

Review of Palaearctic species of the *Dolichopus sagittarius* group Loew, 1848 (Diptera: Dolichopodidae), with description of a new species from Kazakhstan

Обзор палеарктических видов группы *Dolichopus sagittarius* Loew, 1848 (Diptera: Dolichopodidae) с описанием нового вида из Казахстана

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Key words: Diptera, Dolichopodidae, *Dolichopus*, new species, lectotype, Kazakhstan.

Ключевые слова: Diptera, Dolichopodidae, *Dolichopus*, новый вид, лектотип, Казахстан.

Abstract. Type specimen of *Dolichopus sagittarius* Loew, 1848, *D. reichardti* Stackelberg, 1930, *D. grunini* Smirnov, 1948 and *D. portentosus* Negrobov, 1973 are examined and male genitalia are illustrated for the first time. The lectotype is designated for *D. reichardti*. A new species *D. skifiensis* Negrobov, Selivanova et Maslova, **sp. n.** from mountain areas of Southern Kazakhstan is described. A new key species of this group is compiled.

Резюме. Изучены типовые экземпляры *Dolichopus sagittarius* Loew, 1848, *D. reichardti* Stackelberg, 1930, *D. grunini* Smirnov, 1948 and *D. portentosus* Negrobov, 1973, впервые приведены изображения их гипопигиев. Обозначен лектотип *D. reichardti*. Описан новый вид *D. skifiensis* Negrobov, Selivanova et Maslova, **sp. n.** из горных районов Казахстана. Составлена новая определительная таблица видов этой группы.

The genus *Dolichopus* is the largest genus of Dolichopodidae with more than 600 species worldwide. The last key to Palaearctic species was published by Negrobov et al. [2005].

Species of the *Dolichopus sagittarius* group share the following characters distinguishing them from other species of this genus: 4th and 5th segments of fore tarsus are compressed laterally and broadened, 4th segment of fore tarsus is trapezoidal, 5th segment of fore tarsus has a deep incision and asymmetrical lobes having different lengths.

This study is based on collections of Zoological institute of Russian Academy of Sciences, St. Petersburg, Russia (ZIN), Zoological Museum of Moscow State University, Moscow, Russia (ZMMU), Zoologisches Museum, Museum für Naturkunde der Humboldt-Universität zu Berlin, Berlin, Germany (ZMHB) and Department of ecology and taxonomy of invertebrate animals of Voronezh State University, Voronezh, Russia (VSU).

Dolichopus sagittarius Loew, 1848

(Fig. 1, 6, 9, 10)

Dolichopus sagittarius was described from Siberia [Loew, 1848]. We examined the holotype of this species which is deposited in H. Loew's Collection (ZMHB).

Material examined. Holotype, ♂, Siberia (leg. Sedakov), № 11266 (ZMHB).

Dolichopus cognobilis Parent, 1926 is considered as a synonym of *D. sagittarius* that requires conformation because *D. cognobilis* was described after female only from Mongolia [Parent, 1926].

Distribution. This species is known from Mongolia [Stackelberg, 1930], Russia (Magadan Region, Yakutia), China and North America.

Dolichopus reichardti Stackelberg, 1930

(Fig. 2, 11, 12)

Material examined. Lectotype (here designed), ♂, labelled: Kirghizia, Ost-Pamir, Bergkette Sary-kol Ostlich des Sees Kara-kul Lake, 13.07.1928 (Reichardt) (ZIN). Paralectotypes: 1♂, 2♀, same data as in holotype (ZIN).

Additional material examined. In the collection of ZIN there are 2♂ and 2♀ taken from the same locality as the lectotype which were not mentioned by A.A. Stackelberg among syntypes.

Distribution. The species is known from mountains of the Pamir and is also noted from China.

Dolichopus grunini Smirnov, 1948

(Fig. 13)

Material examined. Lectotype, ♂, labelled: Bright Glade, on the river Takema, Sihote-Alin, 2.07.1937 (Primorye, Russia), K.Ya. Grunin (ZMMU). Paralectotype: ♂, same data as in holotype (ZMMU) (designation of lectotype by Negrobov et al. [2012]).

Remarks. Smirnov [1948] described this species from four males collected in the Russian Far East. However, we could find only two syntypes that are quite in poor condition.

