Description of two new species of the chironomid midges collected from the Tama River, Tokyo (Diptera, Chironomidae)

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Abstract: While extensive surveys of the chironomid midges breeding in and around the Tama River were carried out by the senior author, two new species were collected on the Tama Hills along middle reaches of the river, *Paratendipes tamafuscus* sp. nov. and *Tokyobrillia tamamegaseta* gen. et sp. nov., as described in the text.

INTRODUCTION

The species of the chironomid midges breeding in and around the Tama River, Tokyo, were studied extensively by Sasa and his coworkers (1980-1983), with special references to their distribution in relation to the degree of pollution with sewage waters. More recently, studies on the chironomids found in the Tama Hills along the middle reaches of the river have been conducted by the senior author, and some 80 species have already been collected and identified. Among them, the morphology of the following new species, *Paratendipes tamafuscus* sp. nov., and *Tokyobrillia tamamegaseta* gen. et sp. nov., are described in the present paper.

The nomenclature of adult males of Chironomidae, the methods of mounting the specimens on slides, and of standard measurements are the same as described by Sasa (1989). The key characters for classification of the chironomids mostly followed the system described by Brundin (1956), Pinder (1978)

and Sasa (1989). The type specimens are being deposited in Toyama Science Museum.

DESCRIPTION

Paratendipes tamafuscus sp. nov.

(Fig. 1)

Four males emerged from bottom samples of the Tama River collected at Ikuta, Tama-ku, Kawasaki (Kanagawa). Holotype: No. A 199:51, emerged Oct. 25, 1989. Paratypes: No. A 199:52-54, emerged Sep. 7, Sep. 30 and Oct. 28, 1989.

BL 2.98-3.68 (3.39 in average of 4) mm. WL 1.51-1.82 (1.65) mm. Body largely dark brown; ground color of scutum brown, scutal stripes dark brown, scutellum brown, post-notum and abdomen uniformly dark brown; wing unmarked, halteres brown; front femur yellow for basal 2/3 and brown for distal 1/3, front tibia brown for basal 1/3 and yellow for distal 2/3, and with an apical brown ring; front tarsi I and II largely yellow and each with an apical brown ring, III basally yellow and largely brown, IV and V entirely brown; femora, tibiae, tarsi I, II and III of middle and hind legs largely yellow and each with an apical dark ring.

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Figs. 1 and 2.

Head in Fig. 1-a. Frontal tubercles absent. Eyes bare, ER 0.19–0.39 (0.23). Antenna with 13 flagellar segments. AR 1.37–1.54 (1.48), AHR 0.48–0.52 (0.50). Palp well developed, P/H ratio (length of palp divided by width of head) 0.95–1.25 (1.10), SO 8–12 (9.1), CL 7–10 (9.3), Antep pronotum with 1, 2 or 3 (most frequently 1, mean 1.4) lateral seta (unusual character as a member of Chironomini). DM 16–20 (18.0), DL 9–13 (10.3), PA 3–5 (4.0). SC 9 (in 1 specimen) or 10 (in 3). Wing bare, without dark marks, squama bare in 3 specimens, with one seta in one specimen. R2+3 ending closer to tip of R1 than to tip of R4+5. RR 0.19–0.29 (0.26). Tip of costa distal to tip of Cu1, R/Cu 1.05–1.10 (1.08). VR 1.09–1.13 (1.10). Tip of front tibia (Fig. 1-b) with a small, narrow and sharply pointed terminal process. Tip of middle and hind tibiae (Fig. 1-c, d) with two comb scales, both with a short spur. Pulvilli vestigial, claws and empodium well developed (Fig. 1-e). fLR 1.48, 1.53, mLR 0.55–0.58 (0.56), hLR 0.69–0.73 (0.71), fTR 0.27, 0.28, fBR 4.7, 5.3, mBR 3.6–6.6 (5.0), hBR 4.3–4.9.

Hypopygium in Fig. 1-f. Ninth tergite without long setae in the central portion, and with 6 short setae on both sides of anal point. Bands of ninth tergite widely separated in the middle. Dorsal appendage (Fig. 1-g) somewhat plate-like but apically hooked, with 5 short setae on dorsal side near the base, and one long and curved seta on ventral side near the base. Ventral and median appendages as in Fig. 1-h, the former stout and somewhat conical and with some 20 short and recurved setae, the latter brush-like and bearing some 10 short, simple setae. Gonostylus widest at about basal 1/3 and apically pointed, inner margin slightly concave and lateral margin smoothly convex, with two rows of short setae along inner margin.

Remarks. This species is considered as

belonging to the genus *Paratendipes* Kieffer, 1911, since it has general characteristics of the tribe Chironomini, but as shown in the key compiled by Sasa (1989), wings are bare and without dark marks, antenna with 13 flagellar segments, frontal tubercles absent, squama bare, both of the terminal comb scales of middle and hind tibiae with a short spur, pulvilli absent, both dorsal and ventral appendages are the Chironomini-type but hypopygium has median appendages such as seen in species of the tribe Tanytarsini. Of the two species of this genus recorded from Europe by Pinder (1978), this species is more closely related to *P. nudisquama* (Edwards, 1929) in that the anal point is not constricted basally and dorsal appendage is not bottle-shaped, but in the latter, gonostylus is slender and not broadened medially, dorsal appendage is differently shaped and with more numerous inner and lateral setae (Fig. 165B; Pinder, 1978). One species of this genus, *P. tamayubai*, was recorded also from the Tama River by Sasa (1983a), but its dorsal appendage is bottle-shaped and quite different from that of the present species.

