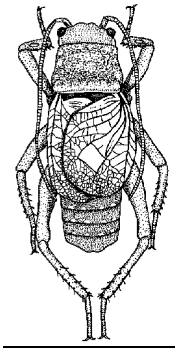

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REVIEW OF THE SHORE-FLY GENUS *LIMNELLIA* MALLOCH, 1925 (DIPTERA, EPHYDRIDAE) OF RUSSIA

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Materials of the genus *Limnellia* Malloch, 1925 of Russia are revised. Two species of the genus, *L. quadrata* (Fallén, 1813) and *L. stenhammari* (Zetterstedt, 1846), have been previously registered from Russia. The new species *Limnellia zlobini* **sp. n.** is described from Primorskii krai. The new species differs from the congeners by the position of two small black spots in the centre of cell R_5 of the wing and by the form of surstylus. The key to species of Russia is given.

KEY WORDS: Diptera, Ephydridae, *Limnellia*, new species, key, Russia.

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Ревизованы материалы по мухам-береговушкам рода *Limnellia* Malloch, 1925 России. Ранее на территории России было зарегистрировано 2 вида этого рода: *L. quadrata* (Fallén, 1813) и *L. stenhammari* (Zetterstedt, 1846). Из Приморского края описывается новый для науки вид – *L. zlobini* **sp. n.** Новый вид отличается от ранее известных наличием двух темных пятен в центре ячейки R_5 крыла и формой сурстилей. Составлена определительная таблица видов рода *Limnellia* фауны России.

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INTRODUCTION

The genus *Limnellia* Malloch, 1925 is worldwide in distribution, with species occurring in all major regions. The genus contains 20 species, 11 of which are known for Nearctic region, five – for Palearctic, by one species for Neotropic and Australasian, and three species – for Afrotropical region. Fauna of Palaearctic region involves five described species, two of which – *Limnellia quadrata* (Fallén, 1813) and *Limnellia stenhammari* (Zetterstedt, 1846) were registered in Russia. The revision of the materials collected by Dr. V.V. Zlobin in the Russian Far East allowed us to recognize one new species. The types of the new species are kept in the collection of Zoological Institute, St.-Petersburg.

TAXONOMY

Genus *Limnellia* Malloch, 1925

Limnellia Malloch, 1925: 331.

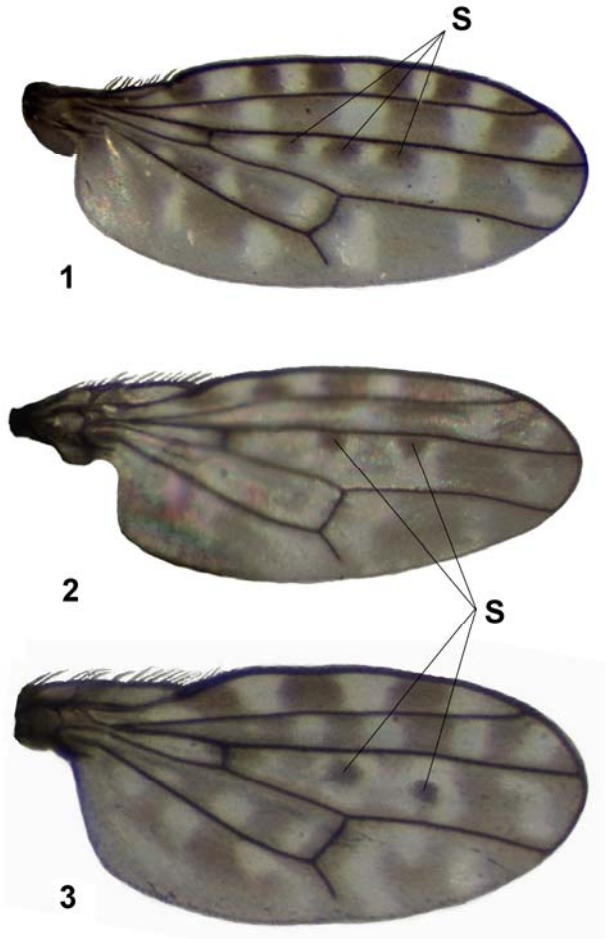
Type species: *Limnellia maculipennis* Malloch, by original designation.

