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Trichochilus, a new genus of Orthocladiinae

(Diptera, Chironomidae)

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SAETHER, O. A. (1985): *Trichochilus*, a new genus of Orthocladiinae (Diptera, Chironomidae). – Spixiana, Suppl. 11: 31–36.

A generic diagnosis is given for the female imago of *Trichochilus* gen. nov. The genus differs from other orthoclads in having hairy eyes, broad frontal tubercles, very short clypeus without setae, tentorium without sieve pore, short palp, numerous short setae on squama, no acrostichals, sensilla chaetica on all metatarsi including those of front leg, no tibial comb, very large pulvilli, well divided gonapophyses VIII and tergite IX, spherical seminal capsules with microtrichia, separate openings of ducts, and distinct microtrichia on labia. The genus superficially appears related to *Rheocricotopus* Thienemann & Harnisch and related genera, but a number of features shows that *Trichochilus* probably is closer to *Dratnalia* Saether & Halvorsen. – *Trichochilus lacteipennis* (Johannsen, 1908) n. comb., is described from the female imago.

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While reviewing some types and species of the genus *Rheocricotopus* Thienemann & Harnisch, 1932 the type of *Trichocladius lacteipennis* Johannsen, 1908 was examined. This female imago is unique among the Orthocladiinae in several features and clearly does not belong in any known genus. Although it may be preferable not to describe a new genus based on a single female imago the unique features makes the genus both easily recognizable and a description highly desirable.

Morphological terminology follows SAETHER (1980).

Trichochilus gen. nov.

Type species: *Trichochilus lacteipennis* (Johannsen 1908: 282) n. comb. by present designation.

Diagnostic characters: The wide frontal tubercles, very short clypeus without setae, shape of the tentorium without sieve pore, slender, 4-segmented palp and presence of strong microtrichia on the genital labia all are nearly unique features among the Orthocladiinae. Also the combination of hairy eyes, very short palps, apparent axillary vein, numerous short setae on squama, absence of acrostichals, tarsal pseudospurs and hind tibial comb, presence of sensilla chaetica on all metatarsi including front leg, large empodium and pulvilli, large gonocoxite with numerous setae, tergite IX well divided into two setigerous protrusions, gonapophyses well divided into two principal lobes and distinct apodeme lobe, seminal capsule spherical with microtrichia, and spermathecal ducts with distinctly separate openings and no enlargement or bulbs before opening sets the genus distinctly apart from other orthoclads.

Etymology: From Greek *trichos*, hair, and *cheilos*, a margin, lip, referring to the strong microtrichia on the genital labia.

Description

Female imago

Moderately large species. (Wing length about 3.2 mm.)

Antenna. With 5 flagellomeres, 1–4 each with 2 sensilla chaetica, 5 with about 10 sensilla chaetica. Antennal ratio 0.69 (in only known species).

Head. Eye rather strongly exerted on head, conspicuously hairy, without dorsomedian extension. Temporals consisting of few dorsal postorbitals and no verticals. Clypeus conspicuously reduced, less than half as long as wide, without setae. Tentorium characteristic, without sieve pore and only gradually tapering towards posterior tentorial pit, with basal microtrichia. Only 4 palpal segments, third palpal segment no longer than second and barely longer than first, with 2 spine-like sensilla clavata at apex, fourth segment longer than second and third combined. Wide frontal tubercles present. Coronal suture reduced.

Thorax. Anteprenotum strongly developed, median lobes narrowed medially, in contact at point or short suture anterior of scutal projection, with several lateral setae. Acrostichals absent; dorsocentrals few, uniserial; prealars several; supraalars absent. Scutellum with few setae in single, transverse row.

Wing. Membrane with fine punctation of microtrichia visible at 250 ×, free of setae. Anal lobe well developed, slightly projecting. Costa moderately extended, R_{2+3} in the middle between R_1 and R_{4+5} , R_{4+5} ends clearly distal to end of M_{3+4} , FCu lies clearly distally of FCu, Cu_1 straight, vannal fold and An both ends distally of FCu, apparent axillary vein present. R and R_1 with few setae. Sensilla campiformia in normal numbers (about 10 at base, 3 below setae and 15 at apex of brachiolium, 2 on subcosta, 1 on FR, and 1 at base of R_1). Squama with numerous, relatively short setae.

