Chloropidae (Diptera) of Turkey with descriptions of new species and new records

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ABSTRACT

A list of Chloropidae from Turkey is provided, containing 64 species from 31 genera and 4 subfamilies. Three species are described as new. Two additional species were only identified to genus level. Twelve species are listed based only on literature data. Most species (40) are recorded from Turkey for the first time.

KEYWORDS: Diptera, Chloropidae, Asia Minor, Turkey, new species, new faunistic data

INTRODUCTION

Grass flies of the family Chloropidae (Diptera, Cyclorrhapha) of Turkey are insufficiently studied, and only 21 species have been recorded to date. Loew (1858) described 3 species: *Oscinis brevirostris* (now *Aphanotrigonum cinctellum* (Zetterstedt)), *O. marginata* (now *Polyodaspis ruficornis* (Macquart)) and *Crassiseta megaspis* (now in *Elachiptera*). He also cited Constantinopolis as type locality for the two former species and Asia minor for the latter species. Becker (1912) described *Chlorops pallidior* from Asia Minor. Duda (1932-1933) recorded *Oscinimorpha albisetosa* Duda, *Chlorops fasciatus* Meigen and *Thaumatomyia sulcifrons* Becker from Asia minor, Lodos (1957) recorded *Oscinella frit* (Linnaeus) as *Scatopse nigra*, but his drawings of the fly, including its wing, beyond question refer to *O. frit*. This species was mentioned by Özer (1976) as well. Lessman (1962), who studied pests of cones of *Ceder libani*, found larvae of a fly, which he did not name (see comments below under *Hapleginella laevifrons* (Loew, 1858)). Dely-Draskovits (1981) and Deeming (2011) recorded *Aphanotrigonum femorellum* Collin, and Beschovski (1974) recorded *Dicraeus discolor* Becker. Giray (1980, citing Iyriboz and Ileri, 1942) recorded *Chlorops pumilionis* (Bierkander). Only 8 species were listed in the Catalogue of the Palaearctic Region (Nartshuk, 1984): *Aphanotrigonum cinctellum* (Zetterstedt) [as *brevirostris*], *Dicraeus discolor* Becker, *Elachiptera megaspis* (Loew), *Lasiosina littoralis* Becker, *Polyodaspis ruficornis* (Macquart), *Melanum laterale* (Haliday), *Thaumatomyia notata* (Meigen) and *Chlorops pallidior* Becker. Deeming (1998), Civelek (2002), and Civelek and Tezcan (2005)

recorded *Oscinella nartshukiana Beschovski, and Civelek* (2005) recorded *Elachiptera bimaculata* Loew. Deeming (2006) described *Scoliophthalmus civeleki* Deeming, and Nartshuk (2006) described *Lasiosina deviata* Nartshuk from Turkey. Koçak et al. (2009) recorded *Lasiambia albidipennis* (Strobl). Ozerov (2009) described *Meromyza filippovi* Ozerov from the European part of Turkey. Only two species, *Scoliophthalmus civeleki* and *Elachiptera bimaculata*, are included in a Turkish checklist of Koçak and Kemal (2009). Last but not least, Deeming (2011) identified *Sabroskyina aharonii* (Duda) from Turkey for the first time.

MATERIAL AND METHODS

A total of 223 specimens were studied originating from 4 collections. Most of the material (172 specimens) was collected by N.E. Vikhrev (NV), M.G. Krivosheina (MK), A.L. Ozerov (AO) and K.P. Tomkovich (KT) in southern Turkey, in or nearby resorts (e.g., Antalya) during the last decades, and most of the specimens from this material are kept in the collection of the Zoological Museum of Moscow University in Moscow (ZMUM). Some specimens (19) were collected by A. Freidberg, A.L.L. Friedman and H. Ackerman (FFA) in southeast Turkey (near Antakya) in 2000, and most of the specimens from this material are kept in the collection of Tel Aviv University in Israel (TAUI). Five specimens were collected by M.G. Volkovich (MV) and 21 specimens, collected by A.Ö. Koçak and L. Gültekin, are kept in the collection of the Zoological Institute of the Russian Academy of Sciences in St. Petersburg (ZIN). Six specimens are from the collection of the Zoologische Staatssammlung München (ZSM) in Germany and kept there. Some species from ZMUM were determined by N.E. Vikhrev and A.L. Ozerov.

For most species, **Material Examined** and **Distribution** sections are given first, followed by a **Comments** section, mostly devoted for biological information. For species described from Turkey or known from there, for which no specimens were available for this study, the relevant reference is given immediately below the species subheading. Species recorded for the first time from Turkey are marked by an asterisk.

Terminology follows essentially McAlpine (1981). Abbreviations used in this article are: env.—environs, prov.—province, reg.—region, Rt.—route, spm—spms—specimen, specimens.

ANNOTATED LIST OF SPECIES

SUBFAMILY SIPHONELLOPSINAE

**Apotropina longepilosa* (Strobl, 1893)

Material Examined

Antalya: reg. Korpu (37,075ºN, 31,232ºE), 10.ix.2009 (N. Dvoretskaya), 1♀; Hatay prov., Samandag env., 14–16.iv.2010 (NV), 1♂.

Distribution

Widely distributed in the southern Palaearctic Region from Europe to Russian Far East and Mongolia.

**Siphonellopsis lacteibasis* Strobl, 1906

Material Examined

Hatay prov., Çivlek env. (36,074ºN, 35,953ºE), 16.iv.2010 (NV), 4♂, 6♀; Antalya, Side, Lake Titreyen, 36,756670ºN, 31,455069ºE, 2.iv.2008 (MK, AO), 1♂.

Distribution

From southern Europe and North Africa to Central Asia.

SUBFAMILY RHODESIELLINAE

**Rhodesiella plumiger* (Meigen, 1830)

Material Examined

Adapazari reg. Karasu, 9.v.2009 (NV), 1♂.

Distribution

A widely distributed eurasian species, known from Europe to Far East Russia.

Comments

Flies of this species usually occur in deciduous forests, among shrubs. The species was bred once from a mushroom (Khalidov, 1984).

Scoliophthalmus civeleki Deeming, 2006

Deeming, 2006: 85—Muğla, Koyceğiz, streamside grasses and *Phragmites*

Distribution

This species was described from Turkey.

SUBFAMILY OSCINELLINAE

**Aphanotrigonum bicolor* Nartshuk, 1964

Material Examined

Antalya: ruins of Side near Selimyie (36,767178ºN, 31,394821ºE), 25.ix. 2007 (AO), 1♂; Side, sand dunes, 3.iv.2008 (NV), 1♂; ruins of Seleukela near Şişeler (36,871752ºN, 31,475023ºE), 4.iv.2008 (AO, MK), 1♀.

