

## **Taxonomic study of the genus *Gabrius* (Coleoptera: Staphylinidae) with two new species from Korea**

**Young Book Cho and Chang Eon Lee\***

(Natural History Museum, Hannam University, Taejon, 300-791, Korea; \*Entomological Institute of Korean Peninsula, Hyomock-2-dong 615-2, Dong-ku, Taegu 701-032, Korea)

### **ABSTRACT**

As a result of taxonomic study of the genus *Gabrius*, *G. ancoripenis* n. sp. and *G. gladipenis* n. sp. are described and *G. unzenensis* and *G. egens* are recorded for the first time from Korea.

Key words: Coleoptera. Staphylinidae. Philonthini. *Gabrius*. new species. Korea.

### **INTRODUCTION**

The genus *Gabrius* Stephens, widely distributed in the world, belongs to the subfamily Staphylininae. Its members are similar to those of the genus *Philonthus* in general appearance, but the front tarsi are not widened in either sex (Lohse, 1964; Coiffait, 1974), the 3rd segment of labial palpi is much narrower than the 2nd, the head is narrow oblong, the temples are fully twice as long as the eyes, and the pronotum has a dorsal low with 5 or 6 punctures (Cameron, 1932). The specimens are mostly collected by sifting wet leaf litter and other debris along creeks.

There was no any taxonomic study on this genus from Korea so far. The Korean species of the genus *Gabrius* are treated for the first time in this paper. *Gabrius ancoripenis* and *G. gladipenis* are described as new to science, and *G. unzenensis* (Bernhauer) and *G. egens* (Sharp) are recorded from Korea for the first time. Descriptions and a key to the four species are presented.

This paper is the third part of a series dealing with the tribe Philonthini of the subfamily Staphylininae from Korea. The material including the types of the new species is deposited in the Natural History Museum, Hannam University, Korea (HNUNM).

### Key to species of Korean *Gabrius*

1. Head with longitudinal groove extending from vertex toward anterior margin ..... 2  
   — Head without longitudinal groove ..... 3
2. Head subrectangular with well defined longitudinal groove; anterior margin of paramere at each side of middle notch convex ..... *G. egens* (Sharp)  
   — Head suborbicular with ill defined longitudinal groove; anterior margin of paramere at each side of middle notch concave ..... *G. gladipenis* n. sp.
3. Front femur with dense comb-like arranged setae, ventro-apically (Fig. 11); Anterior margin of paramere not emarginate medially ..... *G. ancoripenis* n. sp.  
   — Front femur with only several setae, ventro-apically (Fig. 6); Anterior margin of paramere emarginate medially ..... *G. unzenensis* (Bernhauer)

#### ***Gabrius egens* (Sharp, 1874) 홀쪽좀반날개 (신칭) (Figs. 1-3)**

*Philonthus egens* Sharp, 1874, p. 44; Bernhauer et Schubert, 1914, p. 336.

*Gabrius egens*: Smetana, 1960, p. 303; Shibata, 1983, p. 127; Smetana, 1981, p. 130, figs. 10-12.

Aedoeagus large, with anterior portion of median lobe gradually narrowing (Fig. 1) and somewhat weakly sclerotized in ventral view, somewhat bent in lateral view. Paramere covering middle portion of median lobe, narrowly but not deeply emarginate medio-apically. Sensory peg setae on underside of paramere as in Fig. 2.

**Body length:** 5.9-6.2 mm.

**Type locality:** Japan (Hiogo).

**Specimens examined:** 2 ♂♂, 1 ♀, Chejudo, 20. Mar. 1986. Y.B. Cho.

**Distribution.** Korea (new record) and Japan (Honshu, Shikoku).

#### ***Gabrius unzenensis* (Bernhauer, 1938) 봉홀쪽좀반날개 (신칭) (Figs. 4-7)**

*Philonthus (Gabrius) unzenensis* Bernhauer, 1938, p. 153 (cited from Smetana, 1983); Adachi, 1957, p. 183.

*Gabrius unzenensis*: Smetana, 1973, p. 129; Smetana, 1983, p. 125, figs. 1-3; Watanabe, 1985, p. 299, pl. 52, fig. 14.

