



Original article (Orijinal araştırma)

New records and some new distribution data for the Turkish Nematinae (Hymenoptera: Symphyta: Tenthredinidae) fauna

Türkiye Nematinae (Hymenoptera: Symphyta: Tenthredinidae) faunası için yeni kayıtlar ve bazı yeni dağılımlar

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Abstract

Ten species of the subfamily Nematinae of the Tenthredinidae (Hymenoptera: Symphyta) are recorded for the first time from Turkey: *Cladius compressicornis* (Fabricius, 1804), *Craesus latipes* (Villaret, 1832), *Dineura testaceipes* (Klug, 1816), *Euura annulata* (Gimmerthal, 1834), *Euura leucapsis* (Tischbein, 1846), *Euura obducta* (Hartig, 1837), *Euura oligospila* Förster, 1854, *Nematus crassus* Eschscholtz, 1822, *Pristiphora pallidiventris* (Fallen, 1808), and *Pseudodineura fuscula* (Klug, 1816). New distribution data are given for a further six species. The specimens were collected during 2000-2017 in Northeast Anatolia Region by the author. The number of species in the Turkish Symphyta fauna has risen to 370 with these new records.

Keywords: Fauna, Hymenoptera, new record, Tenthredinidae, Turkey

Öz

Nematinae (Hymenoptera: Symphyta: Tenthredinidae) altfamilyasına ait 10 tür: *Cladius compressicornis* (Fabricius, 1804), *Craesus latipes* (Villaret, 1832), *Dineura testaceipes* (Klug, 1816), *Euura annulata* (Gimmerthal, 1834), *Euura leucapsis* (Tischbein, 1846), *Euura obducta* (Hartig, 1837), *Euura oligospila* Förster, 1854, *Nematus crassus* Eschscholtz, 1822, *Pristiphora pallidiventris* (Fallen, 1808) ve *Pseudodineura fuscula* (Klug, 1816) Türkiye için yeni kayıt olarak belirlenmiştir. Altı tür için de yeni dağılım bilgileri verilmiştir. Örnekler 2000-2017 yılları süresince yazar tarafından Kuzey Doğu Anadolu Bölgesi'nden toplanmıştır. Bu türlerle birlikte Türkiye Symphyta faunası 370 türe ulaşmıştır.

Anahtar sözcükler: Fauna, Hymenoptera, yeni kayıt, Tenthredinidae, Türkiye

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Introduction

Turkey has a rich and varied fauna and flora because of its diverse topography and climatic conditions. Turkey's location at the junction of the Euro-Siberian, Mediterranean and Turanian zoogeographic regions, and the fact that it is a crossroad between the continents of Europe, Asia and Africa, only adds to this richness. One of the most remarkable regions of the world is characterized by the major extension of biodiversity areas such as the Caucasus, Irano-Anatolian and Mediterranean Basin into Turkey (Myers et al., 2000).

The order Hymenoptera is one of the most diverse and speciose groups of insects and includes about 153,000 species world-wide according to Aguiar et al. (2013), or more than 250,000 described species according to Gullan & Cranston (2010).

The Symphyta (Hymenoptera) are structurally primitive. Most families include relatively few taxa, with a total of 812 genera and 8630 species in the world (Taeger et al., 2018). There have been 360 determined symphytan species in Turkey (Çalmaşur, 2019). Symphytans may be recognized by the absence of a marked constriction between the first abdominal segment and second, and by the existence of at least one closed anal cell in the forewing. The larvae have a well-developed head capsule and most have thoracic legs; the majority of free-feeding larvae are caterpillar-like with abdominal prolegs. The larvae of Orussidae are not phytophagous (Gauld & Bolton, 1988; Goulet & Huber, 1993). The Tenthredinoidea superfamily is the most well-known of Symphyta, containing 7614 species in the nine families (Argidae, Blasticotomidae, Cimbicidae, Diprionidae, Electrotomidae, Pergidae, Tenthredinidae, Xyelidae and Xyelotomidae) (Taeger et al., 2018). The Tenthredinidae is the best represented family in the northern temperate regions; species wealth tends to increase towards the north. There are more than 6000 species in 360 genera in temperate regions of the Northern Hemisphere (Liston, 1995; Goulet & Huber, 1993; Taeger & Blank, 1998; Lacourt, 1999). The Tenthredinidae are commonly called sawflies; it is the biggest family of the nine (Comstock, 1964), and it includes 415 genera, 5721 species (Taeger et al., 2018).