Distribution

Southern Palaearctc Region, from Hungary to Central Asia.

Comments

The male collected on 25.ix. is colored as described in Nartshuk (1964), with postpronotum yellow. The male collected on 3.iv. has gray postpronotum similar to the other parts of the thorax. The terminalia of both specimens are identical.

Aphanotrigonum cinctellum (Zetterstedt, 1848)

Loew, 1858: 60 (as *Oscinis brevirostris* Loew, 1858, a junior synonym)

Distribution

A transpalaearctic species, known from Europe and North Africa to China.

Aphanotrigonum femorellum (Collin, 1946)

Dely-Draskovits, 1981: 124—Turkey. Deeming 2011: 785—Turkey.

Material Examined

Antalya: ruins of Side near Selimyie (36,767178º N, 31,394821ºE), 25 and 27.ix.2007 (AO), 2♀, 3♀; E from ruins of Side near Selimyie (36,769991ºN, 31,429487ºE), 2.iv.2008 (AO, MK), 1 ♂; Side, Lake Titreyen (36,756670ºN, 31,455069ºE), 27.ix.2007 (AO, NV), 1♂, 2♀; Side, sand dunes, 27.ix.2007 (NV), 2♀; Ruins of Seleukela near Şişeler (36,871752ºN, 31,475023ºE), 4.iv.2008 (MK, AO), 1♀; Adapazari reg., near Kaeasu, 27.viii.2009 (NV), 1♀.

Distribution

A widely distributed but rare Palaearctic species, known from Europe and North Africa to Oman and Mongolia.

Comments

Von Tschirnhaus (1981) recorded the grasses, *Puccinella maritima* (Huds.) Parl. and *Festuca rubra* L., as larval host plants.

**Conioscinella frontella* (Fallén, 1820)

Material Examined

Manavgat, forest, 25.v.2008 (NV), 1♂.

Distribution

A widely distributed Palaearctic species, known from Europe to Israel and Mongolia.

Comments

The larvae are phytophagous, developing in shoots of different grasses (Poaceae).

Conioscinella sp.

Material Examined

Gözne, 30 km N Mers, 500–1000 m, 11.v.2000 (FFA), 1 spm.

Dicraeus discolor Becker, 1910

Beschovski, 1974—Asia Minor; Nartshuk, 1984: 258—Turkey.

Distribution

This species is known from Bulgaria, the southern European part of Russia, and Asia Minor.

Comments

The larvae are probably phytophagous, developing in seeds of grasses (Poaceae), like other species of the genus; the host plant is unknown.

**Dicraeus raptus* (Holiday, 1838)

Material Examined

Antalya, Side, sand dunes, 2.iv.2008 (NV), 2♀.

Distribution

This species was recorded from West Europe and only the Crimea in East Europe.

Comments

The larvae are phytophagous, associated with *Bromus ramosus* Huds. (Ismay, 1981) and probably with other *Bromus* species (Poaceae).

**Dicraeus tibialis* (Macquart, 1835)

Material Examined

Antalya: E from ruins Side near Selimyie (36,769991ºN, 31,429487ºE), 2.iv.2008 (AO, MK), 2♂, 1♀; Side, sand dunes, 2.iv.2008 (NV), 3♂, 4♀.

Distribution

An holarctic species, found recently also in New Zealand (Ismay, 1991).

Comments

The larvae are phytophagous, feeding in unripe seeds of *Bromopsis inermis* Leyss., *B. erectus* Huds. and *Helictotrichon pubescens* (Huds.) Pilg. (Poaceae) (Nartshuk, 1967).

Dicraeus sp.

Material Examined

Rt 400, Büyükeceli, 50 km SW Silifke, 12.v.2000 (FFA), 1♀.

Comments

As there is only a single female available, species identification is impossible.

Elachiptera bimaculata (Loew, 1858)

Civelek and Tezcan, 2005—Turkey.

Material Examined

Antalya: ruins of Side near Selimyie (36,767178ºN: N, 31,394821ºE), 31.iii.2008 (AO, MK), 1♀; ruins of Side (36,988600ºN, 30,983834ºE), 1.iv.2008 (AO, MK), 1♀; Side, sand dunes, 17 and 23.ii.2008 (NV), 1♂, 1♀.

Distribution

Southern Europe, Canary Islands, Madeira, Israel.

**Elachiptera cornuta* (Fallén, 1820)

Material Examined

Antalya, near Lake Titreyen, 36,761420ºN, 31,449875ºE, 5.x.2007 (AO), 1♀; Antalya, Lake Titreyen, 26.iii.2007 NV), 1♂.

Distribution

Widely distributed in the Palaearctic Region, from Europe to China.

Comments

Usually specimens of this species have a black ocellar triangle, but the examined specimens have a yellow ocellar triangle. They also have two dusted stripes on scutum along dorsocentral lines in contrast to *E. rufifrons* Duda, which has a yellow ocellar triangle but a wide dusted stripe in the middle of the scutum (Nartshuk, 2003).

The larvae are phytosaprophagous, developing in rotting tissue of plants.

Elachiptera megaspis (Loew, 1858)

Loew, 1858: 74—Asia minor.

**Elachiptera rufifrons* Duda, 1932

Material Examined

Side, near Titreyen Lake, 30.iii.2008 (NV), 1♂.

Distribution

Southern Eurasian species, known from Spain to China.

Comments

The larvae are phytophagous or phytosaprophagous, and they were reared from shoots of rice in Spain (Batalla, 1978).

**Hapleginella laevifrons* (Loew, 1858)

Material Examined

Antalya: near lhsanlye (37,001421ºN, 30,821684ºE), 2.x.2007 (AO), 1♀; SE Manavgat (36,747663ºN, 31,471777ºE), 30.ix.2007 (AO), 2♀; ruins of Side near Selimyie (36,767178ºE, 31, 9482ºE), 25.ix.2007 (AO), 1♂; ruins of Sillyon (36,988600ºN, 30,98383ºE), 2.x.2007 (AO), 2♀; ruins of Seleukeia near Şişeler (36,871752ºN, 31,475023ºE), 29.ix.2007 (AO), 2♀.

Distribution

A Eurasian species, known from the British Isles to Far East Russia.

Comments

The larvae are saprophagous and/or necrophagous, developing in cones of different coniferous trees (*Pinus*, *Picea*, *Abies*, *Larix*) infested by other insects, and can develop in other parts of coniferous trees, such as in rotting central shoot of *Pinus sibiricus,* that yielded this species in the Leningrad province (Northwest Russia).

A fly mentioned by Lessman (1962), the larvae of which fed on the scales of the cones and mined radiating tunnels inside the seeds of *Ceder libani* in Dargaz and Sütleğen, probably belongs to this species.

Lasiambia albidipennis (Strobl, 1893)

Koçak et al., 2009: 247—Turkey.