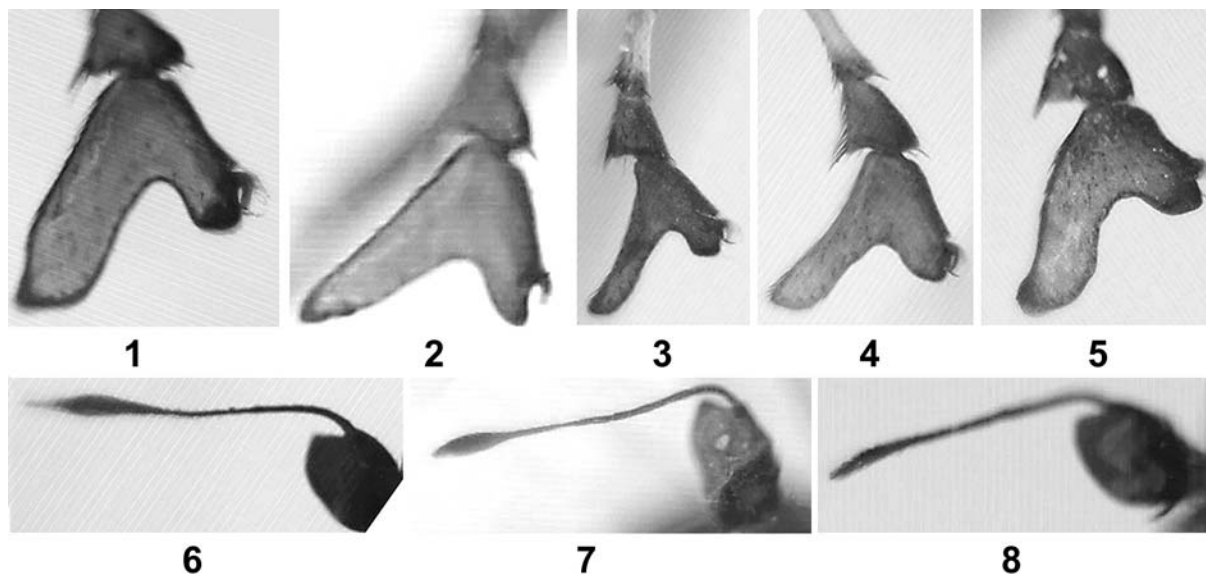


Fig. 1–8. Species of the genus *Dolichopus*, details of structure (1–5 – 4th and 5th tarsomeres of fore tarsi; 6–8 – postpedicel).

Рис. 1–8. Виды рода *Dolichopus*, детали строения (1–5 – 4-й и 5-й членики передних лапок; 6–8 – 3-й членик усиков).

1, 6 – *Dolichopus sagittarius*; 2 – *Dolichopus reichardtii*; 3, 7 – *Dolichopus portentosus*; 4, 8 – *Dolichopus skifiensis*; 5 – *Dolichopus vadimi*.

Distribution. Known from Russia (Primorskiy Province and China).

Dolichopus portentosus Negrobov, 1973
(Fig. 3, 7, 14)

Dolichopus portentosus Negrobov, 1973: 132. Type locality: Baikal Sayan.

Material examined. The species was described from shore of Baykal Lake and Sayans Mountains in West Siberia (Russia) [Negrobov, 1973]. Type material is deposited in ZIN, but one paratype is housed in the collection of VSU.

Distribution. Known only from the Asiatic part of Russia including Buryatia and Magadan Province [Negrobov, Chalaya, 1991].

Dolichopus hejingensis Yang, 1998

Remarks. The species was described after a single specimen collected from Northwest China [Yang, 1998].

Dolichopus vadimi Negrobov, Selivanova et Maslova, 2012
(Fig. 5, 16)

Type material. Holotype, ♂, labelled: Russia, Sakhalin, 29 km SW of Yuzhno-Sakhalinsk, environs of Urozhaynoe, 13.07.1982, Shamshev (ZIN).

Dolichopus skifiensis Negrobov, Selivanova et Maslova **sp. n.**
(Fig. 4, 8, 15)

Material. Holotype, ♂, labelled: Kazakhstan, environs of Turgen, 60 km of Alma-Ata, near stream, higher 2000 m, 12.07.1969, Gorodkov. Paratypes: 1♂, same data as in holotype; 1♂, Kazakhstan, Northern Tien Shan, Alma-Atinskiy Nature Reserve, valley of Scythians, on clayed land near semidried lake, 19.07.1978, Grichanov (holotype and 1 paratype in ZIN, 1 paratype in VSU).

