



A new *Notacanthurus* Tshernova, 1974 and a new *Rhithrogena* Eaton, 1881 (subgenus *Tumungula* Zhou & Peters, 2004) from Thailand (Heptageniidae, Ephemeroptera)

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Abstract

Notacanthurus baei sp. n. (larva) and *Rhithrogena* (*Tumungula*) *siamensis* sp. n. (male, female and assumed larva) are described from northern Thailand. Diagnoses and line drawings of key characters are provided. Larvae of Southeast Asian *Notacanthurus* n.sp. resemble those of Palearctic *Notacanthurus* spp. in having a median ridge of spines directed posteriorly on terga, a similar patterning of terga with oblique stripes sloping inward, femoral cross bands and caudal filaments with whorls of small spines. Contrastingly, larvae of the new species bear claws with denticles, while the mature male larva exhibits prospective penis with distally paired portions of rounded lobes like those in most *Electrogena* Zurwerra and Tomka, 1984. Imagines of *R. (T.) siamensis* represent a second species of subgen. *Tumungula* Zhou and Peters, 2004. Males have balloon-shaped hypertrophied foreclaws, with first tarsal segment about 1.4x the length of the second, and divergent penis lobes without titillators. In contrast to *R. (T.) unica* the male styliger plate shows two sharp, inside directed projections, submedian lobes of the penis have circular gonopores lacking subapical spines.

Key words: *Notacanthurus*, *Rhithrogena*, Heptageniidae, taxonomy, biology, distribution

Introduction

Recently, the generic situation in Heptageniidae of Thailand has been discussed by Braasch (2006b), Sangpradub *et al.* (2002) and Sites *et al.* (2001). The updated list of Heptageniidae from Thailand now comprises 12 species: *Afronurus cervina* (Braasch & Soldán, 1984); *A. dama* (Braasch & Soldán, 1984); *A. gilliesiana* (Braasch, 1990); *A. rainulfiana* (Braasch, 1990); *Asionurus* ? *primus* Braasch & Soldán, 1986a; *Compsoneturia* (*Compsoneturia*) *thienemanni* (Ulmer, 1939); *Compsoneturia* (*Siamoneuria*) *kovaci* (Braasch, 2006b); *Epeorus aculeatus* (Braasch, 1990); *E. unicornutus* (Braasch, 2006a); *Rhithrogeniella tonkinensis* Soldán & Braasch, 1986 (probably identical with '*Afronurus*' *sangangensis* You *et al.*, 1983); *Thalerosphyrus sinuosus* (Navás, 1933); and *Trichogenia maxillaris* Braasch & Soldán, 1988. The recently described *C. (S.) kovaci* was found at Nam Lang River in the Mae Hong Son Province of North Thailand (Braasch 2006b). In a continuation of this study, two new species are described that were captured at light (*Rhithrogena*) and by bottom sampling (*Notacanthurus*, *Rhithrogena*) from Nam Lang River and elsewhere.

The collections have shown that several species could be found only once (*Asionurus*? *primus*, *Trichogenia maxillaris*) or a few times (*Epeorus unicornutus*, *Notacanthurus*) over the course of several years. Further, one not-yet-described species of *Dacnogenia* Kluge, 1988 (larva) was reported by Wang and McCafferty (2004) in their world-wide cladistic study of Heptageniidae. In view of a country such as Thailand with its considerable latitudinal and altitudinal diversity, the investigation of the Thai Heptageniidae fauna is