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A faunistic and systematic study on Pimplinae (Hymenoptera: Ichneumonidae) in Eastern and Northeastern parts of Turkey

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A b s t r a c t : This is a faunistic and systematic study on the subfamily Pimplinae (Hymenoptera: Ichneumonidae) occurring in eastern and northeastern parts of Turkey, during 1999-2004. Totally, 55 species in 24 genera and 5 tribes were recognized. Of these, 16 species are new for the Turkish fauna. New distribution areas are added for almost all previous known species. Keys to the tribes, genera and species are prepared. New hostes are designated for some species. Total species in the subfamily Pimplinae have been recorded occurring in Turkey compile 77 species in 30 genera.

K e y w o r d s : Pimplinae, Ichneumonidae, Hymenoptera, Fauna, Systematics, new Records, new Hosts, Turkey.

Introduction

The Ichneumonidae (Hymenoptera), is a widespread and extremely large family, with an estimated 60.000 extant species in 35 genera worldwide (TOWNES 1969). GAULD (2000) estimated, by extrapolating from recent collections that the total global species-richness of the family will be more than 100.000 species. The family is most species-rich in the temperate regions and the humid tropics; relatively more species in cool moist climates than in warm dry ones (GAULD 1991). When the subfamilies are taking into account some are more species rich in the tropics than in cool temperate habitats (GAULD 1987).

As native scientists ÖZDEMİR & KILINÇER (1990) studied the Pimplinae fauna of sentral part of Turkey with their hosts and they found 16 species in 7 genera. KOLAROV & BEYARSLAN (1994) listed 18 species, of which 7 species were new for the Turkish fauna. KOLAROV (1995) has prepared "A Catalogue of the Turkish Ichneumonidae" and listed 18 species in 34 genera of the subfamily Pimplinae. Since then several authors (KOLAROV 1997; KOLAROV et al. 1997a, KOLAROV et al. 1997b, KOLAROV et al. 1999, KOLAROV et al. 2002, ÇORUH et al. 2002, GÜRBÜZ 2005, KOLAROV & GÜRBÜZ 2004, YURTCAN & BEYARSLAN 2005, YURTCAN & BEYARSLAN 2006) have made contributions to the Turkish Pimplinae fauna. In this paper 16 species of Pimplinae are recorded for the first time from Turkey. With the above mentioned contributions and the present paper the complete number of species of Pimplinae known from Turkey increased to 77.

Material and Methods

Present study was conducted in eastern and north eastern parts of the country, which comprise Ardahan, Artvin, Bayburt, Bingöl, Bitlis, Erzincan, Erzurum, Gümüşhane, Iğdır, Kars, Muş and Rize provinces during 1999-2004. However, more systematic collections were made mainly in Erzurum Province, which has the largest land among listed provinces. In the collection of the material various methods were applied: 1) sweeping vegetation, especially flowering plants, with insect net, 2) Malaysia trap were used in several locations, 3) larvae and pupae of holometabolous insects were collected and reared in laboratory conditions to obtain adults and parasitoids if present 4) in the late fall and early spring, adults were collected under stones, logs and similar meters. In the preparation of the insect samples known standard methods were used. For the identification of the ichneumonid specimens the papers of TOWNES (1969) and KOLAROV (1997) were used. In the conformation and determination of undetermined material Prof. Dr. Janko Kolarov helped us. To some extend reference material in our museum EMET (Entomology Museum, Erzurum, Turkey) were also helpful in this respect. Identification keys were presented for tribes, genera and species by modifying the publications of TOWNES (1969) and KOLAROV (1997). The genus having only one species short diagnostic characters was indicated for this species. The body parts having taxonomic importance were drawn under a Nikon Stereoscopic Zoom Microscope SMZ1500 binocular microscope. The scale is 1 mm. Following information is given for the material listed: province, town, village or specific locality, altitude, date number of specimens, male and female. Terminology for descriptions generally followed TOWNES (1969) and KOLAROV (1997).

Results

The result of the present study is the identification of 55 species in 24 genera in the subfamily Pimplinae. Of which, 16 species are new for the Turkish fauna.

P i m p l i n a e WESMAEL 1845

Key to Tribes of Pimplinae

- 1 Mesonotum distinctly transversely rugose (fig. 1a)2
- Mesonotum not rugose or weakly rugose over a small part of its surface.....3
- 2 Abdominal tergites nearly always with distinct dorsolateral carinae originating near spiracles and running towards tergal apex; last abdominal tergite in females elongate, rounded apically (fig. 1e); in males elongate apically (fig. 1b,c,f); with or without areolet; tarsal claws with a basal tooth **Delomeristini**
- Abdominal tergites without distinct dorsal carinae from spiracles to tergal apex; last abdominal tergite in females rodlike elongate apically (fig. 1d); with areolet; tarsal claws with or without a basal tooth **Rhyssini**
- 3 Mesopleural suture with a slight angular curve at its-middle (fig. 2a); if a white ring on metatibiae then base of the latter white; nervellus intercepted at, above or below its middle4

- Mesopleural furrow straight without angular curve at its middle (fig. 2b); if there is a white ring on metatibiae then base and apex of the latter are infusate; nervellus intercepted above its middle **Pimplini**
- 4 Tarsomere V usually broadened, much broader than I (fig. 32b); occipital carina not interrupted dorsally; without areolet; ovipositor gradually tapered towards apex in lateral view (fig. 32d)..... **Polysphinctini**
- Tarsomere V usually not broadened, narrower than I or if broader, then the occipital carina interrupted dorsally; rarely without areolet; ovipositor with parallel dorsal and ventral sides in lateral view (fig. 9)..... **Ephialtini**

Key to Genera of Delomeristini

- 1 Abdominal tergites II-IV dull, sometimes with indistinct superficial punctation, usually without white apical stripe; frons completely black, genae in females white, face in males with light markings **Delomerista** FOERSTER
- Abdominal tergites II-IV shining, distinctly punctate, with white apical stripe; frons completely yellow, genae in females different.....2
- 2 First abdominal tergite with basolateral angular ledges, (fig. 4b); spiracles not touching the lateral tergal carinae; ovipositor longer than body, with sinuate apex **Hybomischos** BALTAZAR
- First abdominal tergite without basolateral angular ledges with spiracles touching the lateral tergal carinae; ovipositor not longer than body, with straight apex..... **Perithous** HOLMGREN

Genus *Delomerista* FOERSTER 1868

Delomerista mandibularis GRAVENHORST 1829

Body black; areolet rectangle, intercubitus II. interrupted (fig. 3a); abdominal tergites III.-IV. designed (fig. 3b); ovipositor sheath as long as 0.6 of fore wing length, upper and lower valve equal (fig. 3c).

D i s t r i b u t i o n : Austria, Belgium, Bulgaria, Czech Republic, Estonia, Finland, France, Germany, Great Britain, Hungary, Italy, Latvia, Norway, Poland, Romania, Russia, Central Sweden, Switzerland, The Netherlands, former Yugoslavia, Nearctic region (ANONYMOUS 2007).

M a t e r i a l : Bingöl: Soğukçeşme, 1650 m, 3.VI.2003, ♀. Kars: Sarıkamış, Karakurt, TCK Çeşmesi, 1500 m, 12.VII.2003, ♀. **New for the Turkish fauna.**

Genus *Hybomischos* BALTAZAR 1961

Hybomischos septemcinctorius (THUNBERG 1822)

Body yellowish-brown; areolet rectangle, intercubitus II. interrupted (fig. 4a); first abdominal tergite with basolateral angular ledges (fig. 4b); spiracles not touching the lateral tergal carinae; ovipositor longer than body, with sinuate apex, upper valve longer than lower valve (fig. 4c).

D i s t r i b u t i o n : Caucasus, Europe, Southwest of Kazakhstan (KOLAROV 1997).

M a t e r i a l : Bingöl: Yenibaşlar, 1400 m, 3.VI.2003, ♀. Erzurum: Şenkaya, Turnalı, 1750 m, 10.VIII.1997, ♂; Oltu, Çamlıbel, 1700 m, 9.VIII.2000, ♀.

Genus *Perithous* HOLMGREN 1859**Key to species of *Perithous***

- 1 Third abdominal tergite wider than long (fig. 5c); face yellowish brown; length of clypeus 1/2 its wide (fig. 5a); metafemora yellowish brown, apex of tibiae and tarsal claws, others yellow ***P. divinator***
- Third abdominal tergite longer than long (fig. 5d); face pale yellow, length of clypeus almost 1/3 its wide (fig. 5b), metafemora redish brown, apex of tibiae and tarsal claws black, others brown ***P. scurra***

***Perithous divinator* ROSSIUS (1790)**

Distribution: Austria, Belgium, Bulgaria, Corsica, Czech Republic, Finland, France, Germany, Great Britain, Hungary, Italy, Moldova, Norway, Poland, Romania, Slovakia, Spain, Sweden, The Netherlands, Yugoslavia, Nearctic region, Near East Nearctic region, Oriental region (ANONYMOUS 2007).

Material: Erzurum: University field, 1850 m, 25.VII.2003, ♀♀, 4.VIII.2003, ♀, 15.VIII.2003, ♂, Oltu, Arıbağçe, 2000-2400 m, 20.VIII.2001, ♂, Kaleboğazi, 1450 m, 18.IX.2001, ♂, Olur, Yeşilbağlar, 1000 m, 29.VI.2003, ♂, Uzundere, Şelale, 1000 m, 9.VI.1996, ♂.

***Perithous scurra* PANZER 1822**

Distribution: Austria, Belarus, Belgium, Bulgaria, Corsica, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Latvia, Moldova, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, The Netherlands, former Yugoslavia, Near East, Nearctic region, Oriental region (ANONYMOUS 2007).

Material: Erzurum: Uzundere, 1100 m, 16.V.2003, ♂.

Key to genera of *Ephialtini*

- 1 Abdominal tergite II with a pair of oblique furrows (fig. 6a,b) beginning nearly at its basomedial margin and running toward spiracles; first abdominal tergite comparatively long, usually as long as the second one; nervellus intercepted above its middle or rarely middle; the two radiomedial veins of the areolet nearly equal in length (fig. 16a); ovipositor cylindrical, usually not shorter than body 2
- Abdominal tergite II without distinct longitudinal-oblique furrows, first tergite shorter; areolet oblique; nervellus intercepted above its middle (fig. 7c); third radiomedial vein longer than second or absent (fig. 8a); ovipositor compressed or cylindrical, often quite short 3
- 2 Lower valve of ovipositor broadened apically and concealing the apex of upper valve, upper valve rounded dorsally and without a dorsal row of denticles (fig. 9) ***Dolichomitus* SMITH**
- Lower valves of ovipositor neither apically broadened nor concealing the apex of upper valve; upper valve with a dorsolateral row of denticles (fig. 15c) ***Paraperithous* HAUPT**
- 3 Occipital carina always distinct medially, straight or slightly curved upwards 4
- Occipital carina concave medially, weakly curved downwards, sometimes indistinct, rarely absent 6

- 4 Nervellus intercepted below its middle or non-intercepted (fig. 7c); areolet absent (fig. 7b); hypopygium in females broad and protruding backwards; ovipositor gradually tapered towards apex and curved upwards (fig. 7e)..... ***Clistopyga*** GRAVENHORST
- Nervellus intercepted above its middle; sometimes areolet present (fig. 22a,b); hypopygium in females not protruding backwards; ovipositor straight with parallel sides (fig. 22c).....5
- 5 Areolet usually present (fig. 22a,b); propodeum more often without distinct subapicolateral swellings; basal tooth of ovipositor not enlarged, not higher than the others. (fig. 22c)..... ***Tromotobia*** FOERSTER
- Areolet absent (fig. 23a,b); propodeum with distinct subapicolateral tubercles in females, in males these are weaker; basal denticle of ovipositor enlarged and higher, than the others (fig. 23g)..... ***Zaglyptus*** FOERSTER
- 6 Nervellus intercepted below its middle (fig. 16c); ovipositor often compressed, shorter than fore wing; metatarsomere II shorter than V or not more than 1.4 times as long as tarsomere V..... 7
- Nervellus intercepted near or above its middle (fig. 13b); ovipositor compressed or cylindrical, often longer than fore wing, if shorter than metatarsomere II 1.5-2 times as long as V.....9
- 7 Abdominal tergite II. with distinct oblique furrows; the face in both sexes yellow; second recurrent vein emerging from outer corner of areolet as an extension of third radiomedial vein (fig. 8a); apex of upper valve of ovipositor slightly impressed after the node (fig. 8b)..... ***Acropimpla*** TOWNES
- Abdominal tergite II without oblique furrows; clypeus and face in both sexes black or of same colour as the head; second recurrent vein beginning between middle and outer corners of areolet (fig. 16a); apex of upper valve of ovipositor convex or flat or very rare barely concave laterally after the node (fig. 16d)..... 8
- 8 Propodeum long, with clear and long, closely positioned mediolongitudinal carinae (fig. 17d); first abdominal tergite slender, 1.5-2 times as long as wide; scapus dark or, rarely, with a white spot beneath..... ***Endromopoda*** HELLEN
- Propodeum usually quite short, with more broadly separated mediolongitudinal carinae (fig. 17e); abdominal tergite I not so slender, usually not more than 1.5 times as long as wide; scapus often lightened beneath..... ***Scambus*** HARTIG
- 9 Clypeus strongly convex at least in basal half; ovipositor slightly compressed, the sheath 0.3-0.7 times as long as fore wing; metatibiae mostly with white and dark rings..... 10
- Basal half of clypeus flat; ovipositor different; metatibiae usually without distinct white and dark rings 11
- 10 Propodeum quite convex in lateral view; nervellus intercepted at or near its middle; clypeus in males black ***Gregopimpla*** MOMOI
- Propodeum not so convex in lateral view; nervellus intercepted near its upper third (fig. 13b); face and clypeus in males yellow ***Iseropus*** FOERSTER
- 11 Lower mandibular tooth longer than the upper one; clypeus 2.5 times broader than long; flat, yellowish-red, in males white; ovipositor sheath 1.8-5 times as long as fore wing; apex of ovipositor depressed, basal denticles at apices of lower valve strongly bent towards the base of ovipositor (fig. 10b)..... ***Ephialtes*** GRAVENHORST
- Lower mandibular, tooth not longer than the upper one; clypeus 1.8 times broader than long, black or red; ovipositor sheath 1-2 times as long as fore wing; apex of ovipositor cylindrical or slightly compressed, basal denticles at apices of lower valve weakly bent towards the base of ovipositor (fig. 11 e,f)..... 12
- 12 Mediolongitudinal carinae of propodeum distinct on its basal ¼; body quite stout or moderately slender ***Exeristes*** FOERSTER
- Mediolongitudinal carinae of propodeum indistinct; body not stout and slender..... ***Liotryphon*** ASHMEAD

Genus *Clistopyga* GRAVENHORST 1829

Clistopyga rufator HOLMGREN 1854

Body brown; pronotum with carina and lobe in lateral (fig. 7a); areolet absent (fig. 7b), nervellus intercepted below its middle or non-intercepted (fig. 7c); abdominal tergites II. IV. designed (fig. 7d); hypopygium in females broad and protruding backwards; ovipositor gradually tapered towards apex and curved upwards (fig. 7e).