Legs. Tibial spurs relatively short, straight, with hair-like lateral denticles barely indicated on each spur of hind and mid leg and absent on spur of front tibia. Hind tibial comb absent, or indicated by 2 short spine-like setae. Pseudospurs absent. Sensilla chaetica present in low numbers in basal $\frac{1}{4}$ of tarsomere 1 of front leg, in moderate numbers in basal $\frac{1}{3}$ of mid leg and hind leg. Pulvilli and empodium conspicuously large.

Abdomen. Tergites with setae in large, pale spots; primarily in posterior half of tergites VI–VIII, more extensive on V and covering most of tergites I–IV.

Genitalia. Gonocoxite very large and rounded, with numerous setae. Tergite IX strongly divided into two setigerous protrusions with several setae. Gonapophysis VIII divided into large rounded, broadly brush-like ventrolateral lobe; well developed dorsomesal lobe; and distinct apodeme lobe not covered by principal lobes. Labia well developed, with conspicuous microtrichia. Seminal capsules spherical, with some microtrichia, well sclerotized, without distinct neck. Spermathecal ducts nearly straight, without bulbs before distinctly separate openings. Postgenital plate large and rounded. Cercus small, trapezoided in outline (according to SUBLETTE [1967: 533], lost in holotype.)

Systematics

The female imago shows a number of features rarely found in orthocladids. The hairy eyes and large pulvilli apparently place the genus in the *Rheocricotopus* group of genera. The rather strongly exerted eyes, the placement of the temporals and the presence of the frontal tubercles are found in members of *Nanocladius* Kieffer, 1913 (SAETHER 1977a). The shape of the frontal tubercles, however, is unique in *Trichochilus*. A clypeus without any setae is mentioned only in *Asclerina* Reiss (1968: 65) from Nepal. He does, however, not mention if the clypeus also is very short. The tentorium without a sieve pore and gradually tapering to posteriodorsal apex is not common among the orthocladids, but resembles that found in some Diamesinae and Telmatogetoninae (SAETHER 1971 fig. 3 A, G). The short slender palp re-

sembles that of *Acricotopus* Kieffer, 1921, which also has hairy eyes and strongly developed antepnotum, but genitalia of *Cricotopus* - *Orthocladius* type (HIRVENOJA 1973 fig. 36, SAETHER 1977b fig. 47). The palp of the holotype of the type species has just four segments without any indication of a lost fifth segment. According to JOHANNSEN (1951: 26) and SUBLETTE (1967: 533) there are 4 palpal segments which normally would mean that there really are five palpal segments (see SAETHER 1969: 2, 1971: 1245). However, the first palpal segment in *Trichochilus* is distinct and may have been taken not as a "palpifer" but as a "true first palpal segment" by Johannsen and Sublette. The presence of sensilla chaetica on all legs including tarsomere 1 of front leg is otherwise found only in *Cricotopus* v. d. Wulp (HIRVENOJA 1973: 77).

Trichochilus shares a number of uncommon features with *Dratnalia* Saether & Halvorsen (1981: 278), including the absence of acrostichals, presence of a weak axillary vein, numerous short setae on squama, four palpal segments, absence of hind tibial comb, very large rounded gonocoxite with numerous setae, straight spermathecal ducts, and well developed microtrichia on labia. Among other orthoclad genera microtrichia on the labia are present, but weak only in *Heterotrissocladus* Spärck (SAETHER 1975: 3; 1977: 76, 101), *Eukiefferiella* Thienemann (G. A. Halvorsen, pers. comm.) and *Rheocricotopus* (*Rheocricotopus*) *tuberculatus* Caldwell (1984). 4-segmented palps, absence of hind tibial comb and presence of axillary vein are very uncommon features. The divided gonapophysis VIII and tergite IX resemble those found in *Rheocricotopus*, but the genitalia of *Dratnalia* are of principally the same type and the latter genus apparently forms the sister genus of *Trichochilus*. However, the similarities between the two genera may to a large extent be caused by similar adaptations to phoresis or parasitism by the larva or at least specialized behaviour. A more finalized placement of *Trichochilus* cannot be obtained without the knowledge of the male imago and the immatures.

