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New European species of *Athyroglossa* Loew, 1860 (Diptera: Ephydridae) from Finland and the Republic of Georgia

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Abstract. *Athyroglossa* (*Athyroglossa*) *fennica* spec. nov. (Finland) and *Athyroglossa* (*Athyroglossa*) *kuraensis* spec. nov. (Georgia) are described. A key to European species of *Athyroglossa* is presented. The male terminalia and sternites 3–5 of all European species are illustrated.

Key words. Ephydridae, *Athyroglossa*, Europe, Finland, Georgia, new species, key.

INTRODUCTION

Ephydridae, also known as shore flies, is a large family of Diptera Acalyptratae with almost exactly 2000 described species worldwide (based on author´s database). To date, about 350 species are recorded from Europe. The morphological diversity of Ephydridae is high and, as a proof of that, 134 genera are currently distinguished. Certainly, the number of known species will significantly increase in the future if more taxonomic research and field work are carried out on this family. Ephydridae are minute to medium sized flies (0.6–11 mm) and their beauty only reveals itself under high magnification. In addition to the morphological diversity, there is also a wide range of larval natural history with some larvae living in extreme habitats like hot springs, geysers or pools of crude oil (Mathis 2010). Most shore fly larvae and adults are typically microphagous on microscopic algae, yeasts and other unicellular forms, but there are predaceous larvae and adults, with some species preying on egg masses of amphibians and spiders (Wirth et al. 1987).

The genus *Athyroglossa* Loew, 1860 belongs to the Gymnomyzinae (Gymnomyzini) and is divided into two subgenera, namely *Athyroglossa* s. str. and *Parathyroglossa* Hendel, 1931. There are 36 species known worldwide with records from the Nearctic (eight species), the Neotropics (11 species), the Palaearctic (12 species), the Oriental (one species) and the Australasian (five species) Regions. In Europe only four species have been recorded so far, and these were reviewed by Mathis & Zatwarnicki (1990). The most recent comprehensive diagnosis of the genus is given by Mathis et al. (2017). All we know about the natural history of *Athyroglossa* was published by Grimaldi & Jaenike (1983) and Krivosheina & Ozerov (1990).

New material of Ephydridae has been collected all over Europe since 2003 by the author, with the aim to prepare identification keys to European species. One of the first genera to be worked out was *Athyroglossa* and surprisingly two undescribed species were discovered. Here these two new species of *Athyroglossa* are described and illustrated, and an identification key for the European species of the genus is provided.

MATERIAL AND METHODS

Terminology follows Cumming & Wood (2017) and genus specific interpretations from Mathis et al. (2017). Numbers of setae refer to one side of the body only. The identification of previously described species was done using Mathis & Zatwarnicki (1990). Nomenclature was checked with the original descriptions. To investigate the male terminalia the abdomen was dissected, macerated for about three hours in an aqueous solution of sodium hydroxide $NaOH_{(aq)}$, neutralized with acetic acid CH_3–COOH and stored together with the specimen in in microvial filled with glycerine $C_3H_5(OH)_3$. Indices are defined in the text below. Labels of holotypes are listed and numbered in the order found, commencing with the uppermost. They are indicated with double quotation marks. Line-breaks on labels are indicated by slashes. If not noted otherwise, all specimens are collected by the author, air dried, pinned on minuten and deposited in the author´s private collection (PJHS, Leer, Germany).

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Fig. 1. Habitus of *Athyroglossa fennica* spec. nov., holotype, ♂.

RESULTS

Athyroglossa (Athyroglossa) fennica spec. nov.
(Figs 1, 3, 9, 15, 21)
urn:lsid:zoobank.org:act:374E3C1C-15A0-4EBC-A79F-B0B14159325B

Type material

Holotype. FINLAND: ♂; (1) „Fl Central Finland / Kolima 3.7 km ese / Pihtipudas / [63,342°N 25,621°E] / 18.vii.2020, leg. Stuke / 2667 [cross written]". – (2) "Holotypus / *Athyroglossa fennica* ♂ / spec. nov. ♂ / Stuke det. 2020". [The specimen is pinned using a minuten and is in excellent condition (Fig. 1). The holotype will be preserved in the collection of the Museum für Naturkunde – Leibniz Institute for Evolution and Biodiversity Science, Berlin, Germany (ZMB).].

Paratypes. FINLAND: 1 ♂, 18.vii.2020, Central Finland, Kolima 3.7 km ESE Pihtipudas [63.342°N 25.621°E], leg. Stuke. – 1 ♂, 18.vii.2020, Central Finland, Kolima 8.1 km ESE Pihtipudas [63,310°N 25,670°E], leg. Stuke.

Description (holotype, ♂)
Body length about 2.2 mm. Wing length = 1.9 mm. Head height = 0.6 mm.

Head black. Gena-eye-ratio (in lateral view genal height measured at the maximum eye height:eye height) = 0.8. Antenna black. First flagellomere strongly light brown dusted. Arista black, with 4–5 dorsal rays, basal rays slightly shorter than height of basal aristomere. Eye brown, all ommatidia about same size, no ommatrichia recorded. Eye height-length-ratio (in lateral view maximum eye height:maximum eye length) = 1.2. Ocelli forming an isosceles triangle. Frons with distinct brown dusting surrounding ocellar tubercle and reaching forward to ptilinal fissure and posterolaterally to the dorsal eye margin. Frontal triangle indistinct, reaching forward to the ptilinal fissure. Frontal triangle polished, interfrontal vitta otherwise polished to very fine longitudinal wrinkled. Facial grooves with indistinct facial carina. Ventral face bulging and stretching ventrally beneath the clypeus. Facial grooves and parafacia silver dusted. Clypeus large, slightly wider than high, shiny, slightly microsculptured. Gena large, polished in upper ¾ and microsculptured in ventral ¼. Anteroventral margin and

posteroventral margin of gena forming an angle of about 65°. Postcranium brown dusted to subshining. Palpus brown, without setae. Proboscis reaching to mouth edge. 1 ocellar seta; 1 postocellar seta about as long as vertical setae; 1 outer and 1 inner vertical seta; no postorbital setae; 1 distinct reclinate and 1 distinct proclinate fronto-orbital-seta; 1 large dorsal, 1 smaller but still distinct seta below and 3 minute facial setae; 1 distinct proclinate genal seta.