Distribution: Austria, Bulgaria, Finland, France, Germany, Great Britain, Hungary, Latvia, Poland, Romania, former Russia, Slovakia, Sweden, and The Netherlands (ANONYMOUS 2007).

Material: Erzurum: University field, 1850 m, 15.VII.2003, ♀. Kars: Sarıkamış, Karakurt, 1500 m, 20.VIII.2003, ♀. **New for the Turkish fauna.**

Genus *Acropimpla* TOWNES 1960

Acropimpla pictipes GRAVENHORST 1829

Body black, the face in both sexes yellow; second recurrent vein emerging from outer corner of areolet as an extension of third radiomedial vein (fig. 8a); abdominal tergite II. with distinct oblique furrows; apex of upper valve of ovipositor slightly impressed after the node (fig. 8b).

Distribution: Austria, Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Hungary, Iceland, Italy, Latvia, Moldova, Poland, Slovakia, Spain, Sweden, Switzerland, The Netherlands, Ukraine, former Yugoslavia (ANONYMOUS 2007).

Material: Erzurum: Tortum, Aşağımeydanlar, 1700 m, 01.IX.2001, ♀. **New for the Turkish fauna.**

Remarks: present knowledge shows that Erzurum Province (Turkey) is the southeastern most distribution area of this species.

Genus *Dolichomitus* SMITH 1877

Key to the species *Dolichomitus*

- 1 Lower valve of ovipositor longer than upper valve, lower valve is large towards middle of ovipositor gradually (fig. 9a); its length 1.4 as long as body; fore wing 18 mm long, stigma homogen and yellow ***Dolichomitus tuberculatus*** (GEOFFROY)
- Lower valve of ovipositor shorter than upper valve, lower valve is large towards middle of ovipositor suddenly (fig. 9b); its length as long as body, fore wing 7-14 mm long, stigma not homogen and yellowish-brown..... ***D. populneus*** (RATZEBURG)

Dolichomitus populneus (RATZEBURG 1848)

Distribution: Austria, Belgium, Bulgaria, Czech Republic, Finland, Germany, Great Britain, Hungary, Italy, Latvia, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, The Netherlands, Yugoslavia, Nearctic region (ANONYMOUS 2007).

M a t e r i a l : Kars: Sarıkamış, Karakurt, TCK Çeşmesi, 1500 m, 15.VI.2002, 19.VIII.2003, ♂, 22.XI.2003, ♂♂, 3.V.2004, ♀, 23.VI.2004, ♀♀, 21.VII.2004, ♀, 26.VIII.2004, ♀.

Remarks: six specimens were reared from *Saperda populnea* L. (Coleoptera: Cerambycidae) which is very common and important pest on *Populus* spp. in the locality of TCK Çeşmesi, Karakurt.

***Dolichomitus tuberculatus* GEOFFROY 1785**

D i s t r i b u t i o n : Austria, Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Great Britain, Italy, Latvia, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, The Netherlands, former Yugoslavia, Nearctic region (ANONYMOUS 2007).

M a t e r i a l : Erzurum: Uzundere, Dikyar, 1200 m, 2.VII.1994, ♀. Kars: Sarıkamış, Karakurt, TCK Çeşmesi, 1600 m, 19.VIII.2003, ♀. **New for the Turkish fauna.**

R e m a r k s : One specimen was reared from *Saperda populnea* L. (Coleoptera: Cerambycidae) present knowledge shows that Erzurum and Kars provinces are the southeastern most distribution area of this species.

Genus *Ephialtes* GRAVENHORST 1828

***Ephialtes manifestator* LINNAEUS 1758**

Body black; lower mandibular tooth longer than the upper one; clypeus 2.5 times broader than long; flat, yellowish-red, in males white; areolet rectangle, Intercubitus II. interrupted (fig. 10a); ovipositor sheath 1.8-5 times as long as fore wing; apex of ovipositor depressed, basal denticles at apices of lower valve strongly bent towards the base of ovipositor (fig. 10b).

D i s t r i b u t i o n : Belarus, Belgium, Bulgaria, Corsica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Italy, Latvia, Norway, Poland, Romania, Russia, Sardinia, Spain, Sweden, Switzerland, The Netherlands, Yugoslavia, Near East, Nearctic Region, Oriental Region (ANONYMOUS 2007).

M a t e r i a l : Erzurum: University field, 1850 m, 20.VII.2003, Oltu, Uzunoluk, Köroğlu, 2200 m, 12.VII.2004, ♀.

R e m a r k s : above mentioned specimen was reared from *Bembecia scopigera* (Scopoli) (Lepidoptera: Sessidae). *B. scopigera* is an importance pest on sainfoin, *Onobrychis viciifolia*, which is a popular forage legume for cattle and sheep, as it does not induce bloat.

Genus *Exeristes* FOERSTER 1868

Key to species of *Exeristes*

- 1 Metatarsomere V. 1.3 times as long as II. (fig. 11a); tarsal claws in females with a narrow apical furrow (fig. 11c); upper valve of with like sting across tooth of X., its tooth very distinct (fig. 11e); stigma narrow and pale brown.....
 *Exeristes arundinis* (KRIECHBAUMER)

- Metatarsomere V. barely longer to shorter than II. (fig. 11b); tarsal claws in females without a narrow apical furrow (fig. 11d); upper valve of with like half circle across tooth of VII. its tooth distinct (fig. 11f); stigma large and dark brown.....
.....***E. roborator*** (FABRICIUS)

***Exeristes arundinis* KRIECHBAUMER 1887**

Distribution: Albania, Austria, Belgium, Bulgaria, Canary, Corsica, Cyprus, Czech Republic, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Latvia, Malta, Moldova, Norway, Poland, Romania, Russia, Sardinia, Sicily, Slovakia, Spain, Sweden, Switzerland, The Netherlands, former Yugoslavia, Near East, North Africa, Oriental Region (ANONYMOUS 2007).

Material: Erzincan: Mercan, Yollarüstü, 1360 m, 04.VIII.2003, ♀.

***Exeristes roborator* FABRICIUS 1793**

Distribution: Austria, Belgium, Bulgaria, Canary, Corsica, Cyprus, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Malta, Moldova, Norway, Poland, Romania, Russia, Sicily, Slovakia, Spain, Sweden, The Netherlands, former Yugoslavia, Afro-tropical region, Near East, North Africa (ANONYMOUS 2007).

Material: Ardahan: Posof, Ilgar Mt., 2050 m, 18.VIII.2004, ♀. Artvin: Genya Mt., 1900 m, 14.VII.2003, ♂. Bayburt: Balkaymak, 1750, 22.VII.2003, 10♀♀ 10♂♂, Güvercinlik, 1850 m, 26.VII.2003, 10♀♀ 10♂♂, Kop Mt., 2400 m, 13.VIII.1997, 6♀♀, 6.VII.2001, ♂, Maden, 1650 m, 16.VI.2000, ♀, Bingöl: 1100 m, 18.VII.1973, ♂, 28.VI.1974 ♀, 20.II.1976, ♀, 28.II.1976, ♀, 28.VI.1997, ♀, Hamamlar, 1300 m, 5.VI.2003, ♀, Karliova, Soğukçeşme, 1415 m, 14.VII.2004, ♀, Bitlis: Tatvan, Nemrut Dağı, 23.VII.2003, ♀, Erzincan: 1250 m, 30.IX.1981, ♀, 24.VII.1996, ♀, Bahçe Kültürleri Araştırma Enstitüsü, 1250 m, 8.VIII.1996, ♂, 14.VI.1997, ♀. Erzurum, Dumlu, 4.VII.1997, ♂, 8.VIII.1997, ♀, Murat Geçidi, 3.VIII.1997, ♂♂, Gölet, 1950 m, 25.VI.2003, ♂, Palandöken, 2400 m, 10.VII.1993, ♀, 1.VII.1996, ♀, 2200 m, 6.VIII.1996, ♀♀, University field, 1850 m, 6.VI.1971, ♂, 20.VI.1971, ♀, 11.VI.1980, ♀, 21.VIII.1996, ♀♂, 16.VII.1996, ♂, 14.VII.1997, 13♀♀, 8♂♂, 24.VII.1997 ♀, 16.VII.2001, ♂, 13.VIII.2003, ♀, 15.VIII.2003, ♂, 15.VIII.1988, ♀, Aşkale, 9.VIII.1994, ♀; Çat, 2000 m, 1.VII.1994, ♀, Çirışli Geçidi, 2000 m, 20.VIII.2001, ♀♀, 5♂♂, 28.VIII.2001, ♀; Ilica, 1800 m, 8.VII.1997, ♀, 14.VII.1988, ♀, Atlıkonak, 2000 m, 11.VI.2000, ♂, 6.VIII.2001, ♀; Sorkunlu, 1550 m, 30.VII.1998, ♂, Rizekent, 2200 m, 30.VII.1998, ♀♂; Himis, 1750 m, 19.VII.2001, ♂, Horasan, Aras Vadisi, 1450 m, 04.VI.2000, ♀, 13.VIII. 2001, ♀, Horasan-Şenkaya Yol Ayrımı, 1400 m, 19.VIII.2003, ♀; İspir, Madenköprübaşı, 1450 m, 7.VII.1996, ♀; Narman, 1425 m, 30.VI.1989, ♀; Oltu, 1300 m, 9.VI.1988, ♀, 5.VIII.1988, ♀, 30.VI.1989, ♂, Çamlıbel, 1500 m, 2.VII.1997, ♀, Sarsaz, 1450 m, 10.VI.1998, ♀, 12.VI.1998, ♂, 22.VI.1998, ♂, 27.VI.1998, ♀, 18.V.2000, ♀, Sütkans, 1500 m, 25.VI.1996, 4♀♀, Timrek, 2200 m, 14.VII.2004, ♀; Pasinler, Çalıyazı, 2400 m, 11.VII.1996; ♀; Köprüköy, Kayabaşı, 1600 m, 14.VI.2004, ♀♂; Pazaryolu, 1200 m, 3.VII.1997, ♀; Şenkaya, Turnalı, 1750 m, 28.VII.1994, ♀, 25.VI.1996, ♀, 20.VI.1997, ♀, 2000 m, 25.VIII.2000, ♀; Tortum, Aksu, 1750 m, 12.VIII.1998, ♂, Çataldere, 13.VII.2001, ♀, Kırmalı, 2350 m, 3.VIII.2004, ♀; Uzundere, Yayla, 21.VII.2000, ♂. Gümüşhane: Vauk Geçidi, 1800 m, 7.VII.2003, 10♀♀, 10♂♂, Kale Köyü, 1500 m, 21.VII.2003, 10♀♀, 10♂♂. İğdir: 23.VIII.1990, ♀. Kars: 2.VII.1989, 2♀♀, m, 22.VIII.1990, ♂, Erzurum İl Sınırı, 1470 m, 01.IV.2001, ♂; Sarıkamış, 15.VIII.1998, ♀; Akkurt, 1650 m, 25.VII.1997, ♀♀, ♂, Karakurt, 1500 m, 18.VIII.2002, ♀, ♂, 28.VIII.2002, 20.VII.2003, ♀, ♂, 30.VII.2003, 4♂♂, 3.VIII.2003, ♀, TCK Çeşmesi, 1500 m, 10.VII.2004, ♀♀, 21.VII.2004, ♀♀, 7.X.2004, ♀♀. Muş: Merkez, Buğlan passage, 1600 m, 23.VII.2003, ♀. Rize: İkiçidere, Ovit Mt., 2400-2600 m, 11.VIII.2000, ♀♀.

Remarks: this is one of the most common and abundant species occurring in research area. As hosts of this species, in literature many species in various families in the orders Coleoptera, Lepidoptera and Hymenoptera were indicated (THOMPSON 1957,

KOLAROV 1997). Forteen specimens reared from *Lixus bardanae* F. (Coleoptera: Curculionidae) feeding on *Rumex crispus* L., 3 specimens reared from *Malacosoma neustria* L. (Lepidoptera: Lasiocampidae) feeding on *Quercus* spp., 4 specimens from *Malacosoma franconica* D. & S. feeding on *Berberis vulgaris* L., 21 specimens reared from *Rhyaciona pinicolona* DOUB. (Lepidoptera: Tortricidae) feeding on *Pinus sylvestris* L., about 100 specimens were reared from *Diplolepis fructuum* (RÜBSAAMEN). (Hymenoptera: Cynipidae) feeding on *Rosa* spp. and one specimens reared from an undetermined species of Pyralidae (Lepidoptera) feeding on *Anchusa leptophylla* ROEM. & SCHULT.

Genus *Gregopimpla* MOMOI 1965

Key to species of *Gregopimpla*

- 1 Scapus, pedicellus and ocellus black, flagellum dark brown; head almost not narrowed backwards (fig. 12a); stigma in fore wing dark brown; Intercubitus II. intercepted above (fig. 12c); hind and middle legs brown; black ring on apex of metatibiae distinctly, apex of tarsal claws black, others yellow; abdominal tergite uniformly black; body 9.0 mm *Gregopimpla malacosomae* (SEYRIG)
- Scapus and pedicellus yellow, ocellus brown, flagellum pale brown; head almost narrowed backwards (fig. 12b); stigma in fore wing yellow; Intercubitus II. not intercepted above (fig. 12. d); first and second pair of legs yellow; black ring on apex of metatibiae not distinct, tarsal segments yellow, upper middle brown, others black, body; 7.0 (6.0-8.0) mm *G. inquisitor* (SCOPOLI)

Gregopimpla inquisitor (SCOPOLI 1763)

Distribution: Austria, Belarus, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Italy, Latvia, Luxembourg, Moldova, Norway, Poland, Romania, Russia, Sicily, Slovakia, Spain, Sweden, Switzerland The Netherlands, former Yugoslavia (ANONYMOUS 2007).

Material: Erzurum: Merkez, Halıcılık, 1850 m, 28.VII.2003, ♂; Konaklı, 2000-2400 m, 22.VII.2000, ♂♂. **New for the Turkish fauna.**

Remarks: present knowledge shows that Erzurum Province is the northeasternmost distribution area of this species. One specimen was reared from *Malacosoma neustria* L. (Lepidoptera: Lasiocampidae) feeding on *Elaeagnus angustifolia* (L.) in Halıcılık. In literature many host species of *G. inquisitor* were indicated in the orders of Coleoptera, Lepidoptera and Hymenoptera (THOMPSON 1957, KOLAROV 1997)

Gregopimpla malacosomae (SEYRIG 1827)

Distribution: Austria, Belarus, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Italy, Latvia, Luxembourg, Moldova, Poland, Romania, Russia, Sardinia, Sicily, Slovakia, Spain, Sweden, Switzerland, The Netherlands, Yugoslavia, Near East, Oriental Region (ANONYMOUS 2007).

