

# *Nemoura phasianusa*, a New Species of Nemouridae (Insecta: Plecoptera) from Korea

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## ABSTRACT

*Nemoura phasianusa* n. sp. is similar to *Nemoura jezoensis* in general morphology especially lateral view, but can be distinguished by the combination of the characters of the epiproctal shape whose apex is depressed medially, and sclerites of epiproct, which look like question marks without dots.

**Key words:** *Nemoura phasianusa*, new species, description, Nemouridae, Plecoptera, Korea

## INTRODUCTION

The genus *Nemoura* Latreille, 1796 comprised of at least 175 species in the Holarctic Region and extremely common in the most of Europe and Asia (Baumann, 1975; Fochetti and Figueroa, 2008). These taxa are characterized by the males having distinctive sclerotized hooks on the tips of cerci and the females having a combination of lightly sclerotized, angular cerci and a well developed pregenital plate on 7th sternum. But some females are very difficult to identify at the species level but some species have been realized by clearing and staining the sclerotizations of the vagina (Baumann, 1975).

After the early reports of Zwick (1973a, b), four additional species of the genus *Nemoura* have been recognized in Korean fauna: *N. brevicercia* Zhiltzova, 1982, *N. espera* Ham & Lee, 1999, *N. gemma* Ham & Lee, 1998, *N. jezoensis* (Okamoto, 1922), *Nemoura tau* Zwick, 1973 (Zwick, 1973b; Ham and Lee, 1998, 1999; Ham, 2000). In the present paper, a new species of *Nemoura* from Korea is described and illustrated in detail based on the male specimens.

## MATERIALS AND METHODS

Adults were collected from mountain streams in middle Korea between 1999 and 2000 by aerial nets. The materials are preserved in 80% EtOH, examined under a microscope (Zeiss, Stemi SV6), and housed in Ham's Collection of Chonnam National University. Morphological terminology generally follows that of Baumann (1975).

## SYSTEMATIC ACCOUNTS

Family Nemouridae Newman, 1835

Genus *Nemoura* Latreille, 1796

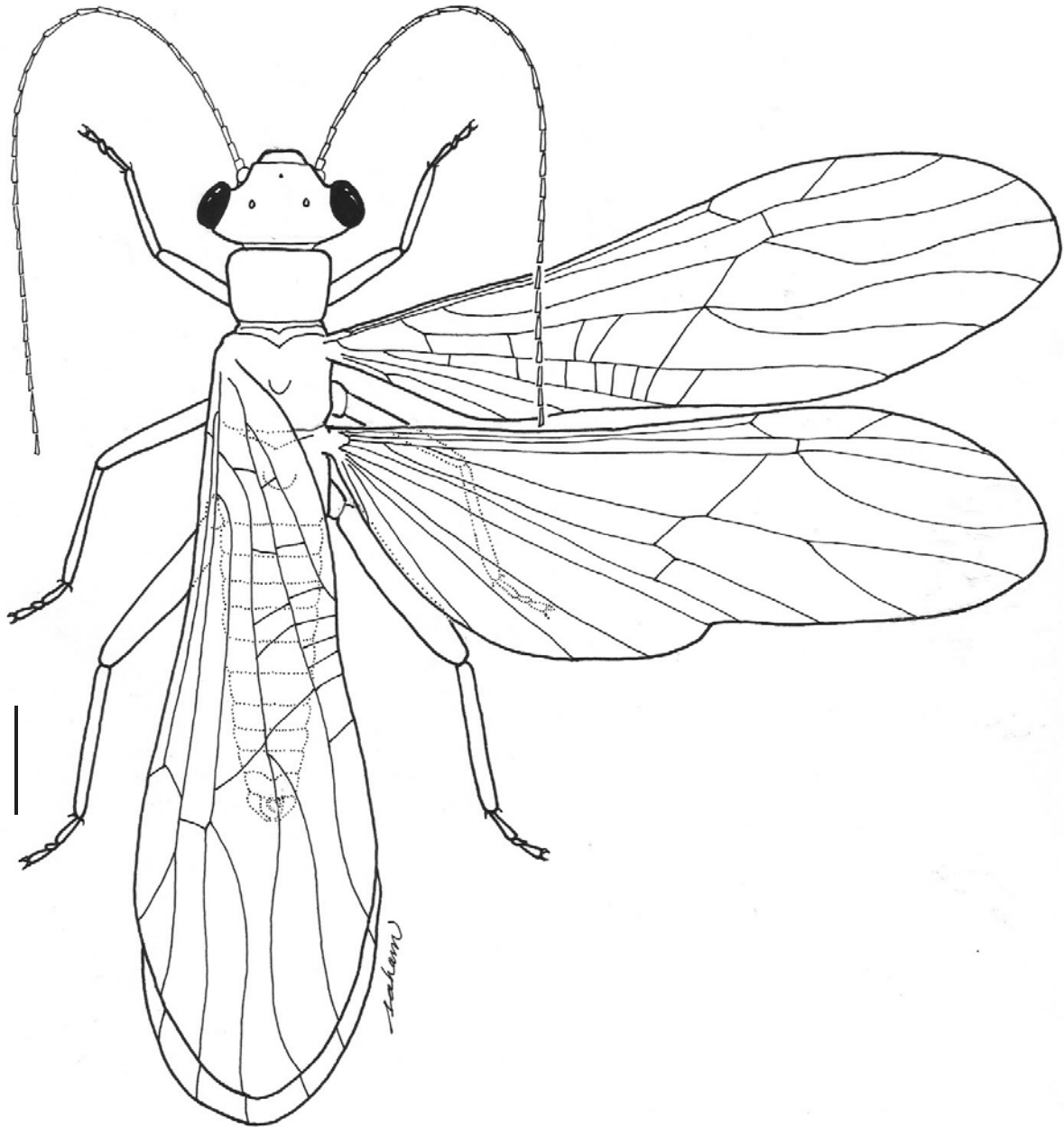
<sup>1</sup>\**Nemoura phasianusa* n. sp. (Figs. 1, 2)