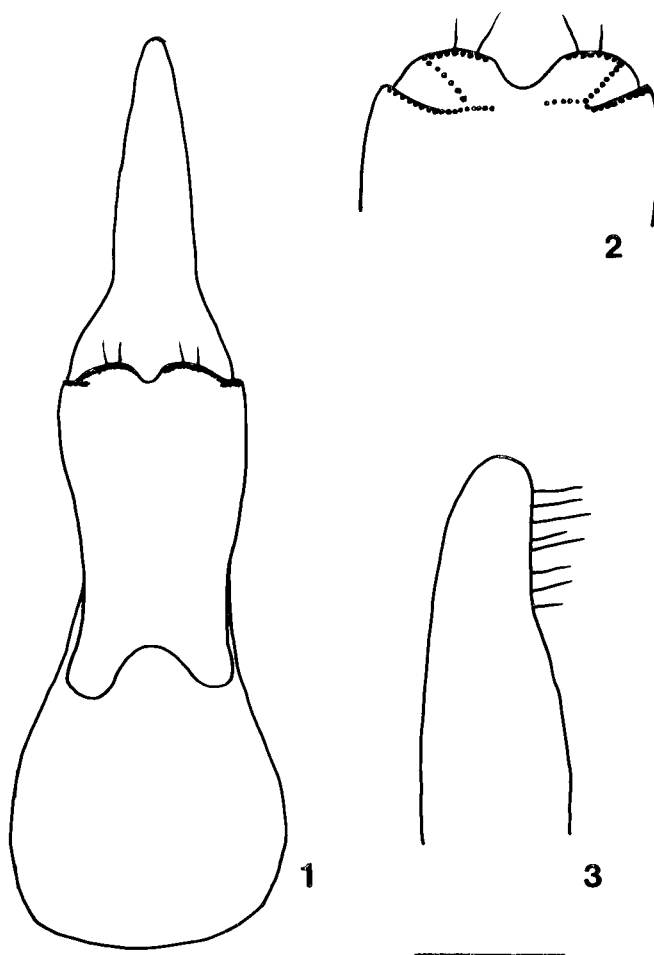
Aedoeagus with median lobe almost gradually narrowed toward obtusely rounded (Fig. 4). Apical portion evenly wide in lateral view (Fig. 7). Branches of paramere obliquely truncate apically, separated by strong, narrow emargination medio-basally (Fig. 4), numerous sensory peg setae on underside of paramere arranged along apical margin at each side of mediobasal emargination (Fig. 5).

**Body length:** 5.5-6.2 mm

**Type locality:** Japan (Unzen).

**Specimens examined:** 3 ♂♂, 3 ♀♀, Mt. Chuwangsan, Kyüngsangpukdo, 28-29. Jun. 1986, Y.B. Cho.

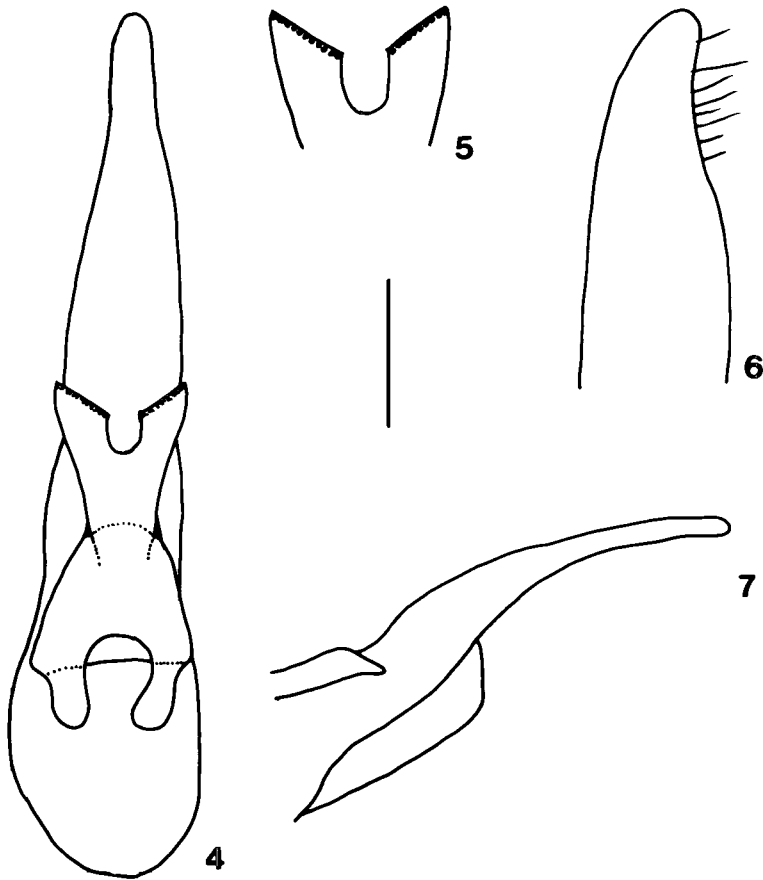
**Distribution:** Korea (new record) and Japan (Honshu, Kyushu).



