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PALAEARCTIC SPECIES OF THE GENUS *SCIAPUS* ZELLER (DIPTERA: DOLICHOPODIDAE)

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Палеарктические виды рода *Sciapus* Zeller (Diptera: Dolichopodidae). Гричанов И.Я., Негробов О.П. Санкт-Петербург: ВИЗР, 2014, 84 с. (Приложения к журналу «Вестник защиты растений», №13). ISBN 978-5-93717-061-3.

Palaearctic species of the genus *Sciapus* Zeller (Diptera: Dolichopodidae). Igor Ya. Grichanov & Oleg P. Negrobov. St.Petersburg: VIZR, 2014, 84 p. («Plant Protection News, Supplements», N13). ISBN 978-5-93717-061-3.

В книге приведен обзор данных по фауне и систематике палеарктического рода хищных мух-зеленушек *Sciapus* Zeller, 1842. Описаны десять новых для науки видов: *Sciapus longitarsis* из Израиля, Голанских высот и Палестины; *S. freidbergi* из Израиля; *S. adana* из Турции; *S. occidasiaticus* из Израиля и Палестины; *S. iranicus* из Ирана; *S. canariensis* из Испании (Канарские острова); *S. litoralis* из Греции и Турции; *S. corsicanus* из Франции (Корсика); *S. pseudobellus* из Италии; *S. vladimiri* из России (Якутия). Обсуждается таксономический статус и признаки ряда видов. Составлен каталог и определитель 66 палеарктических видов *Sciapus*, в основном, по вторичным половым признакам самцов. Выделены 5 видовых групп.

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PALAEARCTIC SPECIES OF THE GENUS *SCIAPUS* ZELLER (DIPTERA: DOLICHOPODIDAE)

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Abstract

Systematic and faunistic information on the Palaearctic species of the predatory genus *Sciapus* Zeller, 1842 is reviewed. New records for known species are given. Ten new species are described: *Sciapus longitarsis* from Israel, Golan Heights and West Bank; *S. freidbergi* from Israel; *S. adana* from Turkey; *S. occidasiaticus* from Israel and West Bank; *S. iranicus* from Iran; *S. canariensis* from Spain (Canary Islands); *S. litoralis* from Greece and Turkey; *S. corsicanus* from France (Corsica); *S. pseudobellus* from Italy; *S. vladimiri* from Russia (Yakutia). *Sciapus cornuflexus* Parent, 1938 is placed in synonymy with *S. albifrons* (Meigen, 1830). The taxonomic status and characters of some species of the genus are discussed. A check list of Palaearctic species of *Sciapus* is compiled, as well as a revised key to 66 species based mainly on male secondary sexual characters, and 5 species groups are defined.

KEY WORDS: Dolichopodidae, *Sciapus*, Palaearctic, zoogeography, new species, key, entomophage, predator.

Introduction

The genus *Sciapus* Zeller, 1842 contains about 70 mainly Holarctic species including 56 recognized species from the Palaearctic Region, seven from the Nearctic Region, one from Orient and one species from Afrotropics (Grichanov, 2003–2014). This genus is defined by the following complex of characters (Bickel, 1994; Grichanov et al., 2011). Hind femur with distinct anterior preapical bristle in both sexes (absent in some Palaearctic species and present in some species of tropical sciapodine genera); propleuron usually without strong ventral setae; male cerci either free and simple or fused, rarely each cercus with a long apicoventral projection; postgonite (or proctiger or "Organ X") often unpaired, projected and fused with ventral side of fused cerci, sometimes reduced, sometimes free and bilobed; female fore femur bearing usually group of 3–6 strong ventral setae.

The last key to the Palaearctic fauna of *Sciapus* was published by Becker (1918), containing 31 species of this genus. Later keys were compiled for some parts of western Palaearctic by Parent (1938), Meuffels & Grootaert (1990) and Grichanov (2006, 2007). Several new species have been described during recent decades from other parts of the Palaearctic Region (Negrobov, 1973; Negrobov & Shamshev, 1986a; Negrobov & Selivanova, 2009,

Negrobov & Grichanov, 2010; Negrobov, Maslova & Selivanova, 2012). Many old species have been redescribed (Meuffels & Grootaert, 1990; Negrobov & Pont, 2005; Negrobov & Maslova, 2006; Negrobov & Selivanova, 2006), and *Sciapus exul* Parent, 1932 has been transferred to *Amblypsilopus* Bigot, 1888 (Bickel, 1994). Nevertheless, many undescribed species are still kept in various collections, and *Sciapus* needs a review on the Palaearctic Region scale.

Several species of the genus were observed as predators on small sciarid, psichodid and other flies, Thysanoptera, Collembola, Arachnida (Ulrich, 2005), occurring in many natural and agricultural ecosystems including gardens, orchards, vineyards, grain, sugar beet and other field crops (Meuffels & Grootaert, 1990; Grichanov, 1997).

All known Palearctic species are here keyed. Many recently described species are known by males only with their females being probably poorly distinguished; therefore a key to males only is here provided. Ten new species discovered during recent collection trips to various countries are described and illustrated. In addition, a check list of Palaearctic species is given. With the new species described here, the Palaearctic fauna of *Sciapus* now totals 66 recognized species.

Material and methods

The holotypes and paratypes of the new species and other material cited are housed at the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia [ZIN], the Natural History Museum of Denmark [ZMUC], Finnish Museum of Natural History, Helsinki, Finland [MZH], Department of Zoology, Tel Aviv University, Israel [TAU]; Natural History Museum, Berlin, Germany [MFN], Voronezh State University, Voronezh, Russia [VSU], Zoological Museum of Moscow State University, Moscow, Russia [MZUM], All-Russian Institute of Plant Protection, St. Petersburg, Russia [VIZR].

Morphological terminology mainly follows Cumming and Wood (2009). Body length is measured from the base of the antenna to the tip of abdominal segment 6. Wing length is measured from the base to the wing apex. The relative lengths of the tarsomeres should be regarded as representative ratios and not measurements (if not specified). Male genitalia were macerated in 10% KOH. Figures showing the male genitalia in lateral view are oriented as they appear on the intact specimen (rotated 180° and lateroflexed to the right), with the morphologically ventral surface of the genitalia facing up, dorsal surface down, anterior end fac-

ing right and posterior end facing left. Information on world distribution for known species follows Grichanov (2003–2014).

Review of Palaearctic species of the genus *Sciapus*

Sciapus Zeller, 1842: 831 (nom. nov. for *Psilopus* Meigen, 1824, nec Poli, 1795). Type species: *Dolichopus platypterus* Fabricius, 1805 (automatic).
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See Bickel (1994) for redescription of the genus and synonymy.

Sciapus aberrans Becker, 1918

Figs. 1–2

Sciapus aberrans Becker, 1918: 187, Fig. 339.

Type locality

[Lebanon:] Beirut.

Material

2♂, 7♀, [**Cyprus**:] Cypern, Ayia Napa, 10 km W Capo Greco, 13-23.VI.1983, B. Petersen leg. [ZMUC].

Distribution

Cyprus, Germany, Greece, Italy, Lebanon, Turkey (Adana). New for Cyprus.

Sciapus adumbratus Becker, 1902

Psilopus adumbratus Becker, 1902: 62.
Sciapus adumbratus (Becker, 1902); Bezzi, 1903: 289; Becker, 1918: 178, Fig. 332; Negrobov & Maslova, 2006: 66, Fig. 1.

Type locality

[Egypt:] "Siala". Originally published as "Kairo, Assiut, Alexandrien, Wüste bei Siala".

Material

2♂, [**United Arab Emirates**:] U.A.E., Ras al Khaimah, shore dunes, light traps, 6-9.IV.1990, K. Mikkola leg. [MZH]; [**Morocco**:] Maroc, Ait Melloul pr Oued. Sous, 27.II-2.III.1961, Lindberg [MZH]; 3♂, **Morocco**: near Ouarzazate, 1100 m, 31.227 N, 7.812 W, 12.V.2012, N.

Vikhrev [MZUM]; 4♂, 2♀, **Morocco**: near Essaouira, 23-26.III.2009, N. Vikhrev [MZUM]; 2♂, [**Turkmenistan**:] Repetek, 24.IV & 4.V.1990, A.L. Ozerov [MZUM].

Distribution

Egypt, Iraq, Morocco, Oman, Tunisia, Turkmenistan, United Arab Emirates. New for Morocco, Turkmenistan, United Arab Emirates.

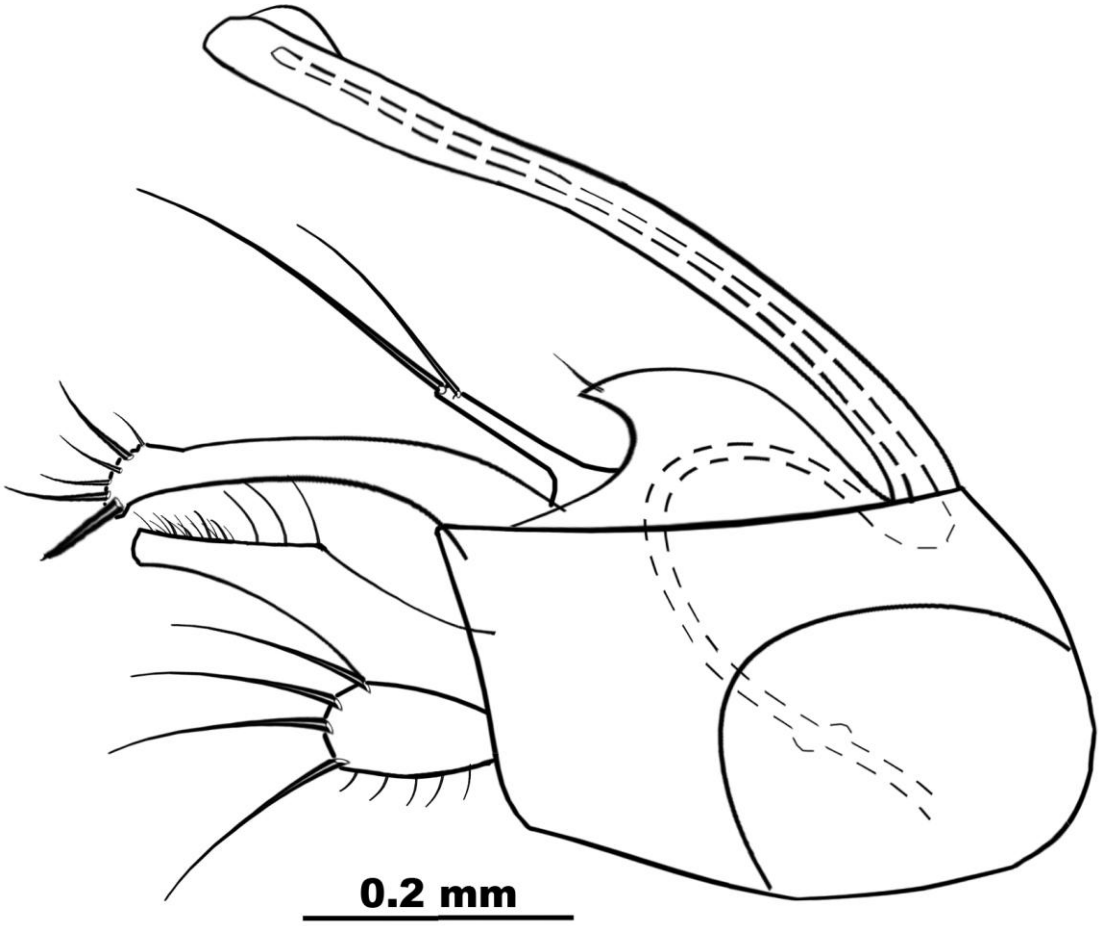

Fig. 1. *Sciapus aberrans* Becker, hypopygium.

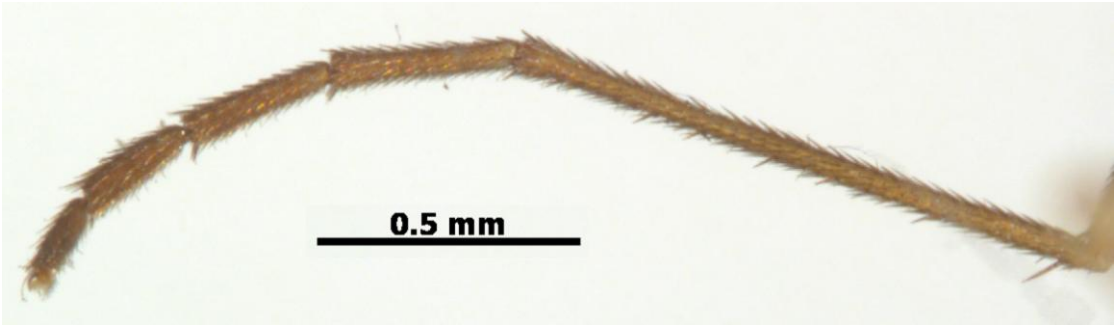

Fig. 2. *Sciapus aberrans* Becker, fore tarsus.

Sciapus albifrons (Meigen, 1830)

Psilopus albifrons Meigen, 1830: 360.

Sciapus albifrons (Meigen, 1830); Bezzi, 1903: 289; Parent, 1938: 682, Figs. 945-947.

Sciapus lobipes Zeller, 1842: 833 (nec Meigen, 1824).

Sciapus cornuflexus Parent, 1938: 684 (nom. nov. for *Sciapus contristans* Becker, 1918: 179, Fig. 333; nec *Dolichopus contristans* Wiedemann, 1817), **syn. nov.**

Type locality

Not given.

Material

13♂, 2♀, [**Russia**:] Leningrad Region, Luga distr., Yashchera, 17.VII.1965, 23.VII.1965, 29.VI.1966, 27.VI.1967, 4.VII.1967, 11.VII.1967, 16.VII.1967, 21.VII.1967, 5.VIII.1967, 11.VIII.1967, 24.VI.1968, 6.VII.1968, A. Stackelberg [ZIN]; 2♂, [**Russia**:] St.Petersburg, Pushkin, 16-15 and 23-27.VII.1998, Grichanov [ZIN].

Distribution

Austria, Belgium, Czech, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, Netherlands, "Palestine", Poland, Romania, Russia (Karachai-Cherkessia, Leningrad, Moscow, Novosibirsk, Pskov, Ryazan, Voronezh), Slovakia, Turkey (Buharkent), Ukraine (Kherson).

Remarks. Parent (1938) and Meuffels & Grootaert (1990) noted that Becker's Fig. 333 (Becker, 1918) with strongly bent "horns of Organ X" provided for *S. contristans* did not correspond with any species of the *S. contristans* species group. Parent (1938) gave a new name *S. cornuflexus* for a species pictured by Becker (1918). At the same time, the Fig. 333 is very similar to Becker's Fig. 322 provided for *S. albifrons*, both having no principal differences in morphology of hypopygium, and Becker's diagnosis of *S. contristans* emphasized the similarity of "Organ X" with that in *S. adumbratus*, which has almost straight "horns of Organ X". Therefore, we consider the Fig. 333 as a technical error, and the name *S. cornuflexus* Parent, 1938, as a synonym of *S. albifrons*.

Sciapus albovittatus Strobl, 1909

Sciapus albovittatus Strobl: in Czerny & Strobl, 1909: 183; Becker, 1918: 174, Figs. 32.

Type locality

Spain: Algeciras.

Distribution

Algeria (?), Spain.

Sciapus algirus (Macquart, 1849)

Psilopus algirus Macquart: in Lucas, 1849: 462.

Sciapus algirus (Macquart, 1849); Bezzi, 1903: 289.

Sciapus albimanus Becker, 1918: 156; Parent, 1926: 208; Type locality: [Spain:] "Algerius (Spanien, Algeciras)"; Negrobov & Maslova, 2006: 67, Figs. 3-5.

Type locality

Algeria.

Distribution

Algeria, Spain.

Sciapus basilicus Meuffels et Grootaert, 1990

Sciapus basilicus Meuffels et Grootaert, 1990: 168, Figs. 8-10.

Type locality

Netherlands: Noord-Holland, Overveen.

Material

2♂, **Russia**: [Krasnodar Terr.], Sochi reg., Nizhevysokoe, Mzymta river, 8-10.VI.2008, K. Tomkovich [MZUM]; 1♂, 1♀, [**Russia**:] Leningrad Region, Vyborg distr., Bolshoi Berezovyi Isl., 16.VII.1980, Kandybina [ZIN].

Distribution

Austria, Denmark, Finland, Germany, Netherlands, Norway, Romania, Russia (Krasnodar, Leningrad), Sweden, Switzerland, UK. New for Russia.

Sciapus bellus Loew, 1873

Psilopus bellus Loew, 1873: 44.

Sciapus bellus (Loew, 1873); Bezzi, 1903: 289; Negrobov & Pont, 2005: 18, Figs. 4-9.

Type locality

Romania: "Herculesbad" [=Baile Herculane].

Distribution

Austria, Czech, Germany, Greece, Hungary, Italy, Poland, Romania, Slovakia, Switzerland, "Ukraine".

Sciapus calceolatus (Loew, 1859)

Psilopus calceolatus Loew, 1859: 1.

Sciapus calceolatus (Loew, 1859); Bezzi, 1903: 289; Negrobov & Selivanova, 2006: 157, Figs. 1-5.

Type locality

Spain: Ferrol.

Distribution

Spain.

Sciapus contristans (Wiedemann, 1817)

Dolichopus contristans Wiedemann, 1817: 72; Meuffels & Grootaert, 1990: 161.

Psilopus contristans (Wiedemann, 1817); Macquart, 1827: 27.

Sciapus contristans (Wiedemann, 1817); Strobl, 1906: 320; Meuffels & Grootaert, 1990: 172, Figs. 11-13.

Psilopus flexus Loew, 1869: 55 (nec Loew, 1858). Type locality: not given [Augsburger Umgegend, Germany]; Negrobov, 1991: 14; Meuffels & Grootaert, 1990: 164.

Sciapus flexus (Loew, 1869) (nec Loew, 1858); Bezzi, 1903: 290.

Psilopus loewi Becker, 1902: 62 (nom.nov. for *Psilopus flexus* Loew, 1869, nec Loew, 1858) (synonymized by Meuffels et Grootaert, 1990: 164).

Sciapus loewi (Becker, 1902); Bezzi, 1903: 290.

Psilopus vialis Raddatz, 1873: 331. Type locality: Germany: Mecklenburg; synonymized by Meuffels & Grootaert, 1990: 164.

Sciapus vialis (Raddatz, 1873); Bezzi, 1903: 292.

Type locality

Germany: Schleswig-Holstein, [Kiel].

Distribution

Austria, ?Belarus, Belgium, Bulgaria, Czech, Egypt, Estonia, France, Germany, Hungary, ?Israel, Italy, Netherlands, Poland, Romania, ?Russia, Slovakia, Spain, UK, ?Ukraine, "Yugoslavia".

Remarks

Meuffels & Grootaert (1990) made a reassessment of species concepts of *S. contristans* and its close relatives. As a result, most of old records of that species need confirmation. It was recently excluded from Denmark, Finland and Sweden; see Grichanov (2010). Reliable area of the species distribution includes Belgium, France, Germany and Netherlands.

Sciapus costae (Mik, 1890)

Psilopus costae Mik, 1890: 158 (nom. nov. for *Psilopus eximius* A. Costa, 1886, nec Walker, 1852).

Sciapus costae (Mik, 1890); Bezzi, 1903: 290; Parent, 1938: 685, Figs. 952-954.

Psilopus eximius A. Costa, 1886: 39 (nec Walker, 1852). Type locality: Italy, Sicily.

Sciapus eximius (A. Costa, 1886); Bezzi, 1903: 290.

Sciapus mediterraneus Becker, 1907: 102. Type locality: Tunisia: "Tabarka, Hafenstadt bei Bizerta im Norden von Tunis" (synonymized by Becker, 1918: 163).

Type locality

Italy: Sicily (automatic).

Distribution

Italy, France, Morocco, Tunisia.

Sciapus discretus Parent, 1926

Sciapus discretus Parent, 1926: 27; Parent, 1938: 686, Figs. 955-956.

Type locality

[Poland:] "Prusse orientalis: Osterode".

Distribution

France, Poland.

Sciapus dytei Negrobov, Maslova et Selivanova, 2012

Sciapus dytei Negrobov, Maslova & Selivanova, 2012*:* 164, Figs. 3-6.

Type locality

Russia: Primorje, Ussuri Reserve.

Distribution

Russia (Vladivostok).

Sciapus euchromus (Loew, 1857)

Psilopus euchromus Loew, 1857: 6.

Sciapus euchromus (Loew, 1857); Bezzi, 1903: 290; Negrobov & Selivanova, 2006: 159, Figs. 6-8.

Type locality

Not given.

Material

1♂, [**Golan Heights**:] "Israel: Baniass [Paneas], 10.VII.1975, M. Kaplan" [TAU]; 2♂, "Israel: Baniass, 13.VI.1982 A.Freidberg" [TAU]; 3♂, **Bulgaria**: Varna, 17.VII.1968, E. Thuneberg [MZH].

Distribution

Bulgaria, Hungary, Golan Heights. New for Bulgaria and Middle East.

Remarks

The species was described by a female. Lichtwardt (1913) associated his material (males and females) collected by Kertész from Gyon (Hungary) with this name, comparing the species with *Sciapus longulus*. One of those males was recently described and firstly figured by Negrobov & Selivanova (2006). *S. euchromus* males were also briefly described by Becker (1918) and Parent (1938), who did not give new distributional records. All three descriptions are somewhat different, but apparently belonging to the same species.

Sciapus euzonus (Loew, 1859)

Psilopus euzonus Loew, 1859: 2.

Sciapus euzonus (Loew, 1859); Bezzi, 1903: 290; Becker, 1918: 176, Fig. 331.

Psilopus eutarsus Schiner, 1862: 183. Type locality: Italy: Sicily.

Sciapus eutarsus (Schiner, 1862); Bezzi, 1903: 290.

Sciapus auresi Vaillant, 1952: 38, Fig. 1 (as a variation of *Sciopus euzonus*). Type locality: Algeria: "d'Oues Baughara, Ruisseau des Singes, Arr Is."; Negrobov, 1991: 15 (as a subspecies of *Sciapus euzonus*; unavailable name according to ICZN, 45.6.4.1, as published after 1980).

Type locality

Italy: Sicily.

Distribution

Algeria, Czech, France, Italy, ?Morocco, Spain, former Yugoslavia.

Sciapus evanidus (Bezzi, 1898)

Psilopus evanidus Bezzi, 1898: 44.

Sciapus evanidus (Bezzi, 1898); Strobl, 1902: 476; Parent, 1938: 688, Figs. 959-961.

Psilopus macrodactylus Bezzi, 1898: 44 ["Loew in coll."]. Type locality: unknown.

Sciapus macrodactylus (Bezzi, 1898); Negrobov, 1991: 15 (as *Sciapus macrodactylus* Becker [in error for Bezzi]).

Type locality

Italy: "Acquasanta presso Bolognola".

Distribution

France, Greece, Italy, Spain, Tunisia, Former Yugoslavia.

Sciapus flavicinctus (Loew, 1857)

Psilopus flavicinctus Loew, 1857: 4.

Sciapus flavicinctus (Loew, 1857); Bezzi, 1903: 290; Parent, 1938: 690, Figs. 962-964.

Psilopus ludens Loew, 1873: 44. Type locality: not given (synonymized by Becker, 1918: 156-157).

Sciapus ludens (Loew, 1873); Bezzi, 1903: 291.

Type locality

Turkey: "bei Constantinopel".

Material

1♂, [**Russia**:] Caucasus, North Ossetia, Sukhotskoe vil., 30 km SW Mozdok, 3.VIII.1988, A.L. Ozerov [MZUM]; 1♂, S **Turkey**: Manavgat, river, 29.IX.2007, N. Vikhrev [MZUM]; 1♂, **Turkey**: Antalya, Side, sand dune, 26.V.2008, N. Vikhrev [MZUM].

Distribution

Azerbaijan, Bulgaria, Denmark, France, Germany, Greece incl. Crete, Hungary, Iran, ?Israel, Italy, Romania, S Russia (Krasnodar, North Ossetia), Slovakia, Turkey (Adana, Istanbul).

Sciapus flexicornis Parent, 1944

Sciapus flexicornis Parent, 1944: 123, Fig. 3.

Type locality

China: "Ordos, Leilongwan".

Distribution

Palaearctic China.

Sciapus frater Parent, 1927

Sciapus frater Parent, 1927: 76; Parent, 1938: 691, Figs. 965-966.

Type locality

Austria: "Wippach, Alpes".

