ASED http://e-ASED.org
Animal Systematics, Evolution and Diversity

Anim. Syst. Evol. Divers. Vol. 36, No. 3: 232-235, July 2020
https://doi.org/10.5635/ASED.2020.36.3.029

Short communication

First Record of the Soft-Wing Flower Beetle Genus *Kuatunia* (Coleoptera: Melyridae) in Korea

Seung-Gyu Lee[1], Heejo Lee[2], Young-Gyu Ban[2], Dong Eon Kim[2,*]

[1]Division of Forest Biodiversity, Korea National Arboretum, Pocheon 11186, Korea
[2]Invasive Alien Species Research Team, Division of Ecological Safety, Bureau of Survey and Safety, National Institute of Ecology, Seocheon 33657, Korea

ABSTRACT

The family Melyridae Leach includes more than 300 genera and 6,000 species consisting of four subfamilies (Dasytinae, Malachiinae, Melyrinae, Rhadalinae). Members of the subfamily Malachiinae is distributed all over the world except for New Zealand and prefer warmer, arid or semi-arid regions. Among the malachiine genera, a genus *Kuatunia* Evers includes 17 species worldwide, mainly distributed in East Asia. In this study, the genus and its described species, *Kuatunia oblongula* (Kiesenwetter), is newly added to the Korean fauna. A diagnosis, habitus photographs, and illustrations of diagnostic characters are provided, with a key to species of the genus in East Asia.

Keywords: Coleoptera, Melyridae, Malachiinae, *Kuatunia oblongula*, Korea, new record

INTRODUCTION

The family Melyridae Leach, 1815 contains more than 300 genera and 6000 described species in four subfamilies (Mayor, 2002). Members of the subfamily Malachiinae is distributed worldwide except for New Zealand and prefer warmer, arid or semi-arid regions (Lawrence and Leschen, 2010). The malachiine genus *Kuatunia* Evers, 1948 includes 17 species worldwide, and all the species are distributed in the Palaearctic region except for one species in Madagascar. In East Asia, six species are distributed in China and five in Japan (Tshernyshev, 2015; Asano et al., 2018).

While working on beetle collection of the project "Ecological Risk Assessment of Invasive Alien Species and Designation of Alert Species", we recognized unusual melyrid species, identified later as a genus *Kuatunia* Evers and the described species, *K. oblongula* (Kiesenwetter, 1874), previously known from Japan and Russian Far East.

In this study, the genus *Kuatunia* and its described species, *K. oblongula*, are reported for the first time in the Korean Peninsula. We provide a habitus photograph, diagnosis, illustrations of diagnostic characters of the species, and a key to species of *Kuatunia* in East Asia.

SYSTEMATIC ACCOUNTS

Order Coleoptera Linnaeus, 1758
Family Melyridae Leach, 1815
Subfamily Malachiinae Fleming, 1821
Tribe Ebaeini Portevin, 1931

[1]*Genus *Kuatunia* Evers, 1948

Kuatunia Evers, 1948: 51 (type species: *Kuatunia klapperichi* Evers, 1948).
See Asano et al. (2018) for the detailed synonymy.

Diagnosis. Body small, length about 3.0 mm; apex of elytra with immovable appendage; protarsi with tarsal comb; endophallus of aedeagus with a gonoporal piece, numerous small spines and sometimes with ligula; male tergite VIII entire (not bifid) (Tshernyshev, 2012; Asano, 2013; Asano et al., 2018).
Distribution. Korea (new record), China, Japan, Nepal, Madagascar, Russia, Thailand.

[2]****Kuatunia oblongula* (Kiesenwetter, 1874) (Figs. 1, 2)**

Hypebaeus oblongulus Kiesenwetter, 1874: 287.

Korean name: [1]*꼬리무늬의병벌레속(신칭), [2]*꼬리무늬의병벌레(신칭)

*To whom correspondence should be addressed
Tel: 82-41-950-5803, Fax: 82-41-950-6103
E-mail: eco0106@nie.re.kr

eISSN 2234-8190

Ebaeus oblogulus: Wittmer, 1961: 363.
Kuatunia oblogula: Wittmer, 1999: 176; Asano et al., 2018: 146.

