

# A Review of Species of the Genus *Brachyopa* (Diptera, Syrphidae) from Russia, with Description of New Species from Tajikistan

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**Abstract**—Two new species of the genus *Brachyopa* Meigen are described from Tajikistan. *B. paradoxa* sp. n. clearly differs from the congeners in the structure of 3rd antennal segment, which is not oval, but cylindrical and elongate. *B. stackelbergi* sp. n. is closely related to *B. insensilis* Collin, but differs in the presence of a distinct tuft hairs on the proepimeron and in the structure of the genitalia. A list of the species of this genus, distributed over territory of Russia, is provided.

Two new species of the genus *Brachyopa* Meigen are described from Tajikistan. One of these, *B. paradoxa* sp. n., clearly differs from other species of the genus in the structure of 3rd antennal segment, which is not oval, but cylindrical and elongate. The species *B. stackelbergi* sp. n. is most closely related to *B. insensilis* Collin, and differs from it in the presence of a distinct tuft of hairs on the proepimeron and structure of the genitalia. A list of species of the genus distributed in Russia is given.

The genus includes about 20 Palaearctic species (Peck, 1988; Mutin and Barkalov, 1999). Owing to recent publication of papers including a detailed examination of the male genitalia, the taxonomy of the genus has been clarified and new synonyms of some previously described species have been established (Thompson, 1980 are revealed; Kaplan and Thompson, 1981; Thompson and Torp, 1982). Of special note is Pellmann's (1998) study, in which the genitalia of most of the European species are figured in detail.

At present, the fauna of the genus *Brachyopa* Meigen of Siberia and the Far East has been much studied (Violovitsh, 1977, 1980; Mutin, 1984, 1985; Mutin, 1998). Data on the distribution of species of the genus in the European part of Russia are, in contrast, very poor and presented in few communications (Krivosheina and Mamaev, 1967; Stackelberg, 1970).

The least known member of the genus is a taxon considered earlier under the name "*B. conica*." A number of species appeared under this name in various

papers: *B. testacea* (Fallén), *B. vittata* Zett., *B. panzeri* Goffe (= *B. cornea* Pz.), and, occasionally, *B. dorsata* Ztt. All these species are associated with wood substrata and develop in juice bead on trunks and under bark of trees, in tunnels of xylophilous insects. However, each of the species is characterized by features determined by a species of trees and a certain group of xylophilous insects. Therefore, it was necessary to reexamine a collection material and publish a clarified list of species of the genus.

The author has examined collections of species of the genus, deposited in the Institute of Ecology and Evolution, Russian Academy of Sciences, Moscow (IEE); Zoological Museum, Moscow State University, Moscow (ZMMU); and Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZIN).

Type specimens are deposited in IEE.

*Brachyopa paradoxa* Krivosheina sp. n. (fig. 1,2)

**Material.** Holotype: ♂, "Tigrovaya Balka" Nature Reserve, environs of Dzhilikul, Tajikistan, 27.III.1986, no. 11. Paratypes: 1 ♂, 5 ♀, as holotype, emergence of adults 31.III–6.IV.1986 (N. Krivosheina).

**Description. Male.** Eyes approximate along short distance and separated by frontal stripe not narrower than median ocellus. Upper frontal triangle, vertex, and occiput black, with dense pale pruinosity; occiput, in addition, with dense pale hairs. Frontal stripe separating eyes glabrous, shining, brown. Lower frontal triangle and face brownish, with pale pruinosity on

