

New Data on the Nomenclature and Fauna of the Genus *Sphaerophoria* Le Peletier et Serville, 1828 (Diptera, Syrphidae) from Siberia and Adjacent Territories

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Abstract—The fauna of the genus *Sphaerophoria* Le Peletier et Serville, 1828 of Siberia and adjacent territories is analyzed on the basis of examination of the material deposited at the Siberian Zoological Museum, Institute of Systematics and Ecology of Animals, Russian Academy of Sciences, Siberian Branch (Novosibirsk), and at the Zoological Institute, RAS (St. Petersburg). The following new synonymies are established: *Sphaerophoria interrupta* (Fabricius, 1805) = *Sph. altaica* Violovitsh, 1976, **syn. n.**; *Sphaerophoria macrogaster* (Thomson, 1869) = *Sph. krocha* Violovitsh, 1976, **syn. n.**; *Sphaerophoria rueppellii* (Wiedemann, 1830) = *Sph. montivaga* Violovitsh, 1985, **syn. n.**; *Sphaerophoria macrogaster* (Thomson, 1869) = *Sph. nana* Violovitsh, 1976, **syn. n.**; *Sphaerophoria chongjini* Bańkowska, 1964 = *Sph. tinae* Violovitsh, 1976, **syn. n.** *Sphaerophoria kamtshatica* Violovitsh and *Sph. sachalinica* Violovitsh are regarded as nomina nuda. *Sphaerophoria bankowskiae* Goeldlin, 1989; *Sph. laurae* Goeldlin, 1989; *Sph. potentillae* Clausssen, 1984 and *Sph. turkmenica* Bańkowska, 1964 are found in Russia for the first time. A number of species is also reported for different territories of Siberia for the first time.

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The genus *Sphaerophoria* is one of large taxa comprising 33 species in the Palaearctic. Due to a high degree of variability in coloration of adults and weakly expressed differences between closely related species, this genus is studied rather poorly in the territory of Russia. Keys to the fauna of the European part of the USSR (Stackelberg, 1970) and Siberia (Violovitsh, 1983) are outdated because of large changes in the nomenclature of some species. A key to the fauna of the Russian Far East (Mutin in: Mutin and Barkalov, 1999) is limited to the above region. The possibility of identification of *Sphaerophoria* in the entire territory of Russia appeared only after publication of two brilliant monographs on *Sphaerophoria* of Finland (Haarto and Kerppola, 2007) and, especially on the subfamily Syrphinae of Sweden (Bartsch et al., 2009). The results of the study of voluminous material on the genus *Sphaerophoria*, deposited at the Siberian Zoological Museum, Institute of Systematics and Ecology of Animals, Russian Academy of Sciences, Siberian Branch (Novosibirsk; ISEA), and at the Zoological Institute, RAS (St. Petersburg; ZIN) are given in the present paper. A total of 7018 specimens belonging to 22 species were examined. The largest number of these specimens belonged to *Sph. philantha* (Mg.)

(2677 specimens) and *Sph. scripta* L. (2361 specimens).

Some species mentioned in publications of Violovitsh (1976a, 1976b, 1982, 1983) were not found in the examined material; therefore, we examined their taxonomy in more detail. The results of this work are also given in the present publication.

Sphaerophoria altaica Violovitsh, 1976.

The species was described as single specimen from Altai (Abai Vill.). The introduction to this paper mentions that it was based on the material deposited at the Biological Institute (the present ISEA); however, specimens of this species are absent in the collection of the institute. As far as at that period Violovitsh ceded all the holotypes of new species to the Zoological Institute RAS, this collection was also examined; no holotypes, however, were found there either. Apparently, the holotype of *Sph. altaica* is lost. In this connection, the analysis of the original description and figures published by Violovitsh, was performed. The drawing of surstyli, given in the original description, is very similar to that of *Sph. interrupta* (F.). Among the material on *Sph. interrupta*, I found 6 specimens collected by Violovitsh in the same place and in the same

year as the holotype of *Sph. altaica*, with small differences in dates. The specimen that served as the holotype of *Sph. altaica*, was collected in June 30, and the specimens examined, in June 25 and 26 and July 1. By the structure of the male genitalia, they correspond well to a drawing of *Sph. interrupta*, given by Goeldlin (1989). Comparison of the description of *Sph. altaica* with specimens of *Sph. interrupta* from the same locus has confirmed that they belong to the same species. Therefore, a new synonymy is established: *Sphaerophoria interrupta* (Fabricius, 1805) = *Sph. altaica* Violovitsh, 1976, **syn. n.**

***Sphaerophoria cylindrica* Say, 1824.**

The species was mentioned by Violovitsh (1976b) for the faunas of Sakhalin and Kuril Islands, but it was not mentioned in the subsequent publications (Violovitsh, 1982, 1983). Knutson (1973) considered that mentioning of this species from the territory of the Palaearctic was erroneous.

Sphaerophoria kamtschatica* Violovitsh, **nom. nudum.*

Violovitsh (1976b) mentioned this species from Kamchatka with a remark "in litt." No description of this species was published in subsequent works; in this connection, we treat this name as an invalid one.

***Sphaerophoria krocha* Violovitsh, 1976.**

The species was described as a single male from the Suputinskii (at present Ussuriiskii) Nature Reserve and was mentioned in the subsequent publications of Violovitsh (1982, 1983). Similarly to *Sph. altaica*, the place of deposition of the holotype is not mentioned, it was only mentioned that the material deposited at the Institute of Animal Systematics and Ecology had been used in the work. Nevertheless, the holotype of this species was not found in the collections of ISEA and ZIN. According to the description and drawings, *Sphaerophoria krocha* corresponds to *Sph. macrogaster* (Thomson). Differences in the structure of surstyli mentioned by Violovitsh in the description of *Sph. krocha*, stay within the limits of intraspecific variability of *Sph. macrogaster*, and are partly explained by different orientation of surstyli during the drawing of the figure. During preparation of the upper part of the hypandrium (in the description, this sclerite is designated as a "paramere"), its lower part must have been destroyed, which resulted in its distortion in the figure. On the basis of these facts, a new synonymy

is established: *Sphaerophoria macrogaster* (Thomson, 1869) = *Sph. krocha* Violovitsh, 1976, **syn. n.**

