

First Record of the Genus *Spilopteron* (Hymenoptera: Ichneumonidae: Acaenitinae) from Korea with Description of a New Species

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ABSTRACT

An acaenitine genus, *Spilopteron* Townes, 1960, is reported for the first time in Korea with *S. mucronatus* Lee new species. A key to the Korean genera of the tribe Acaenitini Foerster, 1869, description of the a species and photographs of diagnostic characters are provided.

Key words: *Spilopteron mucronatus*, Acaenitinae, Ichneumonidae, new species

INTRODUCTION

The genus *Spilopteron* Townes, 1960 (the tribe Acaenitini Foerster, 1869) contains 28 extant species worldwide. Of these, five species have been known to occur in Eastern Palearctic region, and the others in Oriental and Nearctic regions (Yu et al., 2005).

The taxonomic history of the genus reflects its diversity. Three species described by Cresson (1868, 1869) had been placed in the genus *Arotes* Gravenhorst, 1829 from Canada and America. Since his works, these species have been placed in the genus *Spilopteron* that was first described by Townes in 1960 (TS: *Spilopteron franclemonti*). In Japan, Matsumura (1912), Uchida (1930, 1934) and Kusigemati (1981) have described four species. For the next 33 years, many members of this genus were studied by Chiu (1971) and Wang (1982, 1988, 1992, 1993, 1997, 2004) from China; 20 species have been reported, respectively.

The genus *Spilopteron* is similar to the genus *Arotes* Gravenhorst, 1829, but mostly is distinguished by the key characters, such as hind tarsal claws without accessory tooth and vein 2+3 rm of fore wings opposite or a little distad of vein 2 m-cu.

Five species of the genus are parasitoid of wood boring beetles of the family Cerambycidae (Yu et al., 2005).

In the present study, we report a new species, *Spilopteron mucronatus* Lee. The key to the genera of tribe Acaenitini, description and photographs of diagnostic characters for this new species are provided.

MATERIALS AND METHODS

The morphological terminology used in the species descriptions is that of Gauld (1991); except for that of the nomenclature of the wing veins, which is based upon Gauld (1976). Photographs were taken using Zeiss AxioCam MRc5 digital camera system attached to a Zeiss Stemi SV 11 Apo stereomicroscope, processed using an *i*-delta imaging system (Image & Microscope Technology, Daejeon, Korea) and modified in Adobe photoshop CS3.

Type specimens of four species reported in Japan were loaned from the SEHU (Systematic Entomology, Faculty of Agriculture, Hokkaido University 060-8559, Sapporo, Japan). Type materials of the new species are deposited in the YNUE (Department of Biology, Yeungnam University, Gyeongsan, Korea).

TAXONOMIC ACCOUNTS

Order Hymenoptera
Family Ichneumonidae Latreille, 1802
Subfamily Acaenitinae Foerster, 1869
Tribe Acaenitini Foerster, 1869
Genus *Spilopteron* Townes, 1960

Key to the genera of the tribe Acaenitini in Korea

1. Hind tarsal claws with an accessory tooth 2
Hind tarsal claws without an accessory tooth 3
2. Clypeus short and truncate, with a very strong preapical transverse ridge; areola of propodeum well-defined by carina; vein 2+3 rm of fore wing distad of 2 m-cu
..... Genus *Arotes* Gravenhorst
Clypeus uniformly flattened and long, elliptic; apical