**Figs. 1-3.** *Gabrius egens* (Sharp), 1-2, Aedeagus: 1, ventral view; 2, sensory peg setae on underside of paramere; 3, Spines-like setae on ventro-apical portion of front femur (Scale for fig. 1: 0.18 mm)

***Gabrius ancoripenis* n. sp.** 달흠쪽좀반날개 (Figs. 10-15)

**Description:** Body length 5.0-5.2 mm, piceous black, shiny; pronotum reddish-brown to piceous-black; elytra reddish brown, slightly paler than pronotum, each with medial portion darker than lateral portion; apical margins of abdominal tergites paler. Antennae, palpi and legs brownish red. Head about as long as wide, suborbicular, distinctly narrower than pronotum; eyes seen from above shorter than tempora (ratio 9: 14). Surface of head with microsculpture of transverse waves. Antenna with length ratio of first three segments 10:5:6. Pronotum longer than wide (ratio 39: 34), wider than head, distinctly narrowed anteriorly; dorsal rows irregular, each with 1 + 5 punctures; microsculpture similar to that on head. Scutellum with punctuation and pubescence similar to that on elytra, surface with dense microsculpture of transverse waves. Elytra slightly shorter than combined width (ratio 42: 46), wider than pronotum, dilated posteriorly; pubescence fine and not dense, pubescence brownish-yellow. Abdomen with apical margin of each tergite paler; punctuation of tergites finer than on elytra, pubescence brown. Front femur with numerous, strong, comb-like setae ventro-apically (Fig. 11).



**Figs. 4-7.** *Gabrius unzenensis* (Bernhauer), 4-5 & 7, Aedeagus: 4, ventral view; 5, sensory peg setae on underside of paramere; 7, anterior portion in lateral view; 6, Spines-like setae on ventro-apical portion of front femur (Scale for figs. 4 & 7: 0.18 mm)

**Male.** Sternite VIII with broad, obtusely triangular medio-apical emargination, emargination partially filled by a membrane, apical margin of sternite bearing long setae, except medially (Fig. 12).