***Sphaerophoria montivaga* Violovitsh, 1985.**

The species was described as a solitary male from Pamir (the valley of the Murgab River, 3 km of Lake Sarez). The holotype was not found in the collection of ZIN where, according to the original description, it must be deposited. The species to which *Sphaerophoria montivaga* could be attributed was not found in the voluminous material from Pamir. After the study of the description and the picture of *Sph. montivaga*, we came to a conclusion that all the characters distinguishing this species from *Sph. rueppellii* (Wiedemann, 1830) stay within the limits of variability of the latter. In particular, the shape of the ocellar triangle in specimens of *Sph. rueppellii* from different parts of the range varies from equilateral (as in *Sph. montivaga*) to isosceles; the coloration of femoral bases can be entirely yellow or the middle and hind femora can be more or less darkened. The structure of the male genitalia is similar in all the specimens, corresponding to the structure of the genitalia in *Sph. rueppellii* (Wied.) (Bańkowska, 1968; Bartsch et al., 2009). All this allows establishing a new synonymy: *Sphaerophoria rueppellii* (Wiedemann, 1830) = *Sph. montivaga* Violovitsh, 1985, **syn. n.**

***Sphaerophoria nana* Violovitsh, 1976.**

The species was described as a single male from the Japanese island Amami-Oshima. This specimen was not found in collections of ISEA and ZIN. In the description it is mentioned that this species differs from *Sph. krocha* Viol. in coloration of the abdomen. However, already Knutson (1973) found that the coloration of abdomen in species of the genus *Sphaerophoria* is strongly variable and cannot serve as a criterion of the species independence. The study of the picture of the genitalia of a *Sph. nana* male, given in the original description, also did not reveal any significant differences between this species and *Sph. macrogaster* (Thomson), allowing establishment of a new synonymy: *Sphaerophoria macrogaster* (Thomson, 1869) = *Sph. nana* Violovitsh, 1976, **syn. n.**

Sphaerophoria sachalinica* Violovitsh, **nom. nudum.*

The name *Sph. sachalinica* was mentioned by Violovitsh (1976b) with the remark "in litt." The description of the species was not published in any subsequent publication, making this name invalid.

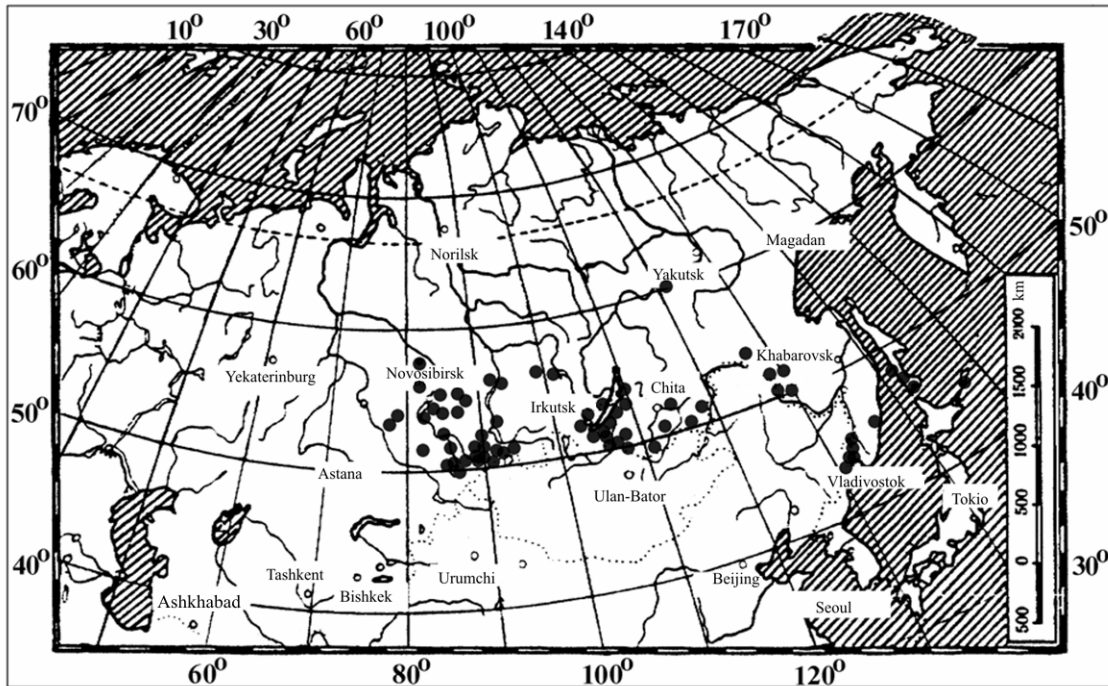


Fig. 1. Distribution of *Sphaerophoria indiana* Bigot.

Sphaerophoria tinae Violovitsh, 1976.

This species was described from the material collected in July 1963 and 1974 and was mentioned in the faunistic works of Violovitsh (1976b, 1982), but it was absent in the key published in 1983. Neither holotype, nor 3 paratypes were found in the collections examined. The drawing of the male genitalia and the description corresponds well to the characters of *Sph. chongjini* Bañk., compared by Violovitsh with his species. A large series of males, including those collected in 1974 by Violovitsh, but identified by me as *Sph. chongjini*, was found in the examined material from the type locality. The coloration of the abdomen and the structure of the male genitalia were mentioned by Violovitsh as differential characters. As it was already mentioned, the coloration of the body cannot serve as a reliable criterion during separation of species in the genus *Sphaerophoria*. The picture of the genitalia of *Sph. tinae* in the work of Violovitsh also contains no basic differences from *Sph. chongjini*. All the abovementioned allows establishing a new synonymy: *Sphaerophoria chongjini* Bañkowska, 1964 = *Sph. tinae* Violovitsh, 1976, **syn. n.**

In the list of the species given below, references to the publications where each species was mentioned from the territory of Siberia and Russian Far East are given together with the known collecting sites, be-

cause in the literature on the genus *Sphaerophoria* (Violovitsh, 1976b, 1983; Mutin in: Mutin and Barkalov, 1999) only data on the general distribution of each species are given without indicating certain localities. Maps are given for widespread species with a large number of collecting sites. Not all the collecting sites are shown in large-scale maps because of overlapping.

