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## Original article

Review of the *Stenus asyura* group (Coleoptera, Staphylinidae, Steninae) in Korea, with description of five new species

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## ABSTRACT

In this study, a total of nine species of the *Stenus asyura* group were recognized from Korea. Among them, five species are described as new to science: *Stenus foliaceus* n. sp., *Stenus fuscicornis* n. sp., *Stenus fusciformis* n. sp., *Stenus gajisanensis* n. sp., and *Stenus suryongensis* n. sp. Habitus photographs, illustrations of diagnostic characters, and a key to the species of this group in Korea are provided.

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## Introduction

In this paper, we introduce the *Stenus asyura* group (subfamily Steninae). Seventy-one species have been described in Japan (Naomi and Puthz 2013; Naomi 2015a,b; Naomi and Nomura 2015; Naomi and Watanabe 2015; Naomi et al 2015) and four species in Korea (Puthz 1974a; Puthz 1991; Oh and Cho 2016). The *S. asyura* group is similar to the *S. cephalotes* group, and the two share numerous external characters. However, the *S. asyura* group is distinguished by a relatively large body (3.5–6.0 mm), generally not developed sexual characters on sternites VI and VII of males, and median lobe of the aedeagus broad, with a distinctly angular apicolateral corner (Naomi 2012).

In this study, a total of nine species of the *S. asyura* group, including five new species, were recognized from Korea. We describe these five new species—*Stenus foliaceus*, *Stenus fuscicornis*, *Stenus fusciformis*, *Stenus gajisanensis*, and *Stenus suryongensis*—and provide habitus photographs and illustrations of distinguishing characteristics. Moreover, the known species from Korea were enumerated with the key to the *S. asyura* group.

## Materials and methods

Specimens examined were collected by sifting leaf litter at various locations in South Korea and preserved with 80% ethyl alcohol. Specimens were dissected last three abdominal segments from the body after softening in hot water. Aedeagi, spermatheca, and dissected abdominal segments were mounted in Euparal on slides following the method described by Hanley and Ashe (2003). Photographs of sexual characters were taken with a Ricoh GX100 camera (Caplio GX100, Japan) attached to a Nikon YS100 microscope (YS100, Japan); habitus photographs were taken with a Canon macro photo lens MP-E 65 mm (MP-E 65mm f/2.8 1–5x Macro Photo, Japan) attached to a Canon EOS 500D camera (EOS 500D, Japan). The specimens studied are deposited in the following institutions:

- HUNHM: Natural History Museum, Hannam University, Daejeon, Korea
- KUM: Kyushu University Museum, Fukuoka, Japan

The measurements are as follows: body length—from the apical margin of head to the posterior margin of abdominal tergite X; forebody length—from the apical margin of head to the posterior margin of elytra; head width—maximum width of the head across the eyes; pronotum width—maximum width of the pronotum; elytra width—maximum width of elytra; pronotum length—length of the pronotum along the midline; elytral length—from the humeral angle to the apicolateral angle.

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Figures 1–5. Habitus of the genus *Stenus*: 1, *Stenus foliaceus*; 2, *S. fuscicarpus*; 3, *S. fusciformis*; 4, *S. fuscivestis*; 5, *S. suryongensis*. <scale bar: 1 mm>

### Systematic account

Genus *Stenus* Latreille, 1797

*S. asyura* group Naomi, 1988

**Diagnosis.** Relatively large body (3.5–6.0 mm); body usually blackish or brownish; generally not developed sexual characters on sternites VI and VII of males, and a broad median lobe of the aedeagus with a distinctly angular apicolateral corner (Naomi 2012).

**Key to the Korean species of the *S. asyura* group**

1. Abdominal tergites III–VI with paratergites.....2  
Abdominal tergites III–VI without paratergites.....4
2. Body brown to dark brown.....3  
Body black.....*S. merkli* Puthz
3. Parameres extending distinctly beyond apex of median lobe...  
.....*S. frebi* L. Benick  
Parameres not extending beyond apex of median lobe .....  
.....*S. fuscicarpus* n. sp.

4. Body black ..... 5  
Body brown to dark brown .....6
5. Frons strongly concave, median portion slightly convex or almost flat, median portion almost without punctures; pronotum with very coarse punctures; elytra with shallow longitudinal impression at the sides .....*S. sulcifer* Oh and Cho  
Frons weakly concave, median portion convex, median portion with punctures; pronotum with less coarse punctures; elytra without shallow longitudinal impression at the sides .....  
.....*S. nomuraianus* Puthz
6. Apical median portion of median lobe of aedeagus distinctly tricuspidate ..... *S. fuscivestis* n. sp.  
Apical median portion of median lobe of aedeagus distinctly monocuspidate .....7
7. Apicolateral margin of median lobe of aedeagus smoothly rounded ..... *S. suryongensis* n. sp.  
Apicolateral margin of median lobe of aedeagus angular ..... 8
8. Apical sclerotized portion of median lobe of aedeagus steeply subtriangular, parameres extending distinctly beyond apex of median lobe, expulsion hooks of internal sac separated and rounded ..... *S. foliaceus* n. sp.

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