Trichochilus lacteipennis (Johannsen) n. comb.

(Fig. 1)

Trichocladius lacteipennis Johannsen, 1908: 282

Description of female

Trichocladius lacteipennis Johannsen; MALLOCH, 1915: 514

Note

Trichocladius lacteipennis Johannsen; JOHANNSEN, 1951: 25, 26

In key, redescription

Hydrobaenus (*Trichocladius*) *lacteipennis* (Johannsen); JOHANNSEN in JOHANNSEN & TOWNES; 1952: 22

In key

Rheocricotopus lacteipennis (Johannsen); SUBLETTE 1967: 532

Redescription

Material examined: Holotype, ♀, U.S.A., Pennsylvania, Harrisburg, at arcs, 12. v., no. 2348 in Cornell University Insect Collections, Ithaca, N. Y.

Notes on type material: The female paratype could not be located.

Description

Female imago (n = 1)

Total length 5.60 mm. Wing length 3.18 mm. Total length/wing length 1.76. Wing length/length of profemur 4.01.

Coloration of thorax yellow with brown vittae and thoracic markings, postnotum blackish. Coxae, trochanters, femora, basal 1/4 of tibia, tarsomere 5 and apices of tibiae and all tarsomeres dark brown, remainder of legs yellow.

Head (Fig. 1 A). Length of flagellomeres (micrometers): 94, 53, 49, 56, 169. AR 0.69. Temporal setae 5, all postorbital. Clypeus 98 µm long, 236 µm wide, void of setae. Tentorium 195 µm long, 45 µm

