

Additional data on *Olecryptotendipes secundus* (Zorina, 2003) from Russian Far East, with a description of preimaginal stages (Diptera: Chironomidae)

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Abstract

The male of *Olecryptotendipes secundus* (Zorina, 2003) is redescribed. The pupae and larvae collected from the Amur River basin are described and illustrated for the first time. The diagnosis of the genus *Olecryptotendipes* Zorina, 2007 is supplemented and expanded. Keys to the Far Eastern species of the genus *Olecryptotendipes* Zorina for adult males, pupae and larvae are given.

Key words: *Olecryptotendipes*, taxonomy, pupa, larva, key, Russian Far East

Introduction

During a study of the non-biting midges of the subfamily Chironominae in the Russian Far East (Makarchenko *et al.* 2005) two species, *Cryptotendipes lenzi* Zorina, 2001 and *C. secundus* Zorina, 2003, were identified based on the morphology of the adult males only. However, pupae and larvae of *C. lenzi* collected in the Partizanskaya River in the Primorye Territory show that the two species should be moved to *Olecryptotendipes* Zorina, 2007.

Currently the genus *Olecryptotendipes* Zorina includes 9 species, namely, *O. arienus* Yan, Wang, 2017 (Oriental China), *O. exilis* Yan, Wang et Bu, 2012 (Oriental China), *O. extensus* Mukherjee et Hazra, 2022 (India), *O. macropodus* (Lyachov, 1941) (European part of Russia and some European countries, see Sæther & Spies (2013)), *O. melasmus* Yan, Wang et Bu, 2012 (China), *O. lenzi* (Zorina, 2001) (Russian Far East, China), *O. obtusus* Mukherjee et Hazra, 2022 (India), *O. secundus* (Zorina, 2003) (Russian Far East), and *Harnischia* complex genus C sp. Epler, 1995 (Nearctic). Also in the web presentation of Langton & Visser (2003) is a description of the pupal morphotype that was named ‘Chironomini gen.? sp.? Pe 5’ (https://chironomidae-exuviae.linnaeus.naturalis.nl/linnaeus_ng/app/views/species/taxon.php?id=63301&epi=77).

For the entire period of study of chironomids from the Amur River basin, only Konstantinov’s article (1950) mentions the discovery of a larva *Cryptochironomus macropodus* Lyachov. The species has been included in the checklist of the Chironomidae of the Russian Far East (Zorina, 2000).

As a result of studying the benthos of the Amur River basin mature pupae with larval exuviae and larvae of *O. secundus* (Zorina, 2003) were found. In this article, we present for the first time an illustrated description of the immature stages of development and a redescription of the male *O. secundus* (Zorina). Also, having analysed the currently available literature data, we expand the diagnosis of the genus *Olecryptotendipes* Zorina. Identification keys are given for adult males, pupae and larvae of the genus *Olecryptotendipes* Zorina of the Russian Far East.

Material and methods

The material was stored in 70% ethanol and slide-mounted in Fora-Berlese solution. Morphological terminology and abbreviations follow Sæther (1980). The measurements are given as the range.

Male: AR—length of apical flagellomere 11 to length flagellomeres 1–10; Aps—antepnotals, Ac—acros-

tichals, Dc—dorsocentrals, Pa—prealars, Su—supraalars; R, R₁, R₄₊₅—veins of wing, VR—length of Cu to length of M; P₁₋₃—legs, Fe—femur, Ti—tibia, Ta₁₋₅—tarsomeres, LR—length of tarsomere 1 to length of tibia, SV—length of femur plus tibia to tarsomere 1, BV—length of femur, tibia and tarsomere 1 divided by tarsomere 2–5, BR—longest seta of tarsomere 1 divided by minimum width of tarsomere 1; HR—length of gonocoxite to length of gonostylus. Pupa: DC₁₋₄—dorsocentrals; L, LS—lateral setae. Larva: W/L—wide/length; AR—ratio of length of basal antennal segment to combined length of remaining segments; S 1–9—cephalic setae; S I–IV—labral setae.

***Olecryptotendipes* Zorina, 2007**

Cryptochironomus Kieffer, 1918: 48; Lyachov, 1941: 591; Chernovsky, 1949, 53; Konstantinov, 1950: 154; Pankratova, 1983: 169; Moller Pillot, 2009: 93–94; Orendt & Spies, 2012: 59

Cryptotendipes Beck & Beck, 1929: 294; Zorina, 2001, 2003

Harnischia complex genus C Epler, 1995: 7, 122; Epler, 2001: 8, 176; Epler *et al.* 2013: 442

Chironomini gen.? sp.? Pe 5 Langton & Visser, 2003: 334

Olecryptotendipes Zorina, 2007: 347; Sæther & Spies, 2013; Vallenduuk, 2019: 182; Yan *et al.* 2012: 41; Yan *et al.* 2017: 291; Mukherjee & Hazra, 2022: 330

Type species: *Cryptotendipes lenzi* Zorina, 2001.

