

RECORD OF THREE GENERA OF CHIRONOMINAE (CHIRONOMIDAE : DIPTERA)  
FROM INDIA

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ABSTRACT

Systematic position of *Chironomus* (= *Tendipes*) *brunetti* Kieffer has been revised by placing it in the genus *Endochironomus* Kieffer. Two new species, *Pentapedilum macrotrichium* and *Xenochironomus loripes* are described from West Bengal, India.

INTRODUCTION

There are no records of the species of genera, *Endochironomus* Kieffer, *Pentapedilum* Kieffer and *Xenochironomus* Kieffer from India, though they have been reported from the Orient in one, two and one species respectively (Sublette and Sublette, 1973). In course of our studies of the chironomid fauna of India at the Zoological Survey of India and the collections of those from different ecological niches of West Bengal, we came across the above species.

For explanations of abbreviations and morphological terminologies, the works of Frommer (1967) and Saether (1967 and 1977) have been referred.

***Endochironomus brunetti* (Kieffer) n. comb.**  
(Figs. 1 a-c)

*Tendipes brunetti* Kieffer, 1913. *Rec. Indian Mus.*, 9 : 133.

*Male* : Unknown.

*Female* : Yellow in colour.

Head : Vertex white with a number of setae. Maxillary palp dark yellow, long, palpomere III longer, palpomere V longest. Eyes contiguous, wider near vertex, reniform extended dorsally, extension being 0.02 mm long. Frontal tubercle absent. Antenna (Fig. 1a brown, flagellomeres II-IV vase-shaped with long neck, flagellomere V almost equal to flagellomere I; length ratio of flagellomeres I—V 35 : 22 : 22 : 25 : 38, AR 0.36.

Thorax : Antepnotum collar-like with an emargination at the middle, mesonotum with three short bands.

Wing : Hyaline with veins yellow. Setae on veins not traceable  $R_{2+3}$  ends well beyond  $R_1$  almost closer to  $R_{4+5}$ ; ending of  $R_{4+5}$  and C pointed and with setae; r-m slightly proximal to f-cu. Wing with markings or

