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Two new species of *Glossosoma* subgenus *Glossosoma* (Trichoptera: Glossosomatidae) from India

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Abstract

Two new species of the genus *Glossosoma* (*Glossosoma*) Curtis are described and illustrated: *G. (G.) dirangense* **sp. nov.** and *G. (G.) sikkimense* **sp. nov.** from Dirang (Arunachal Pradesh) and Lachen (Sikkim), respectively. *Glossosoma (G.) dirangense* most closely resembles *G. (G.) moselyi* Kimmins 1953, but the males of these species can be distinguished by differences in the shapes of abdominal segments IX and X. *Glossosoma (G.) sikkimense* most closely resembles *G. (G.) fissum* Martynov 1935 and *G. (G.) caudatum* Martynov 1931, but the male of *G. (G.) sikkimense* can be distinguished from these other species by differences in the shapes of abdominal segment X, sternite VI ventral process, and the phallus.

Key words: Arunachal Pradesh, Sikkim, Lachen, description, callosity

Introduction

Using morphological phylogenetic evidence, the genera and subgenera of family Glossosomatidae were revised by Ross (1956) and Morse & Yang (1992, 2004). Ross (1956) inferred nine subgenera for the genus *Glossosoma* Curtis 1834, but Morse & Yang (1992) inferred only six subgenera. The genus *Glossosoma* is widely distributed in the Oriental and Holarctic Regions, with 141, 58 and 15 species in the World, the Oriental Region and India, respectively (Morse, 2012). In India the genus *Glossosoma* is represented by four subgenera, namely *Glossosoma* Curtis 1834, *Lipoglossa* Martynov 1930, *Protoglossa* Ross 1956 and *Muroglossa* Ross 1956.

The present study deals only with subgenus *Glossosoma*. The most conspicuous characters for males of this subgenus are a single, long sclerotized process of sternite IX which is always asymmetrical, a pair of sclerotized strips dorsally in the phallocrypt, a single paramere spine on an erectile lobe, and often a Pattern #2 or Pattern #3 callosity in the anal area of each forewing (Morse & Yang 2004). The subgenus *Glossosoma* presently includes 82, 17 and 3 species in the World, the Oriental Region and India, respectively (Morse, 2012). The presently known Indian species of subgenus *Glossosoma* are *G. (G.) fissum* Martynov 1935 (from Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh and Manipur), *G. (G.) moselyi* Kimmins 1953 (from Jammu & Kashmir) and *G. (G.) dentatum* McLachlan 1875 (from Himachal Pradesh and Arunachal Pradesh).

Material and methods

The material studied in this paper was collected from high altitude streams and waterfalls using a 22-watt UV or black light, powered by a sealed, rechargeable 12-volt battery for 1–3 hours beginning at dusk. The caddisfly material so collected was killed and preserved in 95% ethanol with a drop of glycerin. The male genitalia were removed with fine-tipped forceps and treated with the lactic acid procedure described by Blahnik *et al.* (2007). The genitalic terminology corresponds with that of Morse & Yang (2005). The type specimens are deposited in the Museum of the Department of Zoology & Environmental Sciences, Punjabi University, Patiala, India.