A New Record of *Pseudanostirus ecarinatus* (Stepanov, 1930) (Coleoptera: Elateridae) in Korea

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**ABSTRACT:** *Pseudanostirus ecarinatus* (Stepanov, 1930) is recognized for the first time in Korea. A redescription and illustrations of the species are presented based on a single male specimen collected from Mt. Bangtae Gangwon-do. We also provide diagnostic characteristics of the genus, which clearly separate it from other closely related genera, *Calambus* Thomson, 1859 and *Anostrius* Thomson, 1859.

**Key words:** Taxonomy, Coleoptera, Elateridae, *Pseudanostirus ecarinatus*, Korea

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**Introduction**

*Pseudanostirus* Dolin, 1964 was originally established as a subgenus of *Anostrius* Thomson, 1859 based on the type species *Diacanthus globricollis* Germar, 1843, which is widely distributed from South Russia to Central Europe (Germany, Poland, the Czech Republic, Austria, Slovakia and Hungary). However, Gurjeva (1982) raised *Pseudanostirus* to valid generic status. The members of this genus include 17 Palaearctic and six Nearctic species (Laibner, 2000). In Palaearctic regions, most species are known from Middle Asia to Siberia (Gurjeva, 1989; Tamawski, 1996, 2000; Laibner, 2000). The members of *Pseudanostirus* generally occur in shrubby zones or meadows near forest (Laibner, 2000; Hira and Ijima, 2001). No species of *Pseudanostirus* was previously recognized from Korean fauna. We found a male specimen of the genus collected from Mt. Bangtae, Gangwon-do, Korea (Fig. 1). It was subsequently identified as *P. ecarinatus* (Stepanov, 1930). We present a taxonomic diagnosis of the genus and species based on morphological
characteristics.

Materials and Methods

The male specimen reported in this paper was found in insect collections housed at the Korean National Arboretum (KNA) in Pocheon-si, Gyeonggi-do, Korea. The specimen was examined under a stereoscopic microscope (MZ16A and MZ 6; Leica, Solms, Germany) for general morphological structures. Photographs were taken with two digital cameras (Canon D 30 and Leica MZ 16A equipped with a 14.2 color mosaic digital camera system).

Taxonomic Accounts

Family Elateridae Leach, 1815
Subfamily Dendrometrinae Gistel, 1856
Tribe Prosternini Gistel, 1856
Genus Pseudanostirus Dolin, 1964  북방방아벌레속 (신칭)


Diagnosis. Body generally medium, rather stout elliptic shaped; frontal carination of head incomplete and merged with clypeus in middle, their carination diagonally extended forward from each eye; antennae serrate form, generally reaching to apex of hind angles of pronotum in male, but shorter than apex of hind angles in female; pronotum with obscure basal incisures at posterior margin; hind angles of pronotum without carina or with short and vague carina nearly extended to lateral margins; prosternal sutures simple; hypomeron with intersurface within punctures extremely narrow, coarse, and dull; prosternal process elongated and slightly bent inwardly from beyond procoxal cavities; elytral striae distinct wholly or sometimes obliterated in posterior, intervals generally well convex; male genitalia with median lobe longer than parameres, with parameres streamlined expansion at their apex in most species (except for P. risillus (Gurjeva, 1978) which has distinct hook shaped expansion in the apex of parameres); female bursa copulatrix with small spines in median, and their gathering formed a belt liked shape.

Distribution. Holarctic region.

Remarks. Pseudanostirus is new to Korean fauna. This genus is closely related to two other genera, Calambus Thomson, 1859 and Anostirus Thomson, 1859, but is easily distinguished by the following diagnostic characters: 1) the frontal carination diagonally projected forward, nearly reaching frons margin, incomplete at middle; 2) the hypomeron with a coarse surface and narrowly scattered punctures; 3) antennae serrated form; 4) female bursa copulatrix with small spines forming as a belt-like shape in the median region.

Pseudanostirus ecarinatus (Stepanov, 1930)  북방방아벌레 (신칭)

Selatosomus (Calambus) ecarinatus Stepanov, 1930. Entomol. Nachrichtenbl., Troppau, 4(4): 88 (Type locality: Khabarovsk and Vladivostok in Far East Russia)

Corymbites (Calambus) ecarinatus: Jagemann, 1943. Entomol. Listy, 6: 99.