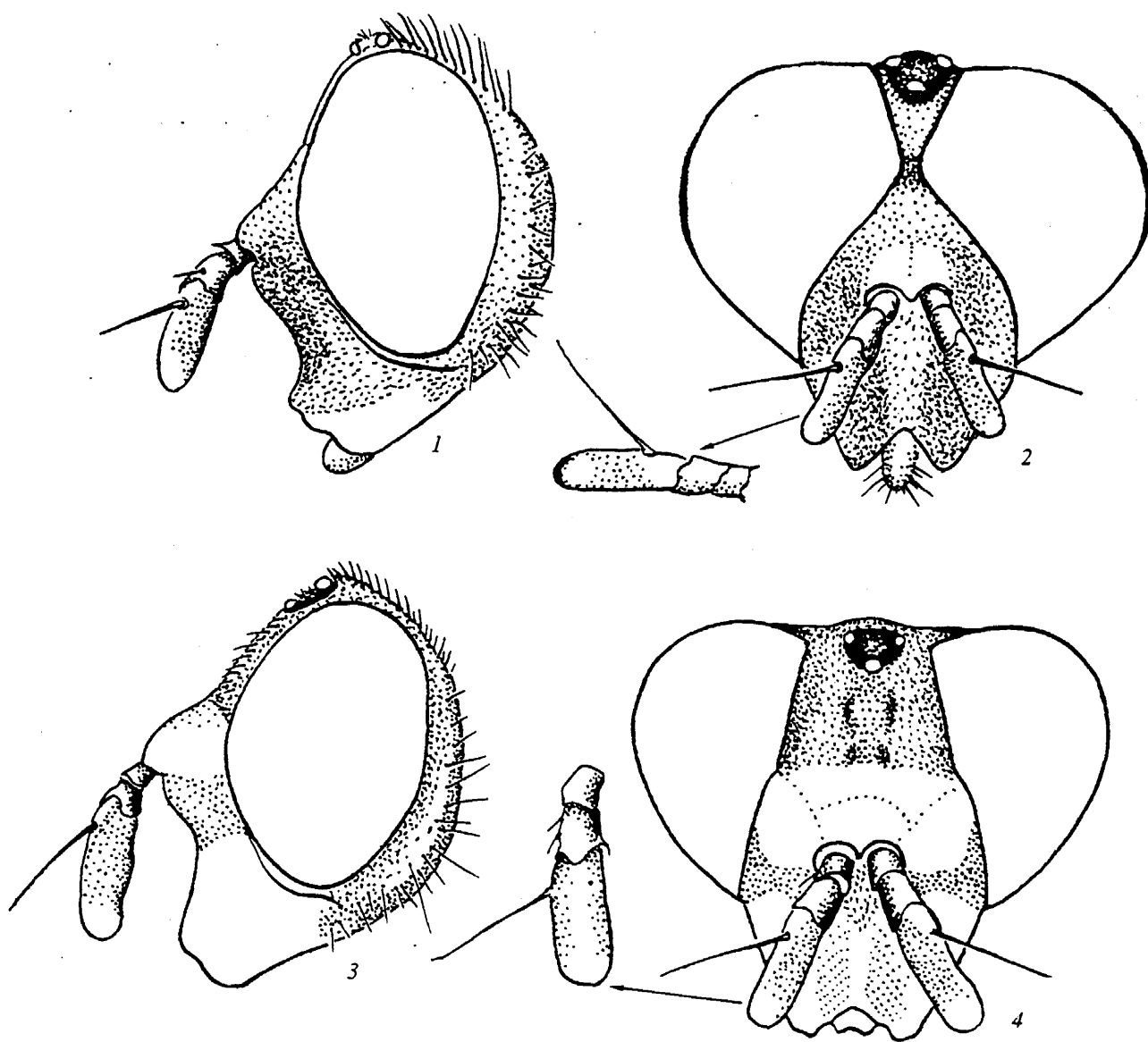


Fig. 1. *Brachyopa paradoxa* Krivosheina, sp. n.: (1, 2) male; (3, 4) female [(1, 3) head, lateral view; (2, 4) head, front view].

large part; lunula glabrous and shining. Occiput uniformly projecting beyond eye margin, its width at ventrolateral corner exceeding width of 3rd antennal segment. Face with wide arcuate emargination below antennae. Antennae with elongate cylindrical 3rd segment not less than 2.5 times as long as wide (3.5 : 1.3). Two basal segments and arista dark brown. 3rd segment slightly paler, arista nearly glabrous. Thorax dark, dark brown to black, with dense pale pruinosity and pale long hairs. Mesonotum with 2 approximate dark median stripes not reaching scutellum and 2 distinct lateral stripes reaching postwing tubercles. Mesonotum, including postwing tubercles, with rather

dense hairs before scutellum. Long dense hairs entirely covering anepisternum, anepimeron and upper part of catepisternum. Some long hairs forming tuft on proepimeron. Scutellum short, arcuately rounded, with short pale hairs. Middle and hind coxae dark, other parts of leg pale, femur and tibia brownish on outer surface, 2 apical tarsal segments slightly darkened on upper side. Hind femur with rows of fine spines on lower side, hind tibia arcuately curved. Abdomen rufous, with dark brownish lateral margins and pale pubescence. Genitalia (Fig. 2, 4-7) differing in structure from those in all known species of the genus. Body length 6 mm, length of wing 7 mm.