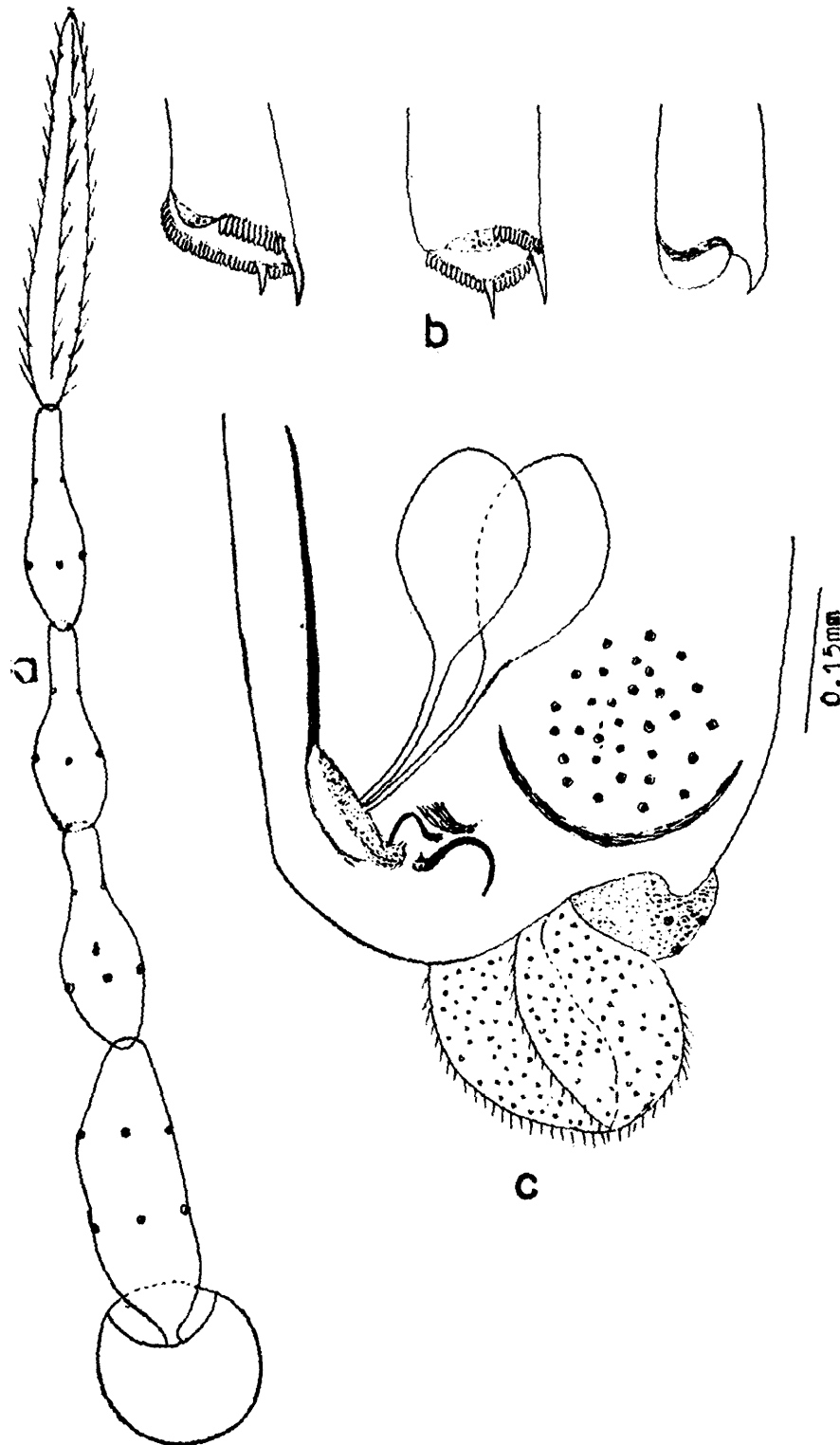


Fig. 1 *Endochironomus brunetti* (Kieffer) n. comb ♀ :  
 a) antenna, b) tibial ends of hind, mid and fore legs,  
 c) genitalia and seminal capsules.

spots as follows : i) smoky bands in cell  $M_{3+4}$  extending over Cu and Cu i but not reaching the margin of the wing, ii) spots two in number one being in cell M near the base of

$M_{3+4}$  and another near the apex of  $M_{3+4}$ . Squama with setae. Haltere white. Length of wing 1.64 mm, breadth 0.82 mm. Legs (Fig. 1b) : Fore femur with a broad subapical dark brown band, fore tibia and tarsomeres I-IV dark, hind tibia with a subapical dark brown band. Fore tibial scale with a small sharp spur. Spurs of mid tibia equal to subequal being 0.024 mm and 0.020 mm long, ratio of length of spurs to the apical diameter of mid tibia 6 : 22 and 5 : 22 ; spurs of hind tibia remarkably unequal being 0.028 mm and 0.008 mm long, ratio of length of spurs to the apical diameter of hind tibia 7 : 10, and 12 : 11. Pulvilli wide, little shorter than empodium which is equal to claws.

Abdomen : Yellow in colour. Setae present on terga, marginal setae longer. Genitalia (Fig. 1c) : Notum 0.12 mm long. Coxosternapodeme bow shaped. Cerci long. Seminal capsules oval, equal measuring 0.10 mm by 0.08 mm ; ducts of seminal capsules straight without loop and opening separately.

*Material examined* : 4 ♀ ♀, India, Bihar, Madhupur, 1913, Coll. N. Annandale.

*Remarks* : This species was described as *Tendipes brunetti* by Kieffer (1913) from India. Since the descriptions of the species as given by Kieffer is utterly inadequate Sublette and Sublette (1973) could not possibly determine its true systematic position. Though the type-specimen are not available in the Zoological Survey of India, Calcutta, on examining the named collections preserved in spirit in the Zoological Survey of India and correlating the observations on them with the descriptions of Kieffer, One may be tempted to place the species under the genus *Endochironomus* Kieffer as a new combination on the basis of following characters ; i) antepnotum collar-like with dorsal emargination, ii) antenna

of female, iii) ending of  $R_{2+3}$  with C far beyond  $R_1$ , iv) fore tibial scale with a short spur, v) hind tibial spurs strikingly unequal and vi) r-m slightly proximal to f-cu. The present authors however, could not locate any spot or clouds in the wing of the material examined as reported by Kieffer (1913). The illustrations could not also be made in detail as the exotic materials are almost bleached due to long preservation in spirit.

