

The chironomids (Diptera, Chironomidae) described by Lundström (1915) from arctic Siberia, with a redescription of *Derotanypus sibiricus* (Kruglova & Chernovskii)

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Abstract

The chironomid material described by Lundström (1915) from the Russian polar expedition in the years 1900–1903 is analysed. *Derotanypus limbatus* (Lundström, 1915) (as *Ablabesmyia*) is a senior synonym of *Ablabesmyia quadrinotata* Lundström, 1915; *Orthocladius pubitarsis* sensu Lundström, not Zetterstedt, 1838, is identical to *Psectrocladius* (*Psectrocladius*) *sokolovae* Zelentsov & Makarchenko, 1988; *Orthocladius cinereipennis* sensu Lundström, 1915, is a junior synonym of *Heterotrissocladius subpilosus* (Kieffer 1911); *Orthocladius alpicola* sensu Lundström, not Zetterstedt, 1850, is identical to *Acricotopus lucens* Zetterstedt, 1850; *Orthocladius marginatus* Lundström, 1915 a junior synonym of *O. (Pogonocladius) consobrinus* (Holmgren, 1869); *Orthocladius (Orthocladius) nitidoscutellatus* Lundström, 1915 a senior synonym of *O. trigonolabis* Edwards, 1924; *Chaetocladius binotatus* (Lundström, 1915) comb. n. probably a senior synonym of *C. validus* Brundin, 1956; *Paralimnophyes trilineatus* (Lundström, 1915) comb. n. a senior synonym of *P. arcticus* Brundin, 1956; *Camptocladius incertus* Lundström, 1915 a junior synonym of *Chaetocladius perennis* (Meigen, 1830); *Chironomus lundstroemi* sp. n. (= *C. staegeri* sensu Lundström, not Lundbeck, 1898), is described as male and female; *Chironomus niveipennis* sensu Lundström, not Fabricius, 1805, is identical to *Chironomus tricolor* Shobanov, Wülker & Kiknadze, 2002.

The following validly named and recognisable species are redescribed: *Derotanypus limbatus* (Lundström) (male and female); *D. sibiricus* (Kruglova & Chernovskii) (male and female); *Diamesa chorea* sensu Lundström, not Lundbeck, 1898, (female); *Orthocladius pallidicornis* Lundström, 1915 (male and female); *Chaetocladius binotatus* (Lundström) (male hypopygium); *Chaetocladius perennis* (Meigen, 1830) (male); *Paralimnophyes trilineatus* (Lundström) (male and female); *Smittia brevipennis* (Boheman, 1856) (female); *C. flavoviridis* Lundström, 1915 (female); *C. tricolor* (additions to male, female).

Key words: Chironomidae, Lundström, arctic Siberia

INTRODUCTION

The chironomid material from the Russian polar expedition in the years 1900–1903 was described by Lundström (1915) and is deposited at the Zoological Institute of the Russian Academy in St. Petersburg. Some of the material has been redescribed in connection with various revisions (Makarchenko 1984; Sæther 1989, 1990 a, b; Sæther & Wang 1996). The remaining material is here reidentified and, where necessary, redescribed. The individual taxa are presented in the sequence in which they appear in Lundström (1915).

The general terminology follows Sæther (1980). All material is on microscope slides prepared in Canada balsam. Measurements are given as ranges, followed by a mean when 4 or more measurements were made. The species are listed in the order in which they appear in Lundström (1915). The examined material all originally pinned generally is in good condition. However, several specimens lack antennae or parts of legs, and the thorax is often broken.

Throughout his paper, Lundström (1915) gave two versions for each collecting date (a later date, and then an earlier one in parentheses), assumedly one derives from the Julian calendar used, e.g., by the Russian orthodox church, the other from the Gregorian calendar. The dates given here are the ones given on the original labels and sometimes are in conflict with the ones given in the original paper.

***Chironomus lundstroemi* sp. n.**

(Figs. 1, 2, 7)

Chironomus staegeri Lundb. sensu Lundström (1915: 6), not Lundbeck, 1898

Type material. Holotype ♂: RUSSIA: Chara-Ullach Mts., 30 vi 1902, M. I. Brussnew. Paratype: ♀, Jana area, Seljach river, 3–7 vi 1908 [21 (8) vi 1908 in Lundström], K. A. Wollosowitsch. Both deposited at Zoological Institute, Russian Academy of Science, St. Petersburg.

Diagnostic characters. The male imago is characterised by a broad anal point tapered from base to tip; large frontal tubercles with conspicuous microtrichia with distinct bases, frons also densely microtrichiose; superior volsella tapering to a point, but with a distinct apical fold; fore leg ratio about 1.14; antennal ratio about 5.0; about 80 dorsocentrals and about 60 scutellars. The female imago has about 98 sensilla chaetica on mid ta_1 and at least 75 on hind ta_1 ; gonocoxite with 8 setae, tergite IX with 114 setae and segment X with 16 setae.

MALE IMAGO (n = 1)

Total length 8.33 mm. Wing length 5.15 mm. Total length/wing length 1.62. Wing length/length of profemur 3.01. Coloration brown with darker markings; abdomen with darker longitudinal, median band on all tergites.

Head. AR 5.00. Ultimate flagellomere 1843 μm long. Dorsal interocular distance 189 μm , ventral interocular distance 340 μm . Frontal tubercle 45 μm high, 15 μm wide, with conspicuous microtrichia with distinct bases. Frons with dense and long microtrichia only posterior near tubercles, shorter and more scattered anteriorly. Temporal setae 36, consisting of 12 inner verticals, 12 outer verticals and 12 postorbitals. Clypeus with about 75 setae. Tentorium 360 μm long, 94 μm wide; stipes 345 μm long, 180 μm wide. Palpomere

lengths (in μm): 105, 113, 360, 311, 420. Third palpomere with 4 thin, lanceolate, 38 μm long sensilla clavata.

Thorax. Anteprenotal setae apparently absent. Acrostichals not countable, dorsocentrals about 80, prealars 19, supraalars 2. Scutellum with about 60 setae.

Wing. VR 1.01. Brachiolum with 4 setae, R with 26, R_1 with 34, R_{4+5} with 7 setae, other veins bare. Squama with 39 setae.

Legs. Scale of front tibia 63 μm long, spurs of mid tibia 94 and 49 μm long including combs, hind leg lost. Width at apex of front tibia 116 μm , of mid tibia 135 μm . Lengths (in μm) of fe to ta_2 of front leg: 1713, 1900, 2170, 1096. LR of front leg 1.14, SV of front leg 1.66. Length of fe of mid leg 2018 μm , of mid tibia 1947 μm .

Hypopygium (Fig. 1). Tergite IX with about 12 median setae and about 32 setae lateral to and underneath anal point; laterosternite IX with 10 setae. Anal point 131 μm long, 75 μm wide. Phallapodeme 300 μm long, transverse sternapodeme 75 μm long. Gonocoxite 300–341 μm long; superior volsella 188 μm long, 38 μm wide (maximum width) about 1/3 from apex, with 8 basal setae; inferior volsella 319 μm long, with 30 strong setae. Gonostylus 338 μm long. HR 1.17, HV 2.46.

FEMALE IMAGO (n = 1)

Total length 7.98 mm. Wing length 4.62 mm long. Total length/wing length 1.73. Wing length/length of profemur 2.81. Coloration as in male, but abdomen without distinct median longitudinal band.

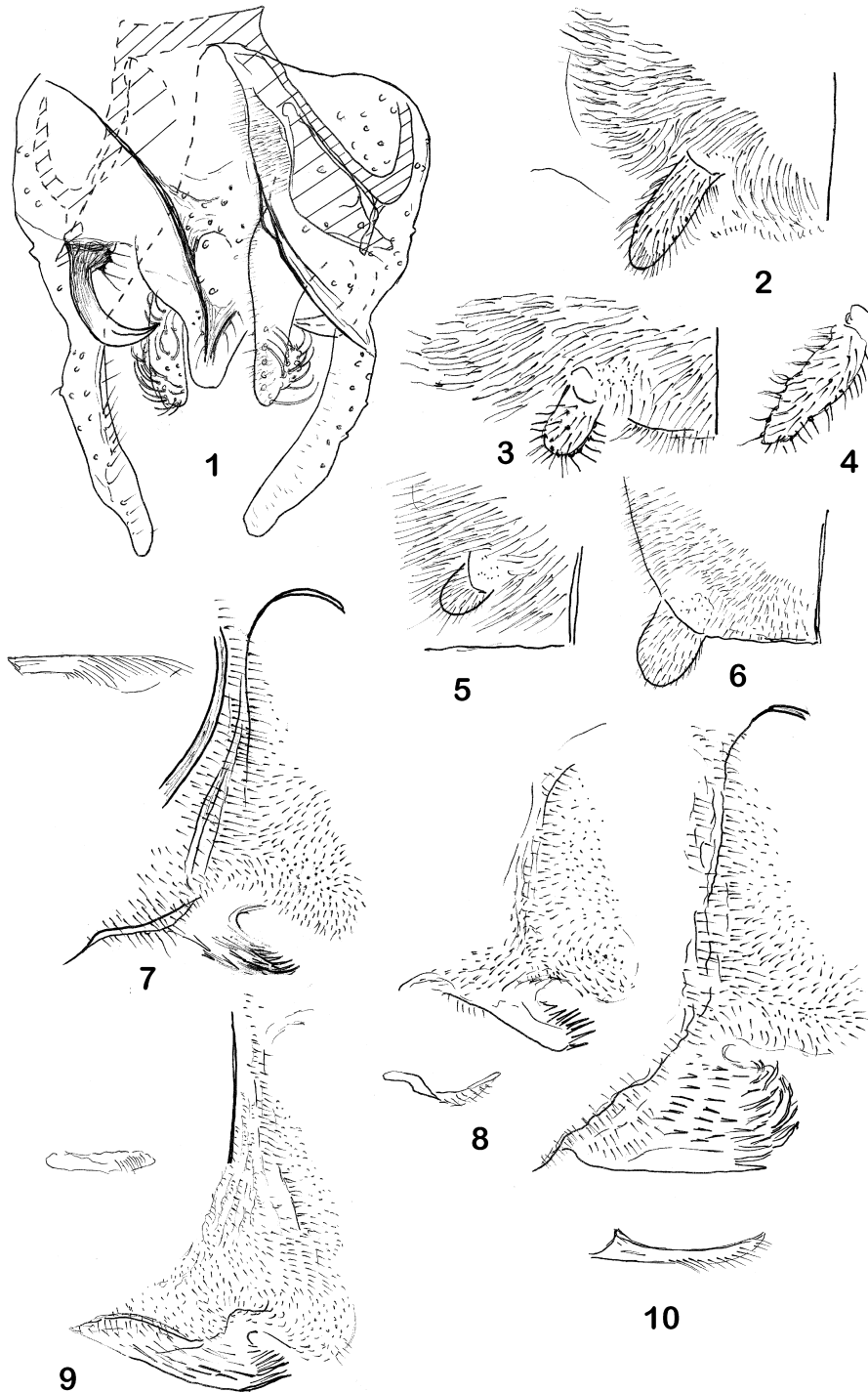
Head. AR 0.44. Flagellomere lengths (in μm): 225, 158, 150, 150, 285. Dorsal interocular distance 180 μm , ventral interocular distance 416 μm . Frontal tubercle (Fig. 2) 45 μm high, 15 μm wide, with conspicuous microtrichia as in male. Frons as in male. Temporal setae 45, consisting of 18 inner verticals, 10 outer verticals and 17 postorbitals. Clypeus with 90 setae. Tentorium 311 μm long, 83 μm wide; stipes 327 μm long, 101 μm wide. Palpomere lengths (in μm): 90, 105, 311, 300, 506. Third palpomere with 5 lanceolate sensilla clavata.

Thorax. Anteprenotal setae apparently absent. Acrostichals about 50, dorsocentrals about 80, prealars 12, supraalars 2. Scutellars not countable.

Wing. VR 0.98. Brachiolum with 3 setae, R with 29, R_1 with 26, R_{4+5} with 24 setae, other veins bare. Squama with 37 setae.