DIAGNOSIS. The genus *Limnellia* Malloch is one of the well known and easily determined groups of the family Ephydridae. The representatives of the genus are characterized by face moderately projecting with 6 downwardly directed setae, by one pair of well developed lateroclinate fronto-orbital setae, by gena narrow, by scutum with grey-brown pattern, by wings with costal vein reaching M_{1+2}, maculate, with transparent and black spots, by abdomen shining black, by surstyli like well developed and unfused processes at ventral margin of epandrium, and by neohypandrium present and connected postero-laterally to gonites.

COMPOSITION. Twenty species. Palaearctic species were revised by Andersson (1971) and Nearctic – by Mathis (1978). Since then one species was described from Brazil (Mathis, 1980), one – from USA (Mathis, Zack, 1980), and one from Palaearctic region (Hollmann-Schirrmacher & Zatwarnicki, 1995). Two species are known from Australasian/Oceanian region (Mathis et al., 2004). There are three species in Russia, one of them is described herein.

Key to Russian species of *Limnellia*

1. Wings with 3 small black distinct spots in cell R_5 (Fig. 1) ……
……. ***Limnellia stenhammari***
– Wings with 2 small black distinct spots in cell R_5 ……..…..…….. 2
2. Each of the two small black spots of cell R_5 adjoins vein R_{4+5} closely (Fig. 2).
Tarsi black or yellowish, apical tarsomere darkened …..….. ***Limnellia quadrata***
– Each of the two small black spots of cell R_5 not adjoining vein R_{4+5} and are posited in the centre of the cell (Fig. 3). Tarsi black ….. ***Limnellia zlobini* sp. n.**



Figs 1-3. Wings of *Limnellia* spp.: 1 – *L. stenhammari*; 2 – *L. quadrata*; 3 – *L. zlobini* sp. n.; (S – spots).

***Limnellia stenhammari* (Zetterstedt, 1846)**
Figs 1, 5

Ephydra stenhammari Zetterstedt, 1846: 1842.

MATERIAL. **Russia**: Leningradskaya oblast: Agalatovo, 1.X 1961, 1♀, (A. Stackelberg), Luzhskii District, Gobzhitzy, 16. VII 1934, 1♂, (A. Stackelberg); Moscovskaya oblast: Golitzyno, 12.V 1979, 1♀ (A. Shatalkin); Bitza, 2.VIII 1936, 1♂, (B.Rohdendorf); Karachaevo-Cherkesskaya Republic (Caucasus): Teberdinskii Reserve, 26.VI 1968, 1♂ (K. Gorodkov); Yamalo-Nenetzkii AO: Salekhard [=Obdorsk,

Tobolsk], tundra, 18.VI 1925, 5♀, 5♂ (A. Fridolin); Yakutia: Abyi, road to Amga River, 22.VII 1925, 2♀ (V. Bianki); Lena River, Derbinskaya, 15.X 1926, 1♂, Jakutsk expedition of Academy of Sciences (V. Bianki); Kamchatka, Kluchevskoe, 22.V 1909, 1♂ (A. Derzavin); Amurskaya oblast, 8♀, 6♂: Zeja, 1.VII 1982 (V. Zlobin), 9.VII 1982 (A. Ozerov), 29.VI 1982 (M. Krivosheina), 5.VII 1978 (A. Shatalkin), Korsakovo, 100 km W Svobodny, 20.IX 1958 (A.Zinoviev); Primorskii krai: 40 km SO Ussurijsk, 14.VII-20.VIII 1983, 9♀, 1♂ (A. Ozerov), Ussuriiskii Reserve (=Suputinskii Preserve), 20.VII 1969, 1♂ (M. Kandybina). **Kazakhstan**: Karagandinskaya oblast, Karkaralinsk, Kent Mts, 1200 m, 23.VII 1957, 1♀ (E. Nartshuk).

