

New species of the genus *Dolichopus* (Diptera: Dolichopodidae) from northern Siberia

Новые виды из рода *Dolichopus* (Diptera: Dolichopodidae) из северной Сибири

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Two new species of the genus *Dolichopus* Latreille, 1796 from northern Siberia are described, *D. haritonovi* **sp. nov.** and *D. hasynensis* **sp. nov.** In the recent key to Palaearctic species of *Dolichopus* (Negrobov et al., 2005), *D. haritonovi* runs to *D. gorodkovi* Negrobov, 1973, and *D. hasynensis*, to *D. intonsus* Smirnov, 1948. Supplemental couplets are provided to identify the new species. Lectotype and paralectotypes of *D. intonsus* are designated. New records of the rare species *D. gorodkovi* are given. Male genitalia of all the above-mentioned species are illustrated.

Два новых для науки вида из рода *Dolichopus* Latreille, 1796 описаны из северной Сибири. По определительной таблице палеарктических видов (Negrobov et al., 2005) *D. haritonovi* **sp. nov.** близок к *D. gorodkovi* Negrobov, 1973, а *D. hasynensis* **sp. nov.** – к *D. intonsus* Smirnov, 1948. Дополнительные тезы и антитезы даны для определения новых видов. Для *D. intonsus* обозначены лектотип и паралектотипы. Приведены новые находки редкого вида *D. gorodkovi*. Для всех упомянутых видов даны рисунки гениталий самцов.

Key words: fauna of Russia, Siberia, Diptera, Dolichopodidae, *Dolichopus*, new species

Ключевые слова: фауна России, Сибирь, Diptera, Dolichopodidae, *Dolichopus*, новые виды

INTRODUCTION

Dolichopus Latreille, 1796 is the most species-rich genus of the family Dolichopodidae in the Holarctic Region. The genus includes a similar number of valid species in the Palaearctic and Nearctic regions. Despite the fact that in Europe, Northern America and China the fauna of this genus has been studied quite well, in the Northern Palaearctic it has only been satisfactorily studied in Scandinavia and the European

part of Russia. The territory of northern Siberia to date did not receive sufficient study. Recent efforts to study the flies of the Asian sector of the Holarctic have revealed a high diversity of Dolichopodidae in southern tundra and northern boreal forests, especially in the genera *Dolichopus*, *Rhaphium* Meigen, 1803, and *Hydrophorus* Fallén, 1823. Below we describe two new species of *Dolichopus*. A detailed analysis of the entire dolichopodid fauna of northern Siberia will be conducted in a subsequent paper.

MATERIAL AND METHODS

The present paper is based on specimens housed in the following institutions: Siberian Zoological Museum of the Institute of Systematics and Ecology of Animals (Novosibirsk), Zoological Museum of the Moscow State University, and Voronezh State University. Terminology for the parts of the hypopygium follows Negrobov and Stackelberg (1971).

RESULTS

Order DIPTERA

Family DOLICHOPODIDAE

Genus *Dolichopus* Latreille, 1796

Dolichopus haritonovi sp. nov. (Fig. 1)

Holotype. Male; **Russia**, *Krasnoyarsk Terr.*, Taymyrskiy Reserve, Ary-Mas field station, right bank of Novaya River, floodplain meadow, 14 m above sea level, 72.5°N, 101.94°E, 10–12 July 2010, coll. A. Barkalov. The holotype is deposited at the Siberian Zoological Museum (Novosibirsk).

Description. Male. Face silver-grey, not reaching lower eye margin, in middle wider than third antennal segment (2.3 : 1.5). Proboscis dark brown; palpus mostly yellow, dark brown at base, with black hairs. Frons shining, with bronze tint, without

dusting. Antennae black; third segment reniform, with rounded apex, its length equal to width. Arista located in middle of dorsal surface of third segment. Ratios of length of third antennal segment to its width and to arista length as 1.5 : 1.5 : 5.1. Lower post-ocular setae white.

Thorax green, with metallic-bronze tint. Mesonotum bright metallic shining, pleurae with grey dusting. Propleuron with one strong seta and short black hairs. Legs with black coxae, most of fore femora except apices, tarsomeres 2–5 of fore and mid tarsi, basal third of hind femora, apices of hind tibiae and hind tarsi; remainder yellow. Coxae with black hairs. Tarsomeres simple, not compressed dorsoventrally, without long dense hairs. Fore tibiae with 2 anterodorsal, 2 posterodorsal and 1 posteroventral setae, without long apicoventral seta. Relative lengths of fore tarsomeres (from first to fifth) as 4.4 : 2.3 : 1.5 : 1.2 : 1.4. Mid femora with one strong preapical seta. Mid tibiae with 5 anterodorsal, 2 posterodorsal and 1 anteroventral setae. Mid basitarsus with very short hairs ventrally. Relative lengths of mid tarsomeres (from first to fifth) as 6.5 : 3.3 : 2.4 : 1.7 : 1.8. Hind femora with two preapical setae, without long hairs and setae ventrally. Hind tibiae not thickened, with 4 anterodorsal, 4 posterodorsal and 1 long ventral setae in apical one-fourth, and with short ventral hairs. Hind basitarsus with 2 strong dorsal and 1 anterodorsal setae. Relative

lengths of hind tarsomeres (from first to fifth) as 5.7 : 5.8 : 3.4 : 2.3 : 2.0.