Other included species: *Olecryptotendipes arienus* Yan et Wang, 2017, *Olecryptotendipes exilis* Yan, Wang et Bu, 2012, *Olecryptotendipes extentus* Mukherjee et Hazra, 2022, *Olecryptotendipes macropodus* (Lyachov, 1941), *Olecryptotendipes melasmus* Yan, Wang et Bu, 2012, *Olecryptotendipes obtusus* Mukherjee et Hazra, 2022, *Olecryptotendipes secundus* (Zorina, 2003), and *Harnischia* complex genus C sp. Epler, 1995.

Diagnosis. The following combination of characters will separate the genus *Olecryptotendipes* Zorina from other members of the *Harnischia* complex:

Male: frontal tubercles absent; thorax and legs with or without spots; AR 1.13–2.24; acrostichals present, sometimes absent; squama with 0–5 setae; hypopygium with Y-type band, rarely separated medially; posterior part of tergite IX elongated with setae, sometimes with caudolateral shoulders; superior volsella with sclerotised part and membranous ridge, with 1–2 dorsal and 1 ventral setae, microtrichia absent or present; inferior volsella absent or reduced; gonostylus curved medially or in distal third.

Pupa with well developed frontal tubercles; frontal setae present or reduced to short rod-shaped outgrowths apically serrated; thoracic horn plumose; hook row widely interrupted medially; pedes spurii B present on segment I anteriorly; pedes spurii B absent on tergite II; sternites IV with pedes spurii A; tergites II–V with rectangular patches of shagreen or tergites II–VI or I–VI a median longitudinal band of spines; posterolateral comb or spur absent.

Larval body consisting of 20 apparent segments; anterior parapods with large claws; posterior parapods thin and elongated; antenna with 6 segments; pecten epipharyngis a simple scale with median notch apically or a triangular serrated scale or consists of 3 scales, median one slightly longer than lateral ones; premandible with 2 apical and 1–2 teeth in base, brush absent; mandible with sickle-shaped dorsal tooth, apical tooth and 2–3 inner teeth; seta interna present (with 4–6 simple branches) or absent; mentum with pale triangular median tooth and 6–7 pairs of yellowish brown lateral teeth or 2 median teeth and 5 pairs lateral teeth.

***Olecryptotendipes secundus* (Zorina, 2003)**

Figs. 1–29.

Cryptotendipes secundus Zorina, 2003: 221, Figs. 1–2

Olecryptotendipes secundus (Zorina, 2003), Zorina, 2007: 350, Figs. 1–17

Material examined. Male, Russia, SAKHALIN ISLAND, Rybnoe Lake near Nogliki Village, 27.vii.2002 (E. Markarchenko) (Holotype); males, Khabarovsk Territory, Sunny region, Amur River basin, spring, near the city of Amursk, 12.vi.2010 (leg. I. Tiunov); pupa with larval exuviae, same data, Amur River near the village of Nizhneleninskoye, 01.vi.2018 (leg. S. Kulbachny); pupa, N 48°44.827' E 135°26.607', same data, the Amur River below the city of Khabarovsk and above the Noevskaya channel, 05.vi.2018 (leg. O. Kudrevsky); 2 pupae, N 48°44.894' E 135°26.669', same data, the Amur River below the city of Khabarovsk, 06.vi.2019 (leg. S. Kulbachny); larva, AMUR REGION, mouth of the Selemdzha River, 19.ix.2008 (leg. T. Tiunova).

Description

Male imago (n = 3).

General colour yellowish. Total length 3.5–4.7 mm; total length/wing length 1.89–3.26.

Head (Fig. 1). Frontal tubercles absent. Temporal setae 11–16. Clypeus with 6–10 setae. Maxillary palp brown, lengths of last 4 palpal segments (µm): 33–55, 81–121, 90–132, 132–165. Palp length/head width 0.78. Scapus yellowish brown, flagellomeres (1–11) dark-brown, 880–1210 µm long. AR 1.75–1.89. Antenna length/palp length 2.49–2.62.

Thorax. Ground colour of scutum pale yellow, mesonotal strips yellow. Aps 0–1, Ac 0, Dc 5–7, Pa 2–4, Su 1–2. Scutellum pale yellow, with 6–8 setae. Postnotum in distal 2/3 dark brown.

Wings. Wing length 1.44–1.85 mm. Squama with 1–5 setae. R, R₁ without setae, R₄₊₅ with 2 apical setae. VR 1.11. Haltere pale yellow.

Legs (Table 1). Legs pale yellow, with exception of distal end of Fe₁, proximal 1/3 and distal end of Ti₁ (sometimes all Ti) distal 1/3 or 2/3 of Ta₁, Ta₂₋₅ brown. P₂ and P₃ yellowish, with exception of brown Ta₃. Terminal combs of Ti₂ and Ti₃ with 15–18 µm long spurs. BR₁ 2.5–3.2, BR₂ 3.3–4.3, BR₃ 3.0–3.6.

TABLE 1. Length (µm) and proportions of legs of the male *O. secundus* (Zorina) (n=3).