Material Examined

Kizilcahamam-Ankara, on *Heracleum platytaenium* Boiss., 2.vii.2007 (Koçak), 17 spms.

Distribution

This species is known from southern Europe, Kazakhstan, and Asia Minor.

Comments

The larvae are saprophagous and necrophagous, living in stems of *Heracleum platytaeniun* Boiss., damaged by *Lixus recurvus* Olivier (= *nordmanni* Hochhuth) (Curculionidae) and *Melanagromyza heracleana* Hering (Agromyzidae) and in corpses of *Lixus* (Koçak et al., 2009; they wrongly cited Zlobin instead of Hering as author of the leaf-mining fly).

**Lasiambia brevibucca* (Duda, 1933)

Material Examined

Antalya, ruins of Sillyon (36,988600ºN, 30,983834ºE), 2.x.2007 (AO), 1.iv.2008 (AO, MK), 2♀.

Distribution

This species was previously known only from Europe.

Comments

The larvae develop in rotten wood, sap flows of damaged trees, bracket fungus and in root holes (Allen, 1981; Godfrey, 1998, Ismay, 2000; Georgiev et al., 2004, Barklay, 2005).

**Lasiochaeta pubescens* (Thalhammer, 1898)

Material Examined

Antalya: Lake Titreyen (36,756670ºN, 31,455069ºE), 27.ix.2007 (AO), 3♂, 2♀; near Lake Titreyen (36,761420ºN, 31,449875ºE), 5.x.2007 (AO), 3♂, 2♀; Side, sand dune, 24.v.2008 (NV), 1♂.

Distribution

Common and widely distributed species in the southern Palaearctic Region, from Azores and Madeira to Afghanistan, recently spreading as north as England and Northern Germany.

**Lipara lucens* Meigen, 1830

Material Examined

Antalya, Lake Titreyen (36,756670ºN, 31,455069ºE), 3.iii.2008 (AO, MK), 1♂.

Distribution

A Eurasian species, occurring on *Phragmites* from Europe to Japan, found also in North America, where considered to be an immigrant (Sabrosky, 1958).

Comments

The larvae live in top galls on common reed (*Phragmites australis* (Cav.) Trin. ex Steud.).

Oscinimorpha albisetosa Duda, 1932

Duda, 1932: 47—Kleinasien. Turkey; omitted in Nartshuk (1984).

Distribution

A Eurasian species, known from Europe to Yakutia and Mongolia.

**Oscinimorpha arcuata* (Duda, 1932)

Material Examined

Antalya, Side, sand dune, 24.v.2008 (NV), 1♂.

Distribution

A west-palaearctic species, known from Great Britain to Israel, and common in southern Europe.

**Oscinimorpha longirostris* (Loew, 1858)

Material Examined

Rt 32–26, 55 km S Eğidrir, 800 m, 6.v.2000 (FFA), 1♀.

Distribution

A mediterranean species, known from the Canary Islands, southern Europe, and North Africa to Israel.

**Oscinimorpha novakii* (Strobl, 1893)

Material Examined

Antalya, Silion ruins, 26.v.2008 (NV), 1♂.

Distribution

A mediterranean species, known from the Canary Islands, southern Europe to Israel.

Oscinella (Oscinella) frit (Linnaeus, 1758) (The frit fly)

Lodos, 1957: 6 (as *Scatopse nigra*); Özer 1976: 3–4.

Material Examined

Antalya: near airport, 16.ii.2008 (NV), 4♂, 5♀; Manavgat, pine forest, 19.ii. and 4.iv.2008 (NV), 1♂, 2♀; Lake Titreyen (36,756670ºN, 31,455069ºE), 27.ix.2007 (AO), 2♀; ruins of Seleukeia near Şişeler (36,871752ºN, 31,475023º E), 4.iv.2007 (AO, MK) 1♀; ruins of Side near Selimyie (36,767178ºE, 31,39482ºE), 26.ix.2007 (AO), 1♂, 1♀; Side, sand dunes, 19.ii.2008 (NV), 1♂, 1♀; SE of Manavgat (36,747662º N, 31,471777º E), 30.ix.2007 (AO), 2♂; Pasture Akseki, 1759 m, 27.ix.2007 (NV), 1♂.

Distribution

A widely distributed species (or group of closely related species), recorded from the Holarctic, Afrotropical, and Oriental Regions.

Comments

The larvae are phytophagous, developing in shoots and seeds of cereals: wheat, barley, rye, oat, and in shoots of many wild grasses. A well known pest of cereals.

**Oscinella (Oscinella) maura* (Fallén, 1820)

Material Examined

Antalya, N of Manavgat (36,836918ºN, 31,474030ºE), 29.ix.2007 (AO), 1♂; Antalya, Kurshunlu, 27.v.2008, (NV), 1♂; Rt 32–26, 55 km S Eğidrir, Candir, 200–400 m, 6.v.2000 (FFA), 1 spm.

Distribution

This species is known from Europe, Siberia, the Caucasus, and Iran.

Comments

The larvae are phytophagous, living in shoots of the grass, *Dactylis glomerata* L. (Poaceae).

Oscinella (Cyclocercula) nartshukiana Beschovski, 1978

Civelek, 2002—Turkey, Ismir Province.

Distribution

This species was described from Bulgaria and is widely distributed in Africa.

Comments

This species has a great agricultural importance in infesting sorghum seedlings, millet, maize, wheat and barley, many of which had already been attacked by the muscid shoot fly, *Atherigona hyalipennis* van Emden, and *A. soccata* Rondani. It develops in shoots of many wild grasses as well (Deeming, 2003).

**Oscinella (Oscinella) nitidigenis* Becker, 1910

Material Examined

Antalya, ruins of Seleukeria near Şişeler (36,71152ºN, 31,475023ºE), 4.iv.2008 (AO, MK), 1♀.

Distribution

A southwestern Palaearctic species, known from the Canary Islands and Europe to Israel; it is also known from Cape Verde Islands.

**Oscinella (Oscinella) nitidissima* (Meigen, 1838)

Material Examined

Konya mountain, pasture, 1740 m (37,211412ºN, 31,9501600ºE), 26.ix.2007 (AO), 1♂.

Distribution

An holarctic species, widely distributed in the Palaearctic Region.

Comments

The larvae are phytophagous, developing in shoots of different grasses (Poaceae), preferably in species of *Agrostis*.

Polyodaspis ruficornis (Macquart, 1835)

Loew, 1858: 69 (as *Oscinis marginata* Loew, 1858, a junior synonym; Nartshuk, 1984: 233—Turkey.

Distribution

This species is known from the Palaearctic and the Oriental regions.

Comments

The larvae develop in different substrates (Kiauka and Nartshuk, 1972).

