Acta Biologica Sibirica
Journal of Biology
Founded in 2015

www.asu.ru

OPEN ACCESS

ISSN 2412-1908

Acta Biologica Sibirica, 2018, 4(4), 19–24

RESEARCH ARTICLE UDC *595.772*

Notes on Dolichopodidae (Diptera) from the White Sea coast and islands (Russian North)

I.Ya. Grichanov, E.I. Ovsyannikova

All-Russian Institute of Plant Protection, Podbelskogo 3, St.Petersburg, Pushkin, 196608 Russia
E-mail: grichanov@mail.ru

Original data on Dolichopodidae from the Belomorsk district of Karelia and Bolshoi Solovetskii Island (Arkhangelsk Region, Primorskii district) resulted from the short-term visit (2018) are presented. All ten collected species and the genus *Medetera* are firstly recorded for the Solovetskiye Islands. *Dolichopus discifer* Stannius, 1831, *Dolichopus ungulatus* (Linnaeus, 1758), *Rhaphium laticorne* (Fallén, 1823), *Sympycnus pulicarius* (Fallén) and *Syntormon tarsatus* (Fallén, 1823) are new species for the Arkhangelsk Region. Photographs of habitats of dolichopodid species are included.
Key words: Diptera; Dolichopodidae; Palearctic Region; Arkhangelsk Region, Russian Karelia; new record; fauna

Introduction

The former Arkhangelsk Governorate (Russian: Архангельская губерния, Arkhangelskaya guberniya), later Northern Krai (Russian: Северный край, Severnyi Krai) occupied in the 19th and the first half of 20th century a huge territory along the Arctic Ocean between Finland and North Ural, being currently divided between the Republic of Karelia, Murmansk, Arkhangelsk, Vologda, Kostroma, and Kirov Regions, the Nenets Autonomous Okrug, and the Komi Republic, with the informal name Russian North (Gundakova et al., 1997). The White Sea is an indentation in the coast of Russian North, and surrounded by four regions, i.e. Murmansk and Arkhangelsk Regions, Karelia and Nenetsia. It is 590 km long and has an area of 90,000 sq km. Major embayments include the Gulf of Mezen (Mezenskaya Guba) on the east, Dvina Bay (Dvinskaya Guba) on the southeast, Onega Bay (Onezhskaya Guba) on the south, and Kandalaksha Gulf (Kandalakshskii Zaliv) on the northwest. At the entrance to Onega Bay are the Solovetskiye Islands including the largest in the area Bolshoi Solovetskii Island. The White Sea has also hundreds of small islands along its western coast mainly.

The area northward of 64° latitude is studied rather spotty in case of the long-legged flies. The list of the Karelian Republic contains now 132 species (Grichanov et al., 2017) with several species found at the White Sea coast of Karelia and on small Karelian islands along this coast (Humala, Polevoi, 1999, 2008, 2015; Grichanov, Polevoi, 2004). The list of Murmansk Region includes 92 species of long-legged flies (Grichanov, 2006), nevertheless, more than 50 species have been collected from environs of Kandalaksha at the head of Kandalaksha Gulf of the White Sea (Frey, 1915; Negrobov, 1974), and the other species are found in the Pechenga and Ponoy districts, with *Hydrophorus ponojensis* Frey, 1915, endemic of the Kola Peninsula and found at the mouth of White Sea. The fauna of Arkhangelsk Region is mainly studied by Frey (1918) and Pryakhina, Ogibin (1970). Stackelberg (1962) included the Solovetskiye Islands into the area of *Dolichopus maculipennis* Zetterstedt, 1843. Grichanov (2006) mentioned 41 species for the Arkhangelsk Region. Ten species have been reported from Nenetsia (Grichanov, 2006), including *Hydrophorus signifer* Coquillett, 1899 from the Kolguyev Island and *Hydrophorus alpinus* Wahlberg, 1844 from the Dolgii Island, *Campsicnemus armatus* (Zetterstedt, 1849), *Dolichopus plumipes* (Scopoli, 1763), *D. rupestris* Haliday, 1833, *H. alpinus* and *H. signifer* from the Kanin Peninsula enclosing the White Sea from the North-East.