***Pentapedilum macrotrichium* n. sp.** (Fig. 2 a—e)

*Male* : Unknown

*Female* : Body length 1.59 mm

Head : Greyish in colour. Vertex with 8-9 (Outer verticles 6, post orbitals 2-3) setae. Clypeus with 25-26 (25) setae arranged in 4-5 rows, clypeal ratio 1. Maxillary palp pale grey ; length ratio of palpomeres I-V 2 : 4 : 6 : 4 : 11, L/W ratio 3.0. Eyes bare, reniform slightly extended dorsally, extension being 0.01mm long. Frontal tubercle absent. Antenna (Fig. 2a) pale grey in colour, flagellomeres II-IV flask-shaped with long neck, flagellomere V pear-shaped with a furrow at the middle ; length ratio of flagellomeres I-V 20 : 15 : 18 : 11 : 25, AR 2.1. Pedicel ratio 0.67. CA 1, CP 0.98.

Thorax : Brown with grey bands. Antepnotum collar-like without seta. Acrostichals 12 in pairs, dorsocentrals 13-14 in a row, prealars 2, prescutellars 0, Scutellum with 10 setae in one transverse row, postscutellum grey in colour.

Wing (Fig. 2b) : Pale with yellowish tinge. Brachiolum with 4 setae. Wing membrane with densely distributed macrotrichia even in veins including cross-veins.  $R_{2+3}$  very close to  $R_1$  at a distance of 0.02mm from  $R_1$  ;