DIAGNOSIS. Specimens of *L.stenhammari* are easily distinguished from the congeners by the following characters: wing with 3 distinct small dark spots in cell R_5, adjoining vein R_{4+5}; face with setulose zone unicolorous, brownish, upper face greyish; all tarsal segments black; halter brownish to black.

DESCRIPTION. Small flies, body length 1.5-2.3 mm.

Head: antennae brown-black, palpus dark, gena grey; face brown in setulose zone and greyish above it; frons brown with 2 grey round postantennal and occipital spots and narrow stripe contacting brown orbita; gena narrow, eye-to-cheek ratio about 6:1.

Thorax: scutum with 2 grey spots at base, humerals grey, 5 thin grey stripes, only the central one reaching scutellum; scutellum brown or with greyish central stripe; legs unicolorously brown-black; wing maculation as on Fig. 1; halter brownish to black; katepistrenum and anepisternum brownish pollen.

Abdomen: shining black; male genitalia as follows: epandrium a little longer than wide, truncate ventrally; surstyli not fused together, not fused with ventral margin of epandrium; well separated, subrectangular (Fig. 5); aedeagus of irregular form; aedeagal apodeme slender, gonites relatively narrow, a little curved (Andersson, 1971).

NOTES. H. Andersson (1971) wrote about yellow coloration of palpus in this species. We examined many specimens but all of them had dark brown or black coloration of this structure.

DISTRIBUTION. The species is widely distributed in Holarctic region.

***Limnellia quadrata* (Fallén 1813)**

Figs 2, 6

Notiphila quadrata Fallén, 1813: 255.

MATERIAL: **Russia**: Moskovskaya oblast: Naro-Fominsk, 23.III 2008, 1♂ (D. Gavryushin); Krasnodarskii krai: Sochi, near Estosadka, Psehako Mt, 43°41'28 N, 40°22' E, subalpine zone, 1♀ (K.Tomkovich). **Turkey**: Side, sand dunes, 19.II 2008, 1♂ (N.Vikhrev). **Great Britain**: Oxford, 5.IX 1998, 1♂ (M. Krivosheina).

DIAGNOSIS. Specimens of *L. quadrata* are easily distinguished from the congeners by the following characters: wing with 2 distinct small dark spots in cell R_5, adjoining vein R_{4+5}, tarsal segments sometimes yellowish; halter black.

DESCRIPTION. Small flies, body length 1.5-2.3 mm.

Head: antennae black, palpus dark, gena grey; face grey; frons brown with 2 grey triangular postantennal spots and 2 occipital spots; gena narrow, eye-to-cheek ratio about 6:1.

Thorax: scutum with 2 grey spots at base, humerals grey, 5 thin grey stripes, only the central one reaching scutellum; scutellum brown, with grey central stripe; legs unicolorously brown-black or with tarsi sometimes yellowish; wing (Fig. 2) with 2 small black distinct spot in cell R_5 each closely appressed against vein R_{4+5}; halter brownish to black; katepistrenum and anepisternum brownish pollen.

Abdomen: shining black; male genitalia as follows: epandrium subrectangular, little longer than wide, significantly narrowed ventrally; surstyli not fused together, not fused with ventral margin of epandrium, well separated, long-oval (Fig. 6).