The first extensive work on Turkey's sawfly fauna was achieved by Guichard & Harvey (1967). Benson (1966, 1968) studied the fauna of Turkish Symphyta, and described new taxa and constructed keys to some genera and species take place in Turkey. The first more recent contributions to data on Turkish sawflies fauna were presented by Çalmaşur & Özbek (2004a, b).

In recent years, several studies have been published on Turkish sawflies and a number of new records have been reported (Çalmaşur, 2006, 2011, 2019; Çalmaşur & Özbek, 2004c, 2006a, b; Hastaoğlu Örgen & Başbüyük, 2006; Korkmaz et al., 2010a, b).

In this study are reported ten species of sawflies for the first time from Turkey. These species records combined with data from the literature reveal that the total number of symphytan species is well above 370 in Turkey.

Materials and Methods

Materials

Specimens included were collected during 2000-2017 in various localities of Turkey by the author. Although the specimens have been collected in different parts of the country, the majority of the sawfly samples were collected from eastern Turkey. Material collected by insect net. Samples are deposited in EMET (Entomology Museum Erzurum, Turkey).

Methods

For determination of the material, Benson (1952) and Zhelochovtsev (1988) were used. Undetermined specimens were identified and others confirmed by Dr. David R. Smith. Images of samples were taken with a Leica MZ 16 A with computer. The genera and species are listed in alphabetic order and global distribution data organized according to Taeger et al. (2018). All records are arranged in the following way at material examined, province, town, local place, geographic name and altitude (if available), date of collecting, number of individuals as male and female. New records of species are marked by an asterisk (*).

Results

Nematinae

**Cladius* (= *Priophorus*) *compressicornis* (Fabricius, 1804)

Mouthparts normal; maxillary palp longer than cardo with stipes, and articles 3 and 5 the longest. Labial palps about twice as long as ligula. Clypeus subtruncate in front, very narrow. Malar space only about half as long as distance between antennal sockets. Inter-antennal crest very prominent, medially carinate. Antenna in female subcylindrical and about as long as costa and stigma of forewing; in male laterally compressed (so that third segment is scarcely four times longer than broad) with each segment produced at the apex beneath, as long as body with head. Wing venation as in *Pristiphora*. Claws with swollen basal lobe and an inner tooth, well separated from end tooth and longer than it. Body length: 5-8 mm (Figures 1a, 2a, 3a).

Global distribution: Canada, China, Europe, Japan, Russia, USA.

Distribution in Turkey: new for Turkish fauna.

Material examined: Rize, Çamlıhemşin, Ayder, 1200-1550 m, 30.VII.2000, ♀.

Host plants: unknown.

Cladius (= *Trichiocampus*) *grandis* (Serville, 1823)

Antenna brownish; head black; labial and maxillary palpi orange. Thorax orange with pectus, cervical sklerites, median portion of pronotum, and all of mesonotum and metanotum black. Abdomen and legs entirely orange. Wings hyaline; costa orange; stigma black; veins brownish. Average length: 8-9 mm (Figures 1b, 2b, 3b).

Global distribution: Canada, Europe, Russia, Turkey, USA.

Distribution in Turkey: Antalya, Bursa, Edirne, Erzurum, Eskişehir, İstanbul, İzmit, Karabük, Yozgat (Liston, 1995; Lacourt, 1999).

Material examined: Erzurum, 4. Kuyu, 1850 m, 31.V.2011, ♀.

Host plants: *Populus balsamifera* L., *P. nigra* L., *P. tremula* L., *Salix caprea* L. (Taeger & Blank, 1998).