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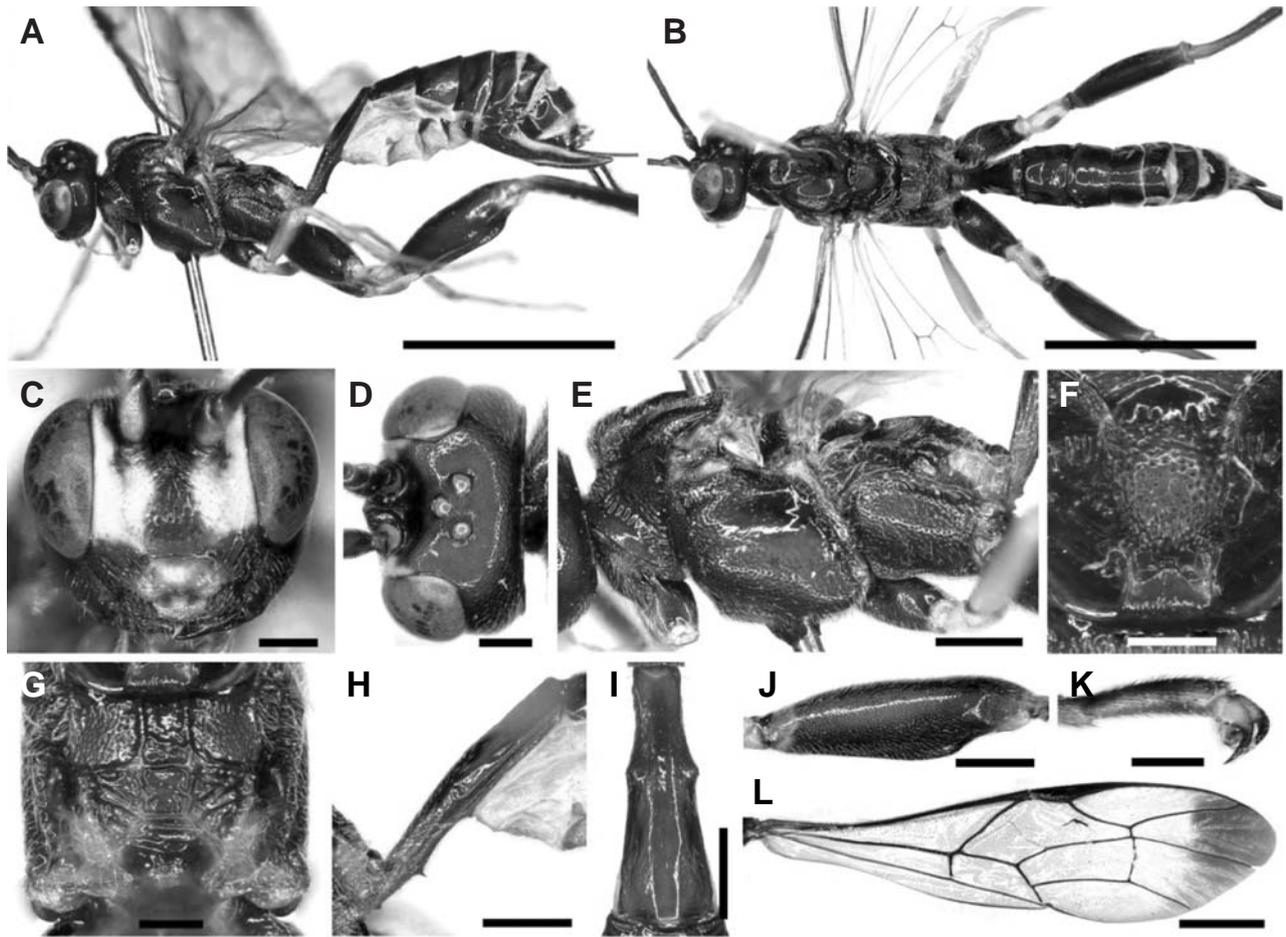


Fig. 1. Female of *Spilopteron mucronatus*, n. sp. (A, B) Body: (A) in lateral view. (B) in dorsal view. (C, D) Head: (C) in frontal view. (D) in dorsal view. (E) thorax in lateral view. (F) scutellum and postscutellum in dorsal view. (G) propodeum in dorsal view. (H, I) First tergite: (H) in lateral view. (I) in dorsal view. (J) Hind femur. (K) Hind tarsal claws. (L) Wing. Scale bars=5.0 mm (A, B), 0.5 mm (C, D, F, G, K), 1.0 mm (E, H-J), 2.0 mm (L).

