



A new species of *Sybistroma* Meigen (Diptera: Dolichopodidae) from the Middle East with a key to West-Palaeartic species of the genus

IGOR YA. GRICHANOV^{1,3} & FARZANEH KAZERANI²

¹All-Russian Institute of Plant Protection, Podbelskogo 3, 196608 St. Petersburg, Pushkin, Russia. E-mail: grichanov@mail.ru

²University of Tabriz, Department of Plant Protection, Faculty of Agriculture, 51664, Tabriz, I.R.Iran.

E-mail: f.kazerani2000@yahoo.com

³Corresponding author

Abstract

A new species, *Sybistroma occidasiatica* **sp. nov.**, from the Middle East is described. It is close to *S. inornata* (Loew, 1857), but is distinguished by its long arista-like antennal stylus (longer than postpedicel) and short apicoventral epandrial lobe of the hypopygium (much shorter than cercus). The new species is peculiar in comprising two phenotypes, which can be distinguished by the length ratio of 1st and 2nd articles of the antennal stylus. The following recombination is also proposed: *Sybistroma caudata* (Loew, 1859), **comb. nov.** (transferred from *Gymnopternus* Loew, 1857). A checklist of the 26 West-Palaeartic species of the genus is compiled, as well as a key based mainly on male secondary sexual characters. The known distribution of *Sybistroma* Meigen, 1824, is discussed.

Key words: Palaeartic Region, Iran, Turkey, Israel, Diptera, Dolichopodidae, *Sybistroma*, new species, key, checklist

Introduction

Up until 2005, the dolichopodine genus *Sybistroma* Meigen, 1824, had long been supposed to be Mediterranean in distribution, with five known species (Negrobov 1991). The genus has been recently expanded to include *Hypophyllus* Haliday, 1832, *Ludovicus* Rondani, 1843, *Nodicornis* Rondani, 1843, and some species of *Hercostomus* Loew, 1857 (Brooks 2005; Grichanov 2012). Naglis (2011) described an additional species from Turkey. Currently, *Sybistroma* contains more than 50 species described mainly from the Palaeartic and Oriental (China) regions. A single Afrotropical species, *S. bogoria* (Grichanov, 2004), has been described from Kenya (Grichanov 2004, as *Ludovicus*).

Most males of *Sybistroma* can be distinguished by their modified antenna (reduced pedicel, postpedicel sometimes enlarged, stylus often with one or more lamellae) and hypopygial morphology (tripartite arrangement of basiventral epandrial lobes and hypandrium in ventral view). Males of species lacking modified antennae are distinguished by the possession of elongate setulose apicoventral epandrial lobes of hypopygium (Brooks 2005, figs 30A–C). Females of *Sybistroma* cannot readily be distinguished from those of *Hercostomus*. A key to the 18 East Mediterranean species was provided by Grichanov (2007). Yang *et al.* (2011) provided a key to Chinese species (Palaeartic and Oriental).

In the present paper, a new species, *Sybistroma occidasiatica* **sp. nov.**, from the Middle East is described and illustrated. In addition, a key to males of West-Palaeartic species of *Sybistroma* is provided. This part of the Palaeartic Region is conditionally confined to the terrestrial ecoregions north and west of the Karakoram mountain range to the Arctic Ocean and to the Atlantic Ocean. With the new species described in this paper, the West-Palaeartic fauna of *Sybistroma* now totals 26 species. All previously described West-Palaeartic species have been diagnosed and/or illustrated by Parent (1938), Stackelberg (1941, 1949), Negrobov (1979), Negrobov & Onishchenko (1991), Grichanov (2000) and Naglis (2011).

Material and methods

The holotype and paratypes of the new species as well as other material examined are housed at the Zoological Museum of Moscow State University, Russia (MZUM), the Zoological Institute of the Russian Academy of Sciences, St Petersburg (ZIN), the Insect Museum of Tabriz University (IMTU) and the Department of Zoology, Tel Aviv University, Israel (TAU).

Specimens were studied and photographed with a ZEISS Discovery V–12 stereo microscope and an AxioCam MRc5 camera. Morphological terminology and abbreviations follow Cumming & Wood (2009). The lengths of the podomeres are given in millimetres. Body length is measured from the base of the antenna to the tip of abdominal segment 7. Wing length is measured from the base to the wing apex. Male genitalia were macerated in 10% KOH. The figure showing the hypopygium in lateral view (i.e. Fig. 5) is oriented as it appears on the intact specimen, with the morphologically ventral surface of the genitalia facing up, dorsal surface down, anterior end facing right and posterior end facing left. Information on world distribution for known species follows Grichanov (2014).

Systematics

Genus *Sybistroma* Meigen, 1824

Type-species: *Dolichopus discipes* Germar, 1821 (designation by Westwood, 1840).

Remarks. See Brooks (2005) for generic diagnosis and synonymy. Unfortunately, combining species from different genera with *Sybistroma*, Brooks (2005: 120) was inaccurate in checking gender endings, using all genders: masculine (*eucerus*, *flavus*, *inornatus* etc.), neuter (*lorifer*, *obscurillum*, *sphenopterum*) and feminine (*setosa*). The gender of *Sybistroma* cannot be neuter, as Meigen (1824) proposing a new genus, originally included *Sybistroma nodicornis* in the genus (a neuter gender of the name is *nodicorne*). Later only three species were described in this genus with clearly defined gender, all with feminine ending (none with masculine or neuter endings): *S. setosa* Schiner, 1862, *S. americana* Schiner, 1868, and *S. lenkoranica* Negrobov, 1979. We follow here Schiner's and Negrobov's proposal, using the feminine gender for all species names.

