

A Review of the Subfamily Osoriinae (Coleoptera, Staphylinidae) in Korea

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ABSTRACT

A systematic review of the subfamily Osoriinae in Korea is presented. Six species are recognized, two of which are recorded for the first time in Korea [*Eleusis coarctata* Sharp and *Mimogonus microps* (Sharp)]. A key is provided for separation of the known species of the Osoriinae, and drawings of genitalia and photographs of habitus are presented.

Key words: Systematics, Coleoptera, Staphylinidae, Osoriinae, Korea

INTRODUCTION

This relatively large subfamily Osoriinae, unusual among staphylinids in having unmargined abdomen, is saprophagous or mycophagous. Members of the Osoriinae contribute to nutrient recycling by forest-floor litter breakdown and are widely distributed in all major biogeographic regions (McCull, 1982; Hansen, 1997).

Osoriines are easily recognized by combination of: entirely lack of paratergites, and (except Eleusinini) abdominal segments with tergite and sternite completely fused into a solid ring; mandibles with developed molar lobes at base; tarsal formula 5-5-5, 4-4-4, or 3-3-3; and abdomen with six visible sternites.

Osorius tarus Sharp was the first Korean Osoriinae recognized by Yuh *et al.* (1985). In addition, they reported *Neolosus aper* (Sharp) as *Lispinus aper* Sharp and incorrectly placed in the subfamily Piestinae. Another species, *Nacaeus longulus* (Sharp) was listed as *Lispinus* species and incorrectly placed in the Piestinae in the check list of insects from Korea (Kim *et al.*, 1994). Also,

Osorius mujechiensis was recently described by Cho (1998) from Mt. Jungjoksan.

While working on staphylinids collections from various Korean institutions, we found two species new to Korea. In this paper we report *Eleusis coarctata* Sharp and *Mimogonus microps* (Sharp) for the first time in Korea, and provide a key, drawings of genitalia and photographs of habitus for identification.

RESULTS AND DISCUSSION

Key to the Korean tribes, genera, and species of Osoriinae

1. Body very flat; pronotum gradually but strongly narrowed toward base for basal 1/3 or more; membranous suture present between each abdominal tergite and sternite (tribe Eleusinini, genus *Eleusis*) *Eleusis coarctata*
- Body flat to convex or cylindrical; pronotal shape diverse, rarely gradually and strongly narrowed toward base; abdominal tergite and sternite of each segments III-VII fused into complete ring 2
2. Procoxa with deep groove and carina on mesal surface; protibia with inner edge concave and ctenidium present; abdominal segment VIII with "extra" tergite at apex; body convex, often nearly cylindrical (tribe Osoriini) 3
- Procoxa with or without carina on mesal surface; protibia with inner edge straight and ctenidium absent; abdominal segment VIII without "extra" tergite at apex; body generally more or less flat (tribe Thoracophorini) 4
3. Pronotum slightly narrowed posteriorly (genus *Osorius*) 5
- Pronotum sides parallel but constricted at base; with a pair large foveae inside the basal constrictions (genus *Mimogonus*) *Mimogonus microps*
4. Abdomen with diagonal strigae (genus *Neolosus*) *Neolosus aper*
- Abdomen without diagonal strigae (genus *Nacaeus*) *Nacaeus longulus*
5. Head with horns at frons; body length over 7.0 mm *Osorius taurus*
- Head without horns at frons; body length less than 5.0 mm *Osorius mujechiensis*

Tribe Eleusinini Sharp 납작투구반날개족 (신칭)

