

Mimemodes cribratus (Reitter) (Coleoptera: Cucujoidea: Monotomidae) New to Korea and a Key to Korean Monotomid Species

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큰머리톱가슴긴고목벌레의 국내 첫 보고 및 한국산 톱가슴긴고목벌레과의 종 분류 검색표

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ABSTRACT: *Mimemodes cribratus* (Reitter) is newly recognized from Korea. The present study includes a redescription, images of habitus and diagnostic characters of the species. In addition, a key to Korean species of Monotomidae is provided.

Key words: Coleoptera, Monotomidae, *Mimemodes cribratus*, Taxonomy, Korea

초 록: 큰머리톱가슴긴고목벌레 [*Mimemodes cribratus* (Reitter)] (신칭)을 국내에서 처음으로 보고하고, 한국산 톱가슴긴고목벌레과의 종 분류 검색표 및 본 종의 기재문과 식별형질에 대한 사진을 제공한다.

검색어: 딱정벌레목, 톱가슴긴고목벌레과, 큰머리톱가슴긴고목벌레, 분류학, 한국

The family Monotomidae Laporte includes about 240 species placed in 33 genera worldwide (Bousquet, 2010) and five species in three genera have been recorded to date in the Korean Peninsula: *Monotoma picipes* Herbst (by Hisamatsu, 1985); *Rhizophagus (Anomophagus) puncticollis* Sahlberg, R. (*Rhizophagus japonicus* Reitter, R. (R.) *nobilis* Lewis (by Park et al., 2007); *Mimemodes emerichi* Mader (by Kang et al., 2008).

Mimemodes Reitter contains 15 species occurring worldwide including nine Palearctic species, of which five are recorded in Japan (Jelínek, 2007; Bousquet, 2010). In the Korean Peninsula, Kang et al. (2008) first recorded the genus

and a single species, *Mimemodes emmerichi* Mader.

Members of *Mimemodes* are characterized by the combination of following characters: head wider than pronotum, male relatively larger than female; antenna appearing with 10 antennomeres, apical antennomere appearing clubbed, antennomere 11 hidden entirely or partially; lateral margins of pronotum strongly round and slightly serrated; elytral surface distinctly punctured with striae; protrochantin not exposed; tarsal formula 4-3-3 (Kang et al., 2008; *per. obs.*).

Some species of this genus are often found in galleries of scolytine beetles, and known as predators of scolytines and other wood-boring insects. However, little is known about the biology of many members of *Mimemodes*, except for few species reported by Nakane (1956) and Kishi (1970).

In the present paper, we report an additional Korean species of the genus, namely *Mimemodes cribratus* (Reitter). We

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provide a redescription, images of habitus and diagnostic characters of the species along with a key to Korean species of Monotomidae. All examined specimens are deposited at Entomological Collection of Korea National Arboretum (KNAE), Pocheon, Republic of Korea.

Materials and Methods

Systematic accounts

Family Monotomidae Laporte, 1840

Subfamily Monotominae Laporte, 1840

Genus *Mimemodes* Reitter, 1876 큰머리긴고목벌레속

Mimemodes Reitter, 1876: 296. Type species: *Bactridium monstrosum* Reitter, 1874.

***Mimemodes cribratus* (Reitter, 1874) 큰머리톱가슴긴고목벌레(신칭)**(Figs. 1A-F)

Bactridium cribratus Reitter, 1874: 515.

Mimemodes cribratus Nakane, 1956: 2; Hisamatsu, 1985: 171; Jelínek, 2007: 493.