Tokyobrillia gen. nov.

This is a new genus within the *Brillia*-complex of the tribe Orthoclaadiini, subfamily Orthoclaadiinae. Four genera have been recognized within this complex: *Brillia* Kieffer, 1913; *Eurycnemus* van der Wulp, 1874; *Euryhapsis* Oliver, 1981; and *Xylotopus* Oliver, 1982. They are mostly characterized by that wings bear macrotrichiae, antep pronotum with dorsal setae, terminal spurs of middle and hind legs are barbed, inner lobe of gonocoxite is long, narrow, and finger-like, anal point is absent, and gonostylus is bifurcate. The present genus shares most of these morphological characteristics with the

Fig. 1 *Paratendipes tamafuscus* sp. nov.

a: head. b: tip of front tibia. c: tip of middle tibia. d: tip of hind tibia. e: hind tarsus V, showing empodium and claws. f: hypopygium. g: right dorsal appendage. h: ventral appendage.

Fig. 2 *Tokyobrillia tamamegaseta* sp. nov.

a: head. b: tip of front tibia. c: tip of middle tibia. d: middle tarsus V. e: tip of hind tibia. f: wing. g: hypopygium. h, i: left and right gonostylus.

above genera, but differs essentially by that gonostylus is not bifurcate but simple, and bears very long terminal spine (megaseta) and 3 or 4 very long setae. A key for differentiating the previously known 4 genera were given by Cranston *et al.* (1989).

Type species. *Tokyobrillia tamamegaseta* sp. nov., monotypic.

***Tokyobrillia tamamegaseta* sp. nov.**

(Fig. 2)

Two males were collected with a light trap set at the side of the Tama River, Masugata, Tama-ku, Kawasaki (Kanagawa), one on Oct. 13, 1988 (holotype: No. A 199:56), and another on Aug. 29, 1989 (paratype: No. A 199:57). BL 2.56, 2.97 mm, WL 1.43, 1.53 mm. Body entirely pale yellow, excepting eyes and tibial spurs, which are dark brown. Head in Fig. 2-a. Eyes bare, each with a long dorsomedial projection, ER 0.23, 0.39. Antenna with 13 flagellar segments, AR 1.61, 1.52, AHR 0.59, 0.57. Palp lost in both specimens. SO 8:10, 12:12, CL 16, 24. Antepnotum with 2 or 3 dorsal setae, and 5 lateral setae. DM 0, 0, DL 28:30, 24:24. PA 4:4, 5:5, SC 16, 12. Wing membrane without dark marks but thickly covered with macrotrichiae. SQ 7:7, 5:5. Wing venation in Fig. 2-f (macrotrichiae omitted); costa extending much beyond tip of R4+5 and to near tip of wing; tip of R4+5 distal to tip of Cu1, R/Cu 1.12, 1.05. R1, R2+3 and R4+5 are very narrowly separated, RR 0.50, 0.55. Cross vein r-m is extremely long, and its fork is much proximal to fCu, VR 1.70, 1.61. Front tibia with strong hair tuft subapically, and with truncate apex but without apical spur (Fig. 2-b). Middle tibia with two strong and barbed apical spurs of subequal length (Fig. 2-c). Hind tibia with two long and barbed apical spurs, and with 3-6 simple and irregularly arranged spurs (Fig. 2-e; probably a primitive form of terminal comb of other Orthoclaadiinae). Front tarsi lost in both specimens. mLR 0.70, hLR 0.74. Terminal claws are well developed but empodium is minute, pulvilli absent (Fig. 2-d).

Hypopygium in Fig. 2-g. Ninth tergite without anal point, and with 22, 24 strong setae. Inner lobe of gonocoxite very long,

narrow, finger-like, and covered thickly with microtrichiae. Gonocoxite very large and apically expanded. Gonostylus long, slender, smoothly curved, with 4 very long setae arising at about middle, and with an extremely long apical spur (63:65 μ m long in holotype, 62 μ m long in paratype; Fig. 2-h, i).

Remarks. This species can be easily differentiated from all the previously known species of Orthoclaadiini by morphological characteristics given in the definition of this new genus, *Tokyobrillia*.

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摘 要

多摩川から採集したユスリカの
2新種について

多摩川は水源を山梨県の山間部に発し，その中流部からは市街地からの下水の混入によりしだいに水質の汚染がすすむという型の典型的な河川の一つであるが，これに発生するユスリカの種類と分布について

は，佐々ら（1980～1983）のくわしい調査があり，最近には小林の研究も行われて，すでに80をこえる種類の発生が確かめられている．今回は1988年から1989年にかけて，小林が採集した標本のうち次の2種類（後者は新属）について記載を行った．その形態的特徴，および図版は本文に記したとおりである．

Paratendipes tamafuscus sp. nov.

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