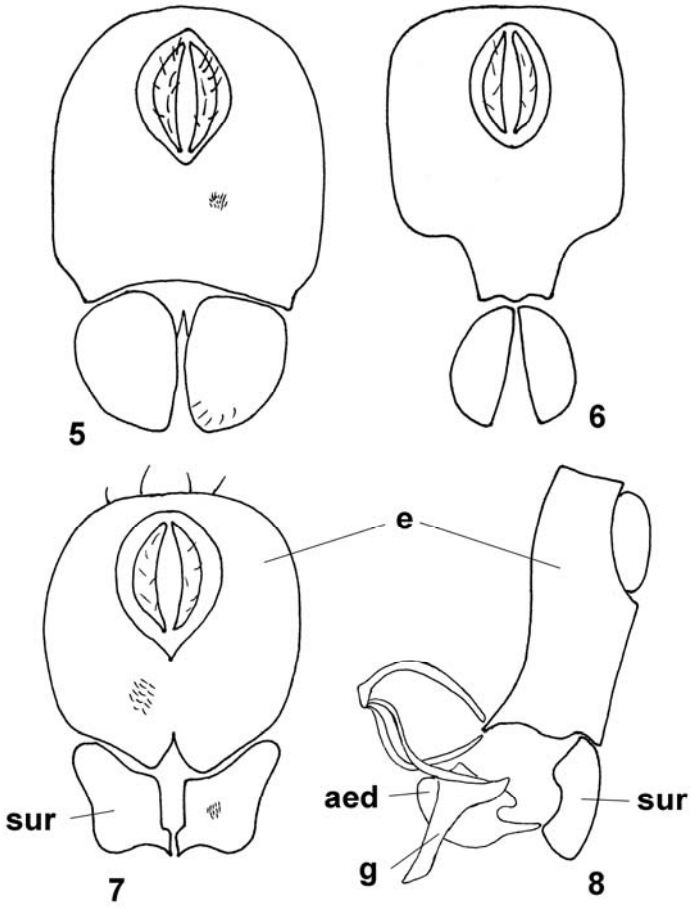
DISRTIBUTION. The species is widely distributed in Europe and known from European part of Russia and Russian Far East.

Fig. 4. *Limnellia zlobini* sp. n., female, paratype, lateral view.

***Limnellia zlobini* Krivosheina sp. n.**
Figs 3, 4, 7, 8

MATERIAL. Holotype – ♀, **Russia**: Primorskii krai, Anisimovka, 17.VII 2004 (V.V.Zlobin). Paratype: 1 ♂, the same date and label.

DIAGNOSIS. Specimens of *L. zlobini* are easily distinguished from the Palaearctic congeners by the following characters: wing with 2 distinct small dark spots in the centre of cell R_5, not adjoining vein R_{4+5}, face black with grey-brownish pubescence, ventral margin of face grey; all tarsal segments black; halter yellow-brownish (Fig. 4).



Figs 5-8. Epandrium and surstyli of *Limnellia* spp.: 5 – *L. stenhammari*, dorsal view; 6 – *L. quadrata*, dorsal view; 7, 8 – *L. zlobini* sp. n.: 7 – dorsal view; 8 – lateral view; (aed – aedeagus; e – epandrium; g – gonite; sur – surstylus).

DESCRIPTION. Small flies, body length about 2.5 mm.

Head: antennae black, palpus dark, gena grey; face brown with narrow grey ventral marginal stripe; frons brown with golden pollen, 2 greyish round post-antennal spots and 2 occipital spots; gena very narrow, eye-to-cheek ratio about 8:1.

Thorax: scutum, besides narrow central stripe, with 4 narrow presutural stripes, with 1 grey spot between each pair of lateral stripes; with 2 short narrow postsutural stripes and 2 round spots; scutellum brown; legs unicolorously black; wing with 2 distinct small dark spots in the centre of cell R_5, not adjoining vein R_{4+5}, wing maculation as on Fig. 3; halter yellow-brownish; katepistrenum and anepisternum brownish pollen with lower part shining black.

Abdomen: shining black; male genitalia as follows: epandrium oval, a little longer than wide, split ventrally; surstyli not fused together, not fused with ventral margin of epandrium, well separated, of irregular form (Fig. 7); aedeagus round ventrally with dorsal depression; aedeagal apodeme slender, gonites straight narrowed apically.

DISTRIBUTION. Russia: Primorskii krai.

ETYMOLOGY. The new species is named in memory of its collector – Russian dipterologist Dr. Vladimir V. Zlobin.

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