**Polyodaspis splendida* Nartshuk, n. sp.

Material Examined

Antalya, to NE of Bucak, River Korpü Irmagi (37,050923ºN, 31,230474ºE), 1.x.2007 (AO), 1♂, 3♀.

Distribution

This species is newly described below from Turkey.

**Polyodaspis sulcicollis* (Meigen, 1838)

Material Examined

Antalya, ruins of Sillyon (36,98860ºN, 30,983834ºE), 2.x.2007 (AO), 1♂, 1♀; 1.iv.2008 (AO, MK), 1♂, 3♀; 3.iv.2008 (NV), 1♀.

This species is very variable in the color of the setae and setulae, which are black or white. The female collected on 2.x.2007 has all the setae and setulae white and corresponds to var. *amicalis* Becker. All other specimens have black setae and setulae.

Distribution

This species is distributed in Europe, the mediterranean subregion, and in Palaearctic Asia eastwards to Yakutia and Mongolia.

Comments

The larvae are probably saprophytophagous. The adults were reared from stems of broomrape (*Orobanche speciosa* D.C.), damaged by other insects (Martelli, 1933).

Sabroskyina aharonii (Duda, 1933)

Deeming, 2011: 794.—Turkey.

Distribution

The species was previously known from Turkey to Pakistan, Africa from Egypt to Chad, Seychelles, and Cape Verde Islands.

**Tricimba albiseta* Dely-Draskovits, 1983

Material Examined

Antalya, to NE of Bucak, river Korpü Irmagi (37,050923ºN, 32,230474ºE), 1.x.2007 (AO), 2♀.

Distribution

This species was described from southern Europe (Hungary, former Yugoslavia, Bulgaria).

Comments

This species is probably only a light-colored variation of *Tricimba cincta* (Meigen).

**Tricimba humeralis* (Loew, 1858)

Material Examined

Antalya: near airport, 16.ii.2008 (NV), 2♀; ruins of Side near Selimyie (36,767178ºN, 31, 39821ºE), 5.x.2007 (AO), 1♂.

Distribution

A widely distributed species, recorded from the southern Palaearctic Region and the Afrotropical Region.

Comments

This species hibernates as adults, was recorded many times in houses during autumn together with *Thaumatomyia notata* Meigen, and was also found in bird nests (Krivokhatskii and Nartshuk, 2001).

SUBFAMILY CHLOROPINAE

**Assuania thalhammeri* (Strobl, 1893)

Material Examined

Akseki pasture, 1750 m, 27.ix.2007 (NV), 1♀.

Distribution

A south Palaearctic species, known from southern Europe and North Africa to Afghanistan.

**Camarota curvipennis* (Latreille, 1805)

Material Examined

Antalya to NE of Bucak, river Korpü Irmagi (37,050923ºN, 31,230474ºE), 1.x.2007 (AO), 3♂, 5♀; Antalya, Kurshunlu waterfall, 27.v.2008 (NV), 1♂, 2♀; Antakya, 10.v.2000 (FFA), 1 spm.

Distribution

This species is known almost from all Europe (except the northern parts), the Caucasus, southern part of Palaearctic Asia and North Africa.

Comments

The larvae are phytophagous, developing in shoots and ears of different cereals: barley, oat, rye, wheat, also in *Elytrigia repens* (L.) Nevski and possibly in other Poaceae.

**Cetema neglectum* Tonnoir, 1921

Material Examined

Sakarya prov., Karasu (41,1ºN, 30,7ºE), 14–20.vi.2010 (NV), 1♂, 1♀; Antakya, 10.v.2000 (FFA), 3♂, 1♀.

Distribution

This species was earlier known only from Europe.

Comments

The larvae are phytophagous, developing in shoots of many grasses (Poaceae).

Chlorops fasciatus Meigen, 1830

Distribution

A Eurasian species, known from Europe to Mongolia.

Duda, 1932-1933: 162-163 “Asia minor”, omitted in Nartshuk (1984)

**Chlorops freidmani* n. sp.

Material Examined

Rt 32–26, 55 km S Eğidrir, 200–400 m, 6.v.2000 (FFA), 1♀; Teknepinar, 20 km W Antakya, 500 m, 10.v.2000 (FFA), 1♀.

Distribution

This species is newly described from Turkey below.

Chlorops pallidior Becker, 1912

Becker, 1912: 236—Turkey, Dauda, Karaman and Durek; Nartshuk, 1984: 276— Turkey.

Distribution

The species was described from Turkey.

Chlorops pumilionis (Bjerkander, 1778) (The gout-fly)

Giray, 1980: 61, citing Iyriboz and Ileri (1942).

Material Examined

Rt 32–26, 55 km S Eğidrir, 800 m, 6.v.2000 (FFA), 1 spm.

Distribution

A Eurasian species, known from Europe to Mongolia.

Comments

The larvae are phytophagous, damaging shoots and ears of wheat, and also developing in *Aegilops*.

**Cryptonevra nigritarsis* (Duda, 1933)

Material Examined

Antalya, Side, Lake Titreyen (36,756670ºN, 31455069ºE, 30.iii.2008 (AO, MK), 2♀.

Distribution

This species is known from Europe and Kazakhstan.

Comments

The larvae live as inquilines in galls of *Lipara* spp. on common reed (*Phragmites australis* (Cav.) Trin. ex Steud.).

**Diplotoxa messoria* (Fallén, 1820)

Material Examined

Konya, mountain pasture, 1740 m (37,211412ºN, 31,951600ºE), 26.ix.2007 (AO), 2♀; Antalya reg., 1540 m, (40,346ºN, 31,929ºE), 2.ix.2009 (NV), 3♂; Alseki, 1750 m, pasture, 25.v.2008 (NV), 1♂; Kars, Bahstat Songle W Sarikani, 2100 m, 5.vii.1985 (Schacht), 1 spm. (ZSM).

Distribution

An holarctic species; in the Palaearctic Region known from the British Isles to Far East Russia.

Comments

The larvae develop in stems of *Eleocharis* species (Cyperaceae). The species is found in Turkey only in mountains above 1500 m.

**Eurina ducalis* A. Costa, 1885

Material Examined

Antalya, Side, Lake Titreyen (36,756670º N, 31,455069ºE), 27.iii.2007, 31.iii.2008 (AO, NV), 3♂; Antakya, 10.v.2000 (FFA), 2 spms.

Distribution

A mediterranean species (southern Europe, Syria, Israel).

Comments

The larvae are phytophagous, forming galls on *Scirpus tuberosus* Desf. and *S. mucronatus* L. (Cyperaceae) (Kaplan, Eitam and Freidberg, 1986; Kolomoez et al., 1989).

**Eurina triangularis* Becker, 1903

Material Examined

Antalya, Side, Lake Titreyen, 30.iii.2007 (NV), 1♀; Antakya, 10.v.2000 (FFA), 4 spms.