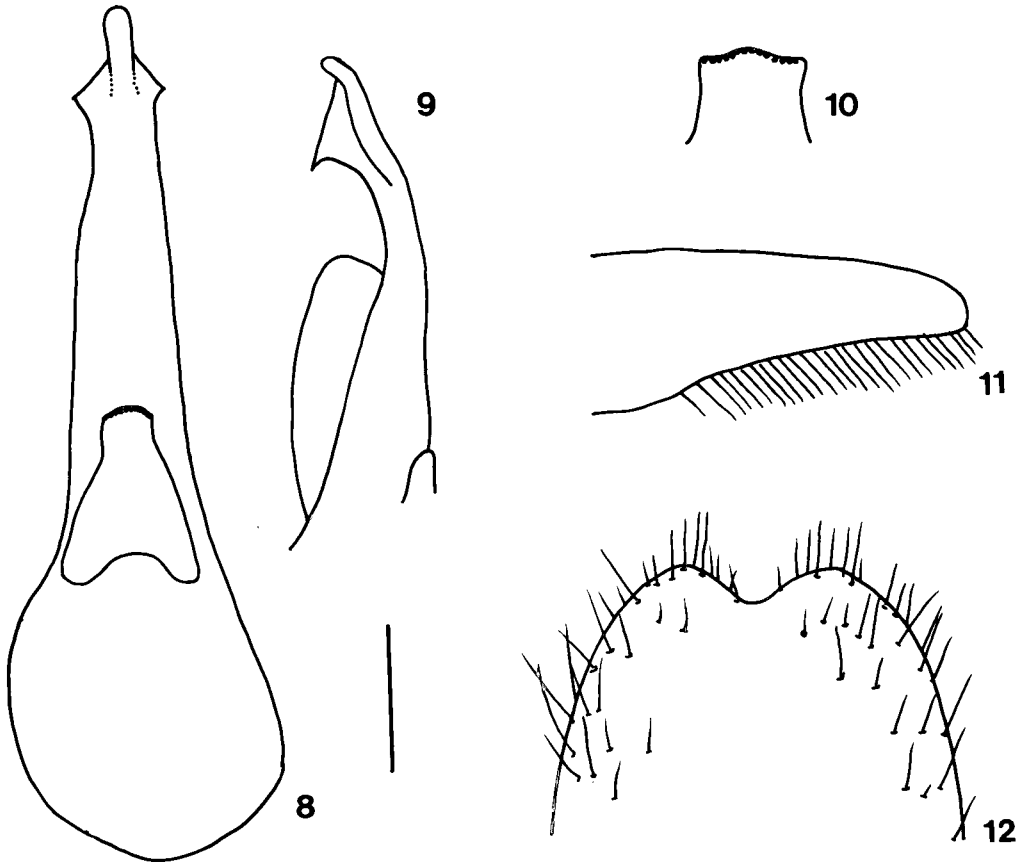
Aedeagus with median lobe elongate, anteriorly at each side extended into sharply triangular lobe and then abruptly narrowed into narrow, rod-like apical portion with blunt apex; apical portion of median lobe in lateral view somewhat curved, ventral face sharply, triangularly extended, resembling an anchor in shape (Fig. 9). Paramere quite short, subtruncate apically, with apical margin slightly, arcuately extended medially; sensory peg setae on underside forming a dense row along apical margin (Fig. 10).

**Type series:** Holotype: ♂, Dongchonri, Yeanmyon, Andong, Kyüngsangpukdo, 15. Jul. 1986, Y.B. Cho. Paratype: 1 ♂, same data as the holotype.

**Distribution:** Korea.

**Remarks:** *Gabrius ancoripenis* may be easily distinguished from all other species known from Korea at present by the characteristic shape of the median lobe and the paramere, and by the numerous, strong, comb-like setae on front femur (Fig. 11).