The List of Species

Sphaerophoria abbreviata Zetterstedt, 1859.

Violovitsh, 1983 : 53; Peck, 1988 : 42; Mutin in: Mutin and Barkalov, 1999 : 404.

Material. 43 ♂, 18 ♀. Russia. Republic of Altai: 25 km SW of Abai Vill., 14.VI.1964 (N. Violovitsh); Chernyi Sugash Vill., 14.VII.1964 (N. Violovitsh); Ulagansky District: Kuraisky Mountain Range, 2450 m, 50.33°N, 87.75°E, meadow, 2.VII.2008 (A. Barkalov); upper Yoldu River, 2000–2500 m, 50°5'N, 88°57'E, motley grass meadow in floodland of mountain brook, 16–18.VI.2005 (V. Zinchenko, V. Sorokina); Turochakskii District, Mt Archa, 51°N, 87°E, 1840 m, light forest with meadows and dwarf birches, 25.VI.2003 (V. Sorokina); Kosh-Agachskii District: Upper Akturu River, 2600–2800 m, 50.1°N, 87.8°E, 4.VII.2006 (A. Barkalov); radon spring near base of Teplyi Klyuch Pass, 2412 m, 49°46'N, 88°05'E,

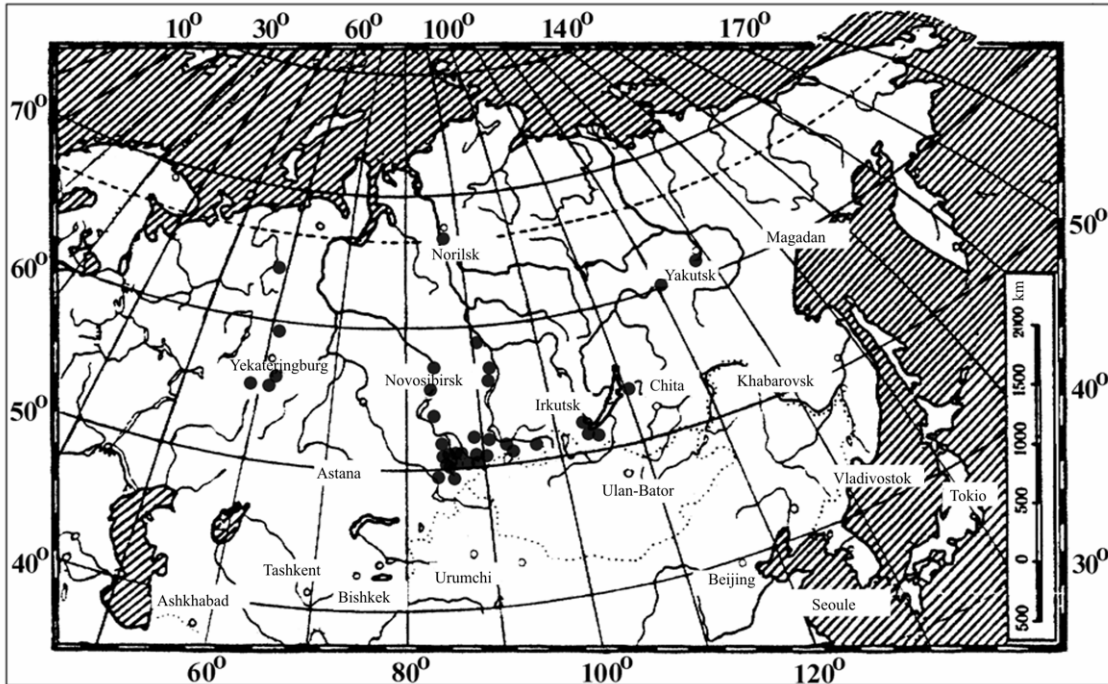


Fig. 2. Distribution of *Sphaerophoria interrupta* (F.).

5.VII.2008 (A. Barkalov); southern slope of Yuzhno-Chuiskii Mountain Range, 2185–2600 m, 59.65°N, 88.22°E, collected by entomological net along lake bank, 12–13.VII.2009 (A. Barkalov). Tuva: bank of Lake Khindikhtig-Khol, 2334 m, 50.4°N, 89.9°E, 21.VII.2007 (A. Barkalov); upper Balyktyg-Khem River, 2000 m, 50°17'N, 96°39'E, 26.VI.1996 (Yu. Marusik). Buryatia: Baikalskii Reserve, Tankhoi station, 19.VI.1980 (A. Barkalov). Transbaikalia: Sokhondinskii Reserve, Ernisty cordon, 3.VII.1991 (N. Gladkevich). Magadan Province: mouth of Kegali River, 16.VI–12.VIII.1968 (L. L. Levina). Kamchatka: Klyuchi Vill., 14.VI.1967 (Romashova). Kazakhstan: Saur Range, Chagan-Obo, 5.VI.2003 (R. Yakovlev).

Distribution. Altai, Tuva, Transbaikalia; Magadan Province, Kamchatka. Holarctic species.

Sphaerophoria bankowskiae Goeldlin, 1989.

Material. 3 ♂. Russia. Republic of Altai: near Artybash Vill., 22.VI.1990 (A. Barkalov); 25 km SW of Abai Vill., 14.VI.1964 (N. Violovitsh). Khakassia: Western Sayan, Abaza, 24.VI.1975 (I. Kharitonova).

Distribution. Europe and Western Siberia (Altai, Western Sayan). The species is mentioned for the fauna of Russia for the first time.

Sphaerophoria batava Goeldlin, 1974.

Mutin in: Mutin and Barkalov, 1999 : 404.