Key to the West-Palaearctic species of *Sybistroma* Meigen (males)

- | | | |
|---|---|-------------------------------------|
| 1 | At least femora entirely or almost entirely brown-black. | 2 |
| - | Legs mainly yellow or reddish yellow | 8 |
| 2 | Antennal stylus very long, basodorsal, with apical flag | 3 |
| - | Antennal stylus simple | 5 |
| 3 | Antennal stylus with rounded apical flag, flag entirely black; fore and mid tibiae red-yellow, basal part of hind tibia reddish; body length 3.75 mm (Stackelberg 1941, figs 154, VIII–77, IX–86) | <i>spectabilis</i> (Parent) |
| - | Antennal stylus with lanceolate apical flag, flag black with white apex; legs entirely or almost entirely brown-black | 4 |
| 4 | Antennal stylus with apical expansion of 1 st article in addition to apical flattening of 2 nd article; body length 3.5 mm (Stackelberg 1941, figs 148, VI–65, VII–72) | <i>maerens</i> Loew |
| - | Stylus with apical flattening only; apical flag of stylus rhomboid, black, white at extreme apex; body length 3.5 mm (Stackelberg 1941, figs VIII–78, IX–87) | <i>transcaucasica</i> (Stackelberg) |
| 5 | Antennal postpedicel not longer than high; stylus of uniform thickness throughout; apicoventral epandrial lobe narrow, much longer than cercus; body length 2.5–3.0 mm (Parent 1938, figs 249, 250) | <i>lorifera</i> (Mik) |
| - | Postpedicel at least 1.5 times longer than high at base; stylus normal, tapering; apicoventral epandrial lobe various | 6 |
| 6 | Stylus middorsal; postpedicel 1.5 times longer than high at base; apicoventral epandrial lobe expanded distad, with very long hooked setae; body length 3.0 mm (Parent 1938, figs 193, 194) | <i>caudata</i> (Loew) |
| - | Stylus almost apical or subapical; postpedicel at least twice longer than high at base; epandrial lobe with short simple setae | 7 |
| 7 | Stylus shorter than postpedicel; apicoventral epandrial lobe band-like, much longer than cercus, longer than hypopygium; body length 3.0 mm (Parent 1938, figs 237–239) | <i>inornata</i> (Loew) |
| - | Stylus longer than postpedicel (Figs 3, 4); apicoventral epandrial lobe much shorter than cercus and hypopygium (Fig. 5); body length 3.3–3.5 mm | <i>occidasiatica</i> sp. nov. |
| 8 | Lower postocular setae white | 9 |
| - | Postocular setae entirely black | 19 |
| 9 | Antennal stylus very long, with apical flag | 10 |