Legs. Scale of front tibia 56 μm long, spurs of mid tibia both 79 μm long including combs, spurs of hind tibia both 90 μm long including combs. Width at apex of front to hind tibiae (in μm) as 113, 113, 150. Sensilla chaetica about 98 on ta_1 of mid leg, at least 75 on ta_1 of hind leg. Lengths (in μm) and proportions of legs:

	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	LR	BV	SV	BR
p_1	1642	1713	-	-	-	-	-	-	-	-	-
p_2	1924	1829	914	504	364	270	176	0.50	3.55	4.10	1.8
p_3	2138	2252	1431	821	633	305	188	0.64	3.00	3.08	2.3



FIGURES 1–10. *Chironomus (Chironomus)* spp., imagines, 1: *C. lundstroemi* sp. n., hypopygium, 2–6: frontal tubercles and frons, 2: *C. lundstroemi* sp. n., female, 3–4: *C. tricolor* Shobanov, Wülker & Kiknadze, female and male, 5: *C. ?lugubris* Zetterstedt, female, 6: *C. flavoviridis* Lundström, female, 7–10: female genitalia, apodeme lobe (shown separately), dorsomesal and ventrolateral lobes, 7: *C. lundstroemi* sp. n., 8: *C. ?lugubris* Zetterstedt, 9: *C. flavoviridis* Lundström, 10: *C. tricolor* Shobanov, Wülker & Kiknadze.

Abdomen. Tergite VIII with about 90 setae. Sternite VIII with 120 median setae and apparently no lateral setae.

Genitalia (Fig. 7). Gonocoxite with 8 setae. Tergite IX with 114 setae. Segment X with 16 setae. Cercus 323 μm long. Seminal capsule 225 μm long not including 15 μm long neck, 150 μm wide. Notum 304 μm long.

Remarks

The anal point is much wider and shorter than in *C. staegeri* Lundbeck as redescribed by Wülker et al. (1971). The species keys to couplet 15 in Lindeberg & Wiederholm (1979), but the anal tergite does not have a distinct reticulated pattern laterally. The male and female, although not from the same locality, appear to be conspecific as indicated by the characteristic frontal tubercles and especially the high chaetotaxy even when compared to the large size. The species differs from *Chironomus aberratus* Keyl, *C. sororius* Wülker, *C. striatus* Strenzke; *C. melanotus* Keyl, *C. lacunarius* Wülker and *C. riihimakiensis* Hirvenoja (Wülker 1973, Wülker & Klötzli 1973, Hirvenoja & Michailova 1991) the species mentioned in couplet 15 of Lindeberg & Wiederholm (1979) as well as from most other species of the genus by the broad anal point. The anal point, however, is not as broad as in *Chironomus obtusidens* Goetghebuer and *C. sp. a* in Pinder (1978). *C. tuvanicus* Kiknadze et al., 1993, a species in the *riihimakiensis* group which is said to comprise a number of northern Palaearctic species, including several in Siberia, has a nearly equally broad anal point. However, even taking into consideration a slightly smaller size, a much lower chaetotaxy with, for instance, only 27–36 dorsocentrals. The antennal ratio of *C. lundstroemi* is higher, the leg ratio lower and the setae of the thorax considerably more numerous than in any of the species mentioned above. The number of sensilla chaetica on the female tarsi is intermediate between the number found in *C. melanotus* and that found in *C. riihimakiensis*. The shapes of the ventrolateral and dorsomesal lobes of gonapophysis VIII are very similar to those illustrated by Hirvenoja & Michailova (1991: fig. 5) for *C. melanotus*.

Chironomus sp.

Chironomus "polaris Holmgr." sensu Lundström (1915: 6).

Holmgren (1869: 46) had described males and females from Spitzbergen he had identified as *Chironomus polaris* Kirby, 1824. Lundström (1915) stated that Holmgren had hardly ("vix") identified *C. polaris* Kirby correctly. However, Lundström apparently thought possibly after a comparison with Holmgren material that one of the Siberian specimens he was studying was conspecific with Holmgren's.

The single male described by Lundström could not be located for the present study. The name under which it was treated, *Chironomus* "polaris Holmgren", is not separately available under ICZN rules. If instead a separate "*C. polaris*" were considered available from Lundström (1915), this name would be permanently invalid as a junior primary hom-

onym of both *C. polaris* Kirby and *C. polaris* Boheman, 1856. To clarify the biological identity of the species, Lundström's missing specimen and those of Holmgren's (at least any seen by Lundström) would have to be compared to the type of *C. polaris* Kirby (at BMNH) and possibly also to *C. hyperboreus* Stæger, 1845 which Holmgren (1869) had considered a junior synonym of the former. Lindeberg & Wiederholm (1979: 102/103) after having seen "all that is left of *C. polaris*" (? = the specimen at BMNH?) claim that it is "not the type".

***Chironomus trabcicola* Shobanov, Wülker & Kiknadze, 2002: 177**

(Figs. 3, 4, 10)

Chironomus niveipennis F. sensu Lundström (1915: 6), not Fabricius, 1805: 42.

Material examined. RUSSIA: New Siberian Islands, west coast, 1 ♂, 1 ♀, 12 vi 1903 [16 (3) vi 17 (4) vii 1903 in Lundström], M. I. Brussnew; Chara-Ullach Mts., 1 ♀, 28 vi 1902 [5 viii (22 vii) 1902 in Lundström], M. I. Brussnew.

MALE IMAGO

The male has been described by Shobanov et al. (2002). Their description can be supplemented with:

Head. Clypeus with about 110 setae. Frontal tubercle (Fig. 4) conspicuous, 56 µm long, 17 µm wide, with some conspicuously long microtrichia with distinct bases; frons with dense microtrichia forming a fur-like covering.

Thorax. Dorsocentrals about 70, prealars 17. Scutellum with about 130 setae.

Wing. Brachiolum with 5 setae, R with 28 setae, R₁ with 1 seta, other veins bare. Squama with about 40 setae.

FEMALE IMAGO (n = 1–2)

Total length 8.22–8.69 mm. Wing length 4.73–5.10 mm. Total length/wing length 1.70–1.74. Wing length/length of profemur 3.13. Thorax, abdomen brown, legs brownish black.

Head. AR 0.57. Flagellomere lengths (in µm): 191, 128, 135, 128, 330; and 229, 139, 150, 116, lost. Dorsal interocular distance 191–263 µm, ventral interocular distance 308–341 µm. Frontal tubercle (Fig. 3) 38–56 µm high, 17–19 µm wide, with conspicuous microtrichia as in male. Frons with long and dense microtrichia. Temporal setae 44–47, consisting of 15 inner verticals, 18–22 outer verticals and 10–11 postorbitals. Clypeus with 60–63 setae. Tentorium 244–266 µm long, 60–71 µm wide; stipes 244–278 µm long, 79–124 µm wide. Palpomere lengths (in µm): 79–86, 94–101, 296–300, 263–330, 394–428. Third palpomere with 6 lanceolate, 30 µm long sensilla clavata.

Thorax. Anteprenotal setae apparently absent. Acrostichals not countable, dorsocentrals 71–74, prealars 12–15, supraalars 2. Scutellum with about 100–120 setae.

Wing. VR 1.04. Brachiolum with 4 setae, R with 25–33, R₁ with 6–9, R₄₊₅ with about 30 setae, other veins bare. Squama with about 50 setae.

Legs. Scale of front tibia 68 µm long, spurs of mid tibia 75 and 60 µm long including combs, spurs of hind tibia 83–90 and 75–79 µm long including combs. Width at apex of front to hind tibiae (in µm) as 124, 120–146, 120–150. Sensilla chaetica about 55–95 on ta₁ of mid leg, about 66–96 on ta₁ of hind leg. Lengths (in µm) and proportions of legs:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV	BR
P ₁	1512	1550	1607	747	454	294	170	1.04	2.82	1.91	2.4
P ₂	1833–	1796–	1021–	529–	359–	217–	132–	0.57–	3.38–	3.44	2.2–
	2032	1805	1058	567	406	274	142	0.59	3.66		2.3
P ₃	2032–	2277–	1607–	945–	614–	312–	161–	0.71	2.77–	2.52–	3.1–
	2060	2334	1663	1011	633	359	180		2.91	2.66	3.4

Abdomen. Tergite VIII with 75–78 setae. Sternite VIII with 94–95 median setae and 10–12 setae to each side.

Genitalia (Fig. 10). Gonocoxite with 0–3 setae. Tergite IX with about 55–75 setae. Segment X with 24–30 setae. Ventrolateral lobe of gonapophysis VIII conspicuously wide. Cercus 309–330 µm long. Seminal capsule 188–221 µm long, 113–150 µm wide. Notum 270–319 µm long.

Remarks

Chironomus niveipennis Fabricius, 1805 is currently considered a synonym of *C. pilicornis* (Fabricius, 1787). The present specimens, however, do not key to *C. pilicornis*, for instance in Lindeberg & Wiederholm (1979), e.g. the male anal point is tapering from base to tip, not basally constricted. The female differs from the other species described here by having a much wider ventrolateral lobe. Among the limited number of *Chironomus* species with adequately described female genitalia only *C. entis* Shobanov (Sæther 1977, fig 81 D, E, as *C. plumosus* (L.) fa. *semireductus* Lenz) and *C. bonus* Shilova & Djvarsheisvili (Rodova 1978, fig. 9) appear to have equally wide ventrolateral lobe. *Chironomus trabiicola* was described from the Lena delta in Russia (74° N latitude, Shobanov et al. 2002).

Chironomus lugubris Zetterstedt sensu Lundström (Figs. 5, 8)

? *Chironomus lugubris* Zetterstedt, 1850: 3490.

Chironomus lugubris Zett. sensu Lundström (1915: 7).

Material examined. RUSSIA: Chara-Ullach Mts., Lake Ketalach, 4 ♀ (one without abdomen) 25 vi– 11 vii 1902, M. I. Brussnew.

FEMALE IMAGO (n = 2–4)

Total length 5.87–6.22 mm. Wing length 3.52–4.22 mm long. Total length/wing length 1.48–1.66. Wing length/length of profemur 2.45–2.65.

Head. AR 0.35–0.42. Flagellomere lengths (in μm): 199–203, 131–143, 146–173, 105–116, 206–240. Dorsal interocular distance 116–135 μm , ventral interocular distance 214–244 μm . Frontal tubercle (Fig. 5) 15–38 μm high, 15–17 μm wide; with strong, conspicuous microtrichia, but in contrast to *C. lundstroemi* and *C. trabicola* no microtrichia have distinct bases. Temporal setae 29–47, consisting of 10–13 inner verticals, 11–18 outer verticals and 11–16 postorbitals. Clypeus with 32–55 setae. Tentorium 210–244 μm long, 53–60 μm wide; stipes 281–315 μm long, 90–124 μm wide. Palpomere lengths (in μm): 75–94, 75–86, 274–311, 248–281, 428–443. Third palpomere with 5 lanceolate, 30 μm long sensilla clavata.

Thorax. Anteprenotal setae apparently absent. Acrostichals not observed, dorsocentrals 38–40, prealars 10–13, supraalars 1–2. Scutellum with about 40–50 setae.

Wing. VR 1.01–1.10. Brachiolum with 3–4 setae, R with 26–34, R_1 with 49–67, R_{4+5} with 74–90 setae, other veins bare. Squama with 35–39 setae.

Legs. Scale of front tibia 49–75 μm long, spurs of mid tibia 49 and 38–45 μm long including combs, spurs of hind tibia 83–90 and 38–60 μm long including combs. Width at apex of front to hind tibiae (in μm) as 83–99, 98–101, 105–113. Sensilla chaetica about 140–145 on ta_1 of mid leg, about 125 on ta_1 of hind leg. Lengths (in μm) and proportions of legs:

	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	LR	BV	SV	BR
p_1	1337– 1584	1007– 1314	1877– 1924	928– 964	680	528	235	1.45	1.97	1.50– 1.51	2.0
p_2	1384– 1689	1384– 1642	845– 927	457	305– 328	223– 235	141	0.55– 0.56	3.54– 3.67	3.59– 3.72	2.0
p_3	1692– 1924	1654– 1994	1431	727	610	352	152	0.72	2.90	2.74	–

Abdomen. Tergite VIII with about 50–70 setae. Sternite VIII with about 40–70 median setae.