Material. 15 ♂, 6 ♀. Russia. Bashkiria: Bashkirskii Reserve, “Shakhty,” 23.V.1995 (Yanybaeva). Novosibirsk Province: Kolyvanskii District, Chernyi Mys Vill., motley grass meadow, 4–6.VII.1997 (A. Barkalov); environs of Novosibirsk, 25.VI.1984 (A. Barkalov). Tomsk Province: Kargosokskii District, 11.VIII.1966 (A. Ermolenko). Kemerovo Province: Tolkinskii District, 4 km S of Razdolye Vill., 11.VI.2002 (V. Zinchenko). Altai Territory: Karasuk Vill., 16.VI.1964 (N. Violovitsh). Republic of Altai: 7 km W of Katanda Vill., 16.VII.1983 (A. Barkalov); near Artybash Vill., 20–22.VI.1990 (A. Barkalov). Khakassia: Western Sayan, near Abaza, 31.VII.1972 (Chelyaev) and 29–30.V.1981 (A. Barkalov); Tashytinskii District, near Bolshoi On Vill., 16.VI.1981 (T. Varlamova). Transbaikalia: near Nizhnii Tsasuchei Vill., 17.VI.1995 (I. Lyubechanskii, V. Smirnova). Kamchatka: Nachki Vill., 1.VIII.1967 (Gushchina).

Distribution. Western Europe, Urals, entire Siberia, Yakutia, Amur Province. Mentioned for the first time for Urals and Siberia.

Sphaerophoria chongjini Bańkowska, 1964.

Bańkowska, 1964 : 347; Violovitsh, 1983 : 53; Mutin, 1983 : 89; Peck, 1988 : 42; Mutin and Barkalov, 1997 : 192; Mutin in: Mutin and Barkalov, 1999 : 404.

Material. 86 ♂, 129 ♀. Russia. Tyumen Province: Tyumen District, Bogandinskii Vill., 10.V.2002 (V. Sorokina); environs of Kurgan, 8.V.2001 (V. Sorokina). Novosibirsk Province: Novosibirsk, 28.V.1972 (N. Violovitsh). Altai Territory: environs of Karasuk Vill., 1.VIII.1964 (N. Violovitsh); Soltonskii District, near Akatyev Vill., 26.V.1988 (D. Ivanov). Republic of Altai: Lake Teletskoe, 9.VII.1974 (N. Violovitsh), 14.VI–22.VII.1987 and 1990 (A. Barkalov); Turochakskii District, Obogo cordon, 2003 (V. Sorokina); Cherga Vill., 23.VIII.1992 (V. Marchenko). Khakassia: Western Sayan, near Bolshoi On Vill., 18.VI.1981 (A. Barkalov); environs of Abaza, 28.VI–18.VII.1975 (I. Kharitonova) and 3–11.V.1981 (A. Barkalov); near Tashtyp Vill., 29.VI.2004 (A. Barkalov); Agaskyr Vill., 18.VII.1975 (Yu. Korshunov). Tuva: Chagytaï Vill., 19.VI–17.VII.1963 (N. Violovitsh), 1989 (D. Logunov); Sug-Aksy Vill., 26.VII.1963 (N. Violovitsh). Buryatia: Baikalskii Reserve, Tankhoi Vill., 18.VII.1980 (A. Barkalov). Transbaikalia: Sokhondinskii Reserve, 8.VI.1991 (V. Pekin). Magadan Province: Seimchan Vill., 12.VII.1966 (Romasheva). Kamchatka: Nachiki Vill., 1.VIII.1967 (L. Levina). Amur Province: Svobodnenskii District, Malaya Sazanka Vill., 17.V.1999 (E. Malikova); Klimoutsy, 8.VIII.1958 (Borisova). Khabarovsk Territory: Sovetskaya Gavan, 7.VIII.1951 (N. Violovitsh). Primorskii Territory: environs of Vladivostok, 1.VI.1978 (A. Barkalov); Vladivostok, 8.VIII.1930 (Malaize); environs of Ussuriisk, 18.V–22.VII.1978 (A. Barkalov); Yakovlevskii (former Suptinskii) District, Yakovlevka, 15.VI.1926 (Dyakonov, Filip'ev); Posyet Bay, 8.VII–12.VIII.1978 (A. Barkalov); Ussuriiskii Reserve, 21–27.VII.1978 (A. Barkalov) and 12.VIII.1978 (S. Artamonov); environs of Spassk-Dalnyi, 24.V–3.VII.1978 (A. Barkalov); near Lake Khasan, 3.VIII–26.IX.1978 (A. Barkalov); Vityaz Bay, 16.VII.1975 (Pripisnoi); Kedrovaya Pad' Reserve, 16.VII.1940 (A. Monchadskii); same locality, 14.VI.1968 (Sinitsina); 7 km N of Zanadrovka Vill., 10.IX.1985 (V. Dubatolov). Sakhalin Province: Sakhalin: 15 km NW of Aniva, 22.VII.1989 (V. Mordkovich); same locality, Cape Slepikovsky, 6–8.VII.1991 (A. Basarukin); environs of Yuzho-Sakhalinsk, 3.IX.1988 (A. Basarukin); Kunashir Island, Cape Paltusova, 6.VIII.1955 (N. Violovitsh).

Distribution. Entire temperate belt of Siberia and Russian Far East. Northern Palearctic.

Sphaerophoria indiana Bigot, 1884.

Bañkowska, 1964 : 342; Zimina, 1979 : 48; Violovitsh, 1983 : 52; Mutin, 1983 : 89; Peck, 1988 :

42; Mutin and Barkalov, 1997 : 192; Mutin in: Mutin and Barkalov, 1999 : 406.

Material. 443 ♂, 317 ♀; Fig. 1.

Distribution. South and taiga belt of Siberia and Russian Far East. Central and eastern Palearctic, Oriental region.

Sphaerophoria interrupta (Fabricius, 1805).

Bañkowska, 1964 : 339; Violovitsh, 1976b : 331; 1982 : 193; 1983 : 52; Zimina, 1979 : 48, 1981b : 30; Peck, 1988 : 43. In all the publications this species is mentioned as *Sph. menthastri* (L.).