Material: Erzurum: Merkez, Halıcılık, 1850 m, 28.VII.2003, ♂. **New for the Turkish fauna.**

Remark: above mentioned specimen was reared from *Malacosoma neustria* L. (Lepidoptera: Lasiocampidae) feeding on *Elaeagnus angustifolia* (L.).

Genus *Iseropus* FOERSTER 1868

Iseropus stercorator (FABRICIUS 1793)

Body black; face and clypeus in males yellow; propodeum not so convex in lateral view; areolet rectangle, Intercubitus II. not distinct (fig. 13a), nervellus intercepted near its upper third (fig. 13b); metafemora brown, metatibiae black yellow with dark basal and apical rings (fig. 13c).

D i s t r i b u t i o n : Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Italy, Latvia, Luxembourg, Moldova, Norway, Poland, Romania, Russia, Sardinia, Sicily, Slovakia, Spain, Sweden, The Netherlands, Nearctic Region, North Africa (ANONYMOUS 2007).

M a t e r i a l : Erzurum: Ilıca, Rizekent, 1900 m, 10.VIII.1999, ♂, Olur, Süngübayır, 1850 m, 24.VII.1996, ♂; Şenkaya, Turnalı, 1750 m, 25.VII.1996, 6♂♂.

R e m a r k : present knowledge shows that Erzurum Province is the northeasternmost distribution area of *I. stercorator*.

Genus *Liotryphon* ASMEAD 1900

Liotryphon crassisetus (THOMSON 1877)

Body not stout and slender undistinct and black; mediolongitudinal carinae of propodeum indistinct; areolet rectangle, Intercubitus II. not interrupted (fig. 14).

D i s t r i b u t i o n : Caucasus, England, Europe, Finland, France, Germany, Sweden, Turkey, former Yugoslavia (KOLAROV 1997).

M a t e r i a l : Erzurum: University field, 1850 m, 20.VII.2003, ♂.

R e m a r k s : above mentioned specimen reared from *Bembecia scopigera* (SCOPOLI) (Lepidoptera: Sessidae). This species, *B. scopigera* is a new host for *L. crassisetus*.

Genus *Paraperithous* HAUPT 1954

Paraperithous gnathaulax (THOMSON 1877)

Body black; areolet rectangle, Intercubitus II. not interrupted (fig. 15a); IV. segments of metatibiae very short (fig. 15b); lower valves of ovipositor neither apically broadened nor concealing the apex of upper valve; upper valve with a dorsolateral row denticles (fig. 15c).

D i s t r i b u t i o n : Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Great Britain, Hungary, Latvia, Norway, Poland, Romania, Russia, Slovakia, Sweden, Switzerland, The Netherlands (ANONYMOUS 2007).

M a t e r i a l : Erzurum: İspir, 1400 m, 8.VII.1994, ♀. Kars: Sarkamış, Karakurt, 1500 m, 15.VII.2003, ♀, 19.VII.2003, ♀.

R e m a r k : this species obtained from *Saperda populnea* L. (Coleoptera: Cerambycidae) feeding on *Populus* spp. in Karakurt.

Genus *Endromopoda* HELLEN 1939**Key to species *Endromopoda***

- 1 In female ovipositor sheath not longer than metatibiae, thorax and abdomen with red marking or completely red; if thorax and abdomen black then coxae black too.
..... *E. arundinator* (FABRICIUS)
- In female ovipositor sheath longer than metatibiae, body black, legs red..... 2
- 2 Ovipositor sheath 1.45-1.75 times as long as metatibia, abdominal tergites II-IV moderate densely punctate, in male profemur with 2 impressions (fig. 17 b,c)
..... *E. phragmitidis* PERKINS
- Ovipositor sheath 1.2-1.4 times as long as metatibia, abdominal tergites II-IV densely moderate densely punctate, in male profemur with 1 impressions (fig. 17a)
..... *E. detritus* HOLMGREN

***Endromopoda arundinator* (FABRICIUS) 1804**

Distribution: Austria, Belgium, Bulgaria, Corsica, Czech Republic, France, Germany, Great Britain, Hungary, Italy, Latvia, Moldova, Norway, Poland, Romania, Russia, Sardinia, Slovakia, Sweden, The Netherlands, former Yugoslavia, Near East, North Africa, Oriental Region (ANONYMOUS 2007).

Material: Erzurum: Kargapazarı Dağları, Radar Yolu, 2700 m, 25.VII.2001, ♀, Pasinler, Tarımsal Araştırma Enstitüsü Arazisi, 1750 m, 22.IX.2003, ♀, Kars: Sarıkamış, Karakurt, TCK Çeşmesi, 18.VIII.2004, ♀.

***Endromopoda detritus* (HOLMGREN 1860)**

Distribution: Austria, Belgium, Bulgaria, Corsica, Czech Republic, France, Germany, Great Britain, Hungary, Italy, Latvia, Moldova, Norway, Poland, Romania, Russia, Sardinia, Slovakia, Sweden, The Netherlands, Yugoslavia, Near East, North Africa, Oriental Region (ANONYMOUS 2007).

Material: Bayburt: Maden, 1650 m, ♀. Erzincan: Mercan, Yollarüstü, 1360 m, 04.VIII.2003, ♀. Erzurum: Kombina, 1850 m, 19.VIII.2003, ♀; University field, 1850 m, 8.VI.2000, ♀, 25.VII.2003, ♀, Ilica, Ağzıaçık Geçidi, 2300 m, 19.VI.2003, ♂, Atlıkonak, 2000 m, 16.VI.2002, ♀; Pasinler, 2200 m, 14.VII.1998, ♀; Şenkaya, Gaziler, Soğanlı Dağı, 2350 m, 24.VI.1999, ♀, Turnalı, 25.VII.1996, ♀. Kars: Sarıkamış, Karakurt, 1600 m, 02.V.2000, ♀, 30.VII.2003, ♀. Rize: Çamlıhemşin, Ayder, 1800 m, 30.VII.2000, ♀, ♂.

Remarks: one specimen reared from *Archips rosana* L. (Lepidoptera: Tortricidae) feeding on *Betula pendula* Rot. *A. rosana* L. is a new host for this species.

***Endromopoda phragmitidis* PERKINS 1957**

Distribution: Bulgaria, Czech Republic, Finland, France, Germany, Great Britain, Italy, Moldova, Poland, Romania, Russia, Slovakia, Sweden, Switzerland, The Netherlands, Yugoslavia, Near East, Oriental Region (ANONYMOUS 2007).

Material: Bayburt: Kopdağı, 2400 m, 13.VIII.1997, 3 ♀♀. Bingöl: 1100 m, 28.II.1976, ♀, 23.III.1976, ♀. Erzurum: University field, 1850 m, 25.VII.2003 ♀, 29.VII.2004, ♀; Aşkale, 1800 m, 16.VII.1999, ♂; İspir, Madenköprübaşı, 1450 m, 17.VI.2003, ♀; Oltu, Çamlıbel, 1750 m, 21.VI.1997 ♀, 2.VII.1997, ♀, 21.VII.1997 ♀. Iğdır: Melekli, 850 m, 24.VIII.1997 ♀. Kars: Sarıkamış, Karakurt, TCK çeşmesi, 1500 m, 19.VIII.2003, ♀, 25.VI.2004, ♂.

Remarks: three specimens reared from *Malacosoma neustria* L. (Lepidoptera: Lasiocampidae) feeding on *Quercus* spp. and *Malus communis* L. *M. neustria* is new host for *E. phragmitidis*.

Genus *Scambus* HARTIG 1838

Key to species of *Scambus*

- 1 Profemur without or with barely distinct impressions beneath (fig. 20b).....2
- Profemur distinctly impressions beneath (fig. 20a,c).....4
- 2 Scapus black, pedicel and coxae black in males, trochanters yellow usually with a black base; metatibia brown with black ring (fig.18a); ovipositor sheath as long as abdomen or shorter than abdomen*S. brevicornis* GRAVENHORST
- Scapus, pedicellus, pro and mesocoxae yellow in males; metatibia different; ovipositor long3
- 3 Mesopleura white and dull; metatibia with a diffuse basal and apical brownish spot; rarely brown or black; last 3 metatarsomeres completely brown (fig.18d).....*S. vesicarius* RATZEBURG
- Mesopleura without feather and shining; metatibia with black rings basally and apically; last 3 metatarsomeres with a light base and dark apex (fig.18b).....*S. foliae* (CUSHMAN)
- 4 Metafemur with one impression beneath in males (fig.16b)5
- Metafemur with 2 impressions beneath in males (fig. 20a).....6
- 5 Portibiae quite strongly swollen in apical half and clearly angularly curved in the middle (fig. 16b), nervellus intercepted at below its middle (fig. 16c)*S. nigricans* (THOMPSON)
- Portibiae not quite strongly swollen in apical half and clearly angularly curved in the middle, base and apical of metatibiae black, tarsal claws black (fig. 18c)*S. sagax* HARTIG
- 6 In female scapus black, pedicellus and first 2 flagellomeres yellow; procoxae mostly black, base and middle of metatarsomeres yellow; first abdominal tergite transversal and completely punctate.....*S. signatus* (PFEFFER)
- In female scapus and pedicellus yellow or black, first 2 flagellomeres dark brown; procoxae brown, base and middle of metatarsomeres black or not; first abdominal tergite not transversal and not punctate.....7
- 7 Head narrowed backward, postgenae not swollen (fig. 19a); scapus and pedicellus yellow; base of metatibiae not yellow rings; mediolongitudinal carinae propodeum often visible; abdomen black or brownish, first tergite and posterior margins of tergites II-IV always black; ovipositor sheath 1.2-1.6 times as long as abdomen*S. calobatus* GRAVENHORST
- Head not narrowed backwards, postgenae swollen (fig. 19b); scapus and pedicellus black; base of metatibia yellow rings; mediolongitudinal carinae propodeum barely visible; abdomen completely black; ovipositor sheath 1.6 times as long as abdomen ...*S. planatus* HARTIG

Scambus brevicornis (GRAVENHORST 1829)

Distribution: Palearctic, Neractic and Oriental Region (ANONYMOUS 2007).

Material: Bingöl: Hamamlar, 1300 m, 3.VI.2003, ♀; Karlıova, Soğukçeşme, 1600 m, 3.VI.2003, ♀. Bitlis: Tatvan, Nemrut Dağları, 2000 m, 23.VII.2003, ♀. Erzurum: Güngörmez, 2500 m, 28.VII.1998, ♀; Konaklı, 2000-2400 m, 22.VII.2000, 5♀♀, ♂♂, Palandöken, 2400 m, 01.VII.1996, ♀; 2200 m, 06.VIII.1996, ♀; University field, 1850 m, 11.VIII.1999, ♂; Ilıca,

Atlikonak, 1800 m, 21.VI.2004, 2100 m, ♀; Horasan, Aras Vadisi, 1500 m, 04.VI.2000, ♀; Oltu, Çamlıbel, 1700 m, 26.VII.2000, ♀, Tutmaç-Başaklı, 1700-2000 m, 01.VII.2000, ♂, 07.VII.2000, ♀; Pazaryolu, Karataş, 2200 m, 5.VII.2000, ♂; Şenkaya, Turnalı, 1750 m, 22.VIII.1999, ♂; Tortum, Esendurak, 1500 m, 11.IX.2001, ♀. Kars: Sarıkamış, Karakurt, 1500 m, 02.V.2000, ♀, 7.VII.2004, ♂, 21.VII.2004, ♂; Erzurum il Sınırı, 1470 m, 14.VI.2004, ♀. Rize, Ovit Mt., 2300 m, 29.VII.2000, ♀, ♂.

Remark: although this species has many hosts in the orders of Coleoptera, Lepidoptera, Diptera and Hymenoptera, two specimens reared from *Acleris rhombana* D. & S (Lepidoptera: Tortricidae) feeding on *Prunus mahaleb* L. in Karakurt. *A. rhombana* is new host for *S. brevicornis*.

***Scambus calobatus* GRAVENHORST 1829**

Distribution: Austria, Bulgaria, Corsica, Czech Republic, Finland, France, Germany, Great Britain, Hungary, Italy, Latvia, Moldova, Norway, Poland, Romania, Russia, Sicily, Sweden, Switzerland, The Netherlands, former Yugoslavia (ANONYMOUS 2007).

Material: Erzurum: University field, 1850 m, 11.VIII.1999, ♂, ♀, 8.VI.2000, ♂.

Remarks: although this species has many hosts in the orders of Coleoptera, Lepidoptera, and Hymenoptera one specimen reared from *Archips rosana* L. (Lepidoptera: Tortricidae) feeding on *Ribes rubrum* L. *A. rosana* is the new host for *S. calobatus*.

***Scambus foliae* (CUSHMAN 1938)**

Distribution: Austria, Bulgaria, Romania, Russia, Turkey (KOLAROV 1997).

Material: Erzurum: Oltu, Sarısaz, 1450 m, 24.V.2000, ♂, 21.VI.2001, ♂.

***Scambus nigricans* (THOMSON 1877)**

Distribution: Caucasus, Europe, Kazakhstan, Middle Asia (KOLAROV 1997)

Material: Artvin: Yusufeli, İshan, 900 m, 21.IX.2000, ♀. Bayburt: Çaldıere, 1800 m, 16.VI.2000, ♀. Erzurum: Güngörmez, 2500 m, 28.VII.1998, ♀; Konaklı, 2200 m, 22.VII.2000, ♀; Palandöken, 2400 m, 23.VII.1996, ♂, 29.VII.2004, ♀; University field, 23.VII.1980, 1850 m, ♂, 1.VI.2000, ♀; Aşkale, 1800 m, 16.VII.1999, ♀; Horasan, 1550 m, 22.VI.1989, ♂, 14.VI.2004, ♀; İlica, Atlikonak, 2000-2400 m, 8.VII.2001, ♀; Oltu, 18.VII.1988, ♂, 30.VI.1989, ♂, 10.VII.1989, 1.VIII.1989, ♂, 5♂♂, 5.VIII.1998, ♀; Başaklı, 1850 m, 9.VIII.2000, ♀, 22.VIII.2001, ♀; Çamlıbel, 1700 m, 9.VIII.2000, ♀; İriağaç, 8.VIII.2000, ♀♀, Kaleboğazi, 8.VIII.2000, ♀♀, Sarısaz, 21.IX.2000, 6♀♀, Subatık, 2300 m, 21.IX.2000, ♀, Sütkans, 1500 m, 25.VI.1996, ♀; Olur, Yeşilbağlar, 16.VI.2001, 1100 m, ♀; Pasinler, 17.VII.1986, ♂, 16.VIII.1988, ♂; Şenkaya, 3.VIII.1988, ♂, 2.VI.1989, ♂, 17.VI.1989, ♂; Turnalı, 1750 m, 25.VII.1996, ♀, 2♂♂; Tortum, Alapınar, 1600 m, 19.VI.2003, ♀; Bağbaşı, 1600 m, 11.IX.2001, ♀, Kırmalı, 2350 m, 3.VIII.2004, ♀. İğdir: 23.VIII.1990, ♂; Melekli, 24.VIII.1997, ♀. Kars: Digor, Yeniköy, 1990 m, ♀; Sarıkamış, Akkurt, Çeşme üzeri, 19.VI.2004, 1550 m, ♀, Karakurt, TCK Çeşmesi, 1500 m, 15.VII.2003, ♀♀, 17.VI.2003, ♂, 7.VII.2004, ♂, 18.VIII.2004, ♀.