Genitalia (Fig. 8). Gonocoxite with 1–6 setae. Tergite IX with about 65–110 setae. Segment X with 13–18 setae. Cercus 184–225 μm long. Seminal capsule 154–165 μm long, 75 μm wide. Notum 244–259 μm long.

Remarks

Lundström recorded 2 males and 3 females of this species from Lake Ketalach. In the collection, however, there are four females (one without abdomen) and no male. Although Lundström (1910) had earlier reported *C. lugubris* from Finland, according to Lindeberg (1959) his material is not conspecific with Zetterstedt's type material. Zetterstedt's type series contained females. These should be analysed in the same detail as the Lundström females before conclusions can be drawn on whether or not they are conspecific.

Chironomus flavoviridis Lundström, 1915: 7

(Figs. 6, 9)

Type material. Holotype ♀: RUSSIA: Chara-Ullach Mts., 26. vi. 1902, M. I. Brussnew.

FEMALE IMAGO (n = 1)

Total length 6.22 mm. Wing length 4.26 mm. Total length/wing length 1.55. Wing length/length of profemur 2.62. Thorax yellowish green with brownish yellow vittae; median anepisternum, preepisternum and postnotum brown. According to Lundström, first 3 segments of abdomen yellowish green, remaining segments brown with narrow yellowish green conjunctives. Legs yellowish green with apices of tibiae and all tarsi blackish brown.

Head. Antenna lost. Dorsal interocular distance 156 µm, ventral interocular distance 233 µm. Frontal tubercle (Fig. 6) 30 µm high, 19 µm wide; covered with dense, but relatively short microtrichia. Temporal setae 26, consisting of 7 inner verticals, 13 outer verticals and 6 postorbitals. Clypeus with 43 setae. Tentorium 263 µm long, 64 µm wide; stipes 270 µm long, 75 µm wide. Palpomere lengths (in µm): 90, 94, 233, 199, 319. Third palpomere with 8 lanceolate, 30 µm long sensilla clavata in 3 separate pits.

Thorax. Anteprenotal setae apparently absent. Acrostichals 26, dorsocentrals 26, prealars 12, supraalars 1. Scutellum with about 40 setae.

Wing. VR 1.11. Brachiolum with 3 setae, R with 40, R₁ with 48, R₄₊₅ with 84 setae, other veins bare. Squama with 28 setae.

Legs. Scale of front tibia 56 µm long, spurs of mid and hind tibia each 68 and 56 µm long including combs. Width at apex of front to hind tibiae (in µm) as 101, 116, 124. Sensilla chaetica about 79 on ta₁ of mid leg, about 95 on ta₁ of hind leg. Lengths (in µm) and proportions of legs:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV	BR
p ₁	1625	1275	1682	917	662	539	265	1.30	1.93	1.74	2.1
p ₂	1613	1588	794	482	373	284	189	0.50	3.05	4.10	-
p ₃	1758	1980	1285	794	614	406	208	0.65	2.48	2.90	-

Abdomen. Tergite VIII with 68 setae. Sternite VIII with 112 median setae and 11 setae to each side.

Genitalia (Fig. 9). Gonocoxite with 10 setae. Tergite IX with about 90 setae. Segment X with 38 setae. Cercus 263 µm long. Seminal capsule 263 µm long excluding 30 µm long neck, 124 µm wide. Notum 311 µm long.

Remarks

In addition to the coloration this female differs from the other species included here by having much shorter microtrichia on the frontal tubercles and the frons. The low number of dorsocentrals (26) and few setae on squama (28) combined with the high number of

setae on segment X (38) and the gonocoxite (10) separates the species from the other species described here. The front LR (1.30) and SV (1.74) separate the female clearly from *C. trabicola* (LR 1.04, SV 1.91), but less from *C. lugubris* sensu Lundström (LR 1.45, SV 1.50). Although Lundström hesitated describing a new species based on a single female he points at the extreme rarity of green *Chironomus* species in arctic areas.

***Chironomus brevipennis* Lundström, 1915: 8**

The specimens could not be located. According to the description the species could be a *Micropsectra* Kieffer.

***Orthocladius consobrinus* (Holmgren) sensu Lundström**

Orthocladius consobrinus Holmgr. sensu Lundström (1915: 9), not *Chironomus consobrinus* Holmgren, 1869: 44.

The single male mentioned by Lundström could not be located. The illustration in Lundström (1915: plate I, fig. 8) indicates that this is not *Orthocladius* (*Pogonocladius*) *consobrinus* (Holmgren). See the section below under the latter species name.

***Psectrocladius* (*Psectrocladius*) *sokolovae* Zelentsov & Makarchenko, 1988: 40**

Orthocladius pubitarsis Zett. sensu Lundström (1915: 9) not *Chironomus pubitarsis* Zetterstedt, 1838: 821.

Material examined. RUSSIA: New Siberian Islands, south coast of Kotelnjy Island, 2 ♂, 23–24 vi 1903, A. W. Koltschak & P. W. Olenin.

The specimens key to *P. (P.) barbimanus* (Edwards) in Wülker (1956) and Langton (1980). However, Zelentsov & Makarchenko (1988) erected the species *P. sokolovae* differing in among other features a slightly higher antennal ratio and higher numbers of setae. The present specimens have numbers of dorsocentrals, scutellars, setae on tergite IX, and length of the anal point as in *P. sokolovae*, while the number of clypeal setae (13–22) are within the variation of *P. barbimanus* (11–21, while 28–35 in *P. sokolovae*). The antennal ratio is about 2.5–3.1 in the present specimens, 3.0–3.05 in *P. sokolovae*, 2.4–2.8 in *P. barbimanus* according to Zelentsov & Makarchenko (1988). In all other details the specimens examined here conform to *P. sokolovae*.

The genus *Psectrocladius*, even if several partial revisions exist, is in need of a complete revision. Unpublished results suggest that the spring generation often is so different from the autumn generation of the same species that they easily could be regarded as dif-

ferent species. This applies both to pupae and imagines. Complicating this is that a species may have two generations a year in one locality, a one-year generation with a different appearance in another.

***Heterotrissocladius subpilosus* (Kieffer)**

Orthocladius cinereipennis Lundström, 1915: 9, syn. n.

Dactylocladius subpilosus Kieffer in Kieffer & Lundbeck, 1911: 273

? *Orthocladius cinereipennis* Lundström, 1910: 9.

Material examined. RUSSIA: New Siberian Islands, north coast, west of Cap Wosnesenje, 1 ♂, 1 ♂ hypopygium, 1 ♀, 16 (3) vii 1902, A. A. Birula.

Heterotrissocladius subpilosus has been redescribed by Sæther (1975: 11). The type of *Orthocladius cinereipennis* Lundström, 1910, has not been examined. If it should turn out to be conspecific with *H. subpilosus*, and thus a senior synonym, a proposal for rejection of *O. cinereipennis* should be made to the International Commission on Zoological Nomenclature. *H. subpilosus* is such an important name in lake typology and in the history of chironomidology that it should be preserved.

***Acricotopus lucens* (Zetterstedt)**

Orthocladius alpicola Zett. sensu Lundström (1915: 10), not *Chironomus alpicola* Zetterstedt, 1850: 3500.

Material examined. RUSSIA: New Siberian Islands, south coast, 4 ♂, 16 & 22–23 vi 1903, M. I. Brussnew.

Acricotopus lucens has been redescribed by Hirvenoja (1973: 82). Zetterstedt's species is a *Paracladius* Hirvenoja.

***Orthocladius (Pogonocladius) consobrinus* (Holmgren)**

(Fig. 11)

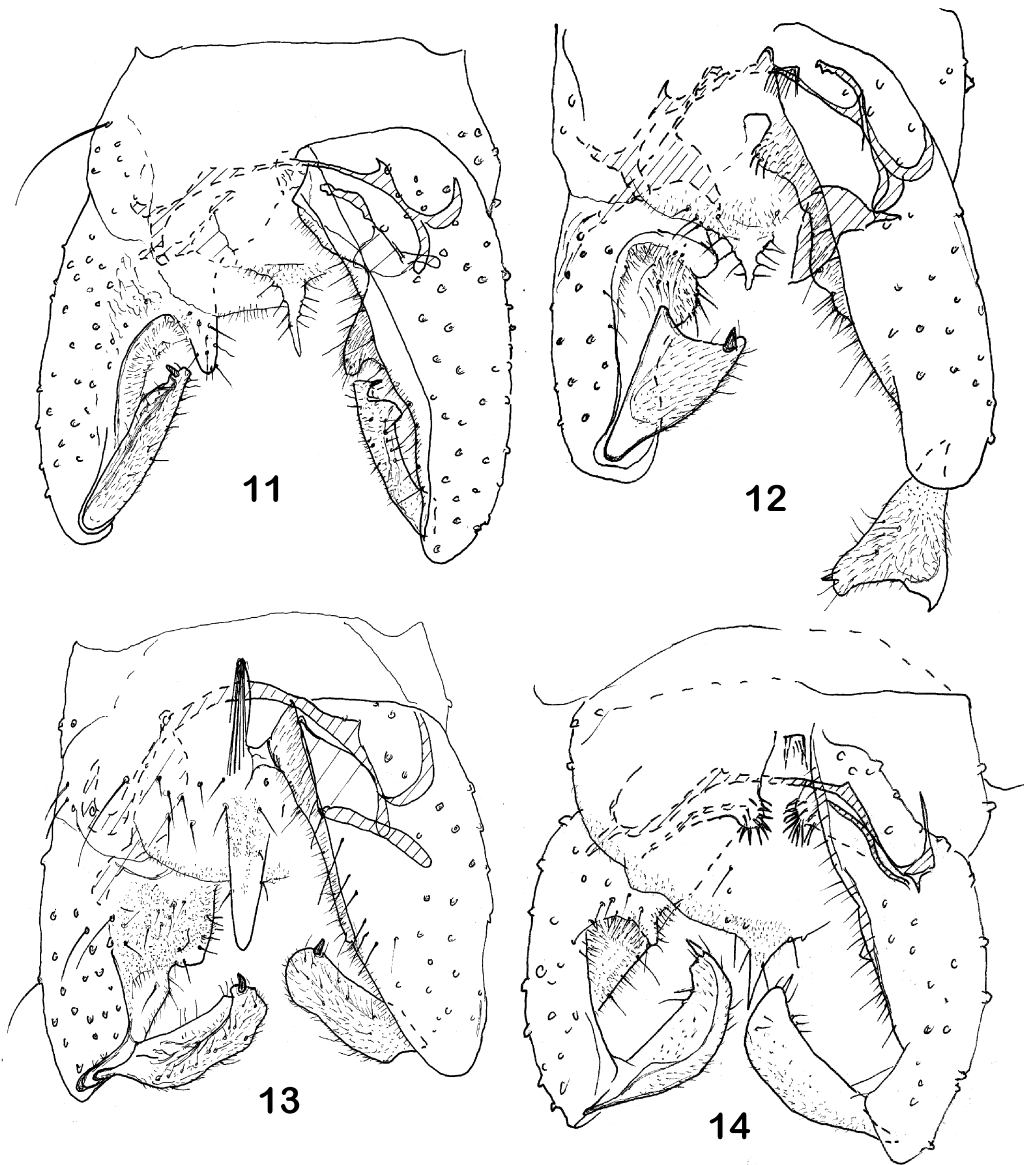
Chironomus consobrinus Holmgren, 1869: 44.

Orthocladius marginatus Lundström, 1915: 10, syn. n.

Type material of O. marginatus Hypopygium of holotype ♂, RUSSIA: New Siberian Islands, south coast, high mountains, 24 vi 1903, M. I. Brussnew.