Material. 113 ♂, 159 ♀; Fig. 2.

Distribution. From Western Europe to Yakutia. Mentioning of this species for Sakhalin (Bañkowska, 1964) is, apparently, erroneous.

Sphaerophoria kaa Violovitsh, 1960.

Bañkowska, 1964 : 318; Violovitsh, 1983 : 52; Peck, 1988 : 43; Mutin and Barkalov, 1997 : 193; Mutin in: Mutin and Barkalov, 1999 : 402.

Material. 3 ♂, 2 ♀. Russia. Sakhalin, 57 km of Cape Terpeniya, 22.VII.1957 (N. Violovitsh).

Note. In his description of *Sph. kaa*, Violovitsh had designated only the holotype and the allotype, but described the species as a series of specimens. Specimens examined by me entirely correspond to those mentioned in the description by collecting sites and time; all of them are supplied by labels of Violovitsh. I designated examined specimens as paratypes and supplied them with corresponding red labels.

Distribution. Russian Far East (Kamchatka, Sakhalin). Mentioning of this specimen from Europe seems doubtful.

Sphaerophoria lauræ Goeldlin, 1989.

Material. 3 ♂. Russia. Kabardino-Balkaria: Baksanskoe Canyon, near Elbrus Vill., 1700–2100 m, 27.VII.1999 (A. Barkalov). Republic of Altai: 15 km S of Katanda Vill., 12.VII.1983 (A. Barkalov); Kosh-Agachskii District, Severo-Chuiskii Mountain Range, valley of Arktur River, 2200 m, 1.VIII.2004 (D. Kropacheva).

Distribution. Northern part and high mountains of Europe, Northern Caucasus and high mountains of Altai. The species is mentioned for the fauna of Russia for the first time.

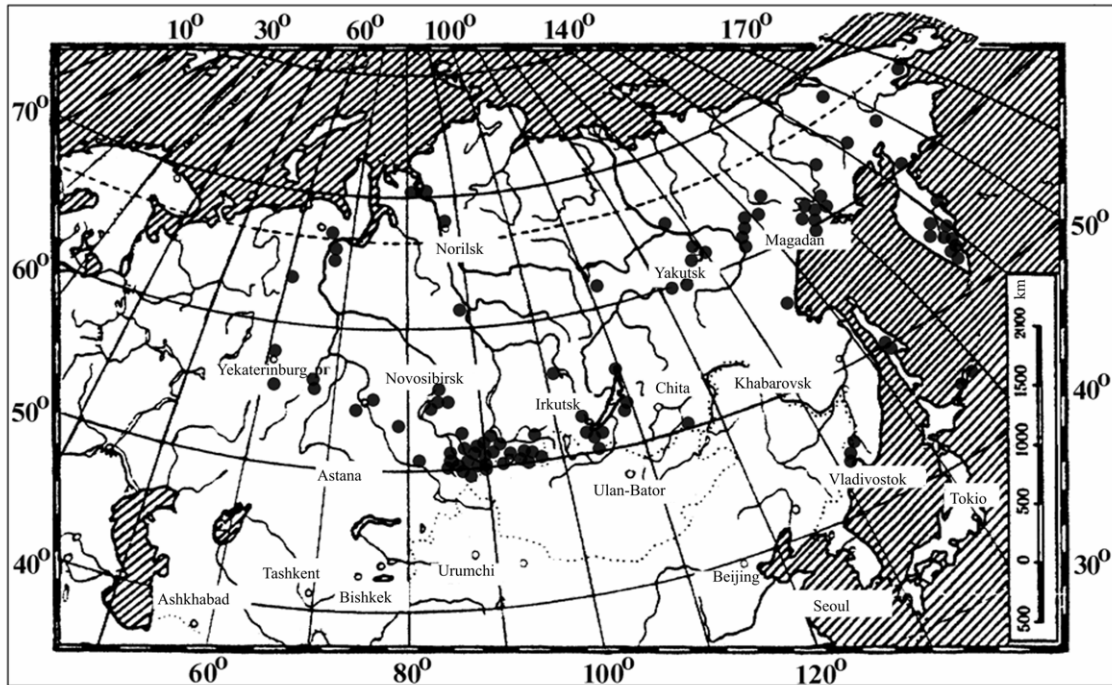


Fig. 3. Distribution of *Sphaerophoria philantha* (Mg.).

Sphaerophoria loewi Zetterstedt, 1843.

Material. 12 ♂, 8 ♀. Russia. Omsk Province: Solyanoe Vill., 22–24.VI.1989 (S. Vasilenko). Novosibirsk Province: environs of Karasuk, 8–9.VI.1982 (A. Barkalov).

Distribution. The species is mentioned for Siberia for the first time. Earlier (Peck, 1988) it was known from Europe, Middle Asia, and Mongolia.

Sphaerophoria macrogaster (Thomson, 1869).

Bañkowska, 1964 : 339 (as *Sph. koreana* Bañk.); Zimina, 1981a : 155 (as *Sph. koreana* Bañk.); Violovitsh, 1982 : 193; 1983 : 52; Peck, 1988 : 43; Mutin and Barkalov, 1997 : 193; Mutin in: Mutin and Barkalov, 1999 : 404.