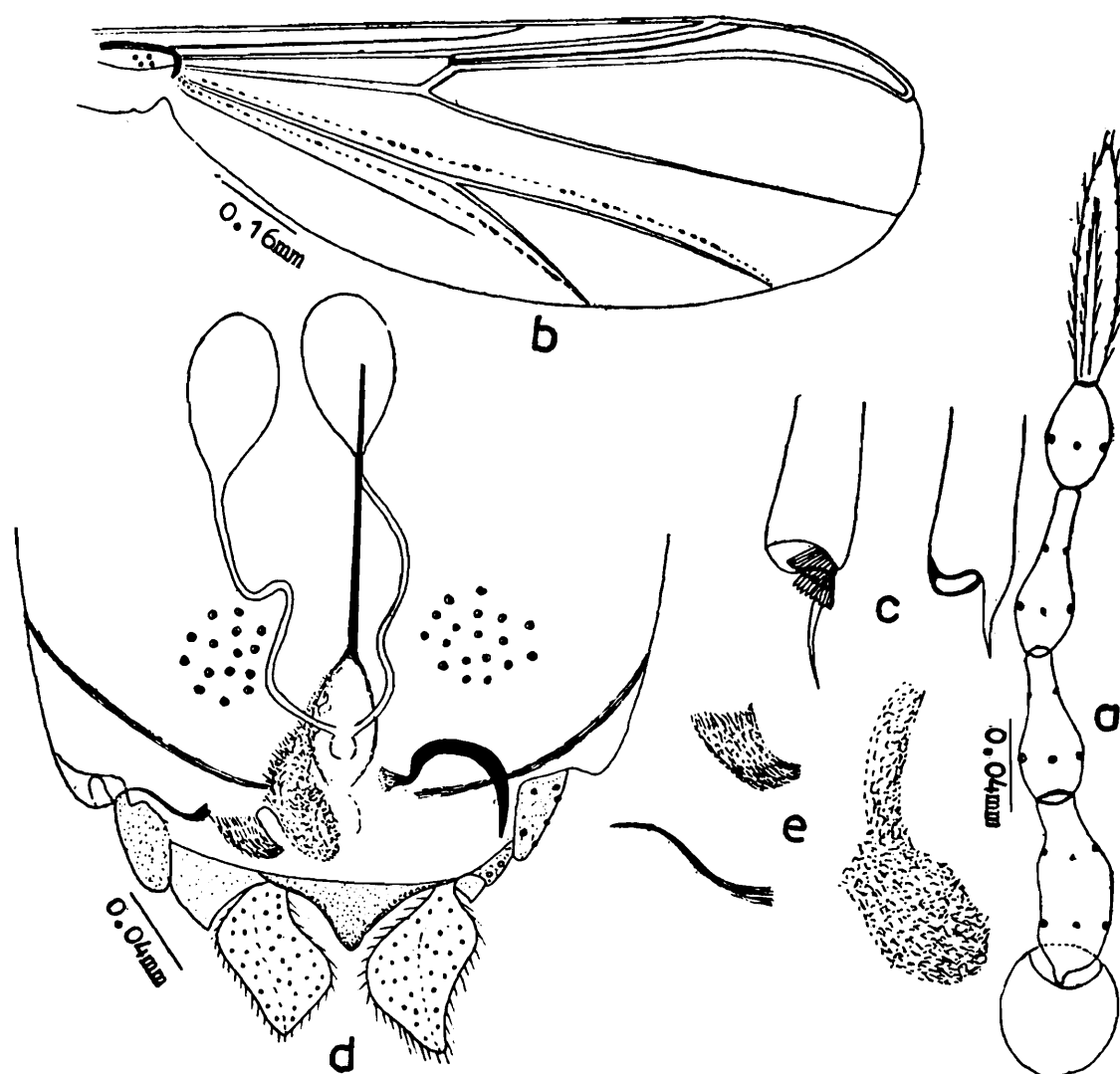


Fig. 2 *Penapedilum macrotrichium* n. sp. ♀ :

a) antenna, b) wing, c) tibial ends of mid and fore legs and d—e) genitalia.

ending of  $R_{4+5}$  with C blunt ; r-m proximal to f-cu ; one faint vein present below  $M_{2+3}$  and above Cu ; An ends proximal to f-cu. Anal lobe obsolete. Squama with 4-5 (4) setae. Haltere with pale stem and grey knob. CR 0.97, V R 1.38. Wing length 1.03 (0.94-1.12,  $n=6$ ) mm, breadth 0.40 (0.33-0.45,  $n=6$ ) mm.

Legs (Fig. 2c) : Brown in colour with numerous setae. Fore tibia with elongated scale being 0.60 mm long, bearing a short

spine. Spurs of mid and hind tibia equal, ratio of length of spurs to the apical diameter of mid and hind tibia 4 : 3. Pulvilli longitudinally split with an empodium. LR 0.4 in fore, LR 0.5 in mid and LR 0.64 in hind legs.

Abdomen : Brown in colour, margin dark brown. Terga with numerous weak setae arranged in irregular rows. Genitalia (Figs. 2d-e) : Notum 0.13 mm long. Gonocoxite IX with 4-6 setae. Coxosternapodeme with one median broad bend. Gonocoxa-

podeme wide with 12-14 setae divided mesally. Gonapophysis VIII divided into a large dorso-mesal and a small brush like ventrolateral lobe. Tergum IX and X with numerous setae. Postgenital plate conical and protruded. Cerci with 20 setae. Labia with profuse setae. Seminal capsule oval, moderately sclerotized with small neck measuring 0.06 mm by 0.03 mm; ducts of seminal capsules straight normally sometimes with one or two bends.

*Holotype* : ♀, (Z. S. I. Reg. 6523/H6) West Bengal, Burdwan, 11. iii. 1978, Coll. A. Chatterjee.

*Paratypes* : 12 ♀♀, data same as holotype; paratypes in the collection of Zoology department, University of Burdwan, Burdwan.

*Remarks* : This species is named as *Pentapedilum macrotrichium* on the basis of dense macrotrichia distributed all over the wing membrane and veins. It seems close to *Pentapedilum convexum* and *P. nodosum* described by Johannsen (1932) from Sumatra and Java respectively but can easily be distinguished from them by, i) thorax with grey vittae, ii) macrotrichia densely distributed on wing as well as veins, iii) grey haltere knob, iv) flagellomeres II-IV flask-shaped with long neck and v) equal and oval seminal capsules.

***Xenochironomus loripes* n. sp.** (Figs. 3 a-e)

*Male* : Body length 3.61(3.51-3.70, n=5) mm.