Remarks: one specimen reared from *Acleris rhombana* D. & S. (Lepidoptera: Tortricidae) feeding on *Prunus mahaleb* L.; one specimen reared from *Malacosoma neustria* feeding on *Malus communis* L.. Both of them are new hosts for *S. nigricans*.

***Scambus planatus* HARTIG 1838**

Distribution: Austria, Belgium, Bulgaria, Corsica, Czech Republic, Finland, France, Germany, Great Britain, Hungary, Italy, Latvia, Moldova, Norway, Poland, Romania, Russia, Slovakia, Sweden, Switzerland, The Netherlands, former Yugoslavia, Nearctic Region (ANONYMOUS 2007).

Material: Bayburt: Kop Mt., 2300 m, 25.VII.2004, ♀♀. Erzurum: Aşkale, 1950 m, 16.VII.1999, ♂, ♀.

Remarks: one specimen reared from a Tortricidae species feeding on *Pyrus elaeagrifolia* Pall. in Kop Mt..

***Scambus sagax* HARTIG 1838**

Distribution: Austria, Bulgaria, Czech Republic, Finland, France, Germany, Great Britain, Hungary, Latvia, Moldova, Norway, Poland, Romania, Russia, Sicily, Slovakia, Sweden, Switzerland, The Netherlands, former Yugoslavia (ANONYMOUS 2007).

Material: Bayburt: Kop Mt., 1750 m, 18.VII.2001, ♂. **New for the Turkish fauna.**

Remark: present knowledge shows that Bayburt Province is the northernmost distribution area of this species.

***Scambus signatus* PFEFFER 1913**

Distribution: Austria, Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Italy, Poland, Romania, Russia, Switzerland, The Netherlands, (ANONYMOUS 2007).

Material: Erzurum: Ilca, Rizekent, 2200 m, 30.VII.1998, ♀; Oltu, Çamlıbel, 1600 m, 26.VII.2000, ♂. Rize: Ayder, Çamlıhemşin, 1200-1550 m, 30.VII.2000 ♀. **New for the Turkish fauna.**

***Scambus vesicarius* (RATZEBURG 1844)**

Distribution: Austria, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, Latvia, Moldova, Norway, Poland, Romania, Russia, Slovakia, Sweden, Switzerland, The Netherlands, former Yugoslavia, Nearctic Region (ANONYMOUS 2007).

Material: Erzurum: Palandöken, 2100 m, 16.IX.1992, ♀♀; Şenkaya, Turnalı, 28.VIII.1999, ♂. **New for the Turkish fauna as well as for the Asian continent.**

Remarks: although *S. vesicarius* has large distribution area it was recorded from Turkey for the first time and Erzurum Province is its easternmost and southernmost distribution area.

Genus *Tromatobia* FOERSTER 1868**Key to species *Tromatobia***

- 1 In female body brown, frons and flagellum pale brown; mesoscutum with 2 yellow rings (fig. 21); convex swellings on abdominal tergites II and III polished, very sparsely punctate and brown; tergites II-IV in males square or elongate, tergites II-V (VI) with a contrasting black apical rim *Tromatobia oculatoria* (FABRICIUS)
- In female body black; frons and flagellum segments dark brown or black; mesoscutum without ring or undistinct; abdominal tergites completely black; tergites II. and III. normal; Intercubitus II intercepted (fig. 22a); ocellus yellowish brown; occipital carina distinctly elevated near vertex, medially often curved upward; mesoscutum red, scutellum dark brown *T. ornata* (GRAVENHORST)
- Intercubitus II not intercepted (fig. 22b); ocellus redish brown; occipital carina not raised; thorax black..... *T. ovivora* (BOHEMAN)

***Tromatobia oculatoria* (FABRICIUS 1798)**

D i s t r i b u t i o n : West Europe and Caucasus (KOLAROV 1997).

M a t e r i a l : Erzurum: University field, 1850 m, 25.VII.2003, ♀, 15.VIII.2003, ♀, ♂♂. İspir, Madenköprübaşı, 1100 m, 7.VII.1996, ♀.

***Tromatobia ornata* (GRAVENHORST 1829)**

D i s t r i b u t i o n : Balearic, Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Great Britain, Italy, Hungary, Latvia, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, The Netherlands, Yugoslavia (ANONYMOUS 2007).

M a t e r i a l : Erzurum: University field, 1850 m, 5.VII.2003, 2♀♀, 13.VII.2003, ♀, 1.VIII.2004, ♀, Umudum Yaylası, 2100 m, 26.VI.2003, ♀; Oltu, Kaleboğazi, 1350 m, 25.IV.2000, ♂; Şenkaya, Akşar, 1300 m, 9.VII.2000, ♂. Kars: Kağızman, 04.V.2003, ♂; Sarıkamış, Karakurt, TCK Çeşmesi, 1500 m, 12.VI.2003, ♂, 3♀♀, 8.VII.2004, ♀, 18.VII.2004, ♀.

R e m a r k s : one specimen reared from *Malacosoma neustria* L. (Lepidoptera: Lasiocampidae) feeding on *Malus communis* L.

***Tromatobia ovivora* (BOHEMAN 1821)**

D i s t r i b u t i o n : Austria, Belgium, Bulgaria, Corsica, Czech Republic, Finland, France, Germany, Great Britain, Italy, Hungary, Latvia, Norway, Poland, Romania, Russia, Sicily, Slovakia, Spain, The Netherlands, former Yugoslavia, Nearctic region, Neotropical region (ANONYMOUS 2007).

M a t e r i a l : Erzurum: Oltu, Çamlıbel, 1700 m, 19.VI.2003, ♂. Rize: Ayder, Çamlıhemşin, 1200-1550 m, 30.VII.2000, 2♂♂. **New for the Turkish fauna.**

R e m a r k s : Erzurum and Rize provinces are the most southeastern distribution area of this species.

Genus *Zaglyptus* FOERSTER 1868**Key to species *Zaglyptus***

- 1 Second recurrent vein with disinct unpigmented areas (fig. 23a), intercubitus I intercepted; Nervellus intercepted not below its middle (fig. 23c); yellow rings of metatibiae short (fig. 23e); abdominal tergites II-IV. brown, others black and swoolen ***Zaglyptus varipes*** (GRAVENHORST)
- Second recurrent vein with indisinct unpigmented sections (fig. 23b), intercubitus I not intercepted; Nervellus intercepted below its middle nervellus (fig. 23d); yellow rings of metatibiae long (fig. 23f); abdominal tergites brownish black, designed ***Z. multicolor*** (GRAVENHORST)

***Zaglyptus multicolor* (GRAVENHORST 1829)**

Distribution: Austria, Belgium, Bulgaria, Corsica, Czech Republic, France, Germany, Great Britain, Hungary, Italy, Latvia, Moldova, Norway, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, The Netherlands, former Yugoslavia, Near East, Oriental Region (ANONYMOUS 2007).

Material: Erzurum: University field, 1850 m, 15.VIII.2003, ♀. Kars: Sankamış, Karakurt, TCK Çeşmesi, 1500 m, 15.VIII.2004, ♂.

***Zaglyptus varipes* (GRAVENHORST 1829)**

Distribution: Austria, Balearic Belgium, Bulgaria, Corsica, Czech Republic, Denmark, France, Germany, Great Britain, Hungary, Latvia, Moldova, Norway, Poland, Romania, Russia, Slovakia, Spain, The Netherlands, former Yugoslavia, Near East, Nearctic Region, Oriental Region (ANONYMOUS 2007).

Material: Artvin: Genya Dağı, 1900 m, 14.VII.2003, ♀. Kars: Sankamış, Karakurt, TCK Çeşmesi, 1500 m, 15.VIII.2004, ♀.

Key to genera of Pimplini

- 1 Inner margins of eyes quite strongly curved towards antennal bases (fig. 25a); pretarsal claws usually with a large basal tooth (fig. 26) ***Itopectis*** FOERSTER
- Inner ocular margins slightly and evenly curved towards antennal bases (fig. 25b); pretarsal claws without basal tooth 2
- 2 In females face convex forwards; second flagellomer shorter than wide (fig. 31b); ovipositor not protruding beyond abdominal apex, its long shorter than half of fore wing ***Strongylopsis*** BRAUNS
- In females not convex forwards; second flagellomere 5 times as long as wide in females (fig. 29c); ovipositor protruding beyond abdominal apex, its fore wing ½ as long as fore wing ***Pimpla*** FABRICIUS

Genus *Itopectis* FOERSTER 1868**Key to species of *Itopectis***

- 1 Propodeal spiracles large and round ellipsoid; mesopleura punctate; metatibiae monochromous, rarely with an indistinct white subbasal ring, coxae and protrochanter black (fig. 24e)..... ***I. viduata*** (GRAVENHORST)
- Propodeal spiracles small, round; mesopleura without punctate; legs variously coloured; metatibiae usually with a distinct white subbasal ring, coxae and protrochanter black or red (fig. 24a-d)..... 2
- 2 Protarsal claws with a narrow basal tooth (fig. 26b); hind corner of pronotum and anterior half of tegulae white; flagellum redish brown; metatrochanter brown (fig. 24d)..... ***I. tunetana*** (SCHMIEDEKNECHT)
- Protarsal claws with a broad basal tooth (fig. 26a); hind corner of pronotum and anterior half of tegulae brown or black; flagellum black; metatrochanter brownish black (fig. 24a,c)..... 3
- 3 Metacoxae and metatrochanter completely brown, apex of metafemora black (fig. 24b); ocellus, pedicellus and hind corner of pronotum black; stigma of fore wing dark brown..... ***I. aterrima*** JUSSILA
- Metacoxae and metatrochanter black or brownish red, metafemora completely brown (fig. 24a,c); ocellus brown or black, pedicellus and hind corner of pronotum brown; stigma of fore wing dark brown or pale brown..... 4
- 4 Mesopleura densely and distinctly punctate and pubescent; scapus black, abdominal tergites red in lateral; metatrochanters brownish-black; base of metatibiae ring large (fig. 24c)..... ***I. maculator*** (FABRICIUS)
- Mesopleura not punctate and pubescent; scapus black, abdominal tergites black red, trochanters brown; base of metatibiae ring narrow (fig. 24a) ... ***I. alternans*** (GRAVENHORST)

***Itopectis alternans* (GRAVENHORST 1829)**

Distribution: Austria, Belgium, Bulgaria, Corsica, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Italy, Latvia, Moldova, Norway, Poland, Romania, Russia, Sardinia, Spain, Sweden, Switzerland, The Netherlands, Ukraine, former Yugoslavia, Near East, Oriental Region (ANONYMOUS 2007).

Material: Bingöl: Yenibaşlar, 1400 m, 03.VI.2003, ♂. Erzurum: University field, 1850 m, 08.VI.2000, ♀ ♂.

Remarks: although many species in the orders of Coleoptera, Lepidoptera, Diptera and Hymenoptera were listed by (THOMPSON 1957) as hosts of *I. alternans* two specimens reared from *Archips rosana* L (Lepidoptera: Tortricidae) feeding on *Betula pendula* Roth. in the University field and it is a new host for *I. alternans*.

***Itopectis aterrima* JUSSILA 1965**

Distribution: Caucasus, Europe, Turkey (KOLAROV 1997).

Material: Erzurum: Olur, Saribaşak, 1850 m, 24.VIII.1992, ♀, ♂.

***Itopectis maculator* (FABRICIUS 1775)**

Distribution: Austria, Belgium, Bulgaria, Canary, Corsica, Czech Republic, Estonia, Finland, Great Britain, Hungary, Italy, Latvia, Luxembourg, Moldova, Norway,

Poland, Portuguese, Romania, Russia, Sardinia, Sicily, Slovakia, Spain, Sweden, Switzerland, The Netherlands, Ukraine, former Yugoslavia, Near East, North Africa, Oriental Region (ANONYMOUS 2007).

M a t e r i a l : Artvin: Genya Mt., 1860 m, 28.VII.2004, ♀. Bayburt: Kop Mt., 2300 m, 25.VII.2001, ♂. Erzurum: Kargapazarı Dağları, Radar Yolu, 1350 m, 25.VII.2001, ♀; University field, 1850 m, 8.VI.2000, 6♀♀; Ilica, Atlıkonak, 2100 m, 21.VI.2004, 2♀♀; Öltü, Tavşantepe, 1350 m, 11.IV.2001, ♀, Uzunoluk, Köroğlu, 2200 m, 12.VII.2004, ♀; Şenkaya, Turnalı, 1750 m, 25.VII.1996, ♀, ♂; Tortum, Alapınar, 1650 m, 19.VI.2003, ♀, Aksu, 1750 m, 12.VIII.1998, ♀, ♂, Esendurak, 1400 m, 18.VII.2004, ♀. Gümüşhane: Vauk Dağı, 1800 m, 26.VI.2000, ♀. Kars: Sankamış, Karakurt, TCK Çeşmesi, 1500 m, 12.VII.2003, ♀, 28.VIII.2004, ♀. Rize: Ovit Dağı, 2300 m, 29.VII.2000, ♀.

R e m a r k s : one specimen reared from *Archips rosana* L. (Lepidoptera: Tortricidae) feeding on *Ribes rubrum* L., one specimen reared from *Acleris rhombana* D.& S. (Lepidoptera: Tortricidae) feeding on *Prunus mahaleb* L., one specimen reared from *Hyponomeuta evonymella* L. (Lepidoptera: Yponomeutidae) feeding the same plant. *A. rhombana* is a new host for the *I. maculator*.

***Itopectis tunetana* (SCHMIEDEKNECHT 1914)**

D i s t r i b u t i o n : Albania, Austria, Belgium, Bulgaria, Canary, Corsica, Czech Republic, Denmark, Estonia, Finland, Great Britain, Hungary, Italy, Latvia, Luxembourg, Moldova, Norway, Poland, Portuguese, Romania, Russia, Sardinia, Sicily, Slovakia, Spain, Sweden, Switzerland, The Netherlands, Ukraine, former Yugoslavia, Near East, North Africa, Oriental Region (ANONYMOUS 2007).

M a t e r i a l : Erzurum: University field, 1850 m, 22.VII.1997, ♀; Tortum, Aşağımeydanlar, 1700 m, 07.VIII.1996, ♂. Kars: Sankamış, Karakurt, TCK Çeşmesi, 1500 m., 12.VII.2003, ♀, 7. VII. 2004, ♂, 28.VIII.2004, ♂.

R e m a r k s : one specimen obtained from *Hyponomeuta evonymella* L. (Lepidoptera: Yponomeutidae) feeding on *Prunus mahaleb* L. *H. evonymella* is new host for the *I. tunetana*.

