

First record of *Lepidostoma bufiel* Malicky, 2017 (Trichoptera: Lepidostomatidae) from India

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Abstract

This paper is another addition to the Indian Trichoptera fauna. Here *Lepidostoma bufiel* Malicky, 2017 is reported for the first time from India (West Bengal). Earlier these species has been only described from Nepal. With this addition, the genus is now represented by 51 species from India.

Keywords: Caddisfly, *Lepidostoma*, Singalila, West Bengal

Introduction

According to Holzenthal *et al.* 2007, the family Lepidostomatidae is widely distributed throughout the Northern Hemisphere and extends southwards to Panama, New Guinea, and the Afrotropical Biogeographic Regions. Species belonging to Lepidostomatidae are characterized by having secondary sexual characters in the scapes, maxillary palps, and wings of males and were once known as the 'curiosity shop' of Trichoptera by McLachlan (1876). In India, it is represented by three genera: *Lepidostoma* Rambur, 1842 (50 spp.), *Paraphlegopteryx* Ulmer, 1907 (14 spp.) and *Zephyropsyche* Weaver, 1993 (1 spp.). The genus *Lepidostoma* at the World level is represented by more than 450 species (Morse 2023). All the Nearctic lepidostomatid genera were synonymized nearly within *Lepidostoma* by Ross (1944). A comprehensive synopsis of the then-known North American species was provided by Weaver (1988) and a review of the world species (Weaver 2002), where he synonymized several genera with this genus, formerly separated by secondary sexual characters of the male. He further divided this genus into 4 large species branches based on the general types of male forewing venation, with differences primarily in the anal region. These branches include the monophyletic *Lepidostoma vernale* branch, the paraphyletic *L. podogram* branch, the paraphyletic *L. ferox* branch, and the monophyletic *L. hirtum* branch. All known species of *Lepidostoma* from India fall under the *L. ferox* branch and

L. hirtum branch. Saini and Parey (2011), Parey and Saini (2012, 2013) and Parey *et al.* (2016), Parey and Pandher (2019) described a series of new species from this genus in the Indian Himalaya region.

Materials and Methods

The caddisfly specimens were collected during a survey conducted at Singalila National Park, West Bengal under 'Fauna of Protected Areas' in 2021. The specimens were collected by light traps using mercury vapour lamps (160 Watts) by placing them near the edges of streams for 4–6 hours beginning at dusk. The specimens were killed and preserved directly in 90% ethyl alcohol. Pertinent locality and field data were recorded and appended to the collection bottles. Morphological characters like labial palps, antennae, setal warts, tibial spurs, wing maculation and venation, and genitalic appendages were examined microscopically. For species confirmation, the male genitalia were removed from one of the specimens of each species and put in a 10% KOH solution overnight. After this treatment, the genitalia were put in 80% ethyl alcohol with a drop of glycerol. The drawings of various aspects were done with the help of a Radical Zoom stereoscopic binocular microscope (with a maximum magnification of 160X) fitted with an ocular grid in one eyepiece. The final drawings were rendered in black ink. The illustrations were scanned at 600 dpi grayscale and mounted onto plates in Adobe© Photoshop© 7.0. The specimens are deposited in

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the National Zoological Collection, Zoological Survey of India, Kolkata (NZC).

Results

Systematic Account

Lepidostoma Rambur, 1842

1842. *Lepidostoma* Rambur, *Hist. Nat. Nevv.*: 493.