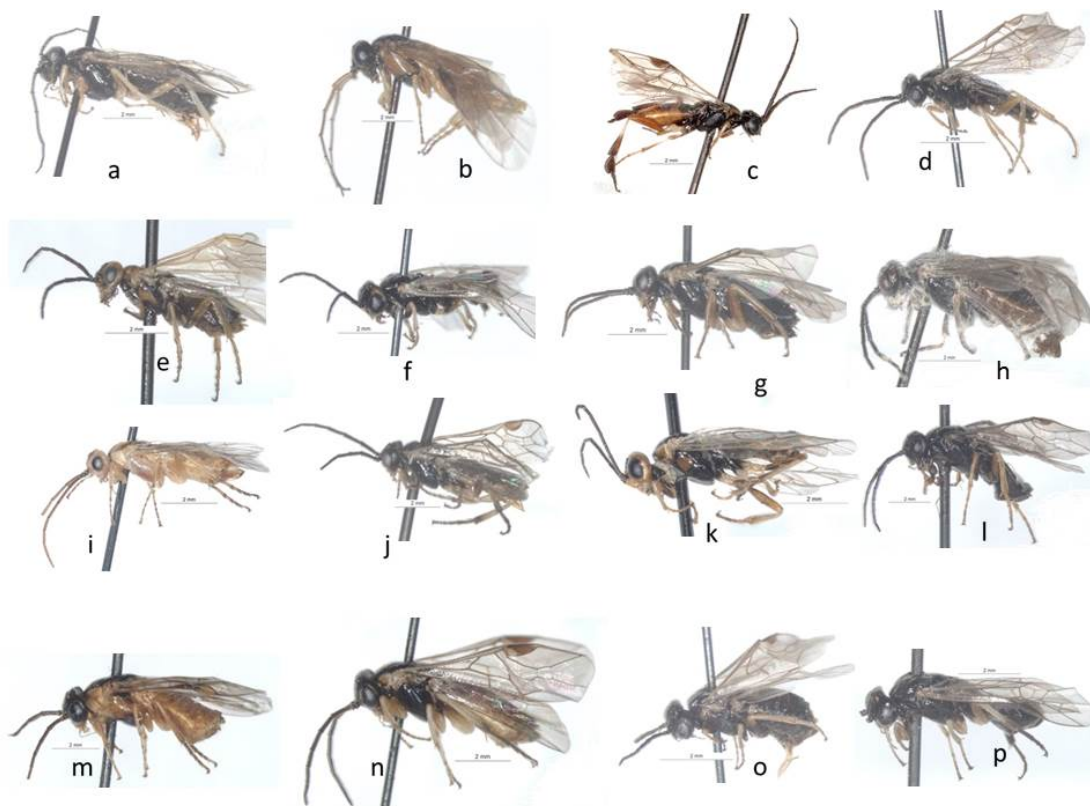


Figure 1. Lateral view of Sawfly species: a) *Cladius compressicornis*; b) *Cl. grandis*; c) *Craesus latipes*; d) *Dineura testaceipes*; e) *Euura annulata*; f) *E. leucapsis*; g) *E. leucosticta*; h) *E. obducta*; i) *E. oligospila*; j) *E. vaga*; k) *Nematus crassus*; l) *Pristiphora araratensis*; m) *Pr. conjugata*; n) *Pr. pallidiventris*; o) *Pseudodineura fuscula*; p) *Stauronematus platycerus*.

****Craesus latipes* (Villaret, 1832)**

Adults are similar to *C. septentrionalis* (L.) but slightly smaller (7.5-10 mm), with the cloudy apex of the fore wings less extensive and the hind femora of females reddish. Mesopleura wrinkled, without distinct punctation. POL equal or more than OCL (10:0.9-10) (Figures 1c, 2c, 3c).

Larvae black or brownish black, with the legs and underside of the last few abdominal segments pale yellowish in *C. latipes*. Head black; body yellow to blue-green, variably marked with orange-yellow, and with prominent black along the sides in *C. septentrionalis*.

Global distribution: Europe, Russia.

Distribution in Turkey: new for Turkish fauna.

Material examined: Bayburt, Çalidere, 1850 m, 16.VI.2010, 2 ♂♂.

Host plants: *Betula alba* L., *B. pendula* L. (Lacourt, 1999).

****Dineura testaceipes* (Klug, 1816)**

Head black, except for pale labrum, sometimes whole clypeus, and more or less supraclypeal area; antenna from completely black to completely pale. Thorax black: darkest specimens with only tegula and upper posterior corner of pronotum pale; palest specimens with tegula, whole pronotum, broad margins of mesoscutal lobes, anterior of mesoscutellum, and mesepisternum except for ventral quarter pale. Abdomen from nearly completely black, except for pale hypopygium, valvifer 2, and cerci, to extensively pale on all

sterna and downturned lateral parts of terga, with terga 8-10 completely pale; dorsum of terga 1-7 always mainly black. Body length: ♀ 5.0-6.5 mm, ♂ 4.2-5.5 mm (Figures 1d, 2d, 3d).

Global distribution: Europe, Russia.

Distribution in Turkey: new for Turkish fauna.