Thorax black. Scutum finely microsculptured, scutellum more roughly microsculptured. Scutum and scutellum covered with short, brown, scattered setulae that are not arranged in lines. Scutum medially distinctly dusted, laterally shining. Scutellum subshining to shining. Anepisternum with several setulae. Anepimeron, posterior margin of anepisternum, meron, katatergite, subscutellum and dorsal ⅔ of mediotergite dusted. Other pleurae shining. no acrostichal seta; 0+1 dorsocentral seta; 0 prescutellar seta; 1 intra-alar seta; 0 supra-alar seta; 1 small postpronotal seta; 2 notopleural seta, posterior inserted above level of anterior; 0 postalar seta; 1 subapical+3 indistinct lateral scutellar seta, only subapical seta situated on a small tubercle; 1 small katepisternal seta; 1 small anepisternal seta. Wing membrane slightly brownish infuscated. Veins brown. Wing completely covered with microtrichia. Alula about four times as wide as long. Dark brown setulae at hind margin of alula about twice as long as alula. Costal index I (straight line distance between the apices of R_1 and R_{2+3} [section 2 of costa]:straight line distance between the apices of R_{2+3} and R_{4+5} [section 3 of costa]) = 2.7. Costal index II (straight line distance between the apices of R_{4+5} and R_{2+3} [section 3 of costa]:straight line distance between the apices of Media and R_{4+5} [section 4 of costa]) = 2.1. R_{4+5} vein-ratio (straight line distance along vein R_{4+5} between crossvein r-m and branch of R_{4+5} and R_{2+3} [Section 1 of R_{4+5}]:distance apicad of r-m [section 2 of R_{4+5}]) = 0.1. M vein-ratio (straight line distance along vein M between crossveins dm-cu and r-m [section 1 of M]:distance apicad of dm-cu [section 2 of M]) = 0.6. M vein-ratio (straight line distance along vein M between crossveins dm-cu and r-m:distance apicad of dm-cu) = 0.6. Base and stem of halter brown, knob of halter black. Legs black with tarsi lighter dark brown to yellow. Fore tarsi dark brown, middle and hind tarsi brown. Legs mostly subshining, all tibiae shining on dorsal surfaces. Legs covered with small setulae. Fore femur with conspicuous, slightly longer, regular setulae arranged on posteroventral surface, long setae anteroventrally towards the apex of the middle femur and some regularly arranged posteroventral setulae at the apex of the hind femur. Middle tibia distally with 2 ventral setae. Metatarsus II-tibia II-ratio (length metatarsus 2:length tibia 2) = 0.5. Fore femur distally with 2 inconspicuous posteroventral short spines.

Abdomen black. Tergites laterally reflexed under. Tergites smooth. Tergite 1 completely dusted. Tergites 2+3 broadly dusted in the middle with a small shining hind margin, dusted at the anterior margin and dusted at the extreme lateral margin. Tergite 4 broadly dusted in anterior 2/3 of the middle and at the anterior margin. Tergite 5 completely dusted dorsally. Tergites covered with scattered black setulae. Tergite III-IV-ratio (length tergite 3 medially:length tergite 4 medially) = 0.9. Tergite IV-V-ratio (length tergite 4 medially:length tergite 5 medially) = 2.3.

Description of male postabdomen and sternites based on 1 dissected paratype: Sternites 3–5 as shown in Fig. 3: Sternites 3–4 moderately large, elongated. Sternite 5 divided in two triangular sclerites. A small additional sclerite between sternites 4 and 5. Sternites 3–5 covered with scattered setulae. Epandrium as Figs 9 and 15: hind margin about as long as cercus, without ventral protuberance and therefore hind margin in lateral view almost straight. Epandrium with minute setulae and hind margin behind cerci with 4 strong setae. Cercus elongated, covered with microtrichia and setae. Surstylus as Figs 9 and 15: elongated, base broadened, dorsally concave, ventrally slightly concave, posterodorsally separated from epandrium, anteriorly upcurved and pointed anteromedially. No setulae present on surstylus. Hypandrium as Fig. 21: with a large anteriorly directed appendix that is almost as long as wide and anteriorly hollowed out. Additionally, with a narrow ventrally directed appendix. Postgonite elongated, anteriorly rounded, dorsally almost straight, and ventrally without indentation. Pregonite distinct, slightly shorter than high, dorsally semicircular and ventrally straight.

Variability. The dusting of the frons can cover almost all of the frons. Wing may be almost hyaline. Apical tarsomeres may be black.

Female. Female unknown.

Diagnosis. This species is easily recognised by the combination of black fore tarsi and long postocellar seta. The only other Palearctic *Athyroglossa* with black fore tarsi is *A. flaviventris* (Meigen, 1830), and it has a reduced postocellar seta. Additional characters to separate both species are given in the key below. With the table of the West Palearctic species presented by Mathis & Zatwarnicki (1990) *A. fennica* spec. nov. will key out at couplet 4 with the separation of *A. flaviventris* and *A. glabra* (Meigen, 1830) where a decision to one of the keys alternatives is not possible anymore. In the key to Nearctic species (Wirth 1970), *A. fennica* spec. nov. will be identified as *A. glabra*.

Fig. 2. Habitus of *Athyroglossa kuraensis* spec. nov., holotype, ♂.

Etymology. The Latin female adjective "fennica" describes the known distribution of this new species that is known thus far from central Finland.

Distribution. Although the author visited 128 locations all over Finland to collect Ephydridae and several looked very similar to the locations of *A. fennica*, this new species was only recorded at two adjacent sites in central Finland.

