



### *Phanoperla namcattien*, a new stonefly from Vietnam (Plecoptera: Perlidae)

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The stonefly genus *Phanoperla* Banks is endemic to the Oriental region, and occurs from insular and peninsular Southeast Asia to the Indian subcontinent, including Sri Lanka and the Himalayas (Sivec *et al.* 1988, Zwick 1982), and 19 species are known from the region (Kawai 1968, Zwick 1982, Zwick 1986, Zwick & Sivec 1985, Stark 1983, 1987, Cao *et al.* 2007). Adults of four species of *Phanoperla* were recorded in Vietnam by Zwick (1986): *P. imitatrix* Zwick, 1986, *P. malayana* Zwick, 1982, *P. simplex* Zwick, 1982, and *P. vietnamensis* Zwick, 1986. Stark (1987) provided additional locality data regarding *Phanoperla* from Vietnam.

As part of a series of studies of stonefly systematics in Vietnam, we are describing one new species of *Phanoperla* based on our samples from southern Vietnam.

#### Materials and methods

Adult specimens were collected from southern Vietnam in 2005. All specimens were preserved in 80% EtOH and deposited in the Aquatic Insect Collection of Seoul Women's University (SWU–AIC). The morphological terminology used follows that of Zwick (1982) and Sivec *et al.* (1988).

#### Genus *Phanoperla* Banks

*Phanoperla* Banks 1938: 221. Type species: *Perla limosa* Hagen (original designation).

*Dyaperla* Banks 1939: 451. Type species: *Dyaperla anomala* Banks (original designation).

#### *Phanoperla namcattien* Cao & Bae, sp. nov.

(Figs. 1–8)

**Diagnosis.** The male adult of *P. namcattien* is characterized by the presence of narrow, finger-like anterior processes of the hemiterga (Figs. 4, 5), by the presence of three patches of sensilla basiconica on the anterior edge of the 9th abdominal tergum (Figs. 4, 5), and by the shape of the aedeagus that possesses a complete ring of short spinules on the conical end and fields of long, sharp spinules on the subapical, lateral surfaces (Figs. 6–8). The female adult is characterized by the unproduced subgenital plate, relatively long vagina, balloon-like spermatheca, and relatively long and slender spermathecal stalk (Figs. 2, 3).

**Male.** Body length 7.2 mm; forewings 7.0 mm; hindwings 6.3 mm. General body color yellowish brown. Head (Fig. 1) yellowish brown, as wide as pronotum (head width: 1.3 mm), without distinct marking. Ocelli two, normal in size; ocellar rings black; distance between ocelli ca. 0.5 x distance from ocellus to inner margin of compound eye. Pronotum (Fig. 1) ca. 2.0 x wider than long, with irregular brownish rugosities; corners round. Wing membrane clear; Rs with simple fork. Abdominal sterna V–VII with setal brushes medially; brushes more pronounced on sternum VII. Abdominal tergum IX (Figs. 4, 5) depressed medially, with two submedian and one median patches of sensilla basiconica. Hemiterga simple, modified from abdominal tergum X; each hemitergum weakly sclerotized; anterior process finger-like, slender, moderately curved outward; proximal part with several sensilla basiconica. Aedeagus tube (Figs. 6–8) slender, membranous, ca. 0.5 mm long; everted sac (Figs. 6, 7) curved ventrally, with a complete ring of short spinules on conical