P	Fe	Ti	Ta ₁	Ta ₂	Ta ₃	Ta ₄	Ta ₅
P ₁	600	432–500	640–700	360–400	272–300	176–200	112–120
P ₂	560–576	480–520	240–280	144–160	120–130	80	80
P ₃	620–680	670–700	376–460	256–288	200–240	120–140	104–120

Continued.

P	LR	SV	BV
P ₁	1.40–1.56	1.50–1.61	1.76–2.05
P ₂	0.48–0.56	3.79–4.33	2.98–3.10
P ₃	0.59–0.66	2.87–3.40	2.41–2.59

Abdomen. Pale yellow.

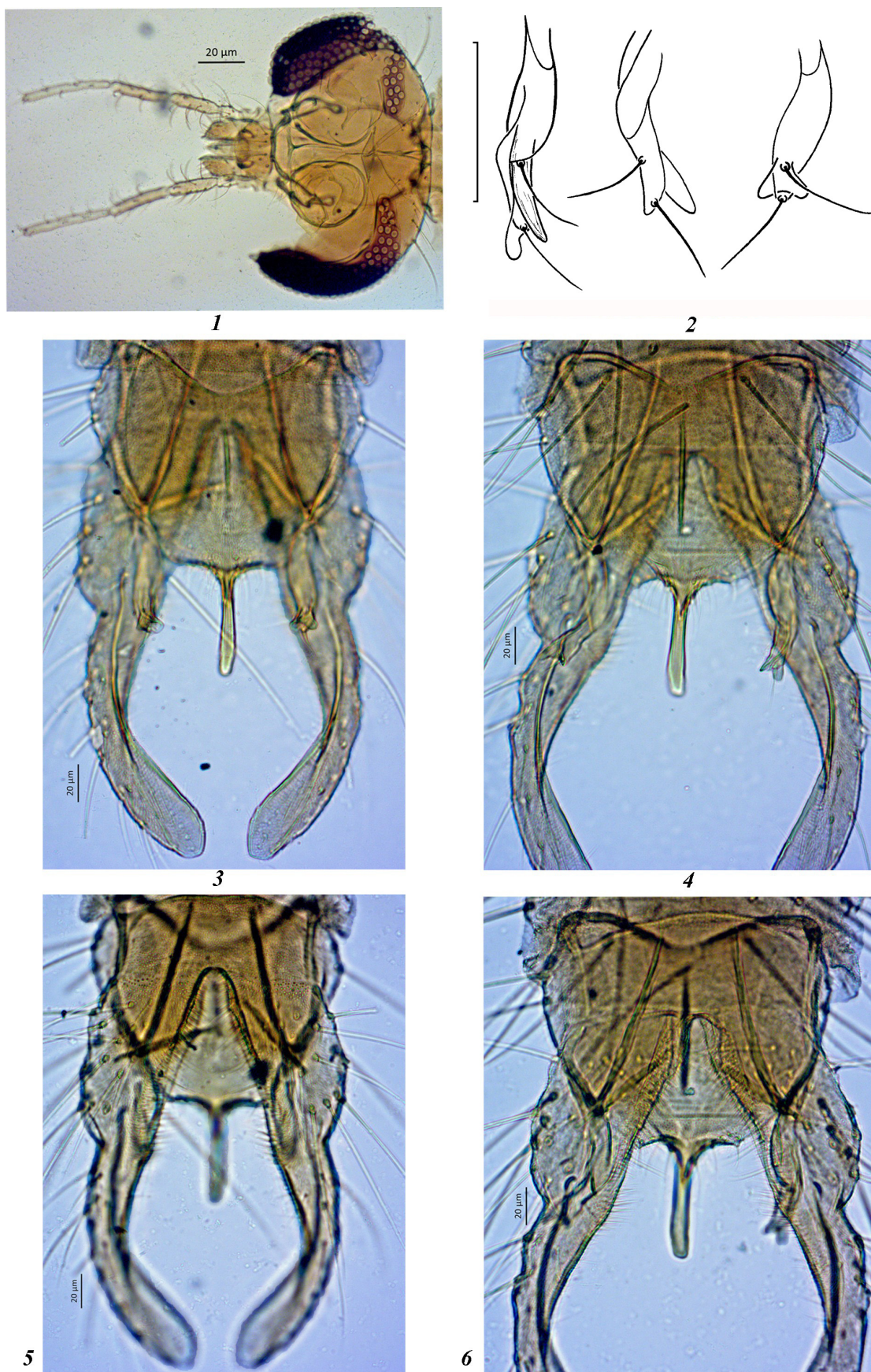
Hypopygium (Figs. 2–6). Anal tergite bands Y-type. Anal point 54–63 µm long, wide at about apical 1/3 (9–12 µm), apically rounded. Anterior margin of tergite IX with caudolateral shoulders bearing 4–5 setae. Gonocoxite 90–105 µm long. Inner margin of gonocoxite with 5–6 setae. Width of transverse sternapodeme 45 µm. Phallapodeme 60 µm long. Superior volsella 51–60 µm long, without microtrichia, bearing usually apical dorsal seta (length 21–24 µm) and ventral seta (length 24–30 µm) on preapical lobe (Fig. 2). Gonostylus 120–135 µm long, curved medially, with 4–5 setae in apical part and 1 short apical seta. HR 0.75–0.78.