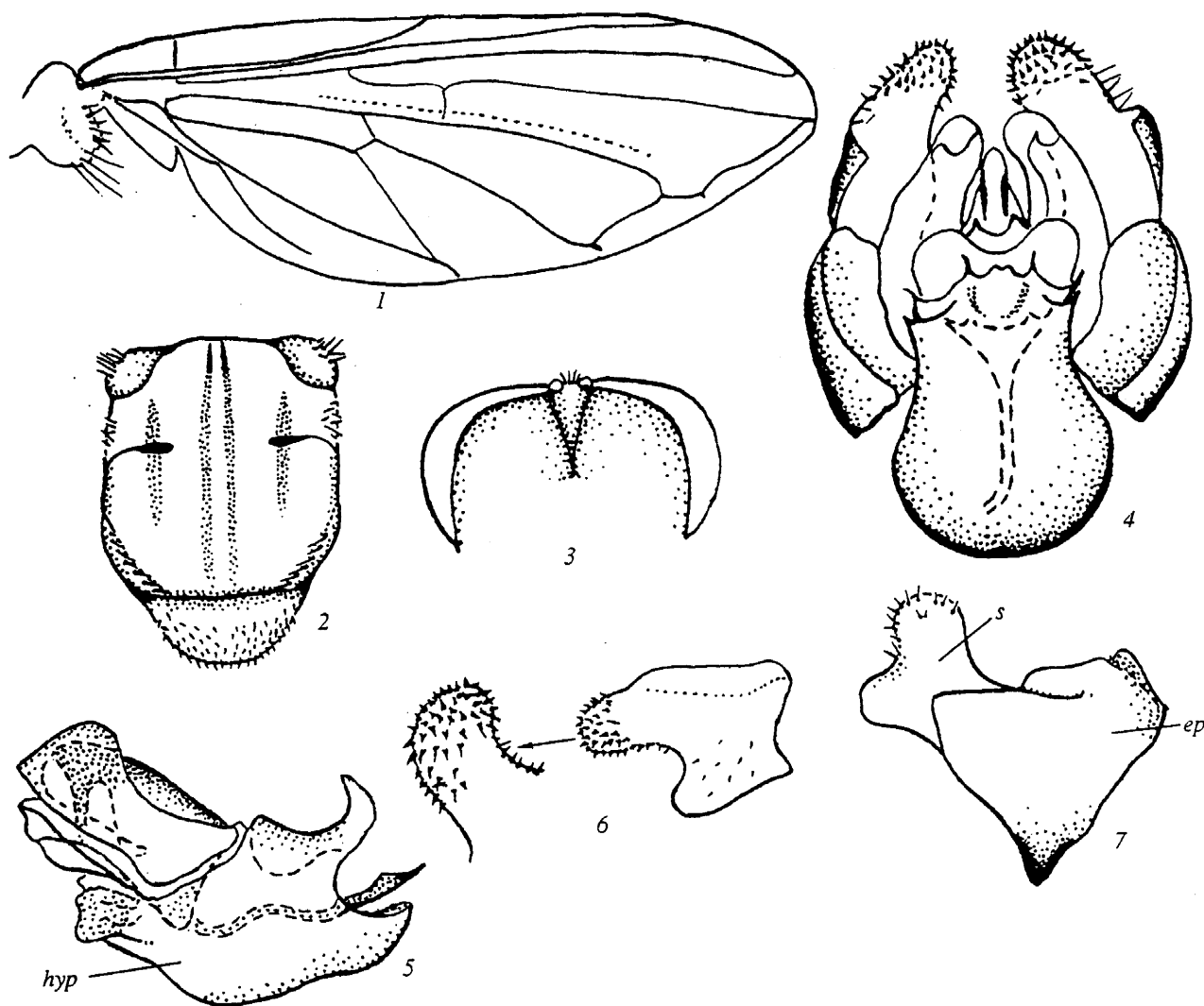


Fig. 2. *Brachyopa paradoxa* Krivosheina, sp. n.: (1) female; (2–7) male [(1) wing; (2) thorax, dorsal view; (3) occipital part of head; (4) genitalia, ventral view; (5) hypandrium, lateral view; (6) surstylus; (7) epandrium and surstylus, lateral view]; *ep*, epandrium; *hyp*, hypandrium; *s*, surstylus.

**Female.** Frons wide, distinctly widened toward antennae, nearly as wide at level of median ocellus as eye (45 : 50), with pale pruinosity and rather dense hairs. Lunula glabrous and shining, half as long as frontal stripe. Middle part of frontal stripe with sparser pubescence and dark background appearing through it. Face pale brownish, pruinose in upper 1/3 below antennae; other parts glabrous and shining. Length to width ratio of 3rd antennal segment 45 : 18. Hairs on anepisternum sparser, mainly situated in posterior part, similarly to those in other species of the genus. Lower side of hind femur with rows of spines only in apical third and with singular hairs in middle part. Apical tarsal segments distinctly darker than those in male.

