

# Taxonomy of the Genus *Eudectus* Redtenbacher (Coleoptera: Staphylinidae: Omaliinae) in Korea

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## 한국산 넓은가슴네눈반날개속의 분류학적 연구

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**ABSTRACT:** A taxonomic study of the genus *Eudectus* Redtenbacher in Korea is presented. Two species, *E. japonicus* Zerche and *E. rufulus* Weise, are newly added to the Korean fauna. Redescriptions, illustrations of the diagnostic features, and a key to the species are provided.

**Key words:** Coleoptera, Staphylinidae, Omaliinae, *Eudectus*, Korea.

**초록:** 한국 미기록속인 넓은가슴네눈반날개속(*Eudectus* Redtenbacher) (신칭)의 분류학적 연구 결과, 넓은가슴네눈반날개(*E. japonicus* Zerche) (신칭)와 배무늬넓은가슴네눈반날개(*E. rufulus* Weise) (신칭) 두 종을 국내에 처음 보고한다. 두 종에 대한 재기재, 진단 형질의 그림, 그리고 검색표를 제시한다.

**검색어:** 딱정벌레목, 반날개과, 네눈반날개아과, 넓은가슴네눈반날개속, 대한민국

The genus *Eudectus* Redtenbacher containing seven species are distributed in the Holarctic region. Four species have been recorded in East Asia (Zerche, 1990, 1993; Herman, 2001; Smetana, 2004). Little is known about the habitat and ecology of *Eudectus* species, but they are usually found in cold place (Zerche, 1990) and overwinter as a larva (Steel, 1970). Our specimens were collected by a net while they were flying in a group or by sifting leaf litters.

Members of the *Eudectus* are characterized by the combination of following characters: body parallel-sided, gently convex, covered with coarse punctures and fine pubescence; eyes large and protruded, ocelli distinct; pair of dorsal tentorial pits present

deeply; gular sutures divergent posteriorly; labrum transverse; mandible elongate and curved inwardly with large internal tooth; maxillary palpomere 3 oval and expanded, palpomere 4 glabrous, much smaller and slender than 3; pronotum hexagonal, more or less convex and transverse, broader than head, lateral margin crenulated and angulated around middle; postcoxal process tetragonal, protrochantin almost concealed; abdomen more or less broad and flat; tergite III covered with spicules almost all over; anterior three fourth of paratergite III covered with distinctly coriaceous sculpture; pair of oval patches of wing-folding spicules present on medial part of tergite IV; tergite VII with apical palisade fringe; front tarsus broad in male; lateral part of sternite III with oblique carina (Watanabe, 1990; Zerche, 1990).

In this paper, we report *E. japonicus* Zerche and *E. rufulus* for the first time in Korea. We also provide habitus photographs, redescriptions of these two species with illustrations of

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diagnostic features, and a key to Korean species. The specimens for this study are deposited in the Chungnam National University Insect Collection (CNUIC), Daejeon, Korea.

## Taxonomic accounts

### Genus *Eudectus* Redtenbacher 넓은가슴네눈반날개속(신칭)

*Eudectus* Redtenbacher, 1857: 245; Zanetti, 1987: 424; Watanabe, 1990: 351; Zerche, 1990: 142; Newton et al., 2000: 342.

*Eudectoides* Campbell, 1978: 11 (synonymized by Zerche, 1990: 144).

Type species: *Eudectus giraudi* Redtenbacher

#### Key to Korean species of the genus *Eudectus* Redtenbacher

1. Head, thorax and elytra brown to reddish brown, abdomen dark brown (Fig. 1A); antennomere 3 more or less gradually dilated apically and longer than wide, 4–8 less transverse (Fig. 2F); postero-lateral margin of pronotum clearly emarginated (Fig. 2G); metaventrite without marking; median lobe of aedeagus longer than paramere (Figs. 2L–M) .....  
..... *E. japonicus* Zerche
- Head, thorax and elytra yellowish brown, abdomen brown but basal and apical segments darker (Fig. 1B); antennomere 3 more or less abruptly dilated apically and slightly longer than wide, 4–8 strongly transverse (Fig. 3A); postero-lateral margin of pronotum almost straight or obscurely emarginated (Fig. 3B); metaventrite with dark tri-markings; median lobe of aedeagus slightly shorter than paramere (Figs. 3G–H) .....  
..... *E. rufulus* Weise

### *Eudectus japonicus* Zerche, 1990 넓은가슴네눈반날개(신칭) (Figs 1A, 2)

*Eudectus japonicus* Zerche, 1990: 157; Herman, 2001: 402; Smetana, 2004: 254; Watanabe, 2013: 77.