Material. 56 ♂, 23 ♀. Russia. Primorskii Territory: Mikhailovskii District, Tarasovka Vill., 19.VI.1973 (L. Kulikova); Lake Khasan, 3.VIII–26.IX.1978 (A. Barkalov); Kedrovaya Pad Reserve 31.VIII.1968 (Sinitsina); Vityaz Bay, 22–23.VII.1975 (Pripisnoi) and 27.V.1994 (V. Dubatolov); 10 km W of Cape Klerk, 28.VIII.1998 (V. Dubatolov); Posyet Bay, 16.VII–19.VIII.1978 (A. Barkalov); Ussuriisk, 18–19.VIII.1926 (Kuznetsov) and 24.VIII.1956 (Kamenkova); environs of Ussuriisk, 18.V.1978 (A. Barkalov); Ussuriiskii (= Suputinskii) Reserve, 13.IX.1968

(Sinitsina) and 26.VIII.1978 (S. Artamonov); Spassk-Dalnii, 4.VI.1928 (Obolenskii); environs of Spassk-Dalnii, 21.VI.1978 (A. Barkalov); Sedanka station, 2.VIII.1930 (Malaize). Sakhalin Province: Sakhalin: Kholmskii District, Cape Slepikovskogo, 14.VIII.1990 and 6.VI.1991 (A. Basarukin); near Katangli Vill., 9–11.VIII.1992 (A. Basarukin); Kunashir Island: Yuzhno-Kurilsk Vill., 1.VII.1989 (A. Barkalov); Golovnino Vill., 4.VII.1989 (A. Barkalov); same locality, Cape Paltusova, 7.VIII.1955 (N. Violovitsh). China. 50 km N of Mukden, 20.VII.1952 (Rubtsov). Republic of Korea. Jeju-do Island, 31.VII.2002 (O. Popova). Japan, Shikoku, 170 km SE of Nakamura, 6.VIII.2002 (O. Popova).

Distribution. Southern Russian Far East, northeastern China, Korean Peninsula, Japan.

Sphaerophoria makarkini Mutin, 1999.

Mutin in: Mutin and Barkalov, 1999 : 404.

Material. 10 ♂, 3 ♀. Russia. Buryatia: Baikalskii Reserve, Tankhoi station, 11.VI.1980 (A. Barkalov). Magadan Province: Lamutskoe, 10.VII.1968 (Novikova) and 28.VII.1968 (S. Bobrova).

Distribution. Transbaikalia (mentioned for the first time), Magadan Province.

Sphaerophoria pallidula Mutin, 1999.

Mutin in: Mutin and Barkalov, 1999 : 404.

Material. 41 ♂, 24 ♀. Russia. Tyumen Province: near Aksenovo Vill., 20.V.1997 (B. Zinchenko). Republic of Altai: Turochakskii District, Obogo, 20.VI.2003 (D. Kropacheva); 25 km SW of Abai, 21.VI.1964 (N. Violovitsh); Ust-Koksa Vill., 6.VII.1964 (N. Violovitsh); 25 km SE of Artybash, 2200 m, mountain tundra, 14.VII. 1991 (A. Barkalov). Evenk National Okrug: Neptene River, 24.VII.1982 (K. Eskov, V. Zherikhin, I. Sukacheva). Khakassia: Western Sayan, Pogranichnoe Vill., 6.VIII.1962 (N. Evstigneeva); Bolshoi On River, 14.VI. 1972 (S. Chelyaev) and 26.VII.1975 (I. Kharitonova); bank of Stoktysh River, 1326 m, 51.8°N, 89.9°E, 28.VI.2004 (A. Barkalov). Transbaikalia: Sokhondinskii Reserve, middle Agutsa River, 10–12 km SW of Agutsa cordon, 1200–1300 m, 15.VI.1991 (V. Pekin, D. Logunov). Khabarovsk Territory: Bureinskii Reserve, Medvezhka cordon, 16–17.VII. 2005 (R. Dudko, I. Lyubchanskii). Sakhalin Province: Sakhalin: Okhinskii District, southern part of Astokh Bay, 16–18.VIII.1992 (A. Basarukin); near Katangli Vill., 9–13.VIII.1992 (A. Basarukin); Korsakovskii District, near Ozernyi Vill., 30.VI.1992 (A. Basarukin); Paromai, 1–18.VII.1991 (A. Basarukin); Kunashir Island, near Yuzhno-Kurilsk Vill., 1.VII.1989 (A. Barkalov).

Distribution. Entire Siberia and southern Russian Far East. The species is mentioned from Western and Central Siberia for the first time.

Sphaerophoria philantha (Meigen, 1822).

Zimina, 1979 : 48 (as *Sph. sarmatica* Bańk.); 1981a : 155 (as *Sph. dubia* Zett.); Violovitsh, 1983 : 53; Peck, 1988 : 44; Mutin and Barkalov, 1997 : 193; Mutin in: Mutin and Barkalov, 1999 : 406.

Material. 1284 ♂, 1393 ♀; Fig. 3.

Distribution. Entire Siberia and Russian Far East. Northern Holarctic.

Sphaerophoria potentillae Claussen, 1984.

Material. 6 ♂. Russia. Republic of Altai: Ulagan-skii District, upper Yoldu River, 2000 m, 50°5'N, 88°57'E, motley grass meadow, 18.VI.2005 (V. Zinchenko); Kuraiskaya steppe, 1662 m, 50.2°N, 88.8°E, 9.VII.2006 (A. Barkalov). Khakassia: Western Sayan, Abaza, 8–11.VI.1980 (A. Barkalov). Tuva: Teli River, 11.VII.1963 (N. Violovitsh). Buryatia: 70 km N of

Bagdarin Vill., upper Talaya River, 1250 m, moist meadows near dwarf larches, 8–10.VII.2002 (P. Ustyuzhanin). Transbaikalia: 23 km N of Kyra Vill., 29.VII.1994 (P. Ustyuzhanin).

Distribution. North of Western Europe, mountains of southern Siberia to Transbaikalia. The species is mentioned for the fauna of Russia for the first time.

Sphaerophoria reginae Claussen et Mutin, 2007.

Bańkowska, 1964 : 309; Zimina, 1981a : 155; 1981b : 31; Violovitsh, 1983 : 53; Peck, 1988 : 46; Mutin in: Mutin and Barkalov, 1999 : 401. In all the publications this species is mentioned as *Sph. viridanea* Brunetti, 1915.

Material. 1 ♂. Russia. Khakassia: Western Sayan, environs of Abaza, 5.VI.1981 (A. Barkalov).

Distribution. Central and eastern Palaearctic.

Sphaerophoria rueppellii (Wiedemann, 1830).

Bańkowska, 1964 : 314; Zimina, 1979 : 48; 1981a : 155; Violovitsh, 1983 : 53; Peck, 1988 : 44; Mutin and Barkalov, 1997 : 193; Mutin in: Mutin and Barkalov, 1999 : 401.

