

A study on Orthocladiinae of India Part III. Genus *Metriocnemus* Van der Wulp

(Diptera, Chironomidae)

by D. C. Sinharay and P. K. Chaudhuri

Zoology Department, T. D. B. College, Raniganj

Zoology Department, University of Burdwan

Abstract

One new species of genus *Metriocnemus* v. d. Wulp, *Metriocnemus longipalpus* has been described with its distribution from India. *Metriocnemus callinotus* Kieffer has also been revised on the basis of fragmentary residues of the type-specimen available at Zoological Survey of India, Calcutta.

The genus *Metriocnemus* was created by VAN DER WULP in 1874 and subsequently its generic status was confirmed by many workers like EDWARDS (1929), JOHANNSEN (1932), GOETGHEBUER (1932), THIENEMANN (1937), ZAVREL (1941) and BRUNDIN (1956) and others. *Chironomus albolineatus* was fixed up as its typespecies by COQUILLET (1901) from a mixed population containing more than one genus. Later, EDWARDS (1929) selected *Metriocnemus fuscipes* as its type-species for its more appropriateness than any other species and it is in this background BRUNDIN (1956) interpreted the genus *Metriocnemus* to be followed by subsequent authors. BRUNDIN (1956) and others. *Chironomus albolineatus* was fixed up as its type-species by Two valid oriental species, *Metriocnemus discretus* and *Metriocnemus nigrescens* were described by JOHANNSEN (1932) from Java and *Metriocnemus callinotus* by KIEFFER (1911) from India.

The terminologies and mode of descriptions followed here are mainly based on SAETHER (1971, and 1974) and SINHARAY et al. (1977).

Metriocnemus longipalpus nov. spec.

Male : Length of body 4 to 4.18 mm.

Length of wing 2.12 (1.87—2.31, n = 8) mm, breadth of wing 0.55 (0.52—0.57, n = 8) mm.

Head : Dark brown in colour. Vertex (Fig. 1) dark brown to brown with 16—18 postocular setae in a row reaching upto mid line and forming a cluster of 6 setae on each side. Clypeus with 3—4 setae. Maxillary palp brown, palpomere

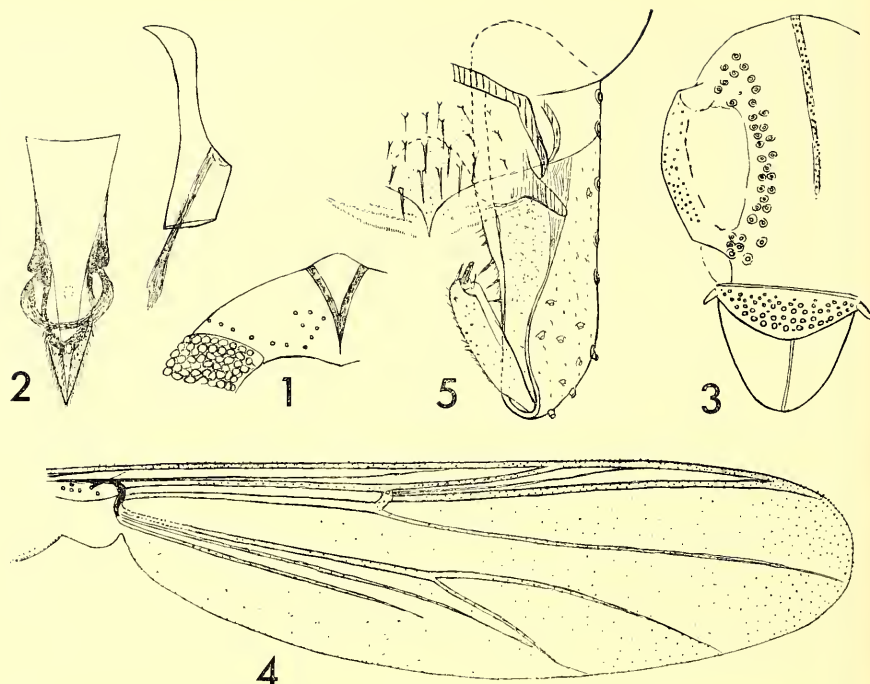


Fig. 1—5: *Metriocnemus longipalpus* nov. spec. ♂; 1) vertex, 2) cibarial pump and tentorium, 3) thorax, 4) wing, 5) hypopygium.