-	Antennal stylus simple	14
10	Face densely covered with light hairs increasing in length downwards; postpedicel 11 times longer than high at base, with rounded expansion at 1/3 in addition to ovoid apical flag; body length 3.5 mm (Grichanov 2000, figs 1–3)	<i>israelensis</i> (Grichanov)
-	Face glabrous; postpedicel much shorter	11
11	Postpedicel twice longer than high at base	12
-	Postpedicel not longer than high	13
12	Fore tarsus modified, basitarsus with narrow apical projection bearing 4 long cilia, tarsomere 2 with a short anterior and a long posterior seta at apex, 3 rd tarsomere as long as 1 st and 2 nd combined; mid femur with long fine ventral setae; antennal stylus with strong, almost round, black flattening at apex; body length 5.0 mm (Parent 1938, figs 336–340; Stackelberg 1941, figs 152a, 153, VIII-76, IX-84)	<i>eucera</i> (Loew)
-	Fore tarsus simple; mid femur without long setae; antennal stylus with long and rather narrow apical widening that is black in basal half and white in apical half; body length 3.0 mm (Parent 1938, figs 341–344; Stackelberg 1941, fig. IX-85)	<i>impar</i> (Rondani)
13	Antennal stylus with spatulate apical flag with white narrow apical half; mid and hind femora with yellow basoventral setae; body length 3.9 mm (Naglis 2011, fig. 1)	<i>schachtli</i> Naglis
-	Antennal stylus with rounded black apical flag with short whitish pointed apex; mid and hind femora bare ventrally; body length 3.5 mm (Parent 1938, figs 332–335; Stackelberg 1941, figs 152b, VII-75)	<i>dufourii</i> Macquart
14	Fore tarsus simple; hypopygium mostly yellow; antennal postpedicel 1.33 as long as high; stylus much longer than pedicel, located before middle of dorsal surface	15
-	Fore tarsus modified; other features variable	16
15	Abdomen thin; segment 7 long and thin; hypopygium reaching posterior margin of abdominal segment 2; body length 3.5–4.0 mm (Parent 1938, figs 307–310; Stackelberg 1941, figs 158, 159, VIII-79, IX-91)	<i>obscurilla</i> (Fallén)
-	Abdomen thick; segment 7 short and thick; hypopygium reaching middle of abdominal segment 4; body length 3.0 mm (Parent 1938, fig. 311; Stackelberg 1941, fig. IX-92)	<i>sciophila</i> (Loew)
16	Antennal postpedicel not longer than high; stylus of uniform thickness throughout, with apical article 5 to 6 times as long as basal; foreleg with basitarsus bearing row of long ventral setae, tarsomere 5 white, enlarged and laterally compressed; body length 3.75–4.75 mm (Parent 1938, figs 298–301; Stackelberg 1941, figs 155, 156, IX-88, IX-89)	<i>crinipes</i> Staeger
-	Postpedicel at least 1.5 times longer than high; stylus normal, tapering, with apical segment at most 2.5–3 times as long as basal one; foreleg not as above	17
17	Foreleg with tarsomere 5 flattened and black, greatly enlarged, tarsomere 4 short and slightly broadened; antennal stylus mid-dorsal; body length 3.5–5.5 mm (Parent 1938, figs 303–306; Stackelberg 1941, figs 157, IX-90)	<i>discipes</i> (Germar)
-	Foreleg with tarsomere 5 white	18
18	Tarsomere 4 and 5 of foreleg moderately enlarged; antennal stylus middorsal, with dot-like thickening at middle; body length 4.5–5.0 mm	<i>clara</i> (Negrobov & Onishchenko)
-	Tarsomere 5 of foreleg slightly enlarged; antennal stylus basodorsal; body length 4.0 mm (Parent 1938, figs 312–314; Stackelberg 1941, fig. IX-93)	<i>sphenoptera</i> (Loew)
19	Legs simple	20
-	Fore or mid legs modified	21
20	Antennal stylus with black subapical flattening; postpedicel more than 4 times as long as high; cercus simple; body length 3.0 mm (Stackelberg 1941, figs 151, VII-74)	<i>setosa</i> Schiner
-	Antennal stylus simple; postpedicel 1.25 times as long as high; cercus bilobate; body length 2.5 mm (Stackelberg 1949, figs 18, 29, 30)	<i>leptocerca</i> (Stackelberg)
21	Fore leg and wing strongly modified; mid tarsus simple; antennal scape and pedicel entirely black	22
-	Mid tarsus modified; fore leg and wing simple	23
22	Fore femur and tibia strongly modified; wing margin strongly projecting between M ₁₊₂ and CuA ₁ ; cercus bilobate, with narrow lobes; body length 4.5 mm (Stackelberg 1949, figs 19, 24, 28, 33)	<i>paradoxoptera</i> (Stackelberg)
-	Fore femur and tibia simple; wing with deep emargination between M ₁₊₂ and CuA ₁ ; cercus simple, subrectangular; body length 3.9–4.4 mm (Grichanov 2000, figs 4–6)	<i>sinaiensis</i> (Grichanov)
23	Tarsomeres 3–5 of midleg widened and flattened laterally, black; antennal scape and pedicel yellow ventrally; body length 3.1 mm (Grichanov 2000, figs 7–9)	<i>golanica</i> (Grichanov)
-	Tarsomeres 3–5 of midleg somewhat widened, black, and tarsomere 5 snow-white	24
24	Stylus expanded at middle only in addition to apical flattening; postpedicel nearly 3 times as long as high; antennal scape yellow ventrally; body length 3.0–4.0 mm (Parent 1938, figs 326–330; Stackelberg 1941, figs 148, 149, VII-73)	<i>nodicornis</i> Meigen
-	Antennal stylus with 2 expansions in addition to apical flattening	25
25	Postpedicel twice as long as high; antennal scape yellow ventrally; body length 3.5 mm (Stackelberg 1941, figs 147, VI-64, VII-71)	<i>binodicornis</i> Stackelberg
-	Postpedicel 3 times as long as high; antennal scape and pedicel yellow ventrally; body length 5.1 mm (Negrobov 1979, fig. 4)	<i>lenkoranica</i> Negrobov

***Sybistroma occidasiatica* sp. nov.**

(Figs 1–7)

Type material. **HOLOTYPE** ♂ “Turkey: [Antalya reg.,] near Manavgat, uncultivated plot, 26.II.2008, N. Vikhrev” [MZUM]. **PARATYPES** (pinned): 1♂, same data as holotype [ZIN]. **Iran.** 1♂ (in 75% ethanol in glass vial), East Azerbaijan province, Shabestar region, 38°41.05' N; 45°31.85' E, 1790 m a.s.l., 29.VII.2013, Roia Namaki [IMTU]. **Israel.** 1♂, Kadoorie, 6.III.1985, A. Freidberg [TAU]; 2♂, Nafech [H. Nappah], 15, 18.III.1985, M. Kaplan [TAU]; 2♂, Jagur, 21.II.1976, A. Freidberg [TAU]; 2♂, 1♀, [Golan Heights] Qusbiya, 31.I.1978, D. Furth [TAU]. **Turkey.** 2♂, 3♀, Antalya reg., near Manavgat, sweeping on ruderal Cruciferae, 26.II.2008, K. Tomkovich leg. [MZUM].

Diagnosis. Antenna entirely black, stylus longer than postpedicel; postocular setae black; legs black except brownish knees; all tarsi simple. This species seems related to *S. inornata* (for differences, see the identification key above). It superficially resembles some species of the genus *Hercostomus*, e.g. *H. fugax* Loew and *H. vivax* Loew (Grichanov 2007; Negrobov & Nechay 2009), differing in the reduced antennal pedicel, enlarged postpedicel, tripartite arrangement of basiventral epandrial lobes and hypandrium in ventral view, enlarged setulose apicoventral epandrial lobe of hypopygium and many fine morphological characters.

Etymology. The species name originates from Latin “Asia occidentalis” (West Asia).



FIGURE 1. Habitus of *Sybistroma occidasiatica* sp. nov., male.