margin of clypeus thin, without a denticle; areola of propodeum indistinct; vein 2+3 rm of fore wing opposite or a little basad of 2 m-cu Genus *Yamatarotes* Uchida

3. Occipital carina complete; areola of propodeum well-defined by carina; apical margin of fore wings brown Genus *Spilopteron* Uchida

Occipital carina broadly absent dorsally, but ventrally present; areola of propodeum indistinct or absent; fore wings entirely hyaline Genus *Phaenolobus* Foerster

Genus *Spilopteron* Townes, 1960
Spilopteron Townes, 1960: 568. Type Species: *Spilopteron franclemonti* Townes.

Diagnosis. Occipital carina complete. Clypeus short, with a strong, sharp, subapical transverse carina, its apex slightly concave and with a very weak median projection. Front pro-

file of mesoscutum vertical. Vein 2+3 rm opposite of vein 2 m-cu or distad by as much as 0.15 its length. Hind tarsal claws without accessory tooth. First sternite with a median swelling that gives rise to numerous long hairs.

***Spilopteron mucronatus* Lee, new species (Figs. 1, 2)**

Material examined. Type series (all the types are housed in YNUE). Holotype, ♀, KOREA: Gyeonggi-do Province, Yangpyeong-gun Yongmun-myeon Mt. Yongmun, 28 May 1991 (J.W. Lee). Paratypes, 1 ♀, KOREA: Chungcheongbuk-do Province, Boeun-gun Mt. Sokri Beopjusa Maepyoso, 12-21 Jun. 2007 (J.C. Jeong), with Malaise trap; 1 ♂, KOREA: Gangwon-do Province, Taebaek-si Geumcheon-dong Mt. Taebaek, 11 Jul. 1999 (J.C. Jeong).

Female. Body length excluding ovipositor 15.02 mm; Fore wing length 12.21 mm; Antenna length 11.74 mm.