Although only a hypopygium (Fig. 11) remains, there is little doubt about the synonymy. *Orthocladius (Pogonocladius) consobrinus* has been redescribed in sufficient detail

by Brundin (1956: 99) after studying Holmgren type material and by Pinder & Cranston (1976).



FIGURES 11–14. Male hypopygium, 11: *Orthocladius (Pogonocladus) consobrinus* (Holmgren) from holotype of *O. marginatus* Lundström, 12: *Orthocladius nitidoscutellatus* Lundström, holotype, 13: *Chaetocladius binotatus* (Lundström) comb. n., holotype, 14: *Orthocladius (Orthocladius) pallidicornis* Lundström.

***Orthocladius nitidoscutellatus* Lundström, 1915: 11**

(Fig. 12)

Orthocladius trigonolabis Edwards, 1924: 170, syn. n.

Type material. Hypopygium of holotype ♂, RUSSIA: West Taimyr peninsula, northern coast, Bonnevie Islands, 22 viii, 1901, A. A. Birula.

Although only the hypopygium remains, its very characteristic features leave no doubt about the synonymy. The non-hypopygial features described by Lundström are in agreement with the descriptions of *O. (O.) trigonolabis* by Sponis (1977: 96; from the lectotype) and Rossaro et al. (2003: 234).

It may be felt that *Orthocladius nitidoscutellatus* should be suppressed instead of being used as valid. However, according to the ICZN (1999) Code it does not fulfil any criteria for rejection, nor for reversal of precedence under Code Article 23.9. It also is unlikely that the nomenclature Commission would rule to invalidate the name, since the respective junior name has been used in too limited a number of papers.

***Chaetocladus binotatus* (Lundström), comb. n.**

(Fig. 13)

Orthocladius binotatus Lundström, 1915: 12.? *Chaetocladus validus* Brundin, 1956: 126.

Type material. Hypopygium of holotype ♂, RUSSIA: New Siberian Islands, upper reaches of Wosnessenje River, 4 vii 1903, A. W. Koltschak & P. W. Olenin.

MALE IMAGO (n = 1)

Hypopygium (Fig. 13). Anal point 94 µm long, 19 µm wide at apex, 30 µm wide near base, free of microtrichia in apical half. Tergite IX with about 25 setae, including 5 on anal point; laterosternite IX with about 7 setae. Phallapodeme 165 µm long, transverse sternapodeme 158 µm long. Virga 94 µm long, consisting of a cluster of about 7 spines. Gonocoxite 323 µm long, gonostylus 143 µm long, megaseta 19 µm long. HR 2.26.

Remarks

Although only the hypopygium remains, its characteristic, uniquely long virga and the fact that Brundin placed the species in *Chaetocladus* should make the species easily identifiable. Unfortunately, the types of *Chaetocladus validus* could not be located. Although *Chaetocladus* is an entirely unrevised genus with a considerable number of species currently considered as valid, most of these species have been examined previously by the author in connection with a planned revision. No other species with a similar hypopygium has been observed.

Orthocladius (Orthocladius) pallidicornis Lundström, 1915: 13

(Figs. 14–18)

Type material. Lectotype ♂, here designated: RUSSIA: Chara-Ullach Mts., 12 vii 1902, M. I. Brussnew. Paralectotypes: 3 ♀ (including 1 misidentified *Tokunagaia* sp., and 1 misidentified Tanytarsini lacking the abdomen), as lectotype except 12 vii and 16–17 vii 1902.

MALE IMAGO (n = 1)

Total length 3.63 mm. Wing length 2.11 mm. Total length/wing length 1.72. Wing length/length of profemur 2.86. Coloration pale brown with dark brown vittae, postnotum and preepisternum.

Head. AR 0.95. Ultimate flagellomere 420 µm long. Temporal setae 15, including 7 inner verticals, 4 outer verticals, and 4 postorbitals. Clypeus with 7 setae. Tentorium 173 µm long, 26 µm wide. Stipes 150 µm long, 41 µm wide. Palpomere lengths (in µm): 38, 45, 101, 94, 173. Third palpomere with 2 lanceolate sensilla clavata 15 µm long.

Thorax. Anteprepronotum robust, projecting, with 2 setae. Acrostichals apparently 11, dorsocentrals 7, prealars 3. Scutellum with 4 setae.

Wing. VR 1.10. Anal lobe conspicuous, projecting [, as in *O. (O.) decoratus* (Holmgren), see Soponis (1977: fig.14 f)]. Costal extension 8 µm long. Brachiolum with 1 seta, other veins bare. Squama with 15 setae.

Legs. Spur of front tibia 41 µm long, spurs of middle tibia 26 and 23 µm long, of hind tibia 60 and 23 µm long. Width at apex of front tibia 41 µm, of middle tibia 39 µm, of hind tibia 45 µm. Sensilla chaetica (possibly only curved setae?): 6 spaced along full length of ta₁ of mid leg, and 2 apically on hind leg. Lengths (in µm) and proportions of legs:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV	BR
p ₁	737	917	529	-	-	-	-	0.58	-	3.13	-
p ₂	794	784	359	217	170	113	99	0.46	3.23	4.39	2.9
p ₃	775	917	482	265	213	123	-	0.53	-	3.51	3.7

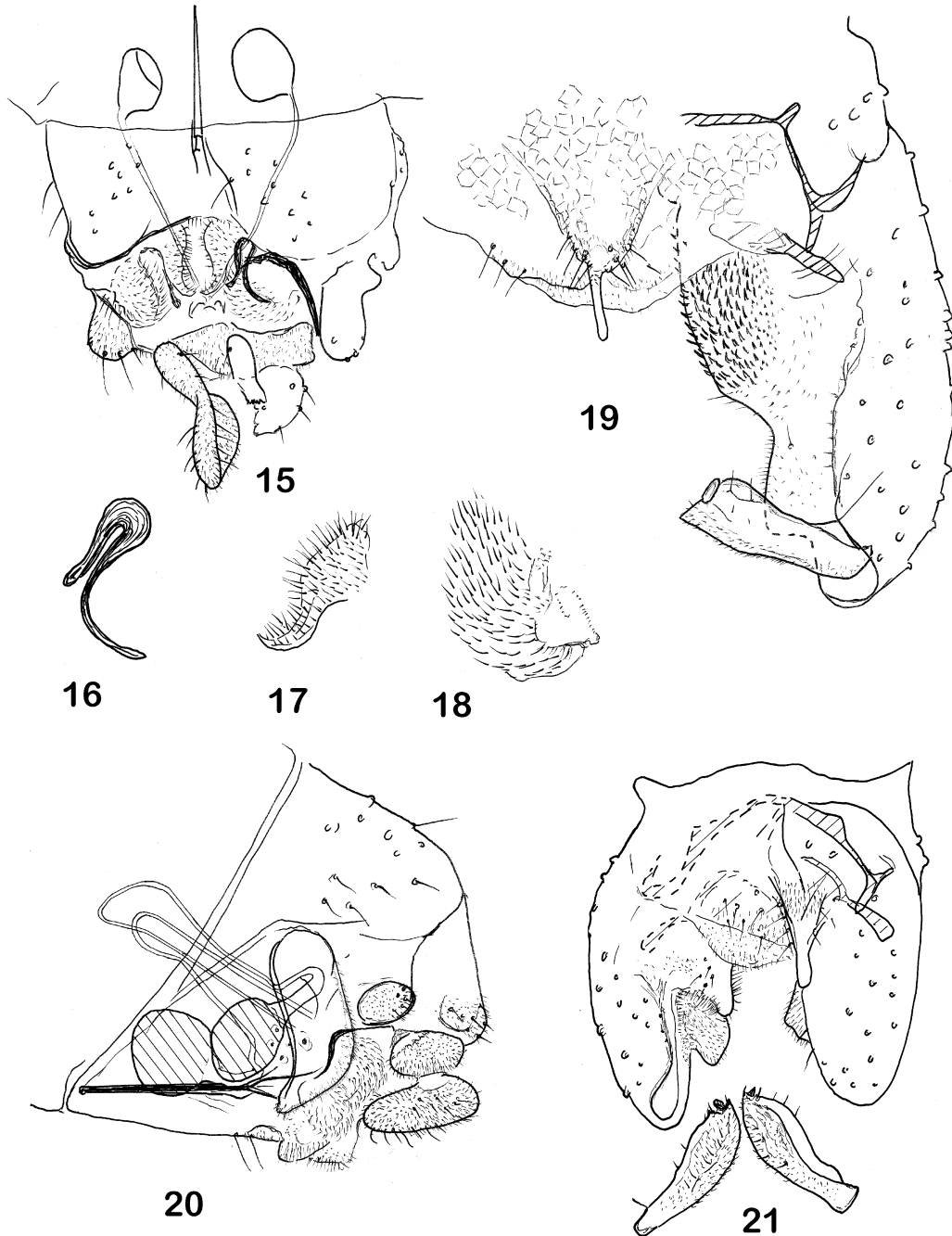
Hypopygium (Fig. 14). Tergite IX with 17 setae, including 9 on anal point; laterosternite IX with 5 setae. Anal point sharply pointed, 38 µm long. Phallapodeme 60 µm long; transverse sternapodeme 68 µm long, oral projections indicated. Virga 19 µm long, apparently consisting of several longitudinally arranged, shorter spines. Gonocoxite 233 µm long, superior volsella prominent, hook-shaped, with conspicuously broad microtrichia; inferior volsella weak. Gonostylus 109 µm long, nearly semicircular, megaseta 11 µm long. HR 2.14, HV 3.33.

FEMALE IMAGO (n = 1)

Total length 2.93 mm. Wing length 2.49 mm. Total length/wing length 1.24. Wing length/length of profemur 3.32. Coloration as in male.

Head. AR 0.58. Lengths of flagellomeres (in µm): 98, 45, 45, 45, 139. Temporal setae 12, consisting of 4 outer verticals; 4 inner verticals, and 4 postorbitals. Clypeus with 13

setae. Tentorium 169 μm long, 30 μm wide; stipes 184 μm long, 41 μm wide. Palpomere lengths (in μm): 38, 53, 124, 94, 180. Coronal suture nearly complete, 158 μm long.



FIGURES 15–21. *Orthocladus*, *Paralimnophyes* and *Chaetocladus*, 15–18: female genitalia, *Orthocladus* (*Orthocladus*) *pallidicornis* Lundström, 15: ventral view, 16: apodeme lobe, 17: dorsomesal lobe, 18: ventrolateral lobe, 19–20: *Paralimnophyes trilineatus* (Lundström) comb. n., 19: male hypopygium, 20: female genitalia, lateral view, 21: *Chaetocladus perennis* (Meigen), male hypopygium from lectotype of *Camptocladus incertus* Lundström.

Thorax. Antepronotum with 6 lateral setae. Acrostichals 10, dorsocentrals 7, prealars 3. Scutellum with 4 setae.

Wing. VR not measurable. Costal extension 38 μm long. Brachiolum with 1 seta, R_{4+5} with 6 setae, costal extension with 2 non-marginal setae. Squama with 14 setae.

Legs. Spur of front tibia 41 μm long, spurs of mid tibia 30 μm and 26 μm long, spurs of hind tibia 64 μm and 23 μm long. Width at apex of front to hind tibiae (in μm) as: 53, 45, 53. Comb of 9 setae; shortest seta 26 μm long, longest seta 45 μm long. Pseudospurs present on ta_1 of mid and hind legs, 28 μm long. Sensilla chaetica not observed. Lengths (in μm) and proportions of legs:

	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	LR	BV	SV	BR
p_1	709	860	520	321	203	132	104	0.60	2.75	3.02	2.7
p_2	756	756	321	198	142	76	95	0.43	-	4.70	2.1
p_3	841	964	463	274	213	128	113	0.48	3.12	3.90	2.6

Abdomen. Setae on sternites I–VIII as: 0, 2, 8, 9, 7, 15, 14, 18.

Genitalia (Figs. 15–18). Half of tergite IX missing, other half with about 7 setae. Gonocoxite with 10 setae. Cercus 105 μm long. Seminal capsule 71 μm long, 53 μm wide. Spermathecal ducts nearly straight. Gonapophysis VIII divided, with large ventrolateral (Fig. 18) and dorsomesal (Fig. 17) lobes. Apodeme lobe (Fig. 16) strongly sclerotised, conspicuous. Notum 128 μm long.