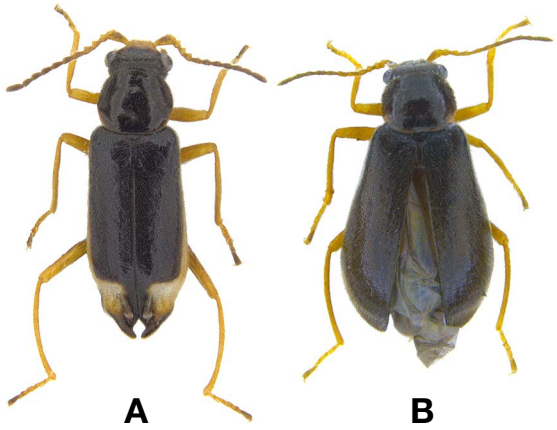

Fig. 1. Habitus. A, Male (2.8 mm); B, Female (2.9 mm).

Kuatunia oblongula oblongula: Mayor, 2007: 436; Yoshitomi and Hayashi, 2011: 22; Tshernyshev, 2015: 258.

Material examined. 1♂, 3♀♀, Korea: Gyeongbuk province: Bonghwa-gun, Jaesan-myeon, Nammyeon-ri, Mt. Cheongryangsan, 36°47′46″N, 128°56′22″E, 457 m, 9 May 2017, Lee SG; 1♂, Gyeongnam province: Hapcheon-gun, Gaya-myeon, Chiin-ri, 35°48′26.2″N, 128°06′00.7″E, 759 m, 9 Jun 2016, Lee SG, Lee JH.

Diagnosis. Length about 3.0 mm; Body (Fig. 1A, B) entirely blackish brown to black and weakly shiny, covered with whitish yellow pubescence; anterior region of head, antennomeres 1–4 and legs yellowish, 5–11 dark and brownish color; posterior and postero-lateral margins of pronotum brownish color. Head transverse, widest across eyes, as wide as pronotal width; eyes large and prominent laterally. Antennae (Fig. 2A) long and slender, antennomere 1 longest and clavate, 2–3 slightly serrate, 4–11 distinctly elongate, 11 longer than 10, slightly shorter than preceding two combined. Pronotum