**Differential diagnosis.** The new species clearly differs from all the known congeners in having the strongly elongate, cylindrical 3rd antennal segment. However, the structure of the head, body, wing, and legs is, on the average, typical of the genus.

*Brachyopa stackelbergi* Krivosheina sp. n. (Fig. 3)

**Material.** Holotype: ♂. Ramit. Tajikistan. 8.VI.1978, nos. 343–346 (M. Danilevskii).

**Description. male.** Eyes approximate along distance shorter than upper frontal triangle, separated by narrow parallel-sided stripe not wider than arista at base. Frons pale yellow; vertex, ocellar tubercle, and

occiput dark, with pale short pubescence denser on occiput. Lower frontal triangle, lunula, and face pale yellow. Lunula glabrous and shining on dorsal side, surface of lower frontal triangle and face with silvery pruinosity, frontal triangle also with fine sparse pale lateral hairs. Occipital margination narrow in upper part and widened at ventrolateral angle behind eyes, not narrower there than 3rd antennal segment, with row of dark short hairs in upper part and long fine pale hairs in lower part. Antennae pale; arista fuscous, nearly glabrous. Length to width ratio of 3rd segment 1.3 : 1.0. Thorax, including humeral and postwing tubercles and pleura, dark, with pale dense pruinosity and sparser pale hairs. Pleura with long pale hairs in posterior part of anepisternum, on epimeron, and in upper part of catepisternum. Anepisternum, in addition to pale hairs, with 2 long black setae. Proepimeron with tuft of rather long pale hairs. Mesonotum with 2 rather wide, separate dark median stripes extending beyond transverse suture. Two narrower distinct lateral stripes situated in posterior part of mesonotum. Scutellum rather short, pale, narrowed to apex, widely rounded there, with sparse black hairs in apical half. Legs pale, femora slightly darkened on lateral surface, hind femur with rows of short black spines along entire length of lower surface. Tibiae with vague fuscous stripes in front. Ultimate tarsal segment brownish on upper side. Halteres pale. Wing transparent, slightly yellowish. Abdomen pale, with pale pubescence. Body length 6 mm, length covered 7 mm.

**Differential diagnosis.** The new species is closely related to *B. insensilis* Collin, and differs in the presence of a distinct tuft of hairs on the proepimeron and in the structure of genitalia.

*A List of Species of the Genus Brachyopa Meigen  
Distributed in Russia*

*B. bicolor* (Fallén 1817).

Russia: 1 ♂, Tellerman, Voronezh Prov., autumn 1961 (B. Mamaev). "*B. bicolor* Fall. det. A. Stackelberg." Ukraine: 1 ♀, environs of Kharkov, 30.IV.1883, 1 ♂, 23.IV.1885, same locality. "*B. bicolor* Fall. c. Yaroshevskii;" 1 ♂, 1 ♀, Khust, Transcarpathia, 17.VII.1963, emergence of adults 20.II.1964 (N. Krivosheina). 1 ♂, Manhaztsberg Nied. Osterr. (A. Siebeck); 1 ♂, New Forest: Denny Wood (F.W. Edwards) "*B. bicolor* Fall. det. R.L. Coe. 1958" [ZIN, IEE]. The species has been described from territory of Sweden, it is distributed in Europe from Sweden to Bulgaria, Romania and the former Yugoslavia. The

indication on its distribution in the Far East (Peck, 1988) requires specification. The examined specimens, provided with the label "*B. bicolor*," belong to *B. violovitshi* Mutin. Doubts concerning the distribution of *B. bicolor* in the Far East have been already stated by Mutin (1998).

*B. cinerea* Wahlberg 1844.

Russia: 1 ♂, 1 ♀, Yashchera River, Luga Distr., Leningrad Prov., 11.VI.1964, 27.V.1968 (A. Stackelberg); 2 ♂, Ishti-Hem, Tuva, 23.VII.1974, emergence of adults 24.I.1975 (N. Krivosheina); 1 ♀, environs of Zeya, Amur Prov., 24.VI.1982 (A. Ozerov) [ZIN, ZMMU, IEE]. The species was described from Sweden, recorded in Finland, is widely distributed in Russia, including Khabarovsk and Primorskii Territories; the latter records are indicated in Mutin's study (1998).

*B. dorsata* Zetterstedt 1837 (= *sibirica* Viol., Mutin and Barkalov, 1999).