***Itopectis viduata* GRAVENHORST 1829**

D i s t r i b u t i o n : Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Hungary, Moldova, Poland, Romania, Russia, Slovakia, Spain, Sweden, The Netherlands, Ukraine, former Yugoslavia, Near East, Nearctic Region, North Africa (ANONYMOUS 2007).

M a t e r i a l : Bitlis: Adilcevaz, 1550 m, 20.VII.1999, ♀♀. Erzurum: Merkez, Halıcılık, 1850 m, 28.VII.2003, ♀; Ilica, Rizekent, 1900 m 10.VIII.1999, ♀; Tortum, Katıklı, 1850 m, 12.VII.2001, ♀; Uzundere, 27.VI.2000, ♂. Kars: Arpaçay, Küçükpirveli, 1800 m, 27.VII.2000, ♂♂.

R e m a r k s : this species reared from *Malacosoma neustria* L. (Lepidoptera: Lasiocampidae) feeding on *Elaeagnus angustifolia* L. in Halıcılık.

Genus *Pimpla* FABRICIUS 1804

Key to species of *Pimpla*

1 Metatibiae without subbasal ring in female (fig. 27a,c,e,f; 28a,b,d)2

- Metatibiae with a white subbasal ring in female (fig. 27b,d; 28c,e).....7
- 2 Metacoxae completely reddish brown (fig. 27a,e)3
- Metacoxae completely black (fig. 27b,c,d; 28a,b,c,d,e).....4
- 3 Ocellus reddish brown; hind leg, tegulae and flagellum yellow; fourth protarsomere deeply emarginate apically in females (fig. 29e)..... *Pimpla coxalis* HABERMEHL
- Ocellus pale colour; hind leg, tegulae and flagellum brown; fourth protarsomere shallowly emarginate apically in females (fig. 29a)..... *P. arcadica* KASPARYAN
- 4 Flagellomeres VI.-X. without tyloids in male (fig. 30b,e); metacoxae and metatrochanter I black (fig. 27c; 28b).....5
- Flagellomeres VI.-X. with or without tyloids in male (fig. 30a,c,d,f,g,h); metacoxae and metatrochanter I different (fig. 27a,b,d,e, f; 28a,c,d,e).....6
- 5 Metacoxae and metatrochanter I black, metatrochanter II brown; first half of metatibiae brown, other and tarsal claws black (fig. 27c); fourth protarsomere shallowly emarginate apically in females (fig. 29c)..... *P. caucasica* KASPARYAN
- Metacoxae and metatrochanters black; 1/3 of metatibiae brown, 2/3 and tarsal claws other and tarsal claws brown (fig. 28b); fourth protarsomere deeply emarginate apically in females (fig. 29g) *P. sodalis* RUTHE
- 6 Flagellomeres VI.-XI. tyloid complete, flagellomer XII. incomplete in male (fig. 30d); metatibiae completely black; ovipositor 1.5 times as long as metatibiae; fourth protarsomere deeply emarginate apically in females (fig. 29f)..... *P. illecebrator* (VILLERS)
- Flagellomeres X tyloid complete in male (fig. 30g), base and apex of metatibiae black, others brown; fourth protarsomere shallowly emarginate apically in females (fig. 29i) *P. rufipes* BRULLE
- 7 Flagellomer VI tyloid complete and flagellomer VII tyloid incomplete (fig. 30h); tegulae white; base and apex of metafemora black others brown (fig. 28e); fourth protarsomere without emarginate apically in females (fig. 29j)..... *P. turionella* (LINNAEUS)
- Flagellum without tyloids (fig. 30a,c,f); tegulae black; metafemora completely brown (fig. 27b,d; 28c); fourth protarsomere without emarginate apically in females (fig. 29b, d,h).....9
- 9 Metatibiae and the other segment with yellow feather; fourth protarsomere not so deeply marginate apically in females (fig. 29b)..... *P. artemonis* KASPARYAN
- Metatibiae and the other segment without feather; fourth protarsomere deeply marginate apically in females (fig. 29d,h).....10
- 10 Metatibiae usually with a yellow subbasal ring, large (fig. 27d), fourth protarsomere deeply marginate apically in females; (fig. 29d); ovipositor sheath shorter than metatibiae..... *P. contemplator* (MULER)
- Metatibiae usually with a yellow subbasal ring, narrow (fig. 28c); fourth protarsomere not so deeply marginate apically in females; (fig. 29h); ovipositor sheath longer than metatibiae..... *P. spuria* GRAVENHORST

Pimpla arcadica KASPARYAN 1973

D i s t r i b u t i o n : Palaearctic Region (YU & HORSTMANN 1997).

M a t e r i a l : Erzurum: University field, 1850 m, 15.VIII. 2003, ♀. Kars: Sarıkamış, Karakurt, 1500 m, 15.VI.2003, ♀♀. 30.VI.2004, ♀, 18.VIII.2004, ♀, 26.VIII.2004, ♀♀. New for the Turkish fauna.

Pimpla artemonis KASPARYAN 1973

D i s t r i b u t i o n : Armenia, Caucasus, Europe (KOLAROV 1997).

M a t e r i a l : Bayburt: Maden, 1650 m, 16.VI.2000, ♀, ♂. Erzurum: University field, 1850 m, 11.VIII.1999, ♂; Aşkale, 1950 m, 16.VII.1999, ♂, 1700 m, 23.V. 2000. ♂. Kars: Arpaçay,

Küçükpirveli, 1500 m, 27.VII.2000, ♀. Rize: Çamlıhemşin, Ayder, 1200-1550 m, 30.VII.2000, ♂; İkizdere, Ovit Mt., 2400 m, 29.VII.2000, ♂.

***Pimpla caucasica* KASPARYAN 1974**

Distribution: Palaearctic Region (YU & HORSTMANN 1997).

Material: Erzurum: Konaklı, 2000-2400 m, 22.VII.2000, ♂, Yeşilyayla, Radar Yolu, 1900-2200 m, 29.VI.2001, ♀. New for the Turkish fauna.

***Pimpla contemplator* (MULLER 1776)**

Distribution: Austria, Belgium, Bulgaria, Canary, Corsica, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Italy, Luxembourg, Moldova, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, The Netherlands, Ukraine, former Yugoslavia, Near East, Oriental Region (ANONYMOUS 2007).

Material: Erzurum: University field, 1850 m, 27.VII.2004, ♀, Oltu, Sütkans, 1500 m, 5.VI.1996, ♀, Çamlıbel, 1600 m, 26.VII.2000, ♀.

Remark: one specimen obtained from *Vanessa urticae* L. (Lepidoptera: Nymphalidae) feeding on *Urtica dioica* L. in the university field.

***Pimpla coxalis* HABERMEHL 1917**

Distribution: Palaearctic Region (YU & HORSTMANN 1997).

Material: Kars: Sarıkamış, Karakurt, 1500 m, 10.IX.2002, ♀. New for the Turkish fauna.

***Pimpla illecebrator* (VILLERS 1789)**

Distribution: Austria, Belgium, Czech Republic, France, Germany, Hungary, Poland, Romania, Russia, Spain, The Netherlands, Near East, Oriental Region (ANONYMOUS 2007).

Material: Artvin: Genya Mt., 1625 m, 28.VII.2004, ♀. Bayburt: Kop Mt., 2300 m, 25.VII.2001, ♂. Erzurum: Konaklı, 2400 m, 22.VII.2000, ♂; Palandöken, 2200 m, 29.VI.1996, ♂, University field, 1850 m, 12.VII.1966, ♀, Aşkale, 1800 m, 16.VII.1989, ♂; Oltu, Sarısaz, 1450 m, 20.VII.1998, ♀, 18.V.2000, ♂, Sütkans, 1500 m, 25.VI.1996, 4♀♀, 6♂♂; Şenkaya, Gaziler, Soğanlı Mt., Çakırbaba Geçidi, 2400 m, 13.VIII.1998, ♀; Uzundere, Dikyar, 1200 m, 2.VII.1994, ♀. Kars: Sarıkamış, Karakurt, TCK Çeşmesi, 1500 m, 28.VIII.2004, ♀.

Remarks: one specimen obtained from *Malacosoma franconica* D. & S. feeding on *Berberis vulgaris* L.; two specimens obtained from *Hyponomeuta evonymella* L. (Lepidoptera: Yponomeutidae) feeding on *Prunus mahaleb* L. *H. evonymella* is the new host for *P. illecebrator*.

***Pimpla rufipes* BRULLÉ 1846**

Distribution: Austria, Cezayir, England, Egypt, France, Finland, Germany, Morocco, Spain, Sweden, Romania, Russia, Tunus, Turkey (KOLAROV 1997).

Material: Bayburt: Kop Mt., 2400 m, 13.VIII.1997, ♀, 16.VI.2000, ♂; Maden, 1650 m, 16.VI.2000, ♀. Bingöl: 1100 m, 28.VI.1974, ♀, 3.VII.1974, ♀. Erzurum: Güngörmez, 2500 m, 28.VII.1998, ♀♀, Güzelyayla, 30.VIII.1992, ♀; Konaklı, 2200-2400m, 22.VII.2000, ♀, ♂♂; Köşk, 20.VI.1996, ♀, ♂; Palandöken, 2200-2400 m, 3.VIII.1994, ♀♀, 1.VII.1996, ♀♀, 12♂♂.

7.VII.1996, 5♂♂, 9.VII.1996, 7♀♀, 3♂♂, 23.VII.1996, 11♀♀, 17♂♂, 29.VII.1996, ♀, 6.VIII.1996, 9♀♀, 7♂♂, 28.VI.1997, ♀; University field, 1850 m, 28.VII.1992, ♀, 13.VI.1996, 12♂♂, 15.VI.1996, ♀, 19.VI.1996, ♂, 13.VII.1996, ♀♀, 16.VII.1996, ♂, 6.VIII.1999, ♂; Ilıca, Atlıkonak, 2000 m, 11.VI.2000, ♀; Rizekent, 1900 m, 10.VIII.1999, ♀, 3♂♂, İspir, Madenköprübaşı, 1450 m, 7.VII.1996, ♂♂; Oltu, Aksu, 1450 m, 14.VII.1997, 6♂♂, Bahçecik, 1300 m, 4.VIII.1999, ♂, Çamlıbel, 1750 m, 21.VI.1997, ♀, ♂, Kaleboğazı, 1450 m, 25.IV.2000, ♂, Karakol, 1900 m, 1.VII.2000, ♀, ♂, Sarı saz, 1400 m, 10.VI.1998, ♀, 20.VII.1998, ♂, Süt kans, 1500 m, 18.VI.1996, ♀; Pasinler, 11.VI.1996, ♀, 6♂♂; Şenkaya, Gaziler, Soğanlı Dağı, Çakır baba Geçidi, 2450 m, 13.VIII.1998, ♀, 22.VII.2004, ♀; Turnalı, 28.VII.1993, ♀; 25.VII.1996, ♀, ♂, Tortum, Aksu, 1600 m, 4.VII.1998, ♀, Kireçli Dağı, 25.VI.1996, ♂. Iğdır: Melekli, 850 m, 24.VIII.1997, ♀. **New for the Turkish fauna.**

Remarks: two specimens reared from *Malacosoma neustria* L. (Lepidoptera: Lasiocampidae) feeding on *Ouercus* spp., two specimens from *Malacosoma franconica* D. & S. (Lepidoptera: Lasiocampidae) feeding on *Berberis vulgaris* L., one specimen from *M. neustria* feeding on *Prunus domestica* L.

***Pimpla sodalis* RUTHE 1859**

Distribution: Nearctic and Palearctic regions (YU & HORSTMANN 1997).

Material: Erzurum: Palandöken, 2200 m, 6.VIII.1996, ♂; Çat, 2200 m, 11.VI.1994, ♀. Kars: Sarıkamış, Karakurt, TCK Çeşmesi, 1500 m, 30.VI.2004, ♀; 18.VIII.2004, ♀. **New for the Turkish fauna.**

***Pimpla spuria* GRAVENHORST 1829**

Distribution: Austria, Belgium, Bulgaria, Corsica, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Malta, Moldova, Norway, Poland, Romania, Russia, Sicily, Slovakia, Sweden, The Netherlands, Ukraine, former Yugoslavia, Near East, North Africa, Oriental Region (ANONYMOUS 2007).

Material: Artvin: Kafkasör, 1300 m, 22.V.2002, ♀; Borçka, 500 m, 12.V.2000, ♂. Erzincan: 1380 m, 30.IX.1981, ♀; Mercan, Demirkapı, 24.V.2004, 1375 m, ♂. Erzurum: University field, 1850 m, 10.VI.2000, ♂; 7.VI.2003, 2♀♀; 15.VIII.2003, ♀; Oltu, Başaklı, 1850 m, 22.VIII.2001, ♀; Çamlıbel, 1500 m, 3.VIII.1997, ♀; Kaleboğazı, 1450 m, 18.IX.2001 ♀; Sarı saz, 1450 m, 18.V.2000, ♂; 21.IX.2000, ♀; Olur, Yeşilbağlar, 1000 m, 29.VI.2003, ♀; Şenkaya, Gaziler, Soğanlı Dağı, Çakır baba, 2450 m, 13.VIII.1998, ♀; Turnalı, 1750 m, 25.VII.1996, ♀; Tortum, Esendurak, 1500 m, 11.IX.2001, ♀, ♂; Uzundere, 1200 m, 16.V.2003, ♀; Şelale, 1100 m, 9.VI.1996, ♂. Kars: Kağızman, 1400 m, 4.V.2003, ♀; Sarıkamış, Karakurt, 1500 m, 2.V.2000, ♂; 30.VI.2004, 2♀♀; 21.VII.2004, ♀.

Remarks: one specimen reared from *Malacosoma franconica* D. & S. (Lepidoptera: Lasiocampidae) feeding on *Berberis vulgaris* L., two specimens reared from *Hyponomeuta evonymella* L. (Lepidoptera: Yponomeutidae) feeding on *Prunus mahaleb* L.. *H. evonymella* is new host for *P. spuria*.

***Pimpla turionellae* LINNAEUS 1758**

Distribution: Austria, Belarus, Belgium, Bulgaria, Canary, Corsica, Czech Republic, Denmark, Estonia, European Turkey, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Italy, Latvia, Luxembourg, Moldova, Norway, Romania,

Russia, Sardinia, Slovakia, Spain, Sweden, Switzerland, The Netherlands, Ukraine, former Yugoslavia, Near East, North Africa, Oriental and Nearctic Regions (ANONYMOUS 2007).

M a t e r i a l : Erzurum: Ilica, Ağzıaçık Bakımevi, 2300 m, 16.VI.2002, ♀; Oltu, Sarısaz, 1450 m, 20.VII.1998, ♀ ♂; Tortum, Aksu, 1600 m, 23.VII.1998, ♀. New record for Asian part of Turkey.

R e m a r k s : one specimen reared from *Malacosoma franconica* D. & S. (Lepidoptera: Lasiocampidae) feeding on *Berberis vulgaris* L., one specimen reared from *Malacosoma neustria* L. feeding on *Prunus domestica* L.