Wing hyaline; costal vein with long and strong thickening. R_{4+5} and M_{1+2} weakly converging at wing tip. M_{1+2} weakly curved in apical part; M_2 absent. Ratio of costal vein sections between R_{2+3} and R_{4+5} and between R_{4+5} and M_{1+2} as 4.1 : 1.7. Ratio of basal and apical portions of M_{1+2} as 11.0 : 10.3. Apical part of

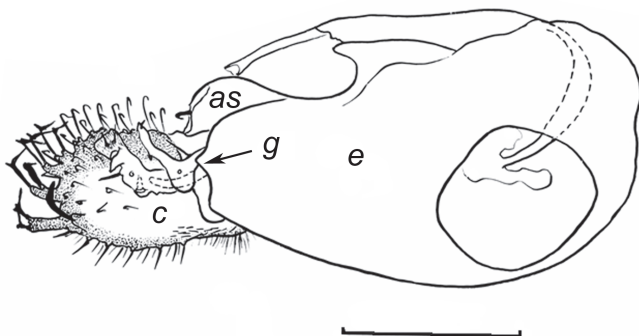


Fig. 1. *Dolichopus haritonovi* sp. nov., male, hypopygium, lateral view. Abbreviations: as, apical surstyli of epandrium; c, cercus; e, epandrium; g, gonopods. Scale bar 0.5 mm.

M_{3+4} shorter than discal mediocubital cross-vein (tp), ratio 3.9 : 4.3. Anal lobe small; anal angle obtuse. Lower calypter yellow, with white hairs. Halter yellow.

Abdomen bronze, with green tint, shiny, with grey dusting on dorsal sides. Surstylus brown, broad with tooth-like emergence from ventral side. Cerci dirty white, broadly black along distal margin, elongate-oval, serrate at apex, with falcate setae (Fig. 1).

Body length 4.6 mm; wing length 4.8 mm.

Female unknown.

Etymology. The species is named in honour of the Russian odonatologist, Professor A.Yu. Haritonov.

Comparison. In the key to Palaearctic species of *Dolichopus* (Negrobov et al., 2005), the new species runs to *D. gorodkovi* Negrobov, 1973 and can be distinguished from the latter by the following characters:

- Mid femur with one, hind femur with two preapical setae. Hind tibia with eight short setae dorsally; setae slightly longer than diameter of tibia. Hind basitarsus with two strong dorsal and one anterodorsal setae. Hypopygium: apical and dorsal parts of cerci oval; apical surstyli of epandrium oval (Fig. 1) ***D. haritonovi* sp. nov.**
- Mid and hind femora each with three preapical setae. Hind tibia with 18–19 long dorsal setae, 2–3 times as long as diameter of tibia. Hind basitarsus with 11–12 strong long dorsal and anterodorsal setae; their length more than twice the diameter of tibia. Hypopygium: apical and dorsal parts of cerci almost

straight; apical surstyli of epandrium triangular (Fig. 2) ***D. gorodkovi***

***Dolichopus gorodkovi* Negrobov, 1973**
(Fig. 2)

New material examined. **Russia:** 1 male, *Irkutsk Prov.*, valley of Nizhnyaya Angara River, Tal'tsy, 21 June 1941, coll. Chernovskii; 1 male, *Chita Prov.*, 9 km W of Urulyunguy station, steppe, 5 July 1975, coll. Richter. The material is kept at the Zoological Institute (St Petersburg).

Notes. This species was described from two specimens collected at the Baikal coast and in the Eastern Sayan Mountains. Since its description, *D. gorodkovi* has also been found in Yakutia (Negrobov & Chalaya, 1991). Here, we provide two new records of this rare species. The hypopygium of *D. gorodkovi* is illustrated for the first time (Fig. 2).

***Dolichopus hasynensis* sp. nov.**
(Fig. 3)

Holotype. Male; **Russia**, *Magadan Prov.*, Khasyn River, boggy creek, on leaves of willow, 13 July 1975, coll. A. Barkalov. The holotype is deposited at the Zoological Institute (St Petersburg).