**Etymology:** This species named for the anchor-like shape of the apical portion of the median lobe

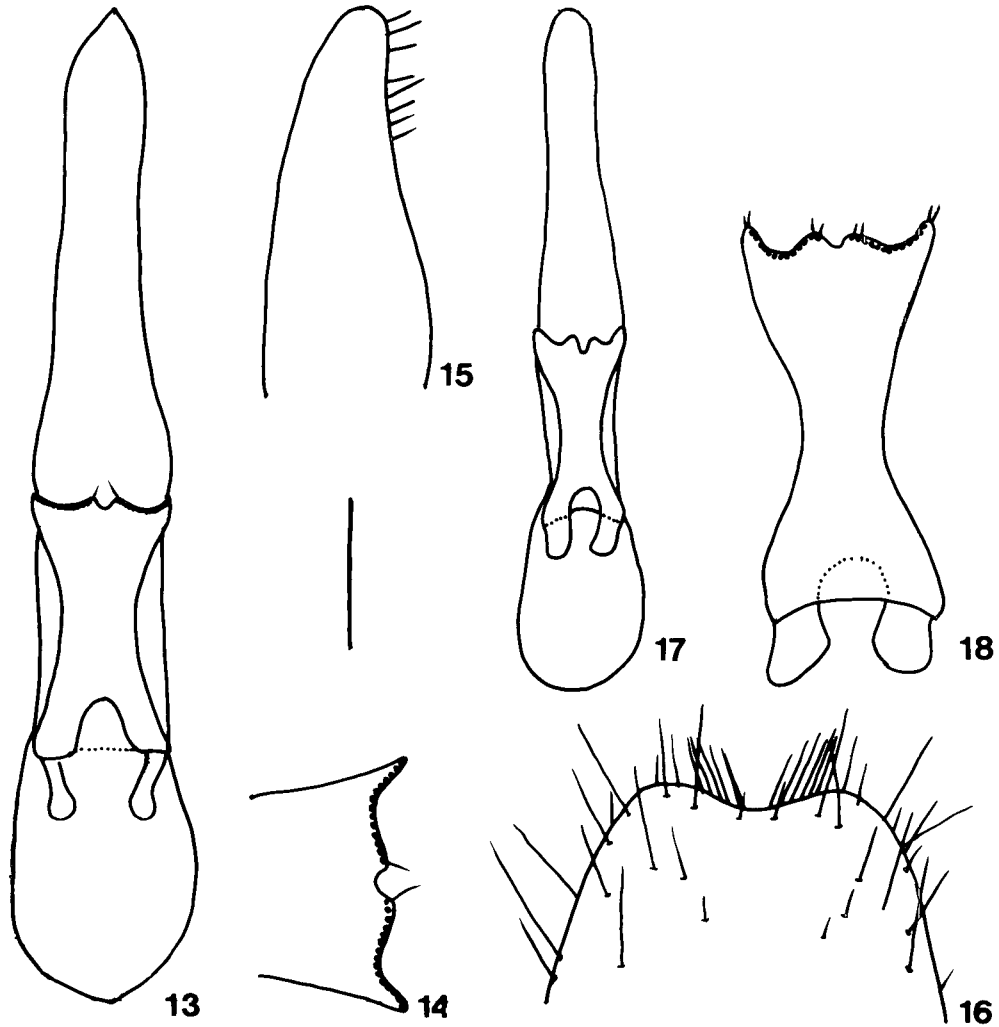


**Figs. 8-12.** *Gabrius ancoripenis* n. sp., 8-10, Aedeagus: 8, ventral view; 9, anterior portion of median lobe in lateral view; 10, sensory peg setae on underside of paramere; 11, Spines-like setae on ventro-apical portion of front femur; 12, Apical portion of male sternite 8 (Scale for figs. 8-9: 0.18 mm)

of the aedeagus.

***Gabrius gladipenis* n. sp.** 검흙쪽좀반날개 (Figs. 13-16)

**Description:** Body length 5.2-5.6 mm, piceous black, shinny; pronotum reddish brown to piceous black; elytra brownish red, clearly paler than pronotum; Abdomen piceous-black, darker than elytra, apical margins of abdominal tergites paler. Antennae, palpi and legs reddish-brown. Head slightly longer than width (ratio 28: 25), suborbicular, somewhat broadened posteriad, more darker than pronotum, narrower than pronotum; eyes seen from above shorter than tempora (ratio 6: 9). Surface of head with microsculpture of transverse waves. Antenna with length ratio of first three segments 9:5:5. Pronotum longer than wide (ratio 37: 35), almost parallel but slightly narrowed posteriad; dorsal rows irregular each with 1 + 5 punctures; microsculpture similar to that of head. Scutellum reddish-brown, with punctation and pubescence similar to that of elytra, surface with dense microsculpture of transverse waves. Elytra slightly shorter than combined width (ratio 40: 42), wider than pronotum, narrowed anteriorly; pubescence fine and somewhat dense, pubescence yellow. Abdomen with apical margin of each tergite paler; punctation of tergites finer than on elytra, pubescence brown. Front femur with several long setae ventro-apically (Fig. 15).



**Figs. 13-18-** *Gabrius gladipenis* n. sp., 13-14, Aedeagus: 13, ventral view; 14, sensory peg setae on underside of paramere; 15, Spines-like setae on ventro-apical portion of front femur; 16, Apical portion of male sternite 8; 17-18, Aedeagus of *Gabrius ophion* Smetana (cited from Smetana, 1983): 17, ventral view; 18, sensory peg setae on underside of paramere (Scale for Fig. 13: 0.18 mm)

**Male.** Sternite VIII with broad and obtuse emargination medio-apically, apical margin of it bearing long and somewhat dense setae, except medially (Fig. 16).