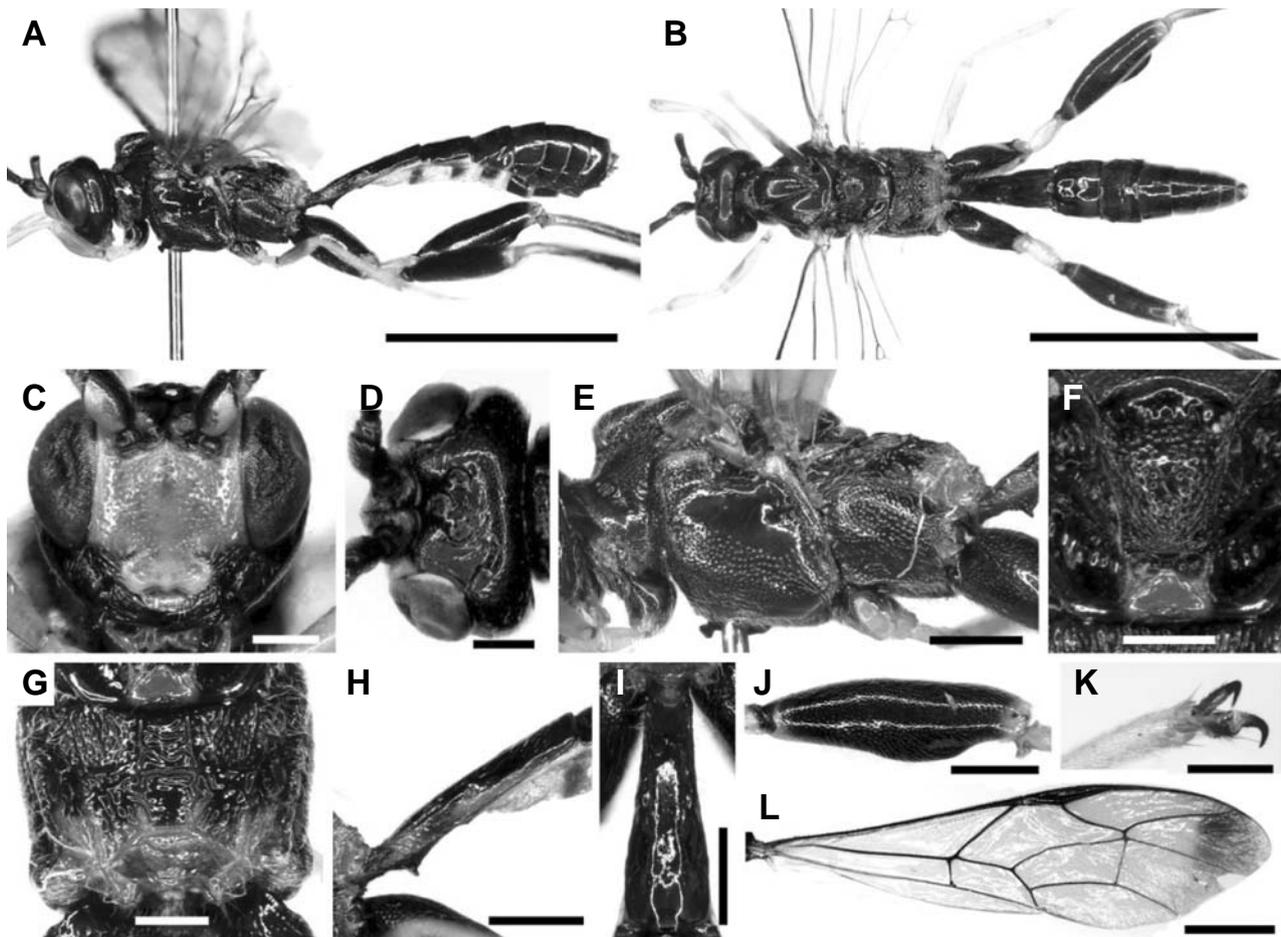


Fig. 2. Male of *Spilopteron mucronatus*, new species. (A, B) Body: (A) in lateral view. (B) in dorsal view. (C, D) Head: (C) in frontal view. (D) in dorsal view. (E) thorax in lateral view. (F) scutellum and postscutellum in dorsal view. (G) propodeum in dorsal view. (H, I) First tergite: (H) in lateral view. (I) in dorsal view. (J) Hind femur. (K) Hind tarsal claws. (L) Wing. Scale bars=5.0 mm (A, B), 0.5 mm (C, D, F, G, K), 1.0 mm (E, H-J), 2.0 mm (L).

Head. Occipital carina complete, dorsally slightly flattened. Occipital notch absent. Ocella area weakly convex; distance between median and lateral ocelli 0.71 times as long as diameter of median ocellus; distance between lateral ocellus and eye 1.84 times as long as diameter of lateral ocellus; surface between lateral ocellus and eye densely punctate; triangular area without longitudinal groove. Distance between eye and antennal socket narrower than distance between antennal sockets. Frons smooth, with longitudinal carina. Eye 1.55 times as long as wide; inner margin of eye straight opposite antennal socket; surface of eye glabrous. Face strongly convex on central area, and with a weak longitudinal ridge at upper center, rugosopunctate, polished with evenly hairs, about 1.54 times as wide as high. Epistomal suture distinct. Clypeus uniformly flattened and short, about 2.30 times as wide as long, not divided, with hairs and punctures; apical margin of clypeus with a preapical transverse

rounded ridge, its apex truncate and weakly rounded, with weak tubercle and lateromedian denticles. Mandible moderately large, weakly and evenly tapered, strongly striate at basal part; length of upper tooth slightly shorter than lower; breadth of upper tooth very slightly narrower than lower. Malar space with deep subocular sulcus, 0.83 times basal mandibular width. Labrum with hairs at apical part. Maxillary palps with five segments. Labial palps with four segments. Antenna with 37 flagellar segments, 0.96 times as long as fore wing; first segment 1.51 times as long as second, and 0.28 times as wide as long; apical segment 0.40 times as wide as long.

