

# First Record of the Polypore Fungus Beetle Genus *Eustrophus* (Coleoptera: Tetratomidae: Eustrophinae) in Korea

Seung-Gyu Lee, Subin Choi, Jongok Lim\*

Division of Forest Biodiversity, Korea National Arboretum, Pocheon 11186, Korea

## ABSTRACT

The family Tetratomidae Billberg occurs in most parts of the world but many species are discovered from Australia and New Zealand. The family contains 13 genera and over 150 described species in five subfamilies, Eustrophinae, Hallomeninae, Penthinae, Piseninae and Tetratominae. Among the eustrophine genera, a genus *Eustrophus* Illiger includes four species in the Holarctic region including three Palaearctic species, *E. dermestoides* (Fabricius), *E. niponicus* Lewis and *E. yunnanensis* Nikitsky. In this study, the genus *Eustrophus* and its a single species, *E. niponicus*, are newly discovered from the Korean fauna. A diagnosis, habitus photographs and illustrations of diagnostic characters including aedeagus of the species are provided.

**Keywords:** Coleoptera, Tenebrionoidea, Tetratomidae, Eustrophinae, *Eustrophus niponicus*, Korea

## INTRODUCTION

The genus *Eustrophus* Illiger, 1802 includes four species worldwide (Nikitsky, 1998; Pollock, 2012). Three species are distributed in the Palaearctic [*E. dermestoides* (Fabricius) in Europe; *E. niponicus* Lewis in Japan, northeastern China and Russian Far East; *E. yunnanensis* Nikitsky in southern China] and one (*E. tomentosus* Say in Canada and United States) in Nearctic region. However, any specimen of this genus has not been discovered from the Korean peninsula yet. They have been known to be usually found under the bark or on polypore fungus (Lawrence and Leschen, 2010; Pollock, 2012).

While working on diversity of beetles in Gwangneung forest protected as the 4th UNESCO biosphere reserve, the genus *Eustrophus* Illiger and one species of the genus, *E. niponicus* Lewis, is identified for the first time in the Korean Peninsula. We present habitus photographs, diagnosis and illustrations of diagnostic characters of the species including genital structure.

All specimens are deposited in the Entomological Col-

lection of Korea National Arboretum (KNAE), Pocheon, Korea. The morphological terminology used here follows Pollock (2012).