Material. 37 ♂, 14 ♀. Russia. Sverdlovsk Province: Middle Urals, 250 km E of Yekaterinburg (= Sverdlovsk), 10.VIII.1974 (I. Kharitonova). Chelyabinsk Province, environs of Chelyabinsk, 27.VII.1988 (I. Kharitonova). Omsk Province: Tatarka Vill., 7.VI.1989 (S. Vasilenko). Novosibirsk Province: environs of Karasuk, 27.V and 16.VI.1982 (A. Barkalov); environs of Novosibirsk, Elitnoe, 29.VII.1985 (I. Krotova); Mikhailovskii District, Nikolaevka Vill., 10.VIII.1960 (N. Violovitsh). Tomsk Province: Kolomino, 21.VI.1968 (N. Violovitsh); Kuzurovo, 16.VII.1968 (N. Violovitsh). Republic of Altai: Cherga, 20.VIII.1992 (V. Marchenko); 15 km S of Katanda Vill., 10.VII.1983 (A. Barkalov). Tuva: northeastern bank of Lake Ubsu-Nur, 1700 m, 18.VII.1993 (A. Barkalov); upper Orokhin-Gol River, 7.VIII.1963 (N. Violovitsh). Buryatia: Dzhidotoi River, Vitim basin, 9–11.VI.1961 (B. Rodendorf). Khabarovsk Territory: Korsakovo, 25.VII.1959 (K. Gorodkov); Khabarovsk, 10.VI.1912. Primorskii Territory: 25 km SW of Slavyanka, Ryazanovka, 3.IX.1986 (V. Dubatolov); Lake Khasan, 20–23.IX.1978 (A. Barkalov); Vityaz Bay, 23.VII.1975 (Pripisnoi); Posyet Bay, 14.VII.1978 (A. Barkalov); Ussuriiskii Reserve, 30.V and 22.VIII.1979 (S. Artamonov). Sakhalin Province: Sakhalin, Yuzhno-Sakhalinsk, 14.VIII.1957

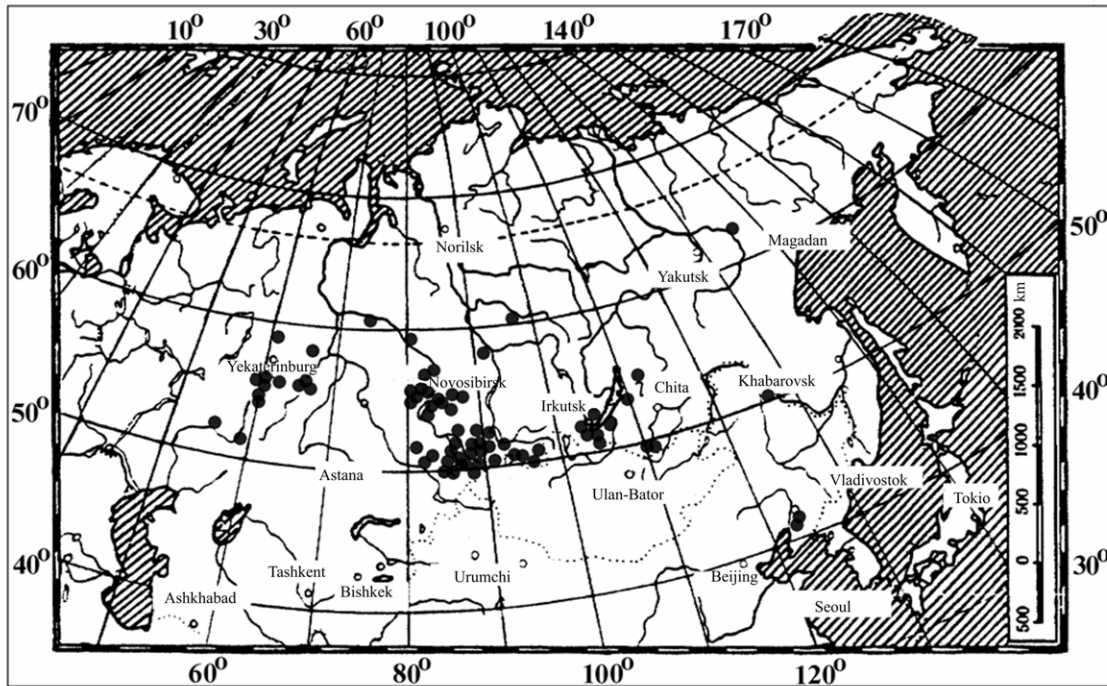


Fig. 4. Distribution of *Sphaerophoria scripta* (Mg.).

(N. Violovitsh); near Novoaleksandrovka Vill., Susuya River, 10.VIII.1990 (A. Basarukin).

Distribution. The entire temperate and southern Palearctic, including Siberia and the Russian Far East. Afrotropical region.

Sphaerophoria scripta (Linnaeus, 1758).

Bańkowska, 1964 : 324; Zimina, 1979 : 48; Violovitsh, 1983 : 53; Mutin, 1983 : 89; Peck, 1988 : 44; Mutin and Barkalov, 1997 : 193; Mutin in: Mutin and Barkalov, 1999 : 401.

Material. 1293 ♂, 1068 ♀; Fig. 4.

Distribution. The entire Palearctic, including Siberia and the Russian Far East. Oriental region.

Sphaerophoria shirchan Violovitsh, 1957.

Bańkowska, 1964 : 307; Zimina, 1981b : 30; Violovitsh, 1983 : 53; Mutin, 1983 : 89; Peck, 1988 : 46; Mutin and Barkalov, 1997 : 193; Mutin in: Mutin and Barkalov, 1999 : 401.

Material. 2 ♂, 6 ♀. Russia. Yakutia: 232 km of Khandyga Vill. towards Magadan, 19.VI.1985 (L. Popova). Sakhalin Province: Sakhalin, Yuzhno-Sakhalinsk, 14.VI.1955 (N. Violovitsh); Kunashir Island, Lake Lagunnoe, 11.VII.1954 (N. Violovitsh).