*Head* : Dark brown in colour. Vertex brown with 12 (postocular 3, outer verticles 5 and inner verticles 4) setae. Clypeus with 14 setae, clypeal ratio 0.87. Maxillary palp (Fig. 3a) pale brown to brown, palpomeres I-IV dark brown, palpomere III with a preapical pit bearing flagella-like sensilla, palpomere V with 2 straight apical setae; length

ratio of palpomeres I-V 10 : 11 : 27 : 33 : 46, L/W ratio 3.71. Eyes bare, contiguous, hemispherical extended dorsally, extension being 0.11mm long. Frontal tubercle absent. Antenna dark brown, length ratio of oflagellomeres I-XI 14 : 6 : 8 : 6 : 8 : 8 : 7 : 7 : 8 : 8 : 164, AR 2.07. Pedicel ratio 1.6 CP 1.1, CA 0.59.

*Thorax* (Fig. 3b) : Brown with one median longitudinal band and two lateral vittae. Antepronotum very thin, V shaped without any seta and divided by a median suture. Acrostichals 10-12 beginning from tip of the middle of mesonotum, dorsocentral 18-20 (20) in a row, humerals 0, prealars 4. Scutellum with 8 setae in an oblique row, postscutellum dark brown with a median suture.

*Wing* (Fig. 3c) : Pale brown with the veins conspicuous and infuscated. Brachiolum with 2 setae. R with 13, R<sub>1</sub>, 13, and R<sub>4+5</sub> without setae; R<sub>2+3</sub> meets C very close to R<sub>1</sub> being 0.1mm away from R<sub>1</sub>; ending of R<sub>4+5</sub> with C blunt and with 3 setae; r-m distinct, dark and proximal to f-cu; An ends distal to f-cu. Squama with 10-12 setae. Haltere with yellow stem and knob and without seta. Wing length 1.44(1.42-1.46, n=8) mm, breadth 0.77(0.77-0.78, n=8) mm. CR 0.95, VR 1.8.

*Legs* (Fig. 3d) : Brown in colour. Fore coxa with 2 long setae, fore femur with an apical dark brown band, mid and hind femur dark brown forming a broad band at its distal part, fore tibia dark brown, mid and hind tibia brown with an apical and basal brown band. Fore tibial scale blunt with 2 long setae at the tip. Spurs of mid tibia subequal, slightly curved being 0.021 mm and 0.017 mm long, ratio of length of spurs to the apical diameter of mid tibia 3 : 4, and 2 : 4; spurs of hind tibia unequal being 0.25 mm and 0.14 mm long, ratio of length of spurs