Distribution

This species is known from North Africa (Egypt) and Israel.

Comments

The larvae are phytophagous, developing in stems of *Scirpus tuberosus* Desf. (Cyperaceae), without forming galls (Kaplan et al., 1986).

**Lasiosina armeniaca* Dely-Draskovits, 1979

Material Examined

Konya reg. (37,235ºN, 31,951ºE), 4.ix.2009 (NV), 1♂.

Distribution

This species was described from Armenia and the Pamir Mountains.

Lasiosina deviata Nartshuk, 2006

Nartshuk, 2006: 281—Turkey, 111 km SW Ansary.

Material Examined

111 km SW Ansary, 951 m. 38,19º N, 33,53º E (Gültekin), 3♂, 1♀. The holotype and 2 paratypes (1♂, 1♀) are deposited in ZIN, and a ♂ paratype is deposited in Atatürk University, Erzerum, Turkey.

Distribution

This species was described from Turkey.

Comments

The larvae live in stems of *Lepidium latifolium* L (Brassicaceae), probably being secondary invaders (Nartshuk, 2006).

**Lasiosina emiliae* Dely-Draskovits, 1982

Material Examined

Antalya, Side, sand dune, 24.ii.2008 (NV), 1♂.

Distribution

This species was known earlier from Kazakhstan, Kirghizia, Tajikistan, and Uzbekistan.

**Lasiosina herpini* (Guérin-Méneville, 1843)

Material Examined

Konya reg. (37,235ºN, 31,951ºE), 4.ix.2009 (NV), 1♂.

Distribution

A transpalaearctic species.

Comments

The larvae develop as secondary invaders in shoots of different grasses, including cereals: rye, wheat, oat, and barley.

Lasiosina littoralis Becker, 1910

Duda, 1932–1933: 139–140; Nartshuk, 1984: 294—Turkey.

Distribution

This species is known from southern Europe, Kazakhstan, and Asia Minor.

Melanum laterale (Haliday, 1833)

Nartshuk, 1984: 281—Turkey.

Distribution

A widely distributed eurasian species, known from Europe to Japan (Hokkaido).

Comments

In salt marshes the larvae develop in *Juncus gerardii* Loisel.(Juncaceae) (von Tschirnhaus, 1981)

**Meromyza femorata* Macquart, 1835

Material Examined

Konya reg. (37,235ºN, 31,951ºE), 1670 m, 4.ix.2009 (NV), 1♀.

Distribution

This species was earlier known only from Europe.

Comments

The larvae are phytophagous, developing in shoots of the grass, *Dactylis glomerata* Linnaeus (Poaceae).

Meromyza filippovi Ozerov, 2009

Ozerov, 2009: 127—European part of Turkey, Byukdere.

Distribution

This species was described from the European part of Turkey (Ozerov, 2009).

**Meromyza ornata* (Wiedemann, 1817)

Material Examined

Adiyman, 15 km NE Golbasi, 850 m, 37,5251ºN, 37,4713ºE 3.vi.2001 (MV), 1♂, 3♀; Bayburt Asagi Kop environ, 30 km W Bayburi, 1700 m, 12.vi.2001 (MV), 1♀.

Distribution

A widely distributed eurasian species, known from Europe to Far East Russia.

Comments

The larvae are phytophagous, developing in shoots of the grass *Deschampsia cespitosa* (L.) B.P. (Poaceae).

**Meromyza nigriventris* Macquart, 1835

Material Examined

Antalya: Side, Lake Titreyen (36,756670ºN, 31,455069ºE), 27.ix.2007 (AO), 1♂; bank of river Manavgat (36,870660ºN, 32,526706ºE), 3.x.2007 (AO), 1♀, 4.x.2007 (NV), 1♀; north of Manavgat (36,836918ºN, 31,474030ºE), 29.ix.2007 (AO), 4♀; Side, sand dune, 24.ii. 2008 (NV), 2♂.

Distribution

An holarctic species: in the Palaearctic Region it is widely distributed from the British Isles to Japan; in North America it is known only from the West.

Comments

The larvae are phytophagous, developing in different cereals: wheat, barley, rye, as well as many wild grasses.

**Meromyza turcica* n. sp.

Material Examined

Antalya, to NE of Bucak, river Korpü Irmagi (37,050923ºN, 31,320474ºE), 1.x.2007 (A. Ozerov), 1♂.

Distribution

This species is newly described here from Turkey.

**Meromyza variegata* Meigen, 1830

Material Examined

NO (=NE) Türkei, Türkisch Armenien, vilayet Kars, Göli Merdenik, 2390–2600 m, 10–15.viii.1965 (Achtelig, Nauman), 1♂, 2♀ (ZSM).

Distribution

This species was previously known only from Europe.

Comments

The larvae are phytophagous and plants listed as hosts are *Dactylis glomerata* L., *Phleum pratense* L., *Alopecurus pratensis* L., *Elytrigia repens* (L.) Nevski., *Festuca pratensis* Huds., although this list requires reconfirmation.

**Metopostigma tenuiseta* (Loew, 1874)

Material Examined

Antalya, Lake Titreyen (36,75670ºN, 31,455069ºE), 5.x.2007 (AO), 1♂.

Distribution

This species was earlier known from Israel, North Africa (Egypt) and the Afrotropical Region.

**Platycephala umbraculata* (Fabricius, 1798)

Material Examined

Prov. Van, Van See E Erçis, 750 m, 9.vi.1988 (Kuhlbander), 2 spms. (ZSM).

Distribution

A widely distributed species in the Palaearctic Region, known from Europe to the Kuril Islands.

Comments

The larvae are phytophagous, developing in shoots of the common reed (*Phragmites australis* (Cav.) Trin. ex Steud.).

**Phyladelphus thalhammeri* Becker, 1910

Material Examined

Antalya, Lake Titreyen (36,756670ºN, 31,455069ºE), 31.iii.2008 (AO, MK), 1♀; Antalya, to SW Manavgat (36,769977ºN, 31,429475ºE), 4.iv.2008 (AO, MK), 1♀.

Distribution

A mediterranean species, known earlier from southern Europe and the Caucasus.

**Thaumatomyia glabra* (Meigen, 1830)

Material Examined

Konya, mountain pasture, 1740 m (72,11412ºN, 31,951600ºE), 26.ix.2007 (AO). 1♀.

Distribution

An holarctic species.

Comments

The larvae are carnivorous, living in the ground near rhizomes of plants where they feed on root aphids, especially Pemphigidae.

Thaumatomyia notata (Meigen, 1830)

Nartshuk, 1984: 287–Turkey; Koçak and Kemal, 2012: Van province.