Material examined: Erzurum, Konaklı Dam Basin, 2100 m, 06.VI.2017, 2 ♂♂.

Host plants: *Crataegus* spp., *Sorbus* spp., *Cotoneaster* spp. (Taeger & Blank, 1998).

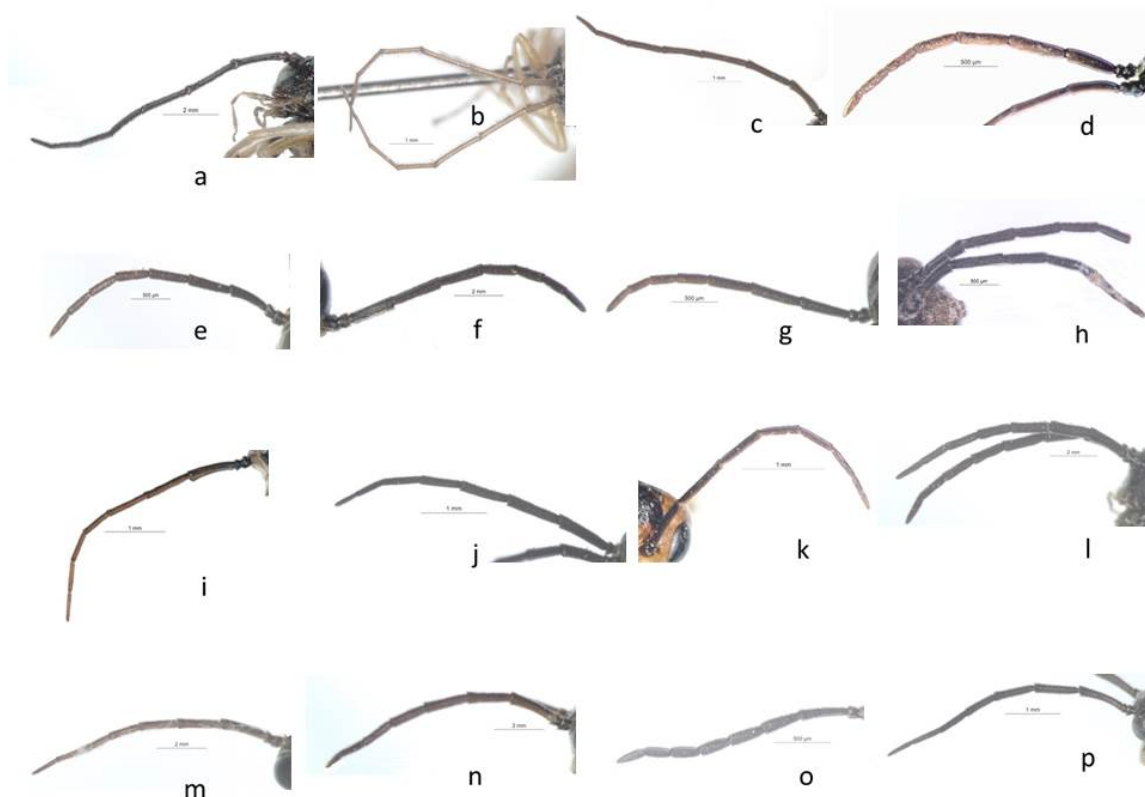


Figure 2. Antenna of Sawfly species: a) *Cladius compressicornis*; b) *Cl. grandis*; c) *Craesus latipes*; d) *Dineura testaceipes*; e) *Euura annulata*; f) *E. leucapsis*; g) *E. leucosticta*; h) *E. obducta*; i) *E. oligospila*; j) *E. vaga*; k) *Nematus crassus*; l) *Pristiphora araratensis*; m) *Pr. conjugata*; n) *Pr. pallidiventris*; o) *Pseudodineura fuscula*; p) *Stauronematus platycerus*.

****Euura annulata* (= *Pachynematus annulatus*) (Gimmerthal, 1834)**

On head, only temporoparietal spots ochreous. Pronotal angles usually black. Saw with 3-4 readily noticeable denticles. Third antennal segment shorter than larger ocular diameter (in female 10:12-13). Body length: 3.5-5 mm (Figures 1e, 2e, 3e).

Global distribution: Canada, Europe, Russia, USA.

Distribution in Turkey: new for Turkish fauna.

Material examined: Erzurum, 4. Kuyu, 1850 m, 11.VI.2016, 2 ♀♀.