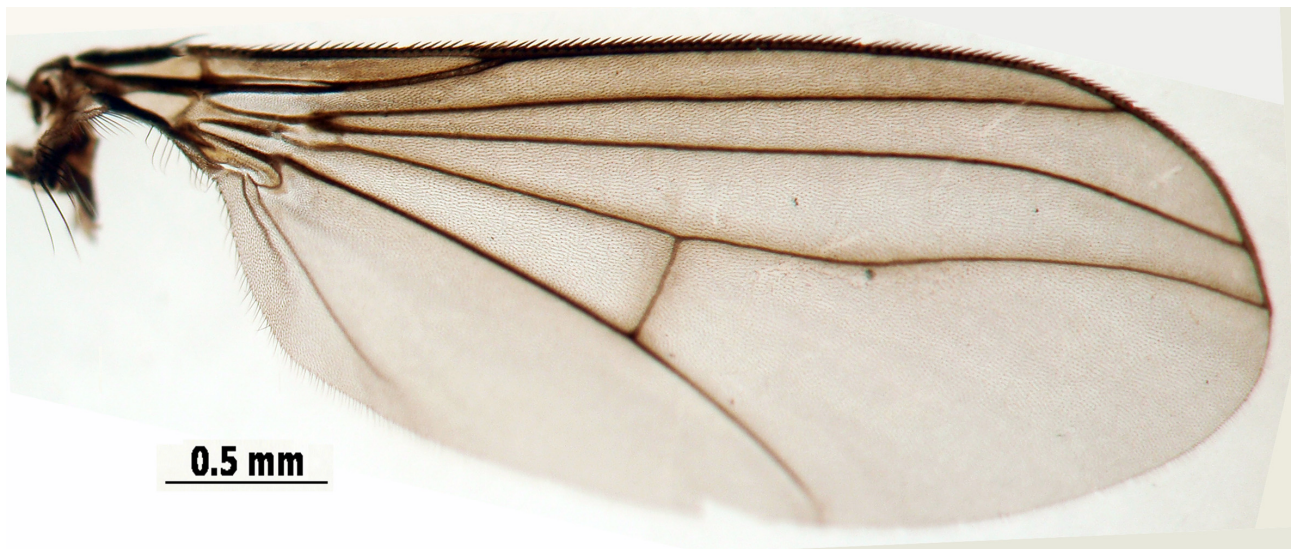


FIGURE 2. Wing of *Sybistroma occidasiatica* **sp. nov.**, male.

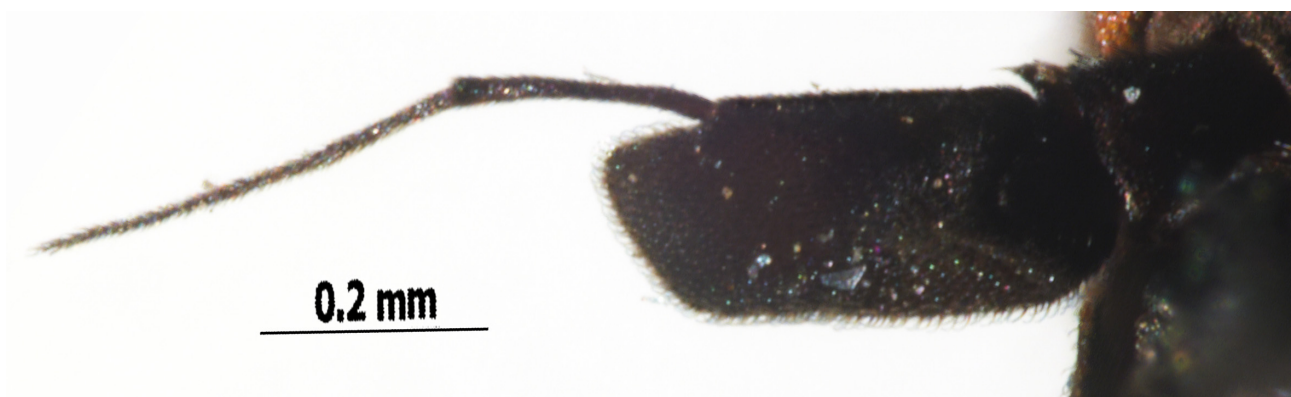


FIGURE 3. Antenna of *Sybistroma occidasiatica* **sp. nov.**, male, phenotype A (Turkey)



FIGURE 4. Antenna of *Sybistroma occidasiatica* **sp. nov.**, male, phenotype B (Israel).