Distribution

Austria, France, Slovakia; excluded from Russia by Negrobov & Grichanov, 2010.

Sciapus glaucescens (Loew, 1856)

Psilopus glaucescens Loew, 1856: 47.

Sciapus glaucescens (Loew, 1856); Bezzi, 1903: 290; Parent, 1938: 692, Figs. 967-969; Negrobov & Selivanova, 2006: 161, Figs. 9-13.

Psilopus robustus Loew, 1857: 4 (nec Walker, 1857). Type locality: Italy: Triest.

Sciapus robustus (Loew, 1857); Negrobov, 1991: 15.

Sciapus brionii Becker, 1918: 162 (as a var. of *Sciopus glaucescens*). Type locality: Brioni Is. "bei Spalato" [Croatia]; Venturi & Parrini, 1960: 70 (as a var. of *Sciopus lesinensis*; "Yugo-

slavia", Azores); Negrobov, 1991: 15 (as a subspecies of *Sciapus glaucescens*; unavailable name according to ICZN, 45.6.4.1, as published after 1980).

Psilopus occultus Santos Abreu, 1929: 376 (as a var. of *Psilopus glaucescens*) (Type locality: Spain: Canary Is., La Palma).

Sciapus occultus (Santos Abreu, 1929); Negrobov, 1991: 15 (as a subspecies of *Sciapus glaucescens*; unavailable name according to ICZN, 45.6.4.1, as published after 1980).

Psilopus validus Loew, 1858: (nom.nov. for *Psilopus robustus* Loew, 1857, nec Walker, 1851).

Sciapus validus (Loew, 1858); Bezzi, 1903: 292.

Type locality

Egypt.

Material

2♂, **Morocco**: Oualidia, lagune, 32.746 N, 9.024 W, 30.IV.2012, N. Vikhrev [MZUM]; 1♂, **Turkey**: Mersin prov., sea level, 36.532 N, 34.225 W, 21.IV.2010, N. Vikhrev [MZUM]; 1♂, **Abkhazia**: Sukhumi, 26.VII.1999, V. Lantsov [ZIN].

Remark

Two males collected from Morocco are identical to the redescription of *S. glaucescens* type (Negrobov & Selivanova, 2006) and to the material from Abkhazia and Turkey, differing in simple accumbent setulae on mid tibia and tarsus, in somewhat darker hind leg.

Distribution

Abkhazia, Bulgaria, Croatia, Egypt, France, Israel, Italy, Morocco, Portugal (Madeira, Azores), Spain (Canary Is.), Russia (Crimea), Turkey. New for Abkhazia, Morocco, Turkey.

Sciapus gracilipes (Loew, 1871)

Psilopus gracilipes Loew, 1871: 304.

Sciapus gracilipes (Loew, 1871); Bezzi, 1903: 290; Negrobov & Selivanova, 2006: 161, Figs. 16-18).

Type locality:

Slovakia: "Tatragebirge".

Distribution

Poland, Russia (Voronezh), Slovakia.

Sciapus heteropygus Parent, 1926

Sciapus heteropygus Parent, 1926: 30; Parent, 1938: 693, Figs. 970-971.

Type locality

France: Ardennes, "Mézières".

Distribution

Czech, Denmark, France, Germany, Greece, Hungary, Israel, Romania, Slovakia, Spain, Switzerland, Turkey (Mugla), UK.

Sciapus holoxanthos Parent, 1926

Sciapus holoxanthos Parent, 1926: 32; Parent, 1938: 694, Figs. 972-973.

Type locality

France: Hyères; Apt.

Distribution

France, Turkey (Muğla).

Sciapus incognitus Negrobov et Shamshev, 1986

Sciapus incognitus Negrobov & Shamshev, 1986a: 20, Figs. 5-8.

Type locality

Russia: Primorye, Kedrovaya Pad Nature Reserve.

Distribution

Russia (Vladivostok).

Sciapus judaeus Parent, 1932

Sciapus judaeus Parent, 1932: 222, Figs. 22-23.

Type locality

"Palestine: Jerusalem, Scopusberg".

Distribution

Cyprus, Israel.

Sciapus laetus (Meigen, 1838)

Psilopus laetus Meigen, 1838: 149.

Sciapus laetus (Meigen, 1838); Bezzi, 1903: 290; Parent, 1938: 695, Figs. 974-976.

Psilopus fulgens von Roser, 1840: 55. Type locality: not given [Wurttemberg, Germany].

Sciapus fulgens (von Roser, 1840); Bezzi, 1903: 290.

Sciapus villeneuvei Parent, 1922: 248. Type locality: Germany (synonymized by Parent, 1925a: 142).

Type locality

Germany: Kiel.

Material

1♂, Pyré. H. [?], 1918 / *Sciopus laetus* Meig., det. O. Parent [ZIN]; 2♂, 1♀, **Morocco**: 40 km S Larache, 0-20 m, 23-24.IV.1989, Zool. Mus. Copenh. Exp. [ZMUC].

Distribution

Belgium, Czech, France, Germany, Morocco, Netherlands, UK.

Sciapus lesinensis (Mik, 1889)

Psilopus lesinensis Mik, 1889: 305.

Sciapus lesinensis (Mik, 1889); Bezzi, 1903: 290; Parent, 1938: 696, Fig. 977; Negrobov & Maslova, 2006: 69, Figs. 7-8.

Psilopus lacteitarsis Becker, 1890: 342. Type locality: "Dalmatia" (synonymized by Becker, 1890: 346).

Sciapus lacteitarsis (Becker, 1890); Bezzi, 1903: 290.

Type locality

[Croatia:] "Lesina insula in Dalmatia".

Distribution

Croatia.

Sciapus lobipes (Meigen, 1824)

Psilopus lobipes Meigen, 1824: 38.

Sciapus lobipes (Meigen, 1824); Zeller, 1842: 833; Parent, 1938: 697, Figs. 978-983.

Type locality

Not given.

Distribution

Austria, Belgium, Czech, Denmark, Estonia, Finland, Germany, Hungary, Netherlands, Poland, Russia (Leningrad, Moscow), Slovakia, Spain.

Sciapus longimanus Becker, 1907

Sciapus longimanus Becker, 1907: 100; Negrobov & Maslova, 2006: 68, Fig. 9.

Type locality

Algeria: Biskra.

Distribution

Algeria.

Sciapus longulus (Fallén, 1823)

Leptopus longulus Fallén, 1823: 24.

Psilopus longulus (Fallén, 1823); Meigen, 1830: 361.

Sciapus longulus (Fallén, 1823); Bezzi, 1903: 291; Meuffels & Grootaert, 1990: 172, Figs. 16-18.

Psilopus lugens Meigen, 1824: 38. Type locality: not given (synonymized by Loew, 1857: 2).

Sciapus lugens (Meigen, 1824); Bezzi, 1903: 291.

Psilopus obscurus Meigen, 1824: 39. Type locality: England.

Sciapus obscurus (Meigen, 1824); Bezzi, 1903: 291.

Psilopus gracilis Meigen, 1830 (Wiedemann in litt.): 361.

Sciapus gracilis (Meigen, 1830).

Type locality

Sweden.

Material

1♂, [**Kyrgyzstan**:] Issyk-Kul, river Tyup, 30.VI.1989, C. Churkin [ZIN]; 1♀, [**Russia**:] Novgorod env., 4.VII.2012, Grichanov [ZIN]; 3♂, 7♀, [**Russia**:] Belgorod Region, Borisovka vil., 20.VI-9.VII.2001, D.D. Kostrov [MZUM]; 1♂, **Russia**: Ryazan Region, river Ranova, 53.715 N, 39.926 E, 6.VI.2012, K. Tomkovich [MZUM]; 1♂, **Russia**: Kursk Region,

Central Chernozem State Biosphere Reserve, Streletskaya Steppe section, 11.VIII.2008, D. Gavryushin [MZUM].

Distribution

Austria, Belgium, Bulgaria, Czech, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Kyrgyzstan, Latvia, Lithuania, Netherlands, Norway, Poland, Romania, Russia (Belgorod, Kabardino-Balkaria, Krasnodar, Kursk, Leningrad, Lipetsk, Moscow, Novgorod, Novosibirsk, Rostov, Ryazan, Saratov, Voronezh), Slovakia, Spain, Sweden, Switzerland, UK, Ukraine (Cherkasy, Odessa), Former Yugoslavia. New for Kyrgyzstan and Belgorod and Novgorod Regions of Russia.

Sciapus maritimus Becker, 1918

Sciapus maritimus Becker, 1918: 186; Meuffels & Grootaert, 1990: 165, Figs. 1-3; Negrobov & Maslova, 2006: 70, Figs. 10-14.

Psilopus contristans Zetterstedt, 1855: 4643 (nec Wiedemann, 1817); Meuffels & Grootaert, 1990: 164.

Sciapus contristans (Zetterstedt, 1855); Meuffels & Grootaert, 1990: 164.

Sciapus flavomaculatus Ringdahl, 1949: 162. Type locality: Sweden: "Insel Faron, Nordlich von Gotland"; Negrobov & Shamshev, 1986b: 87; Meuffels & Grootaert, 1990: 164.

Sciapus littoralis Becker, 1918: 181 [lapsus for *maritimus*].

Type locality

[Germany, France, Poland:] "Nordseeküste auf Sylt; Süd-Frankreich; Polen".

Material

1♂: **Georgia**: Borzhomi env., in *Dendroctonus micans* holes, 25.III-10.IV.1961, Gaprindashvili [ZIN].

Distribution

Belgium, Czech, Denmark, Estonia, Finland, France, Georgia, Germany, Hungary, Latvia, Lithuania, Netherlands, Poland, Romania, Russia (Krasnodar, Leningrad), Spain, Sweden, UK. New for Georgia.

Sciapus matilei Negrobov, 1973

Sciapus matilei Negrobov, 1973: 364, Fig. 2.

Type locality

Afghanistan: Jalalabad.

Distribution

Afghanistan.

Sciapus maurus Parent, 1930

Sciapus maurus Parent, 1930: 90, Figs. 3-4.

Type locality

Algeria: "Jean Bart, d'Alger".

Distribution

Algeria, ?Bulgaria, ?Israel, Tunisia, Turkey (Antalya-Side) [Belgium in error by Negrobov, 1991: 16].

Sciapus medvedevi Negrobov et Selivanova, 2009

Sciapus medvedevi Negrobov & Selivanova, 2009: 277, Figs. 1-2.

Type locality

Armenia: Megri.

Distribution

Armenia.

Sciapus mitis Parent, 1925

Sciapus mitis Parent, 1925b: 194.

Type locality

Tunisia: Mahdia.

Distribution

Tunisia.

Remarks

The species was described by a female. It is remarkable in fore femur devoid of any setae ventrally. It is worth noting that Becker (1907) did not noted ventral bristles on fore femora in *S. longimanus*, describing his 3 new *Sciapus* species from Algeria and Tunisia. *Sciapus mitis* is close to *S. longimanus*, but differing in some other characters.

Sciapus montium Becker, 1908

Sciapus montium Becker, 1908: 55.

Type locality

Spain: Canary Is., La Palma and Tenerife: "Bergwalde bei Agua Garcia".

Distribution

Spain (Canary Is.).

Remarks

Designation of lectotype and paralectotypes with labels "Tenerife, P.Orotava" by Negrobov & Maslova, 2006: 71, is invalid, as the species was originally described by specimens collected from other localities. Negrobov & Maslova (2006) have described probably unnamed species from Tenerife, very close to *S. subvicinus*, which has nothing to do with the original description of *S. montium* (Becker, 1908).

Sciapus nervosus (Lehmann, 1822)

Dolichopus nervosus Lehmann, 1822: 40.

Psilopus nervosus (Lehmann, 1822); Meigen, 1824: 36 [as *nervosus* Wied.].

Sciapus nervosus (Lehmann, 1822); Zeller, 1842: 831; Parent, 1938: 699, Figs. 985-988.

Type locality

Germany: Hamburg.

Material

2♂, [**Russia**:] Krasnoyarsk, E bank, Stolby, 209-260 m, 55.963, 92.745, 18-19.VI.2011, K. Tomkovich [MZUM]; 2♂, [**Russia**:] Amurskaya Region, Zeya city, 18.VI.1982, P. Basikhin [MZUM].

Distribution

Austria, Belgium, Palaearctic China, Czech, Denmark, Estonia, France, Germany, Italy, Korea, Latvia, Lithuania, Netherlands, Poland, Russia (Blagoveshchensk, Chita, Irkutsk, Krasnoyarsk, Leningrad, Moscow, Ural, Vladivostok), Ukraine. New for Amurskaya Region.

Sciapus nigricornis (Loew, 1869)

Psilopus nigricornis Loew, 1869: 305.

Sciapus nigricornis (Loew, 1869); Bezzi, 1903: 291; Negrobov & Selivanova, 2006: 163, Figs. 19-22.

Type locality

Austria: "Kärnthen".

Distribution

Austria, France, Italy, Greece, Hungary, former Yugoslavia.

Sciapus oldenbergi Parent, 1932

Sciapus oldenbergi Parent, 1932: 220, Figs. 1-2.

Type locality

[Croatia:] "Monte Maggiore, Istria".

Distribution

Croatia.

Sciapus opacus (Loew, 1866)

Psilopus opacus Loew, 1866: 63.

Sciapus opacus (Loew, 1866); Bezzi, 1903: 291; Parent, 1938: 701, Figs. 989-990; Negrobov & Selivanova, 2006: 163, Figs. 19-22.

Type locality

Italy: Sicily.

Distribution

Bulgaria, Greece, ?Israel, Italy, Spain, Tunisia, former Yugoslavia.

Sciapus pallens (Wiedemann, 1830)

Psilopus pallens Wiedemann, 1830: 219.

Sciapus pallens (Wiedemann, 1830); Bezzi, 1903: 291; Parent, 1938: 702, Figs. 991-993; Meuffels & Grootaert, 1990: 171, Figs. 14-15.

Psilopus albonotatus Loew, 1857: 4. Type locality: Greece (synonymized by Osten Sacken, 1878: 243; synonymy suggested before by Loew).

Sciapus albonotatus (Loew, 1857); Bezzi, 1903: 291.

Type locality

USA: New York.

Distribution

Palaearctic: Belgium, Bulgaria; Croatia, France, Greece (Crete), Israel, Italy, Netherlands, Portugal (Azores), Spain, Ukraine (Kherson), former Yugoslavia; Nearctic: USA: Michigan, New York, Massachusetts to Maryland, District of Columbia, and North Carolina.

Sciapus palmipes Collin, 1966

Sciapus palmipes Collin, 1966: 33; Meuffels, 1977: 204, Figs. 3-5.

Type locality

Italy: Rosolina Mare: Lido Jesolo.

Distribution

Italy.

Sciapus paradoxus Negrobov et Shamshev, 1986

Sciapus paradoxus Negrobov & Shamshev, 1986a: 18.

Sciapus sachalinensis Negrobov & Shamshev, 1986a: 20, Figs. 3-4 (as a subspecies of *Sciapus paradoxus* Negrobov & Shamshev, 1986a). Type locality: Russia: Sakhalin, 50 km North East of Yuzhno-Sakhalinsk, Starodubskoe.

Type locality

Russia: Primorye, Kedrovaya Pad Nature Reserve.

Distribution

Russia (Vladivostok, Sakhalin).

Sciapus platypterus (Fabricius, 1805)

Dolichopus platypterus Fabricius, 1805: 270.

Psilopus platypterus (Fabricius, 1805); Meigen, 1824: 36.

Sciapus platypterus (Fabricius, 1805); Zeller, 1842: 847.

Psilopus crinipes Meigen, 1830: 361; Loew, 1857: 6. Type locality: not given.

Sciapus crinipes (Meigen, 1830); Bezzi, 1903: 292.

Leptopus tipularius Fallén, 1823: 23. Type locality: Sweden: "Skane".

Psilopus tipularius (Fallén, 1823); Zetterstedt, 1838: 714.

Sciapus tipularius (Fallén, 1823); Zeller, 1842: 831.

Type locality

Germany.

Material

2♂, 7♀, [**Russia**:] Leningrad Region, Luga distr., Yashchera, 13.VII.1965, 5.VIII.1965, 29.VI.1966, 17.VIII.1967, 11.VI.1968, 2.VII.1968, 20.VII.1968, 14.VIII.1968, A. Stackelberg [ZIN].

Distribution

Austria, Belarus, Belgium, Bulgaria, Czech, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Romania, Russia (Leningrad, Moscow, Pskov, Ryazan, Tatarstan, Voronezh); Slovakia, Spain, Sweden, Switzerland, Ukraine (Cherkasy, Kharkiv, Ternopil), former Yugoslavia.

Sciapus polozhentsevi Negrobov, 1977

Sciapus polozhentsevi Negrobov, 1977: 48, Figs. a-c.

Type locality

Russia: Guseripl.

Material

1♂, **Russia**: Sochi, Khosta, 43.52, 39.87, 3-9.V.2011, N. Vikhrev [MZUM]; 1♂, **Russia**: Sochi, Khosta, 43.55, 39.82, 18.V.2011, Gavryushin [MZUM]; 1♂, **Russia**: Krasnodar Terr., Severskaya env., Ubinskaya, 7.V.1970, V. Kovalev [ZIN].

Distribution

Russia (Adygea, Krasnodar).

Sciapus richterae Negrobov et Grichanov, 2010

Sciapus richterae Negrobov & Grichanov, 2010: 6, Figs. 1-5.

Type locality

Azerbaijan: Zakataly, 21 km NW river Kamekh gorge.

Material

1♂, [**Russia**:] Adygea, Dakhovskaya env., 465 m, 44.199, 40.170, 19-24.VIII.2009, K. Tomkovich [MZUM]; 1♂, **Russia**: Sochi, Khosta, 43.52, 38.87, 23-25.VI.2011, N. Vikhrev [MZUM]; 1♂, [**Russia**:] Krasnodar Terr., Gelendzhik distr., between Krinitsy and Praskoveevka, 15.VII.2004, K. Tomkovich [MZUM].

Distribution

Azerbaijan, Russia (Adygea, Krasnodar Terr.).

Sciapus roderi Parent, 1929

Sciapus roderi Parent, 1929: 8, Figs. 9-11.

Type locality

Russia: "Province d'Amour; Siberie Orientale".

Distribution

Russia (Blagoveshchensk, Vladivostok).

Sciapus sibiricus Negrobov et Shamshev, 1986

Sciapus sibiricus Negrobov & Shamshev, 1986a: 17, Figs. 1-2.

Type locality

Russia: "Siberia, Eastern Sayan, Arshan, Tagyrkhai".

Distribution

Russia (Buryatia, Chita, Irkutsk, Vladivostok).

Sciapus spiniger (Zetterstedt, 1859)

Psilopus spiniger Zetterstedt, 1859: 5072.

Sciapus spiniger (Zetterstedt, 1859); Bezzi, 1903: 292.

Type locality

Sweden: Scania, Coryli; Raften, Lund.

Distribution

Belgium, Germany, Hungary, Sweden; [excluded from Russia by Negrobov & Grichanov, 2010].

Sciapus spinosus Parent, 1929

Sciapus spinosus Parent, 1929: 7, Figs. 7-8.

Type locality

Greece.

Distribution

Greece.

Sciapus subvicinus Grichanov, 2007

Sciapus subvicinus Grichanov, 2007: 64 (nom. nov. for *Sciapus mediterraneus* Bulli et Negrobov, 1987, nec Becker, 1907).

Sciapus mediterraneus Bulli & Negrobov, 1987: 81, Figs. 1-3 (nec Becker, 1907).

Type locality

Ukraine: Zaporizhzhya, Molochnyi Liman, Peresyp.

Material

1♂, [**Uzbekistan**:] Buchara bor.-occ., Yargan pr.Chatyrtshy, 1.VI.1928, L. Zimin [ZIN]; 1♂: **Uzbekistan**: Samarkand env., tomato field, sticky trap, 7.VI.1982, I. Grichanov [ZIN]; 1♂, **Kazakhstan**: Kazaly distr., Basykara env., near r. Syr Darya, 45.755 N, 62.303 W, 67 m asl, YPT, 15-19.V.2011, K. Tomkovich [MZUM].

Distribution

Armenia, Kazakhstan, Ukraine (Zaporizhzhya), Uzbekistan. New for Kazakhstan.

Remark

Negrobov & Maslova (2006) described a very close species from Tenerife (Canary Islands) under the name *S. montium* Becker (see above).

Sciapus sylvaticus Becker, 1907

Sciapus sylvaticus Becker, 1907: 98, Fig. 330.

Type locality

Algeria: "de Bainen nordlich von Alger".

Distribution

Algeria.

Sciapus tenuinervis (Loew, 1857)

Psilopus tenuinervis Loew, 1857: 1857: 5.

Sciapus tenuinervis (Loew, 1857); Bezzi, 1903: 292.

Type locality

Not given.

Distribution

Greece.

Sciapus venetus Meuffels, 1977

Sciapus venetus Meuffels, 1977: 201, Figs. 1-2.

Sciapus venestus [in error for *venetus*] (Negrobov, 1991: 17).

Type locality

Italy: Jesolo, Venice.

Distribution

Italy.

Sciapus vicinus Parent, 1925

Sciapus vicinus Parent, 1925b: 172.

Type locality

Egypt: Rafa, Sinai.

Distribution

Algeria, Egypt.

Sciapus wiedemanni (Fallén, 1823)

Leptopus wiedemanni Fallén, 1823: 24.

Sciapus wiedemanni (Fallén, 1823); Bezzi, 1903: 292; Parent, 1938: 706, Figs. 1000-1002.

Psilopus contristans Meigen, 1824: 37 (nec Wiedemann, 1817); Loew, 1857: 2 [as synonym of *Sciapus albifrons* (Meigen, 1830)].

Sciapus contristans (Meigen, 1824); Zeller, 1842: 832; Parent, 1925c: 43, 57.

Sciapus divergens Van Duzee, 1933: 3; Bickel, 2002: 555. Type locality: USA: Washington, Pierce Co., Summer.

Sciapus nervosus British auctt., nec Lehmann, 1822.

Type locality

Sweden.

Material

2♀, **Sweden**: Kristianstadt, 8.VII.2002, Grichanov [ZIN]; 1♂, 2♀, [**Russia**:] Belgorod Region, Borisovka vil., 30.VI-3.VII.2001 [MZUM].

Distribution

Austria, Belgium, Bulgaria, Czech, Denmark, France, Germany, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Romania, Russia (Belgorod, Leningrad, Voronezh), Slovakia, Spain, Sweden, Switzerland, Ukraine (Kharkiv), UK; Nearctic: Canada (Ontario), USA (Washington). New for Belgorod Region of Russia.

Sciapus zonatulus (Zetterstedt, 1843)

Psilopus zonatulus Zetterstedt, 1843: 628; Lundbeck, 1912: 36 [probable synonym of *Sciapus contristans* (Wiedemann, 1817); restored by Meuffels & Grootaert, 1990: 164].

Sciapus zonatulus (Zetterstedt, 1843); Bezzi, 1903: 292; Meuffels & Grootaert, 1990: 166, Figs. 4-6.

Leptopus contristans Fallén, 1823: 24; Meuffels et Grootaert, 1990: 164 (nec *Dolichopus contristans* Wiedemann, 1817). Type locality: Scania.

Psilopus contristans (Fallén, 1823) (nec Wiedemann, 1817).

Sciapus contristans (Fallén, 1823) (nec Wiedemann, 1817).

Type locality

[Sweden].

Distribution

Belgium, Finland, Germany, Netherlands, Poland, Spain, Sweden, Switzerland, UK.

Doubtful species of *Sciapus*

Sciapus fasciatus (Macquart, 1834)

Psilopus fasciatus Macquart, 1834: 449 (nec Guerin-Meneville, 1831). Type locality: Italy: Sicily.

Sciapus fasciatus (Macquart, 1834) (nec Guerin-Meneville, 1831).

Remarks

According with the original description, the male has fore tarsomeres 4-5 black, slightly enlarged; scape and pedicel yellow; face white. 17 species of the genus are known from Italy, of which *S. glaucescens* is one of the closest to *S. fasciatus* by its habitus.

Sciapus ingruo (Harris, 1780)

Musca ingruo Harris, 1780: 144, Fig. 53. . Type locality: England.

Sciapus ingruo (Harris, 1780).

Remarks

S. ingruo is included in the British list as a doubtful synonym of *S. platypterus* (Chandler et al., 1998, and suppls.). Nevertheless, according with the original picture of the species (Harris, 1780: Fig. 53), it has nothing to do with Dolichopodidae.