Diagnosis. Face yellow-grey, antenna black, scape yellow from below, postocular bristles pale-yellow, arista not broadened on apex, legs with coxae largely black, fore tarsomeres 3–5 compressed laterally, tarsomere 3 slightly broadened apically, tarsomere 4 short, trapezoidal and very

broadened, tarsomere 5 broad, with deep apical excision and asymmetrical projections, costal vein with long oval thickening near apex of subcostal vein.

Description. Male. Length: body 5.8–6 mm, wing 5.9–6 mm. Face yellow-grey, dull, without setulae, not reaching lower margin of eye, on middle slightly wider than postpedicel (1.3 : 1). Proboscis dark-brown. Palpus yellow, with black hair-like setulae, finely silvery-white pollinose. Frons dark green with bronze tinge, shining but pollinose along margins. Antenna black, scape yellow from below. Postpedicel reniform, pointed apically, slightly longer than wide. Arista inserted on middle of dorsal surface of postpedicel, not broadened on apex. Postpedicel length : postpedicel width : arista length – 1.2 : 1 : 3.9. Postocular bristles pale-yellow on lower part.

Thorax green with bronze tinge. Mesonotum metallic green with bronze tinge, pleura grey pollinose. Proepisternum below with 1 strong black seta and 2 groups of short pale hairs.

Legs with coxae largely black, with black setae, narrowly yellow apically; otherwise largely yellow, fore tarsomeres 1–3 apically and entire fore tarsomeres 4–5, mid basitarsus apically and entire mid tarsomeres 2–5, hind tibia apically and entire hind tarsus dark, pulvillus white. Femora without long ventral bristles. Fore tibia without long apicoventral seta, with 3–4 anterodorsal and 3–4 posteroventral bristles. Fore tarsomeres 3–5 compressed laterally, tarsomere 3 slightly broadened apically, tarsomere 4 short, trapezoidal and very broadened, tarsomere 5 broad, with deep apical excision and asymmetrical projections (dorsal projection nearly twice as large as ventral projection). Length of fore tibia : lengths of fore tarsomeres (from 1st to 5th) – 7.4 : 4.2 : 1.7 : 1.4 : 1 : 2.5. Mid and hind femora with 1 strong preapical seta. Mid tibia with 5–8 anterodorsal, 2–3 posterodorsal, 2–3 anteroventral and 1 posteroventral setae. Mid basitarsus with 1 strong dorsal and several smaller bristles. Length of mid tibia : lengths of mid tarsomeres (from 1st to 5th) – 10 : 6.5 : 2.9 : 1.9 : 1.4 : 1.2. Hind tibia curved and thickened (especially on basal third), with space lacking setulae on inner side in basal and with long white dorsal oblique chink apically (tibial organ), bearing 6–7 anterodorsal, 5 posterodorsal, 1 strong anteroventral and row of short ventral bristles. Hind basitarsus with 3 strong anterodorsal, 3 dorsal and row of short ventral bristles. Length of mid tibia : lengths of mid tarsomeres (from 1st to 5th) – 11 : 6.4 : 4.4 : 2.7 : 1.8 : 1.3.