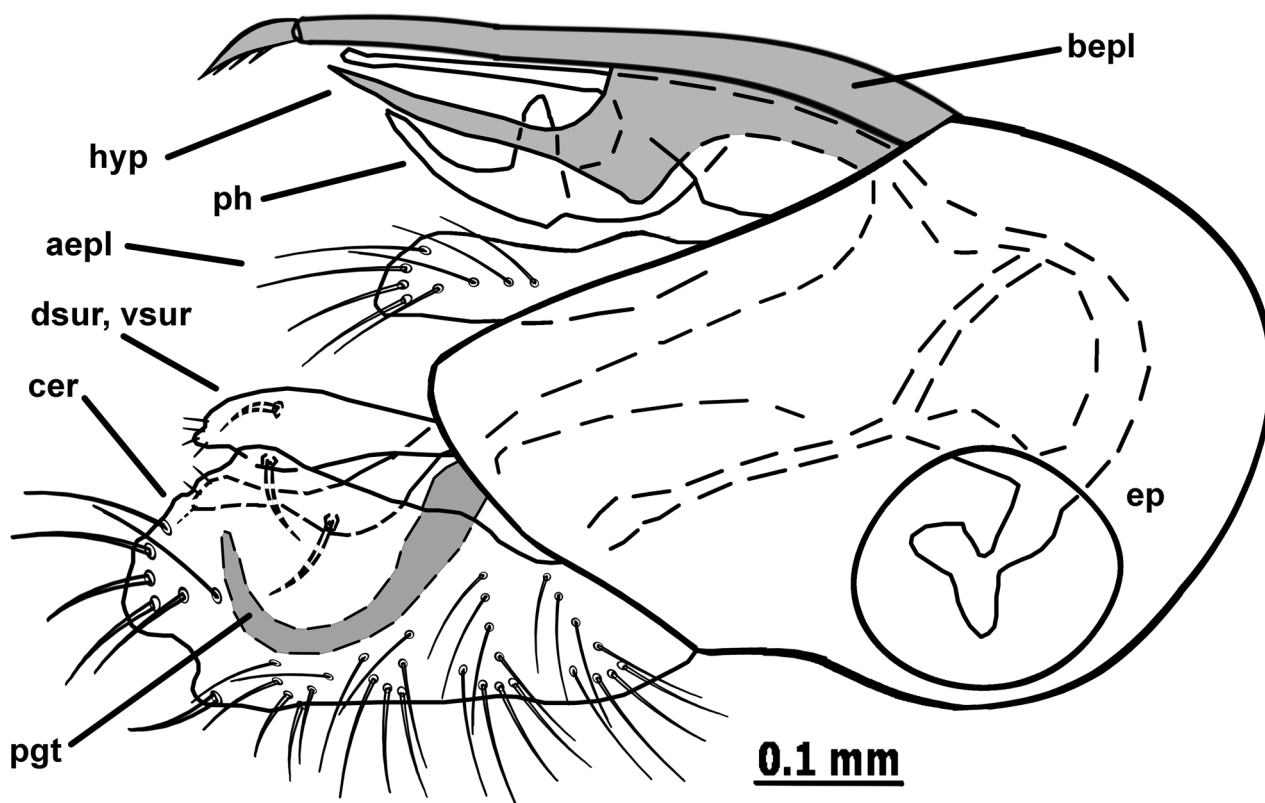


FIGURE 5. Hypopygium of *Sybistroma occidasiatica* sp. nov., left lateral view (ventral setae of cercus not shown). Abbreviations: aepl—apicoventral epandrial lobe, bepl—basiventral epandrial lobe, cer—cercus, ep—epandrium, hyp—hypandrium, pgt—postgonite, ph—phallus, dsur, vsur—surstylus (dorsal and ventral lobes).

Description. Male (Fig. 1): **Head:** antenna entirely black; scape with dorsal setae and about 2 times as long as pedicel; pedicel reduced (from outer view), slightly protruded into postpedicel (from inner view), postpedicel, slightly variable in shape, about 2 times as long as high, with distinct apicodorsal apex and more or less distinct apicoventral apex; stylus shortly haired, about 1.5 times longer than postpedicel, located at about 3/4 of its dorsal surface; 1st and 2nd articles of stylus variable in length: 2nd article nearly 2 times longer than 1st article (holotype and part of paratypes: phenotype A, Fig. 3) or 2nd article only slightly longer than 1st article (phenotype B, Fig. 4); frons black, grey pollinose; eyes finely haired; face black, weakly grey-brown pollinose; ratio of height to width under antennae to width at clypeus, 0.38/0.29/0.17; clypeus black; proboscis dark brown; all postocular setae black. **Thorax:** all setae black; pronotum pubescent, with black hairs; mesonotum grey pollinose; 6 dorsocentral setae, 7 acrostichals, short, biserial; pleura dark, with weak grey pruinosity; scutellum with 2 strong setae, 2 fine lateral setae. **Legs:** entirely black with brownish knees, hairs and setae black; all tarsi simple; fore leg with coxa bearing numerous black hairs laterally and 2 strong setae apically, femur without subapical posterior seta, tibia with 2 anterodorsal, 3 posterodorsal setae, no long apicoventral seta; midleg with coxa bearing some black hairs laterally and 1 strong setae apically, femur with 1 anterior subapical seta, tibia with 3 posterodorsal, 2 posteroventral and 6 apical setae; hindleg with coxa bearing 1 strong seta, femur with 1 anterior subapical seta and some posterodorsal cilia, tibia with 7 posterodorsal and 4 ventral setae. Femur, tibia and tarsomere (from first to fifth) length ratio: fore leg: 1.02/0.98/0.50/0.26/0.20/0.12/0.15, mid leg: 1.22/1.41/0.67/0.39/0.28/0.18/0.20, hind leg: 1.36/1.62/0.49/0.60/0.38/0.24/0.23. **Wing** (Fig. 2): membrane greyish, brownish anteriorly, veins brown; R₁ thickened; costa thickened, with short brown setae dorsally; R₂₊₃ almost straight, R₄₊₅ curved towards M₁₊₂ in apical fourth, M and R₄₊₅ slightly convergent distally, becoming parallel at apex; M joining costa right before wing apex; ratio of costal section between R₂₊₃ and R₄₊₅ to that between R₄₊₅ and M₁₊₂: 0.45/0.13, distal part of CuA₁ about 2 times longer than dm-cu; anal vein distinct; lower calypter dark brown, light basally, with black cilia; halter dark brown to black. **Abdomen:** greenish-black and shiny, with black hairs and marginal setae; 8th segment dark brown, with black cilia. **Male genitalia** (Fig. 5): epandrium black, elongate-oval, as long as tergites 5–6 combined; hypandrium flanked laterally

by basiventral epandrial lobes forming tripartite arrangement in ventral view; basiventral epandrial lobes symmetrical, each lobe spear-shaped with pointed setose apical knob; apicoventral epandrial lobe well-developed, prominent, thin in ventral view, with more or less distinct apical extension, setulose apically; aedeagus thin and long, with large dorsal furcate projection; surstylus dark brown, bilobed, ventral lobe digitiform and slightly curved, with dorsal hump, with short apical setae and 2 strong spines, dorsal lobe thin, expanded at middle, curved ventrally, with short apical setae and 1 strong spine at middle; cercus dark brown; elongate-ovate with preapical dorsal projection, with light and dark simple setae basally and strong black setae along margin distally. **Measurements:** Body length 3.3–3.5 mm, antenna length 1.0–1.1 mm, wing length 3.6 mm, wing width 1.3 mm, hypopygium length 1.0 mm. **Female:** Similar to male except lacking male secondary sexual characters, otherwise as follows. Body length 4.1 mm, antenna length 1.0 mm, wing length 3.8 mm. Face black, weakly grey pollinose, nearly parallel-sided; ratio of its height to width at clypeus, 0.51/0.27; postpedicel slightly variable in shape, about 1.5 times as long as high; stylus about 2 times longer than postpedicel; 2nd article of stylus 2.1 (phenotype A, fig. 6) or 1.5 (phenotype B, fig. 7) times longer than 1st article.