Female. Unknown.

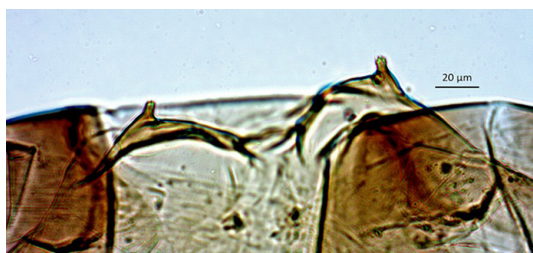
Pupa (n = 4)

Cephalothorax. Length of thorax 0.90–0.90 mm. Frontal tubercles 30–36 µm high, 81–90 µm wide, with short, 9–15 µm long, rod-shaped, apically serrated outgrowths (Figs 7, 13). Thorax granulose along median suture (Fig. 8). Thoracic horn plumose; basal ring oval, 30 µm long, 24 µm wide. Antepronotal 1 (median, 90–105 µm long). Precorneals 2–3 (length 60, 45, 75 µm). DC₁ strong, sometimes split, 30–45 µm long, DC₂ hairy, 45–90 µm long, DC₃ hairy, 45–60 µm long, DC₄ strong, 30–45 µm long. Distance between DC₁ and DC₂ 54–90 µm, DC₃ and DC₄ 6–15 µm, DC₂ and DC₃ 63–96 µm. Wing sheath 900 µm long, 220 µm wide. Prealar tubercle present.

Abdomen (Figs 9–12, 14–16) 2.4–2.8 mm long. Hook rows divided into two parts, each part with 12–17 hooks, 64–80 µm wide, distance between hook rows 40 µm. Tergites I–III with mesh structure. Tergites I–VI with a median longitudinal band of spines. Tergite I: length of stripe 64 µm, with ~15 spines; tergite II: length of stripe 96–144 µm, with 30–45 spines; tergite III: length of stripe 136–240 µm, with 42–65 spines; tergite IV: length of stripe 224–264 µm, with 82–100 spines; tergite V: length of stripe 240–256 µm, with 80–85 spines; tergite VI: length of stripe 240–264 µm, with 65–105 spines. Tergites VII–VIII with two lateral bands of spines. Pedes spurii B present on segment I and absent on segment II; pedes spurii A well-developed on sternite IV. Sternites I–IV with shagreen. Laterosternites IV–VII with spines posterolaterally. Segment VIII without posterolateral comb or spur. Segment I with 1 L seta, II–IV with 3 L setae, V–VIII with 4 LS setae. Anal lobe well-developed with complete fringe of 44–53 taeniae in a single row, with 1–2 dorsal setae. Anal segment 224–256 µm long and 176–224 µm wide.



FIGURES 1–6. Details of the structure of the adult male of *Olecryptotendipes secundus* (Zorina). 1—head; 2—variations in the structure of the superior volsella; 3, 4—hypopygium, dorsal view; 5, 6—hypopygium, ventral view. Scale bar 20 μm.



