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A New Species of the Genus *Microtendipes* Kieffer (Diptera, Chironomidae) from Foothills of Eastern Himalaya, India

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Abstract: In this study *Microtendipes semicylis* sp. nov. has been described based on adult male along with key to males of *Microtendipes* in Oriental region. It is the first record of this genus from north-eastern India.

Keywords: Chironomidae, Diptera, *Microtendipes*, New species, Eastern Himalaya

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Introduction

The genus *Microtendipes* Kieffer 1915 has a nearly worldwide distribution, and comprises 63 described species around the world (Freeman and Cranston, 1980; Cranston and Martin, 1989; Ashe and Cranston, 1990; Oliver *et al.*, 1990; Qi *et al.*, 2012, 2014). From India, Chaudhuri *et al.* (2001) reported *M. callicomus* (Kieffer, 1911), but later on it is considered as *Chironomus callicomus* (Qi *et al.*, 2012). No other species of *Microtendipes* has been reported from India. The males of *Microtendipes* can be distinguished from all other Chironomini by one or two rows of stout, proximally directed setae on the fore femur. Additionally, the hypopygium of some species generally has a tubercle-like or wart-shaped median volsella often bearing a tuft of setae. In this study *Microtendipes semicylis* sp. nov. has been described based on adult male along with key to males of *Microtendipes* in Oriental region. It is the first record of this genus from north-eastern India.

Material and Methods

Adult specimens were collected by light-traps from Pashighat (India: Arunachal Pradesh) and were preserved in 70% ethanol in a single glass vial. The materials were processed and mounted on micro-slides after phenol-balsam technique of Wirth and Marston (1968). Morphological terminology and abbreviations follow Sæther (1980). Measurements of parts of immature stages and adults are expressed in micrometres (μm) except the total lengths and wing lengths, which are in millimetres (mm).

All the types are kept at the Entomological collections of the Department of Zoology, University of Burdwan and will be deposited in the National Zoological Collections (NZC), Kolkata, India.

Systematic Account:

Order Diptera Linnaeus 1758

Family Chironomidae Newman 1834

Subfamily Chironominae Newman 1834

Tribe Chironomini Newman 1834

Genus *Microtendipes* Kieffer 1915

Microtendipes Kieffer 1915. Broteria, Series Zoology, 13: 70.

Type species: *Chironomus abbreviatus* Kieffer.

Microtendipes semicylis sp. nov.:

Reported in Chironomus 20 (2007) by A. Mazumdar to report the Ph.D. dissertation of the author as a part of news from chironomid research in India without any description (i.e. *nomen nudum*) that meet the requirements of ICZN for the name to be valid.

Type Material:

Holotype ♂, J. N. College Campus, Pashighat, Arunachal Pradesh, India 22.VIII.2001, Coll. A. Mazumdar. Holotype ♂, Paratype 2♂, data same as holotype.

Etymology:

The new species has been named *Microtendipes semicylis* after its sickle like superior volsella.

Recognition:

The adult males of *Microtendipes semicylis* sp. nov. can be distinguished from the known species of the genus by following combinations of characters—(1) Costa ending opposite to R_{4+5} , (2) moderate anal lobe, (3) number of femoral setae, (4) bands on tergite IX, (5) short and stumpy truncated anal point, (6) sickle like superior volsella, and (7) apically narrowed inferior volsella.

Description:

Male (n= 3)

Body length 4.7; wing length 3.2; wing length/length of profemur 2.5.

Head: Antenna and maxillary palp damaged during sampling and preservation. Clypeus with 15 setae. Eyes with 48 long dorsal extension.

Thorax: Anteprenotum narrow, separated, anteprenotal setae absent; mesonotum with no tubercle; acrostichals 3-4, dorsocentrals 15-16, prealars 5 and scutellars 12, postscutellum dark without seta.

Wing: Wing with dark transverse band over RM and FCu, membrane without macrotrichia. Costa densely setose. Costa ending opposite to R_{4+5} . R_{2+3} with 10 setae; FCu distal to RM; squama fringed with 10 long setae. Anal lobe moderate.

Legs: Yellowish light brown in colour. Fore femur (Fig. 1a) with two rows of strong backwardly directed setae; fore tibial scale without spur; mid and hind tibiae with single spur of equal length; tibial combs of mid and hind tibia with 1 bent spur, pseudospurs absent; tarsomeres I of mid legs mostly with many sensilla chaetica. Pulvilli small and shorter than claw.

Abdomen: Yellowish in colour with setae. Tergite IX broad and triangular with separate tergal bands. Hypopygium (Fig. 1b): Anal point 48 long with truncated apex. Gonocoxite 160 long triangular with 3 long setae; gonostylus 120 long stout having 10 short setae at its inner margin with 2 long setae at the base. Superior volsella (Fig. 1c) with 1 long basal and 3-4 dorsal setae; evenly curved with pointed apex; inferior volsella expanded at the middle extending beyond gonocoxite medially with setae at its inner margin and 3 long inwardly curved ones near the apex.

Female, Larva, Pupa: Unknown.