## SYSTEMATIC ACCOUNTS

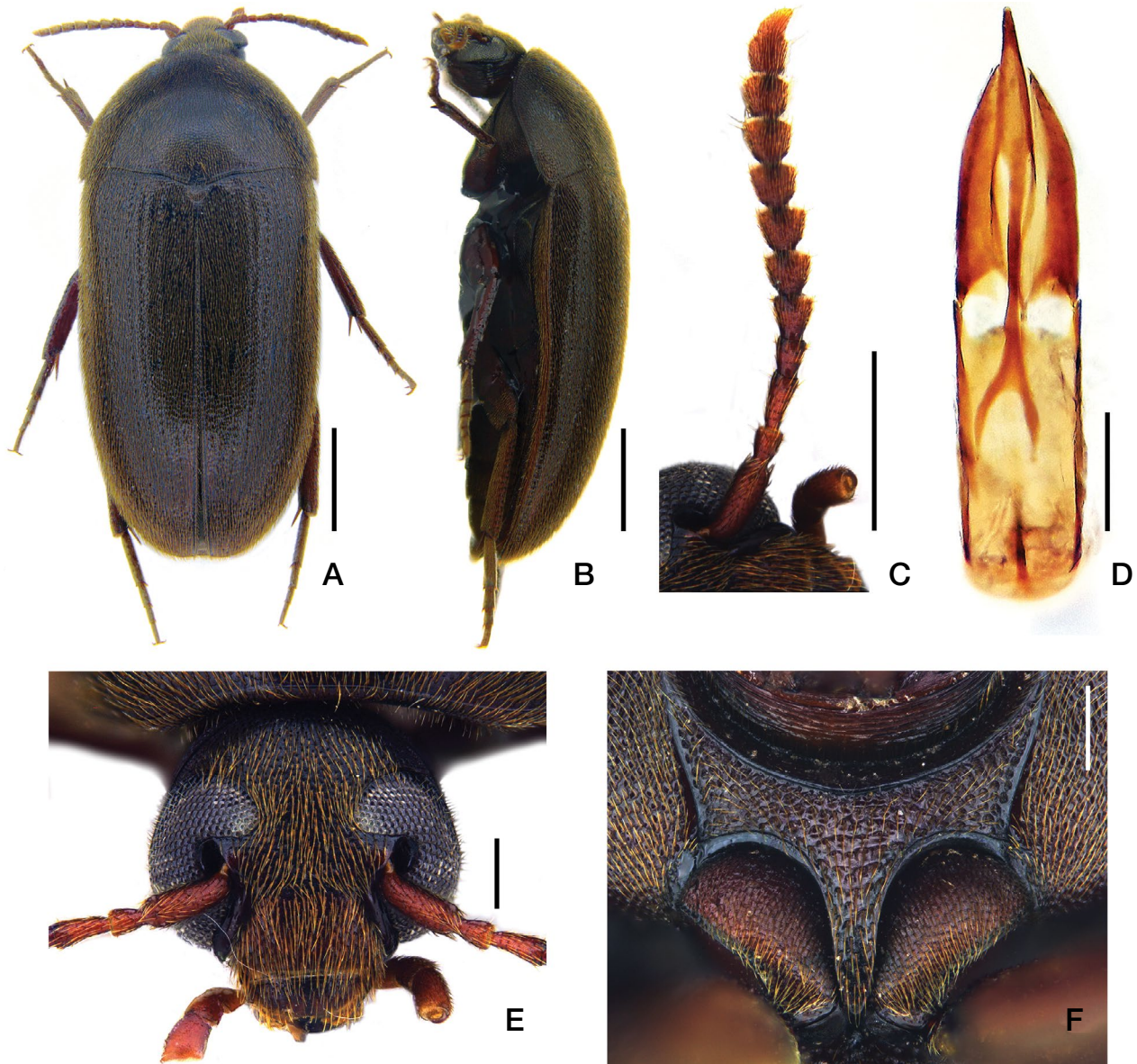
Order Coleoptera Linnaeus, 1758  
Family Tetratomidae Billberg, 1820  
Subfamily Eustrophinae Gistel, 1848

### <sup>1</sup>\* Genus *Eustrophus* Illiger, 1802

*Eustrophus* Illiger, 1802: 301. Type species: *Mycetophagus dermestoides* Fabricius, 1792.

**Diagnosis.** Body oval; prosternal process elongate; posterior margin of pronotum with slight lobe only; prothoracic episterna without transverse suture elytral punctures fine, not forming obvious striae; outer surface of meso- and metatibiae with numerous oblique, comb-like ridges (Young and Pollock, 2002).

Korean name: <sup>1</sup>\*민무늬애버섯벌레붙이속(신칭)



**Fig. 1.** *Eustrophus niponicus*. A, Habitus (dorsal aspect); B, Habitus (lateral aspect); C, Antenna; D, Aedeagus (ventral aspect); E, Head; F, Prosternum (ventral aspect). Scale bars: A, B=1.0 mm, C=0.5 mm, D–F=0.2 mm.

**Distribution.** Korea, Japan, Russian Far East, Southern China, Europe and North America.

<sup>1</sup>*Eustrophus niponicus* Lewis, 1895 (Fig. 1A–F)  
*Eustrophus niponicus* Lewis, 1895: 259.

**Material examined.** 11 exx., Korea: Gyeonggi province, Pocheon-si, Soheul-eup, Korea National Arboretum, Gwangneung forest, 37°44'53.58"N, 127°09'59.01"E, Alt.