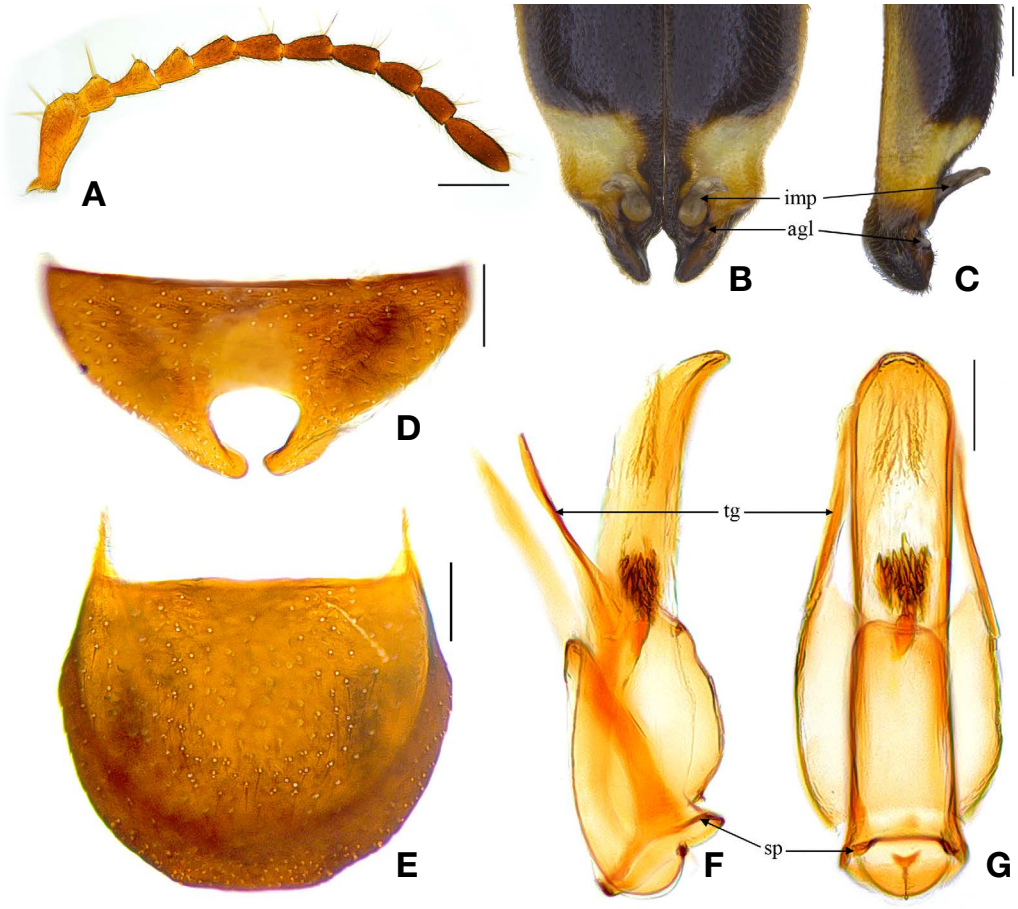

Fig. 2. *Kuatunia oblogula*. A, Antenna; B, Male elytral apex (dorsal aspect); C, *ditto* (lateral aspect); D, Male abdominal tergite VIII; E, Male abdominal sternite VIII; F, Aedeagus with tegmen and spicular fork (lateral aspect); G, Aedeagus with tegmen and spicular fork (ventral aspect). agl, aggregation of glands; imp, immovable processes; sp, specular fork; tg, tegmen. Scale bars: A–C=0.2 mm, D–G=0.1 mm.

convex, slightly transverse, about 1.15−1.20 times as wide as long, widest near basal half; pubescence directed toward apical third of midline. Prosternum distinctly transverse and weakly sclerotized. Elytra oblong, slightly dilated posteriorly, widest at apical third and convergent to apex; elytron about 3.50−3.80 times as long as wide; dorsal surface with fine punctures and pubescence directed posteriorly and postero-laterally. Legs long and slender, with fine pubescence entirely; metatibiae slightly bent inward. *Secondary sexual characters*. Male elytra bicolor, lateral margins and apical regions yellowish (female elytra unicolor, entirely blackish color); apical region of elytra (Fig. 2B, C) depressed, with elongate and immovable processes (imp), and aggregation of glands (agl) present in postero-lateral region of immovable processes; apex with tapered process on each side of midline (female elytra not modified). Posterior margin of male abdominal tergite VIII (Fig. 2D) slightly round; Posterior margin of male abdominal sternite VIII (Fig. 2E) bifid, with two processes bent inward. Aedeagus with tegmen (tg) and specular fork (sp) as in Fig. 2F, G.

Distribution. Korea (new record), Japan and Russian Far East.

Remarks. This species was transferred from *Ebaeus* Erichson to the genus *Kuatunia* by Wittmer (1999), and was treated as species level from subspecies by Asano et al. (2018). This species is similar to *Kuatunia chujoi* (Wittmer) and *K. horaiana* (Nakane), but can be distinguished by the characters provided in the key, and different structure of aedeagus.

Key to species of the genus *Kuatunia* in East Asia

1. Pronotum and elytra same color, dark brown to black····· 2
− Pronotum and elytra different color, pronotum yellowish color entirely or partially····· 7
2. Head unicolor····· 3
− Head bicolor, dark brown to black except yellow in anterior region····· 5
3. Head and scutellum reddish yellow to orange····· ····· *Kuatunia yamawakii*
− Head and scutellum dark brown to black····· 4
4. Antennomeres 1−4 reddish yellow or brownish color; tarsi brown····· *K. klapperichi*
− Antennomeres 1−4 yellowish color; tarsi black····· ····· *K. nigroppoca*
5. Yellow part of head in anterior region broad, with a pair of black patterns; apex of male elytra white·····*K. chibaensis*
− Yellow part of head in anterior region narrow, without black patterns; apex of male elytra yellow····· 6
6. Antenna unicolor, antennomeres 1−11 dark and brownish color·····*K. chujoi*
− Antenna bicolor, antennomeres 1−4 light and yellowish color, 5−11 dark and brownish color····· 7
7. Pronotum entirely black; metalegs yellow, with black femur and tibia partially·····*K. horaiana*
− Pronotum almost black except posterior and postero-lateral margins pale and brown; metalegs entirely yellow····· ····· *K. oblongula*
8. Pronotum dark color, almost black except postero-lateral margins yellow····· *K. emeiensis*
− Pronotum light color, entirely yellowish color····· 9
9. Elytra black with light spots on apex····· *K. sichuana*
− Elytra entirely black····· 10
10. Elytra with dark blue metallic luster; apex of male elytra widely impressed ····· *K. guilinesis*
− Elytra black, free from metallic luster; apex of male elytra concave and impressed plate apically····· *K. wolongensis*