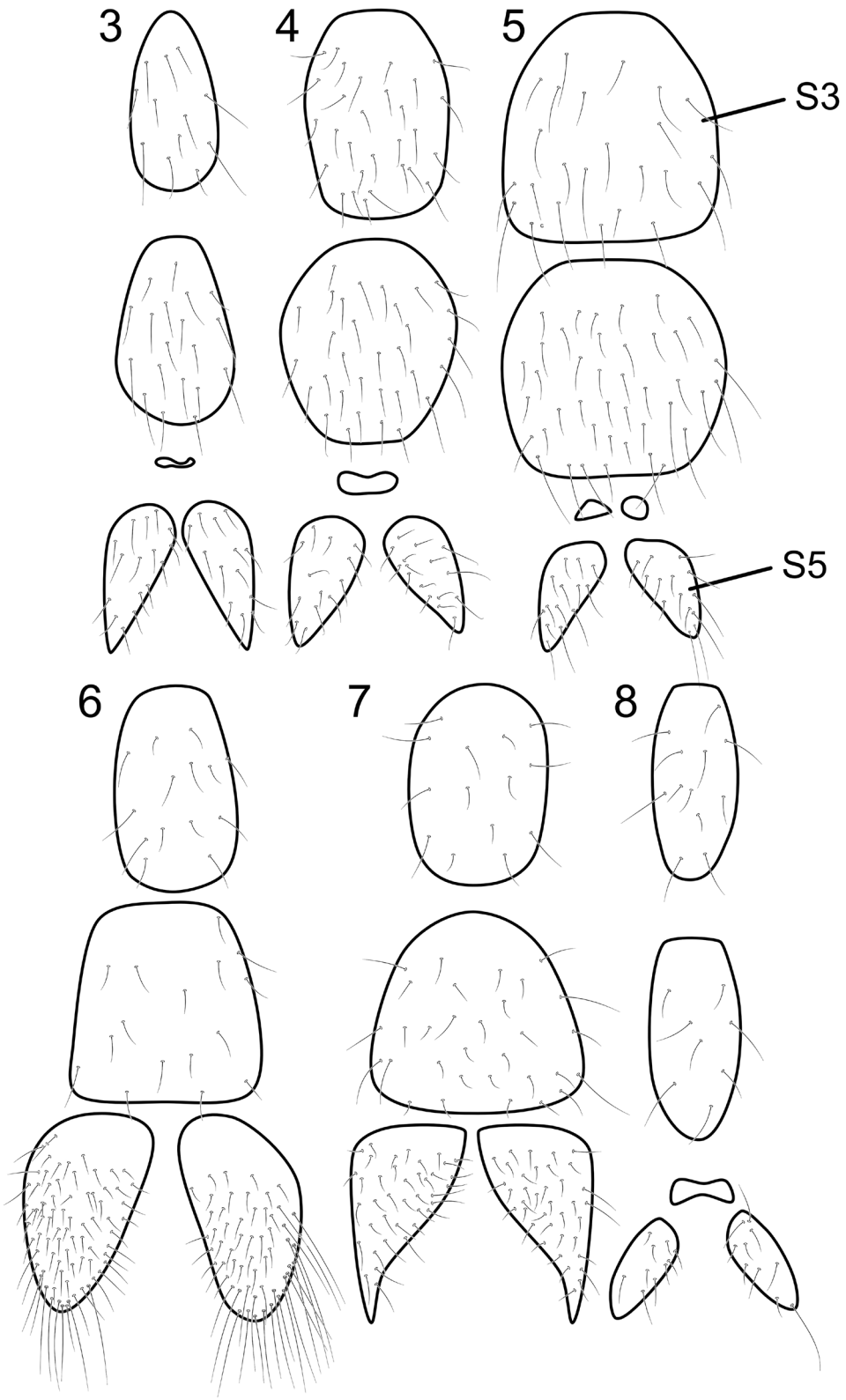
Ecology. All specimens were collected along man-made shores with sparse vegetation of a lake. One locality is a larger harbour, the other one a small area that is used for fishing and bathing. Such localities are the only locations where collecting Ephydridae was successful at large Finnish lakes. At one of the locations *A. glabra* occurred together with *A. fennica* spec. nov.

Athyroglossa (Athyroglossa) kuraensis spec. nov.
(Figs 2, 6, 12, 18, 24)
urn:lsid:zoobank.org:act:30B1D772-4884-464B-B308-86441830440B