Redescription. Body (Fig. 2A) 13.0 mm long and 4.2 mm wide, 3.1 times as long as wide, stout elliptic; color wholly black with 1st to 4th antennomeres, legs dusky brown; pubescences whitish yellow, short, recumbent. Head (Fig. 2C) 1.2 times as long as wide, with broad and shallow impression from dorso- median part between eyes to anterior; frontal carina incomplete at middle, connected with clypeus. Antennae (lacking 8th to 11th) (Fig. 2B) moderately serrated from 4th antennomere; 1st one stout, 1.9 times as long as wide, with weakly developed anterior carina; 2nd small, subcylindrical, 1.3 times as long as wide; 3rd cylindrical, 2.0 times as long as wide, 1.7 times as long as 2nd; 4th, 1.8 times as long as wide, 1.4 times as long as 3rd; each segment from 5th to 8th slightly shorter than preceding one. Pronotum 1.1 times as wide as long, shiny wholly; lateral sides weakly marginate, arched, widest just before middle; punctures small, simple, their diameters 0.0200.025 mm and intervals between punctures 0.0250.050 mm (Fig. 2E); hind angles (Fig. 2D) broad at base, without carina, divergent backwardly, apex with nail-like projection on inner side; posterior margin with obscure basal incisures. Prosternum (Fig. 2F) weakly convex, shiny, with small punctures rather dense; anterior lobe rounded, sub-equal length with apex of hypomeron; prosternal process elongate, bent inwardly beyond procoxal cavities, weakly and narrowly expanded at base; pronosternal sutures straight, simple, but double lined near at procoxal cavities (Fig. 2G). Hypomeron opaque, coarse, densely punctuated; anterior apex feebly depressed; posterior margin widely truncated at apex and.

Fig. 2. Pseudanostirus ecarinatus♂. A. habitus in dorsal view; B. 1st to 4th antennomeres; C. Head in dorsal view; D. Hind angle of pronotum; E. Surface of pronotum; F. Prosternum and prosternal process in ventral view; G. Base of prosternal suture; H. Posterior apex of hypomeron in ventral view; I. Interval between mesocoxal cavities; J. Sternite 9th and 10th; K. Aedeagus in dorsal view.
emarginated. Metasternum with anterior margin broad between mesocoxal cavities, 0.8 times narrower than the width of mesocoxal cavity (Fig. 2I); median longitudinal suture completed. Scutellum 1.14 times as long as wide, rather elongate tongue shaped; anterior margin straight; lateral margins weakly sinuate inwardly at middle; posterior margin widely rounded, postero-median part shallowly depressed. Elytra 2.15 times longer than wide, parallel sided, but gradually and roundly convergent from middle to posterior apex, lateral sides marginate; elytral striae distinct, but more deeply excavated at anterior, and then gradually shallow to posterior; intervals clearly convex at anterior and generally weak to posterior. Abdomen with 5th visual abdomen semi-oval; sternite 9th and 10th as figured (Fig. 2J). Aedeagus (Fig. 2K) with median lobe slender, shapely pointed at apex, and a little longer than parameres; Parameres strongly and widely sinuate in middle, out-margins of apexes inflated and elongated as oval shape.

**Female.** Unavailable in this study.

**Specimen examined.** 1♂, Mt. Bangtae, Inje-gun, Gangwon-do, Korea. 6. VI. 2000. Bong Kyu Byun.

**Distribution.** Korea (new record), Russia, China (Heilongjiang) and Central Mongolia

**Remarks.** The newly recorded species, *P. ecarinatus*, in Korea was designated as a member of the subgenus *Calambus* under the genus *Selatosomus*. Gurjeva (1984) transferred the species into the genus *Pseudanostirus*. The species closely resembles *P. dilatatus* (Miwa, 1928), occurring in Hokkaido, Japan and Sakhalin, Russia but can be distinguished by the ratio of the 2<sup>nd</sup> to 3<sup>rd</sup> antennomeres. In *P. ecarinatus*, the 3<sup>rd</sup> antennomere is approximately 2.0 times as long as 2<sup>nd</sup>, whereas it is 2.3~2.5 times as long as 2<sup>nd</sup> in *P. dilatatus*. The shape of the male genitalia is also similar; in *P. ecarinatus*, the inner sides of the parameres are entirely opened to the apex and the anterior-lateral expansions are more expanded.

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