

**Two new biting midges of *Brachypogon* KIEFFER
(Diptera: Ceratopogonidae) from India**

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ABSTRACT. Two new species, *Brachypogon (Brachypogon) baculus* and *B. (B.) flecteris* are described from India. The genus was previously known to have seven species (six in subgenus *Brachypogon*) and (one in subgenus *Isohelea*) occurring in the subcontinent.

KEY WORDS: Diptera, Ceratopogonidae, *Brachypogon*, new species, India.

INTRODUCTION

The genus *Brachypogon* KIEFFER (1889) of the tribe Ceratopogonini in the subfamily Ceratopogoninae is represented in every continent except Australia. It comprises 185 species worldwide in 3 subgenera, *Brachypogon* KIEFFER (97) *Isohelea* KIEFFER (83) and *Sarissoshelea* DEBENHAM (05) (SAHA & DAS GUPTA, 2006, BORKENT, 2008) with seven Indian species (subgenera *Brachypogon*-06, *Isohelea*-01). The subgenus *Brachypogon* is recognized by small sized individuals with contiguous eyes; more or less fused I–X and long XI–XIII flagellomeres; palpomere III with sub apical pit having sensorial; mandibles with large apical teeth; wing without markings, radius (R) short, oblique radio-medial (r-m) cross-vein, radial cells usually absent and the radial system of a single undivided vein reaching the costa (C) forming somewhat thickened stigma just away of the middle, second medial vein (M₂) incomplete interrupted at the base, sometimes vestigial or absent, microtrichia numerous along the anterior veins and on the surface, wing margin with macrotrichia; small

or long equal or sub equal or long curved claws bearing basal internal barb. Genitalia with tergite IX small having inconspicuous apico-lateral process; stout basistyle, slender and gently curved dististyle; aedeagus relatively simple triangular or broad plate with short basal arms; parameres sometimes fused as an H or U shaped structure.

The present paper describes two new species of the subgenus *Brachypogon* of *Brachypogon* after adult males collected through sweeping in our surveys of dipterans of the eastern region of India.

The insects are processed and mounted on micro-slides after BOSE et al (2003) and the terminology follows SPINELLI & BORKENT (2004)

Types are at present retained in the Entomology Laboratory of the University of Burdwan, Burdwan and will be deposited to National Zoological Collections (NZC), Calcutta.

DESCRIPTIONS

Brachypogon (Brachypogon) baculus sp.n.

(Figs 1-7)

Male

Small brownish in color.

Head. Dark brown. Eyes moderately separated of width of 3 facets. Maxillary palpus (Fig. 1) slender, palpomere III long and widened with a shallow sub apical pit bearing 2 flagella like sensillae, palpomere V with 4 sub apical setae; length ratio of palpomeres I-V 2: 4: 6: 4: 4, PR (Palpal ratio) 1.5. Antennal plume pale, flagellomeres I-X fused or somewhat consolidated, XI-XIII (Fig. 2) slender with long basal setae and XIII with an apical seta.

Thorax. Uniformly dark brown.

Wing (Fig. 3). Clear, unmarked, C with infuscated apex with 3 small spaces, Sc very faint, R little shorter, C, R and base of r-m cross veins heavily infuscated forming a stigma, M₁ well-developed, M₂ visible near the apex; microtrichia sparse on the surface and macrotrichia near the wing margin. CR 0.51. Haltere white. Wing length 0.53 (0.52-0.54, n=3) mm, breadth 0.24 (n=3) mm.

Legs (Fig. 4). Uniformly pale fore and mid legs, fore femur with dark brown apex, hind femur dark brown, tibiae and tarsomeres brown; length ratio of tarsomeres of fore, 4: 3: 2: 1: 2 in fore, 7: 4: 2: 1: 1 in mid and 8: 4: 2: 1: 2 in hind legs. TR of fore, mid and hind 1.33, 1.75 and 2.0 respectively. Hind tibial comb (Fig. 5) of 5 sub equal spines. Claws rather straight, equal with inner basal teeth.

Abdomen. Sternites dark brown bearing many short spines at the caudal margin.