Host plants: *Rumex obtusifolius* L. (Taeger & Blank, 1998).

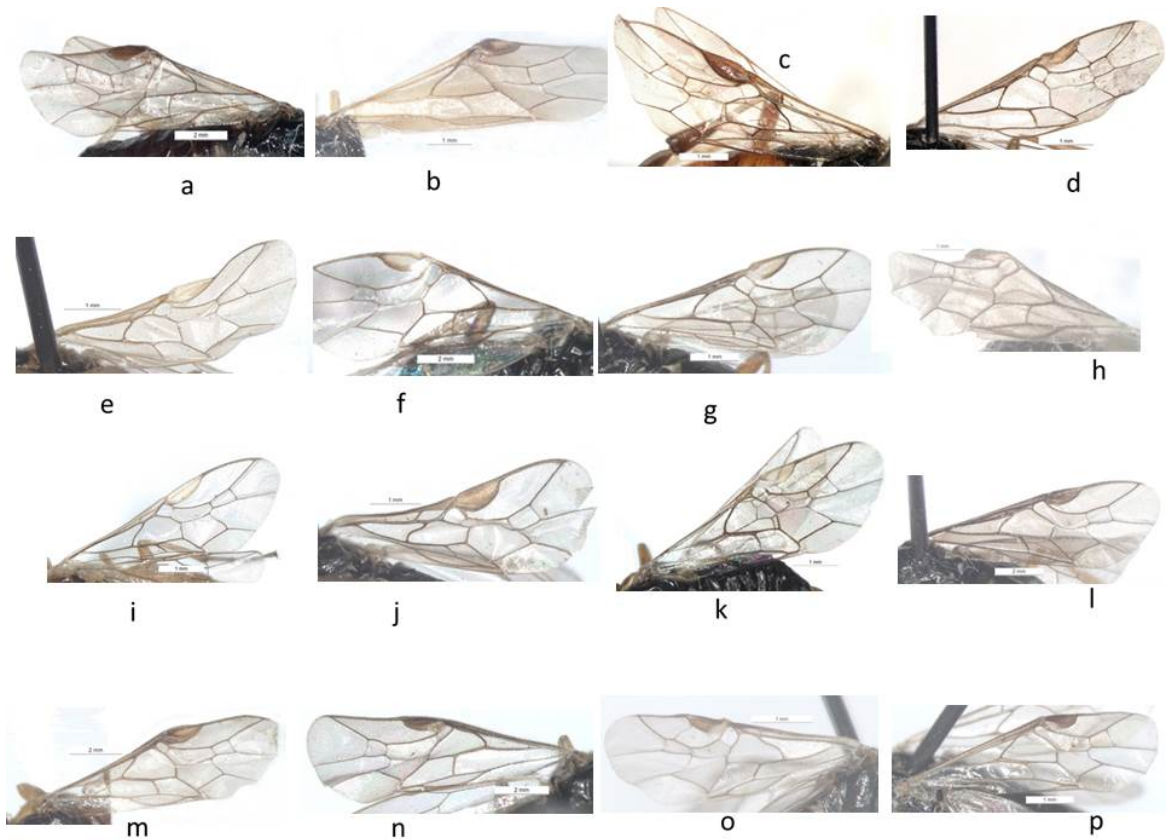


Figure 3. Wing of Sawfly species: a) *Cladius compressicornis*; b) *Cl. grandis*; c) *Craesus latipes*; d) *Dineura testaceipes*; e) *Euura annulata*; f) *E. leucapsis*; g) *E. leucosticta*; h) *E. obducta*; i) *E. oligospila*; j) *E. vaga*; k) *Nematus crassus* l) *Pristiphora araratensis*; m) *Pr. conjugata*; n) *Pr. pallidiventris*; o) *Pseudodineura fuscula*; p) *Stauronematus platycerus*.

****Euura (=Phyllocolpa) leucapsis* (Tischbein, 1846)**

Head and thorax black with light colored pattern. Antennae in male shorter than C and stigma. Mesopleura black or with small yellow spots on pronotum, only its angles light colored. Hind femora largely black. Body length: 3.5-5 mm (Figures 1f, 2f, 3f).

Global distribution: Europe, Russia.

Distribution in Turkey: new for Turkish fauna.

Material examined: Erzurum, Köprüköy, Örentaş, 1900-2100 m, 12.VI.2001, 2 ♀♀; Oltu, Çamlıbel, 1700 m, 19.VI.2013, 2 ♀♀.

