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New findings of micro-caddisflies (Trichoptera: Hydroptilidae) from the Russian Far East

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Abstract. To date, only 24 species in nine genera of micro-caddisflies (Trichoptera: Hydroptilidae) have been recorded from the Russian Far East, with only three species known from Sakhalin Island. Specimens collected during expeditions to the continental Khabarovsk Territory in 1996 and 2000 and on Sakhalin Island in 2000 and 2001 have increased this total. Two hydroptilid species new to science: *Hydroptila spinosa* sp. n. and *Oxyethira tiunovae* sp. n. are herein described and illustrated. *Oxyethira distinctella* MACLACHLAN, 1880 is recorded for the first time from the Russian Far East. Three species already known from the continental portion of the Russian Far East (*Orthotrichia costalis* (CURTIS) 1834; *Stactobiella biramosa* MARTYNOV 1929; and, *Stactobia tshistjakovi* AREFINA and MORSE 2002) represent new records for Sakhalin Island.

Keywords: Trichoptera, Hydroptilidae, *Hydroptila*, *Oxyethira*, Russian Far East, Khabarovsk, Sakhalin Island.

Introduction

Even though several recent publications have appeared which are devoted to the hydroptilid (Trichoptera: Hydroptilidae) fauna of the Russian Far East, our knowledge of this family remains incomplete. Currently, 24 species of micro-caddisflies in nine genera are known from the region (AREFINA, 1997; AREFINA et al., 2002; MORSE et al., 2001). The hydroptilid fauna of Sakhalin Island is poorly known. Only three taxa, *Palaeagapetus flexus* ITO 1991 (AREFINA 1997), *Agraylea* sp. (VSHIVKOVA and KHOLIN 1997) and *Hydroptila itoi* KOBAYASHI 1977 (AREFINA 2002), have been previously recorded for the island. During the expeditions to the island sponsored by the International Programs Division of the U. S. National Science Foundation and the Institute of Biology and Soil Sciences of Russian Academy of Sciences (IBSS RAS, Vladivostok) in 2001 and 2002 new collections of microcaddisflies were made. In addition, specimens from continental areas in the Khabarovsk Territory were made in 1996 and 2000 during the expeditions of the IBSS RAS. Two hydroptilid species new to science: *Hydroptila spinosa* sp. n. and *Oxyethira tiunovae* sp. n. are described and illustrated. *Oxyethira distinctella* MACLACHLAN, 1880 is recorded for the first time from the Russian Far East. Three species already known from the continental portion of the Russian Far East (*Orthotrichia*

costalis (CURTIS) 1834; *Stactobiella biramosa* MARTYNOV 1929; and, *Stactobia tshistjakovi* AREFINA and MORSE 2002) represent new records for Sakhalin Island.

The purpose of this paper is to report on two new taxa and one new record for the Russian Far East and three new records for Sakhalin Island. Type material is held in alcohol and deposited in the collection of the IBSS RAS. Terminology used in the descriptions follows MARSHALL (1979).

Collection Locations

The Russian Far East consists of ten federal divisions. The Khabarovsk Territory occupies 788,600 square kilometers. Sakhalin Island is in the Sakhalin Region and occupies 87,100 square kilometers. Both of these regions are located in the southern half of the Russian Far East.

Hydroptila spinosa sp. n. (Figs. 1-2)

Type material: Holotype male: Central Sakhalin, middle part of Tym' River, 20 km SW from Yasnoye Village, 1 August 2002 (V. Teslenko). Paratypes: 3 males, same data as holotype; 1 male, South Sakhalin, north shore of Vavaiskoye Lake, near the mouth of Shlyuzovka River, 18 July 2002 (N. Minakawa).

Description: Length of fore wing: male - 2.5-2.7 mm, female - 2.7-3.0 mm. Male antennae - 30-segmented, female antennae - 24-26 segmented. Spur formula: 0.2.4. Sternite VII of male with long and expanded caudally, pointed process. Sternite VI of female with small and acute median process.