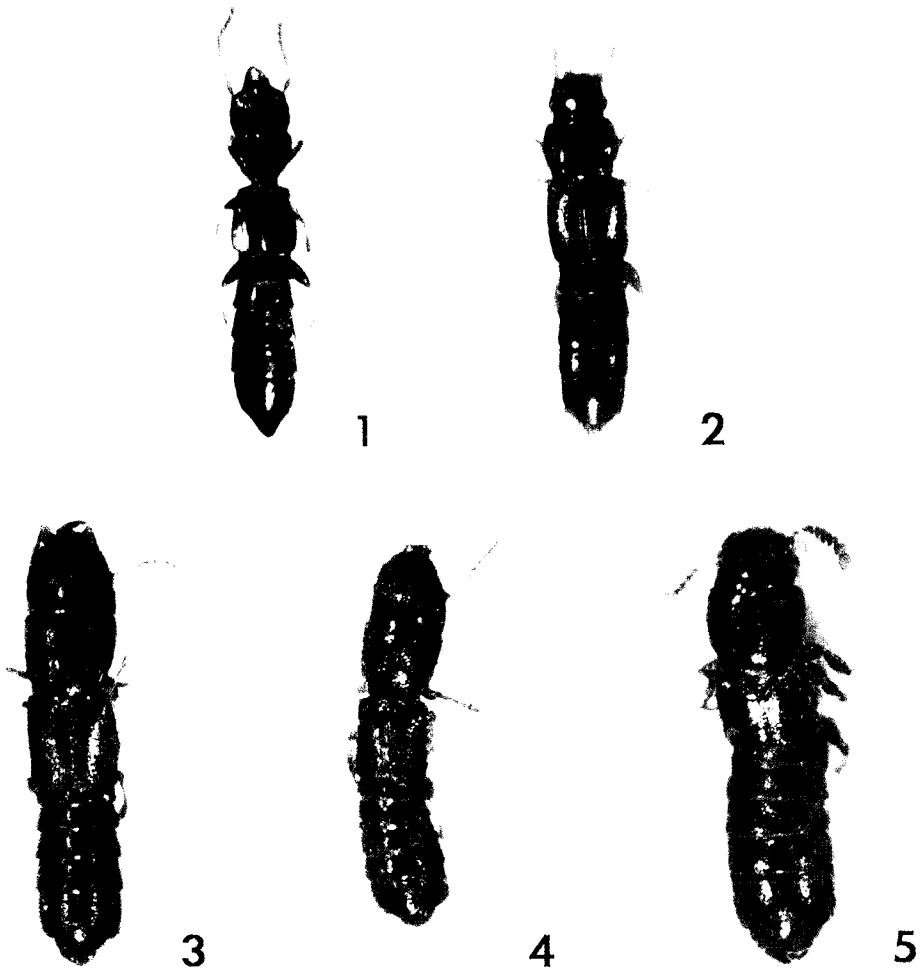
Genus *Eleusis* Laporte 납작투구반날개속 (신칭)

1. *Eleusis coarctata* Sharp, 1889 납작투구반날개 (신칭)

Eleusis coarctata Sharp, 1889, p. 466; Shibata, 1976, p. 86; Watanabe, 1985, p. 263; Naomi, 1996a, p. 49.

Material examined. Korea, Kangwon-do Province, Hoengsungun, Unduryeng, 9-10 Sep. 1998, K.-J. Ahn (18 CNUIC-Chungnam National University Insect Collection, 5 HUNHM-Hannam University Natural History Museum).

Diagnosis. Length 4.0-4.8 mm. General body shape elongate, flattened, black but elytra and abdomen reddish to piceous, shiny. Head large, nearly parallel sides, with a deep elongate depression on each side, the surface finely and sparingly punctate and minutely strigose. Pronotum



Figs. 1-5. Habitus. 1, *Eleusis coarctata* Sharp, length 4.7 mm; 2, *Nacaeus longulus* (Sharp), length 3.3 mm; 3, *Osoarius taurus* Sharp, length 7.8 mm; 4, *Osoarius mujechiensis* Cho, length 4.5 mm; 5, *Mimogonus microps* (Sharp), length 3.0 mm.

very strongly narrowed behind toward base, one small notch present more or less basal 1/3 of each side, finely and sparingly punctate and minutely strigose and very finely canaliculate. Elytra longer than pronotum, each with a large puncture on the middle area and with a few very fine punctures. Abdomen finely but quite definitely margined, the margins testaceous. Median lobe as in Fig. 6 and spermatheca as in Fig. 7.

Remarks. Members of *E. coarctata* Sharp were collected under bark in high montane area in Kangwon-do Province.

Distribution. Korea, Japan.

Tribe Thoracophorini Reitter 줄투구반날개족 (신칭)

Genus *Neolossus* Blackwelder 좀납작투구반날개속 (신칭)

2. *Neolossus aper* (Sharp, 1889) 좀납작투구반날개 (개칭)

Lispinus aper Sharp, 1889, p. 466; Adachi, 1957, p. 193; Shibata, 1976, p. 82; Watanabe, 1985, p. 262; Yuh *et al.*, 1985, p. 225; Kim *et al.*, 1994, p. 139; Naomi, 1996b, p. 767.

