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What is *Ecdyonurus sumatranus* Ulmer, 1939? A contribution to the knowledge of the genus *Rhithrogena* in the Oriental Region (Ephemeroptera, Heptageniidae)

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Abstract

The species *Ecdyonurus sumatranus* Ulmer, 1939 was described from Sumatra based on a female imago and a single nymph. It was designated as the type-species of the genus *Ecdyonuroides* Dang, 1967, erected because of the peculiar morphology of the nymph. This genus was put into synonymy later and the species is currently known as *Thalerosphyrus sumatranus* (Ulmer, 1939). The female imago holotype of *Ecdyonurus sumatranus* Ulmer, 1939 is reinvestigated and revealed to belong to the genus *Rhithrogena* Eaton, 1881. The combination *Rhithrogena sumatrana* (Ulmer, 1939) **comb. nov.** is thus proposed. The nymphs described by Ulmer (1939) from Java sub. nom. *Rhithrogena parva* (?) are associated to this species, and are redescribed with new material coming from Java and Lombok. *Rhithrogena parva* (Ulmer, 1912) is redescribed based on the syntype series from Taiwan and male genitalia are illustrated for the first time. Supplementary description is provided for the nymph of *Rh. parva* and for the one of *Rh. ampla* Kang & Yang, 1994, also from Taiwan. The status of the subgenus *Tumungula* Zhou & Peters, 2004 is briefly discussed. The nymph associated by Ulmer (1939) to *Ecdyonurus sumatranus* is renamed *Thalerosphyrus lamuriensis* **sp. nov.** The genus *Ecdyonuroides* Dang, 1967 is considered as a synonym of *Rhithrogena* **syn. nov.**

Key words: Java, Sumatra, Lombok, Taiwan, *Rhithrogena*, *Thalerosphyrus*, *Ecdyonuroides*, *Tumungula*, new combination, new synonym, new species

Introduction

In his work devoted to the Ephemeroptera of the Sunda Islands, Ulmer (1939) described the species *Ecdyonurus sumatranus* (Heptageniidae), based only on two specimens; a female imago (type specimen) from south Sumatra and a half grown nymph from western Sumatra. Based on Ulmer's writing, he would not have described this species on this scarce material if he was not convinced that both specimens belonged to the genus *Ecdyonurus*. Despite this statement, he recognized that the nymph did not possess all characteristics of the genus *Ecdyonurus*, especially by the absence of posterolateral expansions of the prothorax, but he suggested it could be due to the fact that the nymph was only half grown. This specimen possesses peculiar structures, such as the unique highly-developed posterolateral expansions of the sternites V–VIII. The scattered setae on the galea-lacinia (Ulmer 1939, fig. 436) are characteristic of the subfamily Ecdyonurinae.

Dang (1967) proposed a new genus from Vietnam, called *Ecdyonuroides*, to accommodate a peculiar nymph of the family Heptageniidae, with long posterolateral abdominal expansions, he called *Ecdyonuroides vietnamensis*. He recognized the similarities between his nymph and the one described by Ulmer (1939), transferred the latter to his new genus as *Ecdyonuroides sumatrensis*, (misspelling!) and designated *E. sumatranus* as the type species of the genus *Ecdyonuroides*.

Later, Braasch & Soldán (1984) suggested to put *Ecdyonuroides* in synonymy with *Thalerosphyrus* Eaton, 1881, because the rearing of a nymph of *Ecdyonuroides vietnamensis* gave an adult similar to the genus *Thalerosphyrus*. They proposed the new combinations *Thalerosphyrus vietnamensis* (Dang, erroneously spelled Thanh) and they put in synonymy *Th. sumatranus* (Ulmer) with *Th. sinuosus* (Navás, 1933) without more explanations.

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