Relationships: The new species resembles *M. britteni* (Edwards, 1929) in curved and sharply pointed superior volsella. It showed similarity with *M. caelum* Townes (1945) in short anal point. Tergite bands and gonostylus of the new species bear similarities with *M. caducus* Townes (1945) and *M. diffinis* (Edwards, 1929). The new species showed affinity with *M. pedelus* (De Geer, 1776), *M. zhamensis* (Qi and Wang, 2006) and *M. parachloris* (Tang and Niitsuma, 2017); but the presence of median volsella in *M. pedelus* (De Geer, 1776), *M. zhamensis* and *M. parachloris* ruled out the possible relationship. It also showed

Lengths and proportions of leg segments

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	Ta ₅	LR	BV	SV	BR
P₁	992	1056	576	416	352	240	160	0.55	2.24	3.55	2.40
P₂	816	784	384	224	224	160	96	0.48	2.81	4.16	3.15
P₃	896	800	416	256	192	144	112	0.52	3.00	4.07	4.25

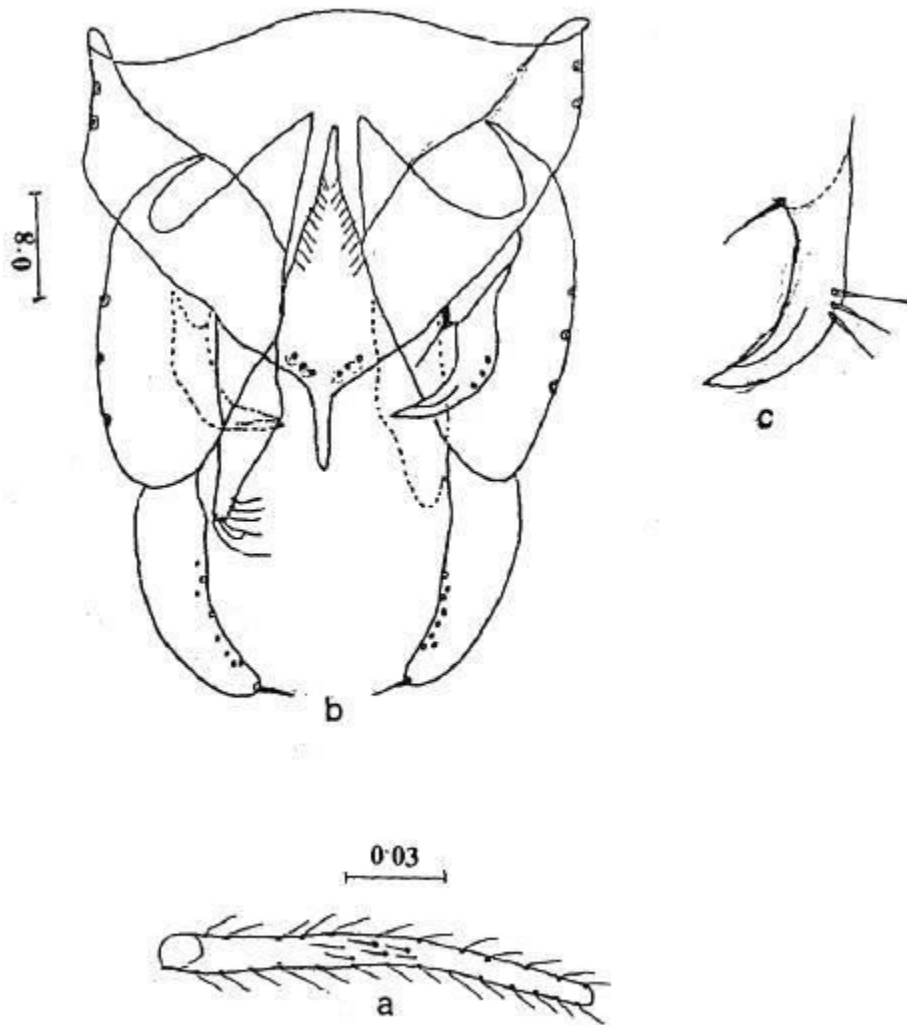


Fig. 1: Adult male of *Microtendipes semicylis* sp. nov. (a) Fore femur, (b) Hypopygium, (c) Superior volsella.

resemblance with *M. zhejiangensis* Qi *et al.* (2012) and *M. globosus* Qi *et al.* (2014) in the shape of anal point, but strongly differs in superior volsella, inferior volsella and gonostylus.

The new species has been included in the key by Qi *et al.* (2012) that are given below:

Key to males of the genus *Microtendipes* in Oriental region

1. Hypopygium with median volsella..... 2
 - Hypopygium without median volsella..... 7
2. Superior volsella with lateral lobe..... 3
 - Superior volsella without lateral lobe..... 5
3. Wing with dark markings..... *M. schuecki*
 - Wing transparent, without markings..... 4
4. Front femur with small tubercle..... *M. tuberosus*
 - Front femur without small tubercle..... *M. yaanensis*
5. Anal point subtriangular..... *M. pedellus*
 - Anal point parallel sided..... 6
6. Superior volsella hook-like..... *M. chloris*
 - Superior volsella broad, rounded apically..... *M. truncatus*
7. Inferior volsella abruptly narrowed in apical half..... 8
 - Inferior volsella digitiform..... 10
8. Anal point apically slightly swollen and rounded..... *M. angustus*
 - Anal point parallel-sided, slender, apex rounded..... 9
9. Superior volsella with 7–10 dorsal setae, 4 long basal setae..... *M. zhejiangensis*
 - Superior volsella with 3–4 dorsal setae, 1 long basal seta..... *M. semicylis* sp. nov.
10. Wing with dark markings..... *M. quasicauducas*
 - Wing transparent, without markings..... 11
11. Abdominal tergite VIII narrowed at base, as inverted V-shaped..... *M. irioceus*
 - Abdominal tergite VIII not narrowed at base..... 12
12. Anal point parallel-sided, slender, apex rounded..... *M. tobaquintus*
 - Anal point subtriangular, with pointed apex..... *M. britteni*

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