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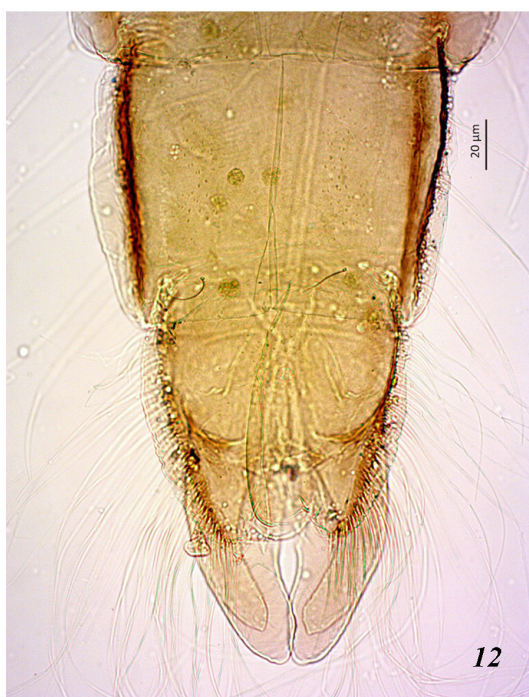
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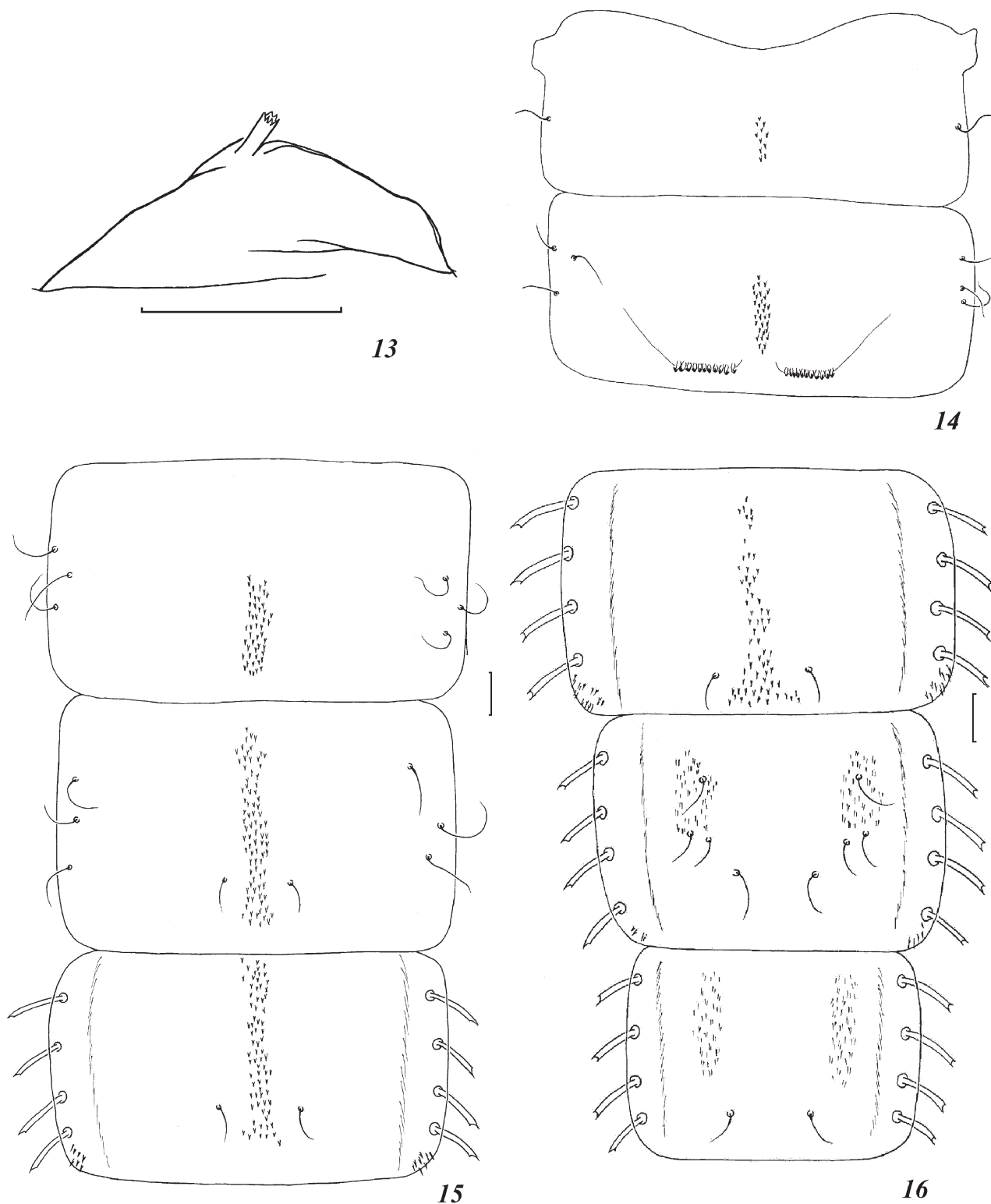


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FIGURES 7–12. Details of the structure of the pupa of *Olecryptotendipes secundus* (Zorina). 7—frontal tubercles; 8—thorax, lateral view; 9—tergites II–III; 10—tergites IV–V; 11—tergites VI–VII; 12—tergites VIII–IX. Scale bar 20 μm.



FIGURES 13–16. Pupa of *Olecryptotendipes secundus* (Zorina). 13—frontal tubercle; 14—tergites I–II; 15—tergites III–V; 16—tergites VI–VIII. Scale bar 50 μ m.

Fourth instar larva (n = 3)

Coloration white (in alcohol), with yellowish head capsule. Head capsule 1.41 mm long, 1.10 mm wide, cephalic index (W/L) 0.78.

Head (Figs 17–22, 25–29). Posterior part of head capsule dorsally convex with several rounded small pits. Setae on dorsal surface: S 7 plumose, S 9 two-branched.



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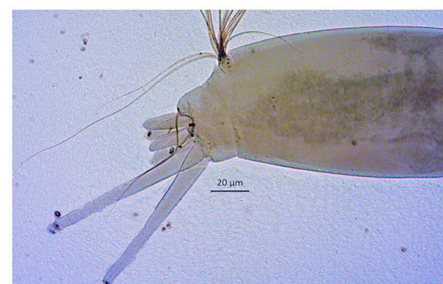
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FIGURES 17–24. Details of the structure of the larva of *Olecryptotendipes secundus* (Zorina). 17—head capsule, dorsal view; 18—head capsule, ventral view; 19—labrum; 20—mandible; 21—antenna; 22—mentum, ventromental plates and maxillary palp; 23—anterior parapods; 24—posterior parapods. Scale bar 20 µm.