The material for this study (156 specimens) has been collected by authors during a 2018 expedition to the Solovetskiye Islands through the Karelian Belomorskii district by standard sweep net. The main collection sites are located at the Karelian White Sea port Belomorsk and on the Bolshoi Solovetskii Island at the Solovetskoye settlement (Arkhangelsk Region). None dolichopodid fly was found on the Bolshoi Zayatskii Island at the southern end of the main Island. This paper presents the new species records in detail. Records of 12 species listed below are arranged

alphabetically by genus. Information on the world distribution for each species listed follows Grichanov (2017). The type localities are provided and the country lists are arranged alphabetically. Material of the newly-recorded species will be deposited at the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, and the Zoological Museum of Moscow State University, Moscow, Russia. Specimens are mounted on pins and placed in the museum drawers. Photographs of common habitats of dolichopodid species are provided below (Figs. 1–4).

Fig. 1. Karelia, Belomorsk environment, Vygostrov, former riverbed of Vyg River, habitat of *Hydrophorus signifer* Coquillett, August 2018

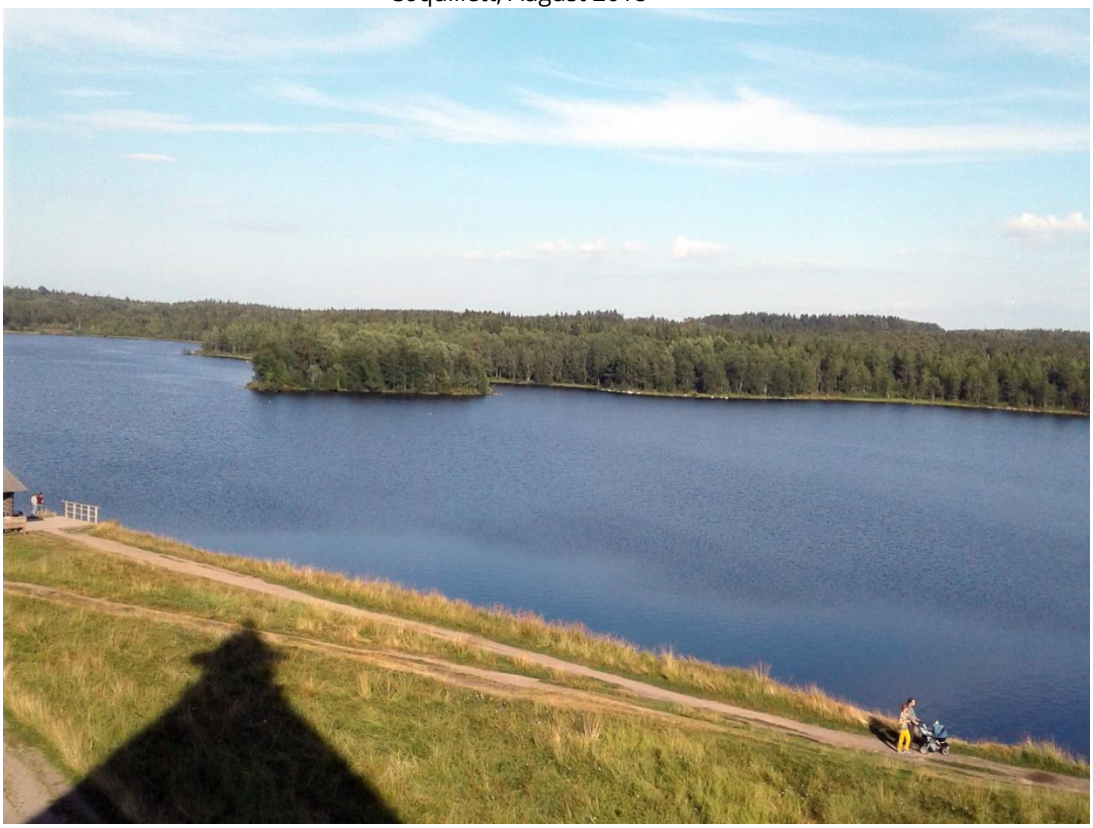

Fig. 2. Arkhangelsk Region, Solovetskii Island, Svyatoe Lake, general view from the Monastery, August 2018

Fig. 3. Arkhangelsk Region, Solovetskii Island, Svyatoe Lake at the Monastery, a typical habitat of *Campsicnemus*, *Dolichopus* and *Sympycnus* species, August 2018

Fig. 4. Arkhangelsk Region, Solovetskii Island, a part of mixed forest with a reclamation ditch, a habitat of *Dolichopus* species, August 2018

New records of Dolichopodidae

1. *Campsicnemus armatus* (Zetterstedt, 1849)

MATERIAL. **Arkhangelsk Region**: 4♂, 5♀, Solovetskii Is. & settl., Svyatoe Lake shore, 11.VIII.2018; Srednii Pert Lake shore, 12.VIII.2018; Severnaya str. at rivulet, 13.VIII.2018.

