



Five new species of genus *Kisaura* Ross (Trichoptera: Philopotamidae) from Himachal Pradesh (India)

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Abstract

Five new species of *Kisaura* Ross are described and illustrated from the Indian Himalaya. Newly described species are *Kisaura trailaensis* sp. n., *K. barotensis* sp. n., *K. monospinata* sp. n., *K. sachensis* sp. n. and *K. curvata* sp. n. In addition, *K. madhyamika* Schmid is recorded from Himachal Pradesh and a catalogue of Indian species of *Kisaura* is provided.

Key words: Oriental, Barot, Taxonomy, Himalayan region

Introduction

The genus *Kisaura* was established by Ross (1956) as a subgenus of *Sortosa* Navás 1918, based on *Sortosa obrussa* Ross 1956. It was considered as a subgenus of *Dolophilodes* Ulmer 1909 by Kuhara (1999) based on the precedence of the generic name *Dolophilodes* over that of *Sortosa*. *Kisaura* was elevated to the status of an independent genus by Malicky (1993b) and Sun & Malicky (2002). Pandher & Saini (2011) reported this genus for the first time from India with descriptions of six new species from the Indian Himalaya.

Kisaura Ross is currently represented by about 67 species at World level and most of these are confined to the Oriental and Palearctic Regions (Morse 2014). Forty-four species of this genus occur in the Oriental Region alone, many (20 species) of which were transferred to it from *Dolophilodes* Ulmer. Most of the additions to this genus were made by Malicky and co-workers (Malicky 1993a, 1993b, 1995, 2007, 2009; Malicky & Chantaramongkol 1993a, 1993b; Sun & Malicky 2002), who added 17 new species to this genus from Thailand, Bhutan, China, Laos and Vietnam.

The biology of the species in the genus is poorly known (Hur & Morse 2006). A more thorough study and complete diagnosis of all previously known and newly described species will be required, along with a study of the larval stages and a well supported phylogenetic analysis, to understand the origin and dispersal of *Kisaura* to other parts of eastern Asia. Presently 17 species have been reported from India and are distributed mostly in the Himalayan states of Sikkim (7 species), Uttarakhand (6), Arunachal Pradesh (2), Meghalaya (1), and Himachal Pradesh (1).

Material and methods

Adults caddisflies were collected by light traps (mercury vapour bulb and UV) placed near the edge of high altitude streams of the Himalayan belt of India. The specimens were preserved in 70% ethyl alcohol with a drop of glycerol added. Pertinent collection and locality data were recorded.

For species-level identification it is essential to observe the lateral spiniform processes of tergite X, which are hidden below the preanal appendages in lateral view and are also not clearly visible even in dorsal view. For accomplishing this, the male genitalia were removed from the specimens and put in 10% KOH solution overnight. After this treatment the genitalia were put in 80% ethyl alcohol with a drop of glycerol and observed for