**Description.** Body length 2.5–2.7 mm. Body (Fig. 1A) more or less convex and parallel-sided, covered with coarse punctures and pubescence; reddish brown to dark brown, more or less glossy. Head pentagonal transversely, punctate coarsely and sparsely, about 1.4 times wider than long; eye about 2.0 times longer than temple; distance between ocelli about 1.4

times longer than distance between outside of ocellus and inner margin of eye; antennae (Fig. 2F) relatively short and stout, gradually incrassate distally, reaching to just below pronotum, antennomeres 1–5 more or less glossy; scape robust, about 1.3 times longer than wide; pedicel suboval, about 1.2 times longer than wide, slightly narrower and shorter than scape; antennomere 3 about 1.5 times longer than wide, slightly narrower and longer than pedicel; 4–6 suboval, 7 subpentangular and 8–10 subquadrate, 4–10 slightly transverse and getting larger distally; 4 about 1.14 times wider than long and 0.69 times shorter than 3; 7 about 1.11 times wider than long; 9 about 1.15 times wider than long; 11 about 1.64 times longer than wide. Pronotum subhexagonal transversely, more or less convex medially and deplanate laterally, covered with coarse punctures; lateral margins more or less serrate; widest around middle, about 1.5 times wider than long, about 1.3 times wider and 1.2 times longer than head; anterior and posterior margins crenulated weakly, anterior margin almost straight and posterior one more or less arcuate; anterior angles round and posterior one more or less angulate obtusely; elytra more or less flat, covered with coarse punctures; lateral margins almost straight with weak crenulation and slightly dilated posteriorly; about 1.1 times wider than long, about 1.5 times wider and 1.8 times longer than pronotum; posterior margin truncated.

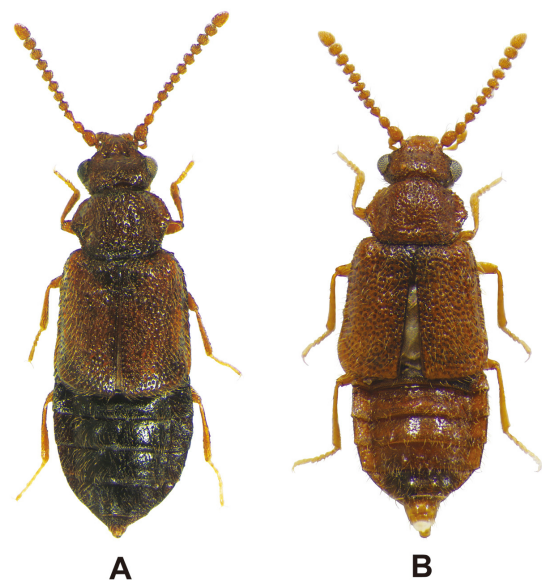
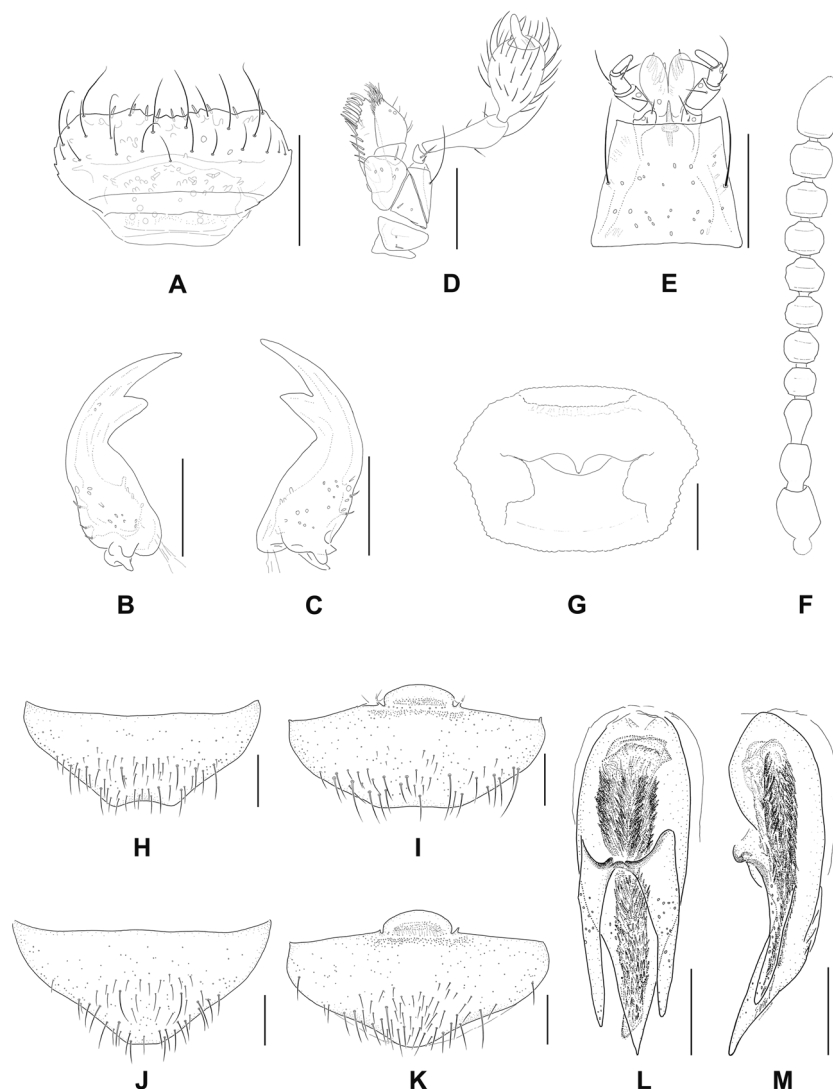