Antenna (Figs 21, 26). Six segmented, total length 81–101 μm , length of each segment (in μm): 30–36; 18–24; 21–27; 3; 4.5–9; 6. AR 0.56–0.59. Basal segment with ring organ at 12–15 μm from base. Blade 36 μm long, situated medially on second segment, extending to apex of fourth segment. Lauterborn organ 6 μm long; at apex of third segment, reaching apex of fifth segment.

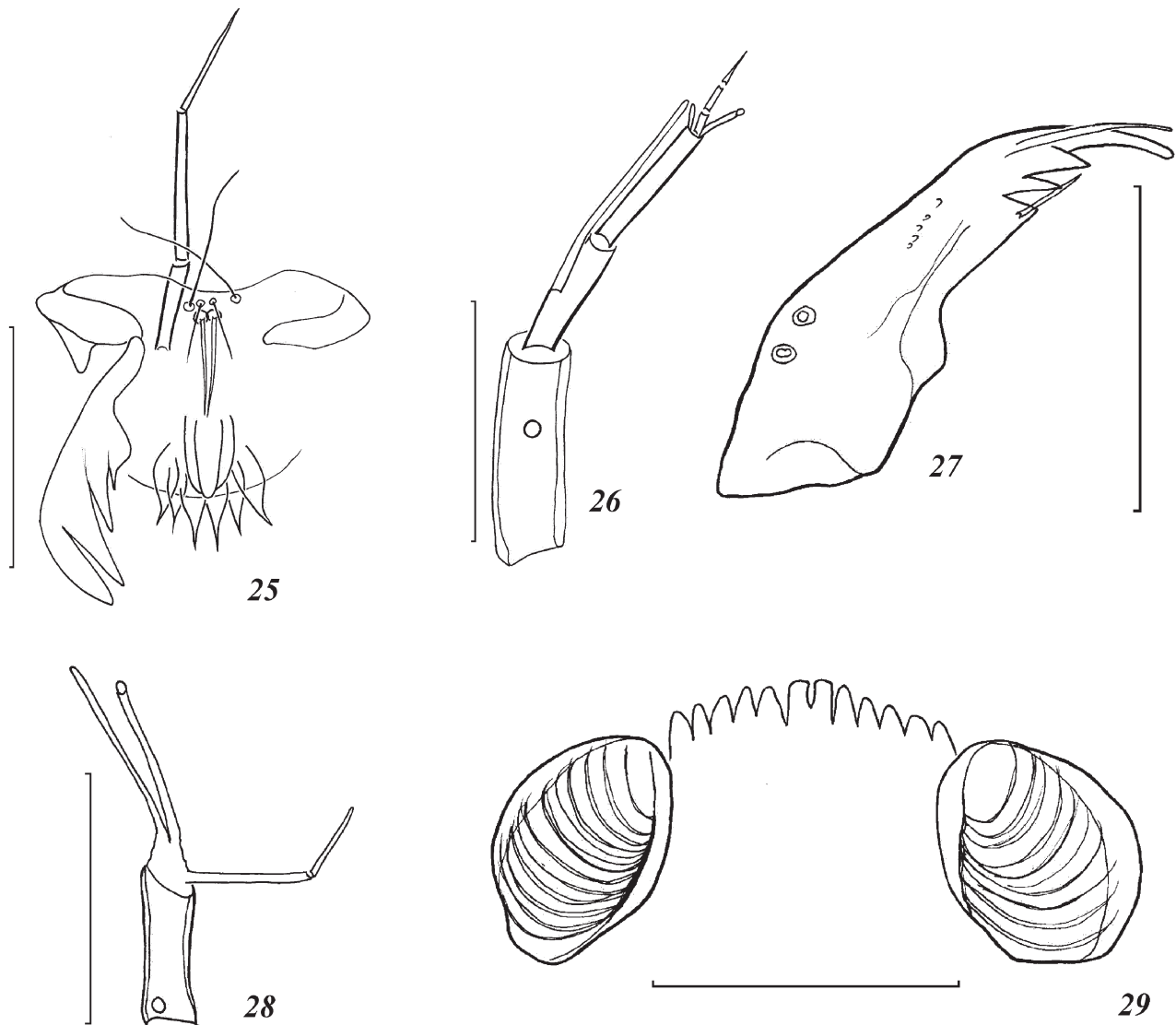
Labrum (Figs 19, 25). S I 21–27 μm long, blade-like; S II 18 μm , slender and simple; S III 12–15 μm , short, and simple; S IV 56–71 μm long, 3-segmented (length of each segment (in μm): 15–23, 24–30, 14–18). Pecten epipharyngis consists of 3 scales, median one slightly longer than lateral ones. Premandible 45–54 μm long, with 2 large apical and 2 small basal teeth; brush absent.

Mandible (Figs 20, 27) 60–75 μm long, 18–24 μm wide, with an apical (15–18 μm long) and two inner teeth and a blade-like dorsal tooth (21 μm long). Seta subdentalis 18 μm long. Pecten mandibularis with 6 branches. Seta interna absent.