Remarks

The species keys to *O. (O.) decoratus* (Holmgren) in Soptonis (1977) whose redescription included the type material. Rossaro et al. (2003) also redescribed the species including the lectotype. They report their specimens as having a not produced anal lobe of the wing, and 10 scutellars in a single row. Both the lectotype of *O. (O.) decoratus*, other specimens of *O. (O.) decoratus* - including some at the Museum of Zoology, Bergen - examined by Soptonis and the present species are characterised by the strongly developed anal lobe. *O. (O.) decoratus* has 8–15 uni-biserial scutellars, while the present species has 4 uniserial scutellars. *O. (O.) decoratus* has 5–11 setae on vein R, *O. (O.) pallidicornis* none. *O. (O.) pallidicornis* also differs from *O. (O.) decoratus* in a number of other features such as a lower antennal ratio (0.95 compared to 1.4–2.0), the lower front leg ratio (0.58 with a wing length of 2.11 mm compared to 0.69–0.77 with wing lengths of 2.20–2.85 mm), the conspicuous and unique microtrichia on the superior volsella, the even more reduced inferior volsella, and the nearly semicircular gonostylus.

***Propillocerus paradoxus* (Lundström)**

Orthocladius paradoxus Lundström, 1915: 14.

The holotype has been redescribed by Sæther & Wang (1996).

Paralimnophyes trilineatus (Lundström), comb. n.

(Figs. 19, 20)

Camptocladus trilineatus Lundström, 1915: 15.*Paralimnophyes arcticus* Brundin, 1956: 130, syn. n.

Type material examined. RUSSIA: New Siberian Islands, south coast, "Holzgebirge", lectotype ♂, here designated, 22 vi 1903, M. I. Brussnew; paralectotypes 2 ♂, 1 ♀, 3 & 16 vi 1903, M. I. Brussnew.

MALE IMAGO (n = 1–3)

Total length 3.10–3.55 mm. Wing length 1.65–1.80 mm. Total length/wing length 1.83–1.98. Wing length/length of profemur 2.55–2.65. Coloration totally brownish black.

Head. AR 0.86. Ultimate flagellomere 459 µm long. Temporal setae 8, including 1–2 inner verticals, 4–5 outer verticals, and 1–3 postorbitals. Clypeus with 18–23 setae. Tentorium 169 µm long, 30–38 µm wide. Stipes 150–169 µm long, 41 µm wide. Palpomere lengths (in µm): 53, 60–71, 94–109, 86–98, 124. Third palpomere with 1–2 lanceolate sensilla clavata 15–23 µm long.

Thorax. Antepnotum with 2 setae. Acrostichals 7–8 (scalpellate, in centre of scutum), dorsocentrals 13–14, prealars 3–4. Scutellum with 8–10 setae.

Wing. VR 1.22–1.33. Costal extension 64 µm long. Brachiolum with 1 seta, R with 13–15 setae, R₁ with 1–2, R₄₊₅ with 5 setae. Squama with 5–6 setae.

Legs. Spur of front tibia 60–68 µm long, spurs of middle tibia 26–30 and 23 µm long, of hind tibia 45–56 and 19–26 µm long. Width at apex of front tibia 45–53 µm, of middle tibia 45–60 µm, of hind tibia 56–60 µm. Sensilla chaetica 8–11 on ta₁ of mid leg, about 10 on ta₁ of hind leg. Lengths (in µm) and proportions of legs:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV	BR
p ₁	647–	780–	359–	198–	123–	85	57–	0.45–	3.63–	3.75–	2.3
	718	784	383	203	132		76	0.49	3.89	3.97	
p ₂	690–	747–	293–	123–	99–	76–	66–	0.39–	4.15–	4.57–	1.8–
	794	846	359	170	132	95	85	0.42	4.64	4.90	2.3
p ₃	662–	756–	397–	189–	156–	85–	76–	0.50–	3.69–	3.57–	1.3–
	784	907	473	217	189	95	85	0.53	3.77	3.72	2.5

Hypopygium (Fig. 19). Tergite IX reticulate, with 16–20 setae; laterosternite IX with 8 setae. Anal point parallel-sided, 34–41 µm long, on 94 µm long, 113 µm wide triangular base. Phallapodeme 113–143 µm long, with rounded phallapodeme lobe; transverse sternapodeme 143–169 µm long, oral projections well developed. Gonocoxite 300–341 µm long. Gonostylus 105–131 µm long, parallel-sided, crista dorsalis long and low, megaseta 15 µm long. HR 2.60–2.86, HV 2.71–2.95.

FEMALE IMAGO (n = 1)

Total length about 3.0 mm. Wing length 1.85 mm. Total length/wing length about 1.6. Wing length/length of profemur 3.27. Coloration as in male.

Head. AR 0.51. Length of flagellomeres (in μm) as: 75, 60, 68, 41, 135. Temporal setae 8, consisting of 2 outer verticals; 4 inner verticals, and 2 postorbitals. Clypeus with 18 setae. Tentorium 169 μm long, 23 μm wide; stipes 139 μm long, 30 μm wide. Palpomere lengths (in μm): 49, 56, 75, 83, Pm_5 lost.

Thorax. Antepnotum with 2 lateral setae. Acrostichals 12 (scalpellate), dorsocentrals 18, prealars 4. Scutellum with 12 setae.

Wing. VR 1.21. Costal extension 49 μm long. Brachiolum with 1 seta, R with 14, R_1 with 9, R_{4+5} with 7 setae. Squama with 7 setae.

Legs. Spur of front tibia 41 μm long, spurs of mid tibia 30 μm and 23 μm long, spurs of hind tibia 26 μm and 24 μm long. Width at apex of front to hind tibiae (in μm) as: 45, 49, 56. Comb of 11 setae; shortest seta 26 μm long, longest seta 41 μm long. Sensilla chaetica 14 on ta_1 of front leg, 13 on ta_1 of mid leg, and 8 on ta_1 of hind leg. Lengths (in μm) and proportions of legs:

	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	LR	BV	SV	BR
p_1	572	671	340	189	132	85	85	0.51	3.21	3.64	2.0
p_2	709	718	293	142	104	76	85	0.41	4.23	4.87	1.7
p_3	718	718	387	170	146	80	85	0.49	3.94	3.09	1.9

Abdomen. Tergite I with 22 setae, T II–VII each with 25–32 setae, T VIII with 22 setae. Setae on sternites I–VIII as: 0, 6, 11, 15, 19, 19, 20, 15.

Genitalia (Fig. 20). Tergite IX apparently undivided, with 20 setae. Gonocoxite with 13 setae. Cercus 135 μm long. Seminal capsule 98 μm long, 83 μm wide; with wide, long, curved neck. Spermathecal ducts with very long loops. Gonapophysis VIII divided, with large ventrolateral lobe and narrow dorsomesal lobe. Notum 150 μm long.

Remarks

All details of this easily recognisable species are in accordance with those given by Brundin (1956: 130) as well as the few details given by Lundström (1915: 15).

Chaetocladius perennis (Meigen)

(Fig. 21)

Chironomus perennis Meigen, 1830: 249.

Camptocladius incertus Lundström, 1915: 15, syn. n.

Type material examined. RUSSIA: New Siberian Islands, west coast, lectotype σ , here designated, 12 vi 1903, M. I. Brussnew; paralectotype σ , south coast at Holzgebirge, 9 vii 1903, M. I. Brussnew.

MALE IMAGO (n = 1–2)

Total length 3.47–3.87 mm. Wing length 1.89–2.07 mm. Total length/wing length

1.84–1.87. Wing length/length of profemur 2.38–2.41. Thorax and abdomen brown, legs dark brown.

Head. AR 1.12–1.15. Ultimate flagellomere 435–444 μm long. Temporal setae 15–17, consisting of 6–7 inner verticals, 6–7 outer verticals and 3 postorbitals. Clypeus with 7–8 setae. Tentorium 173–176 μm long, 38–45 μm wide; stipes 158–165 μm long, 71–75 μm wide, with well sclerotised median plate. Palpomere lengths (in μm): 45–49, 60–68, 128–154, 120–143, 180–203. Third palpomere apparently with 3 very weak sensilla clavata.

Thorax. Antepnotum with 8–10 lateral setae. Acrostichals 18–21, dorsocentrals 18–19, prealars 6, supraalars 1–2. Scutellum with 10–12 setae.

Wing. VR 1.04. Costal extension 68 μm long. Brachiolum with 1 seta, R with 13–15 setae, R_1 with 6–7 setae, other veins bare. Squama with 10–11 setae.

Legs. Spur of front tibia 68–75 μm long, spurs of mid tibia 38 and 34 μm long, spurs of hind tibia 75–86 and 30 μm long, lateral denticles well developed. Pseudospurs 2 on ta_1 and ta_2 of mid leg and ta_1 of hind leg, about 30 μm long; ta_2 of hind leg lost. Sensilla chaetica about 3–5 in apical half of ta_1 of mid leg, about 6 in apical half of ta_1 of hind leg, spine-like. Width at apex of front to hind tibiae (in μm) as: 49–56, 53–54, 68–71. Comb of 15 setae, shortest seta 34–38 μm long, longest seta 41–60 μm long. Lengths (in μm) and proportions of legs:

	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	LR	BV	SV	BR
p_1	794– 860	950– 1021	572– 586	359– 369	255	161	113	0.54– 0.57	2.75	3.08– 3.21	1.8
p_2	841– 898	907– 936	387– 416	246	189	123	109	0.43– 0.44	3.21	4.41– 4.51	1.8– 1.9
p_3	945– 1030	1068– 1106	586	-	-	-	-	0.55	-	3.41	-

Hypopygium (Fig. 21). Tergite IX including anal point with 16–20 setae, laterosternite IX with 8–10 setae. Anal point 75–98 μm long, bare of microtrichia in distal two thirds. Phallapodeme 113–131 μm long, transverse sternapodeme 101–105 μm long. Virga absent. Gonocoxite 293–296 μm long; inferior volsella double, well developed; gonostylus 135 μm long, megaseta 13–15 μm long. HR 2.17–2.19, HV 2.572.87.

Remarks

The characteristic hypopygium is illustrated by Brundin (1947, fig 44) and Pinder (1978, fig. 123 c). Although the types of *C. perennis* not have been re-examined, the present specimens at least are in accordance with the present definition of that species. The leg ratio according to the measurements in Lundström would be 0.73, i. e. quite different from the ones measured on the present specimens (0.54–0.57). However, measurements obtained from pinned, not prepared specimens cannot be regarded as having any significance. The figure in Lundström (1916, fig.18) conform to *C. perennis*.

***Limnophyes pumilio* (Holmgren)**

Chironomus pumilio Holmgren, 1869: 41.
Camptocladius globifer Lundström, 1915: 16.

A paralectotype of *C. globifer* was included in the redescription of *Limnophyes pumilio* (Holmgren) by Sæther (1990 b: 82). The lectotype and other paralectotypes had been treated by Cranston (1979).

***Metriocnemus* spp.**

Metriocnemus fuscipes Meig. sensu Lundström (1915: 17).

Material examined. 1 ♂ (*Metriocnemus eurynotus*): RUSSIA: New Siberian Islands, west coast, 24 vi 1903, M. I. Brussnew. 1 ♂ (*Metriocnemus brusti*): same data. 1 ♂, (*Metriocnemus* cf. *ursinus*): New Siberian Islands, south coast at "Holzgebirge", 4 vii 1903, M. I. Brussnew.

The Lundström collection contains about 40 males and females labelled as "*M. fuscipes* Meig." Only three of these were examined, none of them belongs to *M. fuscipes* (Meigen, 1818). One specimen fits well within the variation of *M. eurynotus* [= *M. obscuripes*] (Holmgren) (see Sæther 1989, 1995), another fits *M. brusti* (Sæther 1989). The third best fits *M. ursinus* (Holmgren) in Sæther (1995). However, no virga was observed, and there are two setae on the anal lobe of the wing. If the virga really is absent the specimen represents a new species. The remaining Lundström specimens need to be examined in order to evaluate whether additional or even undescribed species are present in the material.