FIGURE 6. Head of *Sybistroma occidasiatica* sp. nov., female, phenotype A (Israel)

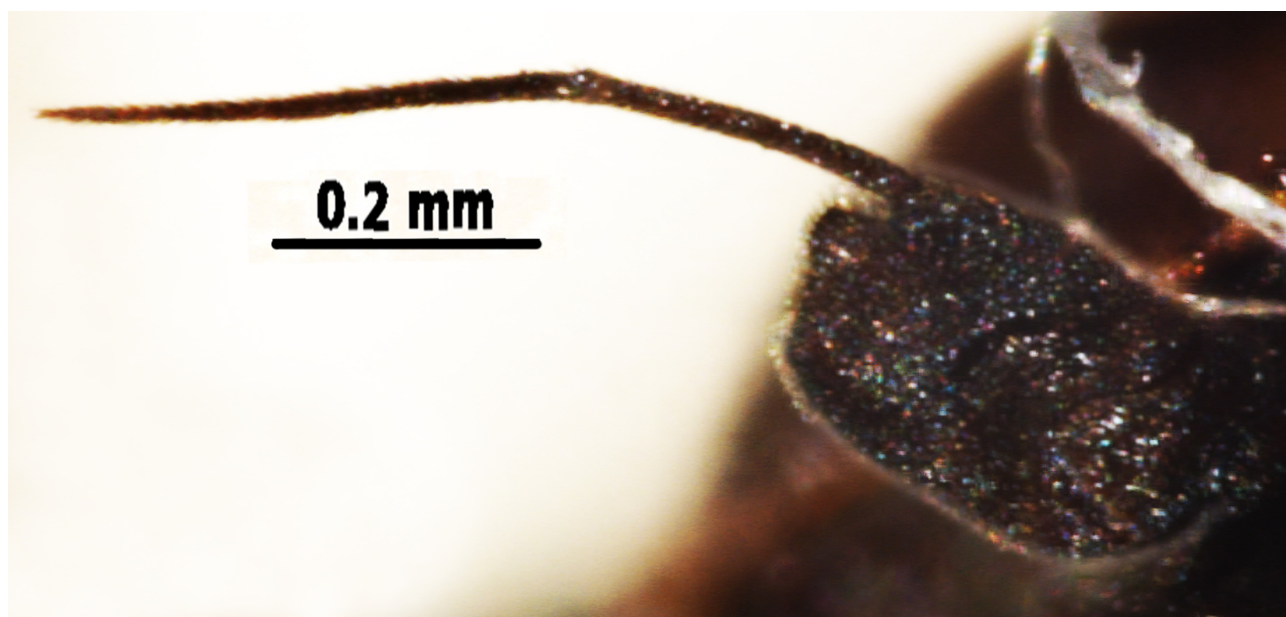


FIGURE 7. Antenna of *Sybistroma occidasiatica* sp. nov., female, phenotype B (Israel).

A checklist of the West-Palaeartic species of *Sybistroma* Meigen

(Information on world distribution for known species follows Grichanov (2014).)

***Sybistroma binodicornis* Stackelberg, 1941**

Distribution. Type locality: “Sarepta, Gov. Saratov, s. o. Russland” [= Krasnoarmeisk, near Volgograd]. The species is known from Russia: Adygea, Kabardino-Balkaria, Lipetsk and Volgograd Regions.

***Sybistroma caudata* (Loew, 1859), comb. nov.**

Distribution. Type locality: Italy; Austria. The species is known from Austria, Azerbaijan, Czech, France, Germany, Hungary, Italy, Poland, Romania, Russia (Adygea, Krasnodar) and Slovakia.

Remarks. *Hercostomus caudatus* (Loew), originally described in the genus *Gymnopternus* Loew, 1857, has typical for males of *Sybistroma* shortened antennal pedicel and tripartite arrangement of basiventral lobes and hypandrium in addition to elongate setulose apicoventral epandrial lobes. Therefore, a new combination for the species is here proposed.

***Sybistroma clara* (Negrobov et Onishchenko, 1991)**

Distribution. Type locality: “Georgia, Borjomi distr., Nedzura river”. The species is known from Georgia and Iran.

***Sybistroma crinipes* Staeger, 1842**

Distribution. Type locality: Denmark: “Ellemosen, Charlottenlund”. The species is known from Austria, Belgium, Czech, Denmark, France, Germany, Hungary, Iran, Italy, Netherlands, Romania, Russia (Alania), Sweden, Switzerland, Turkey (Uşak), UK, Ukraine (Uzhgorod).

***Sybistroma discipes* (Germar, 1821)**

Distribution. Type locality: Germany: Hamburg. The species is known from Austria, Azerbaijan, Belgium, Czech, Denmark, France, Germany, Greece, Hungary, Iran, Ireland, Italy, Netherlands, Romania, Russia (Alania), Sweden, Turkey (Bursa, Çanakkale).