Redescription (male). *Body* (Figs. 1A and B). Length about 2.0 mm; elongate and subparallel-sided, 3.61 times as long as wide (from clypeus to apex of abdomen). Body entirely reddish brown; distinctly glossy with large and granular punctures. *Head* (Fig. 1C). Triangular and flat, widest across eyes, approximately 1.16 times wider than pronotum; eyes large and prominent, about 1.65 times as long as temples; *Antennae* (Fig. 1D), relatively short and robust; antennomere 1 elongate and swollen, 2-3 about as long as wide, 4-9 distinctly

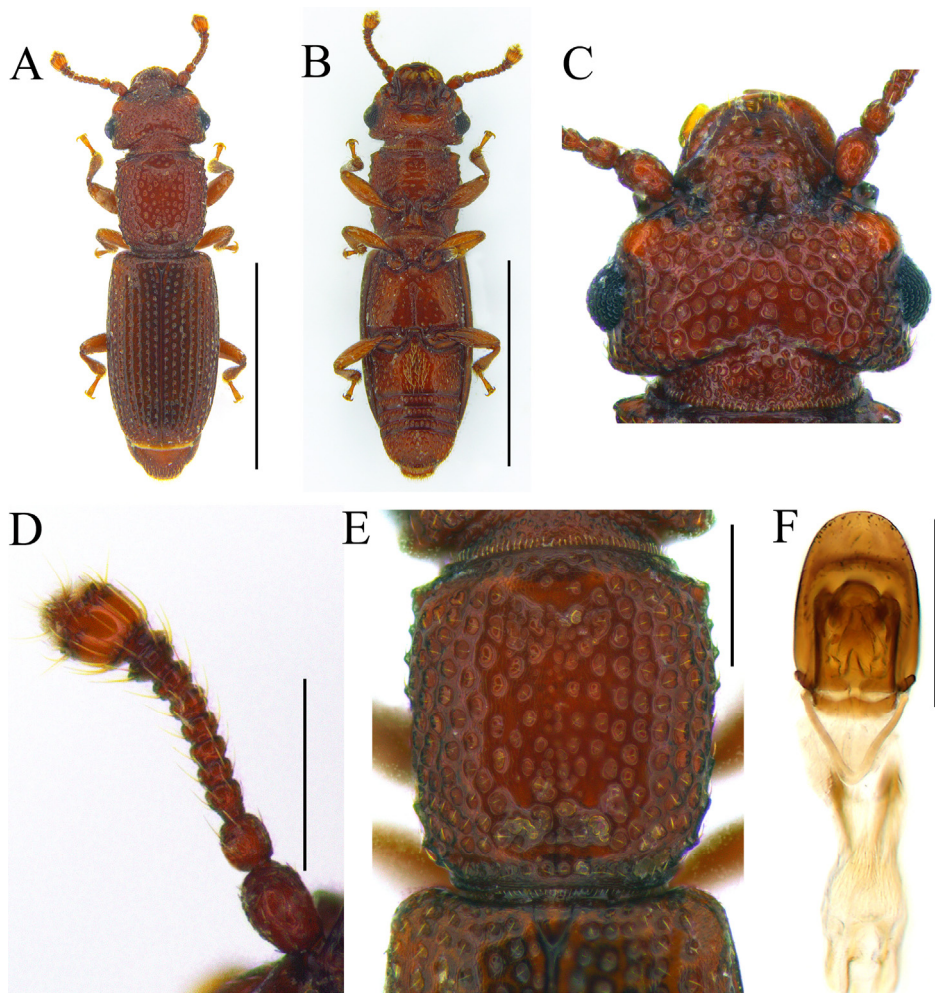


Fig. 1. *Mimemodes cribratus*. (A) habitus, dorsal aspect; (B) habitus, ventral aspect; (C) head, dorsal aspect; (D) antenna; (E) pronotum and scutellum, dorsal aspect; (F) aedeagus, ventral aspect. Scale bars: (A, B) 1.0 mm, (C-F) 0.2 mm.

transverse, 10 expanded and slightly transverse. *Mouthparts*. Almost mouthparts hidden under clypeus in dorsal view. Mandible almost symmetrical, pointed at apex, right one with internal tooth; maxilla with developed galea and lacinia with 4 palpomeres, lacinia with many seta at apex and inner margin; labium with 3 palpomeres. *Thorax*. Pronotum (Fig. 1E) more or less rectangular, approximately 1.10 times as long as wide, widest in apical third to apex; surface with largely and sparsely punctures, with sparser punctures medially; lateral margins with serration and long seta. Scutellum (Fig. 1E) triangular. Meso- and metacoxal cavities distinctly separated, mesoventral process truncate at apex, longer than metaventral process. Metaventricle with medial longitudinal line from posterior end to approximately anterior third, with large punctures antero-laterally and sparser small punctures medially. Elytra approximately 1.69 times as wide as pronotum, widest at middle; surface with glanular puncture lines; interspace between puncture lines less than the width of punctures; hind wings fully developed. *Legs*. Short and robust; last tarsomere of all tarsi longer than the combined length of the other tarsomeres. *Abdomen*. Sternites III-VII with large and dense punctures medially; sternite III with many long setae medially. *Male genitalia*. Pygidium exposed to posterior of elytra, with minute puncture, posterior margin round. Aedeagus as in Fig. 1F.