Material Examined

Antalya: E from ruins of Side near Selimyie (36,769991ºN, 31,429487ºE), 2.iv.2008

(AO, MK), 9♀; Side, sand dunes, 18–27.ii. and 2.iv.2008 (NV), 7♂, 12♀; Antalya reg., Lake Antalya, Side, sand dune, 24.v.2008, 2♂; Lake Titreyen, near Side, 21–25.ii.2008 (KT), 3♀. Near Side, 21–25.ii.2008 (KT), 3♀; N of Manavgat (36,836918ºN, 31,474030ºE), 29.ix.2007 (AO), 2♀; to NE of Bucak, river Korpü Irmagi (37,050923ºN, 31,230474ºE), 1.x.2007 (AO), 3♂. Konya, mountain pasture, 1740 m (37,211412ºN, 31,951600ºE), 26.ix.2007 (AO), 3♂; Kaiseri prov., env. salt lake (38,50ºN, 35,19ºE) 18.iv.2010 (NV), 1♂, 1♀; Rt 750, 20 km N Taurus, 1250 m, 9.v.2000 (FFA).

Distribution

A widespread species, recorded from the Palaearctic, Afrotropical, and Oriental Regions. In the Palaearctic Region it is known from the British Isles to Japan.

Comments

Specimens collected in April are dark colored: ocellar triangle, stripes on scutum and marks on pleura black; specimens collected in September and October are light-colored: ocellar triangle yellow, stripes on scutum and marks on pleura partly reddish-yellow or yellow.

The adults aggregate before hibernation, and search for any holes. They can invade houses in the millions in autumn (Kotrba and Narthuk, 2009). The larvae are carnivorous, living in the ground near rhizomes of plants and feeding on root aphids.

Thaumatomyia sulcifrons (Becker, 1907)

Duda, 1932–1933: 222, Asia minor; omitted in Nartshuk (1984)

Material Examined

Antalya reg., Lake Titreyen, near Side, 21–25.ii.2008 (KT), 1♀; Ankara prov., Tuz Golu, 950 m (38,79ºN, 33,6ºE), 20.iv.2010 (NV), 1♂; Kaiseri prov., env. salt lake (38,50ºN, 36,19ºE), 18.iv.2010 (NV), 2♂, 1♀; Rt 300, 60 km NE Konya, 1000 m, 7.v.2000 (FFA), 1 spm.

Distribution

A south Palaearctic species, known from the Canary Islands to China.

Comments

The larvae are carnivorous, live in the ground near rhizomes of plants, and feed on root aphids.

DESCRIPTION OF NEW SPECIES

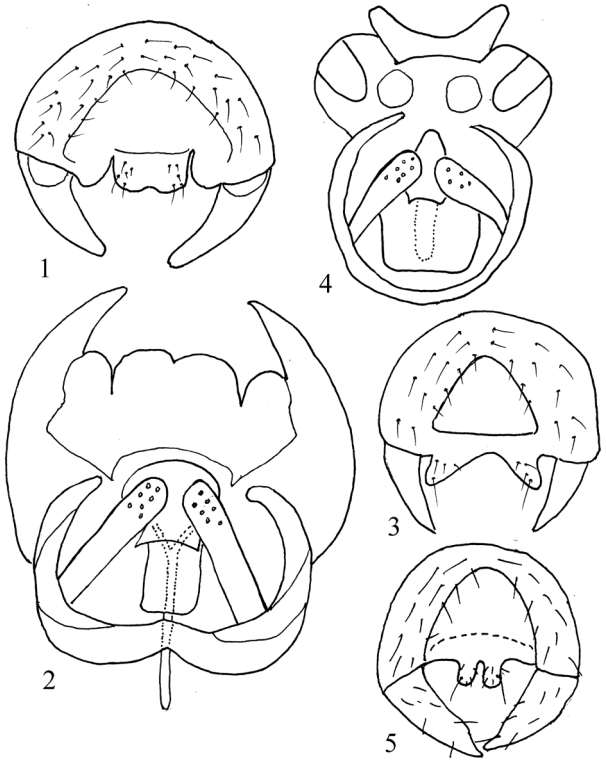
SUBFAMILY OSCINELLINAE

Polyodaspis splendida Nartshuk n. sp.

(Figs. 1, 2)

Material Examined

Holotype ♂, Turkey, Antalya, NE of Bucak, River Korpü Irmagi (37,050923ºN, 31,230474ºE), 1.x.2007 (A. Ozerov). Paratypes 3♀ with the same label.



Figs. 1–5. Male terminalia of *Polyodaspis* spp. 1. *P. splendida* n. sp., epandrium, dorsal view. 2. *P. splendida* n. sp., hypandrium and epandrium, ventral view. 3. *P. sulcicollis*, epandrium, dorsal view. 4. *P. sulcicollis*, hypandrium and epandrium, ventral view (specimens from Turkey). 5. *P. ruficornis*, epandrium.

The holotype and two female paratypes are deposited in ZMUM, one female paratype in ZIN.

Diagnosis

The new species shares with *P. ruficornis* Macquart the color of the body, wide basal cell of wing (*br*), numerous lateral setae and approximated apical setae on the scutellum. It is distinguished from *P. ruficornis* by the narrower facial carina between the antennae, smooth frons, smooth and shiny scutum, narrower scutellum and by the structure of the male terminalia. The frons of *P. ruficornis* is covered by small deep punctures, and the dorsal part of the facial carina between the antennae is nearly as wide as the first flagellomere; scutum and scutellum coarsely punctate, not shiny, scutellum wider. The cerci in

the male terminalia of the new species are fused; in other *Polyodaspis* species of which the structure of the male terminalia is known, the cerci are separate (Figs. 3–5).

Description

Shining, almost entirely black species.

Head: Anterior part of frons, face, antenna, anterior part of gena, palpus and legs brownish yellow. Head broader than deep and deeper than long. Frons as long as broad, smooth, shiny, without punctures. Ocellar triangle black, smooth, shiny, 0.6 length of the frons. Setae of head black and stout. Postocellar setae parallel, equal to the length of the lateral vertical setae, medial vertical seta shorter. Five orbital setae, short. Antenna within deep antennal fovea. Facial carina narrow. First flagellomere shorter than deep. Arista with very short microtrichia. Gena extending anteriorly to level of anterior margin of frons, broad and divided into silvery dusted dorsal part and shiny ventral area. Palpus large. Proboscis relatively short.

Thorax: Scutum as long as broad, its shiny surface covered with short black setulae. Scutellum nearly triangular, apical setae approximated, longer than scutellum. Lateral setae numerous (more than 8 on each side). All marginal setae on small tubercles. Postpronotal seta not developed. Pleura shiny, notopleural setae 1+2. Prescutellar dorsocentral seta longer than notopleurals.