***Chaetocladius glacialis* (Lundström)**

Hydrobaenus glacialis Lundström, 1915: 17.

The male holotype has been redescribed and the species transferred to *Chaetocladius* by Sæther (1990: 61).

***Metriocnemus sibiricus* (Lundström)**

Arctomyia sibirica Lundström, 1915: 19.

The lectotype and 9 paralectotypes have been redescribed and the species transferred to

Metriocnemus by Sæther (1995: 48). *Arctomyia* Lundström, 1915 (type species by monotypy: *A. sibirica*) has thus become a junior synonym of *Metriocnemus* van der Wulp, 1874.

***Smittia brevipennis* (Boheman)**

(Fig. 22)

Chironomus brevipennis Boheman, 1856: 575.

Smittia brevipennis Bohem.) sensu Lundström (1915: 20).

? *Smittia subaptera* Goetghebuer, 1934: 133

Material examined. RUSSIA: West Taimyr, Taimyr Gulf, 1 ♀, 11(28) vi 1901, A. A. Birula; New Siberian Islands, Cap Wosnessenje, 2 ♀, 13 (26)–14 (27) vi 1902, M. I Brussnew.

FEMALE IMAGO (n = 1–3)

Total length 2.26–2.87 mm. Wing length 0.66–0.79 mm, i.e. reduced. Total length/wing length 3.41–3.53. Wing length/length of profemur 1.37–1.50. Coloration blackish brown.

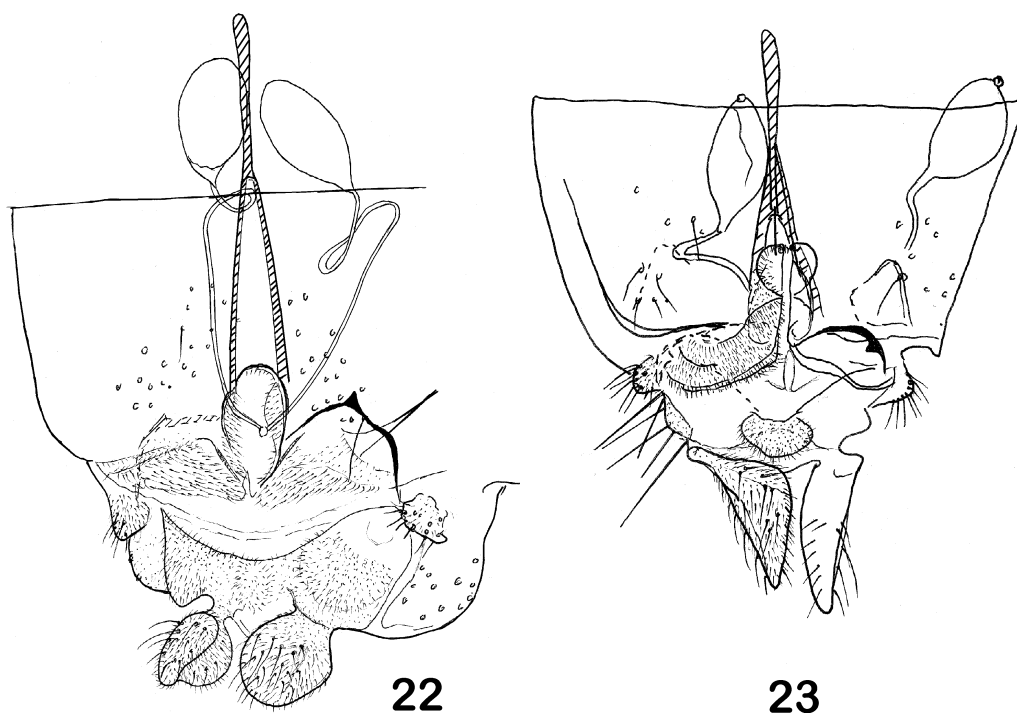
Head. AR 0.41. Lengths of flagellomeres (in μm) as: 68–75, 41–53, 49, 30–45, 84. Temporal setae 6–9, consisting of 1–4 inner verticals, 1–2 outer verticals, and 2–4 postorbitals. Clypeus with 4–13 setae. Tentorium 116–131 μm long, 15–21 μm wide. Palpomere lengths (in μm): 26–30, 34–44, 49, 49, 86.

Thorax. Anteprenotum with 2 lateral setae. Acrostichals 2–11 (starting near anteprenotum; see Remarks below); dorsocentrals 6–19 (see Remarks below); prealars 5–6. Scutellum with 4–6 setae.

Wing. VR 1.21–1.24. Costal extension 53–71 μm long. Brachiolum with 1 seta, R with 7–11, R₁ with 4, R₄₊₅ with 9–12, costal extension with 1–4 non-marginal setae.

Legs. Spur of front tibia 34–36 μm long, spurs of mid tibia 30 μm and 19–26 μm long, spurs of hind tibia 41–53 μm and 19–26 μm long. Width at apex of front to hind tibiae (in μm) as: 32–38, 38–45–60, 56. Comb of 12 setae; shortest seta 24–30 μm long, longest seta 38–41 μm long. Lengths (in μm) and proportions of legs:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV
P ₁	444– 558	501– 595	236– 312	152– 189	99– 137	66	57	0.47– 0.52	3.16– 3.20	3.61– 4.00
P ₂	491– 652	491– 605	198– 265	104– 170	95– 123	57– 66	57– 66	0.39– 0.44	3.39– 3.60	4.57– 5.13
P ₃	539– 671	595– 704	302– 369	151– 170	128– 161	78	66– 71	0.51– 0.54	3.50– 3.67	3.67– 3.78



FIGURES 22–23. Female genitalia, ventral view, 22: *Smittia brevipennis* (Boheman), specimen from Taimyr, 23: *Diamesa chorea* sensu Lundström, (?)not Lundbeck.

Abdomen. Tergite VIII with about 40–55 setae. Sternite VIII with 28–33 median setae and 3–4 setae to each side.

Genitalia (Fig. 22). Tergite IX undivided but with caudal concavity, with about 45–65 setae. Gonocoxite with 9–14 setae. Cercus 75–109 μm long. Seminal capsule elongate ovoid, 79–131 μm long, 45–71 μm wide.

Spermathecal ducts with long loops. Gonapophysis VIII divided, with large ventrolateral lobe and relatively narrow dorsomesal lobe. Notum 116–173 μm long.

Remarks

The genitalia agree with the diagnosis in Sæther (1977: 103) and confirm placement of the specimens within *Smittia* Holmgren. The variation in the numbers of acrostichals and dorsocentrals is much larger than expected within one species. The specimen from Taimyr has 11 weak acrostichals and 13 dorsocentrals. One of the specimens from the New Siberian Islands has 4 acrostichals and 6 dorsocentrals, while the other has 19 dorsocentrals and apparently only 2 acrostichals, which are longer than in the other specimens. Normally this would be sufficient to suspect that three species are involved. However, parthenogenetic species with or without reduced wings often show abnormal and aberrant variation, and the present specimens agree in all other major features.

***Metriocnemus longipennis* (Holmgren)**

Smittia longipennis Holmgren, 1883: 18.

Dolichoprymna longipennis Holmgr. sensu Lundström (1915: 21).

The male imago of *M. longipennis* has been redescribed by Sæther (1989: 421). Sæther (1995: 45) has redescribed the Lundström material, including the female (3 specimens), and established the above synonymy. *Dolichoprymna* Lundström, 1915 (type species by original designation and monotypy: *D. longipennis*) has thus become a junior synonym of *Metriocnemus* van der Wulp, 1874.

***Pseudodiamesa* sp.**

Prodiamesa branickii Now. sensu Lundström (1915: 22).

Material examined. RUSSIA: West Taimyr, north coast, 2 ♂ without hypopygia, the labels with "*branickii*" added from a ballpoint pen (i. e. added later than 1945), one mislabelled as "*Ablabesmyia limbata*", 20 vii (2 viii) 1901[Lundström (1915) gave 1 viii (19 vii) 1901], A. A. Birula.

Oliver (1959) has redescribed *P. branickii*. The present specimens apparently have been re-examined and the hypopygia mounted. However, E. Makarchenko (personal communication) did not study the collection and does not know of any other Russian scientists who did. Furthermore, he knows of no records of *P. branickii* from arctic Siberia. In his material from the Taimyr Peninsula there are males of *P. nivosa* (Goetghebuer) only. However, those males are slightly untypical for *P. nivosa* and may represent a different species.

***Diamesa* sp.**

"*Diamesa chorea* Lundb.(?)" sensu Lundström (1915: 22), not Lundbeck, 1898: 291.
(Fig. 23)

Material examined. RUSSIA: Chara-Ullach Mts., Lake Ketalach, 1 ♀, 21. vii. 1902, M. I. Brussnew.

FEMALE IMAGO (n = 1)

Total length 5.63 mm. Wing length 4.34 mm long. Total length/wing length 1.30. Wing length/length of profemur 2.85. Coloration brown.

Head. Eyes bare. AR 0.63. Pedicel with 1 strong setae. Lengths of flagellomeres (in µm) as: 88, 56, 68, 49, 60, 199. Third flagellomere with deep sensilla capitata, last flagellomere with 2 apical setae each 86 µm long. Coronal suture complete. Temporal setae 29, consisting of 19 frontals and inner verticals, 4 outer verticals, and 6 postorbitals.

Clypeus with 17 setae. Tentorium 263 μm long, 56 μm wide, anterolateral process (sieve pore) weak; stipes 244 μm long, plate 135 μm wide. Palpomere lengths (in μm): 68, 109, 184, 161, 255.

Thorax. Antepnotum with 7 setae. Acrostichals absent, dorsocentrals 12, prealars 12. Scutellum with 24 setae in two rows.

Wing. VR 0.97. Brachiolum with 5 setae, R with 17, R_1 with 20, R_{4+5} with 23 setae, other veins bare. R_{4+5} with campaniform sensilla. Alula with 6 setae. Squama with 51 setae.

Legs. Spur of front tibia 90 μm long, spurs of mid tibia 79 and 71 μm long, of hind tibia 113 and 75 μm long. Width at apex of front to hind tibiae (in μm) as 71, 75, 90. Pseudospurs 49–60 μm long, present on ta_1 and ta_2 of all legs, with 9 additional spine-like setae present along ta_1 of mid leg, 4 on ta_2 of mid leg, and 5 on ta_2 of hind leg. Sensilla chaetica about 280, at 0.12–0.96 of length from base of hind ta_1 . Fourth tarsomere slightly cordiform. Lengths (in μm) and proportions of legs:

	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	LR	BV	SV	BR
p_1	1525	1783	1079	493	317	117	129	0.61	4.16	3.07	2.5
p_2	1619	1666	751	411	258	117	146	0.45	4.30	4.38	2.7
p_3	1853	1971	1196	669	328	129	141	0.61	3.96	3.20	2.8

Abdomen. Tergite VIII with about 30 setae. Sternite VIII with 26 setae.

Genitalia (Fig.23). Gonocoxite with 11 setae. Tergite IX not clearly divided, with about 45 setae. Cercus 195 μm long. Seminal capsule ovoid, with anterior nipple, 135 μm long including neck, 68 μm wide. Spermathecal duct short, with bend, but no loop. Notum 206 μm long. Flap (Willassen 1985, fig. 5.2, 5.3) covering most of ventrolateral and all of dorsomesal lobe.

Remarks

Diamesa chorea Lundbeck was originally described from Greenland. According to Hansen & Cook (1976: 74/75), the male of *D. chorea* differs from *D. bertrami* Edwards, 1935 only in having bare eyes, the hypopygia being identical. The present female specimen, although with bare eyes, has genitalia quite different from those of *D. bertrami* as described by Willassen (1982). Willassen described and gave a key to the females of 37 species of *Diamesa* Meigen. The present specimen keys to *Diamesa incallida* (Walker) in Willassen (1982) resembling in having bare eyes, R_{4+5} with campaniform sensilla, pseudospurs present on front leg, numerous sensilla chaeticae distributed at least to 0.9 of hind metatarsus, all leg measurements and ratios nearly identical, weakly divided T IX, well developed flap, and nearly straight spermathecal ducts. It differs, among other, in having less distinctly cordiform ta_4 , well developed nipple on the seminal capsule, and posterior margin of flap not perpendicular to mesal line.