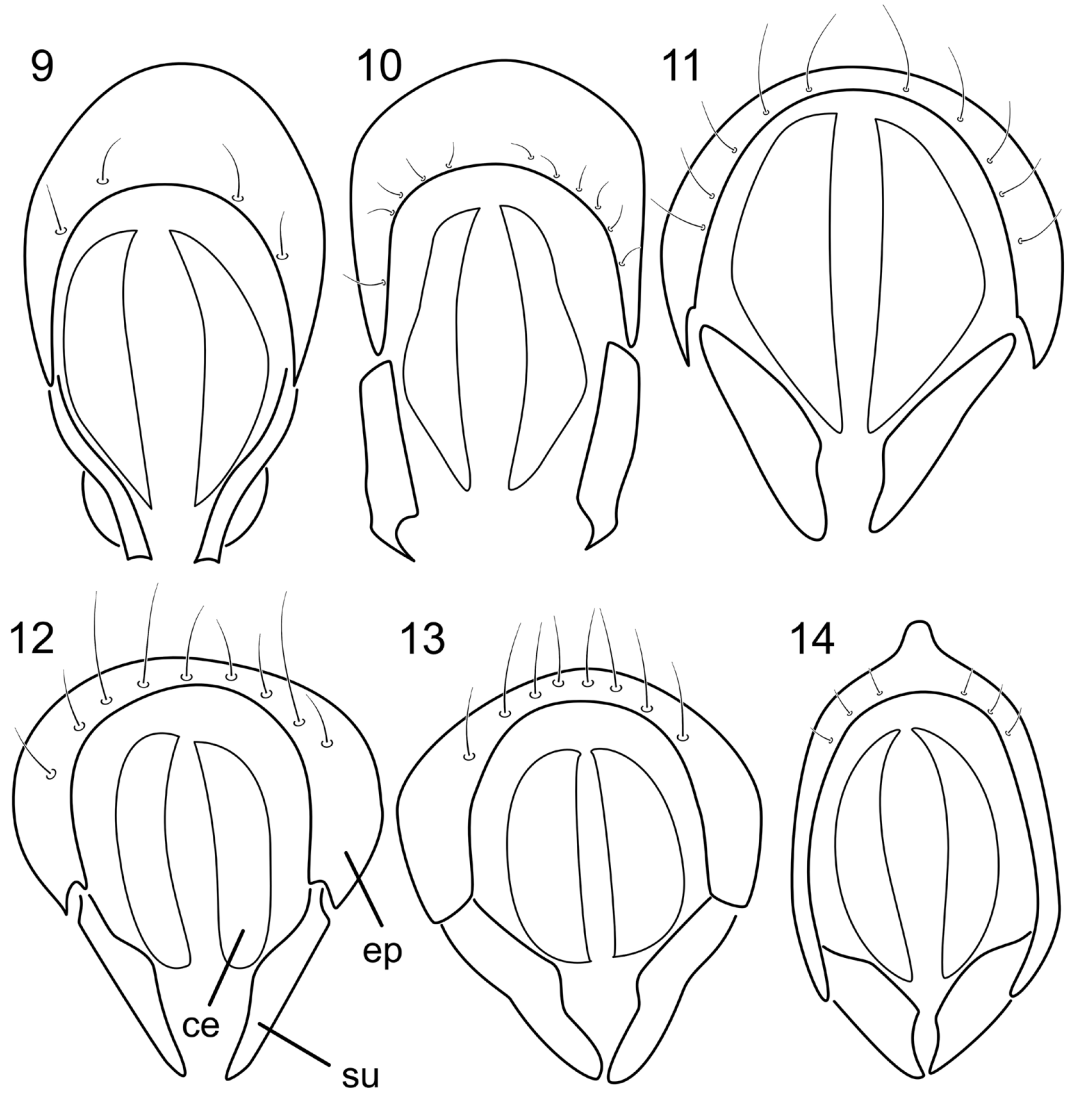
Type material

Holotype. GEORGIA: ♂; (1) "Georgia, Debeda River / n Kirach-Mughanlo / (41,340°N 45,051°E) / 30.06.2019, Stuke leg. / 2459 [cross written]". – (2) "Holotypus / *Athyroglossa kuraensis* ♂ / spec. nov. ♂ / Stuke det. 2020". [The specimen is pinned using a minuten and is in excellent condition (Fig. 2). The holotype will be preserved in the collection of the Museum für Naturkunde – Leibniz Institute for Evolution and Biodiversity Science, Berlin, Germany (ZMB).]

Paratypes. GEORGIA: 4 ♂♂, 1 ♀; 30.vi.2019, Debeda River E of Kirach-Mughanlo [41,334°N 45,068°E]; 4 ♂♂, 2 ♀♀; 30.vi.2019, Debeda River N of Khanji-Gazlo [41,357°N 45,005°E], leg. Stuke. – 7 ♂♂, 3♀♀; 30.vi.2019, Debeda River n Kirach-Mughanlo [41,340°N 45,051°E], leg. Stuke. – 1 ♀; 30.vi.2019, Kura River 1.6 km E of Ilmazo [41,428°N 45,043°E],



Figs 3–8. ♂; sternites 3–5 (ventral view) of European *Athyroglossa*. **3**. *Athyroglossa fennica* spec. nov. **4**. *A. flaviventris* (Meigen, 1830). **5**. *A. glabra* (Meigen, 1830). **6**. *A. kuraensis* spec. nov. **7.** *A. nudiuscula* Loew, 1873. **8**. *A. ordinata* Becker, 1896. Abbreviations: S3 = sternite 3; S = sternite 5.



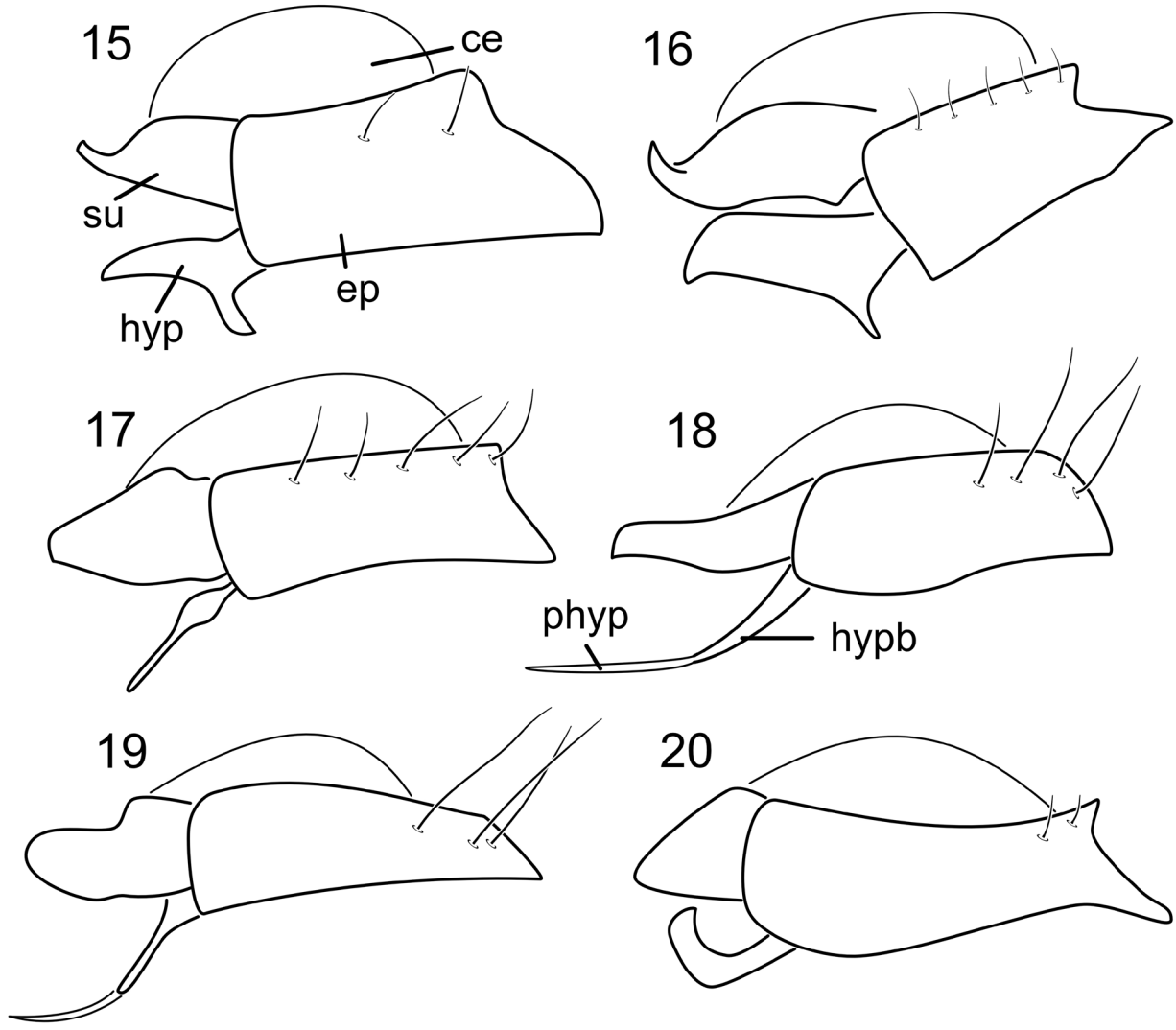
Figs 9–14. Epandrium, surstylus and cercus (dorsal view) of European *Athyroglossa***. 9**. *A. fennica* spec. nov. **10**. *A. flaviventris* (Meigen, 1830). **11**. *A. glabra* (Meigen, 1830). **12**. *A. kuraensis* spec. nov. **13**. *A. nudiuscula* Loew, 1873. **14**. *A. ordinata* Becker, 1896. Abbreviations: ce: cercus, ep: epandrium, su: surstylus.

