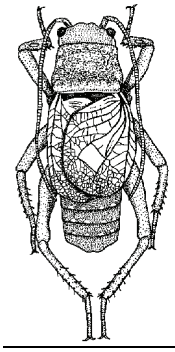

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FIRST RECORD OF *NANOCLADIUS PUBESCENS* MAKARCHENKO ET MAKARCHENKO, 2004 (DIPTERA: CHIRONOIDAE: ORTHOCLADIINAE) IN AMUR RIVER BASIN (RUSSIAN FAR EAST), WITH DESCRIPTION OF PUPA

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Chironomids *Nanocladius* (s. str.) *pubescens* Makarchenko et Makarchenko, 2004 (Chironomidae: Orthocladiinae), known before only from Sakhalin Island, is recorded in the Amur River basin and described by pupa for the first time. The adult male and pupa of this species are close related to *N.* (s. str.) *communis* Wiedenbrug et Silva, 2013 from Brazil.

KEY WORDS: Diptera, Chironomidae, *Nanocladius*, taxonomy, morphology, distribution, Russia.

Е. А. Макарченко*, М. А. Макарченко. Первое указание *Nanocladius pubescens* Makarchenko et Makarchenko, 2004 (Diptera: Chironomidae: Orthocladiinae) из бассейна р. Амур (российский Дальний Восток), с описанием куколки // Дальневосточный энтомолог. 2016. N 315. С. 1-6.

Вид комаров-звонцов *Nanocladius* (s. str.) *pubescens* Makarchenko et Makarchenko, 2004 (Chironomidae: Orthocladiinae), который ранее был известен только с острова Сахалин, обнаружен в бассейне р. Амур и для него

впервые приводится описание куколки. Отмечается, что имаго самец и куколка этого вида наиболее близки таковым *N.* (s. str.) *communis* Wiedenbrug et Silva, 2013 из Бразилии.

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INTRODUCTION

The genus *Nanocladius* was erected by Kieffer (1913); the type species is *Nanocladius vitellinus* Kieffer, 1913. *Nanocladius* includes two subgenera *Nanocladius* s. str. and *Plecopteracoluthus* Steffan, 1965. The genus comprises 49 species worldwide; 15 species are recorded from the Palaearctic Region, 16 from the Nearctic Region, 7 from the Neotropical Region, 7 from the Oriental Region, 7 from the Afrotropical Region, and 5 from Australian Region (Ashe & O'Connor, 2012; Wiedenbrug & Silva, 2013).

For the Russian Far East we recorded eight species of this genus – *N.* (s. str.) *balticus* (Palmen), *N.* (s. str.) *distinctus* (Malloch), *N. minimus* (Sæther), *N.* (s. str.) *palpideminutus* Makarchenko et Makarchenko, *N.* (s. str.) *pubescens* Makarchenko et Makarchenko, *N.* (s. str.) *spiniplenus* Sæther, *N.* (s. str.) *tamabicolor* Sasa and *N.* (*P.*) *asiaticus* Hayashi (Makarchenko & Makarchenko, 2011). Many species of *Nanocladius* s. str. cannot be separate well by adult males and for their identification is necessary to have the pupae.

Nanocladius (s. str.) *pubescens* was described by 2 adult males from Sakhalin Island and immature stages were unknown (Makarchenko & Makarchenko, 2014). In 2014 the mature pupa of this species was collected in Amur River basin for the first time. Below first description of pupa and a brief redescription of adult male extracted from mature pupae are given.

DESCRIPTIONS OF ADULT MALE AND PUPA

Nanocladius (s. str.) *pubescens* Makarchenko et Makarchenko, 2004

Figs 1–9

Nanocladius (s. str.) *pubescens* Makarchenko & Makarchenko, 2004: 218.

MATERIAL. Russian Far East, Amur Region, neighborhood Novobureiskii Village, Dikan River (Bureya River basin), 49°46'34.4" N, 129°56'00.9" E, 3.VII 2014, 1 mature pupa of male, leg. T. Tiunova.

DESCRIPTION. **Adult male** (extracted from mature pupa).

Eyes hairy. Antenna with 13 flagellomeres and well developed plume; AR 0.52. Thorax brownish. Antepronotum with 0–1 lateral setae. Acrostichals absent, dorsocentrals 3–4, prealars 1, scutellum with 2 setae. Pulvillae of the legs present. LR_1 0.7.