***Arctodiamesa appendiculata* (Lundström)**

Diamesa appendiculata Lundström, 1915: 23.

Arctodiamesa appendiculata (Lundström), Makarchenko 1983: 264.

Redescribed by Makarchenko (1984). Not re-examined.

***Procladius (Holotanypus) crassinervis* (Zetterstedt) sensu Pinder (1978)**

Tanypus crassinervis Zetterstedt, 1838: 817.

Tanypus signatus Zett. sensu Lundström (1915: 24), ?not Zetterstedt, 1850.

Material examined. RUSSIA: New Siberian Islands, "Holzgebirge", 2 ♂, 23 vi 1903, upper reaches of Wosnessenje River, 2 ♂, 3–4 vii 1903, M. I. Brussnew.

The genus *Procladius* Skuse is in need of revision. According to Pinder (1978), however, the present specimens cannot belong to *P. signatus* (Zetterstedt, 1850) since that species has a cluster of small teeth apically on the phallapodeme lacking in these specimens. *P. crassinervis* was regarded as a synonym of *P. culiciformis* (Linnaeus, 1767) by Roback (1971: 175), whereas he regarded *P. choreus* (Meigen, 1804) as a separate species. According to Kobayashi (1998), however, male genital structures can vary seasonally, with the gonostylus having a longer heel in spring and fall than in summer. Kobayashi regards *P. crassinervis* as a synonym of *P. choreus*, but he explicitly identified *P. choreus* after Edwards (1929), and the latter, according to Roback (1971), was a misidentification of *P. culiciformis* (L.). Thus, Kobayashi's (1998) "*P. choreus*" is not necessarily in any conflict with what Roback (1971) had treated under the name *P. culiciformis* (L.). It is not known why Pinder (1978) did not follow Roback (1971) in the use of the name *P. culiciformis* (L.), but comparing the two authors' keys suggests that Pinder's "*P. crassinervis* (Zetterstedt)" is Roback's *P. culiciformis* (L.). Apparently consistent with this, it seems possible (judging from Kobayashi's work) that in fact there is only a single species in all of this. If so, then the name *P. culiciformis* (L.) would have priority.

***Procladius (Holotanypus) choreus* (Meigen) sensu Pinder (1978)**

Tanypus choreus Meigen, 1804: 23.

Tanypus culiciformis L. sensu Lundström (1915: 24), ?not Linnaeus, 1767.

Material examined. RUSSIA: Chara-Ullach Mts. at Cape Chara-Ullach, 1 ♂, 1 ♀, 25 vii 1902, M. I. Brussnew.

In light of the results by Kobayashi (1998), *P. crassinervis* and *P. choreus* both may be synonyms of a seasonally variable *P. culiciformis*, with *P. choreus* as a short-heeled summer form. Another character used (e.g. by Roback 1971 and Pinder 1978) to distinguish *P. culiciformis* and *P. choreus* the pigmentation of the abdominal tergites was not discussed

by Kobayashi (1998), but is possibly temperature-dependent as well, and thus may not be informative either.

***Derotanypus limbatus* (Lundström), comb. n.**

(Figs. 24–26)

Ablabesmyia limbata Lundström, 1915: 24.

Ablabesmyia quadrinotata Lundström, 1915: 25, syn. n.

Type material. Lectotype ♂, here designated: RUSSIA: New Siberian Islands, "Holzgebirge", 24 vi 1902, A. A. Birula. Paralectotypes: RUSSIA: New Siberian Islands, west coast, beach of the river Bolschaja, and Kotelnyj Islands, 1 ♂, 2 ♀, 18 vi, 2 vii 1903 [24 (11) vi 1903 in Lundström]; M. I. Brussnew. Holotype ♂ of *A. quadrinotata*: RUSSIA: New Siberian Islands, north coast at a lake, 4 vii (21 vi) 1902, A. A. Birula.

MALE IMAGO (n = 1–3)

Total length 7.08–7.86 mm. Wing length 3.94–4.60 mm. Total length/wing length 1.71–1.80. Wing length/length of profemur 2.38. Coloration yellowish brown to brownish black with darker vittae. Legs uniformly dark brown or, in *A. quadrinotata*, pale brown. Wing with dark spot over both cross-veins.

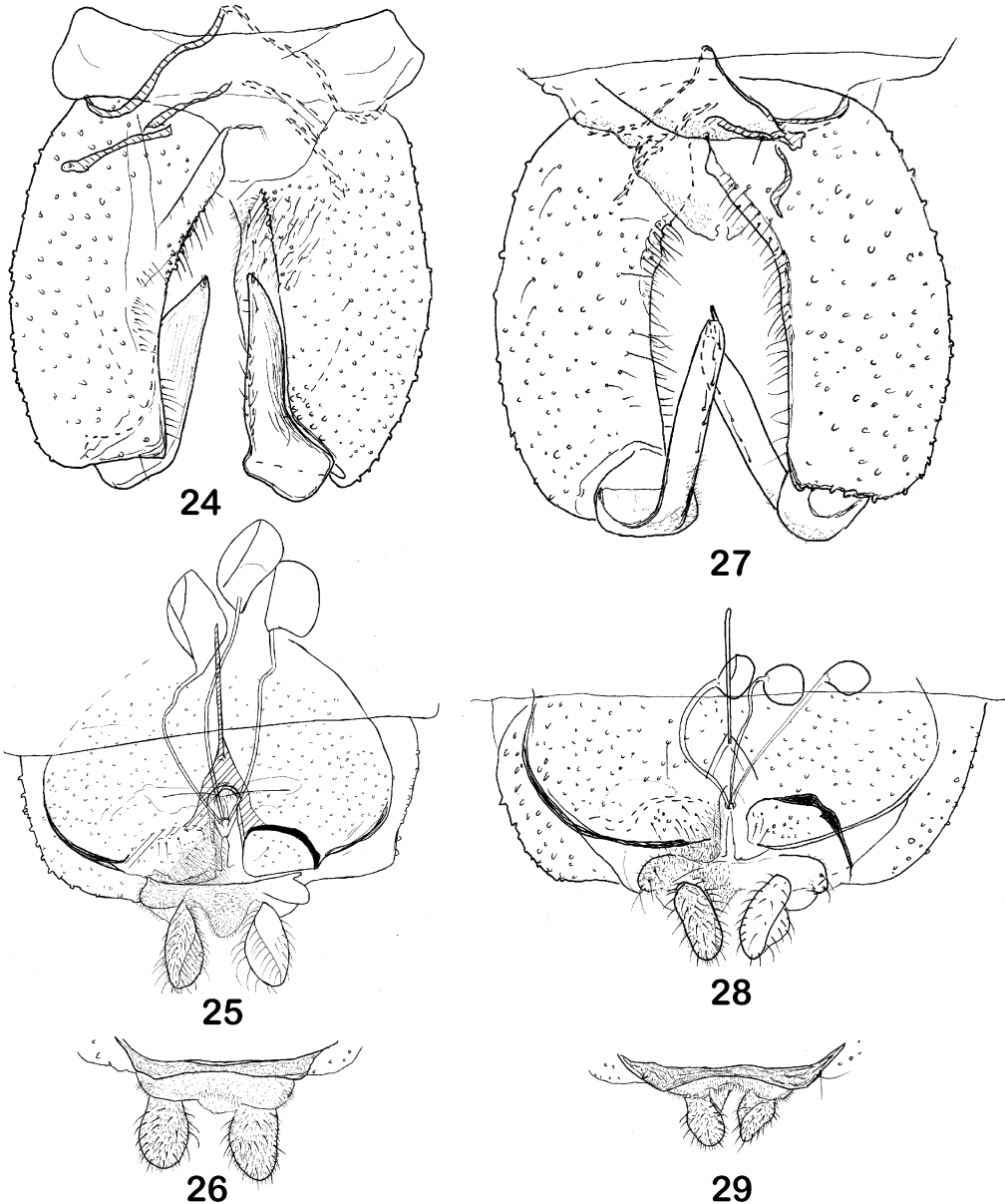
Head. AR 2.71–2.88. Penultimate flagellomere 1210–1332 µm long, ultimate flagellomere 123–132 µm long. Temporal setae 58–65, including 14–18 inner verticals, 18–30 outer verticals, and 14–29 postorbitals. Clypeus with 38–58 setae. Tentorium 311–326 µm long, 64–86 µm wide. Stipes 285–311 µm long, 86 µm wide. Palpomere lengths (in µm): 90–94, 206–225, 319–424, 300–339, 319.

Thorax. Antepronotum with 78 setae. Acrostichals about 65–75, dorsocentrals about 65–100, prealars 50–61, median anepisternum II with 20–30 setae, preepisternum with 16–22 setae. Scutellum with about 65–100 setae.

Wing. VR 0.94. Costal extension 120–150 µm long, RM 188–195 µm long, MCu 94–120 µm long, distance between MCu and RM 8–19 µm. Wing membrane with numerous setae in apical half. Cell m and anal lobe bare, cell r with 14–16 apical setae, r₁ with 4, r₂₊₃ with 7 setae, numerous setae each in cells r₄₊₅, m₁₊₂ and m₃₊₄. Subcosta, RM, M and postcubitus bare, brachiolum with 8–12 setae, R with 58–78, R₁ with 72–84, R₂₊₃ with 7–15, R₂ with 2–5, R₃ with 12–16, R₄₊₅ with 98–103 setae, costal extension with 14–20 non-marginal setae, M₁₊₂ with about 35–55, M₃₊₄ with about 50, Cu₁ with about 20, An with about 30–50 setae. Squama with about 75–90 setae.

Legs. Spur of front tibia 109–128 µm long, with 16–18 lateral teeth; spurs of middle tibia 98–109 and 79–94 µm long, with 16 and 18 teeth, respectively; of hind tibia 109–146 and 86–109 µm long, each with about 18 teeth. Width at apex of front tibia 120–131 µm, of middle tibia 120–128 µm, of hind tibia 135–143 µm. Hind tibial comb absent. Sensilla chaetica apparently absent. Lengths (in µm) and proportions of legs:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV	BR
p ₁	1829–	2182–	1290–	704–	540–	317–	211	0.54–	2.97–	3.11–	4.7–
	1935	2557	1384	762	551	328		0.59	3.19	3.25	5.3
p ₂	1853–	2018–	914–	493–	340–	211–	176–	0.45–	3.58–	4.02–	3.5–
	1994	2346	1077	598	46	258	211	0.47	3.92	4.23	4.1
p ₃	1713–	2205–	1290–	704–	493–	281–	199–	0.54–	2.97–	2.91–	3.9–
	1994	2815	1525	880	680	352	223	0.60	3.15	3.15	4.3



FIGURES 24–29. *Derotanypus* spp., 24–26: *D. limbatus* (Lundström), comb. n., 24: male hypopygium, 25: female genitalia, ventral view, 26: female genitalia, dorsal view, 27–29: *D. sibiricus* (Kruglova & Chernovskii), 27: male hypopygium, 28: female genitalia, ventral view, 29: female genitalia, dorsal view.

Hypopygium (Fig. 24). Tergite IX without posterior setae. Phallapodeme in two sclerotized, overlapping parts 161–173 μm and 124–150 μm long. Gonocoxite 428–506 μm long. Gonostylus 278–323 μm long, basal part 75–98 μm wide, apical part 53–60 μm wide in middle, tapering in apical third; megaseta 15–17 μm long. HR 1.47–1.57, HV 2.43–2.57.

FEMALE IMAGO (n = 1–2)

Total length 6.59–7.77 mm. Wing length 4.86–4.97 mm. Total length/wing length 1.36–1.56. Wing length/length of profemur 2.13. Coloration as in male.