Russia: 1 ♂, Murmansk, 1921 (E. Smirnov). "*B. dorsata* Zett. det. L. Zimina;" 1 ♂, Yashchera, Luga Distr., 30.V.1968; 2 ♂, Gatchina and Yukki, Leningrad Prov., 18.V.1940, 22.V.1947 (A. Stackelberg); 1 ♂, 1 ♀, Ishti-Hem, Tuva, 14.VIII.1973, no. 143, emergence of adults 20–25.III.1974 (N. Krivosheina); 1 ♂, 23 km of Taishet in the direction toward Bratsk, Irkutsk Prov., 5.VI.1939 (Borovskii); 1 ♂, Kundur, Amur Prov., 6.V–7.V.1975, no. 106; 1 ♀, Bychikha, 25 km SE of Khabarovsk, Khekhtsirskii Nature Reserve, 3.V.1975, "*B. dorsata* Ztt., det. Zimina "; 1 ♀, same locality, 28.IV.1976, no. 157 (A. Zaitsev); 1 ♂, Kozyrevsk, Kamchatka, 20.VI.1984, no. 59, emergence of adults 15.II.1985 (N. Krivosheina); 4 ♂, "Tigrovaya Balka" Nature Reserve, Sucvhan, Distr., Ussuriisk Terr., [Primorskii Terr.], 10–12.VI.1927 (A. Stackelberg); 1 ♀, "Kedrovaya Pad" Nature Reserve, environs of Primorskaya Station, Primorskii Terr., 11.X.1964, no. 230, emergence of adults 8.II.1965; 1 ♂, same locality, 17.IX.1968, no. 97; 1 ♀, Ussuriiskii Nature Reserve, 40 km SE of Ussuriisk, Primorskii Terr., 19.IX.1964, no. 170, emergence of adults 2.II.1965; ♀, same locality, 11.IV.1967, no. 19, emergence of adults 21.IV.1967 (N. Krivosheina). 1 ♂, Waldegg [Bohemia], 961. "*B. dorsata* Ztt. Kowarz det." [ZIN, ZMMU, IEE]. Judging from the material available, the species is distributed over Russia from the western to eastern borders and common in collections. The species was described from Sweden. Records on the of species from the territory of Europe.