Distribution. Western Europe, Mongolia, south of the Russian Far East.

Sphaerophoria taeniata (Meigen, 1822).

Violovitsh, 1983 : 53; Peck, 1988 : 46; Mutin in: Mutin and Barkalov, 1999 : 404.

Material. 201 ♂, 184 ♀; Fig. 5.

Distribution. Temperate belt of the Palearctic, including entire Siberia and Russian Far East.

Sphaerophoria turkmenica Bańkowska, 1964.

Material. 1 ♂. Kabardino-Balkaria: Baksan Canyon, 1700 m, 25.VII.1999 (A. Barkalov).

Distribution. Arabian Peninsula, Caucasus, Middle Asia. The species is mentioned for the fauna of Russia for the first time.

Sphaerophoria tvinica Violovitsh, 1966.

Violovitsh, 1983 : 53; Peck, 1988 : 46; Mutin in: Mutin and Barkalov, 1999 : 401.

Material. 6 ♂, 4 ♀. Russia. Altai Territory: Kurynskii District, 12 km SW of Akimovka Vill., 29.V.2004 (V. Sorokina). Republic of Altai: near Artybash Vill., motley grass forest meadow, 22.VI.1990 (A. Barkalov); Kuraiskaya steppe, 1662 m, 50.2°N, 87.8°E,

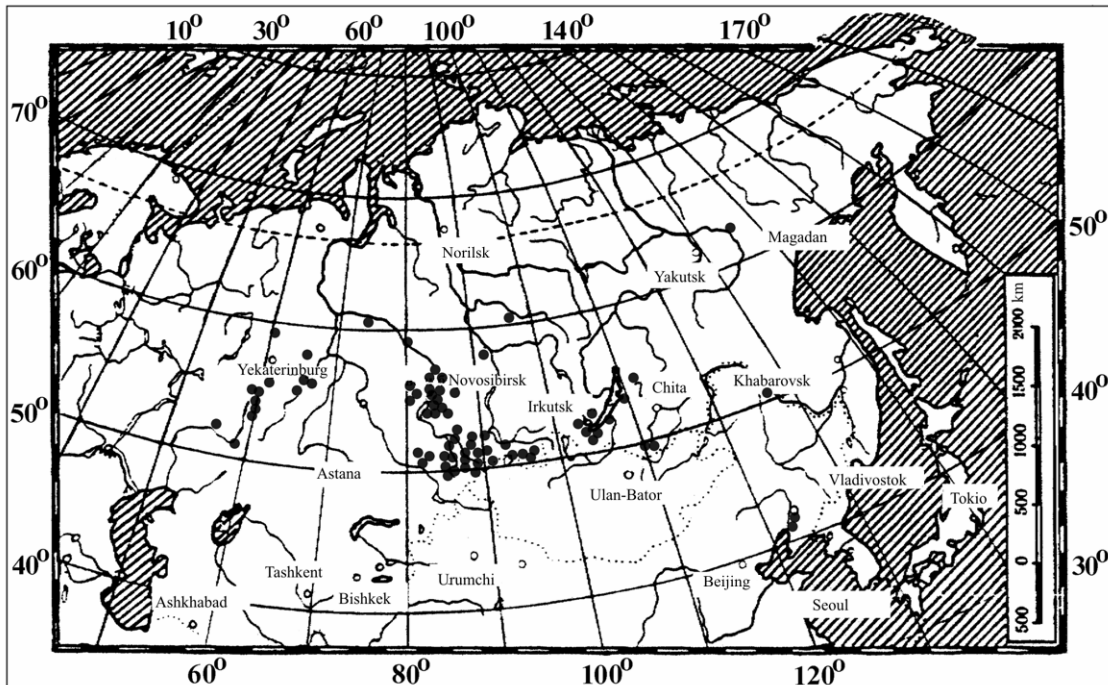


Fig. 5. Distribution of *Sphaerophoria taeniata* (Mg.).

9.VII.2006 (A. Barkalov). Tuva: 15 km N of Khandagaity Vill., 8–10.VII.2002 (P. Ustyuzhanin). Buryatia: near Kurumkan Vill., 30.VI.1980 (A. Barkalov); Naushki station, 10.VII.1992 (L. Kukharchuk). Transbaikalia: Sokhondinskii Reserve, Agutsa cordon, 15.VI.1991 (D. Logunov); Lesnoi Vill., right bank of Ingoda River, 6.VII.1971 (V. Richter). Amur Province: Klimoutsy, 40 km W of Svobodnyi, 31.V.1958 (Borisova).

Distribution. The mountains of southern Siberia and the south of the Russian Far East, Yakutia. For the Altai, the species is indicated for the first time.

Sphaerophoria virgata Goeldlin, 1974.

Mutin and Barkalov, 1997 : 193; Mutin in: Mutin and Barkalov, 1999 : 404.

Material. 11 ♂, 1 ♀. Russia. Yamal-Nenets Autonomous Territory: Yamal Peninsula, Krasnoselkup Vill., 10.VII.1982 (Sergeeva). Tomsk Province: Kargasokskii District, 11.VIII.1968 (A. Ermolenko); Timiryazev, 10.VI.1964. Republic of Altai: 30 km SW of Abai, 30.VI.1964 (N. Violovitsh); 15 km S of Katanda, 23.VII.1983 (A. Barkalov). Khakassia: Western Sayan, environs of Abaza, 3.VI.1981 (A. Barkalov, T. Varlamova). Republic of Sakha - Yakutia: 232 km W of Khandyga Vill. along the highway, 9.VII.1985 (A. Barkalov). Sakhalin Prov-

ince: Sakhalin, environs of Lake Tunaicha, 24.VI.1992 (A. Basarukin).

Distribution. Temperate belt of Palearctic, including entire Siberia and Russian Far East. The species is mentioned for western Siberia and Yakutia for the first time.

Sphaerophoria ziminae Mutin, 1999.

Distribution. The species was described from the southern Primorskii Territory. In our material, this species is absent.

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