Male genitalia (Fig. 1): Segment IX with elongated latero-ventral lobes directed caudad. Tergite X almost transparent, its apical half semi-circular in ventral view, broadened basally. Subgenital plate slightly emarginate, sclerotized apically, surrounded with semi-membranous structure armed with 7-9 rather long, stout spines located marginally. Inferior appendages straight and elongate, directed latero-caudad, shorter than tergum X. Aedeagus straight, slender, paramere (par) broad at base, tapering to curved apex.

Female genitalia (Fig. 2): Segment VIII slightly sclerotized, tapering, with six long and quite stout setae, erected perpendicular to segment and located evenly along distal margin ventrally, and two thin setae dorsally. Segment VIII having undulate transverse groove ventrally. Vaginal apparatus with long posterior branches.

Immature Stages: Unknown.

Diagnosis: This species cannot be placed in any of the existing groups of *Hydroptila* according to MARSHALL (1979). The male of *Hydroptila spinosa* could be recognized by the presence of elongate latero-ventral lobes of segment IX; by complex structure of the subgeni-

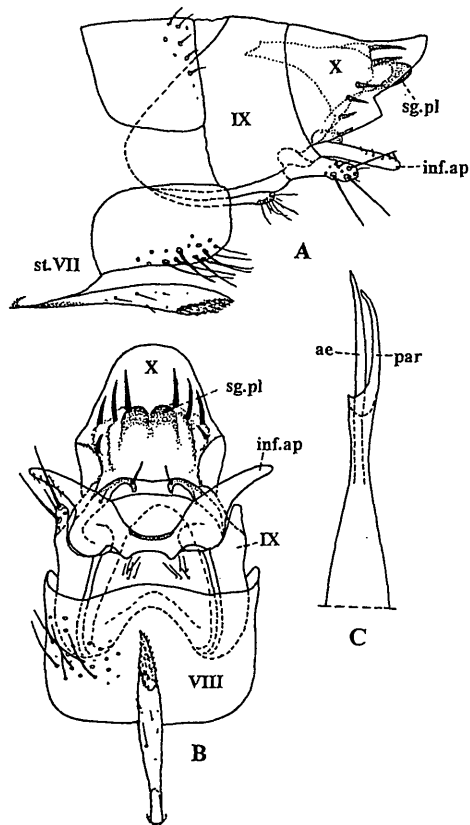


Figure 1. *Hydroptila spinosa* sp. n.: male genitalia in lateral (A) and ventral (B) views; phallus in ventral view (C). Abbreviations: ae - aedeagus, inf.ap - inferior appendages, sg.pl - subgenital plate, st.VII - sternite VII, IX - segment IX, X - tergite X.

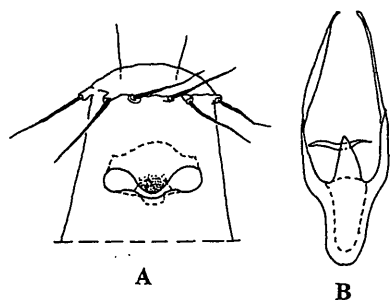


Figure 2. *Hydroptila spinosa* sp. n.: segment VIII of female in ventral view (A); vaginal apparatus in ventral view (B).

tal plate armed with stout spines; by the shape of paramere.

Distribution: Russia (Sakhalin Island).

Etymology: This species is named for the stout spines found on the subgenital plate.

Oxyethira tiunovae sp. n.

Type material: Holotype male: Khabarovsk Territory, Ussuri River Basin, Kiya River at Ekaterinoslavka Village, 26 July 1996 (T. Arefina). Paratypes: 42 males, 110 females, same data as holotype; 5 males, 3 females, South

Sakhalin, north shore of Vavayskoye Lake, near the mouth of Shlyuzovka River, 18 July 2002 (V. Teslenko & N. Minakawa); 1 male, North Sakhalin, Rybnoye Lake near Val Village, 27 August 2002 (N. Minakawa).

Description: Length of fore wing: male - 2.2-2.5 mm, female - 2.5-2.9 mm. Male antennae - 34-38 segmented, female antennae - 23-25 segmented. Spur formula 0.3.4.

Sternite VII of male with short, acute postero-mesal process.