leg. Stuke. – 1 ♀; 30.vi.2019, Kura River 2.0 km ESE Ilmazo [41,420°N 45,044°E], leg. Stuke.

Description (holotype, ♂)

Body length about 2.3 mm. Wing length = 1.8 mm. Head height = 0.7 mm.

Head black. Gena-eye-ratio (in lateral view genal height measured at the maximum eye height:eye height) = 0.7. Scape black, pedicel and first flagellomere orange brown. First flagellomere strongly white dusted. Arista black, with 9 dorsal rays, basal rays slightly longer than width of basal aristomere. Eye brown, all ommatidia about same size, with minute ommatrichia. Eye height-length-ratio (in lateral view maximum eye height:maximum eye length) = 1.5. Ocelli forming an isosceles triangle. Frons shining. Frontal triangle indistinct, reaching forward to the ptilinal fissure. Frontal triangle polished, interfrontal vitta otherwise fine longitudinal wrinkled. Facial grooves with indistinct facial carina. Ventral face bulging and stretching ventrally beneath the clypeus. Facial grooves and parafacia strongly silver dusted. Clypeus large, slightly wider than high, shiny, slightly microsculptured. Gena large, polished in upper ⅔ and microsculptured in ventral ⅓. Anteroventral margin and posteroventral margin of gena forming an angle of about 65°. Postcranium subshining. Palpus brown, without setae. Proboscis reaching to mouth edge. Chaetotaxy head: 1 ocellar seta; 1 postocellar seta about as long as vertical setae; 1 outer and 1 inner vertical seta; several minute postorbital setae; 1 distinct reclinate fronto-orbital-seta and 2 minute proclinate front-orbital setae; 1 large dorsal