DISTRIBUTION. Type locality: Denmark: Rosenthal, Gryphium. Palaearctic: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Iceland, Iran, Ireland, Italy, Mongolia, Netherlands, Norway, Poland, Russia (Arkhangelsk, Kamchatka, Karelia, Krasnoyarsk, Murmansk, Nenetsia, Tatarstan, Yakutia, Yamal, Yekaterinburg), Slovakia, Sweden, Turkey (Kars), UK, North Africa; Tropical Africa.

2. *Campsicnemus scambus* (Fallén, 1823)

MATERIAL. **Arkhangelsk Region**: 20♂, 22♀, Solovetskii Is. & settl., Svyatoe Lake shore, 11.VIII.2018; Srednii Pert Lake shore, 12.VIII.2018; Severnaya str. at rivulet, 13.VIII.2018; **Karelia**: 10♂, 11♀, Belomorsk, Starchina Is., Vyg River bank, 10 & 14.VIII.2018; 1♂, Belomorsk, Vygostrov, Vyg River bank, 10.VIII.2018.

DISTRIBUTION. Type locality: Sweden: Esperod. Palaearctic: Austria, Belarus (Minsk), Belgium, Bulgaria, Czech, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Latvia, Lithuania, Netherlands, Norway, Poland, Romania, Russia (Altai Rep., Altai Terr., Arkhangelsk, Bashkortostan, Chelyabinsk, Ekaterinburg, Irkutsk, Kaliningrad, S Kamchatka, Karelia, Khabarovsk, Khantia-Mansia, Komi, Krasnodar, Krasnoyarsk, Leningrad, Lipetsk, Mordovia, Moscow, Murmansk, Nenetsia, Novgorod, Novosibirsk, Pskov, Ryazan, Saratov, Tatarstan, Tver, Vladivostok, Vologda, Voronezh, Yamalia), Slovakia, Sweden, Switzerland, UK, Ukraine (Kherson, Odessa).

3. *Dolichopus caligatus* Wahlberg, 1850

=*Dolichopus flavipes* Parent, 1938 et auctt. (nec Stannius, 1831), misidentification.

MATERIAL. **Karelia**: 1♂, Belomorsk, Vygostrov, Vyg River bank, 10.VIII.2018 (ZIN).

DISTRIBUTION. Type locality: Sweden: Koonprope Marstrand, Gusum Ostrogothiae. Palaearctic: Austria, Denmark, Finland, Germany, Lithuania, Netherlands, Norway, Russia (Karelia, Khabarovsk, Leningrad), Sweden, UK.

4. *Dolichopus discifer* Stannius, 1831

=*Dolichopus nigricornis* Becker, 1917 et auctt. (nec Meigen, 1824), misidentification.

MATERIAL**. Arkhangelsk Region**: 1♂, 1♀, Solovetskii Is. & settl., Srednii Pert Lake shore, 12.VIII.2018; Severnaya str. at rivulet, 13.VIII.2018.

DISTRIBUTION. Type locality: Germany. Palaearctic: Austria, Belgium, Belarus (Minsk), Bulgaria, Czech, Denmark, England, Estonia, Finland, France, Georgia, Germany, Hungary, Ireland, Italy, N Kazakhstan, Latvia, Lithuania, Netherlands, Norway, Poland, Romania, Russia (Altai Rep., Baikal, Chukotka, Karelia, Khabarovsk, Leningrad, Mordovia, Moscow, Murmansk, Novgorod, Sakhalin, Vladivostok, Vologda, Yakutia), Slovakia, Sweden, Switzerland, Ukraine (Kharkiv); Nearctic: Canada, USA: Alaska, British Columbia to Quebec and Nova Scotia, southward to Colorado and New York. New for Arkhangelsk Region.

5. *Dolichopus longicornis* Stannius, 1831

MATERIAL. **Arkhangelsk Region**: 1♂, 4♀, Solovetskii Is. & settl., Svyatoe Lake shore, 11.VIII.2018; Severnaya str. at rivulet, 13.VIII.2018; **Karelia**: 2♀, Belomorsk, Vygostrov, Vyg River bank, 10.VIII.2018.