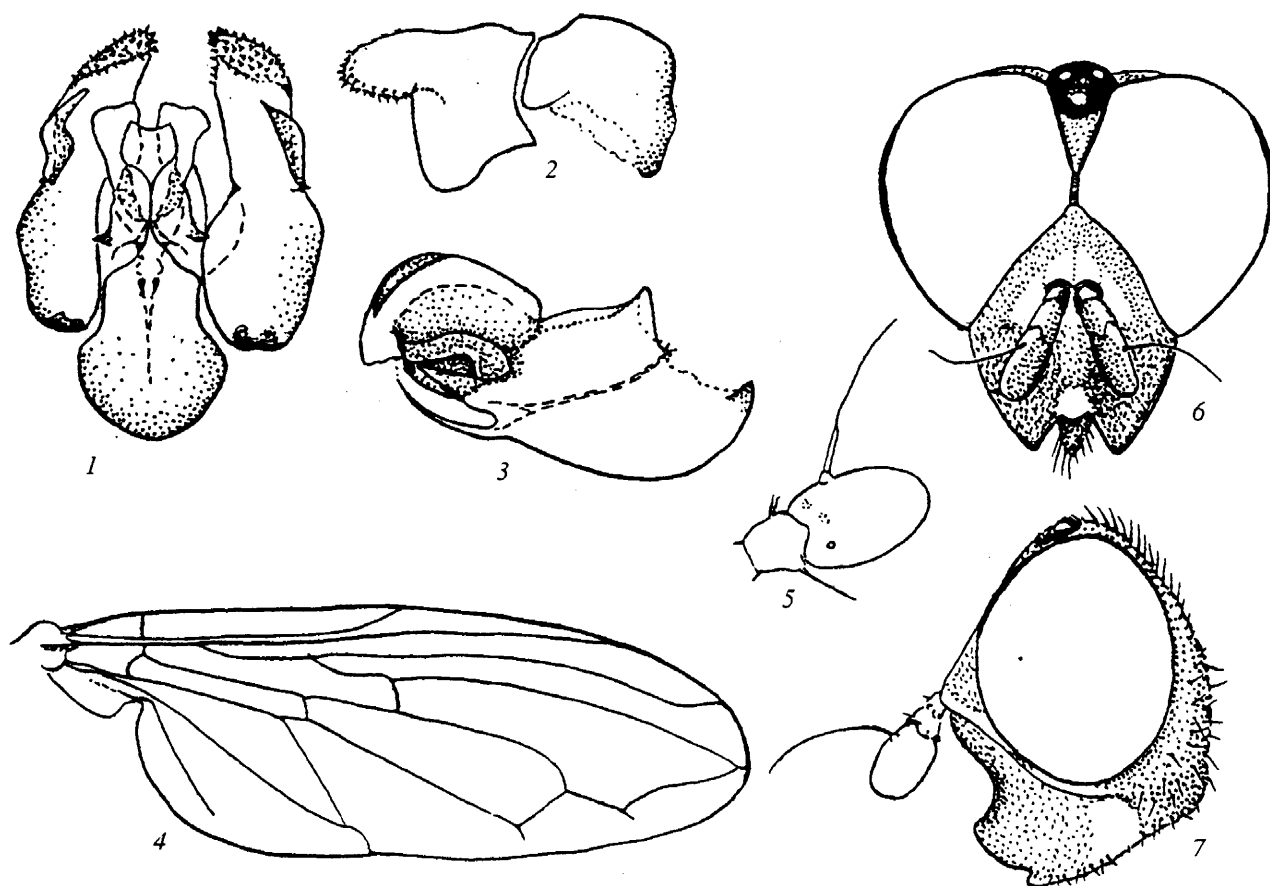


Fig. 3. *Brachyopa stackelbergi* Krivosheina, sp. n., male: (1) genitalia, ventral view; (2) epandrium and surstylus, lateral view; (3) hypandrium, lateral view; (4) wing; (5) 2nd and 3rd antennal segments; (6, 7) head, front and lateral view.

including Romania and the former Yugoslavia (Peck, 1988), requires specification. The distribution of the species in Sweden, Finland, and Denmark has been substantiated (Thompson, 1980).

***B. insensilis* Collin 1939.**

Russia: 1 ♀, "Sarepta, Sarat." [Volgograd Prov.], 29.IV.1917 (N. Kuznetsov). 1 ♂, Kalocsa [Hungary] (Thalhammer) [ZIN]. The species was described from England; it is known from western and Central Europe, southern areas of the Ukraine, and the European part of Russia.

***B. maritima* Violovitsh 1980.**

Russia: 2 ♂, Ussuriiskii Nature Reserve, 40 km SE of Ussuriisk, Primorskii Terr., 17.IV.1969, no. 34, 20.IV.1969, no. 56; 1 ♂, same locality, 19.IV.1969, no. 41; 1 ♂, 1 ♀, same locality, 10.IV.1967, no. 8, 16.IV.1967, no. 57, emergence of adults 27.IV.1967 (N. Krivosheina); 1 ♂, "Tigrovaya Balka" Nature Reserve, Suchan. Distr., Ussuriisk Distr., 11.VI.1927

(A. Stackelberg); 1 ♂, Kamenushka, 40 km SE of Ussuriisk, Primorskii Terr., 4.VI.1989 (A. Shatalkin), "*B. maritima*, det. L. Zimina" [ZIN, ZMMU, IEE]. The species was described from Iturup Island (southern Kuril Islands), it is known from Khabarovsk Territory and the continental part of Primorskii Territory.

***B. obscura* Thompson et Torp 1982.**

Russia: 1 ♂, Yashchera, Luga Distr., Leningrad Prov., 27.VI.1962 (A. Stackelberg), "*B. testacea* Zett. det. Stackelberg" [ZIN]. The species differs from *B. testacea* only in the structure of the genitalia; it was described from Russia (Leningrad Prov.), recorded in Europe from Germany, Sweden, and Norway (Stuke, 2001).

***B. ornamentosa* Violovitsh 1977.**

The species was described from environs of Ussuriisk, recorded in Khabarovsk Territory and eastern China (Mutin, 1998).