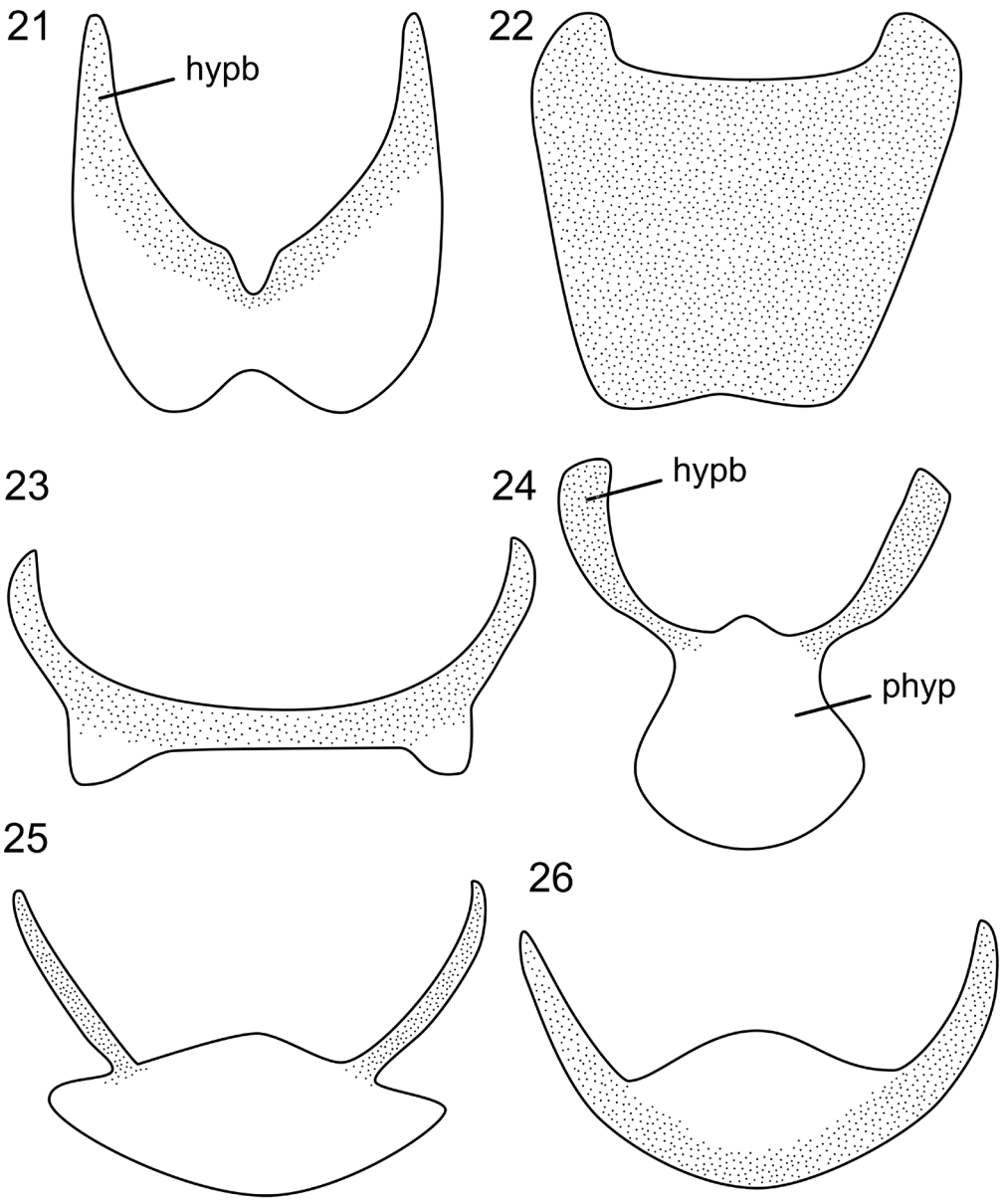


Figs 15–20. Epandrium, surstylus, hypandrium and cercus (lateral view) of European *Athyroglossa***. 15**. *A. fennica* spec. nov. **16**. *A. flaviventris* (Meigen, 1830). **17**. *A. glabra* (Meigen, 1830). **18**. *A. kuraensis* spec. nov. **19**. *A. nudiuscula* Loew, 1873. **20**. *A. ordinata* Becker, 1896. Abbreviations: ce = cercus; ep = epandrium; hyp = hypandrium; hypb = hypandrial bar; phyp = projection of hypandrium; su = surstylus.

and about 8 minute (difficult to see) facial setae; 1 distinct proclinate genal seta.

Thorax black. Scutum finely microsculptured, scutellum more roughly microsculptured. Scutum and scutellum covered with short, brown, scattered setulae that are not arranged in lines. Scutum medially subshining to slightly dusted, laterally shining. Scutellum subshining. Anepisternum with several setulae. Posterior half of anepimeron, meron, katatergite, subscutellum and dorsal half of mediotergite dusted. Other pleurae shining. Chaetotaxy thorax: no acrostichal seta; 0+1 dorsocentral seta; 0 prescutellar seta; 1 intra-alar seta; 0 supra-alar seta; 1 small postpronotal seta; 2 notopleural seta, posterior inserted above level of anterior; 0 postalar seta; 1 subapical+1 lateral scutellar seta, both situated on small tubercles; 1 small katepisternal seta; 1 small anepisternal seta. Wing membrane hyaline, indistinctly darker around dm-cu. Veins white but dm-cu, middle part of R_{2+3}, middle part of R_{4+5} and apex of CuA_1 dark brown. Wing completely covered with microtrichia. Alula about twice as wide as long. Dark brown setulae at hind margin of alula about as long as alula.

Costal index I (straight line distance between the apices of R_1 and R_{2+3} [section 2 of costa]:straight line distance between the apices of R_{2+3} and R_{4+5} [section 3 of costa]) = 3.0. Costal index II (straight line distance between the apices of R_{4+5} and R_{2+3} [section 3 of costa]:straight line distance between the apices of Media and R_{4+5} [section 4 of costa]) = 2.1. R_{4+5} vein-ratio (straight line distance along vein R_{4+5} between crossvein



Figs 21–26. ♂; Hypandrium (ventral view) of European *Athyroglossa*. **21**. *A. fennica* spec. nov. **22**. *A. flaviventris* (Meigen, 1830). **23**. *A. glabra* (Meigen, 1830). **24**. *A. kuraensis* spec. nov. **25**. *A. nudiuscula* Loew, 1873. **26**. *A. ordinata* Becker, 1896. Abbreviations: hypb = hypandrial bars; phyp = projection of hypandrium.

r-m and branch of R_{4+5} and R_{2+3} [Section 1 of R_{4+5}]:distance apicad of r-m [section 2 of R_{4+5}]) = 0.2. M vein-ratio (straight line distance along vein M between crossveins dm-cu and r-m [section 1 of M]:distance apicad of dm-cu [section 2 of M]) = 0.5. Base and stem of halter light brown, knob of halter white. Legs black with apex of fore and hind tibiae yellow and middle tibia yellow. All 3 basal tarsomeres light yellow. Legs partly silver to grey dusted with middle tibia completely dusted. Legs covered with small setulae. Obvious are slightly longer posteroventral setulae on the fore femur. Middle tibia distally with 2 ventral setae. Metatarsus II-tibia II-ratio (length metatarsus 2:length tibia 2) = 0.5. Fore femur distally with 5 inconspicuous posteroventral short spines.

Abdomen black. Tergites laterally reflexed under. Tergites smooth. Tergite 1 completely dusted. Tergites 2 + 3 broadly dusted in the middle. Tergite 4 broadly dusted in anterior 2/3 of the middle, tergite 5 only with a small central macula. Tergites covered with single brown setulae. Tergite III-IV-ratio (length tergite 3 medially:length tergite 4 medially) = 0.8. Tergite IV-V-ratio (length tergite 4 medially:length tergite 5 medially) = 2.2.