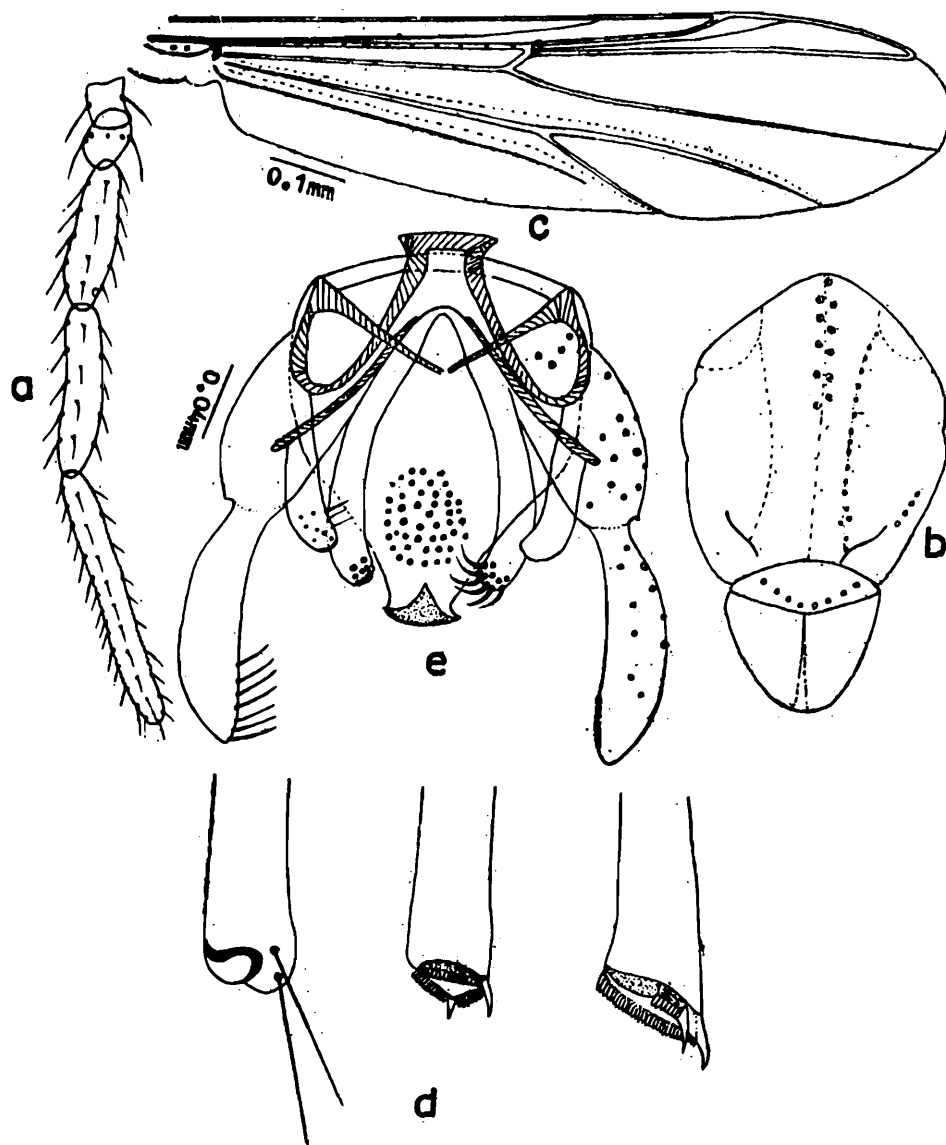


FIG. 3

Figs. 3 *Xenochironomus loripes* n. sp. ♂ :  
 a) maxillary palp b) thorax, c) wing, d) tibial ends of fore,  
 mid and hind legs and e) hypopygium.

to the apical diameter of hind tibia 7 : 16 and 4 : 16. Tarsomere I with an apical band and tarsomeres II—V dark brown. Pulvilli well developed and wide. LR 1.7 in fore, LR 0.46 in mid and LR 0.65 in hind legs.

Hypopygium (Fig. 3e) : Anal point short broad and strongly downturned. Tergum IX with 10 long setae concentrated at the middle.

Gonocoxite stout with 10—12 setae ; gonostylus long with uniform diameter, tip slightly attenuated and blunt having 7-8 (8) inwardly directed setae at its inner apical margin. Appendage 1 reduced to a small wide and slightly bent at the tip bearing a few setae ; appendage 2 well developed, elongated narrow at the base, bowed ventrally reaching beyond

the end of gonocoxite, apex bearing 11 curved setae. Transverse sternapodeme 0.17 mm long, lateral sternapodeme 0.14 mm long, coxapodeme 0.04 mm and phallapodeme 0.1 mm long. HR 0.5; HV 2.32.

*Female* : Unknown

*Holotype* : ♂, (Z. S. I. Reg, 6525/H6) West Bengal, Bolpur, 18. viii. 1977, Coll. D. Chatterjee.

*Paratypes* : 8 ♂♂, data same as holotype ; 3 ♂♂, West Bengal, Raniganj, 10. viii. 1975 and 11. viii. 1977, Coll. P. K. Chaudhuri in the collection of Zoology department, University of Burdwan, Burdwan.

*Remarks* : The species is named as *Xenochironomus loripes* on the basis of the dark brown bands on the femur of its legs. It comes close to *Xenochironomus australiensis* Freeman, 1961 from Australia especially in the structure of male hypopygium but can easily be separated from the above by, i) brown colour of the body, ii) dark brown antenna, iii) colour bands on femur and the colour of the legs, iv) dark r-m and distinct other veins of wing, v) shape of appendages 1 and 2 and their chaetotaxy and vi) attenuation of the tip of the gonostylus.

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