Head. AR 0.19–0.22. First flagellomere (=Fm1) 71–70 μm long, Fm2 56 μm , Fm3–12 each 68–86 μm , Fm13 98–124 μm , Fm14 188–225 μm long. Temporal setae 68–69, consisting of 18–25 outer verticals; 25–29 inner verticals, and 18–22 postorbitals. Clypeus with 50–52 setae. Tentorium 349–364 μm long, 45–73 μm wide; stipes 263–338 μm long, 14 μm wide. Palpomere lengths (in μm): 90–109, 176–188, 356, 330–356, 356.

Thorax. Antepnotum with 20–27 lateral setae. Acrostichals not countable, dorsocentrals about 115, prealars 80–85, median anepisternum II with 16–37 setae, preepisternum with 26–40 setae. Scutellum with about 100 setae.

Wing. VR 0.95. Costal extension 131–154 μm long, RM 281–285 μm long, MCu 105–128 μm long, distance between MCu and RM 8–15 μm . Wing membrane with numerous setae over whole wing, including anal lobe and costal cell. Cell r with 39–80 setae, cell m with 12–13 setae. Subcosta apparently bare, brachiolum with 10–14 setae, costal extension with 12–13 non-marginal setae, R with about 80–100, R₁ with about 95–105, R₂₊₃ with 27–42, R₂ with 13, R₃ with 20–30, R₄₊₅ with about 165–185, postcubitus with 5–6 setae, M with 0–1, M₁₊₂, M₃₊₄, Cu₁ and An each with numerous setae. Squama with about 80–100 setae.

Legs. Spur of front tibia 113–116 μm long, with 16–18 lateral teeth; spurs of mid tibia 124 μm and 98 μm long, with 20 and 17–18 teeth, respectively; one spur of hind tibia 113 μm long with 20–22 teeth, the other spur lost. Hind tibial comb absent. Width at apex of front to hind tibiae (in μm) as: 128–131, 131, 146. Sensilla chaetica about 45 in apical third of ta₁ of mid leg, about 25 in apical third of ta₁ of hind leg. Lengths (in μm) and proportions of legs:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV	BR
p ₁	2276	2170	1079– 1196	540– 633	300– 446	-	-	0.50	-	3.68	1.9
p ₂	2018– 2135	2158– 2276	974	493	411	281	188	0.45	3.75	4.29	2.9
p ₃	1971– 2088	2628– 2956	1548	868	493	340	223	0.52	3.43	3.26	-

Genitalia (Figs. 25, 26). Sternite VIII with about 200 setae. Gonotergite IX bare, rudiments of gonocoxite weak to very weak. Segment X bare. Cercus 225–255 μm long. Sem-

inal capsule 225–236 μm long including triangular neck, 169–199 μm wide. Notum 338–349 μm long.

Remarks

The holotype of *A. quadrinotata* is considerably more pale than the specimens of *D. limbatus*. This is partly since the specimen is somewhat teneral. However, no significant differences could be found in any measurements.

The higher leg ratios all belong to the holotype of *A. quadrinotata*. The measurements of the front leg include only the lectotype of *D. limbatus* (the higher measurements except for ta_4) and the lectotype of *A. quadrinotata* (the lower measurements). The higher BV and SV on the front leg belong to the lectotype of *D. limbatus*. Lundström gives the relative leg lengths of the two species. According to his measurements *A. limbata* should have a fore-leg ratio of 0.59 and a SV of 3.27, *A. quadrinotata* a leg ratio of 0.65 with a SV of 2.92. However, not much confidence can be given to measurements made on unmounted specimens. According to Lundström *A. limbata* should be the smaller species when in fact it contains both the smallest and the largest specimen. The discrepancies between the dates concern the paralectotypes and thus do not effect the validity of the primary types.

Murray & Fittkau (1989, fig.5.13 F) illustrate a species which they call *Derotanypus* sp. nr. *aclines* (Sublette). However, that species is lacking the transverse row of setae present posterior on tergite IX diagnostic for *D. aclines* and the nominal subgenus. Their species, however, could be conspecific with *D. limbatus* in the subgenus *Merotanypus* of Roback (1971).

***Derotanypus sibiricus* (Kruglova & Chernovskii)**

(Figs. 27–29)

Anatopynia sibirica Kruglova & Chernovskii, 1940: 2.

Derotanypus sibiricus (Kruglova & Chernovskii), Fittkau & Roback (1983: 48)

Derotanypus Pe1 Langton (1991: 22).

Type material. Lectotype ♂ of *D. sibiricus*, here designated: RUSSIA: Tomsk, Universitetsk ozewo (Lake Universitetskoe in the confines of the City of Tomsk), 27 iii 1940, W. M. Kruglova, (Zoological Institute, Russian Academy of Sciences St. Petersburg, Russia). Paralectotypes 2 ♀ of *D. sibiricus*, as lectotype except 5–15 iii 1940 and 28 iii 1940.

MALE IMAGO (n = 1)

Total length 8.09 mm. Wing length 4.27 mm. Total length/wing length 1.90. Wing length/length of profemur 2.39. Coloration brown with darker vittae and markings. Legs pale brown with femora, basal and apical tibial bands and ta_3 – ta_5 brown. Wing with dark spot over both cross-veins.

Head. Antenna lost. Temporal setae 51, including 13 inner verticals, 16 outer verticals, and 22 postorbitals. Clypeus with 46 setae. Tentorium 244 μm long, 83 μm wide. Stipes about 225 μm long. Palpomere lengths (in μm): 98, 169, 225, 281, 330.

Thorax. Antepronotals not countable. Acrostichals about 55, dorsocentrals about 70, prealars 45, median anepisternum II with 13 setae, preepisternum with 24 setae. Scutellum with about 90 setae.

Wing. VR 0.94. Costal extension 131 μm long, RM 206 μm long, MCu 113 μm long, distance between MCu and RM 19 μm . Wing membrane with numerous setae in apical half. Cell m with 1 seta, cell r with 46 apical setae, r_1 with 9, r_{2+3} with 23 setae, numerous setae each in cells r_{4+5} , m_{1+2} and m_{3+4} . Subcosta bare, brachiolum with 12 setae, R with 82, R_1 with 100, R_{2+3} with 35, R_2 with 10, R_3 with 36, R_{4+5} with 170, RM with 4, M with 13, M_{1+2} with about 60, M_{3+4} with about 60, Cu with 16, Cu_1 with about 40, postcubitus with about 12, An with about 35 setae, costal extension with 14–20 non-marginal setae. Squama with about 75 setae.

Legs. Spur of front tibia 124 μm long, with 15 lateral teeth; spurs of middle tibia 120 and 98 μm long, both with about 20 lateral teeth; spurs of hind tibia 120 and 109 μm long, with 16 and 19 lateral teeth, respectively. Width at apex of front tibia 128 μm , of middle tibia 124 μm , of hind tibia 150 μm . Sensilla chaetica apparently absent. Lengths (in μm) and proportions of legs:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV	BR
p ₁	1783	2135	1267	891	657	352	211	0.59	2.46	3.09	-
p ₂	1829	2205	1056	587	387	211	199	0.48	3.68	3.82	4.1
p ₃	1829	2510	1408	914	657	235	235	0.56	2.63	3.08	4.7

Hypopygium (Fig. 27). Tergite IX with 2 posterior setae. Phallapodeme in two sclerotized, overlapping parts 120 μm and 94 μm long. Gonocoxite 469 μm long. Gonostylus 285 μm long, basal part 101 μm wide, but sclerotized for only 60 μm ; apical part 45 μm wide, nearly parallel-sided to apex; megaseta 15 μm long. HR 1.67, HV 2.84.

FEMALE IMAGO (n = 1–2)

Total length 6.33–6.57 mm. Wing length 3.94–4.27 mm. Total length/wing length 1.54–1.61. Wing length/length of profemur 2.53–2.58. Coloration as in male or slightly more pale.

Head. AR 0.22. Flagellomeres 1–13 each 56–68 μm long, Fm13 68–75 μm , Fm14 165–176 μm long. Temporal setae 52–71, consisting of 18–27 outer verticals; 23–28 inner verticals, and 11–16 postorbitals. Clypeus with 49–54 setae. Tentorium 263 μm long, 71–75 μm wide; stipes 225 μm long. Palpomere lengths (in μm): 101–105, 131–169, 225–255, 238–304, 428–499.

Thorax. Antepronotals not countable. Acrostichals about 70–90, dorsocentrals about 90–95, prealars 54–56, median anepisternum II with 18–28 setae, preepisternum with 25–26 setae. Scutellum with about 90–95 setae.

Wing. VR 0.93. Costal extension 131–154 μm long, RM 180–191 μm long, MCu 135–150 μm long, distance between MCu and RM 0–8 μm . Wing membrane with numerous

setae over whole wing, including anal lobe and costal cell. Cell r with about 55–70 setae, cell m with about 50 setae. Brachiolum with 13 setae, subcosta with 9, R with 95, R₁ with 80, R₂₊₃ with 55–65, R₂ with 4–6, R₃ with 38–53, R₄₊₅ with about 196, M with 15–21, post-cubitus with 5–6 setae, costal extension with 30 non-marginal setae, M₁₊₂, M₃₊₄, Cu₁ and An each with numerous setae. Squama with about 90–106 setae.

Legs. Spur of front tibia 101–105 µm long, with 14–15 lateral teeth; spurs of mid tibia 113–116 µm and 94–98 µm long, with 23 and 16 teeth, respectively; spurs of hind tibia 124–143 µm and 79–94 µm long, with 22–23 and 16–20 teeth. Width at apex of front to hind tibiae (in µm) as: 105–124, 113–128, 135–146. Hind tibial comb absent. Sensilla chaetica about 70–75 in apical third of ta₁ of mid leg, about 60–70 in apical third of ta₁ of hind leg. Lengths (in µm) and proportions of legs:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV	BR
P ₁	1525– 1689	2182– 2299	985– 1103	563– 657	399– 446	293– 305	199– 211	0.45– 0.48	3.14– 3.23	3.62– 3.76	2.5– 3.1
P ₂	1553– 1736	2064– 2252	845– 914	422– 457	305– 328	211– 246	188– 199	0.41	4.12– 4.13	4.49– 4.50	2.4– 2.5
P ₃	1713– 1783	2393– 2534	1361	704– 751	516– 587	328– 375	211	0.54– 0.57	2.95– 3.11	3.02– 3.14	2.5– 3.2

Genitalia (Figs. 28, 29). Sternite VIII with about 200 setae. Gonotergite IX apparently with 1 seta on each of moderately developed rudiments of gonocoxite. Segment X with 8 setae, 4 on each side. Cercus 173–188 µm long. Seminal capsule 75–94 µm long including triangular neck, 64–83 µm wide. Notum 255–270 µm long.

Remarks

The species at first was thought to be a junior synonym of *D. limbatus*. However, the wings both of male and female are less setaceous in *D. limbatus*, with subcosta, vein M and cell m bare in the male. The posterior margin of male tergite IX is bare in *D. limbatus* while there are 2 setae in *D. sibiricus*. Also, the shapes of the gonostyli differ significantly, with *D. sibiricus* having a more parallel-sided apical part. The females of the two species differ in an even more significant way. While *D. sibiricus* have setae on segment X and possibly on gonotergite IX, these are absent in *D. limbatus*. In addition, the seminal capsules in *D. limbatus* are more than twice as large as those in *D. sibiricus*, one third as long as notum in *D. sibiricus*, two third as long as notum in *D. limbatus*. *D. sibiricus*, however, may be a junior synonym of *D. alaskensis* (Malloch, 1919) (Roback 1971: 94), the only known difference being the presence of two setae on the posterior margin of tergite IX in *D. sibiricus*. However, too little material has been examined to estimate intraspecific variation in this character.

Acknowledgements

I am grateful to Drs Emilia Narchuk and Andrey Przhiboro, Zoological Institute, Russian Academy of Sciences St. Petersburg, Russia, for the loan of the material; and to Martin Spies, Zoologische Staatssammlung, Munich, for reviewing the manuscript and many suggestions for improvements.

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