Description of male postabdomen and sternites based on 3 dissected paratypes: Sternites 3–5 as shown in

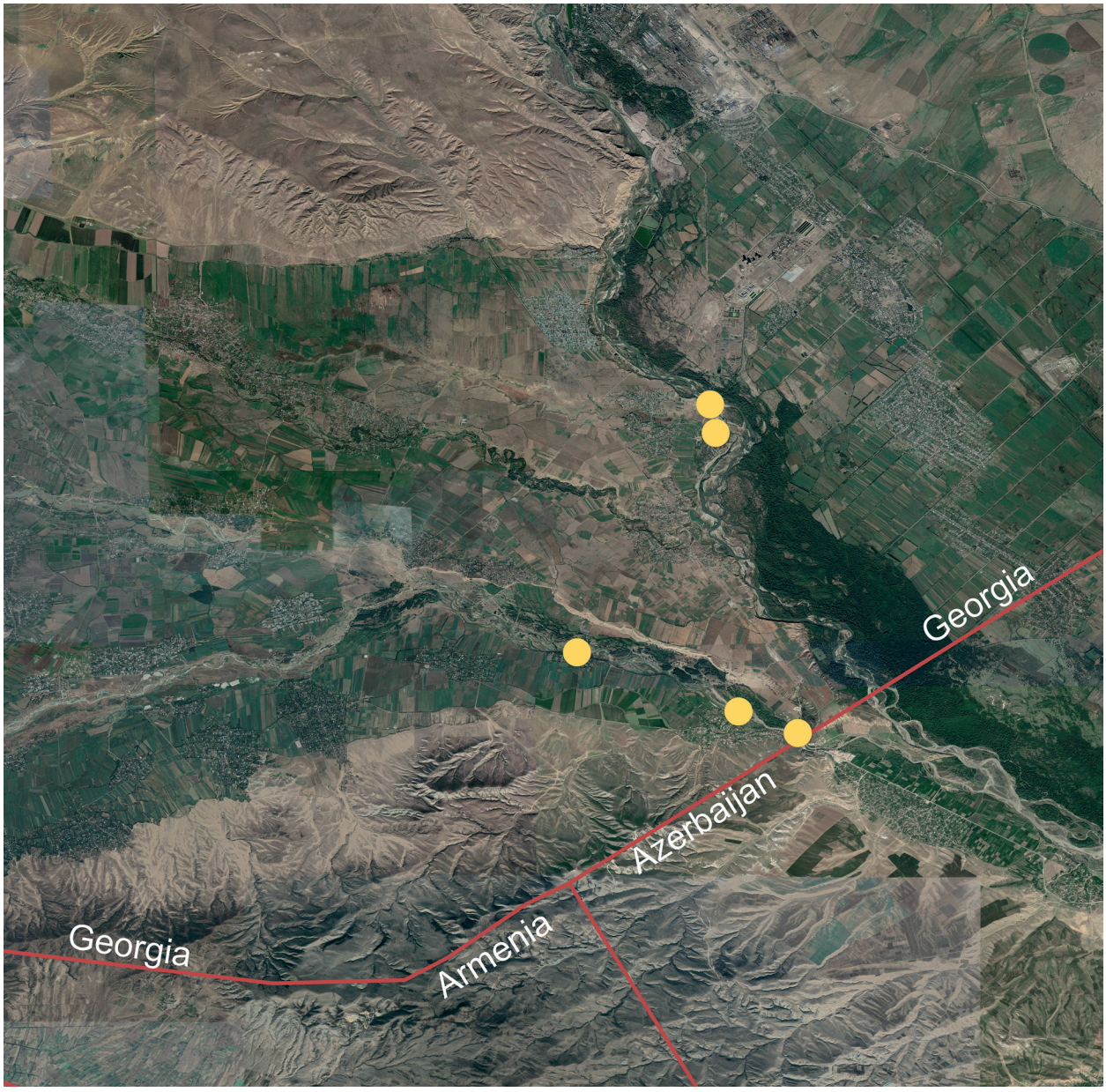


Fig. 27. Records of *Athyroglossa kuraensis* spec. nov.

Fig. 6: Sternite 4 large, almost square, sternite 3 smaller. Sternite 5 divided into 2 large triangular sclerites. No additional sclerite between sternites 4 and 5. Sternites slightly dusted and with scattered setulae. Sternite 5 with obvious long setae on the hind margin. Epandrium as Figs 12, 18: hind margin with 10 strong setae and without ventral protuberance and therefore hind margin in lateral view almost straight. Cercus elongated, covered with microtrichia and setae. Surstylus as Figs 12, 18: elongated, dorsally convex, ventrally concave, posterodorsally fused with epandrium. Surstylus with few minute setulae. Hypandrium as Fig. 24: with a large anteriorly directed appendix that is almost as long as wide. Postgonite elongated, pointed, dorsally almost straight, and ventrally with a subapical indentation. Pregonite distinct, with an almost circular base and a pointed anterior tip.

Variability. The colouration of mid tibia varies between yellow and light brown. The amount of dusting on scutum may be less in older specimens.

Female. Females do not differ from males other than in characters of the postabdomen.

Diagnosis. *Athyroglossa kuraensis* spec. nov. has a reduced postocellar seta, white halteres, dark brown to

black fore and hind tibiae and white basal fore tarsomeres and therewith can be only confused with *A. nudiuscula*. *A. nudiuscula* Loew, 1873 is compared with *A. kuraensis* spec. nov. in the key below. The most obvious diagnostic character of *A. kuraensis* spec. nov. is the slightly dusted scutum and scutellum. With the table of the West Palaearctic species of Mathis & Zatwarnicki (1990) *A. kuraensis* spec. nov. will be identified as non-European *A. argyrata*. Both species share important characters, such as dusting of the scutum and scutellum, white veins at the wing base and antenna that are partly orange. However, *A. argyrata* has a distinctly microsculptured face below the antennal grooves (polished in *A. kuraensis*), light yellow orange hind tibia (brown to black in *A. kuraensis*), dorsally shining middle tibia (completely dusted in *A. kuraensis* spec. nov.) and obviously dusted parafacial and facial ridge (only parafacial partly dusted in *A. kuraensis* spec. nov.).