Remarks. We did not have any opportunity to examine this species, but cite Yuh *et al.* (1985) and Kim *et al.* (1994).

Distribution. Korea, Japan.

Genus *Nacaeus* Blackwelder 긴좀납작투구반날개속 (신칭)

3. *Nacaeus longulus* (Sharp) 긴좀납작투구반날개 (개칭)

Lispinus longulus Sharp, 1874, p. 101.

Lispinus impressicollis longulus Bernhauer, 1929, p. 353; Shibata, 1976, p. 83; Kim *et al.*, 1994, p. 139.

Nacaeus longulus Naomi, 1997, p. 129.

Material examined. Korea, Cheju-do Province, Seongpanak, 28 Sep. 1985, K. S. Lee (1 HUNHM); 28 Nov. 1985, K. S. Lee (1 HUNHM); Seogwipo, 20 Jun. 1985, K. S. Lee (1 CNUIC).

Diagnosis. Length 2.5-3.3 mm. Body dark brown to black, shiny. Head with a pair of shallow depressions. Pronotum broadest near the middle, weakly constricted at base. Elytra convex laterally. Abdomen cylindrical, more or less parallel-sided. Spermatheca with two globose structures (Fig. 8).

Distribution. Korea, Japan.

Tribe Osoriini Erichson 투구반날개족 (신칭)

Genus *Osorius* Latreille 투구반날개속 (신칭)