Fig. 1 Habitus. A, *Eudectus japonicus* Zerche, male, 2.6 mm; B, *E. rufulus* Weise, male, 2.5 mm.



**Fig. 2.** *Eudectus japonicus*. A, labrum, dorsal aspect; B, right mandible, ventral aspect; C, left mandible, ventral aspect; D, left maxilla, ventral aspect; E, labium and mentum, ventral aspect; F, antenna; G, prothorax, ventral aspect; H, male tergite VIII, dorsal aspect; I, male sternite VIII, ventral aspect; J, female tergite VIII, dorsal aspect; K, female sternite VIII, ventral aspect; L, aedeagus, dorsal aspect; M, aedeagus, lateral aspect. Scales = 0.1 mm.

**Male.** Abdominal tergite VIII (Fig. 2H) with more or less emarginated posterior margin; more or less sclerotized setae present on medial part of sternite VII; posterior margin of sternite VIII roundly emarginated weakly (Fig. 2I). Aedeagus (Figs. 2L–M) trilobed and almost symmetrical; median lobe narrowed apically with acute apex rather sclerotized, lateral margin almost straight, much longer than basal bulb and paramere, dorsal surface covered with few scattered punctures; paramere more or less stout, more or less curved inwardly in apical half, covered with scattered punctures.

**Female.** Abdominal tergite VIII (Fig. 2J) with narrowly

truncated posterior margin; posterior margin of sternite VIII more or less prolonged with round apex (Fig. 2K).

**Materials examined.** Total 312 specimens. **KOREA:** *Chungbuk Prov.:* Cheongju-si, Heungdeok-gu, Biha-dong, Mt. Bumosan, N36°38'4.8" E127°24'43.1" 172 m, 29 IV 2009, YH Kim, YG Ban, SG Lee, sweeping [165♂♂ 144♀♀ (4♂♂ 2♀♀ on slide), CNUIC]; same data except for under bark (1♀, CNUIC); *Chungnam Prov.:* Nonsan-si, Beolgok-myeon, Surak-ri, Mt. Daedunsan, Surak-valley, N36°08'04.2" E127°18'29.1" 362 m, 19 IV 2013, SG Lee, JS Lee, MA Cho, leaf litter (1♂,

CNUIC); *Jeju Prov.*: Jeju-si, Chuja-myeon, Is. Hachujado, 22 VIII 2002, YB Cho [original label as ‘Korea, Jeju-do Chujado Island (hachujado) VIII. 22. 2002. Y. B. Cho’] (1 ♀, CNUIC).

**Distribution.** Korea, Japan.

*Eudectus rufulus* Weise, 1877 배무늬넓은가슴네눈반날개 (신칭)

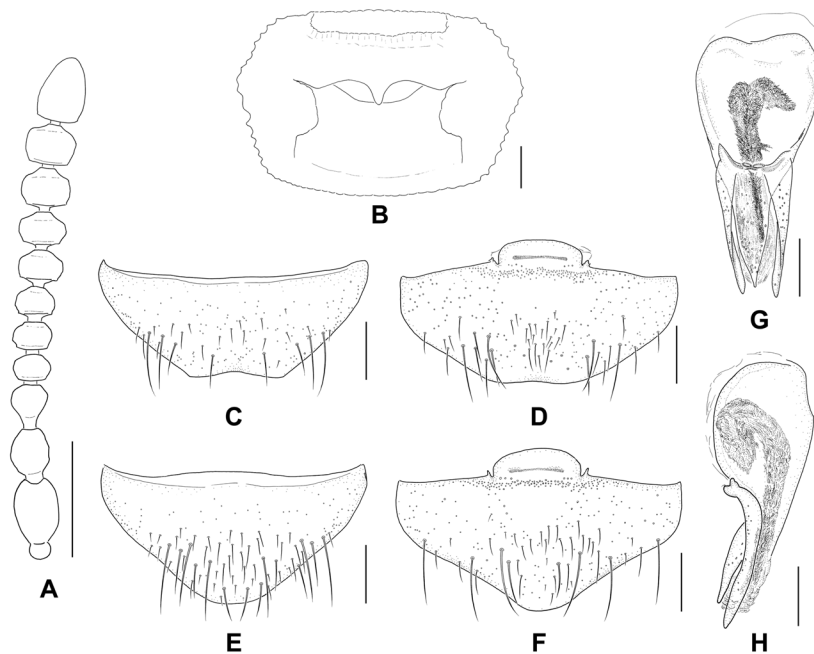
(Figs 1B, 3)