Genitalia (Fig. 6) pubescent. Sternum IX narrow, tergite IX long, oval with feeble apico-lateral processes. Basistyle bulky at the middle with 4 long spines, dististyle long incurved ending with hooked tip; aedeagus broadly triangular with small unequal blunt basal arms and a nipple like median projection, parameres (Fig. 7) cudgel like with broad bent base.

Female - Unknown.

Type Material

HOLOTYPE male, West Bengal, Jhargram (22° 26' N, 86° 58' E), 17.vi. 1991 (P.K. CHAUDHURI).

PARATYPE 2 males, data same as holotype.

Etymology

The name, "*baculus*" originates from the cudgel - like parameres of male genitalia.

DISCUSSION

The new species resembles *B. brazzae* (VATTIER & ADAM, 1966), *B. proprius* SAHA & DAS GUPTA (2006) and *B. pseudocanadensis* SAHA & DAS GUPTA (2006) in palpomeres, costal infuscation and more or less of parameres of male genitalia. The basistyle, aedeagus and paramere of *B. krugeri* DE MEILLON & WIRTH (1981) come closer with the new species. Similarly, the color pattern of legs and abdomen of the new species appears more or less like *B. curtus* DEBENHAM (1991) and *B. insulicola* (TOKUNAGA, 1959) but the characters like 2 sensillae of palpomere III, apical setae of palpomere V, structure of radial cells, faint apical part of M₂, color pattern of legs, spines of hind tibial comb, hooked dististyle, structure of aedeagus and parameres differ from the above species favoring for a new member *Brachypogon* from India.

***Brachypogon (Brachypogon) flecteris* sp. n.**

(Figs 8-14)

Male

Small brown midge.

Head. Dark brown, antennal plume distinctly pale. Eyes contiguous in the middle Maxillary palpus (Fig. 8) slender, palpomere III swollen with a shallow sub apical sensory pit with 1 seta like sensillum, palpomere V significantly slender with 3 apical setae; length ratio of palpomeres I-V: 2: 4: 6: 4: 5, PR 1.5. Antennal plume distinctly paler, scape with-

out seta, flagellomeres I-X fused, somewhat consolidated, XI-XIII (Fig. 9) long, slender with sub basal setae at the bases of XI-XII and XIII with an apical seta.

Thorax. Scutum with dark brown at the middle and pale laterad, scutellum dark brown and post scutellum brown.

Wing (Fig. 10). Hyaline and unmarked, faint Sc, C and R thickened at the apices forming stigma, r-m long and oblique, M₁ well-developed, M₂ faint, feebly apparent near the apical margin. CR 0.52. Haltere white. Wing length 0.55 (n=2) mm, breadth 0.21(n=2) mm.

Legs (Fig. 11). Fore and mid legs uniformly pale brown, fore femur dark brown at the apex, hind femur dark brown little away from the base, tibiae brown, hind tibia with dark brown band at the base, tarsomeres pale; length ratio of tarsomeres 5.5: 3: 2: 1: 2 in fore, 7.2: 4: 2: 1: 2 in mid and 8 : 4: 2: 1: 2 in hind legs; TR of fore, mid and hind legs 1.83, 1.81 and 2.0 respectively, Hind tibial comb (Fig. 12) of 7 spines. Claws rather straight and equal.

Abdomen. Sternites dark brown with many short and single lateral spines at the caudal margin.

Genitalia (Fig. 13). Pubescent. Sternum IX with convex caudal margin bearing a median outgrowth, tergite IX swollen at the middle with small rounded apico-lateral process; aedeagus more or less Y-shaped having median tubular stem, stout lateral arms and slender bow like parameres (Fig. 14).

Female. Unknown.

Type Material

HOLOTYPE male, West Bengal, Jhargram (22° 26' N, 86° 58' E), 01.06.1991 (P.K. CHAUDHURI)