III with a preapical pit bearing 2 sensilla, length ratio of palpomeres from I to V 8-12-60-50-55, L/W ratio 7.5. Eyes naked and slightly elongated dorsally. Antenna dark brown to light brown, proximal flagellomeres small, distal flagellomeres long, flagellomeres with two whorls of setae except flagellomere IX, flagellomere XIV gradually tapered towards the end and with a preapical short, stout seta, length ratio of flagellomeres from I to XIV 7-5-5-5-5-5-5-6-7-7-7-8-8-142, AR 1.8. Cibarial pump and tentorium as in fig. 2.

T h o r a x (Fig. 3): Dark brown. Pronotum with a cluster of 12 lateral setae. Acrostichals 28-30 staggering in a row and being extended upto thorax, dorsocentrals 36-40 arranged in 3 rows, prescutellars with a cluster of 6-7 setae, prealars 28-30 irregularly arranged. Scutellum with numerous setae, postscutellum dark brown.

W i n g (Fig. 4): pale with numerous macrotrichia. Brachiolum with 7-8(8) setae. Setae present on all veins except Sc, R_{2+3} and M, wing membrane with microtrichia in most cells of R_{4+5} and in most part of cell M_{1+2} and along the margin of An; R with 50-55, R_1 with 40-45 and R_{4+5} with 65-72 setae; sensory organ 1 on Fr but absent on R_1 ; R_{2+3} prominent and runs parallel to R_1 and meets C at a distance of 0.18 mm from the tip of R_1 , R_{4+5} ends proximal to M_{3+4} and distal to Cu_1 , free end of C short being 0.082-0.12 mm long, Cu_1 slightly curved and recurved at tip, f-cu distal to r-m, An ends distal to f-cu. Squama fringed with 40-46 closely setae. VR 1.2, CR 0.90. Haltere brown, knob with 6 setae.

Legs: Dark brown and heavily clothed with setae. Spur of fore tibia 0.09 mm long, slender and setaceous at the proximal one-third, ratio of length of the spur to the apical diameter of fore tibia 22:11; spurs of mid tibia equal -0.041 mm long, ratio of length of the spur to the apical diameter of mid tibia 10:11; spurs of hind tibia unequal-0.09 mm and 0.036 mm long, setaceous at the proximal one-third, ratio of the length of spurs to the apical diameter of hind tibia 22:14,9:14. Hind tibial comb with 11 setae 0.024 mm-0.085 mm long. Tarsomeres I and II of mid and hind tibia short and with 2 apical spurs.

Proportions and ratios of leg segments

	Fe	Ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	TR
P ₁	55	66	45	25	17	11	6	68	—
P ₂	65	70	30	19	14	9	8	43	—
P ₃	70	90	42	26	20	11	9	47	1.61

Abdomen: Dark brown, terga beset with numerous long uniformly distributed setae longest being 0.20 mm long.

Hypopygium (Fig. 5): Anal point small, naked with broad base and sharply pointed tip and provided with 15-17 setae, longest being 0.025 mm. Gonocoxite having flaplike projection and 30-32 long setae. Laterosternite with 8-9 setae, transverse sternapodeme 0.19 mm long, phallapodeme 0.08 mm long. Gonostylus more or less cylindrical with a preapical fold and an apical tooth 0.012 mm long. HR 2.8, HV 3.6.

Female: Length of the body 5.1 mm.

Length of wing 1.87 mm, breadth of wing 0.68 mm.

Head: Dark brown. Vertex dark brown with 50-55 (52) postocular setae scattered throughout vertex concentrated in a group along the mid line. Clypeus with 22-25 (24) setae. Maxillary palp dark brown, length ratio of palpomeres from I to V 8-10-42-32-41, L/W ratio 6.1. Eyes as in male. Antenna (Fig. 6) uniformly brown, flagellomere V broader at the middle and then narrowed down to the apex, flagellomere I with 2 whorls of setae, length ratio of flagellomeres from I to V 23-15-16-18-22, AR 0.31.

Thorax: Dark brown. Chaetotaxy of pronotum as in male.

Wing (Fig. 7): Wing brownish with macrotrichia in cells as in male but prominent and numerous than those of male. Sensory organ 1 on Fr and R₁ at a distance of 0.20 mm from the base of R₁, R₂₊₃ runs closely parallel to R₄₊₅, R₄₊₅ ends proximal to M₃₊₄, free end of C 0.10 mm long, Cu₁ and An as in male. Squama with 45-46 setae. Haltere as in male.

Legs: Colour similar to that of male but slightly darker than male, chaetotaxy as in male.