Sciapus regalis (Meigen, 1824)

Psilopus regalis Meigen, 1824: 35. Type locality: Austria: Muhlfeld.

Sciapus regalis (Meigen, 1824); Bezzi, 1903: 290.

Remarks

The species can be conspecific with either *S. contristans* (Wiedemann, 1817) (Zetterstedt, 1843: 627) or *S. zonatulus* (Zetterstedt, 1843) (Meuffels & Grootaert, 1990: 164).

Descriptions of new species

Sciapus longitarsis Grichanov et Negrobov sp. nov.

(Figs. 3–7)

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Type material. Holotype ♂: **Israel**: Haifa, 5.VI.1976, A.Freidberg [TAU]. Paratypes: 2♂ with same data as holotype [TAU]; 3♂: **Israel**: Carmel, 27.V. & 13.VI.1974, A.Freidberg [TAU]; 1♂: **Israel**: Ein Tut, 18.V.1982, O. Shimrod [TAU]; 1♂: **Israel**: N. Yokneam, 18.V.1982, R. Ov [TAU]; 1♂: [**Golan Heights**:] "Israel: Mt. Hermon, 8.VII.1975, A.Freidberg" [TAU]; 1♂: [**Golan Heights**:] "Israel: Kalat Nimrod [Nimrod Fortress], 8.VI.1975, A.Freidberg" [TAU]; 2♂: [**Golan Heights**:] "Israel: Qala'at Nemrod [Nimrod Fortress], 12.VII.1984, A.Freidberg" [TAU]; 3♂: [**Golan Heights**:] "Israel: Qala'at Nemrod [Nimrod Fortress], 28.VI.1977, D.Simon" [TAU]; 2♂: [**Golan Heights**:] "Israel: Ein Meshoshim ['En Meshoshim], 25 & 29.V.1977, A.Freidberg" [TAU]; 1♂: [**West Bank**:] "Israel: Tarkumiya [Tarqumiyah], 23.VI.1976, A.Freidberg" [TAU]; 2♂: [**West Bank**:] "Israel: W. Nemrod [Nahal Nimrod], 10.VI.1976, A.Freidberg" [TAU].

Description. Male: Body length: 6.4 mm, wing length: 5.3 mm, wing width: 1.9 mm, antenna length: 1.4 mm.

Head: 1.5 times wider than high; frons black, densely white pollinose; 1 strong long front vertical bristle bends forward, pair of strong black oculars with 5 ajacent rather long white hairs, 1 long black postvertical; face violet-black, densely white pollinose, under antennae 5 times wider than postpedicel height, with distinct transverse suture; clypeus separated from eyes; proboscis yellow; palpus yellow, with yellow setae and hairs; antenna yellow, 2nd stylomere brown; postpedicel higher than long; pedicel with short setae, somewhat longer ventrally; stylus dorsal, shortly haired, about 4 times longer than antennomeres combined; postocular setae entirely white.

Thorax: mesonotum metallic green, grey pollinose, with black setae; pleura mostly yellow; six long dorsocentrals; acrostichals biseriate along whole mesonotum length; scutellum yellow along margin, with 2 strong median and 2 fine lateral setae.

Legs: yellow; tarsi brownish from tip of basitarsus; coxae yellow, with long yellow hairs; fore coxa with few yellow setae at apex; fore femur with 4-5 ventral white setae, not

longer than femur height; fore femur, tibia and tarsi covered with fine erect ciliation anteriorly and posteriorly; fore tibia glabrous dorsally; mid femur ventrally glabrous, with anterior and posterior rows of short black setae in distal third, not longer than femur height; no strong anterior preapical seta; mid tibia with 1 small anterodorsal seta at base, 2-3 apicals; tarsomeres simple, with very short ventral and apical setae; hind femur without remarkable ciliation, with short anterior preapical seta; hind tibia and basitarsus with very short black setae. Fore leg length ratio (from femur to tarsomere 5): 1.64/1.82/2.35/0.91/0.56/0.33/0.21, mid leg: 1.54/2.13/1.68/0.62/0.46/0.24/0.15, hind leg: 2.05/3.0/0.93/0.92/0.56/0.33/0.25 (in mm).

Wing: hyaline; costa almost straight; ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 0.68/0.13; crossvein *dm-cu* straight; M_2 and CuA distinct; anal lobe well developed; anal angle acute; length ratio of *dm-cu* to distal part of M_{1+2} (fork-handle) to distal part of CuA: 0.74/0.49/0.81 (in mm); lower calypter with yellow cilia; halter yellow.

Abdomen: mainly yellow, with mainly black setae; tergum 1 yellow; terga 2-4 with narrow posterior and broader anterior brown rings; tergum 5 with broader brown rings; tergum 6 blackish-brown; terminalia yellow with blackish-brown apices of surstyli; 1st tergum with long yellowish-white hairs; sterna with yellowish-white hairs; segment 7 longer than epandrium, black, densely setose.

Hypopygium with long simple phallosome (i.e., aedeagus and hypandrium); epandrial lobe short and narrow, with 1 long and 1 short setae; surstylus deeply bifurcated; dorsal arm somewhat geniculate, narrow, slightly expanded distally, bearing 2 strong apical teeth, 1 very long preapical seta and few short hairs; ventral arm deeply bifurcated with narrow subequal in length branches, one of which bearing 2 strong preapical teeth; cercus free, short, narrow, covered with relatively long light hairs, bearing 3 very long setae at base, at middle and at apex; no ventral projection (“Organ X”).

Female: Unknown.

Distribution. Israel, Golan Heights, West Bank.

Etymology: Lat. *longus*; Gr. *tarsós*: 'with long tarsi'.

Diagnosis. The species has some similarity with *S. tenuinervis* (Loew), differing in larger size, unusually long fore basitarsus, glabrous ventrally mid and hind femur, fine erect ciliation anteriorly and posteriorly on all podomeres of fore leg.

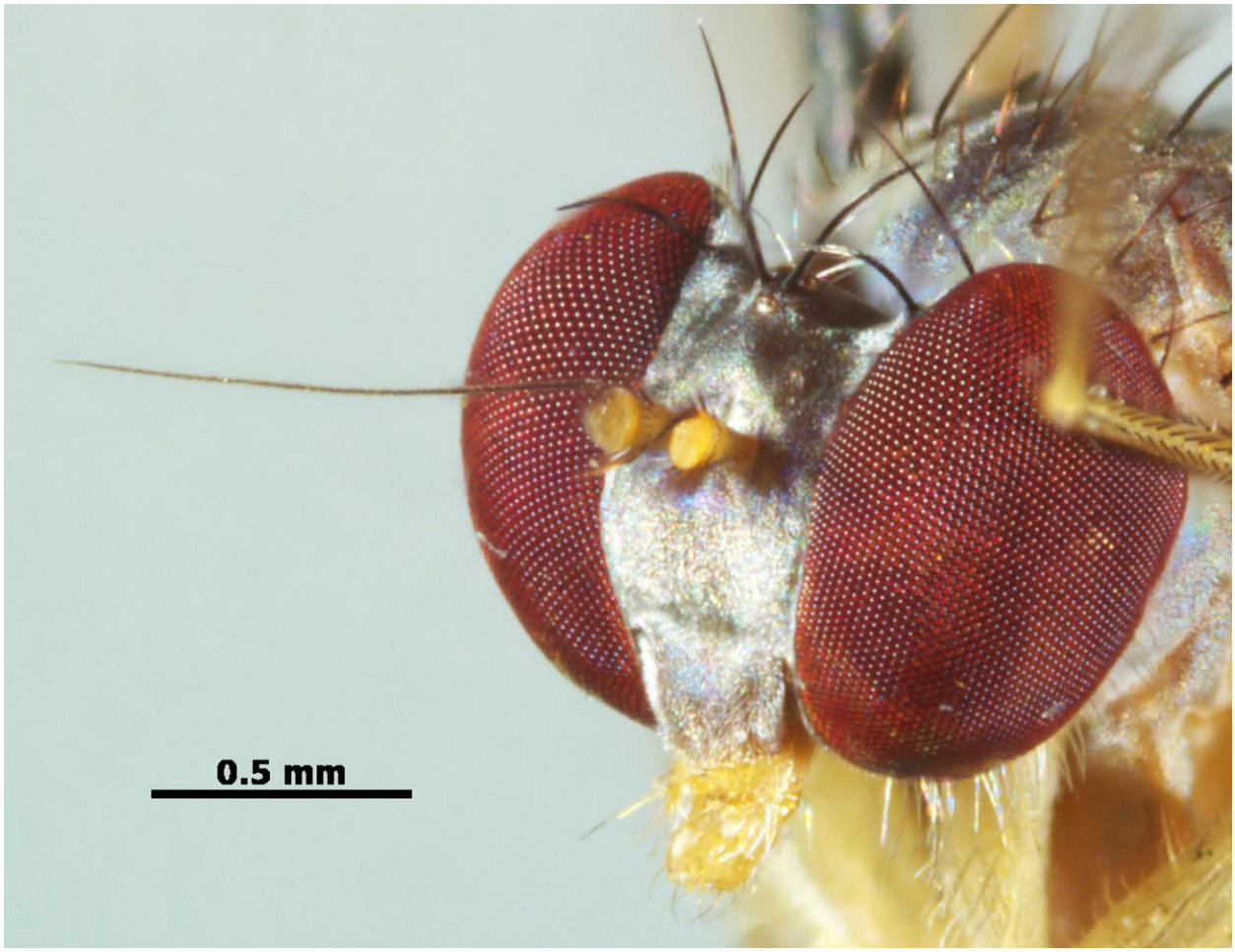

Fig. 3. *Sciapus longitarsis* Grichanov et Negrobov sp. nov., head.

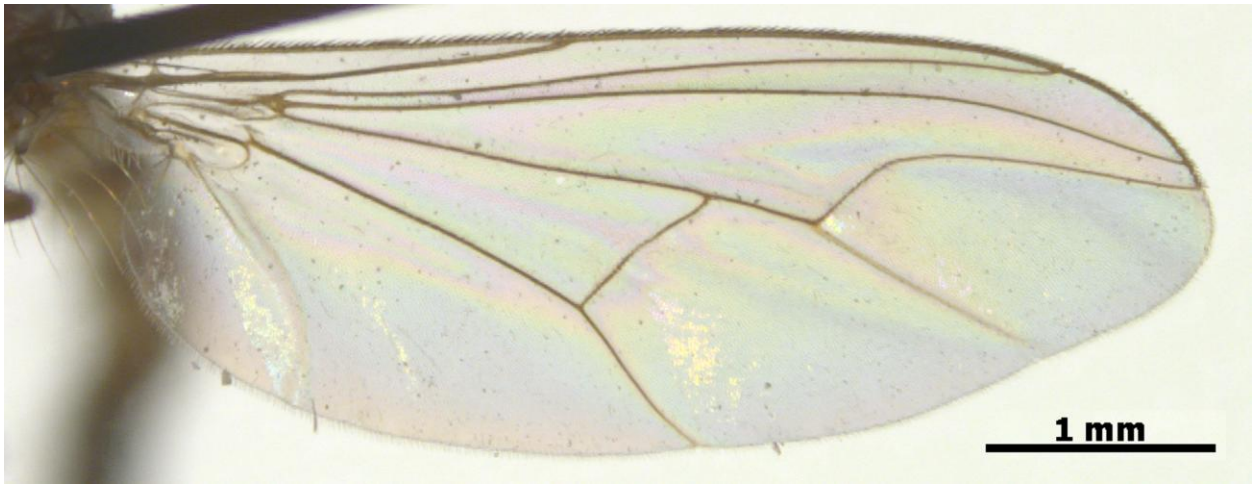

Fig. 4. *Sciapus longitarsis* Grichanov et Negrobov sp. nov., wing.

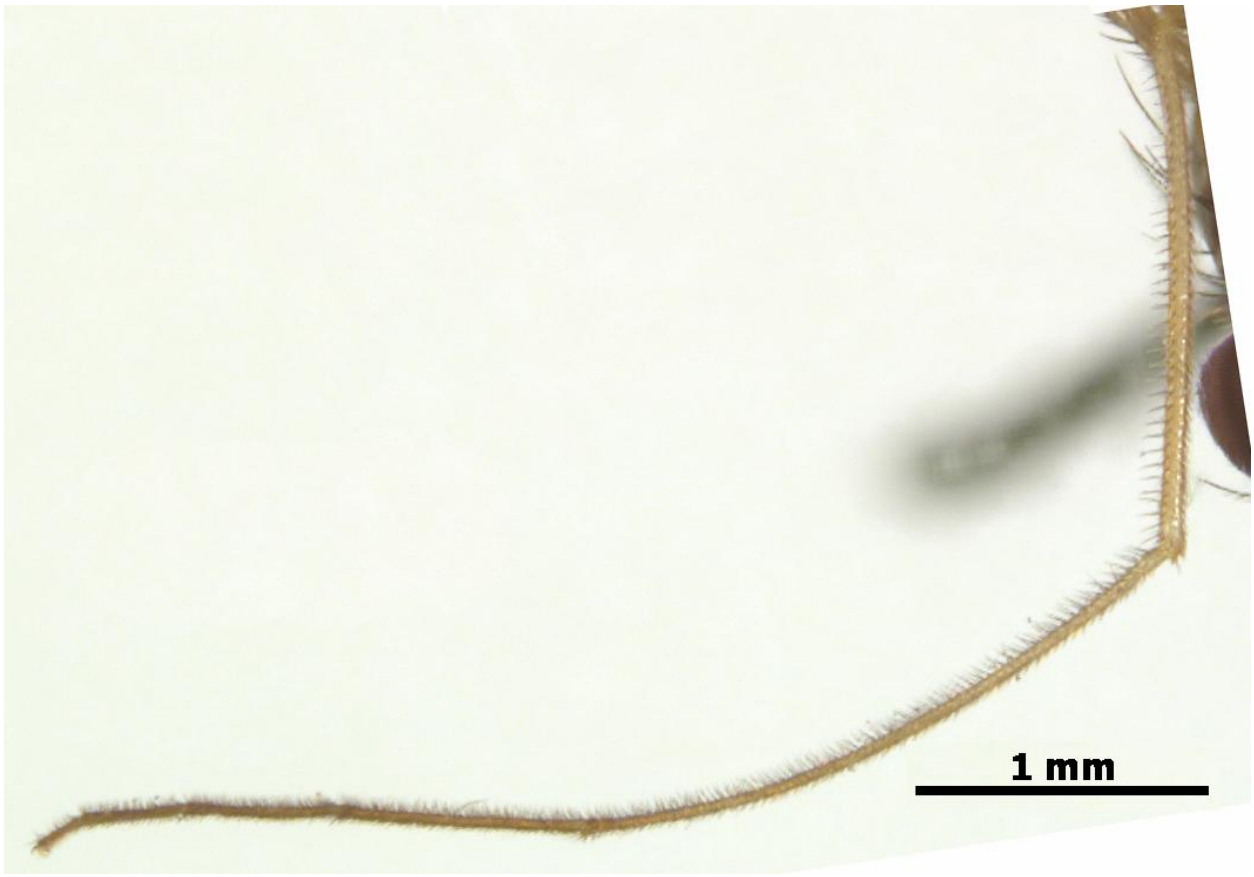

Fig. 5. *Sciapus longitarsis* Grichanov et Negrobov sp. nov., fore tibia and tarsus.

Fig. 6. *Sciapus longitarsis* Grichanov et Negrobov sp. nov., hypopygium.

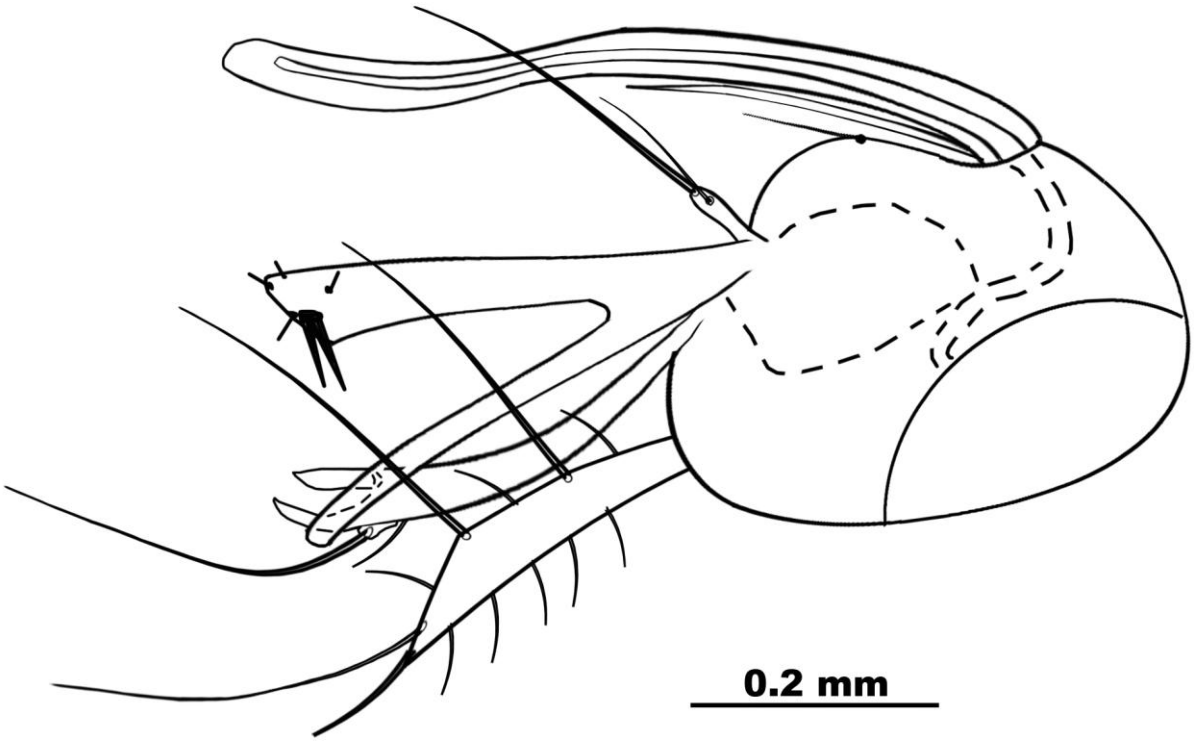

Fig. 7. *Sciapus longitarsis* Grichanov et Negrobov sp. nov., hypopygium.

***Sciapus freidbergi* Grichanov et Negrobov sp. nov.**

(Figs. 8–12)

urn:lsid:zoobank.org:act:73C4EF3E-1830-426D-854E-497136B28A0E

Type material. Holotype ♂: **Israel**: Maagan Michael, 21.X.1973, A.Freidberg [TAU]. Paratype: 1♂ with same data as holotype, collected on 21.V.1973 [TAU].

Description. Male: Body length: 4.5 mm, wing length: 3.1 mm, wing width: 1.0 mm, antenna length: 0.8 mm.

Head: inconspicuously wider than high; frons greenish-blue, whitish pollinose; 1 strong long front vertical bristle bends forward, pair of strong black oculars with ajacent microscopic hairs, 1 long white postvertical; face violet-black, densely white pollinose, under antennae 3 times wider than postpedicel height, with indistinct transverse suture; clypeus not separated from eyes; proboscis dark yellow; palpus yellow, with yellow setae and hairs; antenna mainly yellow, postpedicel and stylus brown; postpedicel as long as high; pedicel with short setae, somewhat longer ventrally; stylus dorsal, shortly haired, about 3 times longer than antennomeres combined; postocular setae entirely white.

Thorax: mesonotum metallic green, weakly grey pollinose, with black setae; pleura blackish-green, grey pollinose; metepimeron yellow; six dorsocentrals somewhat decreasing in length anteriorly; acrostichals biseriate, relatively short; scutellum with 2 strong median and 2 fine short lateral setae.

Legs: yellow; tarsi brownish from tip of 2nd segment; coxae yellow, with long yellow hairs; fore coxa with few yellow setae at apex; fore femur with row of 4-5 ventral dark cilia, not longer than half femur height, with few preapical posteroventral setae; fore tibia without setae, with somewhat elongated setulae ventrally; fore basitarsus with short basoventral seta; 2nd segment slightly, but distinctly expanded and flattened in distal half, with 4-5 short setae on ventral prominence; 3rd segment distinctly thickened in basal half; 4th segment with ventral row of short erect setae; mid femur ventrally with few short dark cilia, with few preapical posteroventral setae; no strong anterior preapical seta; mid tibia with 1 anterodorsal seta at base, 2-3 apicals; tarsomeres simple, with very short ventral and apical setae; hind femur without remarkable ciliation, with short anterior preapical seta, with 2-3 preapical posteroventral setae; hind tibia and basitarsus with very short black setae; hind basitarsus with short basoventral seta. Fore leg length ratio (from femur to tarsomere 5): 1.06/1.09/0.68/0.34/0.16/0.22/0.14, mid leg: 1.11/1.38/0.90/0.37/0.24/0.18/0.12, hind leg: 1.31/1.70/0.53/0.54/0.27/0.18/0.16 (in mm).

Wing: hyaline; costa almost straight; ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 0.33/0.07; crossvein *dm-cu* straight; M_2 and CuA fold-like; anal lobe developed; anal angle right; length ratio of *dm-cu* to distal part of M_{1+2} (fork-handle) to distal part of CuA: 0.37/0.35/0.50 (in mm); lower calypter with yellow cilia; halter yellow.

Abdomen: metallic green, with mainly black setae; sterna 1-3 brown; terminalia mainly black; 1st tergum with long yellowish-white hairs; sterna with yellowish-white hairs; segment 7 glabrous, short, 1/3 length of segment 6; segment 8 large, embracing more than half lateral surface of epandrium, covered with short white hairs.

Hypopygium with long simple phallosome; epandrial lobe yellow, short, with 2 narrow lobes, each lobe bearing 1 long seta; surstylus black, deeply bifurcated; dorsal arm expanded dorsally, bearing 2 modified setae at apex; ventral arm shorter, straight and narrow, with few simple setae as figured; cerci fused to apex, black, covered with relatively long light hairs, bearing 4 very long lateral setae and midventral prominence bearing dense bunch of straight and curved setae forming hook; no true ventral projection (“Organ X”).

Female: Unknown.

Distribution. Israel.

Fig. 8. *Sciapus freidbergi* Grichanov et Negrobov sp. nov., habitus.

Etymology: The species is named after Israeli dipterist, Dr. Amnon Freidberg (Tel Aviv), who collected the types.

Diagnosis. The species along with *S. adana* sp. nov. keys to *S. lesinensis* Mik and *S. albovittatus* Strobl, differing from the latters in modified 2nd tarsomere and simple 4th tarsomere of fore tarsus. *S. freidbergi* differs reliably from *S. adana* in morphology of hypopygium appendages: cercus with thick ventral hook; surstylus with short apical process, half as long as surstylus width at apex; epandrial lobe bilobed (see below).