ORCID

Seung-Gyu Lee: https://orcid.org/0000-0002-9512-6073
Heejo Lee: https://orcid.org/0000-0002-2670-9750
Young-Gyu Ban: https://orcid.org/0000-0002-3397-2709
Dong Eon Kim: https://orcid.org/0000-0002-2656-9436

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

ACKNOWLEDGMENTS

This work was supported by a grant from the National Institute of Ecology (NIE), funded by the Ministry of Environment (MOE) of the Republic of Korea (NIE-D-2017-09) and the research on *Kuatunia* species newly discovered in Korea was supported by a grant from the National Institute of Biological Resources (NIBR), funded by the Ministry of Environment (MOE) of the Republic of Korea.

REFERENCES

Asano M, 2013. New combinations and redescriptions of six species of the tribe Ebaeini Portevin (Coloptera, Malachiidae) in Japan. Japanese Journal of Systematic Entomology, 19:275-284.

Asano M, Ikeda H, Kamezawa H, Nomura S, 2018. Revision of six species of the subtribe Ebaeina of Japan, with descrip-

tion of a new species (Coleoptera: Melyridae). Japanese Journal of Systematic Entomology, 24:141-149.

Evers AMG, 1948. Neue Malachiidae. Entomologische Blätter, 41-44:49-60.

Kiesenwetter HV, 1874. Die Malacodermen Japans nach Ergebnisse der Sammlungen des Herrn G. Lewis während der Jahre 1869-1871. Berliner Entomologische Zeitsechrift, 18:241-288. https://doi.org/10.1002/mmnd.18740180302

Lawrence JF, Leschen RAB, 2010. Melyridae Leach, 1815. In: Handbook of zoology, Coleoptera. Vol. 2. Morphology and systematics (Elateroidea, Bostrichformia, Cucujiformia partim) (Eds., Leschen RAB, Beutel RG, Lawrence JF). Walter de Gruyter, Berlin, pp. 273-280.

Mayor AJ, 2002. Melyridae Leach 1815. In: American beetles. Vol. 2. Polyphaga: Scarabaeoidea through Curculionidea (Eds., Arnett RH Jr, Thomas MC, Skelley PE, Frank JH). CRC Press, Boca Raton, FL, pp. 281-304.

Mayor AJ, 2007. Family Malachiidae Fleming, 1821. In: Catalogue of Palaearctic Coleoptera. Vol. 4. Elateroidea-Derodontoidea-Bostrichoidea-Lymexyloidea-Cleroidea-Cucujoidea (Eds., Löbl I, Smetana A). Apollo Books, Stenstrup, pp. 415-454.

Tshernyshev SE, 2012. Two new species of soft-winged flower beetles of the genus *Kuatunia* Evers, 1945-48 (Coleoptera, Malachiidae) from China and northeastern Russia. Zootaxa, 3191:56-64. https://doi.org/10.11646/zootaxa.3191.1.5

Tshernyshev SE, 2015. A new species of soft-winged flower beetles of the genus *Kuatunia* Evers, 1945-48 (Coleoptera, Cleroidea, Malachiidae) from Nepal. Zootaxa, 3941:255-260. https://doi.org/10.11646/zootaxa.3941.2.6

Wittmer W, 1961. Synonymische und systematische Notizen über Malacodermata (Col.) (4. Beitrag). Entomologische Arbeiten aus dem Museum G. Frey, 12:362-364.

Wittmer W, 1999. Zur Kenntnis der Familie Malachiidae (Coleoptera). 3. Beitrag. Entomologica Basiliensia, 21:171-252.

Yoshitomi H, Hayashi N, 2011. List of the family Melyridae and its related families in Japan. Sayabane, New Series, 2:18-24.

Received April 7, 2020
Revised June 29, 2020
Accepted June 29, 2020