***B. panzeri* Goffe 1945 (= *conica* Panzer 1798).**

Russia: 1 ♂, 1 ♀, Yashchera, Luga Distr., Leningrad Prov., 13.VI.1959, 16.VI.1968 (A. Stackelberg); 1 ♀, Ishti-Hem, Tuva, at window, 2.VII.1974 (N. Krivosheina); 1 ♂ and 1 ♀, Klimoutsy, Amur Prov., 40 km W of Svobodnoe, 30–31.V.1959 (K. Borisov); "*B. dorsata* Ztt. det. Stackelberg;" 1 ♂ and 1 ♀, same locality, 4.VI.1958 and 29.V.1959 (G. Zinov'ev); 1 ♂ and 1 ♀, Kozyrevsk, Kamchatka, 22.VI.1984 (N. Krivosheina); 1 ♂, "Yakovlevka, Spassk, u. Ussuriisk Terr." [southern Primorskii Terr.] 24.VI.1927 (A. Stackelberg); 1 ♀, "Vinogradovka, Ussuriisk Terr." [southern Primorskii Terr.], 10.VI.1929 (D'yakonov and Filip'ev); 1 ♀, Sokolchi, environs of Lazo, Primorskii Terr., 24.VI.1979, in a house at window (N. Krivosheina). Ukraine: 1 ♂ and 1 ♀, Lemskoe, environs of Rakhov, Transcarpathia, 23–24.V.1966, mowing at brook (N. Krivosheina). 1 ♂, Waldegg [Bohemia] "*Brachyopa dorsata* Ztt. Kowarz det." [ZIN, IEE]. The species was described from Austria; it is known from Scandinavia and Denmark, also recorded from Romania and the former Yugoslavia (Peck, 1988). In Russia, it is apparently distributed from the western to eastern borders, common in the forest zone.

***B. plena* Collin 1939.**

The species was described from Czechia; it was recorded in Russia from Leningrad Prov.

***B. pilosa* Collin 1939.**

Russia: 2 ♂, Yashchera, Luga Distr., 30–31.IV.1968; 1 ♂, environs of Luga, Tolmachevo, Leningrad Prov., 16.VI.1936 (A. Stackelberg); 1 ♂, Ubinskaya, Krasnodar Terr., 23.VII.1970, no. 146 (N. Krivosheina); 1 ♀, same locality, July 1970, no. 156–157 (B. Mamaev). 1 ♂, "Dornbach," 26.V.1907; 1 ♂, "Hovange Skov. Nysted" [Denmark], 15.VI.1972 (E. Torp). "*B. pilosa* Coll. det. E. Torp" [ZIN, IEE]. Judging from the data available, the range of the species is limited with the territory of Europe, except in the extreme south.

***B. pivanica* Mutin, 1984.**

Russia: 1 ♀, "Kedrovaya Pad" Nature Reserve, environs of Primorskaya Station, Primorskii Terr., 10.V.1967 (B. Mamaev); 1 ♂, Zeya, Amur Prov., 11.VII.1981 (A. Shatalkin) [ZMMU, IEE]. The species was described from Khabarovsk Terr.; recorded in Yakutia, Amur Province, and Primorskii Territory (Mutin, 1998).

***B. primorica* Mutin, 1998.**

The species was described from various areas of Khabarovsk and Primorskii Territories.

***B. testacea* (Fallén 1817).**

Russia: 2 ♂, "Lakhta and Kartashevka, Petrogr. u.," 9.VI.1919, 28.VI.1926; 1 ♂ "vic. Luga NW Russia, Tolmatschevo" [Leningrad Prov.], 3.VII.1938 (A. Stackelberg); 1 ♂, Belozerskii Distr., Vologda Prov., 17.VI.1964 (A. Borodin), "*B. testacea* Fall, det. L. Zimina;" 1 ♂, "Tigrovaya Balka" Nature Reserve, Suchan. Distr., Ussuriiskii Terr." [Primorskii Terr.], 10.VI.1927 (A. Stackelberg) "*B. testacea* Fall. det. Thompson;" 1 ♂, Ussuriiskii Nature Reserve, 40 km SE of Ussuriisk, Primorskii Territory, 16.V.1967 (B. Mamaev). "*B. testacea* Fall. det. Stackelberg." 1 ♂, "Waldegg [Bohemia], no. 960, *Brachyopa testacea* Fall. Kowarz det." [ZIN, IEE]. The species was described from Sweden, its range extends from the northwestern to eastern borders of the Palaearctic Region.

***B. violovitshi* Mutin, 1985.**

Russia: 1 ♀, Ussuriiskii Nature Reserve, 40 km SE of Ussuriisk, Primorskii Terr., 10.IX.1968, no. 72 (N. Krivosheina); 1 ♂, same locality 27.V.1985 (A. Ozerov), "*B. bicolor* Fall. det. L. Zimina;" 1 ♂, Komsomolsk-on-Amur, 30.V.1987 (B. Mutin). "*B. violovitshi*, det. Mutin" [ZMMU, IEE]. The species was described from southern Primorskii Territory, its range is limited with Khabarovsk and Primorskii Territories.