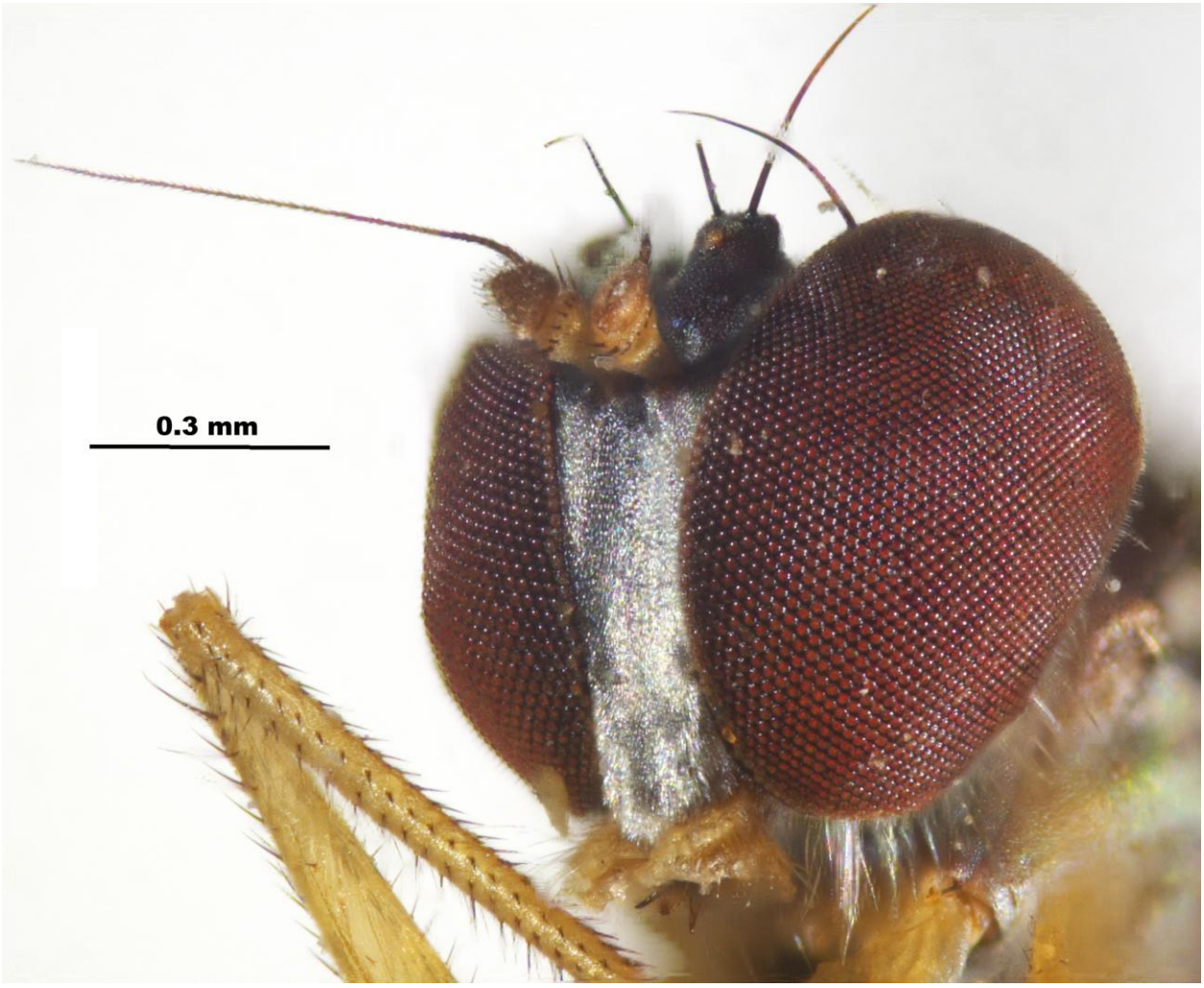

Fig. 9. *Sciapus freidbergi* Grichanov et Negrobov sp. nov., head.

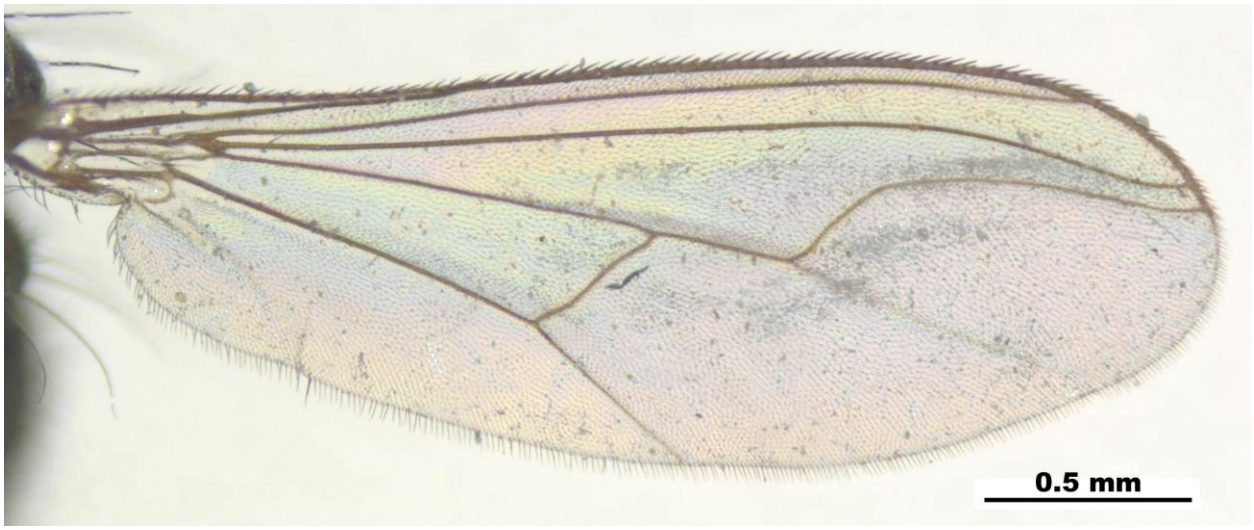

Fig. 10. *Sciapus freidbergi* Grichanov et Negrobov sp. nov., wing.

Fig. 11. *Sciapus freidbergi* Grichanov et Negrobov sp. nov., hypopygium.

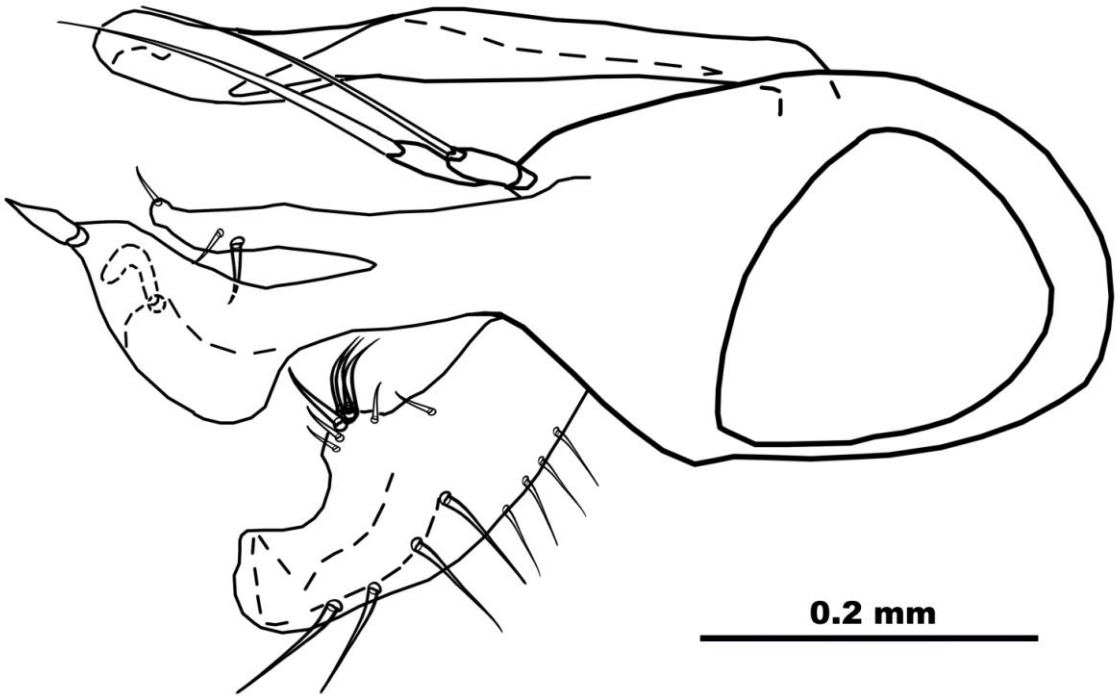

Fig. 12. *Sciapus freidbergi* Grichanov et Negrobov sp. nov., hypopygium.

Sciapus adana Grichanov et Negrobov sp. nov.

(Figs. 13–17)

urn:lsid:zoobank.org:act:E9C0F7DD-D574-4697-8B04-040163769AAF

Type material. Holotype ♂: **Turkey**: Adana, Yumurtalik, 12-17.IV.2007 [ZIN]. Paratypes: 10♂, 2♀, with same data as holotype [ZIN]; ♂: **Turkey**: Adana, Yumurtalik, 25.IV.2007 [ZIN].

Description. Very similar to *S. freidbergi*, except for the following features.

Male: Body length: 3.8 mm, wing length: 2.8 mm, wing width: 1.0 mm, antenna length: 0.7 mm.

Head: palpus with 2 dark setae and yellow hairs; antennal postpedicel inconspicuously higher than long.

Legs: 4th segment with ventral row of short erect hairs; fore leg length ratio (from femur to tarsomere 5): 0.96/0.97/0.60/0.33/0.18/0.22/0.15, mid leg: 1.03/1.17/0.70/0.34/ 0.22/0.17/0.12, hind leg: 1.17/1.48/0.48/0.46/0.24/0.18/0.12 (in mm).

Fig. 13. *Sciapus adana* Grichanov et Negrobov sp. nov., male habitus.

Wing: ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 0.40/0.07; length ratio of *dm-cu* to distal part of M_{1+2} (fork-handle) to distal part of CuA: 0.34/0.32/0.43 (in mm).

Abdomen: terminalia mainly brown (probably discolorated).

Hypopygium with long simple phallosome; epandrial lobe short and narrow, with 2 long setae; surstylus deeply bifurcated; dorsal arm broader, expanded dorsally, bearing 2 long processes and 2 modified setae, one of which located at apex of longer process; ventral arm shorter, straight and narrow, with few simple setae; cerci fused to apex, subrectangular, covered with relatively long light hairs, bearing 4-5 very long lateral setae, and group of long straight and short curved setae ventrally at apex of median keel; no true ventral projection ("Organ X").

Female: Body length: 3.9 mm, wing length: 3.25 mm (in alcohol). Similar to male except lacking MSSC. Fore femur with several strong yellow bristles ventrally; each hemitergite with 2 narrow modified setae of unequal length; cercus with 3 apical setae, of which one seta nearly as long as cercus.

Distribution. East Turkey.

Etymology: The species is named after the Turkish province Adana.

Diagnosis. The species along with *S. freidbergi* sp. nov. keys to *S. lesinensis* Mik and *S. albovittatus* Strobl, differing from the latters in modified 2nd tarsomere and simple 4th tarsomere of fore tarsus. *S. adana* differs reliably from *S. freidbergi* in morphology of hypopygium appendages: cercus without ventral hook; surstylus with long apical process, as long as surstylus width at apex; epandrial lobe simple.

Fig. 14. *Sciapus adana* Grichanov et Negrobov sp. nov., female habitus.

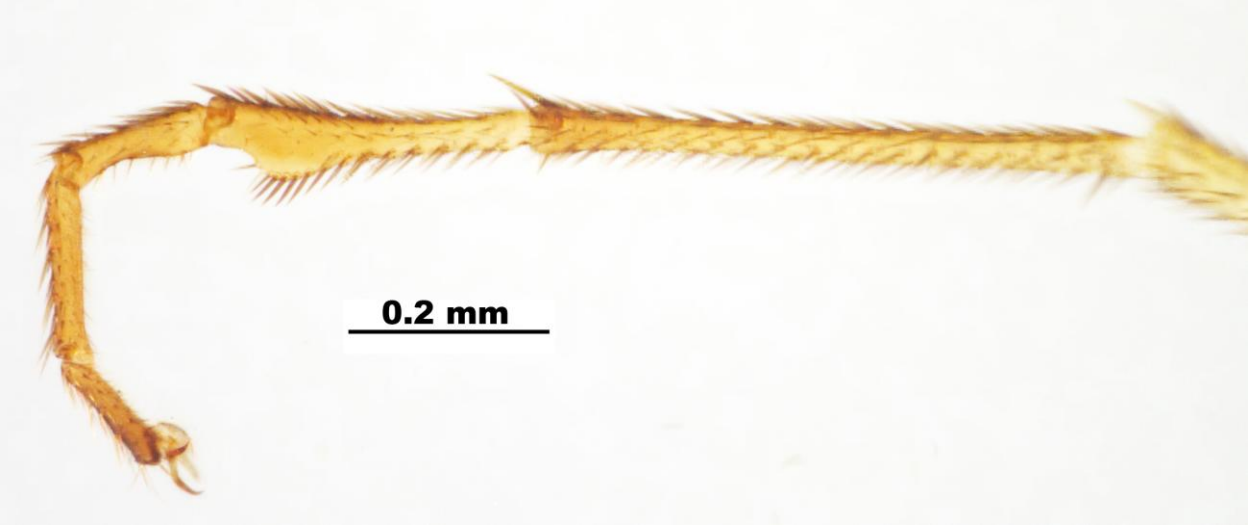

Fig. 15. *Sciapus adana* Grichanov et Negrobov sp. nov., male fore tarsus.

Fig. 16. *Sciapus adana* Grichanov et Negrobov sp. nov., hypopygium.

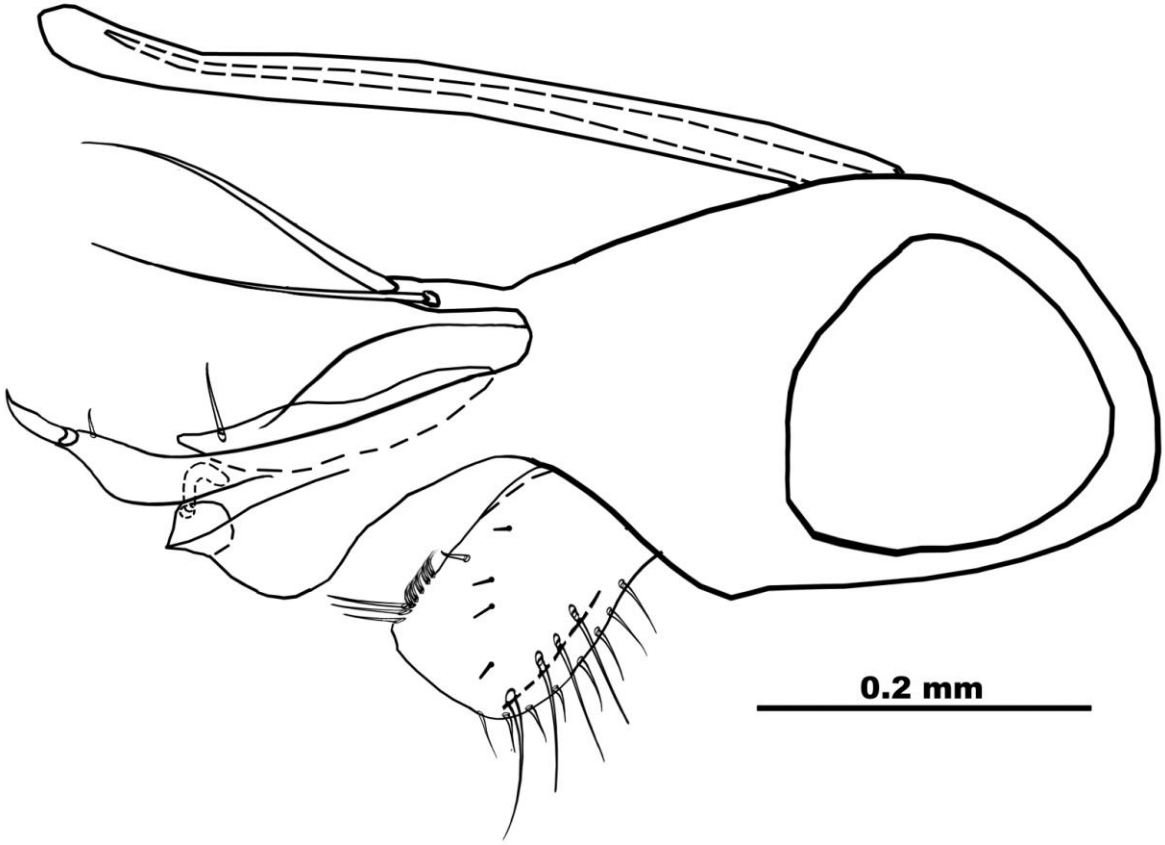

Fig. 17. *Sciapus adana* Grichanov et Negrobov sp. nov., hypopygium.

***Sciapus occidasiaticus* Grichanov et Negrobov sp. nov.**

(Figs. 18–21)

urn:lsid:zoobank.org:act:38869166-7923-4748-8DA1-10AF69163C1C

Type material. Holotype ♂: [**West Bank**:] "Israel: Ein Hajla, 11.V.1977, A.Freidberg" [TAU]. Paratypes: 1♂, 3♀ with same data as holotype [TAU]; 3♂, 4♀, **Israel**: Neot HaKikar, 20.V.1974, A.Freidberg" [TAU].

Description. Male: Body length: 4.8 mm, wing length: 3.4 mm, wing width: 1.1 mm, antenna length: 0.8 mm.

Head: about as wide as high; frons violet, white pollinose; 1 strong front vertical bristle bends forward, pair of strong black oculars with ajacent short black hairs, 1 long white post-vertical; face black, densely white pollinose, under antennae 2 times wider than postpedicel height, with indistinct transverse suture; clypeus not separated from eyes; proboscis yellow; palpus yellow, with yellow setae and hairs; antenna mainly yellow, postpedicel brownish at apex; stylus brown; postpedicel about as long as high; pedicel with short setae, somewhat

longer ventrally; stylus dorsal, shortly haired, about 3 times longer than antennomeres combined; postocular setae entirely white.

Thorax: mesonotum metallic green, weakly grey pollinose, with black setae; pleura blackish-green, grey pollinose; metepimeron yellow; six dorsocentrals decreasing in length anteriorly; few pairs of short acrostichals in anteroior half of mesonotum; scutellum with 2 strong median and 2 fine short lateral setae.

Legs: yellow; distal segments of tarsi brownish; coxae yellow, with long yellow hairs; fore coxa with few yellow setae at apex; fore femur with row of 4-5 ventral dark cilia, not longer than half femur height, with few preapical posteroventral setae; fore tibia without setae; segments 1-3 with elongate ventral setulae; 2nd segment slightly thickened at extreme apex; 3rd segment slightly, but distinctly sinuate due to ventral thickening in middle third, slightly thickened at extreme apex; segments 4-5 not expanded, flattened ventrally, with short erect ventral setulae; mid femur with few preapical posteroventral setae; no strong anterior preapical seta; mid tibia with 1 anterodorsal seta at base, 2-3 apicals; tarsomeres simple, with very short ventral and apical setae; hind femur without remarkable ciliation; no strong anterior preapical seta; hind tibia and basitarsus with very short black setae; hind basitarsus with short basoventral seta. Fore leg length ratio (from femur to tarsomere 5): 1.08/1.17/0.75/0.53/0.50/0.22/0.16, mid leg: 1.13/1.49/1.13/0.48/0.33/0.19/0.13, hind leg: 1.49/1.82/0.60/0.65/0.32/0.16/0.13 (in mm).

Wing: hyaline; costa almost straight; ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 0.20/0.07; crossvein *dm-cu* straight; M_2 and CuA fold-like; anal lobe developed; anal angle right or acute; length ratio of *dm-cu* to distal part of M_{1+2} (fork-handle) to distal part of CuA: 0.41/0.29/0.55 (in mm); lower calypter with yellow cilia; halter yellow.

Abdomen: with mainly black setae; terga 1-3 mainly yellow, with more or less distinct dark dorsal spots and stripes; tergum 4 mainly dark; terga 5-6 greenish-black; sterna yellow-brown; terminalia yellow; 1st tergum with long yellowish-white hairs; sterna with yellowish-white hairs; segment 7 short, glabrous; segment 8 large, covered with short white hairs.

Hypopygium with long simple phallosome; epandrial lobe yellow, short, with 2 long setae; surstylus yellow, brown at apex, deeply bifurcated; dorsal arm somewhat longer and stronger sclerotized than ventral arm, slightly expanded distally; both arms narrow, each bearing modified seta and few short hairs at apex; cerci yellow, fused almost to apex, long, covered with relatively long dorsal hairs; each cercus bearing 1 very long apical seta and 5

long subapical lateral setae; ventral projection located at middle of cerci, bearing 3 pairs of strong ventral setae curved basad, without distal lobe.

Female: Body length: 4.2 mm, wing length: 3.5 mm (in alcohol). Similar to male except lacking MSSC. Fore femur with several strong yellow bristles ventrally; each hemitergite with 2 narrow modified setae of unequal length; cercus with 3 apical setae, of which one seta nearly as long as cercus.

Distribution. Israel and West Bank.

Etymology: The species name originates from Latin "Asia occidentalis" (West Asia).

Diagnosis. The new species differs from all other species in only 3rd tarsomere of fore tarsus enlarged, in absence of strong anterior preapical seta on hind femur, in morphology of hypopygium appendages.

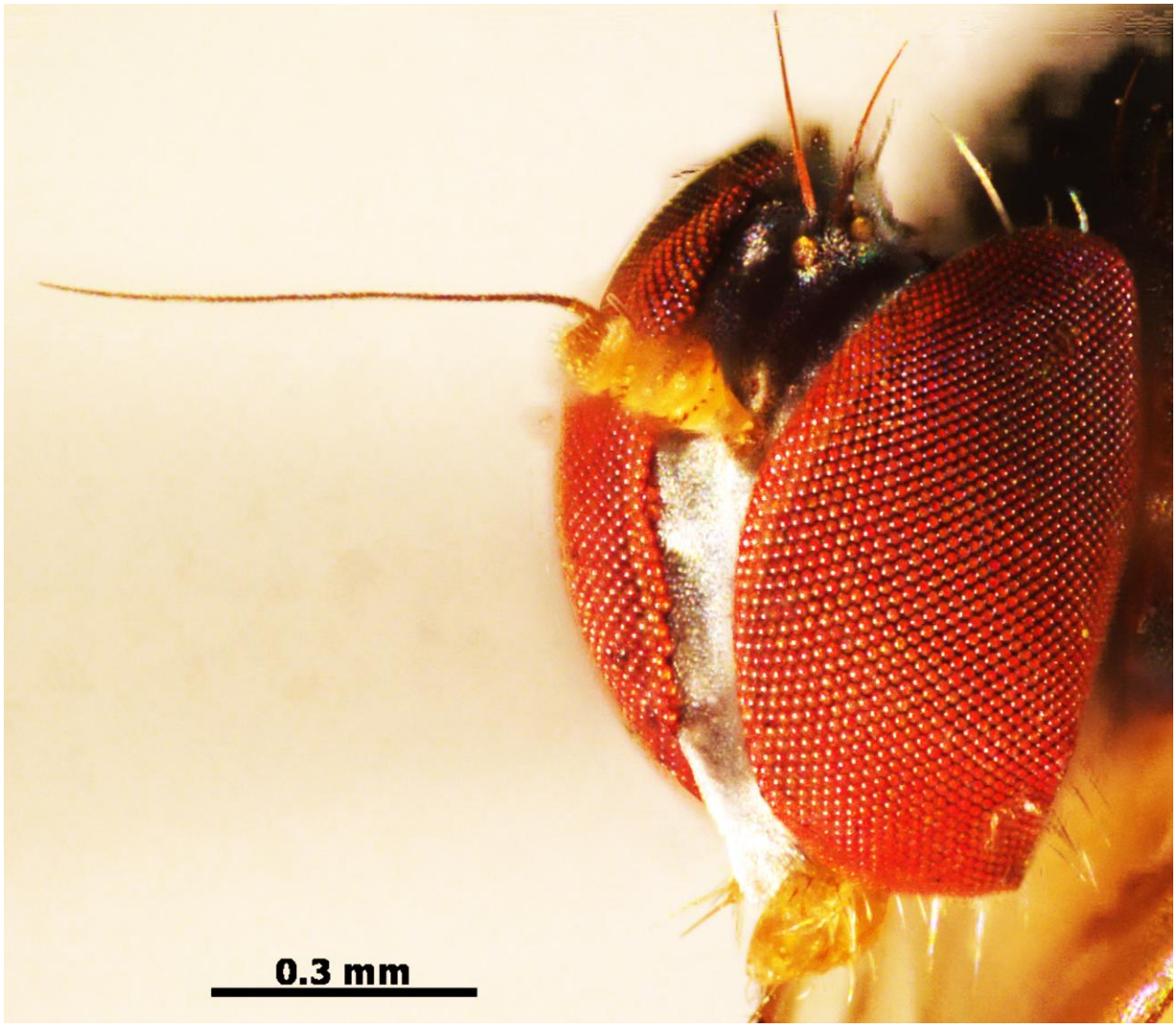

Fig. 18. *Sciapus occidasiaticus* Grichanov et Negrobov sp. nov., head.