Genus *Strongylopsis* BRAUNS 1896

Strongylopsis belua KUZIN 1950

Body black; inner ocular margins slightly and evenly curved towards antennal bases; in female face convex forward; second flagellomer shorter than wide (fig. 31b); areolet rectangle, Intercubitus II. not interrupted (fig. 31a); metafemora, metatibiae and tarsal segments with spines (fig. 31c); ovipositor not protruding beyond abdominal apex, its long shorter than half of fore wing.

D i s t r i b u t i o n : Former Russia (ANONYMOUS 2007).

M a t e r i a l : Erzurum: University field, 1850 m, 14.VI.1970, ♀.

Key to genera of Polysphinctini

- 1 Clypeus not separated from face by a groove or furrows; ovipositor short, curved upwards (fig. 32d).....*Schizopyga* (GRAVENHORST)
- Clypeus separated from face by a furrows; ovipositor long, not curved upwards.....2
- 2 Abdominal tergites II. and IV. with a pair of rounded convexities (fig. 33); ovipositor sheath 3-4 times as long as apical height of abdomen.....*Polysphincta* (GRAVENHORST)
- Abdominal tergites II. and IV. oblique furrows delimiting a central rhombic area with transverse impressions or nearly smooth (fig. 34b); ovipositor sheath 2 times as long as apical height of abdomen3
- 3 Abdominal tergites II-IV with deep oblique furrows delimiting a large rhombic central area (fig. 34b); mesoscutum not pubescent or its centre partly pubescent; thorax brown, ovipositor sheath 1/5 times as long as metatibiae, last tarsomere not strongly enlarged.....*Zatypota* (FOERSTER)
- Abdominal tergites II-IV almost smooth, with weak oblique impressions beyond the middle; mesoscutum densely pubescent; thorax completely black, ovipositor sheath 1/3 times as long as metatibiae; last tarsomere strongly enlarged (fig. 35b).....*Zabrachypus* (CUSHMANN)

Genus *Schizopyga* GRAVENHORST 1829

Schizopyga podagrica GRAVENHORST 1829

Body black; areolet absent (fig. 32a); tarsal claws very broad (fig. 32b) subbasal and apex of metatibiae black, middle yellow, tarsal segments with yellow black rings (fig. 32c); ovipositor short, curved upwards (fig. 32d).

D i s t r i b u t i o n : Palearctic Region (YU and HORSTMANN 1997).

M a t e r i a l : Erzurum: Oltu, Çamlıbel, 1700 m, 26.VII.2000, ♀.

Genus *Polysphincta* GRAVENHORST 1829

***Polysphincta tuberosa* GRAVENHORST 1829**

Body black; clypeus separated from face by a furrow; abdominal tergites II. and IV. with a pair of rounded convexities (fig. 33); ovipositor sheath 3-4 times as long as apical height of abdomen not curved upwards.

D i s t r i b u t i o n : Austria, Bulgaria, Czech Republic, Finland, France, Germany, Great Britain, Hungary, Poland, Romania, former Russia, Sardinia, Sweden, Switzerland, The Netherlands, Nearctic Region (ANONYMOUS 2007).

M a t e r i a l : Erzurum: Şenkaya, Tumalı, 1750 m, 29.VII.1996, ♀.

Genus *Zatypota* FOERSTER 1868

***Zatypota bohemani* (HOLMGREN 1854)**

Body black; areolet absent (fig. 34a); abdominal tergites II-IV with deep oblique furrows delimiting a large rhombic central area (fig. 34b); mesoscutum not pubescent or its centre partly pubescent; thorax brown, ovipositor sheath 1/5 times as long as metatibiae.

D i s t r i b u t i o n : Austria, Belgium, Bulgaria, Canary, Cyprus, Czech Republic, European Turkey, Finland, France, Germany, Hungary, Great Britain, Italy, Latvia, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, The Netherlands, former Yugoslavia, Near East, Nearctic and Oriental Regions (ANONYMOUS 2007).

M a t e r i a l : Erzurum: University field, 1850 m, 5.VIII.2003, ♀. Kars: Sarıkamış, Karakurt, TCK Çeşmesi, 1500 m, 15.VIII.2004, ♂.

Genus *Zabrachypus* CUSHMAN 1920

***Zabrachypus primus* CUSHMAN 1920**

Body black; areolet absent, bulla distinct (fig. 35a); abdominal tergites II-IV almost smooth, with weak oblique impressions beyond the middle; mesoscutum densely pubescent; thorax completely black, ovipositor sheath 1/3 times as long as metatibiae; last tarsomere strongly enlarged (fig. 35b).

D i s t r i b u t i o n : Austria, Bulgaria, Czech Republic, Hungary, Moldova, Romania, Russia, Near East, Nearctic Region, Oriental Region (ANONYMOUS 2007).

M a t e r i a l : Erzurum: Oltu, Başaklı, 1850 m, 22.VIII.2001, ♀. **New for the Turkish fauna.**

Key to genera of Rhyssini

- 1 First abdominal tergite from the sternite by a groove (fig. 36c); glymma developed; tergites not emerginate posteromedially; trochantellus without a carina; abdominal sternites II-IV in females with a pair of swellings medially in the middle, body black; abdomen with white markings ***Rhyssa* GRAVENHORST**

- First abdominal tergite fused with the sternite; glymma absent; tergites emerginate posteromedially; trochantellus with a carina; abdominal sternites II-IV in females with a pair of swellings near the base, body brown; abdomen with yellowish brown markings..... *Megarhyssa* ASHMEAD

Genus *Rhyssa* GRAVENHORST 1829

***Rhyssa persuasoria* (LINNAEUS 1758)**

Body black; head not narrowed backwards (fig. 36a); areolet triangular (fig. 36b); first abdominal tergite from the sternite by a groove (fig. 36c); glymma developed; tergites not emerginate posteromedially; trochantellus without a carina; abdominal sternites II-IV in females with a pair of swellings medially in the middle; abdomen with white markings.

D i s t r i b u t i o n : Austria, Belgium, Bulgaria, Czech Republic, European Turkey, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Italy, Latvia, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, The Netherlands, Yugoslavia, Near East, North Africa, Oriental and Nearctic Regions (ANONYMOUS 2007).

M a t e r i a l : Artvin: Merkez, 450 m, 15.IX.1997, ♀.

Genus *Megarhyssa* ASHMEAD 1900

***Megarhyssa perlata* (CHRIST 1791)**

Body brown; mesoscutum with ring and lope (fig. 37a); stigma very long (fig. 37b); first abdominal tergite fused with the sternite; glymma absent; tergites emerginate posteromedially; trochantellus with a carina; abdominal sternites II-IV in females with a pair of swellings near the base; abdomen with yellowish brown markings (fig. 37c).

D i s t r i b u t i o n : Austria, Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Hungary, Italy, Moldova, Norway, Poland, Romania, Russia, Slovakia, Sweden, Yugoslavia (ANONYMOUS 2007).

M a t e r i a l : Erzurum: Uzundere, Şelale, 1000 m, 23.V.1996, ♀. **New for the Turkish fauna.**

Zusammenfassung

Vorliegende Arbeit behandelt die Systematik und das Vorkommen der Unterfamilie Pimplinae (Hymenoptera: Ichneumonidae) im östlichen und nordöstlichen Teil der Türkei. Der Untersuchungszeitraum erstreckt sich zwischen 1999 und 2004. 55 Arten aus 24 Gattungen und 5 Triben wurden nachgewiesen, davon 16 neu für die türkische Fauna. Bestimmungsschlüssel zu Tribus, Gattungen und Arten werden vorgestellt. Neue Wirtsarten wurden für manche Arten festgestellt. Somit ergibt sich für die Gesamttürkei für Pimplinae ein derzeitiger Stand von 77 Arten aus 30 Gattungen.

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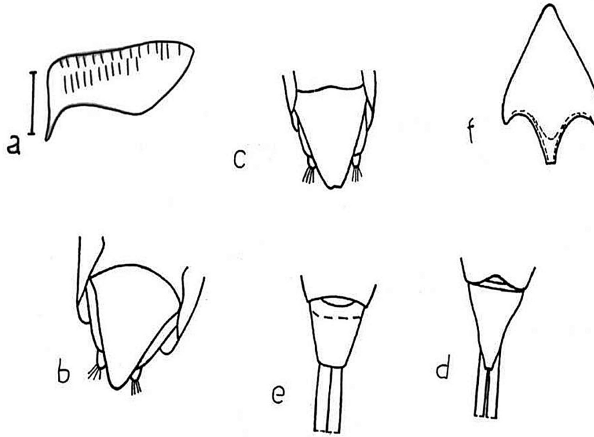


Fig. 1a-f: (a) Mesoscutum on Rhyssini; (b,c,f) Last abdominal tergite in male; (b,c) Rhyssini, (d,e) Last abdominal tergite in female; (d) *Megarhyssa*, (e,f) *Pseudorhyssa* (b,c,d,e,f KASPARYAN 1981).

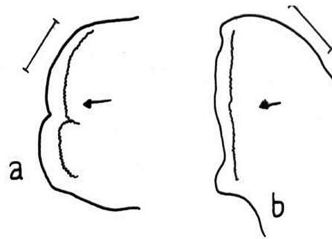


Fig. 2a-b: Mesopleural furrow: (a) Ephialtini, (b) Pimplini (KASPARYAN 1981).

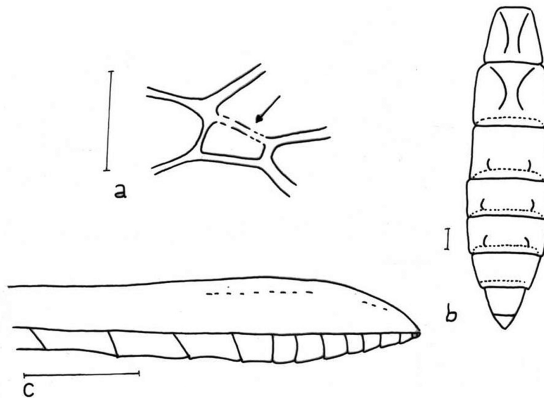


Fig. 3a-c: *Delomerista mandibularis* (♀): (a) Areolet and II. intercubitus, (b) Abdomen, (c) Apex of ovipositor.

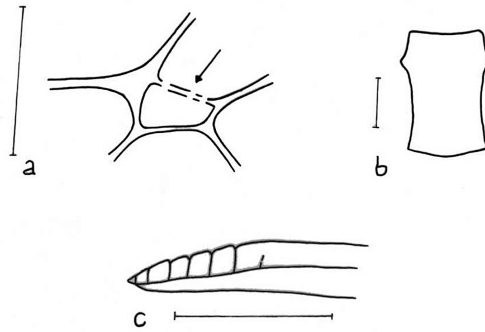


Fig. 4a-c: *Hybomischos septemcinctorius* (♀): (a) Areolet and II. intercubitus, (b) Basolateral angular ledges, (c) Apex of ovipositor.

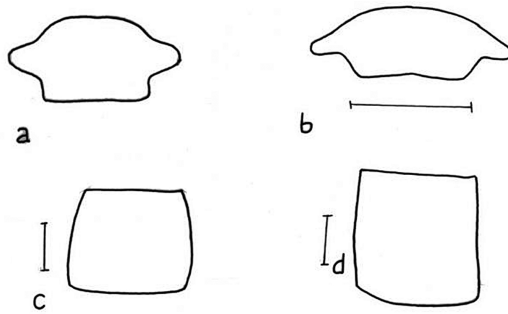


Fig. 5a-d. Clypeus: (a) *Perithous divinator* (♂), (b) *P. scurra* (♂), (c-d) III. abdominal tergite: (a) *P. divinator* (♂), (d) *P. scurra* (♂).

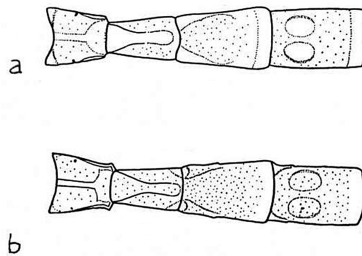


Fig. 6a-b: Furrow of abdominal tergite II: (a) *Dolichomitus romanicus*, (b) *D. dobrogensis* (KASPARYAN 1981).

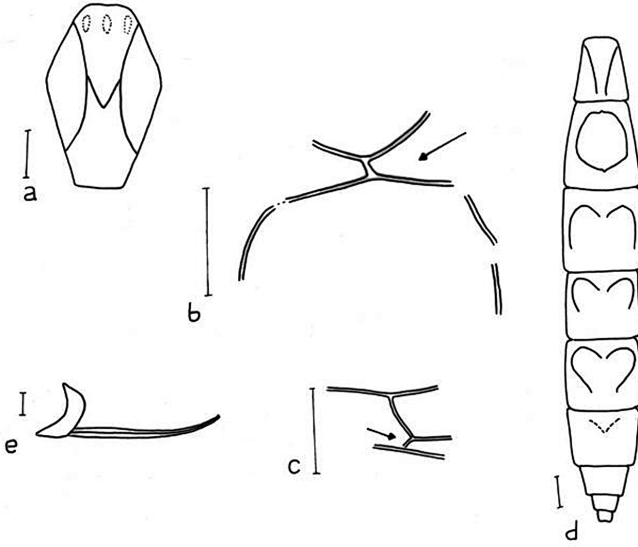


Fig. 7a-e: *Clistopyga rufator* (♀): (a) Mesoscutum, (b) Bulla on recurrent vein, (c) Nervellus, (d) Abdomen, (e) Ovipositor.

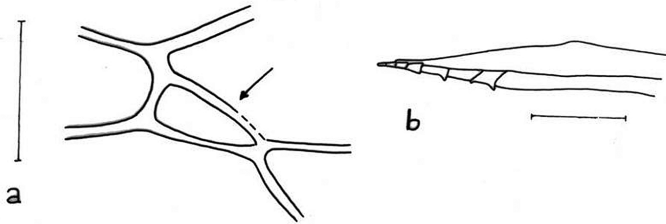


Fig. 8 a-b: *Acropimpla pictipes* (♀): (a) Areolet, (b) Apex of ovipositor.

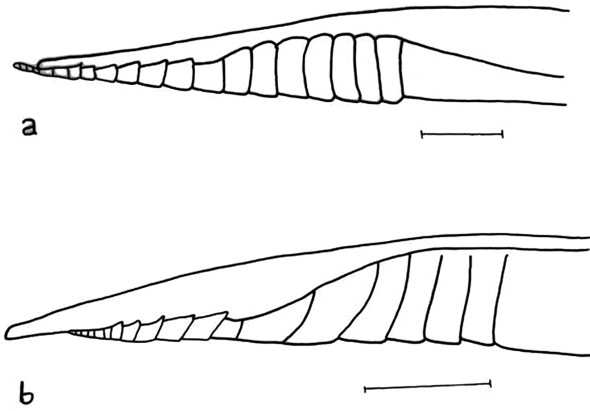


Fig. 9a-b: Apex of ovipositor: (a) *Dolichomitus tuberculatus*, (b) *D. populneus*.