Maxillary palp (Figs 22, 28). Basal segment 21–24 μm long, ring organ located near base, with two 2-segmented (24 and 9–12 μm long, respectively) and one simple (21 μm long) sensillae.

Mentum (Figs 22, 29) 33–45 μm wide; 2 median teeth and 5 pairs lateral teeth. Ventromental plate 27–30 μm wide, 24–30 μm long.

Abdomen. Anterior parapods large, with large claws (Fig. 23). Posterior parapods 328–344 μm long, with 10 simple hooks (Fig. 24). Procercus 30 μm high, 21 μm wide. Anal tubules 104 μm long.



FIGURES 25–29. Larva of *Olecryptotendipes secundus* (Zorina). 25—labrum; 26—antenna; 27—mandible; 28—maxillary palp; 29—mentum and ventromental plates. Scale bar 50 μm .

Remarks. The male of *O. secundus* (Zorina) can be distinguished from all known species of the genus by having a superior volsella without microtrichia and bearing apical and ventral setae, and by the absence of acrostichals and setae on both R and R₁.

The pupa is well distinguished by the presence of rod-shaped outgrowths on the frontal tubercles and longitudinally located shagreen in the form of stripes on the tergites I–VI.

Collected pupae are similar to Chironomini gen.? sp.? Pe 5 Langton & Visser (2003, Fig. 149b) with respect to location of shagreen on tergites II–IV, medially interrupted band of hook-shaped spines, number of setae on segments V–VIII and absence of caudolateral spur, but differ from the latter in the above features.

The larva of *O. secundus* (Zorina) is similar to the larvae of *O. lenzi* (Zorina) and *Harnischia* complex genus C sp. Epler, but differs from the latter in the following features: AR 0.56–0.59, S IV 3-segmented (2nd and 3rd segments about the same length), premandible with 2 large apical and 2 small basal teeth. Mandible with 2 inner teeth, seta interna absent. Maxillary palp with two 2-segmented and one simple sensillae apically. Mentum with 12 pale teeth, 2 median teeth and 5 pairs lateral teeth.

The larvae of *O. secundus* (Zorina), which we found in the Amur River basin, are very similar in structure of the body and head capsule to *Cryptochironomus macropodus* Lyakhov, that was described from the Volga River basin. Despite the rather detailed description and figure of the larva *C. macropodus* given by Pankratova (1983), we cannot reliably say that this is one and the same species. At present, it is not possible to carry out a comparative morphometric analysis of the larvae found by us with the type specimens of *C. macropodus*.

Distribution. The species is known from Amur River basin and Sakhalin Island, Russian Far East. The larvae live on sandy-pebbly soils of large rivers.

Key to the species of *Oleocryptotendipes* Zorina from the Russian Far East

Males

1. Acrostichals present; R and R₁ with setae; anal point narrow, parallel-sided; superior volsella with microtrichia ventrally, dorsal seta arising subapically *O. lenzi* (Zorina)
- Acrostichals absent; R and R₁ without setae; anal point widest at about 2/3 from base; superior volsella lacking microtrichia ventrally, dorsal seta arising apically or subapically (Fig. 2) *O. secundus* (Zorina)

Pupae

1. Frontal setae present without any rod-shaped outgrowth; tergites II–V with rectangular patches of shagreen; anal lobe with 33–37 fringed taeniae *O. lenzi* (Zorina)
- Frontal setae absent with rod-shaped outgrowth (Figs 7, 13); tergites I–VI with a median longitudinal band of shagreen; anal lobe with 44–53 fringed taeniae (Figs 9–12) *O. secundus* (Zorina)

Larvae

1. Mentum slightly concave with triangular median teeth and 7 pairs of lateral teeth; maxillary palp with four 2-segmented sensillae apically *O. lenzi* (Zorina)
- Mentum convex with 2 with two identical quadrangular medial and 5 pairs of lateral teeth (Figs 22, 29); maxillary palp with two 2-segmented and one simple sensillae apically (Figs 22, 28) *O. secundus* (Zorina)

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References

- Chernovskii, A.A. (1949) Opredelitel' lichinok komarov semeistva Tendipedidae. (Identification of larvae of the midge family Tendipedidae. *Opredelitel' Faune SSSR, Izdania Zoologiya Institle Akademii Nauk SSSR*, 31, 1–186. [in Russian]
- Epler, J.H. (1995) *Identification Manual for the Larval Chironomidae (Diptera) of Florida. Revised Edition*. Florida Department