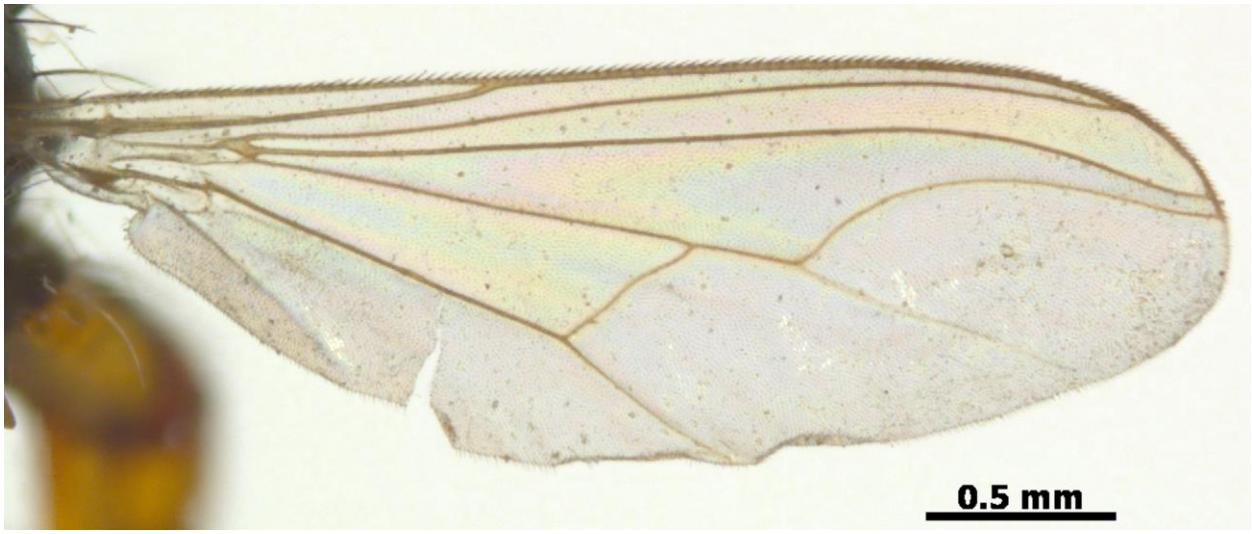

Fig. 19. *Sciapus occidasiaticus* Grichanov et Negrobov sp. nov., wing.

Fig. 20. *Sciapus occidasiaticus* Grichanov et Negrobov sp. nov., hypopygium.

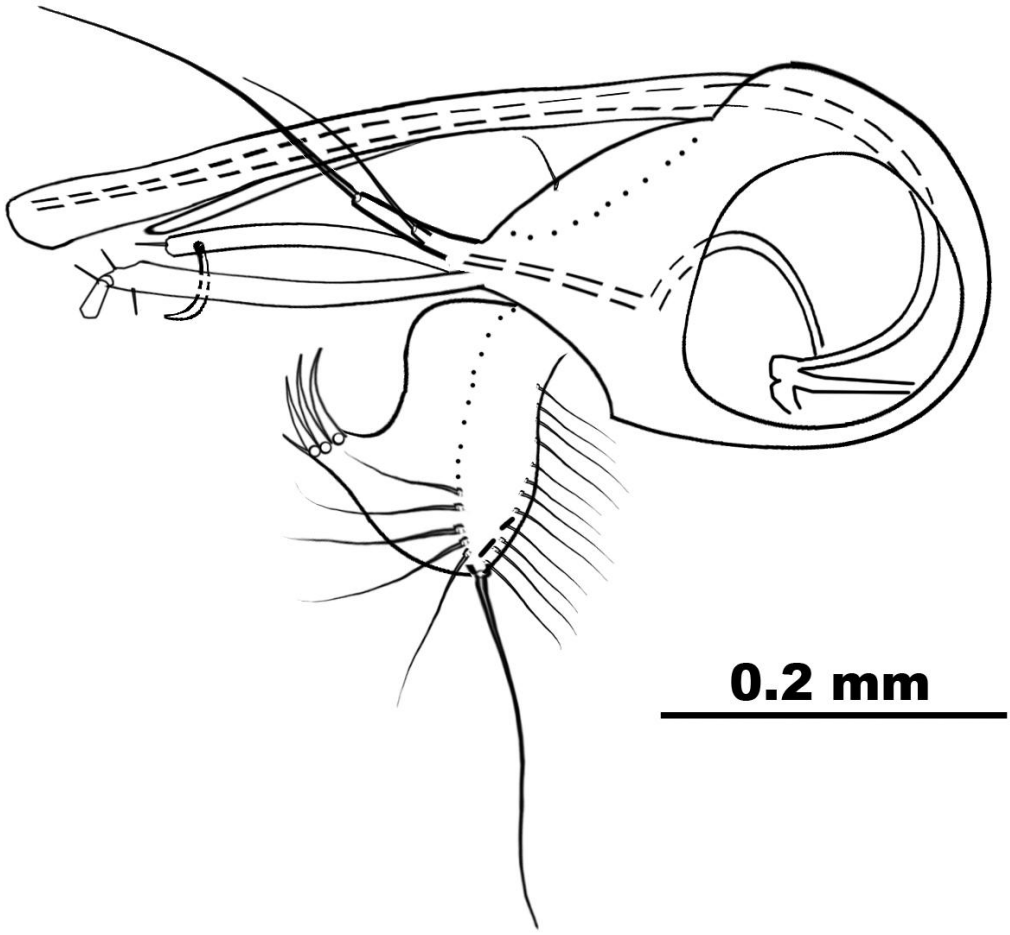

Fig. 21. *Sciapus occidasiaticus* Grichanov et Negrobov sp. nov., hypopygium.

***Sciapus iranicus* Grichanov et Negrobov sp. nov.**

(Figs. 22–26)

urn:lsid:zoobank.org:act:7B0F9D7F-60F6-4F59-8A02-DEE8B968FD20

Type material. Holotype ♂: **Iran**: Tehran, 7.V.1938, Zhenzhurist [MZUM]. Paratypes: 8♂, 4♀, Iran: Pahlevi [=Bandar-e Anzali], 2.V.1937, Zhenzhurist [MZUM, ZIN, VSU].

Description. Male: Body length: 5.0 mm, wing length: 4.4 mm, wing width: 1.3 mm, antenna length: 1.0 mm.

Head: slightly wider than high; frons greenish, densely white pollinose; 1 strong front vertical bristle bends forward, pair of strong black oculars with ajacent pair of short black setae, 1 long black postvertical; face black, densely white pollinose, under antennae nearly 3 times wider than postpedicel height, with indistinct transverse suture; clypeus not separated from eyes; proboscis orange-yellow; palpus yellow, with 2 black setae and yellow hairs; antenna mainly yellow, postpedicel and stylus brown; postpedicel about as long as high; pedicel

with short setae, somewhat longer ventrally; stylus dorsal, shortly haired, about 3 times longer than antennomeres combined; about 12 upper postocular setae black, of which uppermost seta rather long; lateral and lower postoculars white.

Thorax: mesonotum metallic green, weakly grey pollinose, with black setae; pleura blackish-green, whitish pollinose; metepimeron brown; six or seven dorsocentrals decreasing in length anteriorly; few pairs of short acrostichals in anteroior half of mesonotum; scutellum with 2 strong median and 2 fine short lateral setae.

Legs: yellow; distal segments of tarsi brown; coxae yellow, with long yellow hairs; fore coxa with few yellow setae at apex; fore femur with 1-2 ventral dark setae at base and few posteroventral dark setae at apex, about as long as femur height; fore tibia with 1 dorsal seta at base, 2-3 fine posterodorsal setae, with elongated setulae ventrally, rather long at base; fore tarsus with elongate semi-erect ventral setulae; basitarsus with 3 ventral setae; mid femur with few long dark ventral setae at base and at apex, with row of short black rigid hairs ventrally, half as long as femur height; no strong anterior preapical seta; mid tibia with 2 long anterodorsal and 2 short posterodorsal setae, 2-3 apicals; tarsomeres simple, with short semi-erect ventral setulae; hind femur with strong anterior preapical seta, with 2-3 preapical posteroventral setae; hind tibia with 1 strong anterodorsal seta at base, with some short setae ventrally and dorsally; hind basitarsus with short basoventral seta. Fore leg length ratio (from femur to tarsomere 5): 1.27/1.38/0.94/0.47/0.40/0.30/0.22, mid leg: 1.46/1.99/1.26/0.54/0.44/0.24/0.20, hind leg: 1.85/2.44/0.78/0.74/0.44/0.23/0.19 (in mm).

Wing: hyaline; costa almost straight; ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 0.32/0.07; crossvein *dm-cu* straight; M_2 weak, CuA well developed; anal lobe narrow; anal angle obtuse; length ratio of *dm-cu* to distal part of M_{1+2} (fork-handle) to distal part of CuA: 0.45/0.57/0.52 (in mm); lower calypter with yellow cilia; halter yellow.

Abdomen: blackish green, with mainly black setae; terga 2-3 with small brownish lateral spots; sterna yellow-brown; hypopygium black-brown with yellow-brown appendages; 1st tergum with long yellowish-white hairs; terga ventrally and sterna with long yellowish-white hairs; segment 7 short, glabrous; segment 8 large, covered with long white hairs.

Hypopygium with long simple phallosome; epandrial lobe yellow, short, with 1 long and 1 short setae; surstylus yellow, brown at apex, entire, bearing some setae at apex as figured; cerci yellow, fused to apex, short, covered with relatively long hairs, light at base and black at apex; ventral projection located at middle of cerci, bearing curved and pointed ventrally setose lobe at base, and long hairy distal lobe.

Female: Body length: 2.8 mm, wing length: 2.6 mm. Similar to male except lacking MSSC. Fore femur with several strong yellow bristles ventrally; each hemitergite with narrow modified setae of unequal length.

Distribution. Iran.

Etymology: The species name originates from the name of the country.

Diagnosis. The new species belongs to *S. contristans* group of species having simple tarsi and fused cerci bearing ventral projection (Organ X). It keys to *S. discretus*, differing in mid femur bearing black setae and rigid hairs ventrally, fore and mid tarsi having erect or semierect setulae ventrally, pointed ventrally Organ X.

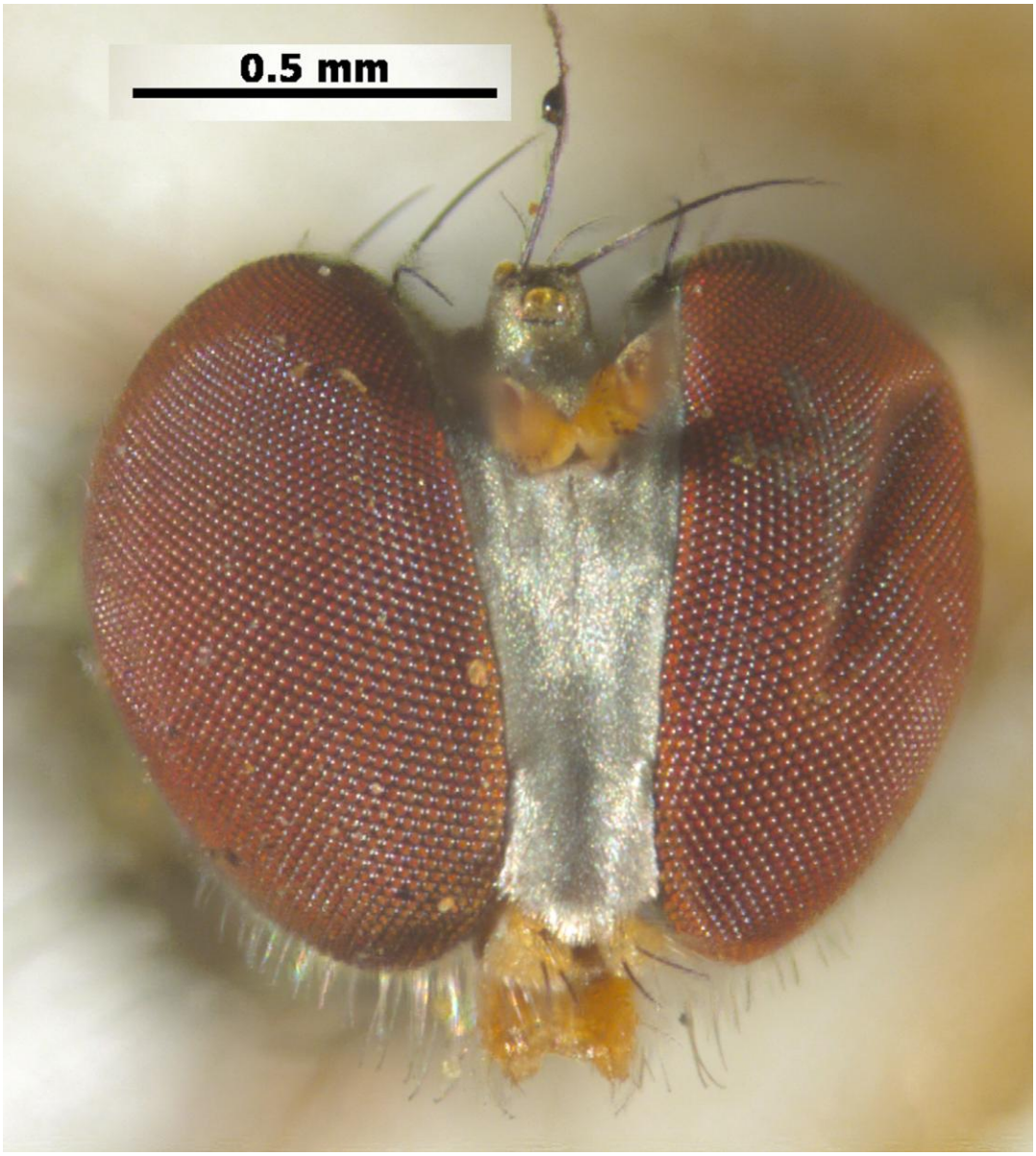

Fig. 22. *Sciapus iranicus* Grichanov et Negrobov sp. nov., head.

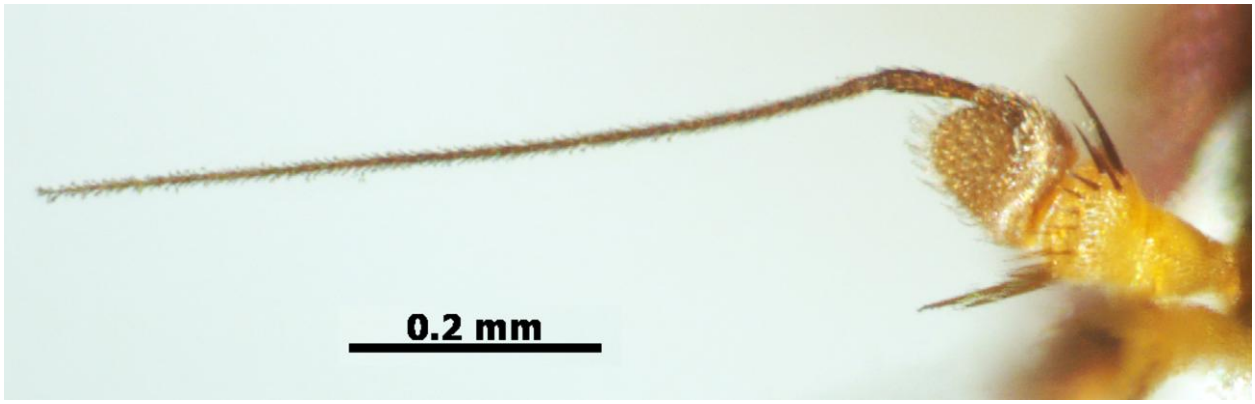

Fig. 23. *Sciapus iranicus* Grichanov et Negrobov sp. nov., antenna.

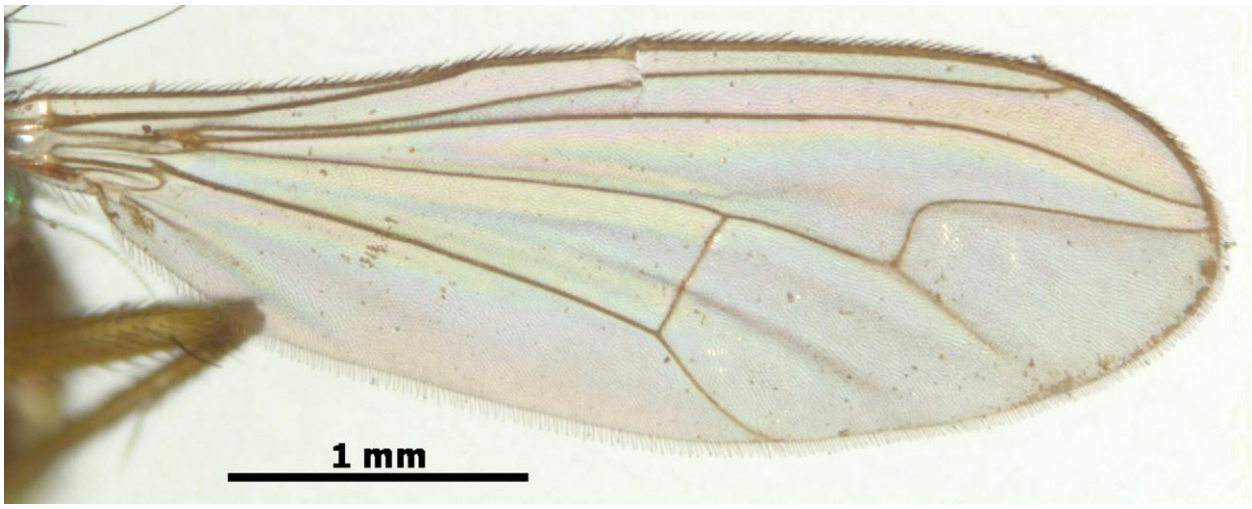

Fig. 24. *Sciapus iranicus* Grichanov et Negrobov sp. nov., wing.

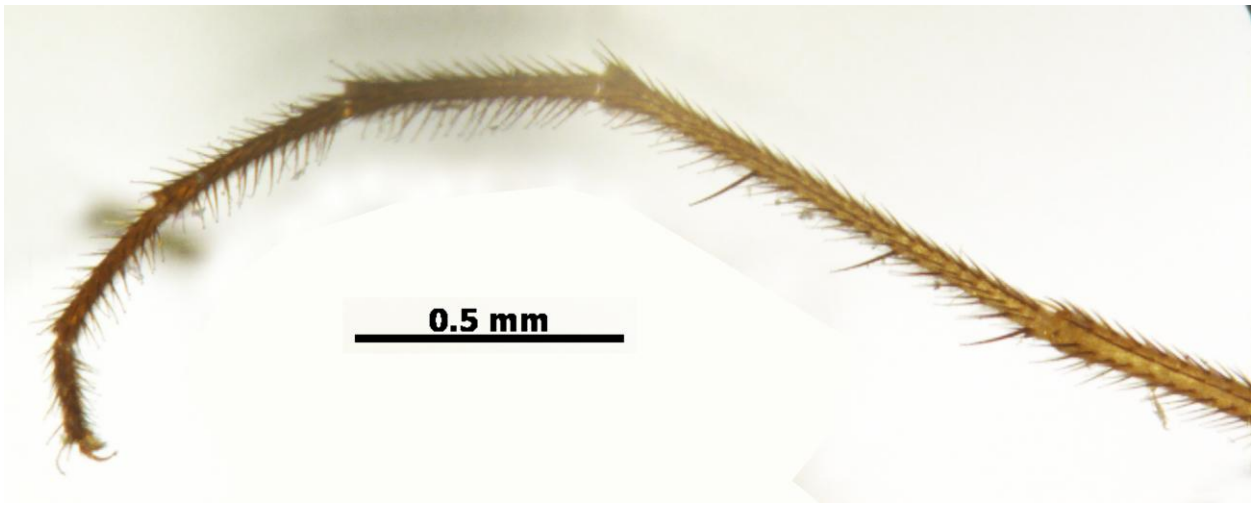

Fig. 25. *Sciapus iranicus* Grichanov et Negrobov sp. nov., fore tarsus.

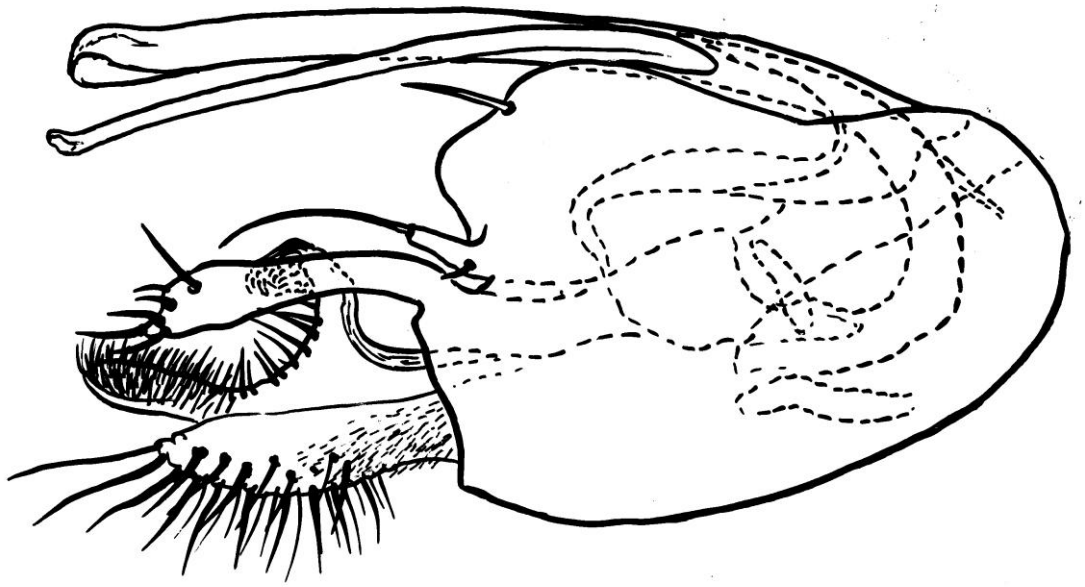

Fig. 26. *Sciapus iranicus* Grichanov et Negrobov sp. nov., hypopygium.

***Sciapus canariensis* Grichanov et Negrobov sp. nov.**

(Figs. 27–29)

urn:lsid:zoobank.org:act:E4D86779-F15E-4AF2-A67B-80EE471FE6E8

Type material. Holotype ♂: [**Spain**:] Canary, Tenerife, Teno Peninsula, lowland, 25-30.III.2011, N. Vikhrev [MZUM]. Paratype: 1♂, [**Spain**:] Canary, Tenerife Isl., park, 28.406 N, 16.570 W, 25-30.III.2011, N. Vikhrev [ZIN].

Description. Male: Body length: 4.5 mm, wing length: 3.6 mm, wing width: 1.3 mm, antenna length: 1.0 mm.

Head: with shrunken eyes, probably wider than high; frons black, densely white pollinose; 1 strong front vertical bristle bends forward, pair of strong black oculars, no ajacent hairs, 1 long black postvertical; face black, densely white pollinose, under antennae about 3 times wider than postpedicel height, with indistinct transverse suture; clypeus not separated from eyes; proboscis black; palpus yellow, with 1 black seta and yellow hairs; antenna with scape and pedicel yellow, postpedicel and stylus black; postpedicel about as long as high; pedicel with short setae, somewhat longer ventrally; stylus dorsoapical, shortly haired, 3.5 times longer than antennomeres combined; about 5 upper postocular setae black, of which uppermost seta rather long; lateral and lower postoculars white.

Thorax: mesonotum dark green, grey pollinose, with black setae; pleura black, densely white pollinose; metepimeron brown-black; six or seven dorsocentrals decreasing in length anteriorly; acrostichals well developed, biseriate along whole mesonotum length; scutellum with 2 strong median and 2 fine short lateral setae.

Legs: yellow; fore tarsus entirely brown-black; distal segments of mid and hind tarsi brown-black; coxae mainly yellow, with long yellow hairs; mid and hind coxae brownish; fore coxa with few yellow setae at base and at apex; fore femur with several sparse minute white hairs ventrally at base; fore tibia with 1 short dorsal seta at base; fore tarsus with simple setulae; tarsomeres 3 and 4 inconspicuously thickened; mid femur without remarkable ciliation; no strong anterior preapical seta; mid tibia with 1 anterodorsal at base and 1 short posterodorsal seta at extreme base; tarsomeres simple, with short ventral setulae; hind femur with anterior preapical seta, with 1 short preapical posteroventral setae; hind tibia with some short setae ventrally and dorsally; hind basitarsus with short basoventral seta. Fore leg length ratio (from femur to tarsomere 5): 1.12/1.22/1.12/0.38/0.28/0.17/0.17, mid leg: 1.35/1.83/1.40/0.64/0.44/0.29/0.19, hind leg: 1.79/2.42/0.77/0.84/0.47/0.26/0.18 (in mm).

Wing: hyaline; costa almost straight; ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 0.42/0.11; crossvein *dm-cu* straight; M_2 weak, CuA well developed; anal lobe narrow; anal angle right; length ratio of *dm-cu* to distal part of M_{1+2} (fork-handle) to distal part of CuA: 0.50/0.42/0.55 (in mm); lower calypter with yellow cilia; halter yellow.