Wing: transparent, veins yellow, cell *br* widened from level of base of vein R_1 towards apex, 1.5 times width of its basal part. Veins R_{4+5} and *M* slightly divergent. Crossvein dm-cu strongly oblique. Halteres yellow.

Legs: yellow including coxae, hind tibia darkened on tibial organ.

Abdomen: black, shiny. Female cerci black. Male terminalia (Figs. 1–2): epandrium very small, cerci fused, surstyli triangular, hypandrium open, postgonite simple and not divided. Body length 1.2 mm.

Etymology

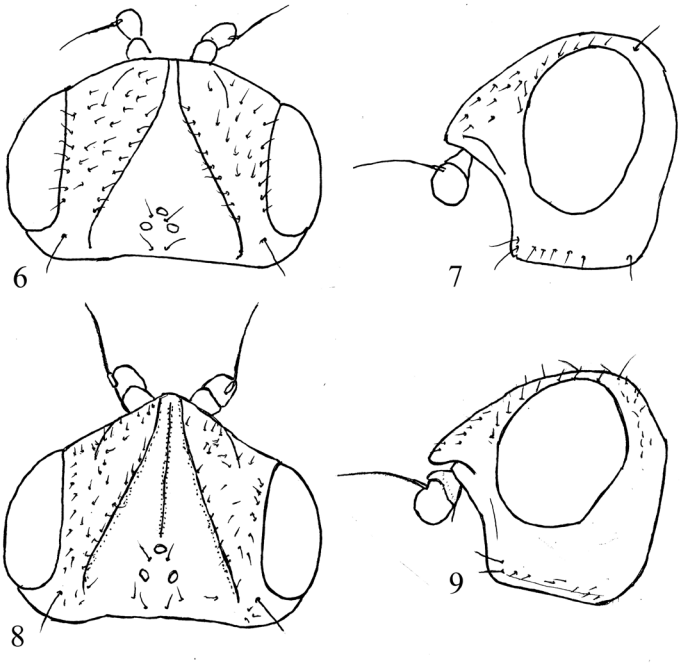
The species epithet means shiny, as the frons and scutum of the new species are shiny, without punctures.

Comments

The new species may be included in the key to Palaearctic species of the genus *Polyodaspis* Duda (Nartshuk, 2011) by the following modification:

1. First basal cell wide in the middle. Scutellum with many lateral setae..... **2**
- First basal cell not widened. Scutellum with two lateral setae..... **3**
2. Surface of frons flat, without a swelling before ocellar triangle. Postocellar setae parallel... **2a**
-. Surface of frons with a swelling before ocellar triangle. Postocellar setae slightly convergent ..... ***P. convexa*** **Ismay and Schulten**

2a. Surface of frons with small deep punctures, dorsal part of facial carina between antennae nearly as wide as first flagellomere, scutum and scutellum coarse punctate, not shiny, scutellum wider. Male cerci separated, not fused (Fig. 5). Palaearctic and Oriental Regions..... ..... ***P. ruficornis*** **(Macquart)**



Figs. 6–9. Head of *Chlorops* spp. 6. *C. freidmani* n. sp., dorsal view. 7. *C. freidmani* n. sp., lateral view. 8. *C. interruptus,* dorsal view. 9. *C. interruptus,* lateral view.

-. Surface of frons and scutum smooth and shiny, dorsal part of facial carina between antennae narrower than first flagellomere. Male cerci fused (Fig. 1)..... ***P. splendida* n. sp.**

SUBFAMILY CHLOROPINAE

Chlorops freidmani Nartshuk, n. sp.

(Figs. 6, 7)

Material Examined

Holotype ♀, Teknepinar, 20 km W Antakya, 500 m, 10.v.2000 (A. Freidberg, L. Friedman and H. Ackerman). Paratype ♀, Route 32–26, 55 km S Eğidrir, 200–400 m, 6.v.2000 (A. Freidberg, L. Friedman, and H. Ackerman). Right antenna is missing in the paratype. The holotype is deposited in TAUI. The paratype is deposited in ZIN.

Diagnosis

The new species is similar to *C. interruptus* (Meigen) (Figs. 8, 9) in having a large shining yellow ocellar triangle, a yellow spot on katepisternum, and abdominal tergites

blackish . It is distinguished from other species of *Chlorops* by the combination of black first flagellomere, darkened apical part of palpus, narrow gena, and the structure and color of the ocellar triangle.

Description

Body yellow with black stripes on scutum.

Head: (Figs. 6, 7): Frons nearly square, covered with black setulae. Ocellar triangle long, extending to anterior margin of frons, shiny yellow, laterally slightly concave, and narrow apical part longer than in *C. interruptus*. Ocellar triangle not darkened laterally and without median black line from ocellar tubercle to tip (Ocellar triangle of *C. interruptus* laterally straight and darkened, and there is a medial black line from ocellar tubercle to tip; narrow apical part shorter). Width of gena 0.33 times of the vertical diameter of eye and exceeds width of first flagellomere (In *C. interruptus* the gena is nearly half of the vertical diameter of eye). First flagellomere round, black, with yellow spot medially at base, basal segments of antenna yellow. Arista brownish. Palpus slightly blackish at tip.

Thorax: Scutum covered with black setulae and with 5 separated black dusted stripes, central stripe not extending to scutellum. Postpronotum yellow. One dorsocentral and lateral and medial postalar setae black. Scutellum semicircular, covered with black setulae. Apical setae shorter than scutellum, two pairs of lateral setae. Pleura yellow, with small black mark on anepisternum, spot on katepisternum shine yellow, 1+2 notopleural setae. Postnotum black, shiny medially.

Wing: transparent, venation typical for the genus, halter yellow.

Legs: entirely yellow.

Abdomen: slightly brownish dorsally. Body length 4 mm.

Etymology

The species epithet is composed of the names of the three collectors: Freidberg, Friedman, and Ackerman.