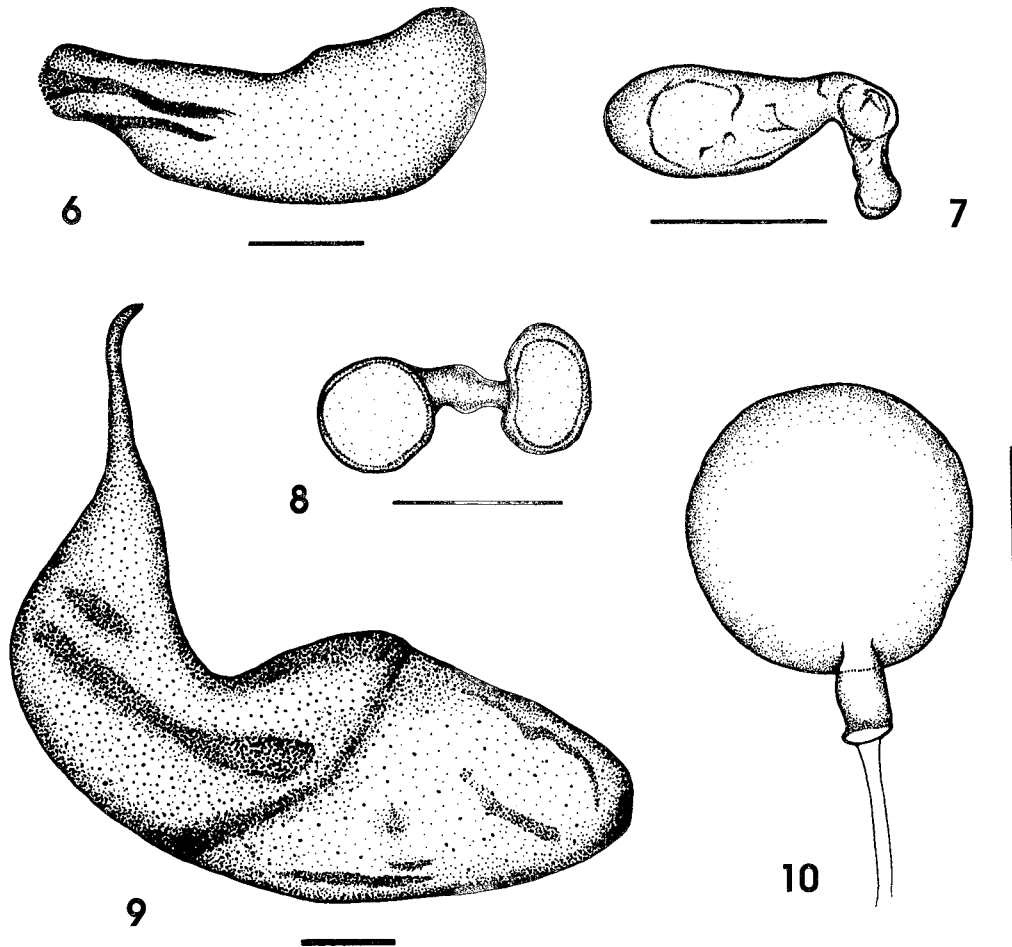
4. *Osorius taurus* Sharp, 1889 투구반날개

Osorius taurus Sharp, 1889, p. 411; Adachi, 1957, p. 193; Shibata, 1976, p. 169; Yuh *et al.*, 1985, p. 229; Watanabe, 1985, p. 276; Naomi, 1986, p. 36.

Material examined. Korea, Kangwon-do Province, Sokumgang, 30 May 1987, Y. B. Cho (1 HUNHM); Kyungsangbuk-do Province, Cheongsonggun, Mt. Juwhangsan, 28 Jun. 1987, Y. B. Cho (10 HUNHM); Chungcheongbuk-do Province, Youngdonggun, Mt. Minhujisan, 20 Aug. 1997, Y. B. Cho (1 HUNHM); Chungcheongnam-do Province, Kumsangun, Mt. Jinraksan, 13-18 Sep. 1998. P. Tripotion (3 HUNHM); Cheju-do Province, Kasiri, 18 Apr. 1985, K. S. Lee (1 CNUIC); 29 Mar. 1985, K. S. Lee (1 CNUIC).

Diagnosis. Length 7.5-8.5 mm. Body brown to black, coarsely punctured. Head with median longitudinal smooth area, frons with a pair of horns. Pronotum broader than long, narrowed posteriorly, with a median longitudinal smooth area. Elytra longer than pronotum. Abdomen broadened posteriorly, strongly punctured. Median lobe sclerotized in apical half (Fig. 9). Spermatheca as in Fig. 10.

Distribution. Korea, Japan, China.



Figs. 6-10. Median lobe and spermatheca, lateral aspect. 6, *Eleusis coarctata* Sharp, median lobe; 7, *Eleusis coarctata* Sharp, spermatheca; 8, *Nacaeus longulus* (Sharp), spermatheca; 9, *Osorius taurus* Sharp, median lobe; 10, *Osorius taurus* Sharp, spermatheca. Scales 0.1 mm.

5. *Osorius mujechiensis* Cho, 1998 작은투구반날개

Osorius mujechiensis Cho, 1998, p. 99.

Material examined. Korea: Kyungsangbuk-do Province, Ulsan city, Mt. Jungjoksan, 23 Jul. 1996, Y. B. Cho (holotype, 1 paratype HUNHM); 23 Mar. 1996, Y. B. Cho (2 CNUIC).

Distribution. Korea.

Genus *Mimogonus* Fagel 곱보투구반날개 속(신칭)

6. *Mimogonus microps* (Sharp, 1889) 곱보투구반날개 (신칭)

Osorius microps Sharp, 1889, p. 412.

Mimogonus microps Adachi, 1957, p. 193; Shibata, 1976, p. 168; Watanabe, 1985, p. 275; Naomi, 1987, p. 13.

Material examined. Korea, Kangwon-do Province, Ssangyong, 29 Aug. 1996, Y. B. Cho (1 HUNHM).

Diagnosis. Length 2.0-3.0 mm. Body yellowish, shiny. Head narrower than pronotum, frons narrowed and weakly deflected anteriorly, coarsely and irregularly punctured, eye small. Pronotum broader than long, parallel sides but constricted at base, with a pair of foveae near posterolateral corners. Elytra as wide as pronotum, coarsely and obsolete punctured. Abdomen broadened posteriorly, indistinctly punctured, densely covered with short yellow hairs.

Distribution. Korea, Japan, China, Taiwan.

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한국산 투구반날개아과 (딱정벌레목: 반날개과)의 분류

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요 약

한국산 투구반날개아과의 분류학적 재검토를 수행하였다. 국내에서 처음으로 보고되는 *Eleusis coarctata* Sharp 와 *Mimogonus microps* (Sharp)를 포함한 6종의 검색표, 생식기 그림, 표본사진을 작성하였다.