Abdomen: blackish green, with mainly black setae; terga 1-3 with small brownish lateral spots; sterna brown; hypopygium black-brown with yellow-brown appendages; 1st tergum with yellowish-white hairs; terga ventrally and sterna with yellowish-white hairs; segment 7 short, glabrous; segment 8 large, covered with white hairs.

Hypopygium with long simple phallosome; epandrial lobe yellow, long, with 1 long apical and 1 short basal setae; surstylus yellow, brown distally, entire, bearing some short setae at apex as figured; cerci brown, fused to apex, 2 times longer than wide, covered with black hairs; ventral projection yellow, long, bearing long and thin, hairy at apex distal lobe.

Female: Unknown.

Distribution. Spain (Canary Islands).

Etymology: The species name originates from the name of the Canary Islands.

Diagnosis. The new species keys to *S. venetus*, differing in entirely brown-black fore tarsus; ventral side of Organ X nearly straight (lateral view), with ventral setae slightly longer than height of distal process. *S. venetus* has fore tarsus with yellow basitarsus, otherwise

brownish; ventral side of Organ X sinuate (lateral view), with ventral setae 2 times longer than height of distal process. The hypopygium morphology in *S. canariensis* is rather similar to that in *S. adumbratus*; nevertheless, the latter species has more or less distinct dark spot on wing at apex anteriorly; mid tibia covered with erect or semi-erect setulae; postpedicel brown, yellow at base.

Remarks. It is the 3rd species known from the Canary Islands (in addition to *S. glaucescens* and *S. montium*).

Fig. 27. *Sciapus canariensis* Grichanov et Negrobov sp. nov., head.

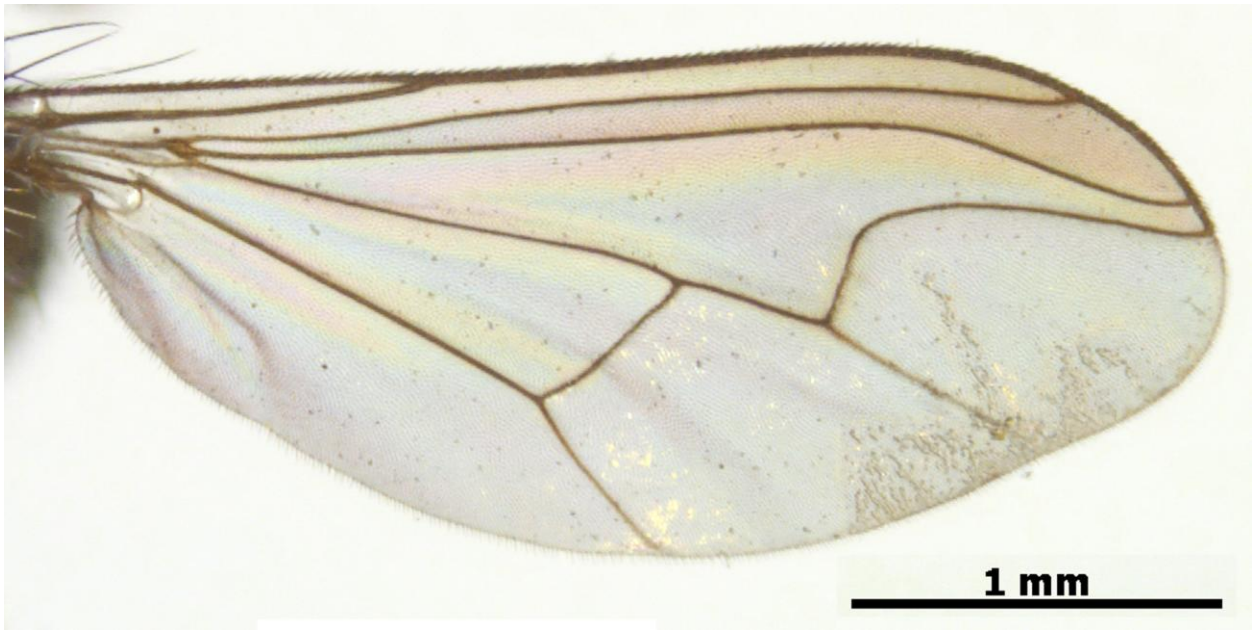

Fig. 28. *Sciapus canariensis* Grichanov et Negrobov sp. nov., wing.

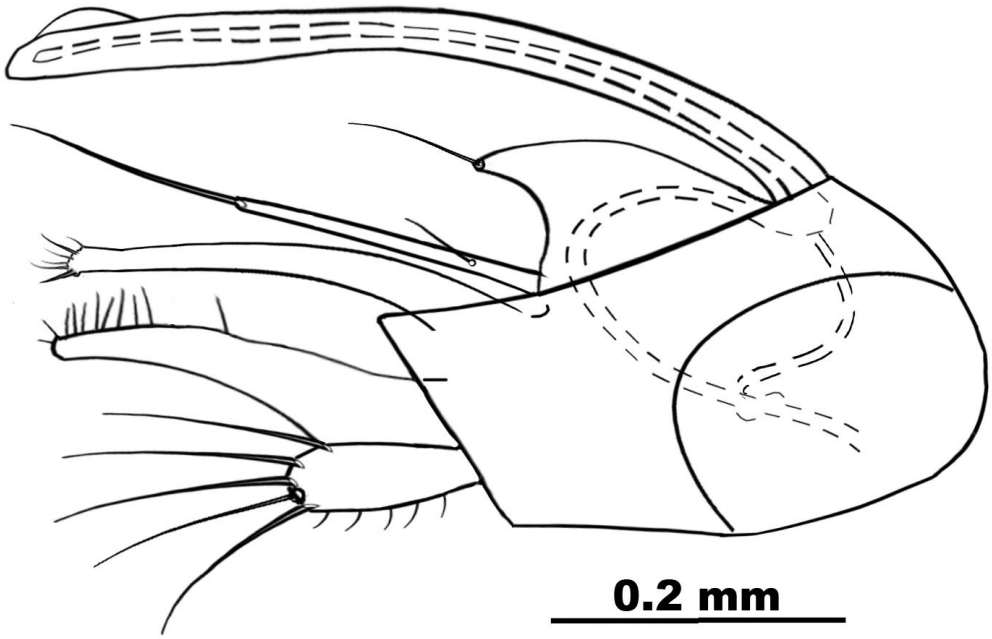

Fig. 29. *Sciapus canariensis* Grichanov et Negrobov sp. nov., hypopygium.

***Sciapus litoralis* Grichanov et Negrobov sp. nov.**

(Figs. 30–34)

urn:lsid:zoobank.org:act:B15F04FB-5B70-4F23-AF49-35EBEE869F32

Type material. Holotype ♂: [**Greece**:] Hellas, Lakonia, 5 km S of Monemvasia, 2.IX.1985, Georg Christensen leg. [ZMUC]. Paratype: 1♂, 1♀, S **Turkey**: [Antalya,] Side, sand dunes, 3-4.X.2006, N. Vikhrev [MZUM]; 1♂, 1♀, **Turkey**: [Antalya,] Side, sand dunes near sea, 28-30.IX.2007, N. Vikhrev [MZUM].

Description. Male: Body length: 4.8 mm, wing length: 3.8 mm, wing width: 1.3 mm, antenna length: 1.0 mm.

Head: wider than high; frons black, densely white pollinose; 1 strong front vertical bristle bends forward, pair of strong black oculars with 2 ajacent black hairs, 1 long black postvertical; face black, densely white pollinose, under antennae about 3 times wider than postpedicel height, with indistinct transverse suture; clypeus not separated from eyes; proboscis yellow; palpus yellow, with 1 black seta and yellow hairs; antenna with scape and pedicel yellow, postpedicel and stylus brown-black; postpedicel nearly as long as high; pedicel with short setae, somewhat longer ventrally; stylus dorsal, shortly haired, 3 times longer than antennomeres combined; about 6 upper postocular setae black, of which uppermost seta rather long; lateral and lower postoculars white.

Thorax: mesonotum dark green, grey pollinose, with black setae; pleura black, densely grey pollinose; metepimeron dirty yellow; five strong dorsocentrals decreasing in length anteriorly; acrostichals well developed, biseriate along whole mesonotum length; scutellum with 2 strong median and 2 fine short lateral setae.

Legs: yellow; distal segments of tarsi brown; coxae yellow, with long yellow hairs; fore coxa with few yellow setae at base and at apex; hind coxa with 2 setae; fore leg without setae, entirely covered with rows of short erect hairs, somewhat longer at base of tibia and at apex of femur posteriorly; mid femur with elongate ventral setulae at apex; no strong anterior preapical seta; mid tibia with 1 strong anterodorsal at base, and 1 short posterodorsal at middle, 1 short postgerior seta at extreme base; tarsomeres simple; hind femur with anterior preapical seta, with 2 short preapical posteroventral setae; hind tibia with some short setae ventrally and dorsally; hind basitarsus with short basoventral seta. Fore leg length ratio (from femur to tarsomere 5): 1.13/1.29/0.97/0.53/0.41/0.27/0.20, mid leg: 1.24/1.75/1.12/0.58/0.38/0.22/0.17, hind leg: 1.58/2.11/0.66/0.76/0.41/0.22/0.15 (in mm).

Wing: hyaline; costa almost straight; ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 0.42/0.7; crossvein *dm-cu* straight; M_2 weak, CuA well developed; anal lobe narrow; anal angle right; length ratio of *dm-cu* to distal part of M_{1+2} (fork-handle) to distal part of CuA: 0.47/0.42/0.51 (in mm); lower calypter with yellow cilia; halter yellow.

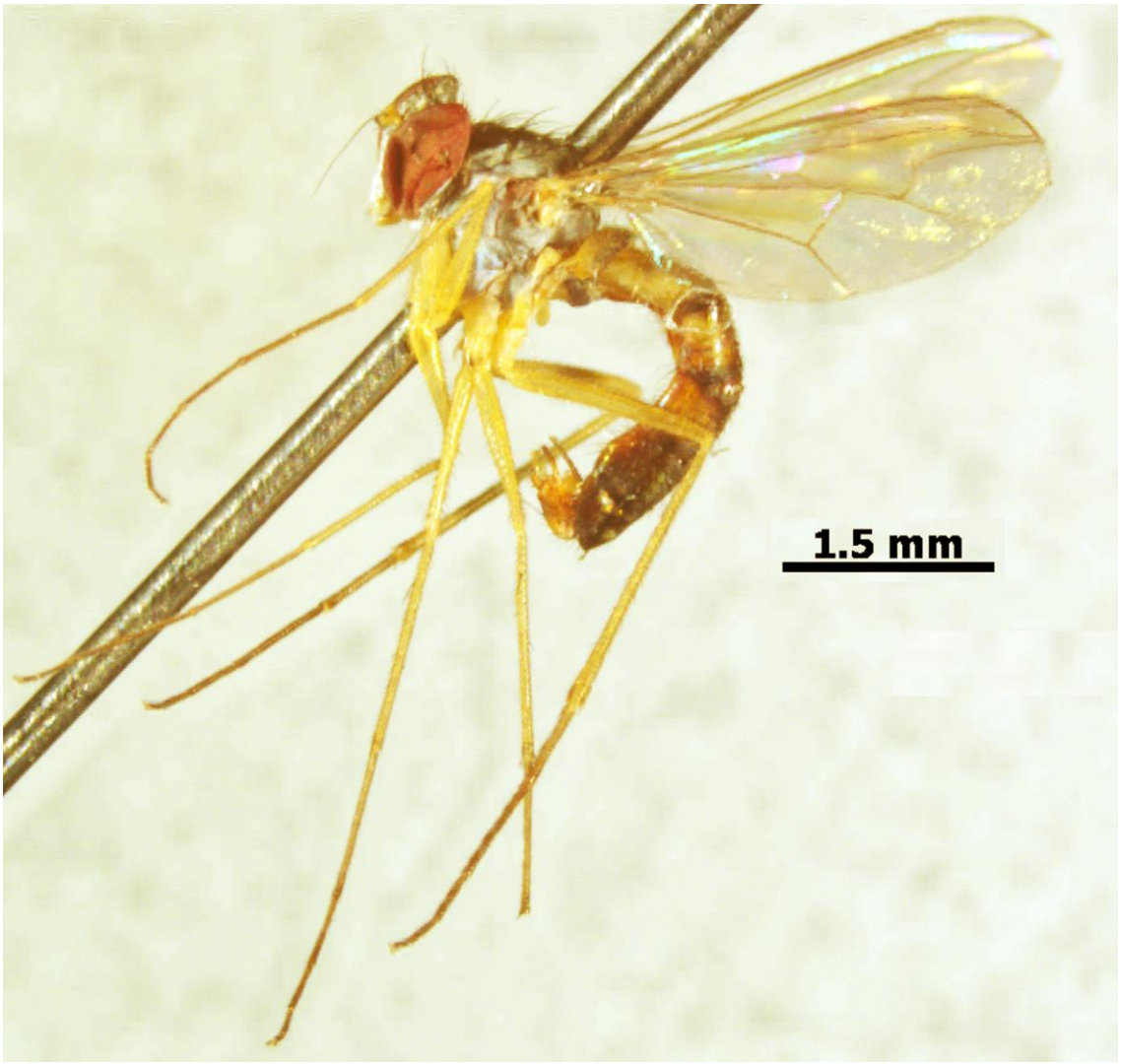

Fig. 30. *Sciapus litoralis* Grichanov et Negrobov sp. nov., habitus.

Abdomen: with mainly black setae, with segments 1-4 mainly yellow, more or less widely blackish brown along sutures, and segments 5-6 blueish or greenish black; sterna yellow; hypopygium brown with yellow-brown appendages; 1st tergum with yellowish-white hairs; terga ventrally and sterna with yellowish-white hairs; segment 7 short, glabrous; segment 8 large, covered with white hairs.

Hypopygium with long simple phallosome; epandrial lobe yellow, elongated, with 1 long and 1 short setae; surstylus yellow, brown distally, entire, bearing some setae at apex as figured; cerci brown, fused to apex, 2 times longer than wide, covered with black hairs; ven-

tral projection (Organ X) with yellow, long, bearing long distal lobe, gently sinuate ventral side, with interrupted row of ventral setae, with preapical glabrous constriction and apical enlargement (lateral view).

Female: Body length: 4.5 mm, wing length: 4.2 mm. Similar to male except lacking MSSC. Fore femur with several strong yellow bristles ventrally; each hemitergite with 2 narrow modified setae of unequal length; cercus with 3 apical setae, of which one seta nearly as long as cercus.

Distribution. Greece, Turkey.

Etymology: From Latin: shore-dweller.

Diagnosis. The new species belongs to *S. aberrans* group of species having simple tarsi and fused cerci bearing ventral projection (Organ X). It keys to *S. vladimiri* sp.n., differing in distal part of Organ X bearing interrupted row of ventral setae, having preapical glabrous constriction and apical enlargement (lateral view).

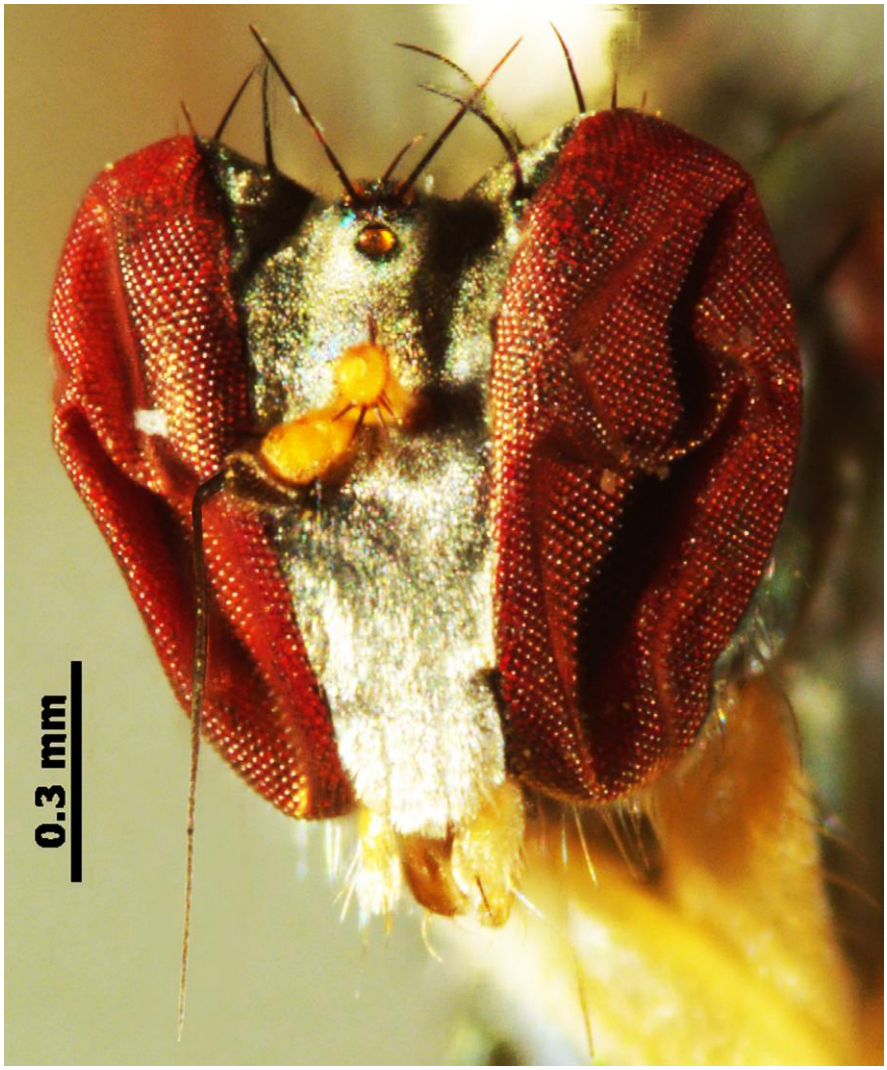

Fig. 31. *Sciapus litoralis* Grichanov et Negrobov sp. nov., head.

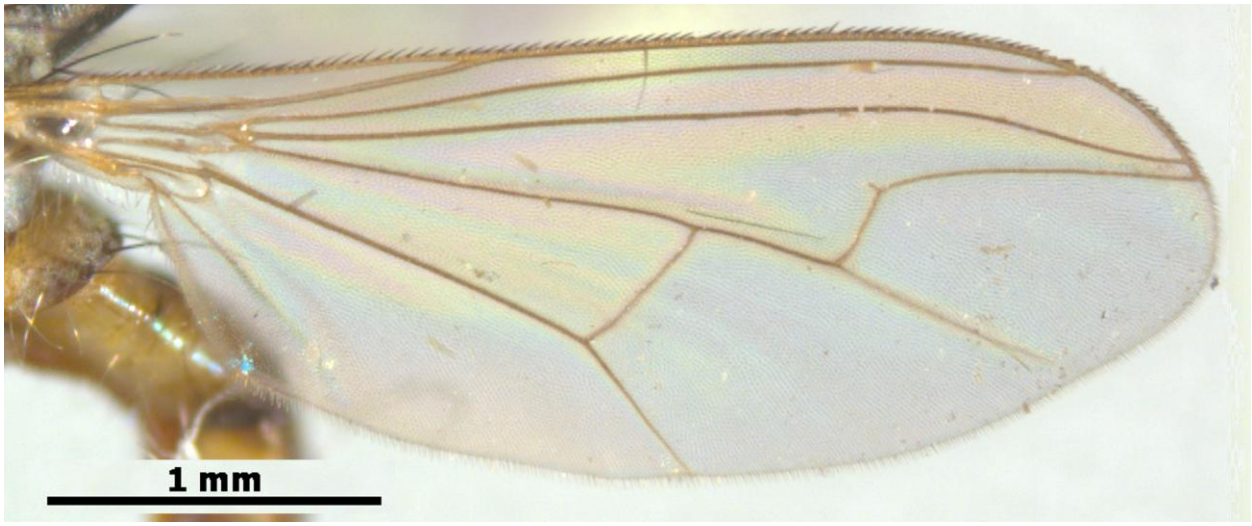

Fig. 32. *Sciapus litoralis* Grichanov et Negrobov sp. nov., wing.

Fig. 33. *Sciapus litoralis* Grichanov et Negrobov sp. nov., hypopygium.

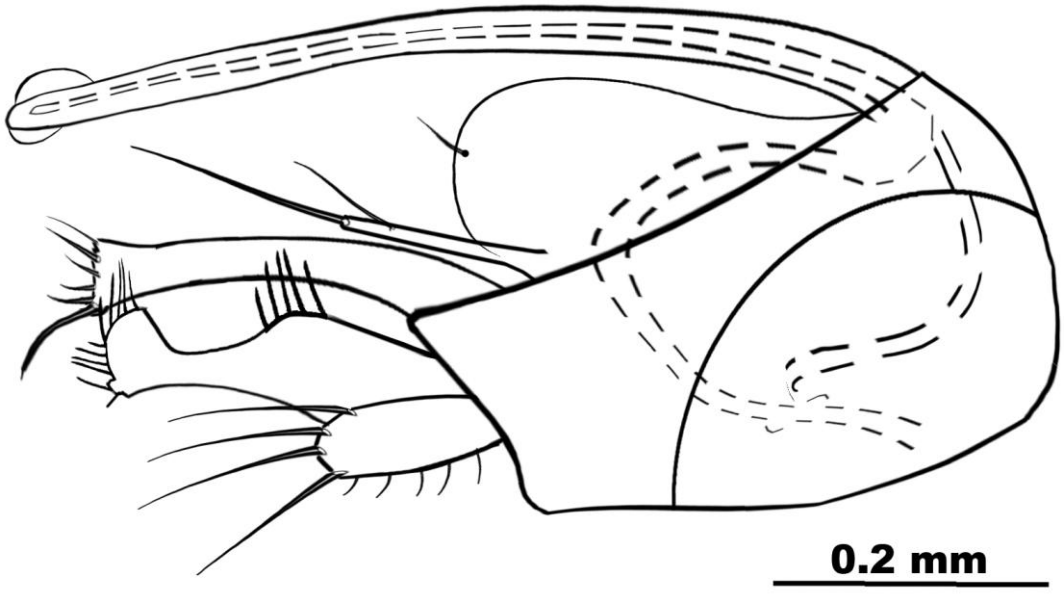

Fig. 34. *Sciapus litoralis* Grichanov et Negrobov sp. nov., hypopygium.

***Sciapus corsicanus* Grichanov et Negrobov sp. nov.**

(Figs. 35–39)

urn:lsid:zoobank.org:act:A71A92A4-0113-49B2-B0FA-A9DD7BC5C783

Type material. Holotype ♂: [**France**:] Corse, Forét d'Aïtone, Evisa, 900-1300 m, 14.VII.1967, Langemark-Lomholdt [ZMUC]. Paratypes: 5♀ with same data as holotype [ZMUC].

Description. Male: Body length: 4.1 mm, wing length: 3.9 mm, wing width: 1.4 mm, antenna length: 1.0 mm.

Head: with shrunken eyes, wider than high; frons violet-black, grey pollinose; 1 short front vertical bristle, half as long as postvertical, located close to latter bristle; pair of strong black oculars with 5 ajacent short black hairs; 1 long black postvertical; face somewhat bulging, violet-black, whitish pollinose, under antennae 5-6 times wider than postpedicel height, with distinct transverse suture; clypeus separated from eyes; proboscis black; palpus black, with black setae and hairs; antenna black; postpedicel about as long as high; pedicel with short setae, somewhat longer ventrally; stylus dorsal, shortly haired, nearly 4 times longer than antennomeres combined; upper postocular setae black, lateral and lower postoculars white.

Thorax: mesonotum metallic bluish-black, weakly grey pollinose, with black setae; pleura black, grey pollinose; six dorsocentrals decreasing in length anteriorly; acrostichals

well developed, biseriate along whole mesonotum length; scutellum with 2 strong median and 2 fine short lateral setae.

Legs: yellow-brown; coxae brown, with yellow setae and hairs; fore coxa with strong lateral and apical setae; femora mostly light-brown; tibiae brownish distally; tarsi black, brownish at base; fore femur with 4-5 ventral light setae in basal half, longer than femur height; fore tibia with 1 anterodorsal at base, 2 posterodorsal setae in basal half; fore tarsus simple; basitarsus with few rather short ventral setae; mid femur ventrally bare, with anterior and posterior rows of elongate semierect setulae in distal half; no strong anterior preapical seta; mid tibia with 1-2 anterodorsal and 0-1 short posterodorsal setae, 2-3 short apicals; mid tibia and basitarsus entirely covered with erect setulae; tarsomeres simple; hind femur with strong anterior preapical seta; hind tibia with 4-5 dorsal setae. Fore leg length ratio (from femur to tarsomere 5): 0.99/0.92/0.75/0.30/0.25/0.15/0.15, mid leg: 1.03/1.77/1.16/0.44/0.35/0.23/0.15, hind leg: 1.35/1.83/0.69/0.59/0.37/0.20/0.16 (in mm).