Description. Male. Face silver-grey, naked, not reaching lower eye margin, its width in middle almost equal to length of third antennal segment. Proboscis dark brown; palpus mostly brown, with black hairs. Frons green, shining, with bronze tint, without dusting. Antennae black, with first segment yellow-brown ventrally; third segment obtuse apically, longer than wide. Arista with short hairs, located in middle of dorsal surface of third segment. Ratios of length of third antennal segment to its width and to arista length as 1.8 : 1.5 : 5.2. Lower postocular setae yellow.

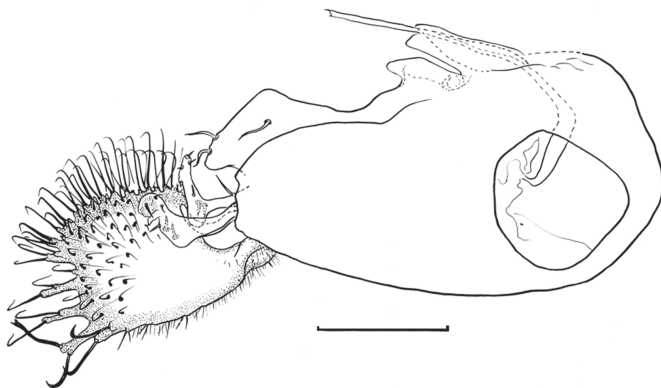


Fig. 2. *Dolichopus gorodkovi*, male, hypopygium, lateral view. Scale bar 0.5 mm.

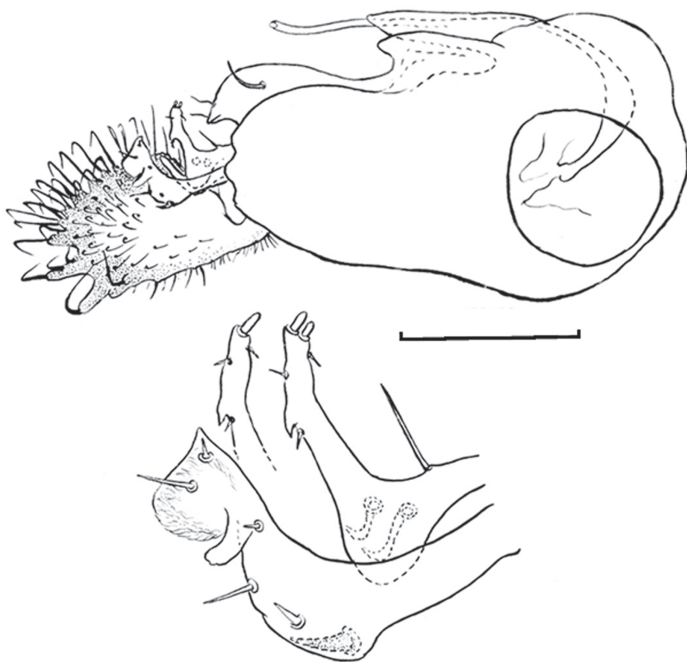


Fig. 3. *Dolichopus hasynensis* sp. nov., male, hypopygium, lateral view. Scale bar 0.5 mm.

Thorax green, with metallic-bronze tint. Mesonotum bright metallic shining, with bronze spots on sides; pleurae with grey dusting. Propleuron with one strong seta and short white hairs. Legs mostly yellow; coxae, dorsal surfaces of hind tibiae, fore and mid tarsi and entire hind tarsi black. Dorsal surfaces of hind femora with a black spot. Tarsi with black hairs. All tarsomeres simple, not compressed dorsoventrally, without long dense hairs. Fore tibiae with 2 anterodorsal, 2 posterodorsal and 1 posteroventral setae, without long apicoventral seta. Relative lengths of fore tarsomeres (from first to fifth) as 5.2 : 2.6 : 1.8 : 0.7 : 1.0. Mid femur with one strong preapical seta. Mid tibia with 3 anterodorsal, 2 posterodorsal and 1 anteroventral setae. Mid basitarsus with very short hairs ventrally. Relative length of mid tibia and mid basitarsus as 12.4 : 7.5. Other tarsal segments broken. Hind femur with one strong preapical seta anteriorly and short setae ventrally;

the latter setae better developed in apical part and no longer than femur width. Hind tibia not swollen, with 3–4 anterodorsal, 3 posterodorsal, 1 long preapical seta on apical one-fourth, and short ventral setae. Hind basitarsus with 3–4 strong setae dorsally. Relative lengths of hind tarsomeres (from first to fifth) as 6.7 : 5.5 : 3.7 : 2.4 : 1.8.