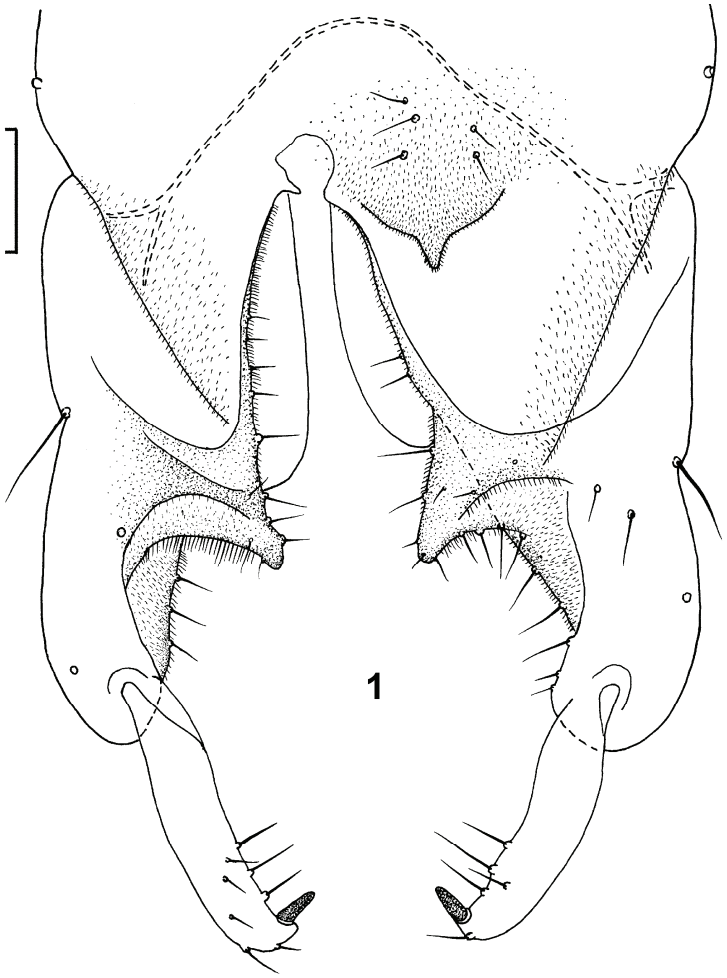
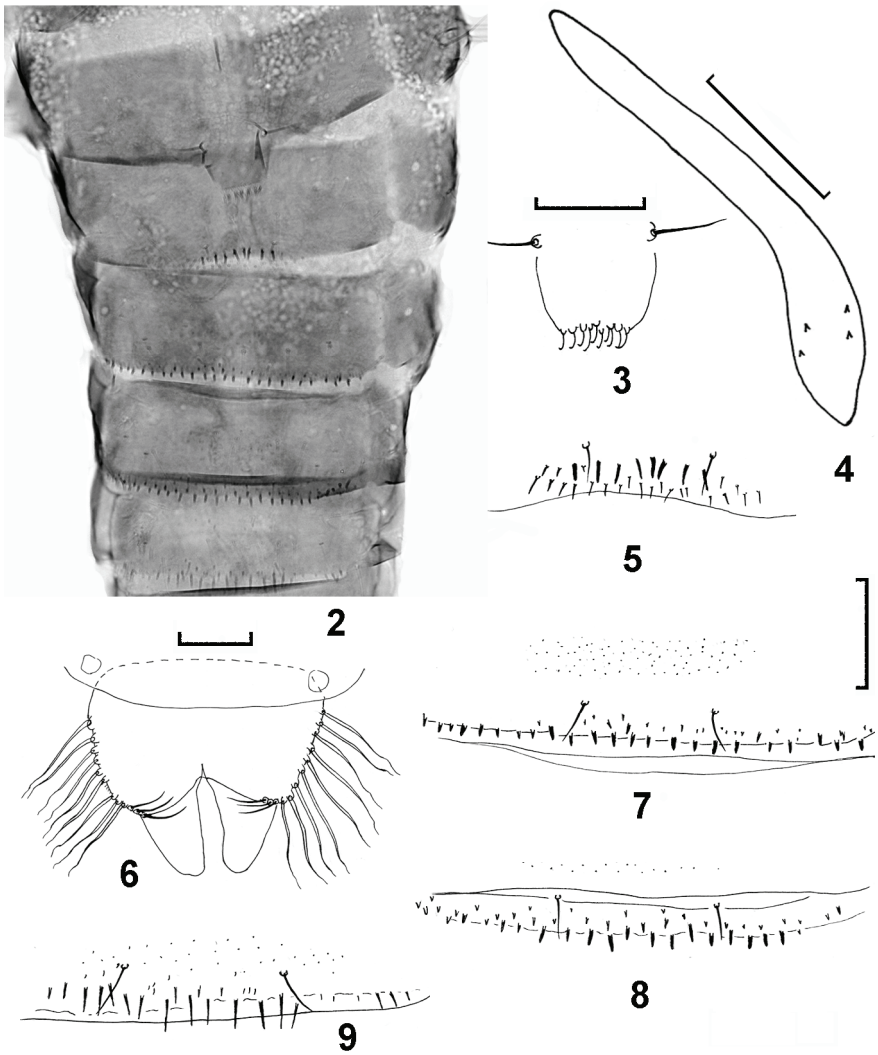