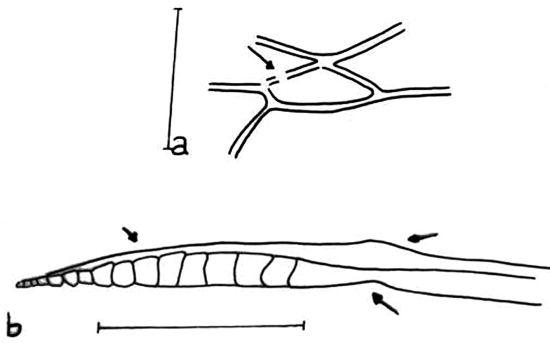


Fig. 10a-b: *Ephialtes manifestator*: (a) Areolet and II. intercubitus, (b) Apex of ovipositor.

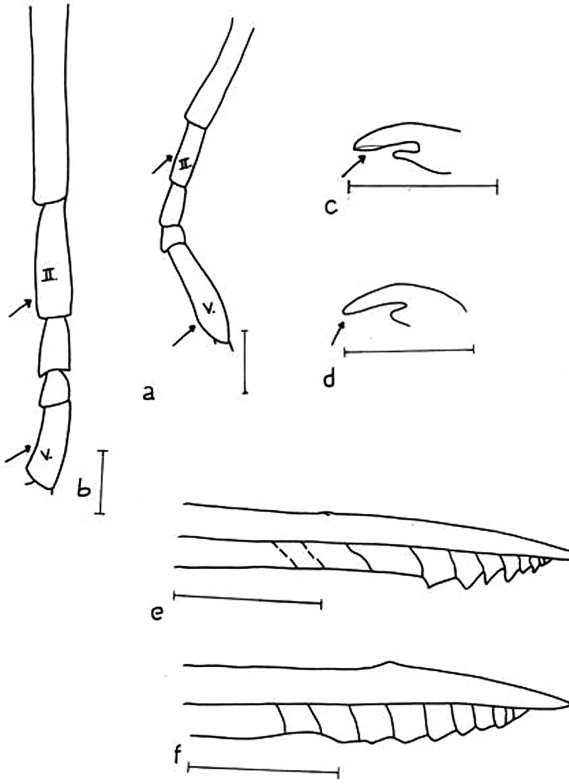


Fig. 11a-f: Tarsal claws: (a) *Exeristes arundinis* (♀), (b) *E. roborator* (♀), (c-d) Tooth: (c) *E. arundinis* (♀), (d) *Exeristes roborator* (♀), (e-f) Apex of ovipositor: (e) *E. arundinis*, (f) *E. roborator*.

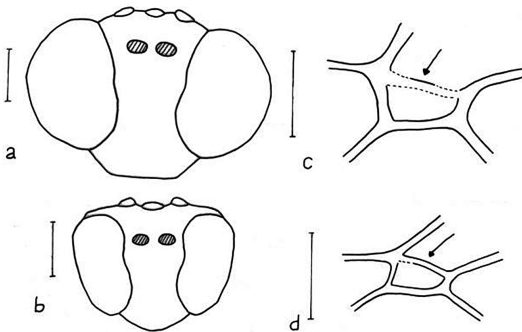


Fig. 12a-d: Head: (a) *Gregopimpla malacosomae* (♂), (b) *G. inquisitor* (♂), (c-d) Areolet and II intercubitus: (c) *G. malacosomae* (♂), (d) *G. inquisitor* (♂).

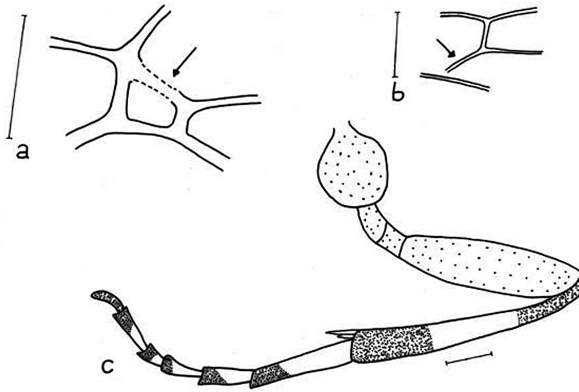


Fig. 13 a-c: *Iseropus stercorator* (♂): (a) Areolet and II. intercubitus, (b) Nervellus, (c) Hind leg.

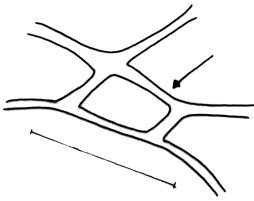


Fig. 14: Areolet and II. intercubitus of *Liotryphon crassisetus* (♂).

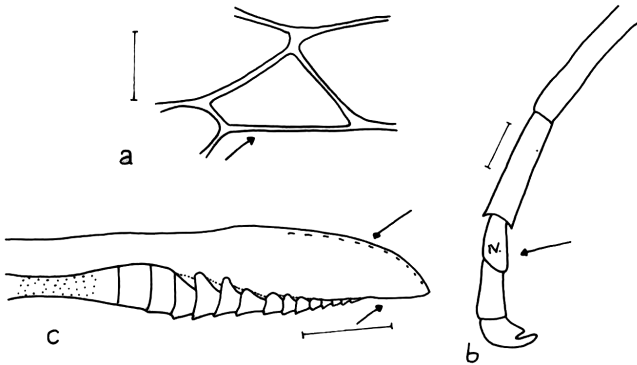


Fig. 15 a-c: *Paraperithous gnathaulax* (♀): (a) Areolet, (b) Tarsal segments, (c) Apex of ovipositor.

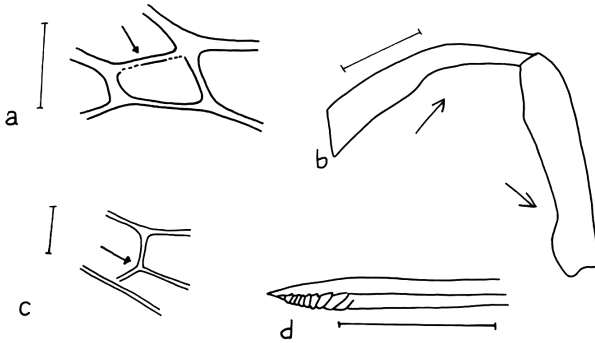


Fig. 16a-d: *Scambus (A.) nigricans* (♂): (a) Areolet and II. intercubitus, (b) Profemur and protibia, (c) Nervellus, (d) Apex of ovipositor.

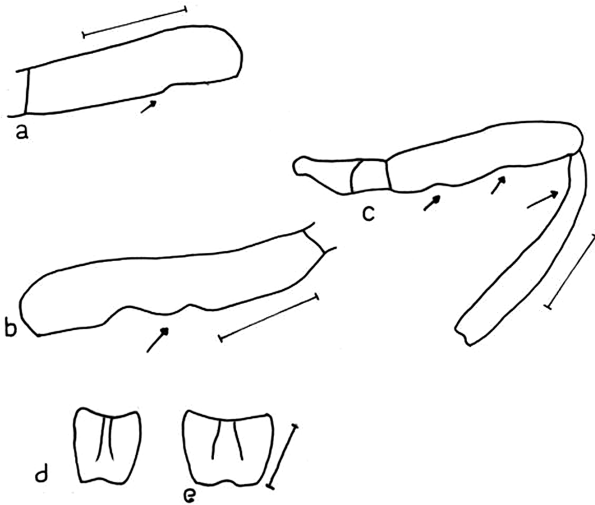


Fig. 17a-e: (a) Profemur of *Endromopoda detritus*, (b-c) *E. phragmitidis* (b) Metafemur, (c) Profemur and tibia; (d-e) Mediolongitudinal carina: (d) *Endromopoda* (e) *Scambus*.

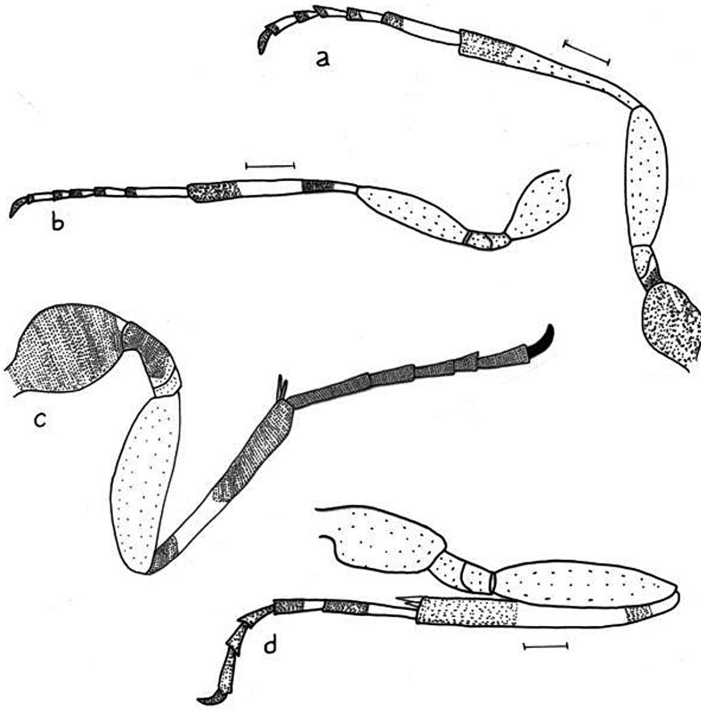


Fig. 18: Hind leg: (a) *Scambus brevicornis*, (b) *S. foliae*, (c) *S. sagax* (d) *S. vesicarius*.

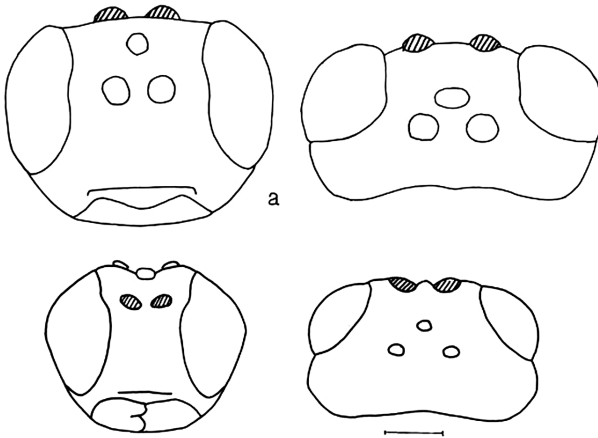


Fig. 19a-b: Head: (a) *Scambus calobatus*, (b) *S. planatus*.

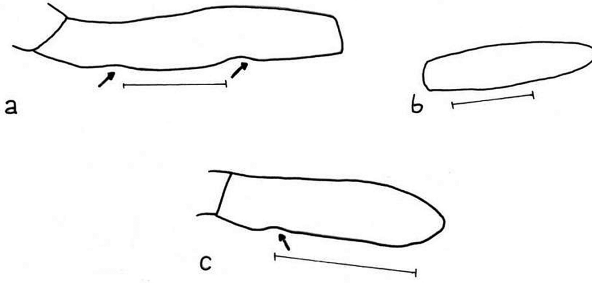


Fig. 20a-c: Profemur: (a) *S. calobatus*, (b) *S. foliae*, (c) *S. sagax*.

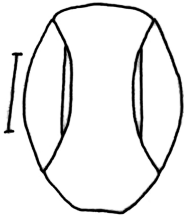


Fig. 21: Mesoscutum of *Tromatobia oculatoria* (♂).

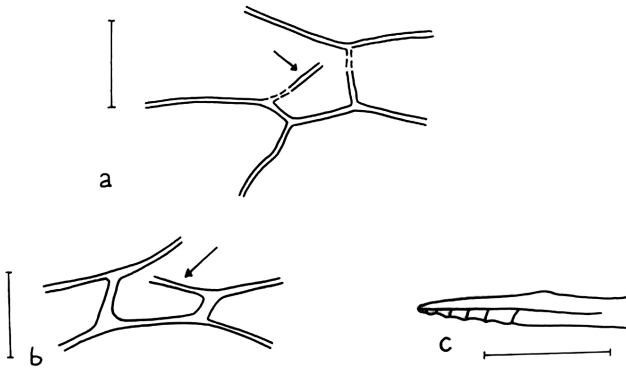


Fig. 22a-c: (a-b) II. intercubitus: (a) *Tromatobia ornata* (♂), (b) *T. ovivora* (♂), (c) Apex of ovipositor on *T. ovivora*.

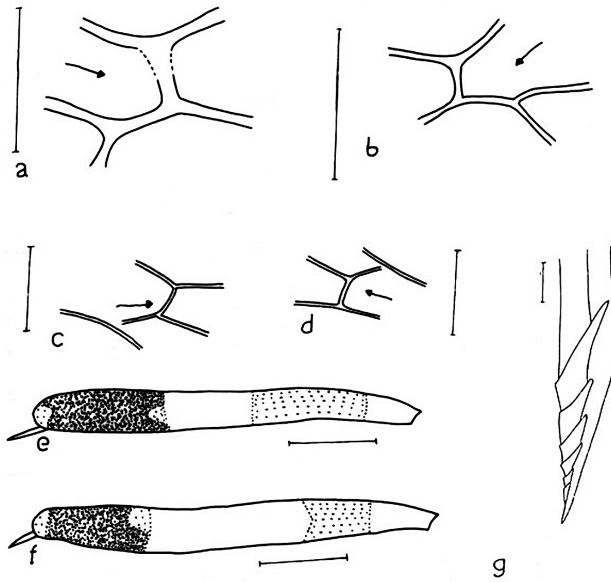


Fig. 23a-g: (a-b) II. intercubitus: (a) *Zaglyptus varipes* (♀), (b) *Z. multicolor* (♀), (c-d) Nervellus: (c) *Z. varipes* (♀), (d) *Z. multicolor* (♀), (e-f) Metatibiae: (e) *Z. varipes* (♀), (f) *Z. multicolor* (♀); (g) Apex of ovipositor on *Z. varipes*.

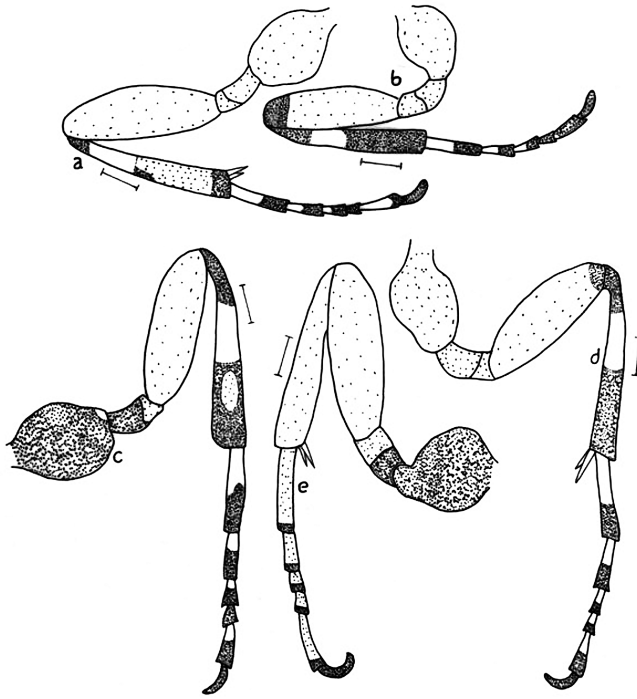


Fig. 24a-e: Hind leg: (a) *Itoplectis alternans* (♀), (b) *I. aterrima* (♀), (c) *I. maculator* (♀), (d) *I. tunetana* (♀), (e) *I. viduata* (♀).

