A. Norstedt & Söner, Stockholm, Sweden.
- Crotch, G. R. 1873. Materials for the study of the Phytophaga of the United States. Proceedings of the Academy of Natural Sciences of Philadelphia 25: 19–83.
- Heikertinger, F. 1925. Die Halticinen genera der Palaearktis und Nearktis. Bestimmungstabellen. Koleopterologische Rundschau 11(3/4): 49–70.
- Horn, G. H. 1889. A synopsis of the Halticinae of boreal America. Transactions of the American Entomological Society 16: 163–320.
- Jacoby, M. 1903. A further contribution to our knowledge of African phytophagous Coleoptera, Part II. Transaction of the Entomological Society, London 1903: 15.
- Konstantinov, A. S. 1998. Revision of the Palearctic species of *Aphthona* Chevrolat and cladistic classification of the Aphthonini (Coleoptera: Chrysomelidae: Alticinae). Memoirs on Entomology International, Associated Publishers, Gainesville, FL.
- Konstantinov, A. S., and K. D. Prathapan. 2008. New generic synonyms in the Oriental flea beetles (Coleoptera: Chrysomelidae). The Coleopterists Bulletin 62(3): 381–418.
- Laboissière, V. 1933. Descriptions de trois nouveaux Galerucini du Tonkin. Bulletin du Muséum national d'histoire naturelle (ser. 2) 5: 203–208.
- Medvedev, L. N. 1993. Alticinae of the Philippine Islands (Coleoptera, Chrysomelidae). Part 2. Russian Entomological Journal 2(5–6): 11–32, 2(3–4): 41–58.
- Medvedev, L. N. 1997. New and interesting Chrysomelidae (Coleoptera) from the Philippines collected by Dr. M. Sato. Japanese Journal of Systematic Entomology 3(1): 99–104.
- Persson, P. I. 1974. "Eugenies resa". Localities, dates and labels of the insects collected during the voyage around the world by the Swedish frigate "Eugenie" in the years 1851–1853. Entomologisk Tidskrift 92: 164–172.
- Prathapan, K. D., A. S. Konstantinov, K. M. Shameem, and A. P. Balan. 2013. First record of leaf-hole shelters used and modified by leaf beetles (Coleoptera, Chrysomelidae), with descriptions of two new *Orthaltica* Crotch species from southern India. Zookeys 336: 47–59.
- Reid, C. A. M. 1990. *Micrantipha* Blackburn, a synonym of *Orthaltica* Crotch (Col., Chrysomelidae). Entomologist's Monthly Magazine 126: 205–206.
- Scherer, G. 1971. Das genus *Livolia* Jacoby und seine umstrittene stellung im system. Eine taxonomische-zoogeographische-evolutionistische studie (Coleoptera-Chrysomelidae-Alticinae).

- Entomologische Arbeiten aus dem Museum G. Frey 22: 1–37.
- Scherer, G. 1974.** Review of North American species of *Orthaltica* with new generic synonymy (Coleoptera: Chrysomelidae: Alticinae). The Coleopterists Bulletin 28(2): 65–72.
- Sharp, D. 1874.** Note on *Aulacothorax exilis*, Boheman. Entomologist's Monthly Magazine 11: 137.
- Virgin, C. (editor). 1858–1868.** Kongliga Svenska Fre-gatten Eugenies Resa omkring jorden under befäl af C. A. Virgin, ären 1851-1853. Vetenskapliga Iakttagelser på H. M. Konung Oscar den Förstes befallning utgifna af K. Svenska Vetenskaps Akademien. II. Zoologi. 1. Insecta. P. A. Norstedt & Söner, Stockholm, Sweden.
- White, B. E. 1942.** A new genus and species of Coleoptera (Chrysomelidae) from the southwestern United States. Entomological News 53(1): 16–21.

(Received 17 March 2017; accepted 3 October 2017.  
Publication date 22 December 2017.)