125 m, 9–27 Jun 2017, Lee SG, Choi S leg., Flight intercept trap (KNAE).

**Diagnosis.** Length 5.0–6.5 mm; body (Fig. 1A, B) elongate oval, subparallel-sided, distinctly convex dorso-ventrally, about 2.2–2.3 times as long as wide; dorsal color dark brown, with dense and sheen golden-pubescence; ventral aspect, antennae and legs reddish brown; eyes (Fig. 1E) large, moderately separated and about as long as antennomere 1, inner margin deeply emarginate; antennomeres 2–10 slight-

Korean name: <sup>1</sup>\*민무늬애버섯벌레붙이(신칭)

ly widened at apex, antennomere 2 shortest, 3 distinctly longer than 2, 5–10 subequal in size and shape, 11 subtriangular to nearly quadrate (Fig. 1C); pronotum semicircle-shape, distinctly transverse, 1.7–1.8 times wider than long, widest at apex, slightly wider than elytral width, posterior margin distinctly sinuate; prosternal process (Fig. 1F) pointed at apex, almost extended to posterior margin of procoxae; elytron about 3.2 times as long as wide, with fine punctures arranged in longitudinal striae. Aedeagus as in Fig. 1D.

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

**Remarks.** All specimens were collected by FIT in Gwangneung Forest.

## ACKNOWLEDGMENTS

We thank to Prof. Darren Andrew Pollock (Eastern New Mexico University, Portales, USA) for providing help and opinion. This study was supported by Korea National Arboretum (Project No. KNA1-1-24, 18-2), Korea Forest Service.

## REFERENCES

- Billberg GJ, 1820. Enumeratio insectorum in Museo Gust. Joh. Billberg. Typis Gadelianis, Stockholm, pp. 1-138.
- Fabricius JC, 1792. Entomologia systematica emendata et aucta. Secundum classes, ordines, genera, species adjectis synonymis, locis, observationibus, descriptionibus. Proft, Hafniae, pp. 1-538.
- Gistel JNFX, 1848. Faunula monacensis cantharologica. Isis von Oken 1848: (6) [unn. pp. 1-3]; (7): [unn. pp. 4-6]; (8): [unn. p. 7]; (9): [unn. pp. 8-9]; (10): [unn. pp. 10-11]; (11): [unn. pp. 12-13].
- Illiger J, 1802. Aufzählung der Käfergattungen nach der Zahl der Fussglieder. Magazin für Insektenkunde, 1:285-305.
- Lawrence JF, Leschen RAB, 2010. 11.5. Tetratomidae Billberg, 1820. In: Handbook of zoology. Insecta: Coleoptera, Beetles. Volume 2 (Eds., Leschen RAB, Beutel RG, Lawrence JF). W. de Gruyter Inc., Berlin, pp. 514-520.
- Lewis G, 1895. On the Cistelidae and other heteromorous species of Japan. The Annals and Magazine of Natural History, 15: 250-278, 422-448.
- Linnaeus C, 1758. Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Tomus I. Editio decima, reformata. Laurentii Salvii, Holmiae, pp. 1-824.
- Nikitsky NB, 1998. Generic classification of the beetle family Tetratomidae (Coleoptera, Tenebrionoidea) of the world, with description of new taxa. Pensoft Series Faunistica No. 9. Pensoft, Sofia, pp. 1-80.
- Pollock DA, 2012. Review of the Eustrophinae (Coleoptera, Tetratomidae) of America north of Mexico. ZooKeys, 188: 1-153.
- Young DK, Pollock DA, 2002. Family 99. Tetratomidae. In: American beetles. Volume 2. Polyphaga: Scarabaeoidea through Curculionoidea (Eds., Arnett RH Jr, Thomas MC, Skelley PE, Frank H). CRC Press, Boca Raton, FL, pp. 413-416.

Received July 6, 2018  
Revised October 11, 2018  
Accepted October 26, 2018