Host plants: *Salix cinerea* L. (Kopelke, 2007).

***Euura leucosticta (=Phyllocolpa leucosticta)* (Hartig, 1837)**

Body entirely black, tegulae light colored. Scutellum flat, without punctation. Antennal socket with hairs, matte, inner lines of antennal segments brownish. Inner spur of hind tibia curved. Stigma and legs entirely light colored. Body length: 4.5-5.5 mm (Figures 1g, 2g, 3g).

Global distribution: Algeria, Europe, Russia.

Distribution in Turkey: Gümüşhane (Benson, 1968).

Material examined: Erzurum, Aşkale, Kandilli, Ortabahçe, 1850 m, 04.VI.2015, 10 ♀♀, ♂.

Host plants: *Salix acuminata* Schleich, *S. atrocinerea* Brot., *S. aurita* L., *S. caprea* L., *S. cinerea* L., *S. pedicellata* Desf. (Taeger & Blank, 1998).

****Euura obducta* (= *Pachynematus obductus*) (Hartig, 1837)**

Clypeus like entire head black (but clypeal anterior margin sometimes white), thorax black, only corners of pronotum may be white. Stigma black or dark brown. Hind tarsus shorter than hind tibia. Sheath dark brown to black, apically rounded, process on abdominal tergite VIII. in male markedly projecting, pointed. Body length: 5-6 mm (Figures 1h, 2h, 3h).

Global distribution: Canada, Europe, USA.

Distribution in Turkey: new for Turkish fauna

Material examined: Erzurum, 4. Kuyu, 1850 m, 30.V.2001, ♀.

Host plants: *Carex* sp., *Festuca* sp., *Poa* sp. (Taeger & Blank, 1998).

****Euura oligospila* (= *Nematus oligospilus*) (Förster, 1854)**

Body entirely yellowish. Antenna pale yellow, scape and pedicel black, upper surface of flagellum brown. Head with black spot posterior to postocellar area. Mesoscutum with three black stripes, metapostnotum with black medial spots Wings hyaline, costa and stigma yellow. Other veins brownish. Body length: 5-7 mm (Figures 1i, 2i, 3i).

Global distribution: Argentina, Australia, Canada, Chile, Europe, Lesotho, New Zealand, Pakistan, Russia, South Africa, USA.

Distribution in Turkey: new for Turkish fauna.

Material examined: Erzurum, Atatürk University Campus, 1850 m, 19.IX.2003, ♀, 25.VI.2015, ♀; Aziziye, Atlıkonak, 1850 m, 11.VI.2018, ♀; Köprüköy, Örentaş, 2000 m, 12.VI.2001, ♀.

Host plants: *Salix alba* L., *S. caprea* L., *S. fragilis* L., *S. hastata* L., *S. pentandra* L. (Taeger & Blank, 1998).

***Euura vaga* (= *Pachynematus vagus*) (Fabricius, 1781)**

Process on abdominal tergite VIII in male not large; Clypeus in female black, weakly notched. Body length: 7mm (Figures 1j, 2j, 3j).

Global distribution: Canada, China, Europe, Turkey, USA.

Distribution in Turkey: Sivas (Taeger et al., 2018).

Material examined: Rize, İkizdere, Ovit, 1600-2400 m, 29.VII.2000, ♀.

Host plants: Grasses, *Carex nigra* (L.) (Taeger & Blank, 1998).

****Nematus crassus* Eschscholtz, 1822 (Det.: by L. Zombori)**

Body thick, head black in the middle, of a nut brown on the sides, parts of the mouth yellow; antennae longer than the half of the body, filiform, black, border of the thorax brown; two longitudinal lines on the thorax, the greater part of the thorax chestnut brown; abdomen convex, shining black; wings longer than the body; legs yellow. Body length: 8-9 mm (Figures 1k, 2k, 3k).

Global distribution: Canada, Europe, Japan, Russia.

Nearctic region (Taeger et al., 2018).

Distribution in Turkey: new for Turkish fauna.

Material examined: Erzurum, Köprüköy, Örentaş, 2000 m, 12.VI.2001, ♀.

Host plants: *Populus* sp., *Rumex obtusifolius* L., *Salix fragilis* L. (Taeger & Blank, 1998).