Wing slightly darkened. R_{4+5} and M_{1+2} weakly converging at wing tip. M_{1+2} weakly curved in apical part; M_2 absent. Ratio of costal vein sections between R_{2+3} and R_{4+5} and between R_{4+5} and M_{1+2} as 3.6 : 1.7. Apical part of M_{3+4} longer than tp , their

ratio 7.8 : 3.3. Anal angle obtuse; anal lobe small. Lower calypter yellow, with black hairs. Halter yellow.

Abdomen bronze, with green tint, shiny, with grey dusting laterally. Surstylus broad, with tooth-like emergence on tip (Fig. 3). Gonopods curved; their ventral lobes with one or two oval, broadened setae on tip. Cerci oval, dirty white, with broad black stripe along distal margin, dorsally with serrated edges and sickle setae.

Body length 4.5 mm; wing length 4.5 mm.

Female unknown.

Etymology. The species is named for the type locality Khasyn, a settlement in Magadan Province.

Comparison. In the key to Palaearctic species of *Dolichopus* (Negrobov et al., 2005), the new species runs to *D. intonsus* Smirnov, 1948 and can be distinguished from the latter by the following characters:

- Fore coxae mostly darkened. Third antennal segment longer than wide. Hind tibiae not

swollen. Ventral setae on hind femora short, shorter than width of femur. Hypopygium: apical surstyli of epandrium long; length of surstylus approximately 4 times its width (Fig. 3)..... *D. hasynensis* sp. nov.

- Fore coxae yellow in apical parts. Third antennal segment shorter than wide. Hind tibiae swollen. Ventral setae on hind femora long, distinctly longer than width of femur. Hypopygium: apical surstyli of epandrium short; length of surstylus approximately 2.5 times its width (Fig. 4)..... *D. intonsus*

***Dolichopus intonsus* Smirnov, 1948**
(Fig. 4)

Type material. Lectotype (here designated). Male; **Russia**, *Primorie Terr.*, Sudsukhinskiy (now Lazovskiy) Reserve, Kit Bay, 6 July 1946, coll. Sharov. *Paralectotypes*. **Russia**, *Primorie Terr.*: 4 males, 1 female, same data as for lectotype; 2 males, 3 females, environs of Slavyanka, 26 July 1940, coll. Sharov. Lectotype and paralectotypes are kept at the Zoological Museum of Moscow State University.

Notes. In the description of this species, Smirnov (1948) did not designate the holotype and did not provide drawings. We ex-

amined the syntypes of *D. intonsus*. Here we designate the lectotype of *D. intonsus* and illustrate its hypopygium.

ACKNOWLEDGEMENTS

This research was supported by the Russian Foundation for Basic Research, grants No. 10-04-00093a and No. 11-04-01051a.

REFERENCES

- Negrobov O.P. & Chalaya O.N. 1991. Dolichopodidae (Diptera) of the northeastern USSR. In: Matis E.G. (Ed.). *Biologicheskie problemy Severa. Entomologicheskie issledovaniya na Severo-Vostoke SSSR* [Biological problems of the North. Entomological studies in the North-East of the USSR], 2: 66–80. Vladivostok: Far Eastern Branch of the USSR Academy of Sciences. (In Russian).
- Negrobov O.P., Rodionova S.Y., Maslova O.O. & Selivanova O.O. 2005. Key to the males of the Palaearctic species of the genus *Dolichopus* Latr. (Diptera, Dolichopodidae). *International Journal of Dipterological Research*, 16(2): 133–146.
- Negrobov O.P. & Stackelberg A.A. 1971. Dolichopodidae. Unterfamilie Medeterinae. In: Lindner E. (Ed.). *Die Fliegen der Palaearktischen Region*, 284: 238–256, Tables 13–28. Stuttgart: E. Schweizerbart'sche Verlagsbuchhandlung.
- Smirnov E.S. 1948. Materials on the fauna of *Dolichopus* Latr. of the Far East. II. *Nauchno-metodicheskie zapiski*, 11: 230–241. Moscow: Izdatel'stvo Glavnogo upravleniya po zapovednikam. (In Russian).

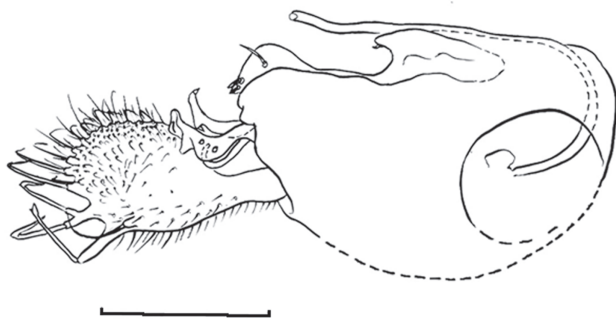


Fig. 4. *Dolichopus intonsus*, male, hypopygium, lateral view. Scale bar 0.5 mm.

Received June 2, 2011 / Accepted May 16, 2012