Etymology. This species is named after the Kura river. The type material originates from the Kura and its tributary, the Debeda river.

Distribution. Although Ephydridae have been collected all over eastern Georgia and suitable habitats with other *Athyroglossa* species have been visited regularly, *A. kuraensis* spec. nov. has only been recorded thus far from a very small area at the border with Azerbaijan (Fig. 27).

Ecology. All specimens of *A. kuraensis* spec. nov. were collected by sweeping at shores of the Debeda or Kura rivers or a nearby gravel pit with little or no vegetation. Sympatric species of *Athyroglossa* recorded at the locations are *A. nudiuscula* and *A. ordinata*. However, *A. kuraensis* spec. nov. was the most numerous species among the collected specimens of *Athyroglossa*.

Key to European species of *Athyroglossa* Loew, 1860

1 Halter whitish; postocellar seta less than half the length of vertical setae; arista with more than seven branches, the longest of these longer than width of basal flagellomere; ♂ sternite 4 distinctly wider than sternite 3, no additional sclerite between sternite 4 and sternite 5 (Figs 6, 7); ♂ terminalia with epandrium almost orbicular, posteriorly without protuberance, and not reaching to tip of cercus (Figs 12–13, 18–19); hypandrium narrow, hypandrial bars anteriorly separated by an area of less strong sclerotisation, and with a distinct anteriorly directed protuberance (Figs 24–25) **2**

– Halter dark brown to black; postocellar seta longer than half the length of vertical setae (exception *flaviventris*); arista with less than seven branches that are often shorter than the width of the first flagellomere; ♂ sternite 4 at most slightly wider than sternite 3; a small additional sclerite between sternite 4 and sternite 5 (Figs 3–5, 8); ♂ terminalia with epandrium elongated or orbicular, sometimes with a posterior protuberance; reaching or not reaching to tip of cercus; hypandrial bars anteriorly fused, and without distinct anteriorly directed protuberance (Figs 9–11, 14–17, 20–23, 26) **3**

2 Scutum shiny; scutellum almost flat, microsculptured, shiny; tergites 3–4 at most dusted at hind margin; middle tibia mainly black, dorsally shiny; veins brown; ♂ sternites 3-5 as Fig. 7: sternite 5 divided into two triangular sclerites with short setae only; ♂ terminalia as Figs 13, 19, 25: anteriorly directed protuberance of hypandrium wider than long ..... ***nudiuscula*** Loew, 1873

– Scutum with broad medial stripe of slight dusting; scutellum smooth, convex and slightly dusted all over; tergite 3 dusted medially over its whole length, tergite 4 dusted medially for more than half of its length; middle tibia mainly orange-yellow to light brown, completely silver dusted; veins in basal half of wing white; ♂ sternites 3–5 as Fig. 6: sternite 5 divided into two ovate sclerites with long apical setae; ♂ terminalia as Figs 12, 18 & 24: anteriorly directed protuberance of hypandrium about as wide as long ..... ***kuraensis*** spec. nov.

3 Setulae on scutum in lines; fore femora without posteroventral stout black setulae; scutellum convex, polished; ♂ sternites 3–5 as Fig. 8: sternites 3–4 elongated; sternite 5 divided into two small elliptic sclerites, distance between these sclerites about as long as maximum width of one sclerite; ♂ terminalia as Figs 14, 20, 26: epandrium elongated, posteriorly with protuberance; almost reaching to tip of cercus; hypandrium with posterodorsally directed protuberance (Figs 14, 20) ... ***ordinata*** Becker, 1896

– Setulae on scutum not arranged in lines; fore femora with posteroventral stout black setulae; scutellum flat, distinctly microsculptured; ♂ at least sternite 4 broader, sternite 5 divided into two larger sclerites, distance between these sclerites less than maximum width of one sclerite (Figs 3–5); epandrium less elongated, posteriorly without protuberance, not reaching to tip of cercus (Figs 9–11, 15–17); hypandrium without posteriorly directed protuberance (Figs 21–23) **4**

4 Postocellar seta minute, about as long as diameter of ocellus; pedicel and base of basal flagellomere orange; fore tarsi dark brown to black; frons shining; parafacia silver dusted right next to antennal groove; tergite 4 shiny, only narrowly dusted at fore margin; ♂ sternites 3–5 as Fig. 4: sternite 4 large, broader than sternite 3; ♂ terminalia as Figs 10, 16, 22: hypandrium a large sclerotised plate without

distinct hypandrial bars; surstylus distally pointed and curved upwards .....***flaviventris*** (Meigen, 1830)

– Postocellar seta as long as vertical setae; at least pedicel black; fore tarsi dark brown to black or yellow; frons shining or partly dusted; parafacia at eye margin completely shining or silver dusted up to ventral eye margin; tergite 4 can be more dusted; ♂ sternite 4 about as broad as sternite 3; hypandrium smaller and with distinct hypandrial bars (Figs 21, 23); surstylus distally not curved upwards (Figs 9, 11, 15, 17) **5**

5 Basal two tarsomeres of all legs yellow white; parafacia completely shining; frons completely shining, might be subshining in some specimens; scutum shining; tergite 4 shining, only narrowly dusted at fore margin; ♂ sternites 3–5 as Fig. 5: sternites 3–4 large, about as broad as wide and broader than sternite 5; ♂ terminalia as Figs 11, 17, 23: epandrium in front of cerci narrow; surstylus straight, apically rounded; hypandrium narrow and with small lateral evaginations ....***glabra*** (Meigen, 1830)

– All fore tarsomeres black or dark brown, all other tarsi at least partly black; parafacia dusted along anteroventral eye margin; frons partly dusted; scutum at least dusted in the centre; tergite 4 dusted for more than half of its length in the middle; ♂ sternites 3–5 as Fig. 3: sternites 3–4 narrow, distinctly narrower than long and narrower than sternite 5; ♂ terminalia as Figs 9, 15, 21: epandrium in front of cerci broad; surstylus slightly s-shaped, apically straight; hypandrium broad and apically obviously indented ***fennica*** spec. nov.

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