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## The nymph of *Gilliesia* Peters & Edmunds, 1970 (Ephemeroptera: Leptophlebiidae), with description of a new species from Thailand

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### Abstract

The new species *Gilliesia ratchaburiensis* sp. nov. is described based on male and female imagos (some of them reared from nymphal stages), nymphs and eggs collected in western Thailand. The nymph of *Gilliesia*, which is described for the first time, has bifid gills, a dense patch of setae on the ventral side of the glossae, no posterolateral spines on abdominal segment VIII, maxillary palpi 3-segmented and very reduced maxillary canines. Compared to congeners, the male imagos of the new species have penis lobes more straight and with the apical portion bent laterally but not ventrally, and female abdominal sternum 9 with a U-shaped, deep, median cleft. Phylogenetically, *Gilliesia* seems to be more similar to *Dipterophlebiodes* than to *Habrophlebiodes* and other Leptophlebiinae. The present finding in Thailand expands the distribution of *Gilliesia* in tropical Southeast Asia.

**Key words:** Nymph first description, new species, *Habrophlebiodes*, *Dipterophlebiodes*, Leptophlebiinae

### Introduction

The genus *Gilliesia* Peters & Edmunds, 1970 was proposed to accommodate the species *Thraululus hindustanicus* Gillies, 1951 described based on adult specimens only. *Gilliesia hindustanica* is known from Darjeeling District and Assam territories in India (Gillies 1951, Peters & Edmunds 1970). The second species, *G. pulchra* Zhou, 2004, was described from Southwestern China also based on adult stages only (Zhou 2004). This means that the nymphal stage of the genus has remained unknown.

Peters & Edmunds (1970) stated that *Gilliesia* is most similar to *Habrophlebiodes* and *Dipterophlebiodes*, hence belonging to the subfamily Leptophlebiinae according to Kluge (1994). Adults of *Gilliesia* can be distinguished from all other genera in the same subfamily by the unique structure of the male penes and the absence of a female ovipositor (Peters & Edmunds 1970).

In this paper, we present the first description of *Gilliesia* nymph based on a new species.

### Material and methods

The specimens were collected at a first-order tributary of the Phachi river, Ratchaburi province, in western Thailand. Nymphs were reared in an earthenware pot. Measurements (mm) and photographs were taken using a NIKON SMZ800 and SMZ18 stereoscopic microscope, respectively. All drawings were made with the aid of a camera lucida attached to a stereoscopic microscope. For scanning electronic microscope (SEM) pictures, the eggs and mouthparts were dehydrated, critical point dried, and gold coated (20 nm), and observed under a JEOL JSM-5600LV. Final plates were prepared with Adobe Photoshop CS6. Material is deposited in the collection of the Zoological Museum, Kasetsart University, Bangkok, Thailand (ZMKU) and Musée cantonal de zoologie, Lausanne, Switzerland (MZL).