***Sybistroma dufouri* Macquart, 1838**

Distribution. Type locality: France: Saint-Sever. The species is known from Algeria, France, Greece, Italy, Macedonia, Morocco, Russia (Adygea), Spain incl. Balearic Is., former Yugoslavia.

***Sybistroma eucera* (Loew, 1861)**

Distribution. Type locality: Spain: “andalusische Art”. The species is known from Austria, France, Italy, Spain.

***Sybistroma golanica* (Grichanov, 2000)**

Distribution. The species is only known from the type locality: “Israel, Tel Dan, and Golan, Qusbiye”.

***Sybistroma impar* (Rondani, 1843)**

Distribution. Type locality: Italy. The species is known from Bulgaria, Greece, Hungary, Israel, Italy, Romania, Russia (Krasnodar), Turkey (Adiyaman, Antalya).

***Sybistroma inornata* (Loew, 1857)**

Distribution. Type locality: [Italy:] Triest. The species is known from Austria, Belgium, Czech, France, Germany, Hungary, Italy, Poland, ?Romania, “South Russia”, Slovakia, Spain, Switzerland, former Yugoslavia.

***Sybistroma israelensis* (Grichanov, 2000)**

Distribution. The species is only known from the type locality: “Israel, W Nemrod and Banias”.

***Sybistroma lenkoranica* Negrobov, 1979**

Distribution. The species is only known from the type locality: Azerbaijan, Lenkoran.

***Sybistroma leptocerca* (Stackelberg, 1949)**

Distribution. Type locality: Tajikistan: “Varzob valley, Kondara; Rakhati, Gissar ridge; Kalay-khumb near Pyandzh”. The species is known from Tajikistan and Iran.

***Sybistroma lorifera* (Mik, 1878)**

Distribution. Type locality: Italy: “Calabrien”. The species is known from France, Greece, Italy, Turkey (Uşak), former Yugoslavia.

***Sybistroma maerens* Loew, 1873**

Distribution. Type locality: not given. The species is reported from Hungary and Romania.

***Sybistroma nodicornis* Meigen, 1824**

Distribution. Type locality: not given. The species is known from Austria, Belgium, Bulgaria, Czech, Egypt, France, Germany, Greece, Hungary, Iran, Iraq, Italy, Netherlands, “South Russia”, Romania, Slovakia, Switzerland, Turkey (Afyonkarahisar, Uşak), former Yugoslavia.

***Sybistroma obscurella* (Fallén, 1823)**

Distribution. Type locality: Sweden: “Esperod Scan”. The species is known from Abkhazia, Czech, Denmark, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Romania, Russia (Adygea, Crimea, Krasnodar, Mordovia), Sweden, Switzerland, Turkey (Bursa, Çanakkale, Kırklareli), UK, former Yugoslavia.

***Sybistroma occidasiatica* sp. nov.**

Distribution. Type locality: “Turkey: Antalya reg., near Manavgat”. The species is found in the Golan Heights, western Iran, Israel and Turkey (Antalya).

***Sybistroma paradoxoptera* (Stackelberg, 1949)**

Distribution. Type locality: Tajikistan: “Gissar ridge, Gafilyabad, river Luchob; Rakhati, Gissar ridge; Kalay-khumb, river Pyandzh; Khorog, West Pamir”. The species is only known from Tajikistan.

***Sybistroma schachti* Naglis, 2011**

Distribution. The species is only known from the type locality in Turkey: “Province Hakkari, Nabur Deresi Valley, South Beytisebap”.

***Sybistroma sciophila* (Loew, 1869)**

Distribution. Type locality: “Losoncz” [=Lucenec, Slovakia]. The species is known from Afghanistan, Belgium, Czech, Hungary, Italy, Slovakia.

***Sybistroma setosa* Schiner, 1862**

Distribution. Type locality: Austria: Potzleinsdorf. The species is known from Austria, Hungary, Romania, Slovakia.

***Sybistroma sinaiensis* (Grichanov, 2000)**

Distribution. Type locality: Egypt: Sinai, Wadi Hibran. The species is known from Egypt (Sinai Mts.) and Israel.

***Sybistroma spectabilis* (Parent, 1928)**

Distribution. Type locality: France: “Eaux Chaudes, Pyrennes”. The species is known from France and Spain.

***Sybistroma sphenoptera* (Loew, 1859)**

Distribution. Type locality: “bei Wien; Schlesien; Harz” [Austria; Poland; Germany]. The species is known from Austria, Czech, Germany, Hungary, Italy, Poland, Romania, Switzerland, Turkey (Çanakkale, Kars), former Yugoslavia.

***Sybistroma transcaucasica* (Stackelberg, 1941)**

Distribution. Type locality: [Abkhazia:] “Suchum, Transkaukasien” [= Sukhumi]. The species is known from Abkhazia, Russia (Adygea, Krasnodar) and Turkey (Bursa).

Discussion

The Oriental and Palaearctic parts of China include 28 described species of *Sybistroma* which are confined usually to some local regions of the country (Yang *et al.* 2011). Until recently a large gap existed between East-Palaearctic (China) and West-Palaearctic (the Middle East, European and Caucasian countries) areas of the genus distribution. The only exception was European *S. sciophila* reported from Afghanistan by Negrobov (1991) who did not provide original material. Grichanov (2012) transferred *Hercostomus leptocercus* and *H. paradoxopterus* (described from Tajikistan) to *Sybistroma* and supposed that some additional Central Asian species of *Hercostomus* share morphological characters with *Sybistroma* (*H. leptocercus* was also reported from Iran by Negrobov & Matile 1974). Moreover, the Iranian fauna of the genus now comprises six species (Khaghaninia *et al.* 2013 and the new species described here), but additional species are expected to be found in this country, as well as in adjacent countries of Central and South Asia, which are still undercollected. Our opinion is supported by rather local distribution of many *Sybistroma* species, except for a few widely spread European and/or Mediterranean species (see above).