- of Environmental Protection, Tallahassee, Florida, 317 pp.
- Epler, J.H. (2001) *Identification Manual for the larval Chironomidae (Diptera) of North and South Carolina. A guide to the taxonomy of the midges of the southeastern United States, including Florida. Special Publication SJ2001-SP13*. North Carolina Department of Environment and Natural Resources, Raleigh, NC, and St. Johns River Water Management District, Palatka, Florida, 526 pp.
- Epler, J., Ekrem, T. & Cranston, P.S. (2013) The larvae of Chironominae (Diptera: Chironomidae) of the Holarctic Region—Key and diagnoses. In: Andersen, T., Cranston, P.S. & Epler, J.H. (Sci. Eds.), *Chironomidae of the Holarctic Region. Key and diagnosis—Larvae. Insect Systematics & Evolution, Supplement*, 66, pp. 7–12.
- Konstantinov, A.S. (1950) Chironomids of the Amur River basin and their role in the diet of Amur fish. *Proceedings of the Amur ichthyological expedition of 1945–1949*, 1, 147–287. [in Russian]
- Langton, P.H. & Visser, H. (2003) *Chironomidae exuviae. A key to pupal exuviae of the West Palaearctic Region*. Biodiversity Center of ETI, Amsterdam. [CD-ROM Series]
- Lyakhov, S.M. (1941) To the study of adaptation of rheophilic Chironomidae. *Report of the Academy of Sciences of the USSR*, 32 (8), 591–593. [in Russian]
<https://doi.org/10.1007/BF01142712>
- Makarchenko, E.A., Makarchenko, M.A., Zorina, O.V. & Sergeeva, I.V. (2005) Preliminary data on fauna and taxonomy of chironomids (Diptera, Chironomidae) of the Russian Far East. *Vladimir Ya. Levanidov's Biennial Memorial Meetings*, 3, 394–420. [in Russian]
- Moller Pillot, H.K.M. (2009) *Chironomidae larvae of the Netherlands and adjacent lowland. Biology and Ecology of the Chironomini*. KNNV Publishing, Zeist, 270 pp.
- Mukherjee, B. & Hazra, N. (2022) First records of three genera, *Cyphomella* Saether, 1977, *Olecryptotendipes* Zorina, 2007 and *Robackia* Sæther, 1977 of the *Harnischia* complex from India with description of *O. extentus* sp. n., *O. obtusus* sp. n. and *R. aequilongia* sp. n. (Diptera: Chironomidae). *Zootaxa*, 5091 (2), 330–340.
<https://doi.org/10.11646/zootaxa.5091.2.5>
- Orendt, C. & Spies, M. (2012) *Chironomini (Diptera: Chironomidae: Chironominae). Key to Central European larvae using mainly macroscopic characters. Second, Revised Edition*. Orendt Hydrobiologie, Leipzig, 64 pp.
- Pankratova, V. Ya. (1983) *The larvae and pupae of the non-biting midges of subfamily Chironomidae of the fauna USSR (Diptera, Chironomidae=Tendipedinae)*. Nauka, Leningrad, 296 pp. [in Russian]
- Sæther, O.A. (1980) Glossary of chironomid morphology terminology (Diptera, Chironomidae). *Entomologica scandinavica, Supplement*, 14, 1–51.
- Sæther, O.A. & Spies, M. (2013) Fauna Europaea: Chironomidae. In: Beuk, P. & Pape, T. (Eds.), *Fauna Europaea: Diptera Nematocera. Fauna Europaea. Version 2.6.2*. Available from: <http://www.faunaeur.org> (accessed 9 April 2013)
- Vallenduuk, H.J. (2019) Chironomini larvae of western European lowlands (Diptera: Chironomidae). Keys with notes to the species. With a redescription of *Glyptotendipes (Caulochironomus) nagorskayae* and a first description of *Glyptotendipes (Caulochironomus) kaluginae* new species. *Lauterbornia*, 82, 1–217.
- Yan, C., Wang, X. & Bu, W. (2012) Two new species of *Olecryptotendipes* Zorina, 2007 from China (Diptera, Chironomidae). *Zookeys*, 208, 41–49.
<https://doi.org/10.3897/zookeys.208.3299>
- Yan, C., Ting, L., Guangjun, Z., Yafeng, S. & Wang, X. (2017) A new species of *Olecryptotendipes* Zorina from China (Diptera, Chironomidae). *Zootaxa*, 4299 (2), 291–296.
<https://doi.org/10.11646/zootaxa.4299.2.10>
- Zorina, O.V. (2000) Fauna and systematics of the tribe Chironomini (Diptera, Chironomidae) of the south of Russian Far East. *A.I. Kurentsov's Annual Memorial Meeting*, 11, 101–120.
- Zorina, O.V. (2001) Five new species of the tribe Chironomini (Diptera, Chironomidae, Chironominae) from the Russian Far East. *Vestnik zoologii*, 35 (4), 31–38.
- Zorina, O.V. (2003) Four new species of non-biting midges of the *Harnischia* complex (Diptera, Chironomidae, Chironominae) from Sakhalin Island (Russian Far East). *Eurasian Entomological Journal*, 2 (3), 221–225.
- Zorina, O.V. (2007) *Olecryptotendipes*, a new genus in the *Harnischia* complex (Diptera: Chironomidae) from the Russian Far East. In: Andersen, T. (Ed.), *Contributions to the Systematics and Ecology of Aquatic Diptera—A Tribute to Ole. A. Sæther*. The Caddis Press, Columbus, pp. 347–351.