Genitalia (Fig. 8-9): Notum 0.11 mm. Gonocoxite small with 5 setae. Tergum IX with 42-46 (44) setae. Seminal capsule (Fig. 9) strongly sclerotized, oval and measuring 0.12 mm by 0.08 mm.

Material examined: Holotype ♂ (Type no. 46, B. U. Ent.), India: West Bengal: Kalimpong, 2. 10. 1975, S. Chakravarti. Allotype ♀, data same as holotype. Paratypes: 4 ♂, and 3 ♀, India: West Bengal: Jorbangla, 27. 7. 1975, K. Sinha;

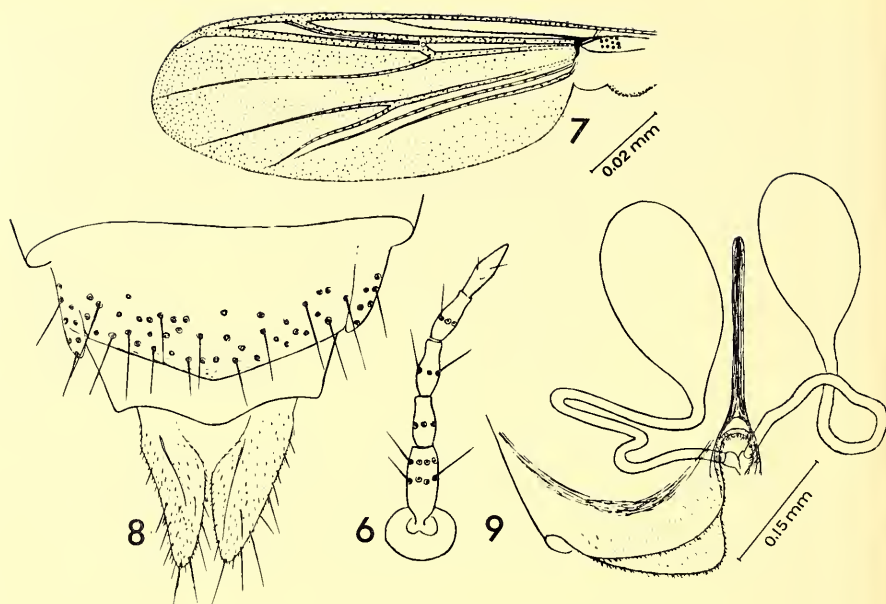


Fig. 6—9: *Metriocnemus longipalpus* nov. spec.
♀; 6) antenna, 7) wing, 8) genitalia and 9) seminal capsule.

6♂ and 1♀, India: West Bengal: Tung, 10. 5. 1973, S. Basak and Pankhabari, 30. 3. 1976, S. K. Das Gupta. Additional specimens: 3♂ and 2♀, India: Mizoram: Aizol, 2. 5. 1976, K. Sinha.

The species has been named *Metriocnemus longipalpus* n. sp. for its large sized maxillary palp. It shows similarity with *Metriocnemus discretus* Johannsen (1932) from Tjibodas, West Java and *Metriocnemus nigrescens* Johannsen (1932) from Lawn Plateau, Middle Java in general morphological features but can easily be distinguished from them by i) dark brown head with postocular setae on the vertex, ii) presence of setae on veins, iii) fringed squama with 40-46 setae, iv) brown haltere with setae, v) 2 spurs on tarsomeres I and II, of hind tibia, vi) gonocoxite with a flap like projection, vii) cylindrical gonostylus with a preapical fold and an apical tooth and viii) short sharply pointed anal point.

Metriocnemus callinotus Kieffer

KIEFFER, J. J., 1911. Rec. Ind. Mus. 6: 175.

Male: Length of body 6 mm. Length of wing 2.01 mm, breadth of wing 0.92 mm.

Head: Transparent yellow. Maxillary palp with 5 palpomeres, palpomere I little transverse. Antenna with scape black, pedicel yellow, flagellomeres brown, flagellomere XIII grey and little longer than the preceding ones.

Thorax : Black brown, mesonotum transparent yellow with 3 bands of which median one covered and gradually narrowed behind, pleura truncate transparent and shortened with black spots.

Wing : Hyaline with macrotrichia on the surface. Veins conspicuous and yellow, r-m highly elongate and oblique, f-cu distal to r-m, C shortly elongated behind R_{4+5} , Cu_1 curved at the middle and recurved at the tip. Anal lobe well developed and rounded. Haltere pale at knob and black at stem.