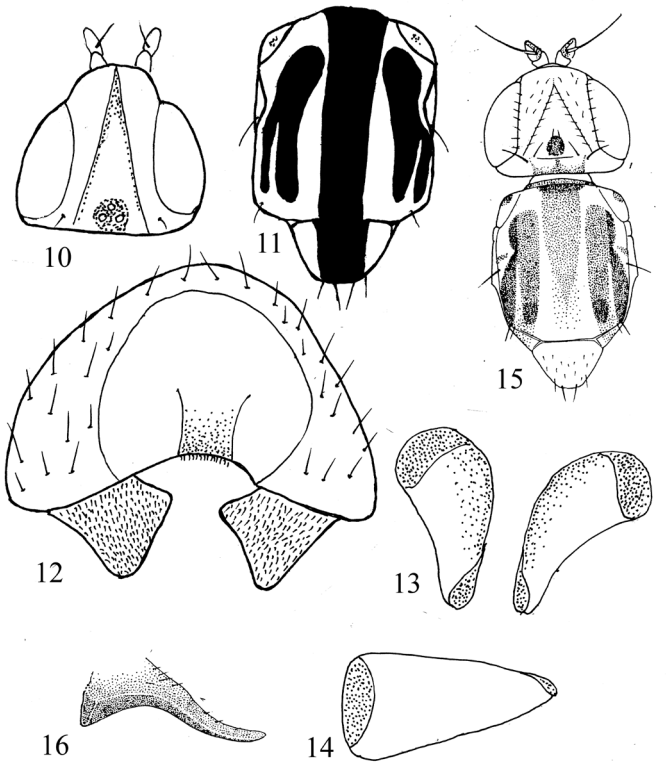
Comments

The new species may be included in the key to european species of the genus *Chlorops* Meigen (Dely-Draskovits, 1978) by the following modification:

92(91) Spot on katepistermun shiny yellow **92a**
92a(92b) Ocellar triangle shiny yellow. Abdomen slightly brownish dorsally .....
..... ***Chlorops freidmani* n. sp.**
92b(92a) Ocellar triangle partly black. Abdomen yellow or with brown bands on tergites..... **93**

The new species may be included in the key to palaearctic species of the genus *Chlorops* Meigen (Smirnov and Fedoseeva, 1976) by the following modification:

55(51) Spot on katepisternum entirely yellow, red or orange..... **55a**
55a (55b) Arista with short pubescence. Ocellar triangle shiny dark yellow. Abdomen slightly brownish dorsally ..... ***Chlorops freidmani* n. sp.**



Figs. 10–16. Structures of *Meromyza* spp. 10–14. *M. turcica* n. sp. 15–16. *M. pleurosetosa*. 10. Head, dorsal view. 11. Scutum and scutellum, dorsal view. 12. Epandrium, dorsal view. 13. Postgonites, ventral view. 14. Postgonite, lateral view. 15. Head, scutum and scutellum, dorsal view. 16. Postgonite, lateral view. (Figs. 15, 16 after Beschovski, 1987).

55a (55b) Arista with long pubescence. Ocellar triangle black with two yellow spots. Abdomen red-brown dorsally..... ***Chlorops pennatus*** **(Duda)**

Meromyza turcica Nartshuk, n. sp.

(Figs. 10–14)

Material Examined

Holotype ♂: male, Antalya, to NE of Bucak, river Korpü Irmagi (37,050923ºN, 31,320474ºE), 1.x.2007 (AO); deposited in ZMUM.

Diagnosis

Similar to *M. pleurosetosa* Beschovski in having some black setae on anepisternum

and palpus black apically. It is distinguished from this species by the darker color of the stripes on scutum, pleural spots, abdomen and by the thinner hind femur. The main differences are in the structure of the male terminalia. The postgonite of the new species is more massive, the posterior process is wide triangular, and the anterior process is separated from posterior, but overlies on posterior process. In *M. pleurosetosa* (Figs. 15, 16) the anterior process is not separated from the posterior and has the appearance of a small projection.

Description

Body yellow, with black stripes on scutum.

Head: (Fig. 10): retreating ventrally in lateral view. Frons longer than wide. Ocellar triangle nearly extending to anterior margin of frons, with black ocellar tubercle and darkened laterally. First flagellomere slightly longer than wide, yellow, arista yellow, nearly bare. Eye bare, the horizontal diameter longer than the vertical one. Gena wider than first flagellomere deep. Vibrissal angle obtuse. Palpus black in apical half.

Thorax: (Fig. 11): Scutum with black, dusted stripes, central stripe extending to scutellum, and scutellum with wide black stripe and black anterior angles. Postpronotum yellow, with blackish spot. Postnotum black dusted. Pleura yellow with black spots on anepimeron and meron, spot on katepimeron reddish. Anepimeron with 3 black setae.

Legs: yellow, with blackish tarsi. Hind femur 2.5 times as thick as hind tibia.

Abdomen: blackish dorsally. Male genitalia (Figs. 12–14): Epandrium yellow, with wide surstylus evenly covered with small setulae. Postgonite wide triangular, anterior process of postgonite black, not projected below posterior process. Posterior process blackish. Body length 2.5 mm.

Etymology

The species epithet is a Latin adjective referring to the location where the holotype was collected.

Comments

The new species may be included in the key to Palaearctic species of the genus *Meromyza* Meigen (Nartshuk and Fedoseeva, 2010) by the following modification:

85(86) There are black hairs on anepisternum (in original paper error—on katepisternum!)... **85a**

85a (85b) In male genitalia postgonite more massive, the posterior process is wide triangular, the anterior process is separated from posterior, but overlies on posterior process. Stripes on scutum and spot on katepisternum darker, hind femur thiner (Figs. 10–14)... ***M. turcica* n. sp.**

85b(85a) In male genitalia postgonite slender, the anterior process is not separated from the posterior and has the appearance of a small projection (Figs. 5, 16). Stripes on scutum and spot on katepisternum not so dark, hind femur thicker..... ***M. pleurosetosa* Beschovski**

DISCUSSION

Only 21 species of Chloropidae were previously recorded from Turkey. The present list contains 64 species of 31 genera, including literature records. Species of all 4 subfami-

lies are present in the Turkish fauna. Forty species are recorded from Turkey for the first time, and three are described as new. Some specimens from the genera *Conioscinella* and *Dicraeus* have not been identified to species because the available material was insufficient. Based on comparisons with the Chloropidae fauna of some neighboring countries, it is assumed that the number of Chloropidae species in Turkey is much larger. Among the neighboring countries the best studied is Bulgaria (Beschovski, 1985), with 144 species. Chloropidae of other neighboring countries are insufficiently studied. Nartshuk (2010a) recorded 51 species from Greece. Georghiou (1977) and Nartshuk (1990, 2010b) treated the Chloropidae fauna of Cyprus, and a total of 20 species have been recorded. Allaverdyan (1956) recorded seven species from Armenia. The fauna of Israel is rich, with over 100 species (Kaplan (1977) 56 of them have been identified to the species level and 32 to the genus level.

The list of Chloropidae species from Turkey includes species with different ranges, most of which are Mediterranean. There are multiregional species (*Oscinella frit, O. nartshukiana, Tricimba humeralis, Polyodaspis ruficornis, Thaumatomyia notata)*, Holarctic species (*Dicraeus tibialis, Oscinella nitidissima, Meromyza nigriventris*), or eurasian species (*Rhodesiella plumiger, Oscinella maura*, *Conioscinella frontella*, *Chlorops pumilionis*). Several species known earlier only in Europe are now known in Asia Minor (*Lasiambia brevibucca*, *Cetema neglecta, Meromyza femorata, M. variegata*).

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