Mesosoma. Pronotum finely punctate dorsally, and middle area with transverse wrinkle; in profile moderately long, 0.85 times as long as deep; epomiaae entirely absent. Mesonotum finely punctate, profile of front vertical, with a weak median longitudinal groove. Notauli distinct, extending to a

beyond center part. Scuto-scutellur groove smooth. Scutellum weakly convex, forming a square; lateral longitudinal carinae absent. Mesopleuron punctate; speculum glabrous; epicnemial carinae conspicuously present below. Propodeum short; propodeal spiracle elongately oval, more than 2.00 times as long as wide; basal area and areola separated by anterior transverse carina; basal area longer than wide; areola wider apically than basally, well-defined by carinae; anterior transverse carina complete; posterior transverse carina complete; lateral longitudinal carinae complete; median longitudinal carinae complete; first lateral area with uniformly distributed punctures and hairs.

Wings. Areolet of fore wings absent; vein 2+3 rm opposite of vein 2 m-cu; vein Cu1 0.63 times as long as vein 1A; 0.48 times as long as vein 1m-cu; vein cu1 between vein 1 m-cu and vein Cu1a 1.15 times as long as vein cu1b; vein Rs 1.72 times as long as vein Rs+2r; vein Rs+M distad of vein cua; vein 2m-cu with two bulla. Hind wings with 14 distal hamuli; vein 2-Cu 0.84 times as long as vein CU-a.

Legs. Fore femur ventrally unspecialized, slightly flattened; fore tibiae simple; second tarsomere 4.69 times as long as broad; third tarsomere 3.67 times as long as broad; fourth tarsomere 1.77 times as long as broad; fifth tarsomere of similar thickness to other tarsomeres; tarsal claws with accessory tooth. Middle tarsal claws with accessory tooth. Hind femur ventrally with a weak tooth; first tarsomere 6.63 times as long as broad; second tarsomere 2.64 times as long as broad; third tarsomere 1.81 times as long as broad; fourth tarsomere 1.56 times as long as broad; fifth tarsomere 3.96 times as long as broad, 1.50 times as long as second tarsomere; tarsal claws without accessory tooth.

Metasoma. Tergites smooth, not punctate distinctly. Petiole and postpetiole of first tergite in profile flattened, with spiracle in middle; first tergite in dorsal view distinctly narrowed anteriorly, without impression, and median groove weakly, 0.38 times as long as width of its apex. Second tergite 1.12 times as long as width of its apex, anteriorly with transverse depression in which is thyridium, without impression behind thyridium. First sternite with small spine. Subgenital plate conspicuous, triangular, and folded on the middle line.

Color. Body color dark brownish black. Flagellum without a median white band. The following characters yellow: ventral side of scape, face except for a mark at center, clypeus, labrum, apical area of propodeum, fore legs except for coxa, middle legs except for coxa, hind trochanter and trochantellus. Stigma brown.

Male. As for female except face, postscutellum and hind tarsomeres 2-5 yellow.

Distribution. Korea.

Etymology. The specific name is derived from the Latin,

meaning of spine, a reference to spine on the first sternite of abdomen.

Remarks. This species can be easily distinguished from other genus *Spilopteron* by the first sternite in ventral view with a small spine, and *S. mucronatus* Lee, new species, is similar to *S. flavescutatum* Wang, 2004, in appearance at a glance, but can be distinguished by the second lateral area of propodeum defined by carinae, vein 2+3 rm of fore wings opposite of vein 2 m-cu, and also differ from *S. longitubus* Wang, 2004, by scutellum and postscutellum black.

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