Wings scarcely infuscate. Costal vein with long oval thickening

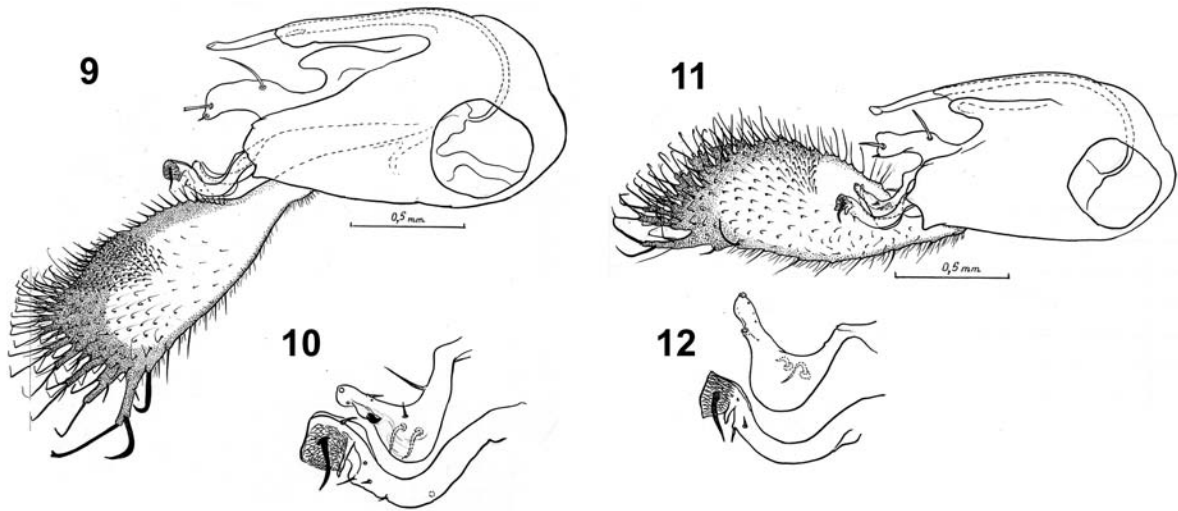


Fig. 9–12. *Dolichopus sagittarius* (9, 10) and *Dolichopus reichardtii* (11, 12), details of structure.

9, 11 – hypopygium, lateral view; 10, 12 – surstylus.

Рис. 9–12. *Dolichopus sagittarius* (9, 10) и *Dolichopus reichardtii* (11, 12), детали строения.

9, 11 – гипопигий, латерально; 10, 12 – сурстили.

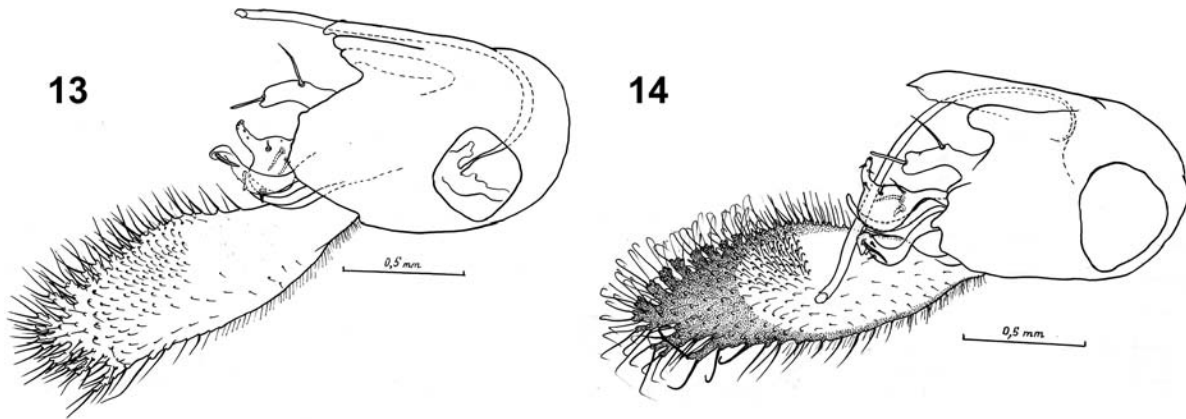


Fig. 13–14. *Dolichopus grunini* (13) and *Dolichopus portentosus* (14), hypopygium, lateral view.

Рис. 13–14. *Dolichopus grunini* (13) и *Dolichopus portentosus* (14), гипопигий, латерально.