***Pristiphora araratensis* Haris, 2006**

Female. Black, including antennae, mouthparts and palpi. All coxae and trochanters, basal fifth of hind femur, basal third of middle and fore femora black. Apical three segments of tarsi darkened. Other parts of legs: the remaining parts of femora, entire tibiae, first and second segments of tarsi ochraceous. Venation black. Costa, subcosta and stigma dark brown. Wings dark infusate (darkest in the genus *Pristiphora*). Head moderately densely and moderately deeply punctured, shiny. Frontal area not marked. Distance of the hind ocellus from the hind margin of the head about as long as the diameter of an ocellus. Mesonotum, mesoscutellum, mesoscutellar appendage and mesopleuron strongly shiny, hardly, sporadically, superficially and shallowly punctured. Claws with small inner tooth. Sawsheath emarginated in dorsal view. Body length: 6.0 mm (Figures 1l, 2l, 3l).

Holotype: female, Turkey, Kars, Mts. Ararat, 04. 06. 1989, leg. Podlussanyi. The holotype is deposited in the Hungarian Natural History Museum, Budapest.

Global distribution: Turkey.

Distribution in Turkey: Ağrı (Ağrı Mt) (Haris, 2006).

Material examined: Bingöl, Çirişli Pass, 2000 m, 11.VI.2002, ♂. Erzurum: Atlıkonak, 2000 m, 11.VI.2016, ♀, Hasankale, 1700 m, 11.VI.2001, ♂, Umudum, 2000 m, 26.VI.2003-30.VI.2017, 6 ♀♀, 5 ♂♂. Kars: Karakurt, 1500 m, 04.V.2003, ♀, 2 ♂♂.

Host plants: unknown.

***Pristiphora conjugata* (Dahlbom, 1835)**

Stigma light colored, more so than C. Antennae basally yellow or brown. Lower part of face light colored. Mesopleura yellow, abdomen with wide medial black stripe. Body length: 6-7.5 mm (Figures 1m, 2m, 3m).

Global distribution: China, Europe, Japan, Russia, Turkey.

Distribution in Turkey: Ankara (Taeger et al., 2018).

Material examined: Erzurum, 12.VII.2002, 1850 m, 2♀♀.

Host plants: *Populus nigra* L., *P. tremula* L., *Salix caprea* L., *S. fragilis* L. (Taeger & Blank, 1998).

****Pristiphora pallidiventris* (Fallen, 1808)**

On hind legs femoral and tibial apices and entire tarsi black. Stigma darker than C; abdominal tergite IX in female apically black. Claw with denticle. Antennae longer than head and thorax together. Abdomen in male ventrally completely light colored. Body length: 5-6 mm (Figures 1n, 2n, 3n).

Global distribution: Canada, Europe, Japan, Russia.

Distribution in Turkey: new for Turkish fauna.

Material examined: Artvin, Oruçlu, 21.V.2006, ♀. Erzurum: Tortum, Esendurak, 1500 m, 11.IX.2001, ♀; Uzundere, 950 m, 04.V.2017, ♀.

Host plants: Rosaceae, *Rubus ideaus* L. (Taeger & Blank, 1998).

****Pseudodineura fuscula* (Klug, 1816)**

Sheath short, apically thick and obtuse. Femora black, apically somewhat ochreous. Pronotal angles black. Length of eighth antennal segment 2.5 times its width. (Figures 1o, 2o, 3o).

Global distribution: Europe, Russia, USA.

Distribution in Turkey: New for Turkish fauna

Material examined: Erzurum, 4. Kuyu, 1850 m, 11.V.2003, 2 ♀♀; 23.V.2016, ♀.

Host plants: *Ranunculus cassubicus* L., *R. repens* L., *R. platanifolius* L. (Taeger & Blank, 1998).

***Stauronematus (=Pristiphora) platycerus* (Hartig, 1840)**

Pronotum completely black, or only extreme upper and rear edges brown. Female head in dorsal view subparallel behind eyes, male only slightly contracted. Abdomen entirely black, mesepisternum more densely pubescent above than below but usually without entirely glabrous area on lower half. Body length: 5-6.5 mm (Figures 1p, 2p, 3p).

Global distribution: China, Europe, Iran, Russia, Turkey.

Distribution in Turkey: Sivas (Taeger et al., 2018).

Material examined: Erzurum, 1850 m, 02.VIII.2016, 3 ♀♀; Uzundere, 1000 m, 12.VI.2002, 2 ♀♀.

Host plants: *Alnus* sp., *Populus* sp., *Salix* sp. (Liston, 2007).

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