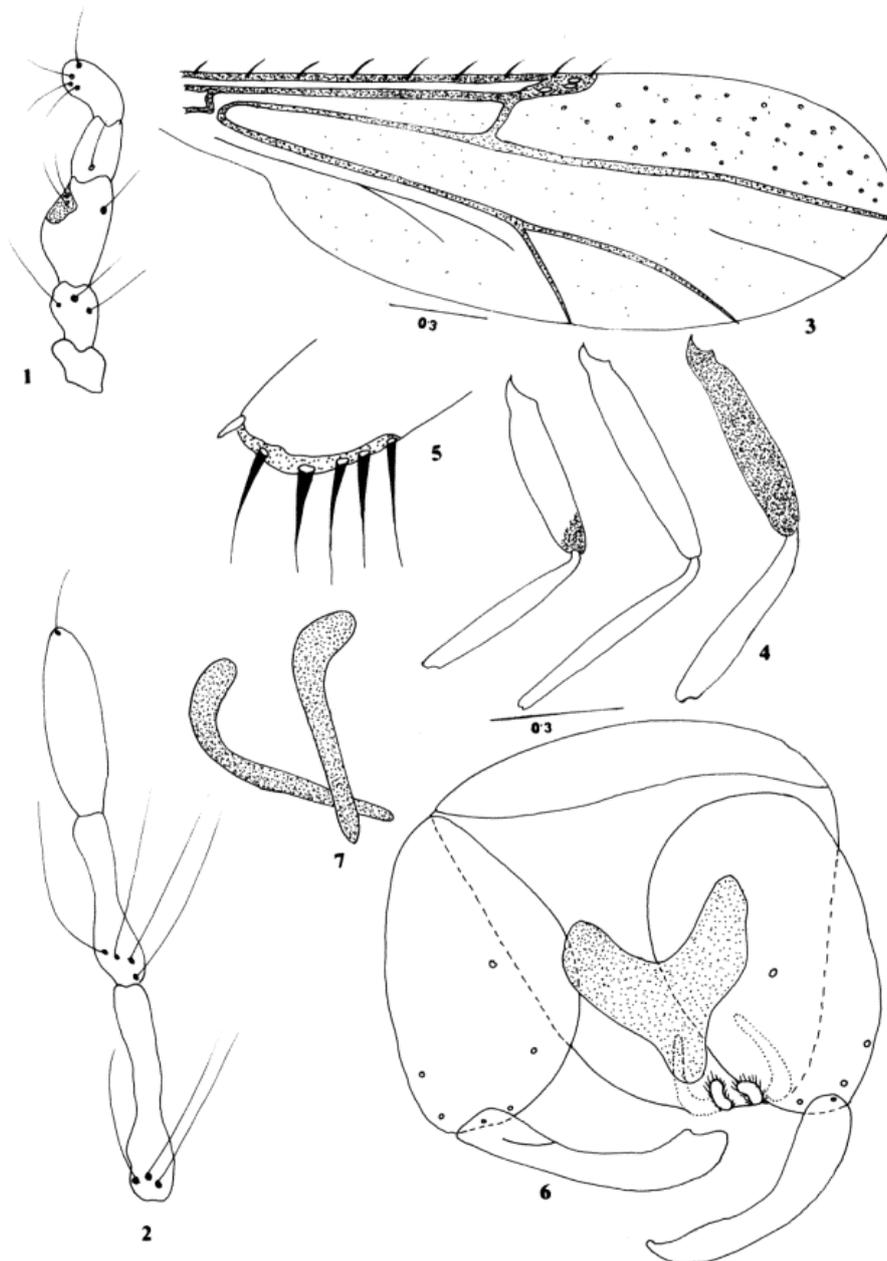
PARATYPE 1 male, data same as holotype.