*Material examined.* Holotype: ♂, Sangwonsa Valley, Chiaksan Mt., 13 Jun. 2000 (S.A. Ham). Paratypes: 4♂♂, Sangwonsa valley, Chiaksan Mt., 9 Jun. 2000 (S.A. Ham); ♂, Sangwonsa Valley, Chiaksan Mt., 16 Jun. 1999 (T. Shimizu).

*Adult. Male.* Length. Body 5.7 mm; forewing 6.8 mm; hind wing 6.9 mm; antenna 6.1 mm. Head and prothorax dark brown without pattern. Antennae dark brown, as long as body length. Wings (Fig. 1) macropterous, venation typical for family, and hyaline. Terminalia (Fig. 2A-C). Hypoproct broad at base, tapering to narrow apex, extending lobes; vesicle present. Paraprocts consisting of 2 lobes; inner lobes sclerotized, narrow and short, closely applied to midline; outerlobes sclerotized ventrally and membranous dorsally, very large and triangular in shape, bearing 2 protrusions at apex; a patch of hairs located between hypoprocts. Epiproct (Fig. 2D, E) short and broad in dorsal aspect, apex rounded, completely recurved, membranous, and bilaterally symmetrical; dorsal sclerites large and broad at apex of epiproct, bilaterally symmetrical, like question marks without dots in shape; lateral sclerites small and narrow extending from dorsal base to ventral center; ventral part lightly sclerotized, broad at base, with small lateral knobs at basolateral corners; central ridges becoming narrower toward apex, each bearing a row of spines, partly covered by dorsal sclerites near the middle of epiproct; ventral cushion membranous, bearing 2 pairs of sclerites. Tergum (Fig. 2A). Tenth

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**Fig. 1.** *Nemoura phasianusa*, n. sp., male, holotype: entire body in dorsal view. Scale bar=1 mm.