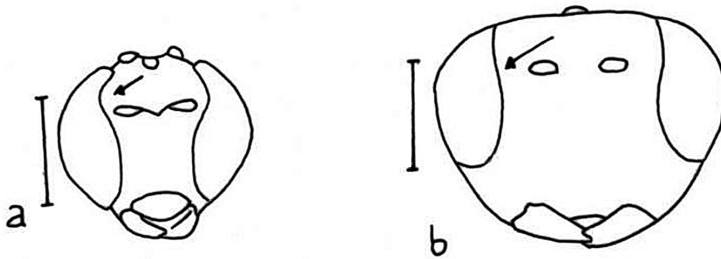


Fig. 25a-b: Inner margins of eyes: (a) *Itoplectis alternans* (♀), (b) *Strongyloopsis belua* (♀).

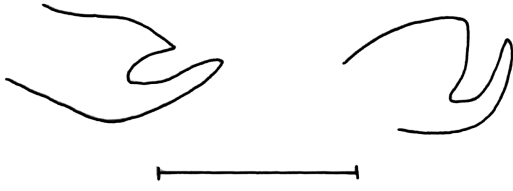


Fig. 26a-b: Protarsal claws: (a) *Itopectis alternans* (♀), (b) *Itopectis tunetana* (♀).

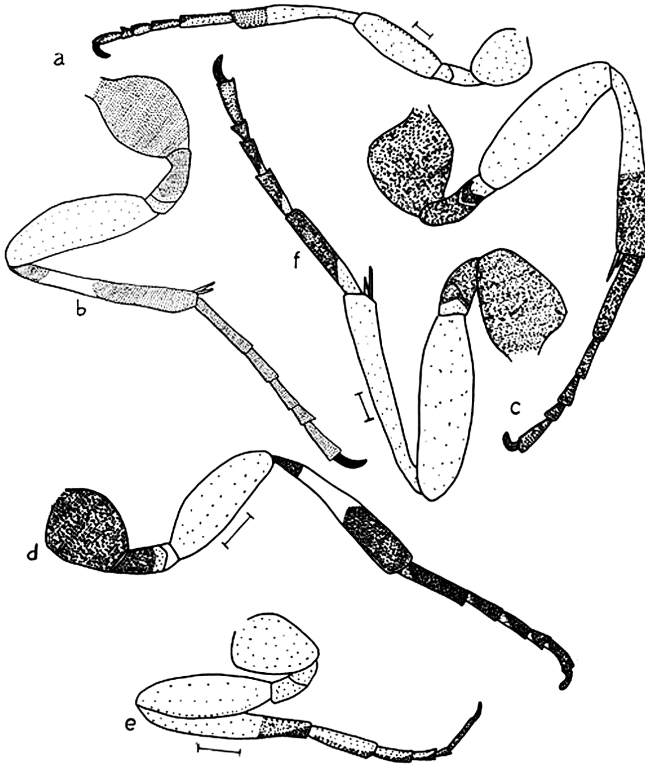


Fig. 27: Hind leg: (a) *Pimpla arcadica* (♀), (b) *P. artemonis* (♀), (c) *P. caucasica* (♀), (d) *P. contemplator* (♂), (e) *P. coxalis* (♀).

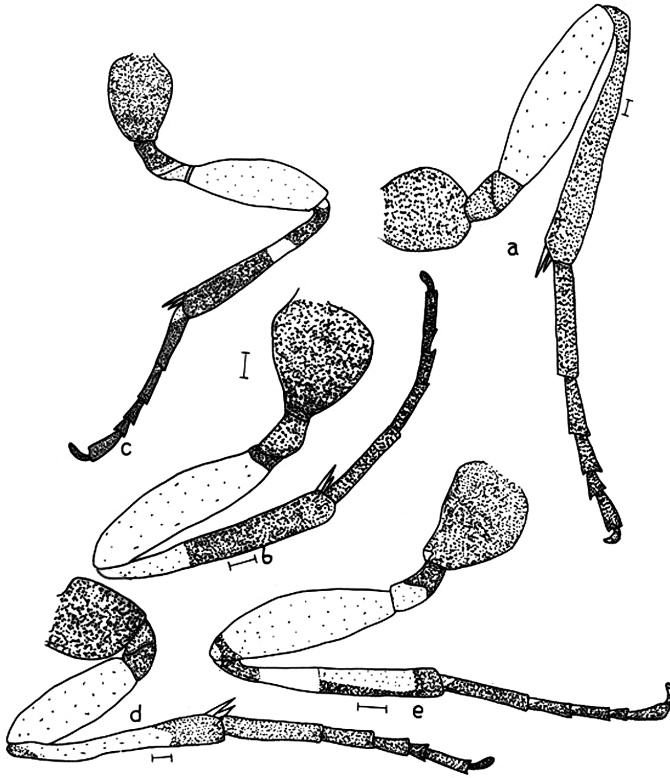


Fig. 28a-e: Hind leg: (a) *Pimpla illecebrator* (♀), (b) *P. sodalis* (♀), (c) *P. spuria* (♂), (d) *P. rutipes* (♀), (e) *P. turionella* (♂).

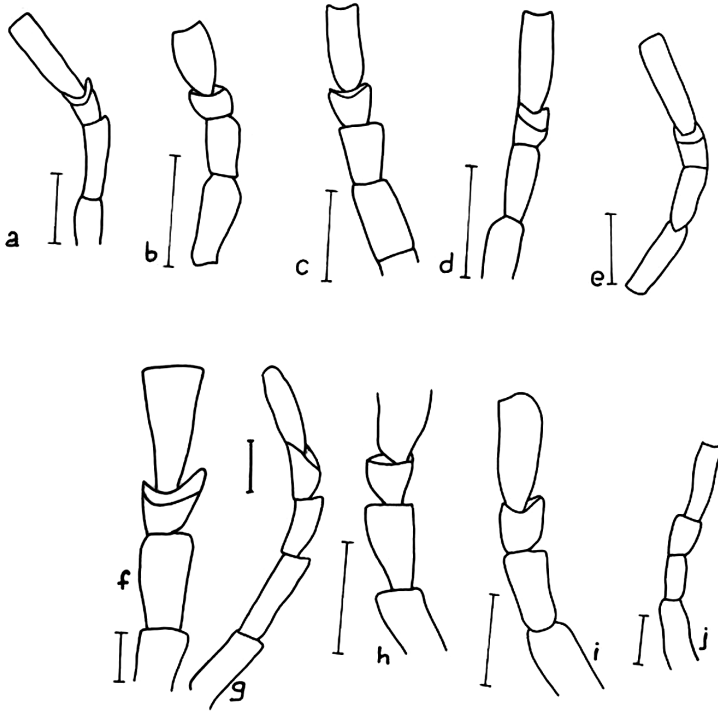


Fig. 29a-j: Fourth protarsomere: (a) *Pimpla arcadica* (♀), (b) *Pimpla artemonis* (♀), (c) *P. caucasica* (♀), (d) *P. contemplator* (♂), (e) *P. coxalis* (♀), (f) *P. illecebrator* (♀), (g) *P. sodalis* (♀), (h) *P. spuria* (♂), (i) *P. rutipes* (♀), (j) *P. turionella* (♂).

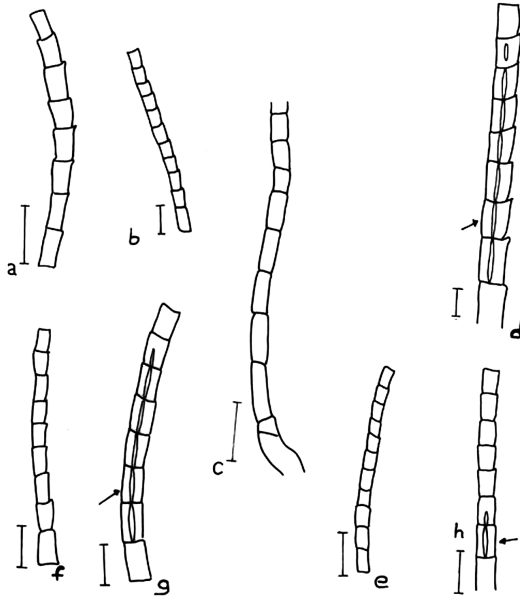


Fig. 30a-h: (a,b,c,f,g) Flagellomeres without tyloids, (d,e,h,i) Flagellomeres with tyloids; (a) *Pimpla artemonis* (δ), (b) *P. caucasica* (φ), (c) *P. contemplator* (δ), (d) *P. illecebrator* (δ), (e) *P. sodalis* (φ), (f) *P. spuria* (δ), (g) *P. rutipes* (δ), (h) *P. turionella* (δ).

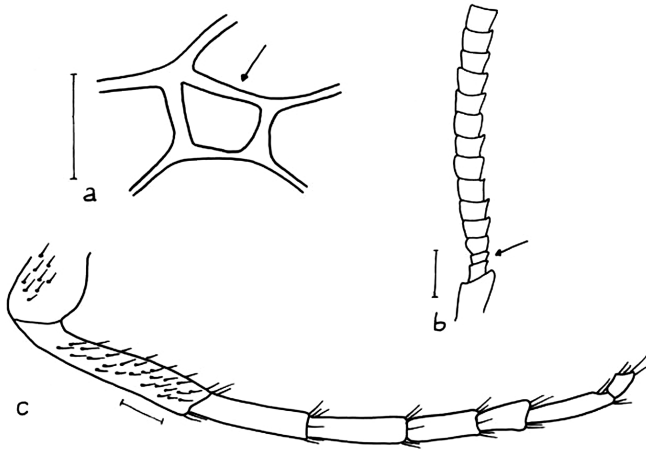


Fig. 31a-c: *Strongylopsis belua* KUZIN (φ): (a) Areolet and II. intercubitus, (b) Flagellomeres, (c) Hind leg.

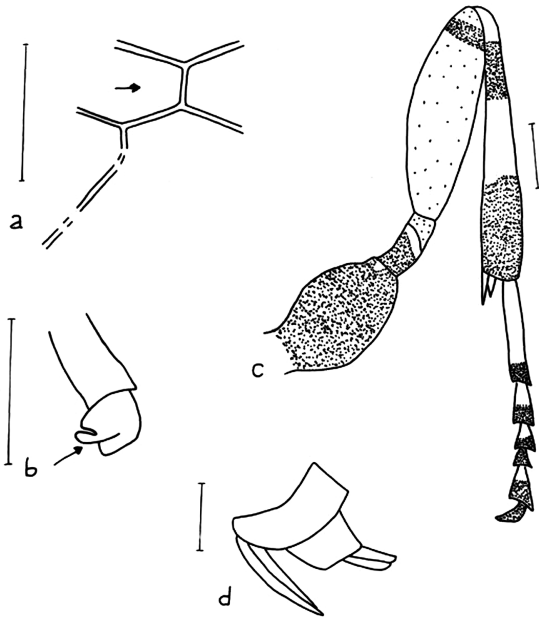


Fig. 32a-d: *Schizopyga podagrica* (♀): (a) Vein on front wing, (b) Tarsal claws, (c) Hind leg, (d) Apex of ovipositor.

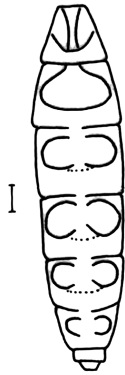


Fig. 33: Abdominal tergites of *Polysphincta tuberosa* GRAVENHORST (♀).

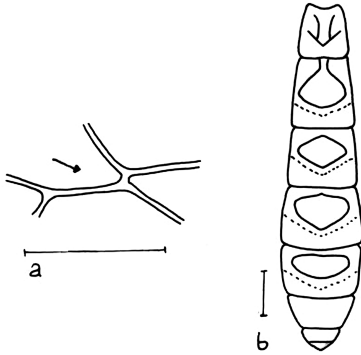


Fig. 34a-b: *Zatyptota bohemani* (♀): (a) Vein on front wing, (b) I.-V. abdominal tergites.

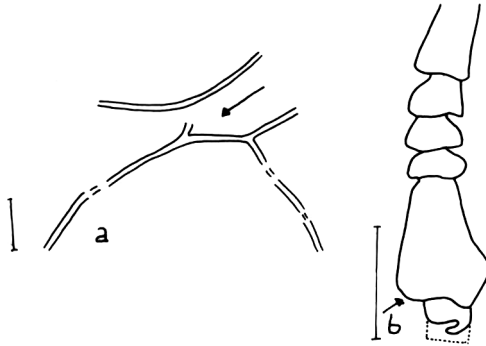


Fig. 35a-b: *Zabrachypus primus* CUSHMAN (♀): (a) Vein on front wing, (b) Last tarsomere.

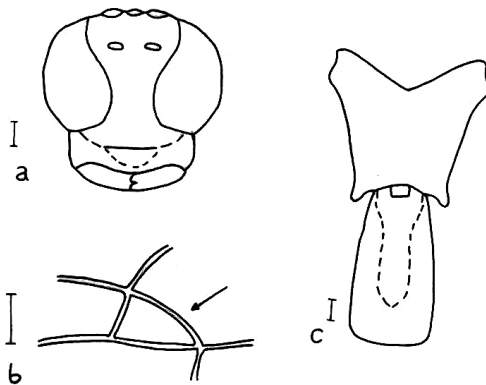


Fig. 36a-c: *Rhyssa persuasoria* (♀): (a) Head, (b) Areolet, (c) I. abdominal tergite.

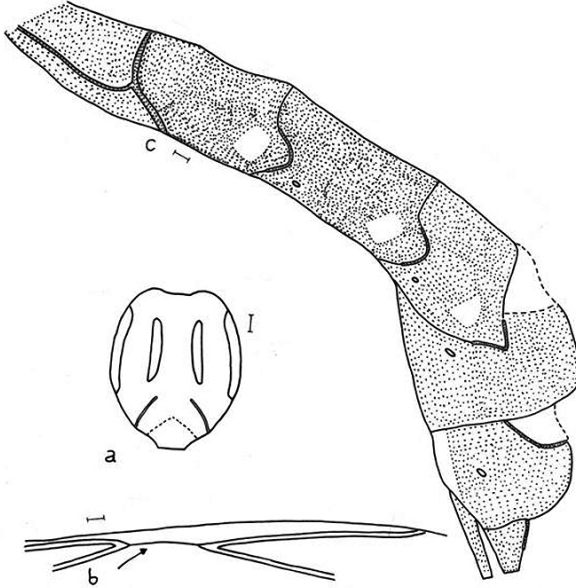


Fig. 37a-c: *Megarhyssa perlata* (♀): (a) Mesoscutum, (b) Stigma, (c) Abdomen.

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