Wing: hyaline; costa straight; ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 0.58/0.12; crossvein *dm-cu* straight; M_2 foldlike, CuA well developed; anal lobe narrow; anal angle right; length ratio of *dm-cu* to distal part of M_{1+2} (fork-handle) to distal part of CuA: 0.51/0.64/0.53 (in mm); lower calypter with yellow cilia; halter yellow.

Abdomen: dark greenish-blue, black along sutures, with mainly black setae; sterna dark; hypopygium black with black-brown appendages; 1st tergum with long yellowish-white hairs; terga ventrally and sterna with long yellowish-white hairs; segment 7 short, glabrous; segment 8 large, covered with long black hairs.

Hypopygium with long simple phallosome; epandrial lobe black, long, with 2 long setae at apex; surstylus black, entire, spoon-like, bearing 2 teeth and some setae at apex as figured; cerci black, free from base, long, narrow, covered with relatively long light hairs and black setae; ventral projection absent.

Female: Body length: 3.8 mm, wing length: 3.4 mm. Similar to male except lacking MSSC. Vertical and postvertical bristles equal in length; face parallel-sided; fore femur with 5 strong light-brown bristles ventrally; each hemitergite with 2 narrow modified setae of unequal length; cercus with 3 apical setae, of which one seta longer than cercus. Fore leg length ratio (from femur to tarsomere 5): 1.00/0.93/0.68/0.25/0.21/0.16/0.14, mid leg: 1.02/1.41/0.89/0.37/0.26/0.15/0.15, hind leg: 1.34/1.74/0.59/0.53/0.34/0.18/0.19 (in mm).

Distribution. France.

Etymology: Latin: from Corsica (Corse).

Diagnosis. The new species is close to *S. nigricornis*, differing in mid tibia and basitarsus having erect or semierect setulae, veins M_1 and M_2 forming right angle, different shape of surstylus. *S. nigricornis* differs in mid tibia and basitarsus having simple setulae, veins M_1 and M_2 forming rather obtuse angle.

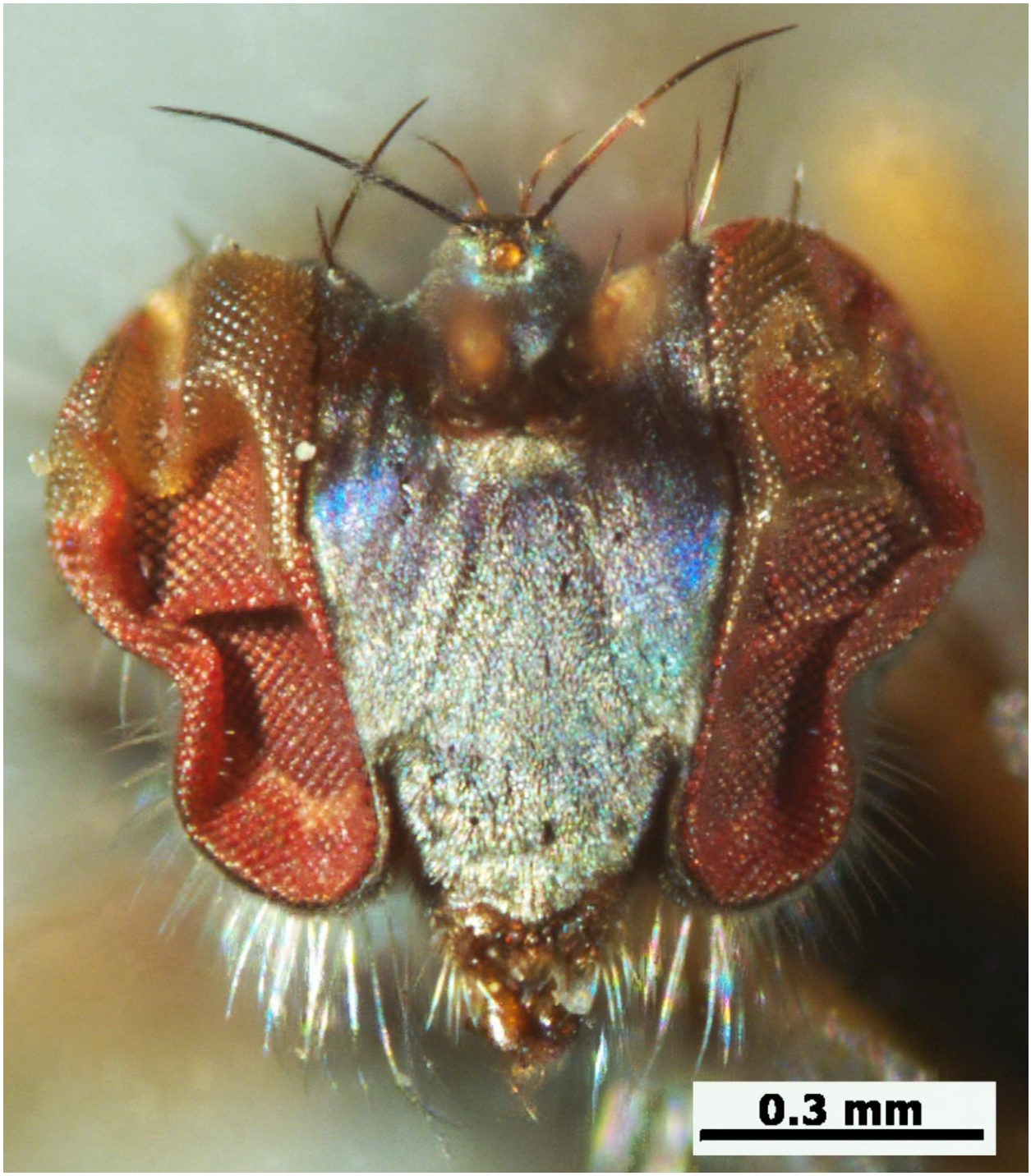

Fig. 35. *Sciapus corsicanus* Grichanov et Negrobov sp. nov., head aneriorly.

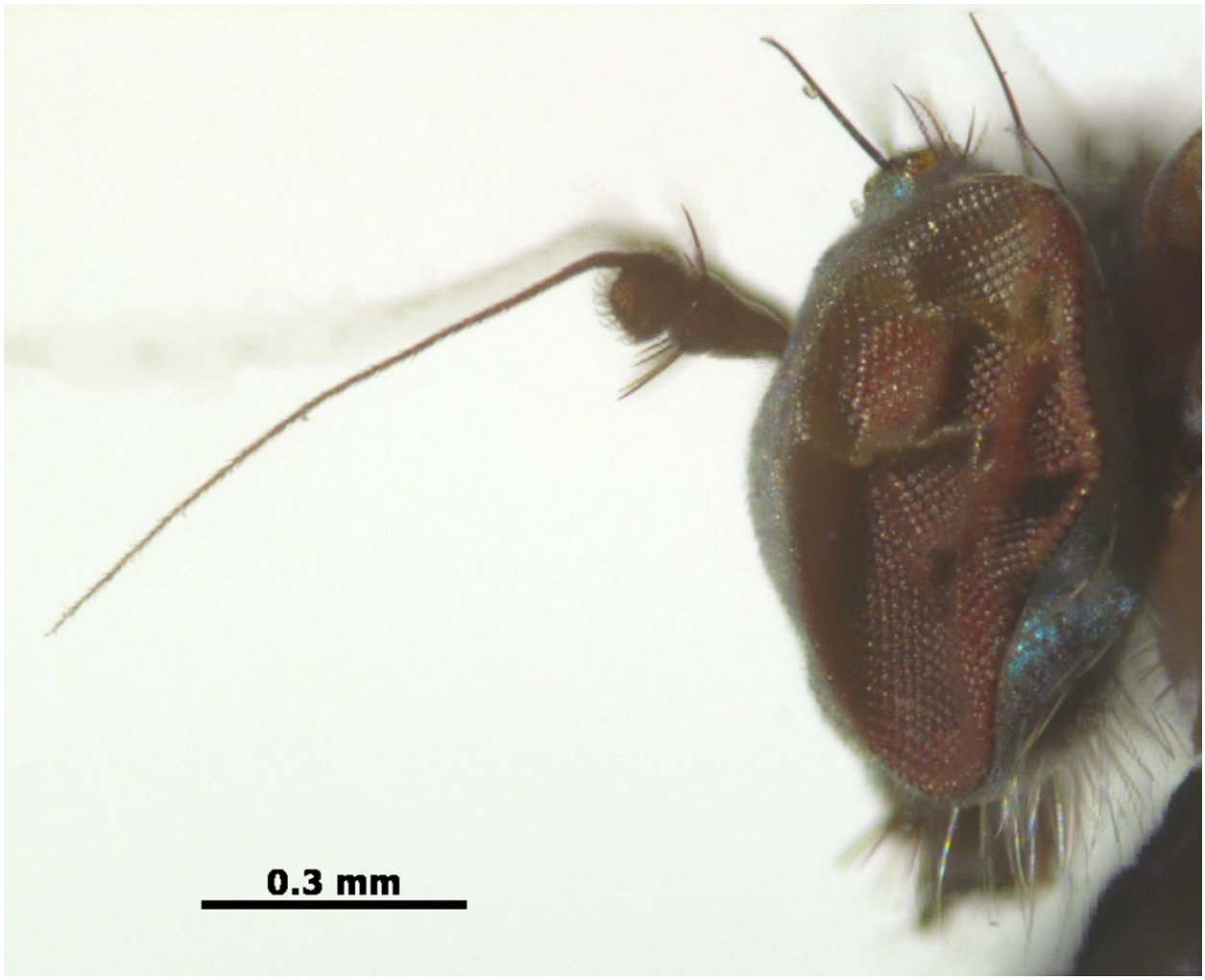

Fig. 36. *Sciapus corsicanus* Grichanov et Negrobov sp. nov., head laterally.

Fig. 37. *Sciapus corsicanus* Grichanov et Negrobov sp. nov., wing.

Fig. 38. *Sciapus corsicanus* Grichanov et Negrobov sp. nov., hypopygium.

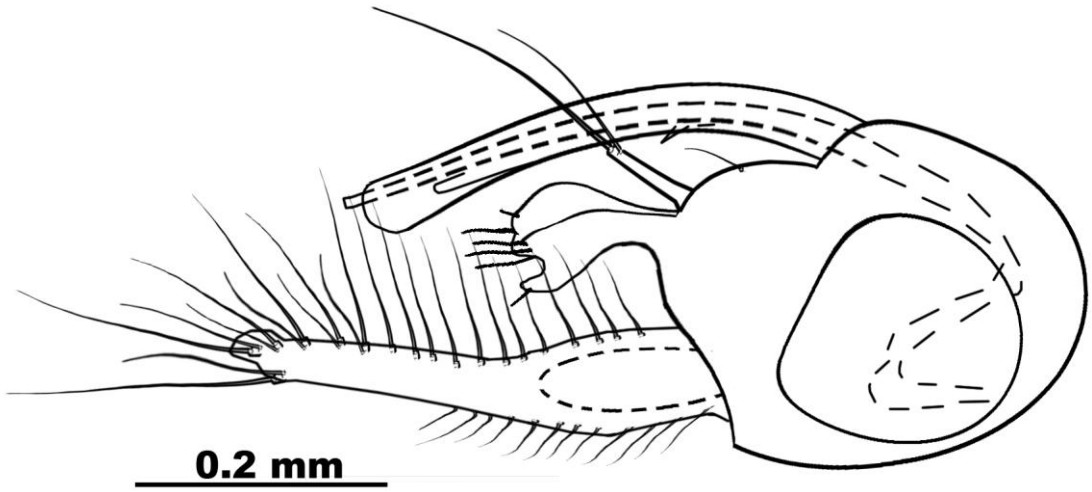

Fig. 39. *Sciapus corsicanus* Grichanov et Negrobov sp. nov., hypopygium.

***Sciapus pseudobellus* Grichanov et Negrobov sp. nov.**

(Figs 40–42)

urn:lsid:zoobank.org:act:132CC2B0-7A7D-4876-ABC7-5E79DD765E1E

Type material. Holotype ♂, **Italy**: Baragazza, 25.VII.1963 / *Sciapus bellus* det. Venturi [ZIN].

Description. Male: Body length: 3.0 mm, wing length: 2.8 mm, wing width: 1.3 mm, antenna length: 0.8 mm.

Head: Frons and face densely greyish white pollinose; face in middle hardly wider than postpedicel height; proboscis dark yellow; palpus yellow, with 1 black seta at apex and with yellow hairs; antenna with scape and pedicel yellow; postpedicel brown, as high as long; stylus dorsal, shortly haired; ratio of postpedicel length to its width to stylus length, 5/5/45; postocular setae entirely white.

Thorax: Dark green; mesonotum hardly shining, grey pollinose, with black setae and longiyudinal brown stripes along rows of dorsocentrals; pleura densely grey pollinose, metaepimeron yellow; propleura with yellow hairs; 6 pairs of dorsocentrals; acrostical setae long, biserial; scutellum with 2 strong setae and 2 lateral hairs.

Legs: Including all coxae yellow; 4^{th} segment of mid tarsus black, flattened laterally and widened, with black lateral setae as figured; coxae with long yellow hairs and setae. Fore femur with ventral row of long thin yellow hairs, longer than femur height, increasing in length distally; fore tibia with 2 posteroventral short setae; fore tarsus with simple hairs. Mid femur with preapical anterior and posteroventral setae; mid tibia with 3 anterodorsal, 3 posterodorsal and 3 ventral short setae; mid basitarsus with 5-5 short ventral setae. Hind femur with preapical anterior and posteroventral setae; hind tibia with 5 anterodorsal and 4 posterodorsal short setae; hind basitarsus with short ventral setae. Tibia and tarsomere (from first to fifth) length ratio: fore leg: 45/64/25/19/13/7, mid leg: 118/88/24/17/14/6, hind leg: 153/32/35/25/18/8.

Wing: dark along anterior margin; costa straight; M_1 gently curved, forming right angly with M_2; length ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 26/3; M_2 well developed, almost reaching wing margin; posterior cross vein *dm-cu* straight; length ratio of distal part of CuA_1 to *dm-cu* to distal part of M_{1+2}: 4.2: 2.4: 3.6; anal vein distinct; anal lobe narrow; anal angle obtuse; lower calypter yellow, with long yellow cilia; halter yellow.

Abdomen: Shining metallic-green, bronze along sutures, with black setae, with long white hairs dorsally at base; sterna with pale hairs.

Hypopygium brown; phallosome thin, with dorsal serration; epandrial lobe large, with apical seta; surstylus short, bilobate with dorsal arm thin and slightly curved, ventral arm thick, bearing 8 setae; cerci long, narrow, short haired; no Organ X.

Female: Unknown.

Distribution. Italy.

Etymology: The species is named for its similarity with *Sciapus bellus*.

Diagnosis. The new species belongs to *S. bellus* group of species, being cose to *S. dytei*, differing in cercus being nearly as long as epandrium, different shape of surstylus and epandrial lobe. *S. dytei* has cercus half shorter than epandrium.

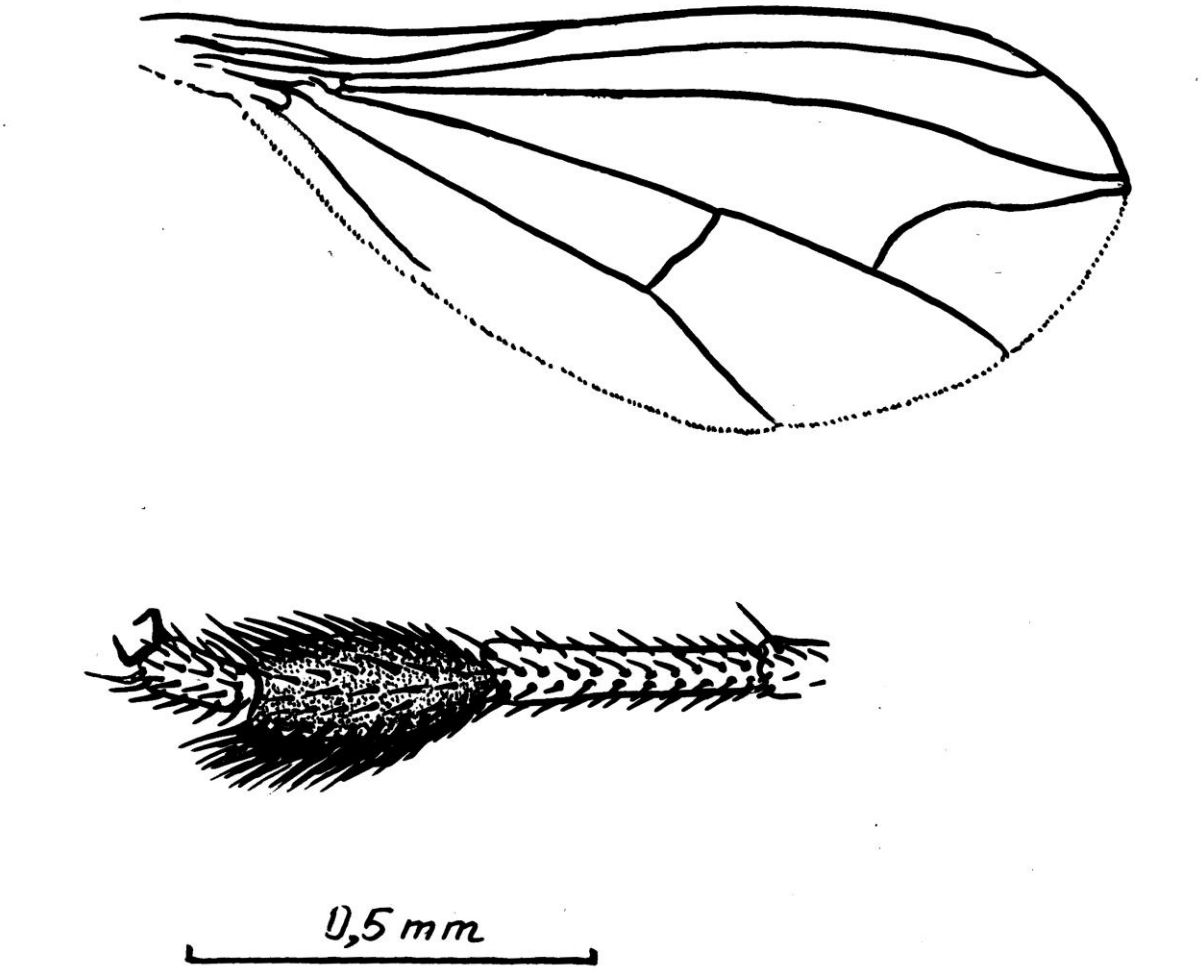

Fig. 40. *Sciapus pseudobellus* Grichanov et Negrobov sp. nov., wing.

Fig. 41. *Sciapus pseudobellus* Grichanov et Negrobov sp. nov., mid tarsomeres 3-5.

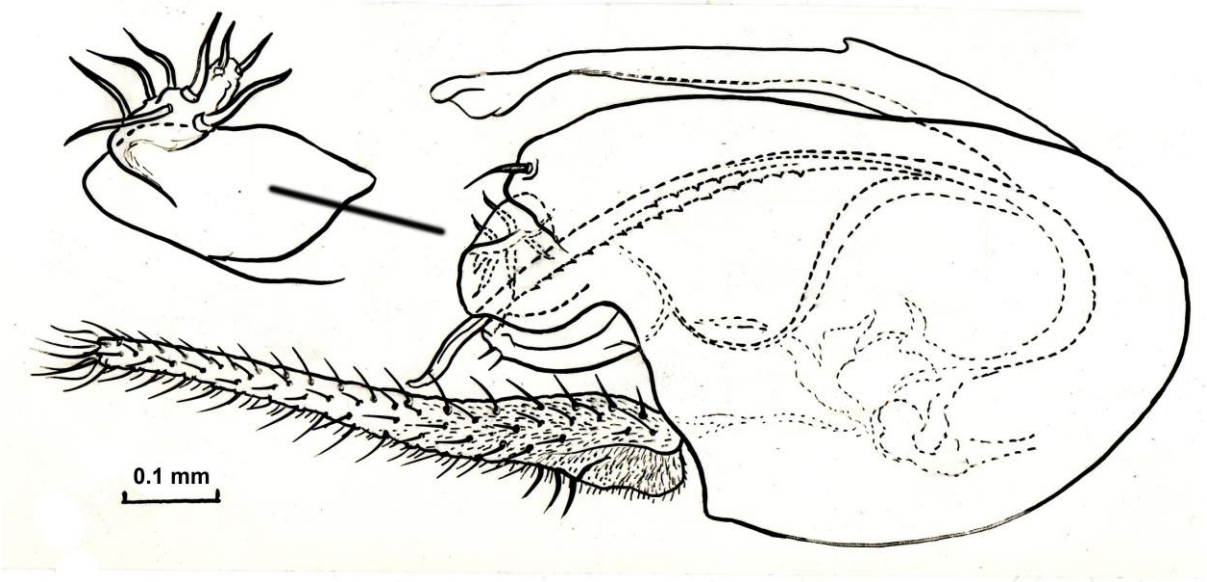

Fig. 42. *Sciapus pseudobellus* Grichanov et Negrobov sp. nov., hypopygium.

***Sciapus vladimiri* Grichanov et Negrobov sp. nov.**

(Figs. 43–44)

urn:lsid:zoobank.org:act:E862099D-D7C2-4EAB-8970-8E7CB0DFDAE1

Type material. Holotype ♂, [Russia:] Yakutia, Yakutsk, botanical garden, 14.VII.1976, Kovalyov [ZIN].

Description. Male: Body length: 3.6 mm, wing length: 3.3 mm, wing width: 0.8 mm, antenna length: 0.6 mm.

Head: Frons and face greyish white pollinose; face under antennae 3 times wider than postpedicel height; face and convex epistome separated by distinct transverse suture; proboscis brown; palpus yellow, with 1 long and one short black setae at apex and with white hairs; antenna with scape and pedicel yellow; postpedicel brown, slightly higher than long; stylus dorsal, shortly haired; ratio of postpedicel length to its width to stylus length, 6/5/36; postocular setae entirely white.

Thorax: Dark green; mesonotum metallic, pollinose, with black setae; pleura grey pollinose, metaepimeron yellow; propleura with 1 strong yellow seta below and with group of yellow hairs above; acrostical setae long, biserial, developed along whole length of mesonotum; scutellum with 2 strong setae.

Legs: Including all coxae yellow except for brown tarsi (from apex of basitarsus); coxae with long yellow hairs; tarsi simple. Fore femur with ventral row of short thin white hairs, not

longer than femur height, in distal quarter with posterior row of 8-9 hairs, approximately equal to or hardly shorter than femur height; fore tibia with 2 dorsal and 2 posteroventral short setae, with posteroventral row of erect setulae; fore tarsus with short erect ventral hairs, basitarsus with 1 short ventral seta. Mid femur in distal quarter with anteroventral row of short black setae, not longer than femur height; mid tibia with 3 anterodorsal, 3 posterodorsal and 2 posteroventral short setae; mid tibia and tarsi covered with short erect hairs; mid basitarsus with 3 short ventral setae. Hind femur with 1 strong preapical seta; hind tibia with 3 anterodorsal and 3 posterodorsal short setae and with short ventral hairs; hind basitarsus with 4-5 short black ventral setae. Tibia and tarsomere (from first to fifth) length ratio: fore leg: 70/46/24/18/19/11, mid leg: 90/58/29/20/13/10, hind leg: 117/36/37/25/13/9.

Wing: Hyaline; costa straight; M_1 gently curved; length ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_1: 20/3; M_2 well developed, almost reaching wing margin; posterior cross vein *dm-cu* straight; length ratio of distal part of CuA_1 to *dm-cu* to distal part of M_{1+2}: 2.7: 2.8: 1.7; anal vein distinct; anal lobe narrow; anal angle obtuse; lower calypter yellow, with quite long yellow cilia; halter yellow.

Abdomen: Shining metallic-green, with black setae, with short white hairs dorsally at base; segments 1-3 with yellow lateral spots, half as large as segments 1-2, smaller on segment 3.

Hypopygium brown, cerci yellow; surstylus slightly curved at apex, shorter than epandrium; cerci short, long haired, much shorter than Organ X, which expanded at base, bearing bunch of long cilia on midventral prominence, with narrow beaklike projection covered with short hairs and extending beyond apex of surstylus.