Male genitalia (Fig. 3): Segment VIII nearly as long as high; its anterior margin slightly concave at ventral portion; postero-lateral margin with rounded excision medially; postero-dorsal margin with shallow, rounded excision. Segment IX withdrawn into segment VIII, with ventral portion longer than dorsal one. Subgenital processes projecting as pair of heavy sclerotized bars massive basally and tapering to slender apical half with blunt apex and directed ventro-caudad. Arms of bilobed process directed dorso-laterad, each with terminal seta. Inferior appendages triangular in lateral view, with upturned apex; in ventral view, appendages fused basomesally, with wide rounded excision apically, lateral margins parallel-sided; each setal lobe somewhat triangular, with rounded apex and several terminal setae. Aedeagus with apex capitate, projecting

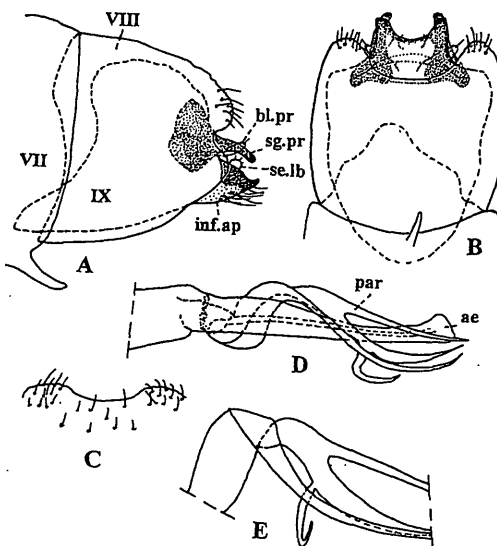


Figure 3. *Oxyethira tiunovae* sp. n.: male genitalia in lateral (A) and ventral (B) views; distal margin of segment VIII in dorsal view (C); phallus in ventral view (D) (holotype); enlarged middle portion of paramere in ventro-lateral view (E) (paratype - Sakhalin, Rybnoye Lake). Abbreviations: ae - aedeagus, bl.pr - bilobed process, inf.ap - inferior appendage, par - parameres, se.lb - setal lobe, sg.pr - subgenital processes, VII - sternite VII, VIII - segment VIII, IX - segment IX.

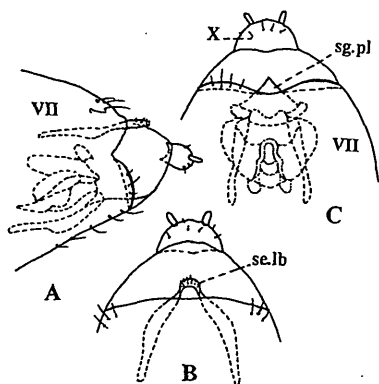


Figure 4. *Oxyethira tiunovae* sp. n.: female genitalia in lateral (A), dorsal (B) and ventral (C) views. Abbreviations: se.lb - setose lobe, sg.pl - subgenital plate, VII - segment VII, X - tergite X.

laterad, without lobes or spines; paramere turning one time around phallus, broad at proximal part, first divided at midlength into two strands wide and narrow, then wide strand divided again into two branches of nearly equal length; one of strands bearing rather long hook-shaped projection angled about 90 degrees.

Female genitalia (Fig. 4): Disto-ventral margin of segment VII with shallow medial excision. Posterior margin of tergite VIII arched band produced as spatulate setose lobe; sternite VIII forming triangular subgenital plate. Tergite X short, semicircular. Vaginal apparatus complex.

Immature Stages: Unknown.

Diagnosis: This species belongs to the *Oxyethira* (*O.*) *flavicornis* Group. Within the group, this species most closely resembles to *O. ecornuta* MORTON, 1893 and *O. flavicornis* PICTET, 1834. The male of *O. sakhalinica* sp. n. differs from the mentioned above species by the shape of the subgenital processes and inferior appendages and also by number of paramere branches. It can be easily recognized by the structure of paramere.

Distribution: Russian Far East (Khabarovsk Territory, Sakhalin).

Etymology: This species is named after Dr. Tatyana M. Tiunova of the Institute of Biology and Soils Science, Far Eastern Branch of the Russian Academy of Science, Vladivostok, Russia.