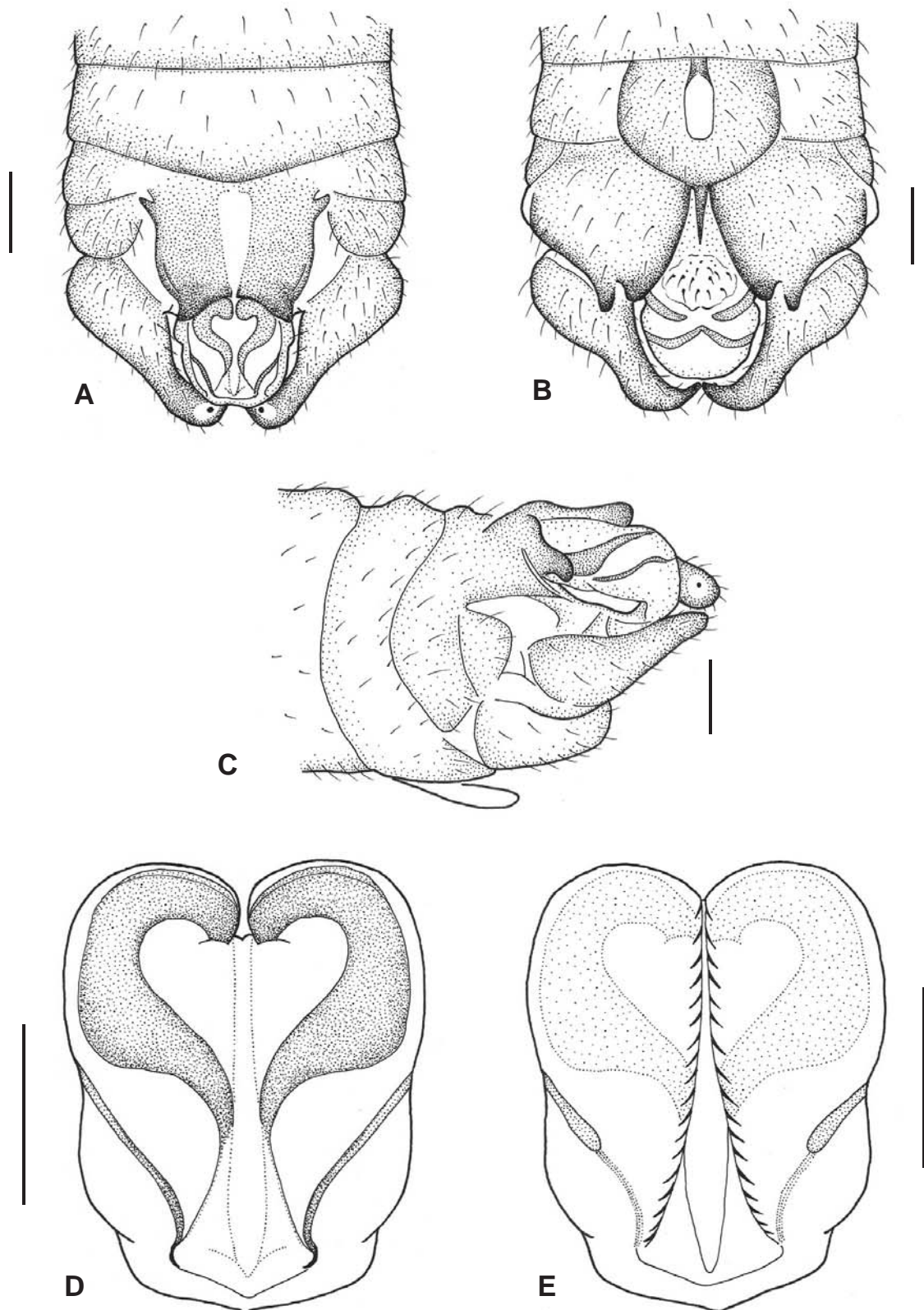
tergum mostly sclerotized except near midline, forming a large concave area anterior to base of epiproct, bearing thin hairs, bearing small knobs on the side of base. Ninth tergum sclerotized, produced toward tenth tergum, covered with thin hairs. Eighth tergum sclerotized, not produced and unmodified. Cerci (Fig. 2A, B) mostly sclerotized strip that bend inwardly at apex, bearing naked round spot on the tip; body of cercus elongate, greatly enlarged at base.

*Female.* Unknown.

*Larva.* Unknown.

*Diagnosis.* *Nemoura phasianusa* n. sp. is similar to *N. jezoensis* (Okamoto, 1922), in general morphology especially lateral view, but can be distinguished by the combination of the characters of the epiproctal shape the apex of which is depressed medially, and sclerites of epiproct, like question marks without dots.

*Etymology.* The specific epithet *phasianusa* (“pheasant” in latin) refers to the type locality name. That is the first syllable “chi-” of chiaksan (Mt.) means pheasant.



**Fig. 2.** *Nemoura phasianusa*, n. sp., male, holotype: A, terminalia in dorsal view; B, terminalia in ventral view; C, terminalia in lateral view; D, epiproct in dorsal view; E, epiproct in ventral view. Scale bars=0.02 mm (A-C), 0.01 mm (D, E).

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