Aedeagus with median lobe elongate, slightly narrowing to apex, apex triangular shape, the tip of apex acute in ventral view (Fig. 13); middle to apex of median lobe distinctly wound like as arrow in lateral view. Paramere with apical margin with small median emargination and each side with wider emargination (Fig. 14); sensory peg setae on underside forming a dense row along apical margin (Fig. 14).

**Type series:** Holotype: ♂, Dongcheonri, Yeanmyon, Andong, Kyüngsangpukdo, 15. Jul. 1986; Y.B. Cho. Paratype: 3 ♂♂, 3 ♀♀, same data of the holotype.

**Distribution:** Korea.

**Remarks:** *Gabrius gladipenis* resembles *G. ophion* in the general form of the aedeagus but differs

by the apex of median lobe (apex is obtusely rounded in *G. ophion* — see Figs 17-18). The aedoeagus of *G. gladipenis* also resembles that of *G. gelo* Smetana, 1983 but the form of the paramere and that of median lobe in lateral view are different.

**Ethmology:** This species named for the sword-like shape of the median lobe of the aedoeagus.

## ACKNOWLEDGEMENT

We extend our thanks to Dr. Aleš Smetana, Biosystematics Research Institute, Agriculture Canada, for the detail correction of this manuscript.

## REFERENCES

- Adachi, T., 1957. The Staphylinid fauna of Japan. J. Toyo Univ., (11): 166 - 200.
- Bernhauer M. and K. Schubert, 1914. Staphylinidae IV. In Junk & Schenkling, Coleopterorum Catalogus, pars **57**: 291-408. W. Junk, Berlin.
- Cameron, M., 1932. The fauna of British India including Ceylon and Berma, Coleoptera, Staphylinidae, vol. **III**: 1-443. Taylor & Francis. London.
- Sharp, D., 1874. Staphylinidae of Japan. Trans. ent. Soc. London: 1-103.
- Shibata, Y., 1983. Provisional check list of the family Staphylinidae of Japan. III. Ann. Bull. Nichidai Sanko, **21**: 67-140.
- Smetana, A., 1960. Monographische Bearbeitung der pal arktischen Arten der Gattung *Gabrius* Curt. aus der *nigritulus*-Gruppe (Coleoptera). Dtsch. ent. Z. N.F., **7**: 295-356.
- Smetana, A., 1973. Ueber einige von Dr. M. Bernhauer beschriebene *Gabrius*-Arten (Coleoptera: Staphylinidae) (90. Beitrag zur Kenntnis der Staphyliniden). Nouv. Rev. Ent. **3**: 125-136.
- Smetana, A., 1983. Review of the Japanese species of the genus *Gabrius* Stephens (Coleoptera, Staphylinidae), (121st contribution to the knowledge of Staphylinidae). Pan-pacific Ent., **60**(2): 122-150.
- Smetana, A., 1984. A new species of the genus *Gabrius* Stephens from Japan (Coleoptera, Staphylinidae), (122nd contribution to the knowledge of Staphylinidae). Revue Suisse Zool., **91**(3): 647-650.
- Watanabe, Y., 1985. Staphylinidae. In: The coleoptera of Japan in color, Vol. **II**, pp. 261-321.

RECEIVED: 31 October 1997

ACCEPTED: 11 December 1998

한국산 흙쭉좀반날개속(*Gabrius*) (딱정벌레목: 반날개과)의 분류

조영복·이창언\*

(한남대 자연사박물관, \*반도곤충연구소)

요약

한국산 미기록속인 흙쭉좀반날개속에 대한 조사결과 4종이 동정되었다. 이들 중 *Gabrius ancoripenis* n. sp.와 *G. gladipenis* n. sp.는 신종이었고, *G. egens*와 *G. unzenensis*는 한국 미기록종이었다. 이들에 대한 종 기재와 검색표를 제시하였다.