Female: Unknown.

Distribution. Russia (Yakutia).

Etymology: The species is named after the famous Russian dipterologist and paleontologist Dr. Vladimir Kovalev (1942–1987).

Diagnosis. The new species keys to *S. longulus* group of species, differing in well developed Organ X on fused cerci. Antenna mainly yellow; acrostical setae present; frons greyish white pollinose; fore tibia, mid tibia and tarsi with rows of short erect hairs; abdominal segments 1-3 with yellow lateral spots.

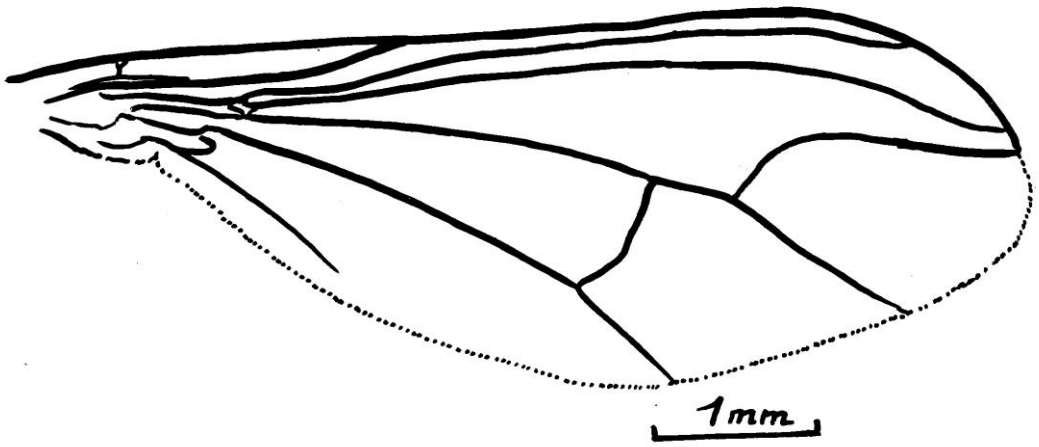

Fig. 43. *Sciapus vladimiri* Grichanov et Negrobov sp. nov., wing.

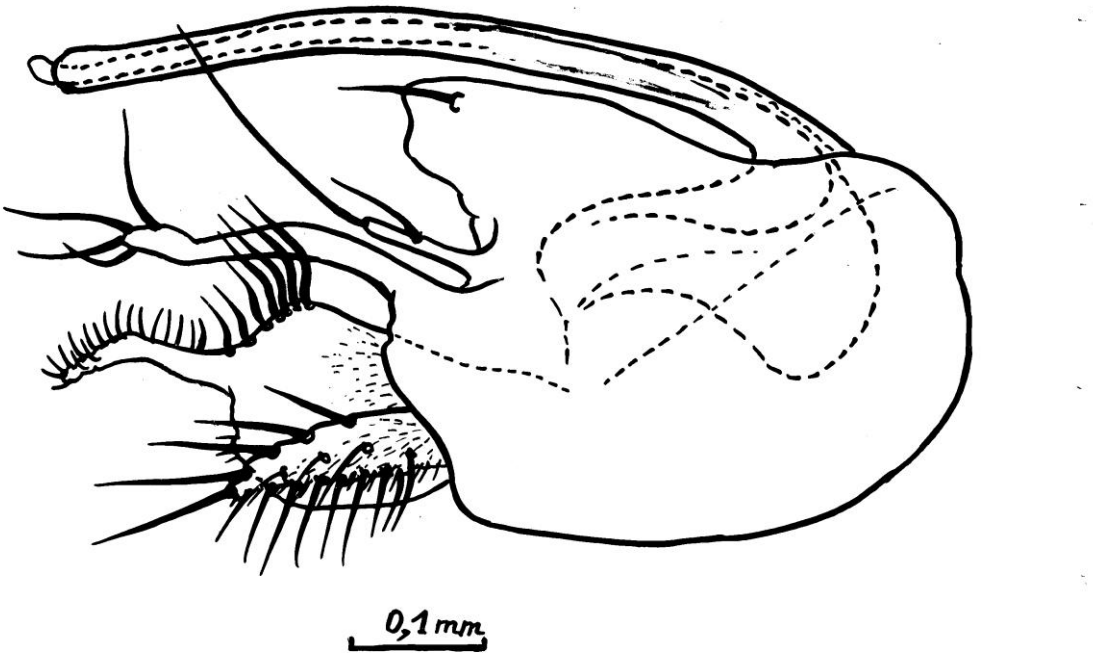

Fig. 44. *Sciapus vladimiri* Grichanov et Negrobov sp. nov., hypoopygium.

Key to Palaearctic species of the genus *Sciapus* (males)

Remark. *S. mitis* Parent known by female is not included.

1. Tarsi with one or more segments enlarged (often slightly), plumose (or pennate), silvered or white 2
– All tarsi simple, at most some segments with erect setulae, or elongated, or sometimes 5th segment flattened dorsoventrally and slightly broadened 27
2. Mid tarsus modified; wing broad; face narrow, white; cercus simple, ventral cercal projection ("Organ X") absent 3
– Fore or hind tarsi modified 6
3. Mid tarsus with 3rd and 4th segments enlarged, silvery-white; cercus short; 3.5-5.0 ..... *platypterus* (Fabricius)
– Mid tarsus with 3rd segment not enlarged, at most thickened at apex, and 4th segment black 4
4. Wing transparent; mid tarsus with 3rd segment thickened at apex, and 4th segment strongly enlarged; fore tibia not longer than basitarsus; 6.5-7.0 ..... *bellus* (Loew)
– Wing dark along anterior margin; mid tarsus with 3rd segment not enlarged, and 4th segment slightly enlarged; fore tibia distinctly longer than basitarsus 5
5. Cercus shorter than epandrium; 5.5-5.8 ..... *dytei* Negrobov, Maslova et Selivanova
– Cercus longer than epandrium; 3.0 ..... *pseudobellus* sp.n.
6. Hind tarsus with 2nd segment strongly enlarged, with bilateral black pennation; fore tarsus simple; cercus longer than surstylus, simple, organ X absent; 3.3-4.0 . *polozhentsevi* Negrobov
– Hind tarsus simple; fore tarsus modified 7
7. Fore tarsus with only one segment enlarged 8
– Fore tarsus with at least two segments enlarged 11
8. Fore tarsus with only 3rd segment enlarged in middle and curved ..... *occidasiaticus* sp.n.
– Fore tarsus with either 4th or 5th segment enlarged 9
9. Fore tarsus with 5th segment white ..... *algirus* Macg.
– Fore tarsus with 5th segment black, ovoid, enlarged 10
10. Hind femur without anterior preapical seta; cerci free and lacking organ X; 5.0-5.3 ..... *richterae* Negrobov et Grichanov
– Hind femur with anterior preapical seta; cerci fused, with Organ X; 5.2 ..... *calceolatus* Loew
11. Fore tarsus with 3rd segment enlarged 12

– Fore tarsus with 3rd segment simple or thinned 15

12. Fore tarsus with 2nd and 3rd segments enlarged 13

– Fore tarsus with 2nd segment simple 14

13. Cercus with thick ventral hook; surstylus with short apical process, half as long as surstylus width at apex; 4.5 ..... *freidbergi* sp.n.

– Cercus without ventral hook; surstylus with long apical process, as long as width of surstylus at apex; 4.5 ..... *adana* sp.n.

14. Antenna black; face narrow; mesonotum not striated; fore tarsus about 3 times longer than tibia; fore tarsus with 3rd and 4th segments white ..... *lesinensis* Mik

– Antenna yellow, postpedicel brown; face broad; mesonotum striated; fore tarsus 1.75 times longer than tibia; fore tarsus with 3rd and 4th segments black ..... *albovittatus* Strobl

15. Fore tarsus with 4th segment bearing large dorsal lobe 16

– Fore tarsus without lobe on 4th segment 23

16. Acrostichals absent; wing vein *m-cu* strongly convex 17

– Acrostichals present; wing vein *m-cu* straight 18

17. Epandrial lobe much longer than epandrium, bearing long hairs; antennal pedicel with pale bristles; hind basitarsus much longer than next segment; 5.0-8.0 ..... *nervosus* (Lehmann)

– Epandrial lobe shorter than epandrium, sparsely ciliated; antennal pedicel with dark bristles; 6.0 ..... *roderi* Parent

18. M_1 strongly curved towards base of wing; fore tarsus with 3rd segment white at apex; mesonotum with 5 weak dorsocentrals; 6.0 ..... *costae* Parent

– M_1 regularly convex anteriorly; 6 normal dorsocentrals 19

19. Abdomen largely yellow; costa concave or straight 20

– Abdomen dark, metallic green; costa straight 21

20. Wing costa distinctly concave (dorsal view); 4th segment of fore tarsus compressed, lengthened into narrow triangular lobe dorsally at apex; 6.0 ..... *albifrons* (Meigen)

– Wing costa straight (?); 4th segment of fore tarsus with broad rhomboid lobe; 6.0 ..... *palmipes* Collin

21. Fore basitarsus with 2 erect setae at 2/3; fore basitarsus at apex and 2nd segment along ventral side with curved cilia; 3rd segment thin; mid tibia and tarsus covered with fine erect setulae; 7.9-8.1 ..... *paradoxus* Negrobov et Shamshev

– Fore tarsus with simple segments 1-3; mid leg with normal ciliation 22

22. Fore tarsus yellow, black on apical half of fourth segment and on fifth segment; uppermost 5-6 postocular cilia black; hypopygium with ventral margin of organ X only slightly concave, with long hairs along whole length; 4.5-6.0 ..... *wiedemanni* (Fallén)

– Fore tarsus entirely brown-black; of the uppermost postocular cilia usually one or two, seldom more (to five) cilia are black; hypopygium with ventral margin of organ X strongly concave, haired only at apical and basal parts; 4.0-6.0 ..... *lobipes* (Meigen)

23. Fourth segment of fore tarsus milky-white 24

– Fore tarsus with 4th segment black 25

24. Fourth segment of fore tarsus slightly broadened and laterally compressed; antenna yellow, postpedicel brown at tip and dorsally; wing vein M_1 distinct; fore coxa with yellow hairs, without bristles even at tip; hypopygium with organ X very slender; 5.0-6.0..... ..... *pallens* (Wiedemann)

– Fourth and fifth segments of fore tarsus strongly broadened and laterally compressed; antenna black; wing vein M_1 fold-like; acrostichals microscopic; cercus free, organ X absent; 4.0..... ..... *evanidus* (Bezzi)

25. Antenna black; frons metallic blue; 3.0 ..... *longimanus* Becker

– Antenna mainly reddish-yellow with postpedicel dark; frons white polinose 26

26. All coxae yellow; fore tarsus entirely black; hind basitarsus as long as next segment; organ X with a strongly arcuate dorsal horn and with a plain bunch of long setae on its apicoventral angle; 6.0 ..... *flavicinctus* (Loew)

– Mid and hind coxae more or less grey; only last two segments of fore tarsus dark; hind basitarsus slightly shorter than next segment; organ X with straight horn and without bunch of long setae; 6.0 ..... *glaucescens* (Loew)

27. At least mesonotum shining metallic; usually frons, thorax and abdomen entirely shining green, only very feebly dusted 28

– Frons, thorax and abdomen not shining, densely pollinose, sometimes with shining spots or stripes 32

28. Cerci fused, with long apicoventral projection 29

– Cerci free at least partly 30

29. Fore femur ventrally on basal half with four yellow spines, longest towards base, much longer than diameter of femur; tibia and tarsus of mid leg with a prickly appearance as a result of short erect setae; 3.0-4.5 ..... *longulus* (Fallén)

– Fore femur ventrally with setiform hairs decreasing in length distally; tarsomeres of mid leg with anterodorsal setae; 4.7-4.9 ..... *incognitus* Negrobov et Shamshev

30. Mid tibia and tarsus without fine erect ciliation; frons not shining; 4-5 dorsocentrals; acrostichals absent; 2.5-2.75 ..... *sylvaticus* Becker
– Mid tibia and tarsus covered with fine erect ciliation; body entirely shining..... 31
31. Antenna black; surstylus longer than cercus; cercus pointed at apex; 3.0-3.5 .....*laetus* Meigen
– Antenna mainly yellow; surstylus as long as cercus; cercus broad at apex; 3.0.....
.....*euchromus* Loew
32. Cerci free at least partly, organ X reduced or free from cerci 33
– Cerci fused, organ X present..... 45
33. Fore femur ventrally with double row of 7-9 long, spinelike yellow bristles; wing broad; face narrow, white; 4.0-5.0.....*spiniger* (Zetterstedt)
– Another combination of characters..... 34
34. Mesonotum and scutellum yellow along margins; abdominal segments yellow, with black stripe anteriorly; fore femur ventrally with a row of 4-5 bristles; fore tarsus nearly twice longer than tibia; mid and hind femora with some white bristly cilia ventrally; R_1 rather long; 5.5.....*tenuinervis* (Loew)
– Another combination of characters..... 35
35. Surstylus not bifurcated or bifurcated at extreme apex; cerci usually free to base..... 36
– Surstylus deeply bifurcated; cerci usually free in distal half 40
36. Face plane, narrow; fore femur with 3 long flattened posteroventral bristles at base, 2/3 length of femur, and with anteroventral row of setae, about as long as height of femur.....
.....*oldenbergi* Parent
– Face broad, bulging; fore femur ventrally with or without simple bristles 37
37. Mid tibia and tarsus covered with fine erect ciliation; surstylus half as long as cercus, broad ..
.....*corsicanus* sp.n.
– Mid tibia and tarsus without fine erect ciliation 38
38. Antenna deep black; fore femur with 5 ventral setae; mid femur ventrally bare; veins M_1 and M_2 forming rather obtuse angle; cercus long and narrow, swollen at base; surstylus not bifurcated; 4.0.....*nigricornis* (Loew)
– Antenna reddish-yellow, postpedicel entirely or partly dark; veins M_1 and M_2 forming right angle; surstylus bifurcated at extreme apex..... 39
39. Fore femur without ventral setae; all tibiae devoid of major setae; 3.6.....
.....*medvedevi* Negrobov et Selivanova

– Fore femur with row of 4 black ventral setae in basal half; mid femur ventrally bare; cercus somewhat broader at base; 5.0 ..... *spinosus* Parent

40. Epandrium subquadrangular; surstylus bifurcated nearly from base..... 41

– Epandrium globular-ovate; surstylus bifurcated from midlength, with narrow curved lobes ... 44

41. All podomeres of fore leg covered with fine erect ciliation anteriorly and posteriorly; fore tibia glabrous dorsally; surstylus with narrow lobes; 6.4 .....*longitarsis* sp.n.

– Fore leg covered with simple ciliation; surstylus distally with more or less widened lobes 42

42. Mid femur with ventral row of long black ventral setae, longer than femur height; 4.8–5.3..... .....*talebii* Kazerani et Grichanov

– Mid femur with yellow ventral ciliation or bare..... 43

43. Both lobes of surstylus deeply bifurcated; mid femur bare; 6.5.....*euzonus* (Loew)

– Only ventral lobe of surstylus bifurcated at apex; mid femur with a complete row of ventral bristly cilia; 3.5-4.0.....*frater* Parent

44. Body mainly yellow, with green spot on mesonotum; palpus with 2 strong black setae at apex; cercus as long as surstylus; surstylus with flattened setae; 6.5.....*holoxanthos* Parent

– Mesonotum and scutellum metallic green; abdomen dark, at most with yellow spots on basal segments; palpus without strong setae; hind basitarsus about as long as next segment; cercus half as long as surstylus; surstylus with simple setae; 6.0-6.5.....*heteropygus* Parent

45. Abdominal segments 1-4 at least partly yellow..... 46

– Abdomen entirely dark, rarely with yellow-brown spots laterally at base 59

46. Lobes of Organ X bifurcate 47

– Lobes of Organ X fused to apex 49

47. Organ X with long apical setae, about half as long as Organ X; 5.0.....*judaeus* Parent

– Organ X with short apical setae..... 48

48. Hypopygium black; 5.0..... *flexicornis* Parent

– Hypopygium reddish yellow; 4.5..... *maurus* Parent

49. Fore basitarsus longer than tibia; at least hind tibia and tarsi, distal half of hind femur brown. .....*montium* Becker

– Fore basitarsus not longer than tibia; hind femur and tibia yellow..... 50

50. Apex of Organ X hardly reaching apex of cercus; 4.1 ..... *gracilipes* Loew

– Distal part of Organ X strongly projecting behind apex of cercus 51

51. Organ X without long setae ventrally at middle 52

– Organ X with some long setae ventrally at middle..... 56

52. Wing with distinct smoky spot at apex anteriorly; fore tarsus entirely blackish-brown; mid tibia covered with erect setulae; 4.0..... *adumbratus* (Becker)
– Wing without smoky apical spot; mid tibia covered with simple setulae..... 53
53. Abdomen entirely yellow, at most brownish at apex; antenna entirely yellow; 4.0.....
.....*vicinus* Parent
– Abdomen mainly dark, with partly yellow segments 2-3..... 54
54. Wing vein dm-cu distinctly longer than distal part of CuA (4:3.2); fore tarsus mainly yellow, brown at apex; antennal postpedicel yellow, brownish at apex; 3.7-4.4 .....
..... *matilei* Negrobov
– Wing vein dm-cu not longer than distal part of CuA; antennal postpedicel brown-black 55
55. Fore tarsus entirely brown-black; ventral side of Organ X nearly straight (lateral view), with ventral setae slightly longer than height of distal process ..... *canariensis* sp.n.
– Fore basitarsus yellow, fore tarsus brownish from tip of basitarsus; ventral side of Organ X sinuate (lateral view), with ventral setae 2 times longer than height of distal process; 4.5-5.0 .
.....*venetus* Meuffels
56. At least fore tibia and tarsus covered with erect setulae..... 57
– Fore tibia and tarsus covered with accumbent setulae..... 58
57. Organ X thin and beaked at apex, with curved dorsally distal process; with uninterrupted row of ventral setae decreasing in length towards apex; fore and mid tarsi covered with erect setulae; 3.6 ..... *vladimiri* sp.n.
– Organ X thick and with gently sinuate ventral side (lateral view), with interrupted row of ventral setae, with preapical glabrous constriction and apical enlargement (lateral view); only fore tarsus covered with erect setulae; 4.8..... *litoralis* sp.n.
58. Cercus small and rounded; distoventral epandrial lobe with 2 apical setae; 4.0-5.5.....
.....*aberrans* Becker
– Cercus 2 times longer than wide; distoventral epandrial lobe with 1 apical seta and 1 seta at middle; 3.8-4.5.....*subvicinus* Grichanov
59. Fore femur ventrally on basal half with a row of rigid hairs, some of which are longer than diameter of femur..... 60
– Fore femur ventrally bare or with hairs shorter than diameter of femur; hind basitarsus about as long as or shorter than second segment; organ X of hypopygium with stout process..... 63
60. Hind basitarsus about as long as second segment; frons white; metaepimera grey; Organ X of hypopygium with stouter process 61

– Hind basitarsus distinctly longer than next segment; frons grey yellow or silvery grey; Organ X of hypopygium with a very slender process 62

61. Mid femur with pale fine hairs ventrally; tarsomeres 2-4 of fore and mid tarsi without erect setulae; Organ X rectangular ventrally at base; 4.5-5.0.....*discretus* Parent

– Mid femur with black rigid hairs ventrally; tarsomeres 2-4 of fore and mid tarsi with erect or semierect setulae ventrally; Organ X pointed ventrally at base; 5.0.....*iranicus* sp.n.

62. Frons silvery grey; metaepimera grey; fore tibia and tarsus covered with fine erect ciliation; 4.8..... *sibiricus* Negrobov et Shamshev

– Frons grey yellow; uppermost 5-8 postocular cilia black; metaepimera yellow; hind margin of wing irregularly curved; fore tibia and tarsus covered with simple hairs; 4.3-5.6 ....*contristans* (Wiedemann)

63. Fore tarsus with at least 3rd and 4th segments slightly thickened, nearly as thick as tibia; mid tibia with 4 posterodorsal, 3 anterodorsal and 2 anteroventral bristles, covered with short erect setae; hind basitarsus nearly as long as second segment; Organ X with simple setae at middle, regularly convex ventrally; 4.0-5.0..... *opacus* (Loew)

– Fore tarsus simple; mid tibia usually without erect setae; Organ X strongly projected ventrally at base; other features various..... 64

64. Uppermost postocular cilia white; mid tibia with 3 antero- and 3 posterodorsal setae (less often with only 2 antero- and/or 2 posterodorsals); hind tibia likewise rather strongly bristled; metaepimeron yellow; midcoxa basally usually not darkened; 3.75-4.9 ....*maritimus* Becker

– Uppermost 6-10 postocular cilia dark, mid tibia with only one anterodorsal seta near base, seldom with some more very small bristles; hind tibia poorly bristled (generally only one anterodorsal seta developed); metaepimera dark; mid coxa darkened at base 65

65. Hind margin of wing irregularly curved, with a bulge at tip of CuA; fore basitarsus bearing, besides a small basal seta, 1-3 other small posteroventrals; surstylus of hypopygium not very broad, as high as process of Organ X (lateral view); 3.9-4.5 ..... *zonatulus* (Zetterstedt)

– Hind margin of wing regularly curved; fore basitarsus bearing only one small basal posteroventral seta; surstylus of hypopygium very broad, about 2 times higher than process of Organ X; 4.2-4.8 ..... *basilicus* Meuffels & Grootaert

Discussion

Bickel (1994) has recognized four species groups (A-D) in the Holarctic fauna of the *Sciapus*. We here name the groups, adding one more group, and supplementing them with new and missing Palaearctic species.

Sciapus platypterus species group has a distally expanded wing in males, somewhat narrowed face in both sexes, male mid tarsus modified (usually simple in most *Sciapus*), and compact hypopygium: *S. platypterus, S. bellus, S. dytei* and *S. pseudobellus*.

Sciapus laetus species group has simple cerci and surstyli and mostly unornamented tarsi in males: *S. corsicanus, S. euchromus, S. evanidus, S. laetus, S. lesinensis, S. nigricornis, S. oldenbergi, S. polozhentsevi, S. spiniger, S. spinosus* and *S. sylvaticus*.

Sciapus euzonus species group has deeply bifurcated surstylus in males, cerci usually simple and free in distal half: *S. euzonus, S. frater, S. heteropygus, S. holoxanthos, S. longitarsis, S. occidasiaticus, S. talebii* and *S. richterae*.

Sciapus nervosus species group has more or less complex cerci (but presence of Organ X uncertain), large and usually undivided surstylus, modified fore leg in males: *S. adana, S. freidbergi, S. longimanus, S. nervosus* and *S. roderi*.

Sciapus constristans species group has "Organ X" distinctly fused with fused cerci, surstylus undivided or bifurcated at extreme apex: *S. aberrans, S. adumbratus, S. albifrons, S. albovittatus, S. algirus, S. basilicus, S. calceolatus, S. canariensis, S. constristans, S. costae, S. discretus, S. flavicinctus, S. flexicornis, S. glaucescens, S. gracilipes, S. incognitus, S. iranicus, S. judaeus, S. litoralis, S. lobipes, S. longulus, S. maritimus, S. matilei, S. maurus, S. medvedevi, S. montium, S. opacus, S. pallens, S. palmipes, S. paradoxus, S. sibiricus, S. subvicinus, S. venetus, S. vicinus, S. vladimiri, S. wiedemanni* and *S. zonatulus*. The Nearctic and Afrotropical species also belong to this group.

There is inadequate information regarding the hypopygium of the following species: *S. mitis* Parent (described from female only) and *S. tenuinervis* (Loew).

Sciapus together with seven more tropical genera forms distinct tribe Sciapodini within the subfamily (Bickel, 1994), and key characters proposed by Bickel are sometimes insufficient to distinguish *Sciapus* from other genera of the tribe. The hypopygial structure is decisive to refer some species to one of the closest genera: *Mascaromyia* Bickel, 1994, *Bickelia* Grichanov, 1996 (both are endemics of the western Indian Ocean islands), and *Sciapus*. The

latter genus with its type species has been recently involved in the molecular analysis of Dolichopodidae, suggesting relationship between *Medetera* Fischer von Waldheim, 1819 and *Sciapus* (Bernasconi et al., 2007), though the *S. platypterus* species group seems close to the genus *Neurigona* Rondani, 1856 from a morphological point of view. Nevertheless, considering the Sciapodinae as a whole to have some ancestral characters (symplesiomorphies), Bickel (1994) suggested that it may be the sister group of the subfamily Dolichopodinae.

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