Regarding the new species described here, the material examined comprises evidently two phenotypes, which can be distinguished by the length ratio of 1st and 2nd articles of antennal stylus (compare Figs 3 and 4, Figs 6 and 7). The two phenotypes have no difference in the hypopygial structures beyond the limits of their individual variability. Phenotype A is found in Iran, Turkey and Israel (“Kadoorie” and “Jagur”). Phenotype B occurs at present in three localities in Israel and Golan Heights, being collected together with phenotype A in one of the localities (“Jagur”). It is quite probable that this represents an early stage of sympatric speciation; however, at present we cannot find sufficient justification to recognize the *S. occidasiatica* phenotypes as separate species.

Acknowledgments

The authors are sincerely grateful to Drs. Nikita Vikhrev and Andrei Ozerov (Moscow), Dr. Amnon Freidberg (Tel Aviv) for their kindness in providing specimens for study. Bradley Sinclair and Scott Brooks (CNC, Ottawa) kindly commented on earlier drafts of the manuscript. The work of senior author was partly supported by the Russian Foundation for Basic Research grant N 14-04-00264-a.

References

- Brooks, S.E. (2005) Systematics and phylogeny of the Dolichopodinae (Diptera: Dolichopodidae). *Zootaxa*, 857, 1–158.
- Cumming, J.M. & Wood, D.M. (2009) Adult morphology and terminology [Chapter] 2. In: Brown, B.V., Borkent, A., Cumming, J.M., Wood, D.M., Woodley, N.E. & Zumbado, M.A. (Eds.), *Manual of Central American Diptera. Vol. 1*. NRC Research Press, Ottawa, pp. 9–50.
- Grichanov, I.Ya. (2000) West–Palearctic species of the genus *Ludovicius* (Diptera: Dolichopodidae). *Russian Entomological Journal*, 9, 269–274.
- Grichanov, I. Ya. (2004) *Review of Afrotropical Dolichopodinae. Plant Protection News Supplement*. VIZR RAAS, St. Petersburg, 245 pp.
- Grichanov, I.Ya. (2007) *A checklist and keys to Dolichopodidae (Diptera) of the Caucasus and East Mediterranean. Plant Protection News Supplement*. VIZR RAAS, St. Petersburg, 160 pp.
- Grichanov, I.Ya. (2012) Systematics of the genus *Katangaia* Parent, 1933 (Diptera: Dolichopodidae). *Caucasian Entomological Bulletin*, 8 (1), 165–167.
- Grichanov, I.Ya. (2014) *A check list of species of the family Dolichopodidae (Diptera) of the World arranged by alphabetic list of generic names* (online database). Available from: <http://dolicho.narod.ru/Genera3.htm> (accessed 20 April 2014)
- Khaghaninia, S., Gharajedaghi, Y. & Grichanov, I.Ya. (2013) Additional notes about long-legged flies (Diptera: Dolichopodidae) in East Azerbaijan province of Iran. *Biharean Biologist*, 7 (1), 42–47.
- Meigen, J.W. (1824) *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten*. Vierter Theil. Hamm, Schulz-Wundermann, 428 pp.
<http://dx.doi.org/10.5962/bhl.title.13731>
- Naglis, S. (2011) New records of Dolichopodinae (Diptera, Dolichopodidae) from Turkey, with the description of new species of *Sydistroma* Meigen and *Tachytrechus* Haliday. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, 84 (1–2), 23–33.
- Negrobov, O.P. (1979) Diptera of the family Dolichopodidae of the USSR fauna. I. Subfamilies Dolichopodinae and Medeterinae. *Entomologicheskoe obozrenie*, 58 (3), 646–657. [in Russian, with English summary]
- Negrobov, O.P. (1991) Family Dolichopodidae. In: Sóos, Á. & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera. Vol. 7. Dolichopodidae–Platypezidae*. Akadémiai Kiadó, Budapest, pp. 11–139.
- Negrobov, O.P. & Matile, L. (1974) Contribution à la faune de l’Iran: Diptera, Dolichopodidae. *Annales de la Société Entomologique de France*, 10, 841–845.
- Negrobov, O.P. & Nechay, N.A. (2009) Key to the Palaearctic species of the genus *Hercostomus* Loew (Diptera, Dolichopodidae). Part 5. *International Journal of Dipterological Research*, 20 (4), 203–206.
- Negrobov, O.P. & Onishchenko, V.V. (1991) New species of the family Dolichopodidae (Diptera) from Georgia. *Zoologicheskii zhurnal*, 70 (11), 148–149.
- Parent, O. (1938) Diptères Dolichopodidés. In: *Faune de France*. T. 35. L’Académie des Sciences de Paris, Paris, 720 pp.
- Stackelberg, A.A. (1941) 29. Dolichopodidae. In: Lindner, E. (Ed.), *Die Fliegen der Palaearktischen Region*, 4 (5), Lief. 138, 177–224.
- Stackelberg, A.A. (1949) Species of the genus *Hercostomus* Lw. (Diptera, Dolichopodidae) of middle Asiatic Fauna. *Trudy Zoologicheskogo Instituta. Akademiya Nauk SSSR*, 8 (4), 669–687. [in Russian, with English summary]
- Yang, D., Zhang, L., Wang, M. & Zhu, Y. (2011) Dolichopodidae. In: *Fauna Sinica, Insecta. Vol. 53*. Science Press, Beijing, 1912 pp. [in Chinese, with English summary].