Lepidostoma bufiel Malicky, 2017

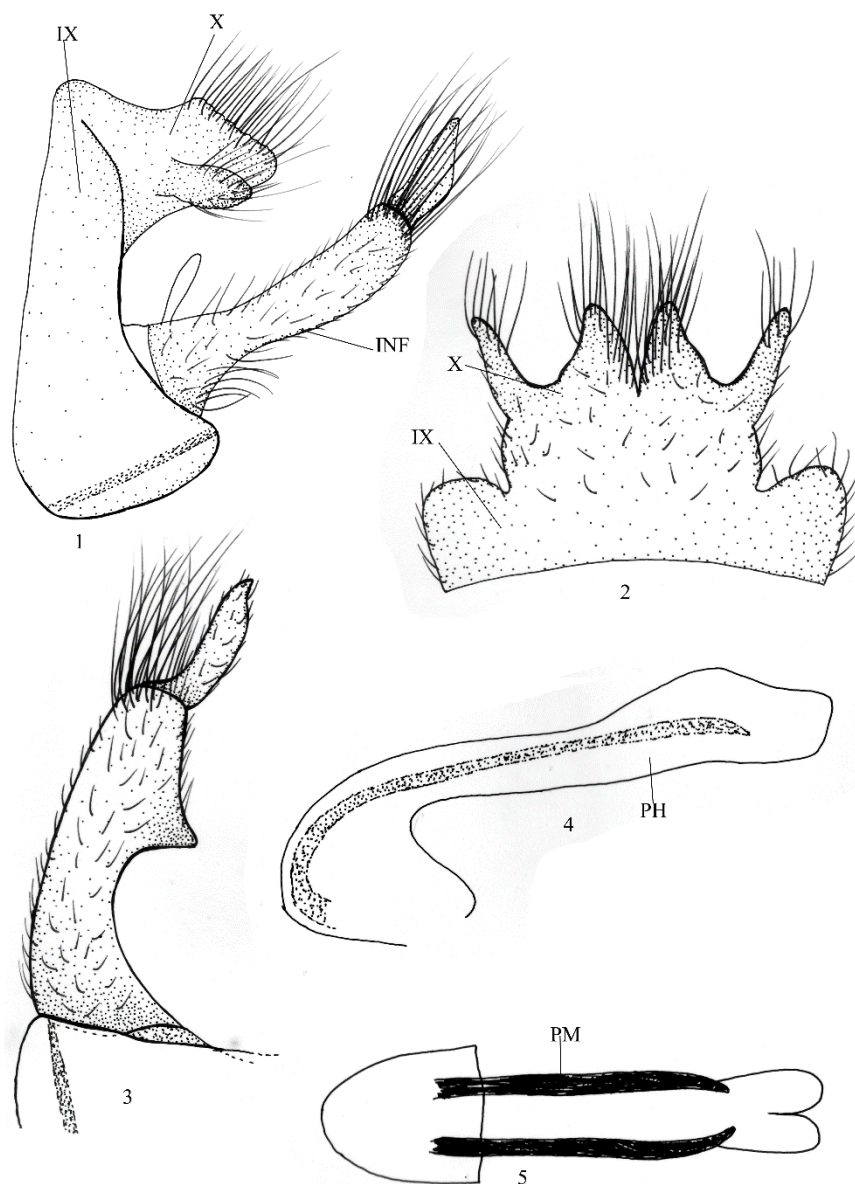
2017. *Lepidostoma bufiel* Malicky, *Linzer biol. Beitr.* **49**(2): 1462.

Abbreviations: IX- Segment 9, X-Segment 10, INF- Inferior appendage, PH- Phallus, PM- Phallomere.

Material examined: India: West Bengal; Singalila National Park, Gauribas, 27°03'03.6"N 88°01'58.8"E, 2,575 m, 28-ii-2021, Pandher (NZC). 2♂ (NZC-8387/H13).

Adult Male: Body colour in alcohol brown, wings without any patches, Forewing length 8.5 mm.

Male genitalia: Segment IX produced anteromedially, dorsally reduced, ventrally slightly longer to accommodate inferior appendages as viewed in lateral view. Inferior



Figures 1. Male genitalia of *Lepidostoma bufiel* Malicky, 2017. 1. Lateral view, 2. Dorsal view, 3. Inferior appendage, Ventral view, 4. Phallus, Lateral view, 5. Phallus, Ventral view.

appendages two segmented, basal segment longer than apical segment, apical segment somewhat twisted, pointed ventroapically as viewed in lateral view; pointed medially in ventral view. The phallus is long and slender, and the parameres are simple, basally curved, pointed rods, somewhat shorter as the phallus.

Distribution: Nepal; India (West Bengal).

Discussion

This species can be easily distinguished from numerous similar species in the shape of inferior appendages in

the ventral view which is very characteristic for *L. bufiel* having an inner tooth on the medial surface.

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