Remarks: AREFINA et al. (2002, p. 102) treated this new species mistakenly as *O. ecornuta*. However, a closer examination of recently and previously collected specimens revealed consistent differences between males of these two species.

Orthotrichia costalis (CURTIS), 1834

Hydroptila costalis CURTIS, 1834: 218.

Orthotrichia costalis NEBOISS, 1963: 594-595, fig. 4 (male); Arefina et al., 2002: 100-102.

Material examined: 1 ♂, South Sakhalin, Vavayskoye Lake, 18 July 2002 (V. Teslenko).

Distribution: Europe, Russian Far East (Khabarovsk and Primorye Territories, Sakhalin).

Remarks: This species represents a new record for Sakhalin Island.

Oxyethira distinctella MACLACHLAN, 1880

Oxyethira distinctella MACLACHLAN, 1880: 521-522, Pl. 59, figs. 1-2 (male); KELLY, 1982: 141-142, fig. 86 (female).

Material examined: 102 males, 109 females, North Sakhalin, Rybnoye Lake near Val Town, 27-30 July 2002 (N. Minakawa); 5 males, 7 females, North Sakhalin, an unnamed small lake at Val River Basin, 28 July 2002 (N. Minakawa); 33 males, 11 females, Khabarovsk Territory, Tuguro-Chumikansky Region, an unnamed lake at Neran Village, 3 August 2000 (T. Tiunova).

Distribution: Europe, Russian Far East (North of Khabarovsk Territory and North of Sakhalin). Remarks: This species represents a new record for the Russian Far East.

Stactobia tshistjakovi AREFINA et MORSE, 2002

Stactobia tshistjakovi AREFINA et al., 2002: 103-104, figs. 16-18 (male).

Material examined: 3 males, Central Sakhalin, middle part of Tym' River, 20 km SW from Yasnoye Village, 1 August 2002 (V. Teslenko).

Distribution: Russian Far East (Primorye Territory, Sakhalin Island). Remarks: This species represents a new record for Sakhalin Island.

Stactobiella biramosa MARTYNOV, 1929

Stactobiella biramosa MARTYNOV, 1929: 297, figs. 5-6 (male); AREFINA et al., 2002: 104-105, figs. 22-23 (female).

Material examined: 25 males, 2 females, Sakhalin, Lyutoga River, 25 July 2001 (Yu. Marusik); 1 male, Central Sakhalin, middle part of Tym' River, 20 km SW from Yasnoye Village, 1 August 2002 (V. Teslenko).

Distribution: Siberia (Bija River), Russian Far East (Khabarovsk and Primorye Territories, Sakhalin). Remarks: This species represents a new record for Sakhalin Island.

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What do you think ?



The following text was found in *Nota lepidopterologica* 25:202:

Resolution adopted by the General Meeting of the Societas Europaea Lepidopterologica (SEL) at the XIII European Congress of Lepidopterology in Korsør (Denmark) on 4 June 2002:

Lepidopterists are strongly recommended to use species-group names of Lepidoptera established in the form of an adjective or participle in the nominative singular only in their original (gender) form given in the original description, unless the name was fixed otherwise by a subsequent opinion of the International Commission on Zoological Nomenclature. In this respect the gender agreement requirements of Artt. 31.2, 34.2 of the actual (4th edition) of the Code shall be disregarded, and such species-group names of Lepidoptera in the form of an adjective or participle in the nominative singular shall generally be treated as nouns in apposition and must in no case be changed to agree in gender with whichever generic name they are combined (cf. Artt. 31.2.2, 34.2.1).

When naming new species of Lepidoptera, taxonomists shall make sure that the form (epithet) of an adjectival species name either matches the obvious gender of the genus name (cf. Recommendation 30A, 30B) it shall be combined with or follows the example of (the majority of) its congeners.

The President is empowered to take appropriate action so that the afore mentioned general mode of the application of the gender agreement provisions of the Code in the nomenclature of Lepidoptera can be formally accepted by the institutions concerned.

Good for lepidopterists only ? I remember to have found in recent papers "amendments" such as Stenophylax malatestus or Apsilochorema anosoanum...



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