***B. vittata* Zetterstedt 1843.**

Russia: 1 ♀, Rozhdestvenno (9 km of Siverskaya), Leningrad Prov., 9.VII.1956 (A. Stackelberg); 1 ♀, Peshki, Solnechnogorsk Distr., 16.IX.1970, no. 218 (B. Mamaev); 1 ♂, Abramtsevo, 8.VI.1954 (E. Smirnov), "*B. conica*, det. L. Zimina;" 4 ♂, 4 ♀, Pavlovskaya Sloboda, near Nakhabino, Moscow Prov., 11.V.1964 (N. Krivosheina); 2 ♂, Artybash, Gornyi Altai, coast of Lake Teletskoe, 15.VI.1981, on cedar (M. Krivosheina); 1 ♂, Altai, Upper Abakan River, warm source, 30.VI.1962 (Novikova); 1 ♀, Taizas River, Altai, 3–12.VII.1897 (Yu. Wagner); 1 ♂, Morozovka, Ternei, Primorskii Terr., 16–17.VI.1937 (K. Grunin). Ukraine: 1 ♂, Lemskoe, environs of Rakhov, Transcarpathia, 24.V.1966, mowing at brook (N. Krivosheina). 1 ♂, "Harcynia (Saxesen)" [Saxony]; 1 ♂, 1 ♂, "Waldegg [Bohemia], 956, *B. conica* Pz. det. Kowarz" [ZIN, ZMMU, IEE]. The species is, obviously, a typical Transpalaearctic inhabitant. As it ap-

peared in a number of papers under the name "*B. conica*," its distribution range needs to be clarified.

*B. zhelochovtsevi* Mutin 1998.

Russia: 1 ♂, Klimoutsy, 40 km E of Svobodnoe, Amur Prov., 2.VI.1959 (G. Zinov'ev) [ZIN]. The species was described from Magadan and Amur Province, Khabarovsk Territory.

As *B. paradoxa* sp. n. clearly differs from the congeners in the structure of the antennae, the main morphological characters of species of the genus have been analyzed.

Species of the genus vary in the pubescence of the arista and thorax and structure of the frontal stripe of males and 1st segment of the hind tarsus. The extent of pubescence of the arista is known to vary within the limits of the genus. The arista may be glabrous (*B. maculipennis* Thompson, *B. insensilis* Collin, *B. bicolor* (Fallén), *B. paradoxa* sp. n., *B. stackelbergi* sp. n.), shortly pubescent (*B. scutellaris* Rob.-Desv. and *B. pilosa* Collin), or plumose (*B. vittata* Zett. and *B. testacea* (Fallén)). Three species (*B. cinerea* Wahlb. and both the new species) possess tufts of long hairs on the proepimeron (below the anterior spiracles), in addition to those on the proepisternum; other species have dense long hairs only on the proepisternum (before the anterior spiracles). In *B. paradoxa* sp. n., the eyes are separated by a rather wide frontal stripe equal in width to the middle ocellus. In other species, either the stripe is slightly narrower, or the eyes nearly adjoin. Also, the stripe widely varies in length. The length and width of the metatarsus in males also vary. It is nearly cylindrical, slightly narrower than, or as wide as the tibia in most of the species. In *B. insensilis* Collin and *B. stackelbergi* sp. n., the metatarsus is swollen and distinctly wider than the tibia. Long dense hairs are situated on the anepisternum and anepimeron in *B. paradoxa* sp. n. and *B. cinerea* Wahlb. In other species, the hairs are sparser and usually longer at the posterior margin of the anepisternum. Coloration of the mesonotum varies from a rufous with small fuscous longitudinal stripes to entirely darkened ones. In addition to *B. paradoxa* sp. n., *B. cinerea* Wahlb. (the abdomen is black and shining) and *B. maculipennis* Thompson (the cross-veins of wings bear a dark spot) also clearly differ in appearance from the congeners.

Thus, a number of morphological characters vary within the genus. As a result, the following main generic differences can be listed: scutellum pale, vein *M* running into *R*<sub>4+5</sub> under an acute angle, and spines on

hind femur forming no rows (spines scattered over entire lower surface of femur in male, and situated only in its apical third in female).

On the whole, the genus is presented by 5 Transpalearctic species: *B. cinerea* Wahlb., *B. dorsata* Zett., *B. panzeri* Goffe, *B. testacea* (Fall.), and *B. vittata* Zett. (the position of *B. bicolor* (Fall.) remains unclear); 6 eastern-Siberian and Far Eastern species described by N.A. Violovitsh and V.A. Mutin: *B. maritima* Viol., *B. ornamentosa* Viol., *B. pivanica* Mutin, *B. primorica* Mutin, *B. violovitshi* Mutin, and *B. zhelochovtsevi* Mutin; at last, 7 or 8 species have been recorded only in the European part of the Palearctic Region.

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