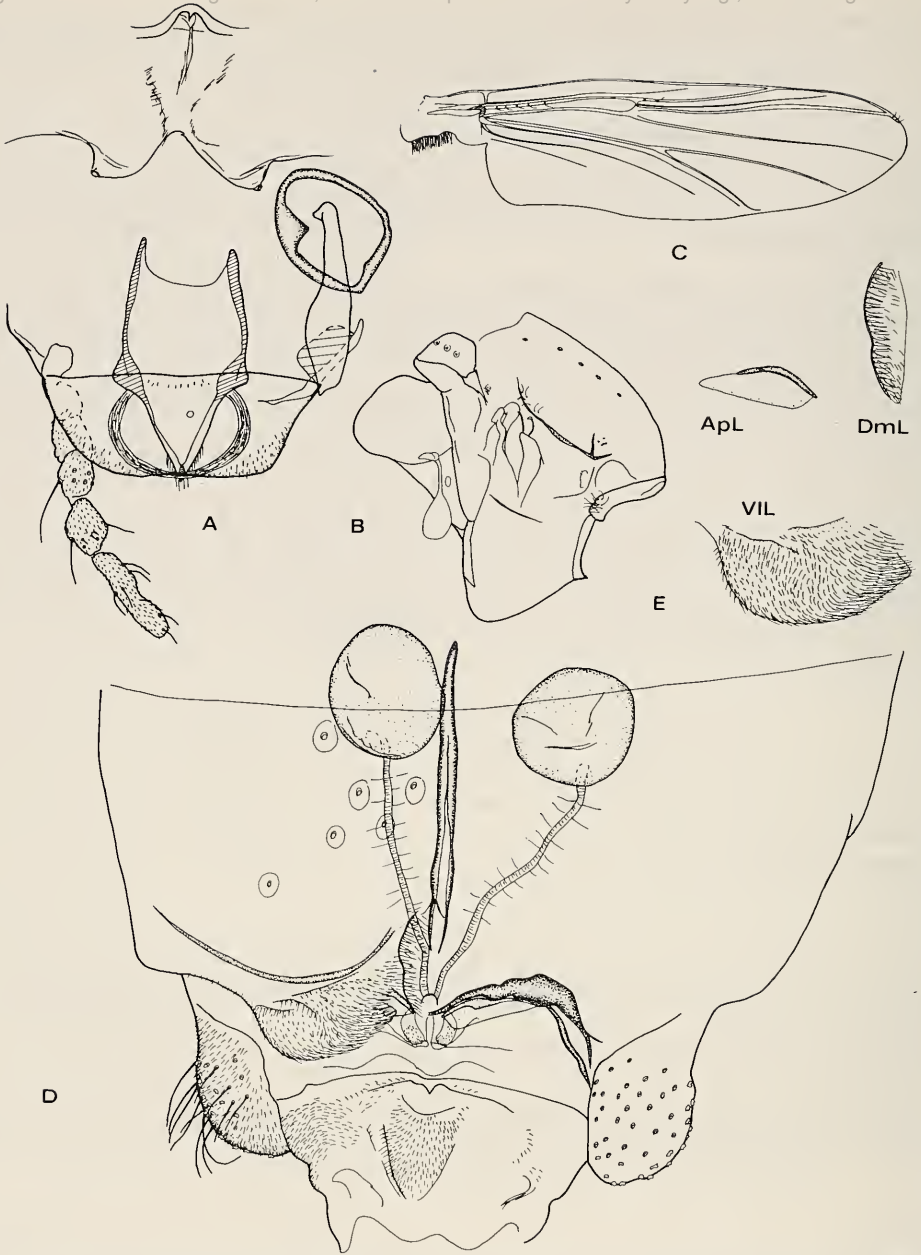


Fig. 1. *Trichochilus lacteipennis* (Johannsen) n. comb., female imago. – A. Head. – B. Thorax. – C. Wing. – D–F. Genitalia; D. Ventral view; E. Dorsal view; E. Lobes of gonapophysis VIII (VIL, ventrolateral lobe; ApL, apodeme lobe; DmL, dorsomesal lobe).

wide. Stipes 135 μm long, 53 μm wide. Palp lengths/width (micrometers): 47/39, 56/41, 56/39, 98/23. Frontal tubercles 53 μm wide, 26 μm high. Coronal suture 38 μm long.

Thorax (Fig. 1B). Anteprepronotum with 9 lateral setae. Dorsocentrals 6, prealars 6. Scutellum with 6 setae. Humeral pit small and indistinct, consisting of several circular spots. (Not large and distinct as mentioned by JOHANNSEN [1951: 26].)

Wing (Fig. 1C). VR 1.27. Costal extension 113 μm long. Brachiolum with 1 seta, R with 5 setae, R_1 with 1 seta, and costal extension with 3 non-marginal setae. Squama with 44 setae.

Legs. Spur of front tibia 62 μm long, spurs of middle tibia 41 μm and 38 μm long, of hind tibia 60 μm and 16 μm long. Width at apex of front tibia 66 μm , of middle tibia 64 μm , of hind tibia 74 μm . Hind tibia with 2 apical spiniform setae, both 26 μm long. Sensilla chaetica 3 at 0.15–0.21 of ta_1 of front leg, 15 at 0.11–0.24 of ta_1 of middle leg, 10 at 0.17–0.35 of ta_1 of hind leg. Lengths (micrometers) and proportions of legs:

	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	LR	BV	SV	BR
P_1	794	1087	643	369	246	161	–	0.59	–	2.93	2.3
P_2	907	1040	501	284	208	151	95	0.48	3.32	3.89	1.3
P_3	926	1238	662	340	241	142	95	0.53	3.46	3.27	2.3

Abdomen. Number of setae on T I–VIII as: 85, 125, 133, 101, 84, 54, 30, 35. Number of setae on S I–VIII as: 0, 16, –, 21, 23, 26, 24, 15.

Genitalia (Fig. 1D–E). Gonocoxite IX with 49 setae. Tergite IX with altogether 29 setae. Cercus lost. Seminal capsule 109 μm long, 105 μm wide. Notum 143 μm long.

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