DISTRIBUTION. Type locality: not given [Germany: ?Hamburg, ?Breslau]. Palaearctic: Austria, Belarus, Belgium, China, Czech, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Mongolia, Netherlands, Norway, Poland, Romania, Russia (Altai Rep., Arkhangelsk, Blagoveshchensk, Buryatia, Chukotka, Irkutsk, Kamchatka, Karelia, Komi, Krasnodar, Krasnoyarsk, Kuril Is., Leningrad, Lipetsk, Magadan, Moscow, Murmansk, Novgorod, Novosibirsk, Perm, Pskov, Sakhalin, Ural, Vladivostok, Vologda, Voronezh, Yakutia, Yaroslavl), Serbia, Slovakia, Sweden, Switzerland, UK, Ukraine (Kherson, Carpathians); Nearctic: Canada (Yukon), USA (Alaska).

6. *Dolichopus plumipes* (Scopoli, 1763)

MATERIAL. **Arkhangelsk Region**: 7♂, 5♀, Solovetskii Is. & settl., Svyatoe Lake shore, 11.VIII.2018; Severnaya str. at rivulet, 13.VIII.2018; **Karelia**: 1♂, 2♀, Belomorsk, Starchina Is., Vyg River bank, 10.VIII.2018.

DISTRIBUTION. Type locality: Slovenia: “Carnioliae indigena”. Palaearctic: Europe, Afghanistan, China (Heilongjiang, Hebei, Henan, Shanxi, Inner Mongolia, Xinjiang, Qinghai, Xizang), Georgia, Kazakhstan, Mongolia, Russia (Adygea, Arkhangelsk, Baikal, Belgorod, Chukotka, Kabardino-Balkaria, Kamchatka, Karelia, Karachai-Cherkessia, Khabarovsk, Koryakia, Krasnodar, Kirov, Komi, Leningrad, Lipetsk, Mari El, Moscow, Murmansk, Nenetsia, Nizhnii Novgorod, N Ossetia, Novgorod, Novosibirsk, Perm, Pskov, Rostov, Tomsk, Tyumen, Vladivostok, Vologda, Voronezh, Yakutia), Turkey (Tur Lake, Kackar Mountains, Rize), Uzbekistan; Nearctic, Neotropical and Oriental Regions.

7. *Dolichopus ungulatus* (Linnaeus, 1758)

MATERIAL. **Arkhangelsk Region**: 2♂, 3♀, Solovetskii Is. & settl., Svyatoe Lake shore, 11.VIII.2018; Severnaya str. at rivulet, 13.VIII.2018.

DISTRIBUTION. Type locality: Europe. Palaearctic: Austria, Belarus, Belgium, Bulgaria, China (Xinjiang), Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Hungary, Iran, Ireland, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Romania; Russia (Adygea, Alania, Altai Rep., Altai Terr., Chechnya, Irkutsk, Kabardino-Balkaria, Karachai-Cherkessia, Karelia, Khabarovsk, Khantia-Mansia, Krasnodar, Krasnoyarsk, Kursk, Leningrad, Lipetsk, Mordovia, Moscow, Novgorod, Novosibirsk, Orenburg, Perm, Pskov, Ryazan, Tatarstan, Vologda, Voronezh, Yakutia), Serbia, Slovakia, Spain, Sweden, Switzerland, UK, Ukraine (Kharkiv, Kyiv, Odessa, Ternopil, Carpathia). New for Arkhangelsk Region.

8. *Dolichopus urbanus* Meigen, 1824

MATERIAL. **Arkhangelsk Region**: 1♀, Solovetskii Is. & settl., Severnaya str. at rivulet, 13.VIII.2018.

DISTRIBUTION. Type locality: not given. Palaearctic: Austria, Belgium, Czech, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Russia (Adygea, Altai Rep., Arkhangelsk, Buryatia, Irkutsk, Kabardino-Balkaria, Karachai-Cherkessia, Karelia, Khantia-Mansia, Krasnodar, Krasnoyarsk, Leningrad, Moscow, Murmansk, Voronezh, S Ural), Slovakia, Sweden, Switzerland, UK.

9. *Hydrophorus signifer* Coquillett, 1899

MATERIAL. **Karelia**: 2♂♀, Belomorsk, Vygostrov, Vyg River bank, 10.VIII.2018 (ZIN).

DISTRIBUTION. Type locality: Russia: Bering Is. Palaearctic: Austria, Belgium, Czech, Finland, Latvia, Netherlands, Norway, Sweden, Russia (Chukotka, Kamchatka, Karelia, Murmansk, Nenetsia, N Ural, Yakutia); Nearctic: USA, Canada.

