



<http://dx.doi.org/10.11646/zootaxa.3835.1.1>

<http://zoobank.org/urn:lsid:zoobank.org:pub:5BBF2D80-F682-49E7-9B32-64E75ACAA6CF>

## The concept of *Compsoeuria* Eaton, 1881 revisited in light of historical and new material from the Sunda Islands (Ephemeroptera: Heptageniidae: Ecdyonurinae)

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### Abstract

Based on re-examination of material belonging to the Museum of Zoology, Hamburg University, Germany, especially Georg Ulmer's collection, as well as newly collected specimens from the Sunda Islands, the genuine concept of *Compsoeuria* Eaton, 1881 is revised. The genus has had as junior synonyms *Compsoeuriella* Ulmer, 1939 (Oriental) and *Notonurus* Crass, 1947 (Afrotropical). A recent molecular study removed *Notonurus* from this synonymy. The type species of *Compsoeuria*, *Compsoeuria spectabilis* Eaton, 1881, is redescribed. A lectotype male imago is designated for *Compsoeuriella thienemanni* Ulmer, 1939, type species of *Compsoeuriella*. Based on egg morphology, nymphal stages of both *Compsoeuria* and *Compsoeuriella* are unequivocally attributed. The nymph of *Compsoeuria spectabilis* is described and corresponds in part to what Ulmer (1939) described as the nymph of *Compsoeuriella thienemanni*. The latter nymph is also redescribed from material collected recently in Sumatra. Due to the important number of morphological differences between these two species, *Compsoeuriella* **stat. prop.** is removed from its synonymy with *Compsoeuria*. Besides *C. thienemanni*, the genus *Compsoeuriella* encompasses *C. langensis* (Braasch & Boonsoong, 2010) **comb. nov.** from Thailand and *C. tagbanua* (Braasch & Freitag, 2008) **comb. nov.** from the Philippines (Palawan), which is partially redescribed. All other species under the combined concept of *Compsoeuria/Compsoeuriella* are mentioned and their generic placements are discussed. The new combination *Afronurus taipokauensis* (Tong & Dudgeon, 2003) **comb. nov.** from Hong Kong, China is proposed.

**Key words:** *Compsoeuriella*, *Notonurus*, *Afronurus*, Indonesia, Java, Sumatra, new combination, Georg Ulmer

### Introduction

*Compsoeuria* Eaton, 1881 was established for the species *C. spectabilis* Eaton, 1881 on the basis of male and female imagos from Lahat, Sumatra. The genus was characterized by the few crossveins in the forewing that are arranged in a peculiar manner; the given name means literally "the one with elegant veins". In his later monograph (Eaton 1885), the same author confirmed the diagnosis and provided a drawing of the wings, the male genitalia, as well as the legs of the female imago (Eaton 1885: plate XXIII, fig. 42; plate XXIV, fig. 42). The species was later mentioned by Klapálek (1905) also from Buitenzorg, Java and without further information except that the wing venation is typical for the genus. Ulmer (1924) redescribed and illustrated *C. spectabilis* based on new material mainly also coming from Buitenzorg, Java (now called Bogor). He also associated with this species two male subimagos coming from Sumatra.

In his monumental work devoted to the mayflies of the Sunda Islands, Ulmer (1939) mentioned again *C. spectabilis* as the sole known species of the genus, which he characterized by the especially short segment 1 of the fore tarsi of the male imago, and by the short hind tarsi of the female imago. As new material, he mentioned one pinned female and several male and female imagos in ethanol coming from Buitenzorg. He then described the new genus and new species *Compsoeuriella thienemanni* Ulmer, 1939, based on both male and female imagos from Java and Sumatra, and he noted a close relationship to *C. spectabilis*, especially concerning the wing venation, but

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