Legs : Yellowish. Fore tibia a little longer than femur. Tarsomere brown, tarsomere III almost twice as long as tarsomere V, tarsomere IV shorter than tarsomere III. Hind tibial comb of several spines (10?). Empodium filiform, shorter, shorter than claws. Pulvillus absent.

Abdomen : Yellowish brown, darker behind.

Hypopygium : Anal point short with a few setae. Gonocoxite with a basal lobe and with a no. of setae. Gonostylus with a short apical tooth.

Material examined: Holotype ♂, (Z. S. I., Calcutta), India: HIMACHAL PRADESH: Simla, 1908, N. Anandale.

The species was revised on the basis of male specimen from Simla at an altitude of 2300 m by Dr. N. Anandale. The available fragments such as hind leg, a portion of antenna, wing and posterior part of abdomen lying in the type collections of Kieffer at Zoological Survey of India, Calcutta, differ from other species described here in colouration of thorax, antenna and venation of wing etc. The details of morphological features could not be ascertained as the exotic forms in entirety was not available during this study.

Acknowledgement

We are grateful to Dr. James E. Sublette of Eastern New Mexico University, Portales, for kindly going through the manuscript and giving important suggestions. They are indebted to Dr. F. Reiss of Zoologische Staatssammlung München (formerly of Max-Planck-Institute of Limnology, Plön) for providing relevant literatures during this study of Orthocladiinae. We express deep sense of gratitude to Prof. S. K. Das Gupta of Govt. College, Darjeeling for various courtesies and to Prof. D. K. Chaudhuri; Head of the department of Zoology, Burdwan University for laboratory facilities and helpful criticisms.

Literature

- BRUNDIN, Lars 1956: Zur Systematik der Orthocladiinae (Diptera, Chironomidae) — Rept. Inst. Freshwater Res. 37: 5—85
- COQUILLET, D. W. 1901: New Diptera in the U. S. National Museum, — Proc. U. S. Nat. Mus. 23: 593—618
- EDWARDS, F. W. 1929: British non biting midges (Diptera, Chironomidae) — Trans. Ent. Soc. Lond. 77 (2): 279—430
- GOETGHEBUER, M. 1932: Dipteres Chironomides IV. (Orthocladiinae, Corynoneurinae, Clunioninae, Diamesinae) — Faune de France 23: 1—204
- JOHANNSEN, O. A. 1932: Orthocladiinae of the Malayan subregion of the Dutch East Indies — Arch. Hydrobiol. Suppl. 9: 725—732
- KIEFFER, J. J. 1911: Description de nouveaux chironomides de l'Indian Museum de Calcutta, — Rec. Ind. Mus. 6: 113—177

- SAETHER, O. A. 1971: Notes on general morphology and terminology of Chironomidae (Diptera), — *Can. Ent.* **103**: 1237—1260
- — 1974: Morphology and terminology of female genitalia of Chironomidae (Diptera), — *Ent. Tidskr. Suppl.* **95**: 216—223
- SINHARAY, D. C. and P. K. CHAUDHURI, 1977: A study of Orthoclaadiinae (Diptera, Chironomidae) of India. Part I. Genus *Eukiefferiella* Thienemann, — *Oriental Ins.* **12** (3) (in press)
- THIENEMANN, A. 1937: Chironomiden aus Lappland. III. Beschreibung neuer Metamorphosen mit einer Bestimmungstabelle der bisher bekannten *Metriocnemus* v. d. Wulp-Larven und Puppen. — *Stett. Ent. Zeit.* **98**: 165—185.
- WULP, F. M. VAN DER 1874: Dipterologische Anteeekeningen. — *Tijdschr. Ent.* **17**: 127—137.
- ZARVEL, J. 1941: Chironomidarum larvae et nymphae. IV. (Genus *Metriocnemus* v. d. Wulp) — *Act. Soc. Sci. Nat. Morvo-Silesiacea* **13**: 1—28.

Author's Address:

Dr. P. K. Chaudhuri, Zoology department, University of Burdwan,
Burdwan 713 104, W. B., India.

Mr. D. C. Sinharay, Zoology department, T. D. B. College,
Raniganj 713 347, W. B., India.

Angenommen am 25. 1. 1978

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Spixiana, Zeitschrift für Zoologie](#)

Jahr/Year: 1977

Band/Volume: [001](#)

Autor(en)/Author(s): Sinharay D.C., Chaudhuri Prasanta K.

Artikel/Article: [A study on Orthocladiinae of India Part III. Genus *Metriocneumus* Van der Wulp \(Diptera, Chironomidae\) 281-286](#)