Fig. 1. Dorsal view of male hypopygium of *Nanocladius* (s. str.) *pubescens* Makarchenko et Makarchenko. Scale bar – 50 μm

Hypopygium (Fig. 1). Tergite IX with short anal point, 8 μm long, covered by microtrichiae and with 5 short setae in basal part of anal point. Laterosternite IX with 1 seta on each side. Transverse sternapodeme 44 μm long, with reduced oral projections. Virga absent. Gonocoxite 108 μm long; inferior volsella triangular and covered with microtrichia and some short setae; superior volsella in form of transparent roundish plate. Gonostylus 52 μm long, with megaseta 8 μm long and with 3 long setae in inner margin of distal part.



Figs. 2–9. Pupa of *Nanocladius* (s. str.) *pubescens* Makarchenko et Makarchenko. Tergites II–VI; 3 – spinules of posterior-median margin of tergite II; 4 – thoracic horn; 5 – spinules of posterior-median margin of tergite III; 6 – anal lobes; 7 – spinules of posterior-median margin of tergite IV; 8 – the same of tergite V; 9 – the same of tergite VI. Scale bars: Figs. 3–5, 7–9 – 50 µm 13; Fig. 6 – 200 µm.

Pupa (n=1). Length of abdomen 1.04 mm. Exuviae brownish.

Cephalothorax. Frontal apotome with frontal setae on tubercles; length of frontal setae 72 µm. Antepronotum with two median setae 64 µm long and one lateral setae 36 µm long. Thoracic horn 140 µm long and 20 µm wide (in widest place), with some

small spinules in basal part. Three precorneals nearest of thoracic horn, two of them are 76–80 μm long and third precorneal seta is very thin and about 8 mm in length. Dorsal surface of mesonotum weakly rugose. Dorsocentrals thin and hair-like; Dc_1 36 μm long, Dc_2 20 μm long, $Dc_{3–4}$ 12 μm long. $Dc_{1, 3–4}$ of the same thickness and Dc_2 very thin. Distance between Dc_1 and Dc_2 44 μm; between Dc_2 and Dc_3 42 μm; between Dc_3 and Dc_4 20 μm.

Abdomen. Tergites I–II without shagreen, but tergite II with distinct median protuberance with 13 setae which with curved apex (Fig. 3). Tergite III in middle part with a transverse row of 8 small spines on the posterior margin, behind them located discolored and smaller size seta-like spines (Fig. 5). Tergites IV–V with spot of fine shagreen in middle part and with a transverse 2–3 rows of small dark spines on the posterior margin (Figs. 7–8). Tergite VI with like shagreen and transverse rows of spines on the posterior margin as on tergites IV–V but spines light and more a long. Tergite VII with very weak shagreen in middle part and with few small spines on posterior margin. Tergite VIII without shagreen and posterior small spines. PSB present on segment II. Sternites without shagreen. Sternites IV–VII with PSA in the form of long spinules. Segment I with 1 pair of hair-like lateral setae. Segments II–IV with 3 pairs of hair-like lateral setae. Segments V–VI with 3 pairs of hair-like and 1 pair of taeniate lateral setae. Segment VII with 4 pairs of taeniate lateral setae. Segment VIII 4–5 taeniate lateral setae. Anal lobe 100 μm long, with fring of 9 taeniate setae about 190 μm long (Fig. 6). Male genital sac overreaching anal lobe 40 μm. Anal macrosetae 36–40 μm long.

Larva unknown.

DISTRIBUTION. Sakhalin Island and Amur River basin.

REMARKS. Adult male and pupa of *N.* (s. str.) *pubescens* are close related to *N.* (s. str.) *communis* Wiedenbrug et Silva from Brazil (Wiedenbrug & Silva, 2013). Males of both species have microtrichia on the anal point, inferior volsella triangular and transverse sternapodeme rounded without oral projections. But anal point of *N.* (s. str.) *pubescens* with microtrichia in distal part while anal point of *N.* (s. str.) *communis* with microtrichia in basal part. Pupa of *N.* (s. str.) *pubescens* can be distinguished by the longer thoracic horn (140 μm), shorter anal macrosetae (36–40 μm) and more fine, not so good visible shagreen in middle part of tergites IV–VI. Brazilian species has thoracic horn 85–125 μm long, length of anal macrosetae about 180 μm and spinules of shagreen in middle part of tergites IV–VI are distinct.

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