Etymology

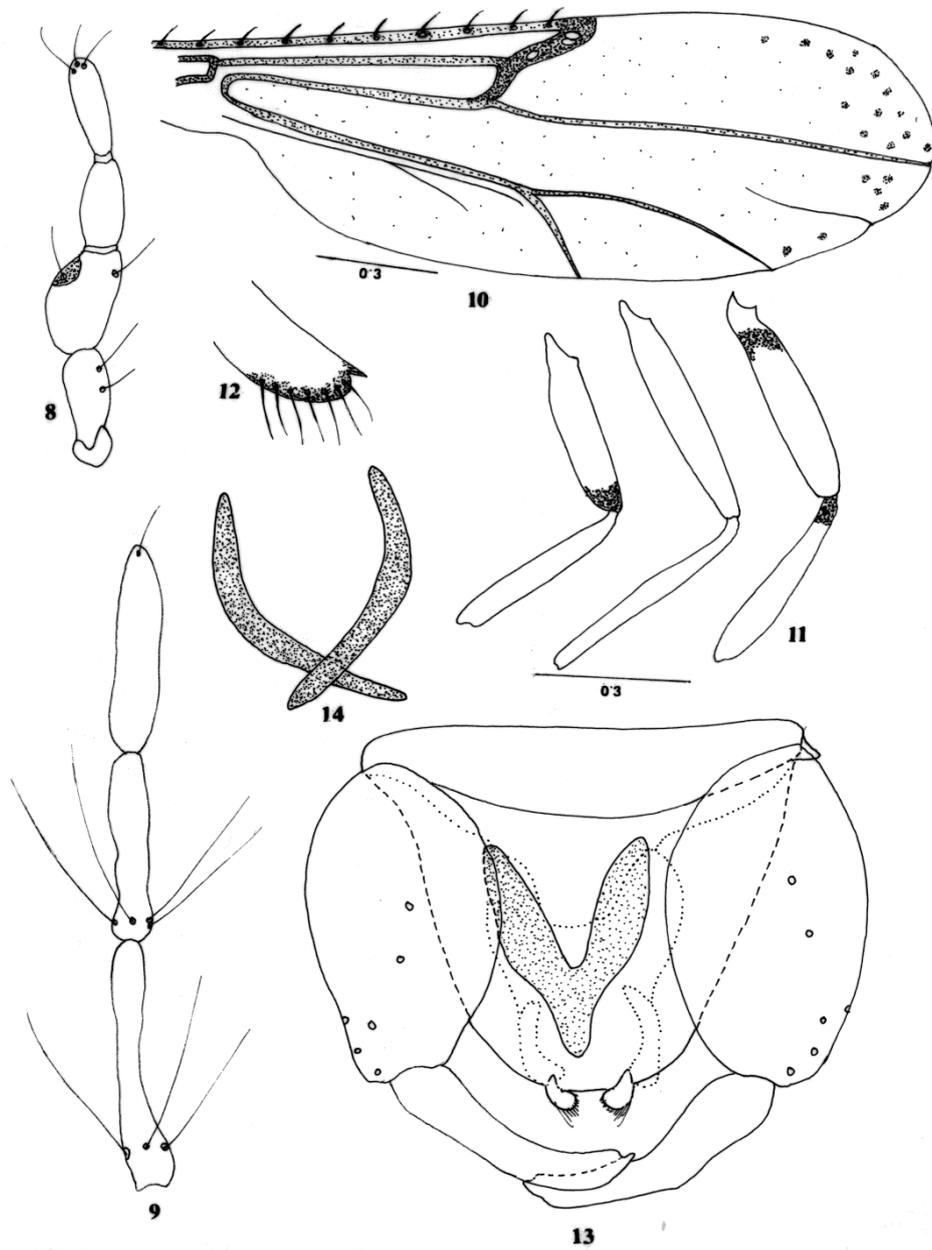
The name, "*flecteris*" derives from the bow like parameres of male genitalia

DISCUSSION

The species comes closer to *B. fuscivenosus* (LUTZ.) in wing venation and to *B. beaufortanensis* DELECOLLE & RIEB (1992) in sensorial pit of palpomere III, wing venation, stigma, structure of tergite IX. Basistyle and dististyle show affinities with *B. insulicola* (TOKUNGA, 1959) and *B. subjectus* DEBENHAM (1991). Critical examination of flagellomeres XI-XIII, sensorial pit and sensillum of palpomere III, wing venation, colour pattern of fore and hind femora and hind tibia, spines of hind tibial comb, aedeagus and bow like parameres appear quite different from the previous species and clearly establish it as a new Indian species of the genus.



Figs 1-7. *Brachypogon (Brachypogon) baculus* sp.n.: male. 1 – maxillary palpus, 2 – flagellomeres XI-XIII, 3- wing, 4 – femora and tibiae of fore, mid and hind legs, 5 – hind tibial comb, 6 – genitalia, 7 – parameres.



Figs 8-14. *Brachypogon (Brachypogon) flecteris* sp.n.: male: 8 – maxillary palpus, flagellomeres XI-XIII, 10 – wing, 11 – wing, 12 – femora and tibiae of fore, mid and hind legs, 13 – genitalia, 14 – parameres.

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