10. *Medetera* sp.

REMARK. A specimen of this genus has been observed (but not captured) in the Solovetskoye settlement on a wall of a wooden building on 11 August 2018.

11. *Rhaphium laticorne* (Fallén, 1823)

MATERIAL. **Arkhangelsk Region**: 1♂, 2♀, Solovetskii Is. & settl., Severnaya str. at rivulet, 13.VIII.2018.

DISTRIBUTION. Type locality: Sweden. Palaearctic: Austria, Belarus, Belgium, Bulgaria, Bosnia and Herzegovina, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Kyrgyzstan, Latvia, Luxembourg, "Middle Asia", Netherlands, Norway, Poland, Romania, Russia (Altai Rep., Krasnodar, Krasnoyarsk, Leningrad, Lipetsk, Mordovia, Moscow, Murmansk, Novosibirsk, Pskov, Ryazan, Voronezh), Slovakia, Sweden, Turkey (Korucuk), UK, Ukraine. New for Arkhangelsk Region.

12. *Sympycnus pulicarius* (Fallén)

MATERIAL. **Arkhangelsk Region**: 18♂, 19♀, Solovetskii Is. & settl., Svyatoe Lake shore, 11.VIII.2018; Srednii Pert Lake shore, 12.VIII.2018; Severnaya str. at rivulet, 13.VIII.2018; **Karelia**: 9♂, 2♀, Belomorsk, Starchina Is., Vyg River bank, 10 & 14.VIII.2018.

DISTRIBUTION. Type locality: not given [Sweden]. Palaearctic: Andorra, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iran, Ireland, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Macedonia, Moldova, Mongolia, Netherlands, Norway, Poland, Portugal, Romania, Russia (Alania, Altai Rep., Altai Ter., Buryatia, Chechnya, Chelyabinsk, Crimea, Kabardino-Balkaria, Kaliningrad, Karachai-Cherkessia, Karelia, Khakassia, Krasnodar, Krasnoyarsk, Leningrad, Lipetsk, Moscow, Murmansk, Novgorod, Novosibirsk, Pskov, Stavropol, Svedlovsk, Tambov, Tatarstan, Voronezh, Yakutia), Serbia, Slovakia, Spain incl. Canary Islands, Sweden, Switzerland, Tajikistan, Turkey (Aydin, Bolu, Mugla, Van), UK, Ukraine (Kherson), Uzbekistan; Nearctic: California. New for Arkhangelsk Region. New for Arkhangelsk Region.

13. *Syntormon tarsatus* (Fallén, 1823)

MATERIAL. **Arkhangelsk Region**: 1♀, Solovetskii Is. & settl., Severnaya str. at rivulet, 13.VIII.2018.

DISTRIBUTION. Type locality: Sweden. Palaearctic: Austria, Belarus, Belgium, Czech, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Latvia, Netherlands, Norway, Poland, Romania, Russia (Buryatia, Karelia, Kamchatka, Leningrad, Pskov), Slovakia, Sweden, UK, Ukraine (Kherson). New for Arkhangelsk Region.

Conclusion

Only one species (*Dolichopus maculipennis*) was known from the Solovetskiye Islands before our short-term visit there (Stackelberg, 1962). The weather during our stay was warm and almost dry, the same as for the whole month before our visit. Rivulets and marshes had practically no water except for narrow bands along lake shores. That was probably a reason of collection of only ten dolichopodid species. All these species and the genus *Medetera* are new for the Islands. It means that possible faunal composition of the family must be many times more diverse there. All the collected species are widespread across the Palaearctic Region or even across the Holarctic Realm; nevertheless, *Dolichopus discifer*,

D. ungulatus, *Rhaphium laticorne*, *Sympycnus pulicarius* and *Syntormon tarsatus* are new species for the Arkhangelsk Region. According to sampling data, two species (*Campsicnemus scambus* and *Sympycnus pulicarius*) have the highest total abundance in both Belomorsk district of Karelia and Bolshoi Solovetskii Island. It is worth noting that *Dolichopus maculipennis* and *Rhaphium laticorne* are unknown in the neighboring Karelia, and *Campsicnemus armatus* and *Hydrophorus signifer* are not found in the well-studied Leningrad Region (with about 230 species in its fauna). The Dolichopodidae of the Arkhangelsk Region fauna contains now 47 species, and the Solovetskiye Islands fauna includes 11 species.