*Eudectus giraudi* var. *rufulus* Weise, 1877: 96.

*Eudectus rufulus*: Weise, 1884: 270; Sharp, 1889: 473; Nakane, 1971: 83; Zerche, 1988: 362; 1990: 146; 1993:343; Watanabe, 1990: 353; 2013: 77; Herman, 2001: 402; Smetana, 2004: 254.

**Description.** Body length 2.4–2.6 mm. Body (Fig. 1B) more or less convex and parallel-sided, covered with coarse punctures and pubescence; yellowish brown to brown, more or less glossy. Head pentagonal transversely, punctate coarsely and sparsely, about 1.6 times wider than long; eye about 2.1 times longer than temple; distance between ocelli about 2.0 times longer than distance between outside of ocellus and inner

margin of eye; antennae (Fig. 3A) relatively short and stout, gradually incrassate distally, reaching to posterior margin of pronotum, antennomeres 1–5 more or less glossy; scape robust, about 1.4 times longer than wide; pedicel suboval, about 1.2 times longer than wide, slightly narrower but rather shorter than scape; antennomere 3 about 1.1 times longer than wide, slightly narrower and shorter than pedicel; 4–8 subpentangular and 9–10 subquadrate, 4–10 transverse and getting larger distally; 4 about 1.36 times wider than long; 7 about 1.35 times wider than long; 9 about 1.24 times wider than long; 11 about 1.41 times longer than wide. Pronotum subhexagonal transversely, more or less convex medially and deplanate laterally, covered with coarse punctures; lateral margins more or less serrate; widest around anterior two fifth, about 1.5 times wider than long, about 1.3 times wider and longer than head; anterior and posterior margins crenulated weakly; anterior margin almost straight and posterior one more or less arcuate, anterior angles round and posterior one more or less angulate obtusely; elytra more or less flat, covered with coarse punctures, lateral margins almost straight with weak crenulation and slightly dilated posteriorly; about 1.2 times wider than long, about 1.4 times wider and 1.8 times longer than pronotum; posterior margin



**Fig. 3.** *Eudectus rufulus*. A, antenna; B, prothorax, ventral aspect; C, male tergite VIII, dorsal aspect; D, male sternite VIII, ventral aspect; E, female tergite VIII, dorsal aspect; F, female sternite VIII, ventral aspect; G, aedeagus, dorsal aspect; H, aedeagus, lateral aspect. Scales = 0.1 mm.

truncated.

**Male.** Abdominal tergite VIII (Fig. 3C) with more or less emarginated posterior margin; more or less sclerotized setae present on medial part of sternite VII; posterior margin of sternite VIII weakly emarginated roundly (Fig. 3D). Aedeagus (Figs. 3G–H) trilobed and almost symmetrical; median lobe slightly shorter than basal bulb and paramere, lateral margin in basal three fourth almost straight and parallel-sided, apical fourth narrowed apically with acute apex; paramere more or less stout, curved inwardly in apical two third, covered with scattered punctures.

**Female.** Abdominal tergite VIII (Fig. 3E) with more or less rounded posterior margin; posterior margin of sternite VIII more or less prolonged with round apex (Fig. 3F).

**Materials examined.** Total 7 specimens. **KOREA:** *Gangwon Prov.:* Pyeongchang-gun, Jinbu-myeon, Mt. Odaesan, Sangwonsa, 15 IX–14 XI 2001, KJ Ahn, CW Shin *ex* FIT (1 ♀, CNUIC); *Chungnam Prov.:* Daejeon-si, Seo-gu, Jangan-dong, Mt. Jangtaesan, N36°13'03.3" E127°20'36.2" 258 m, 28 III 2012, DH Lee, TK Kim, SG Lee, leaf litter (1♂1♀, CNUIC); *Gyeongnam Prov.:* Geoje-si, Dongbu-myeon, Geoje Natural Recreation Forest, N34°47'16.9" E128°37'23.4" 213 m, 14 IV 2011, YH Kim, sifting, flood debris [3♂♂1♀ (2♂♂1♀ on slide), CNUIC].

**Distribution.** Korea, Japan.

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