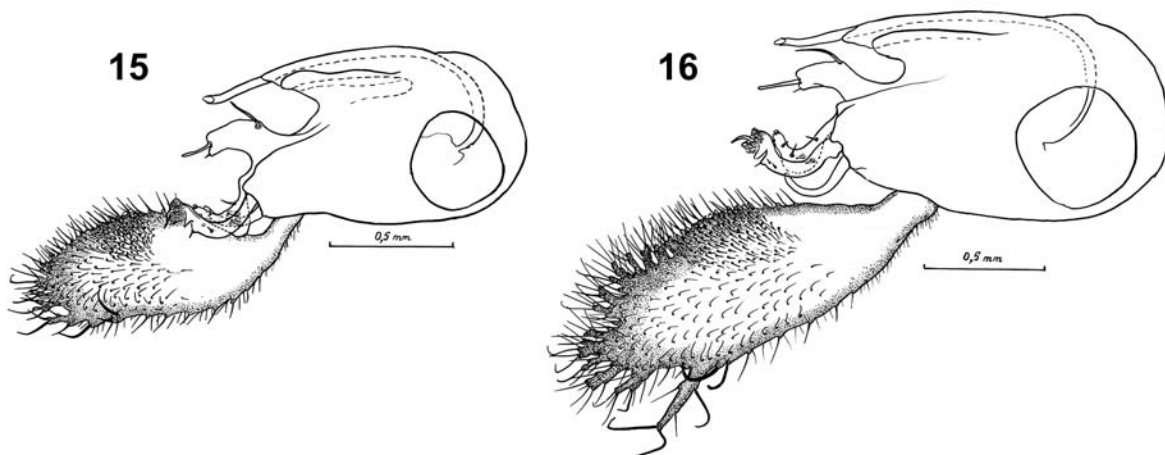


Fig. 15–16. *Dolichopus skiftensis* (15) and *Dolichopus vadimi* (16), hypopygium, lateral view.

Рис. 15–16. *Dolichopus skiftensis* (15) и *Dolichopus vadimi* (16), гипопигий, латерально.

near apex of subcostal vein. Veins R_{4+5} and M_{1+2} parallel near wing margin; M_{1+2} weakly curved in apical part, without rudimentary M_2 . Proportion of costal section between apices of R_{2+3} and R_{4+5} to costal section between apices of R_{4+5} and M_{1+2} – 2.8 : 1.6. Apical section of M_{3+4} longer than hind m-crossvein – 4.8 : 1.8. Anal angle obtuse. Calypter yellow with black setae. Halter yellow.

Abdomen greenly-bronze, pollinose laterally and near base. Surstylus dark-yellow, narrow, of rostral shape, pointed, with strong bristle on apex. Cercus dirtily-brown, broadly black bordered apically, with serrate edges and with crescent bristles which are longer than epandrium.

Female. Unknown.

Etymology. The epithet refers to the type locality of the new species, valley of Scythians.

Remarks. The new species is similar to *Dolichopus sagittarius* and *Dolichopus hejingensis* [Stackelberg 1930; Negrobov et al., 2005]. The main differences between these species are given below in the key.

Key to species of the *Dolichopus sagittarius* group

1. Postocular bristles yellow on lower part. Femora partly darkened or yellow 2
– Postocular bristles black on lower part. Femora yellow 5
2. Arista with elongate-oval plate on apex. Fore and mid femora with dark stripe beneath. Dorsal projection of fore tarsomere 5 wide, oval *D. sagittarius*
– Arista not flattened on apex. Dorsal projection of fore tarsomere 5 narrow 3
3. Face silvery-white. Dorsal projection of fore tarsomere 5 scarcely longer than ventral projection *D. hejingensis*
– Face yellow-grey. Dorsal projection of fore tarsomere 5 more than 2 times longer than ventral projection 4
4. Fore and mid thigh in the basal half with black stripes, rear thighs black, except apical part and yellow stripes on the dorsal side. Dorsal process of 5th tarsomeres fore legs sharp triangular. Length cerci is longer than the length epandrium. Dorsal side of cercus longer than ventral side on top of a triangular *D. reichardi*
– Femora yellow. Dorsal process of 5th tarsomeres fore legs oval. Length cerci is shorter than the length epandrium. Ventral and dorsal side cercus same length on top oval *D. skifiensis* **sp. n.**

5. Arista clothed in dense hair-like setulae and appearing as thickened. Cerci with deep excisions apically and digitiform dorsal apical projection *D. vadimi*
– Arista dilated on apex as elongate-oval plate. Cerci without digitiform dorsal apical projection 6
6. Postpedicel shorter than wide. Epandrial lobe evenly curved dorsally. Cerci without falciform apical setae *D. grunini*
– Postpedicel longer than wide. Epandrial lobe strongly curved dorsally. Cerci with falciform apical setae dorsally *D. portentosus*

Acknowledgements

The authors express grateful to Dr. Scott Brooks (Canada) for editing of the manuscript. This study was supported by RFBR (11-04-01051-a).

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