Material examined. 1♂, KOREA: Gyeonggi Prov., Yangpyeong-gun, Cheongun-myeon, Dowon-ri, N37°32'51.05" E127°47'29.92", 6. vii. 2017, M.-S. Kim leg., under bark of *Pinus koraiensis* Siebold and Zucc (Pinaceae).

Distribution. Korea (South) and Japan.

Remarks. *Mimemodes cribratus* is similar to *M. emmerichi*, but can be distinguished by the characters provided in the key and different shape and structure of aedeagus. Previously known only from Japan, this species is recorded for the first time in Korea.

Biology. This species was collected under the bark of *Pinus koraiensis* Siebold and Zucc (Pinaceae) with many adults of scolytine species including *Tomicus piniperda* (Linnaeus). In Japan, *Mimemodes japonus* Reitter is known as an important egg predator of *Cryphalus fulvus* Nijima (Coleoptera: Curculionidae), which is a notorious pest to *Pinus densiflora* Siebold and Zucc. (Pinaceae) (Kishi, 1970).

Key to Korean species of Monotomidae

(modified from Nakane, 1956; Hisamatsu, 1985; Park et al., 2007; Kang et al., 2008)

1. Body relatively cylindrical; neck constriction absent; lateral margins of pronotum simple, not modified; protrochantin exposed (subfamily Rhizophaginae: genus *Rhizophagus*) ... 2
 - Body relatively flattened; neck constriction present; lateral margins of pronotum serrated; protrochantin not exposed (subfamily Monotominae: genera *Monotoma*, *Mimemodes*) 4
2. Body with relatively large punctures; antennomere 11 hidden entirely; pronotum about as long as wide; mesocoxal bead extending to approximately anterior fifth of metaventricle, metacoxal bead extending to approximately anterior third of ventrite I (subgenus *Anomophaegus*)
 - *Rhizophagus (Anomophaegus) puncticollis*
 - Body with relatively small punctures; antennomere 11 hidden partially, papillate form; pronotum longer than wide; mesocoxal bead not extended, metacoxal bead not extended (subgenus *Rhizophagus*) 3
3. Body bicolored, elytra with reddish brown patches in anterior- and posterior regions; frontoclypeal suture present; pronotum flat, not emarginate medially, narrower than elytra; pro- and mesotibiae with small spines in outer corner and margin *R. (Rhizophagus) japonicus*
- Body unicolored, black; fronto-clypeal suture absent; mentum with anterior margin of depressed line broadly rounded; pronotum as wide as elytra, weakly emarginate medially; pro- and mesotibiae with large spines in outer corner and margin *R. (R.) nobilis*
4. Body relatively matt; head narrower than pronotum; elytral surface with puncture lines, not connected striole; distal part of tibia narrow apically (genus *Monotoma*)
 - *Monotoma picipes*
 - Body relatively glossy; head wider than pronotum; elytral surface with puncture lines, connected striole; distal part of tibia dilated apically (genus *Mimemodes*) 5
5. Body small, less than 2.5 mm; elytra unicolored, with reddish brown patch in base to half regions; pronotum longer than wide; scutellum elongate and triangular; intervals of elytral puncture lines narrower, less than width of puncture
 - *Mimemodes cribratus*

- Body large, more than 3.5 mm; elytra bicolored, with reddish brown patch in base to half regions; pronotum as long as wide; scutellum subquadrate and slightly convex; intervals of elytral puncture lines wider, more than width of puncture
..... *M. emmerichi*

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