References

Frey, R. (1915). Zur Kenntnis der Dipterenfauna Finlands III Dolichopodidae. *Acta Societatis pro Fauna et Flora Fennica*, 40(5), 1–80.

Frey, R., 1918. Der Dipterenfauna des nördlichen europäischen Russland. 2. Dipteren aus Archangelsk. *Acta Societatis pro Fauna et Flora Fennica*, 46(2), 12–13.

Grichanov, I.Ya. (2006). *A checklist and keys to North European genera and species of Dolichopodidae (Diptera)*. St.Petersburg: VIZR, 1–120 (Plant Protection News Supplements). Available from: https://diptera.info/downloads/Grichanov_N_Europe.pdf (accessed 27 July 2018).

Grichanov, I.Ya. (2017). *Alphabetic list of generic and specific names of predatory flies of the epifamily Dolichopodoidae (Diptera).* 2nd Edition. St.Petersburg: VIZR, 1–563. (Plant Protection News Supplements, 23). Available from: https://archive.org/download/Grichanov2017DolibankSec/Grichanov%202017%20Dolibank-sec.pdf (accessed 27 July 2018).

Grichanov, I.Ya., Polevoi, A.V. (2004). Dolichopodidae of Russian Karelia (Diptera). *Zoosystematica Rossica*, 2003, 12(2), 271–275.

Grichanov, I.Ya., Polevoi, A.V., Ovsyannikova, E.I. (2017). New records of Dolichopodidae (Diptera) from Valaam Island (Russian Karelia). *Acta Biologica Sibirica*, 3(4), 81–87.

Gundakova, L.V. [et al.] (Eds.) (1997). *Administrative-territorial division of the Arkhangelsk Governorate and Region in the 18–20th centuries: reference book*. Arkhangelsk, 1–413 (in Russian).

Humala, A.E., Polevoi, A.V. (1999). On the insect fauna of Karelian coast and islands of the White Sea. *In*: Gromtsev, A.N., Krutov, V.I. (Eds.). *Inventarizatsiya i izuchenie biologicheskogo raznoobraziya na Karel'skom poberezh'e Belogo morya* [Biodiversity inventories and studies in the areas of Karelian White Sea coast]: 106–113. Petrozavodsk: Karelian Research Centre RAS (in Russian).

Humala, A.E., Polevoi, A.V. (2008). Insects. *In*: Belkin V.V. [et al.]. *Skal'nye landshafty Karel'skogo poberezh'ya Belogo morya: prirodnye osobennosti, khozyaistvennoe osvoenie, mery po sokhraneniyu* [Rocky landscapes of the Karelian coast of the White Sea: natural features, economic development, measures for preservation]: 125–136. Petrozavodsk: Karelian Research Centre RAS (in Russian).

Humala, A.E., Polevoi, A.V. (2015). Records of rare and noteworthy insect species (Insecta) in the Republic of Karelia. *Trudy Karelskogo nauchnogo tsentra RAN*, 6, 19–46 (in Russian).

Negrobov, O.P. (1974). To fauna of Dolichopodidae (Diptera) of the Laplandskii and Kandalakshskii reserves. *In*: *Problemy izuchenija i ohrany landshaftov* [Problems of studying and protection of landscapes]. Voronezh, 43–46 (in Russian).

Pryakhina, E.F., Ogibin, B.N. (1970). To fauna and ecology of the dipteran insects living under fir-tree bark in the Arkhangelsk Region. *In*: *Tezisy dokladov k otchetnoi sessii laboratorii lesovedeniya i lesovodstva za 1969 god* [Abstracts of reports to the reporting session of Laboratory of Silvics and Forestry for 1969]. Arkhangelsk, 58–61 (in Russian).

Stackelberg, A.A. (1962). A list of Diptera of the Leningrad Region. V. Dolichopodidae. *Proceedings of the Zoological Institute of the Academy of Sciences of the USSR, 31*. Moscow, Leningrad: Izdatelstvo Akademii Nauk, 280–317 (in Russian).

Citation:
Grichanov, I.Ya., Ovsyannikova, E.I. (2018). Notes on Dolichopodidae (Diptera) from the White Sea coast and islands (Russian North). *Acta Biologica Sibirica, 4* (4), 19–24.
Submitted: 23.09.2018. **Accepted:** 05.11.2018
crossref http://dx.doi.org/10.14258/abs.444869