



Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 29, Heft 22: 293-320

ISSN 0250-4413

Ansfelden, 28. November 2008

Contribution to the knowledge of ichneumonid wasps of Iran. Subfamilies Ichneumoninae, Pimplinae and Diplazontinae (Hymenoptera, Ichneumonidae)

Ashkan MASNADI-YAZDINEJAD & Reijo JUSSILA

Abstract

The paper provides the faunistic data of 44 examined species of 3 ichneumonid subfamilies: Ichneumoninae 29 species, Pimplinae 13 species and Diplazontinae 2 species. 2 species in 2 genera (*Sussaba* CAMERON, 1909 and *Woldstedtius* CARLSON, 1979) from subfamily Diplazontinae, 12 species in 2 genera (*Fileanta* CAMERON, 1901 and *Probolus* WESMAEL, 1845) from subfamily Ichneumoninae and 2 species from subfamily Pimplinae are new records for the Iranian ichneumonid fauna. Previously recorded species are included. Distributional maps are given for all species of these three subfamilies. The study increases the Iranian number of known species of Ichneumoninae to 82, Pimplinae to 42 and Diplazontinae to 4.

Zusammenfassung

Es werden 44 Ichneumonidae-Arten aus den Unterfamilien Ichneumoninae, mit 29 Arten, Pimplinae, mit 13 Arten, und Diplazontinae, mit 2 Arten, aus dem Iran faunistisch bearbeitet. 15 Arten erweisen sich als Neuanachweise für den Iran. Das Arteninventar der drei Unterfamilien im Iran wird in Tabellen und Verbreitungskarten dargestellt.

Introduction

The hymenopterous family Ichneumonidae is one of the largest in the entire Insecta with 60.000 species worldwide and with 8711 species described from the Palaearctic

region. This cosmopolitan family usually occurs in cool and moist climates rather than in warm and dry habitats. The eastern Palaearctic and eastern Nearctic regions are particularly rich in ichneumonid species. Ichneumonids are parasitoids of immature holometabolous insect orders such as Coleoptera, Diptera, Hymenoptera, Lepidoptera, Raphidioptera, Trichoptera and also non-insect Chelicerata (Araneae), but the most common hosts are Symphyta and Lepidoptera (GOULET & HUIBER 1993). The highly diverse family of Ichneumonidae, with 39 subfamilies, has been poorly represented in Iran.

The subfamily Ichneumoninae is the second largest subfamily of Ichneumonidae, and contains 4300 species worldwide, of which 1774 species occur in the Palaearctic region (YU & HORSTMANN 1997). From this subfamily 73 species have been previously recorded from Iran (HEINRICH 1929; KASPARYAN 1981; TOWNES et al. 1965; HERARD et al. 1979; SHOJAEI 1996; KOLAROV & GHAHARI 2005; MASNADI-YAZDINEJAD 2006).

The subfamily Pimplinae consists of 1600 known species, of which 330 species occur in the Palaearctic region (YU & HORSTMANN 1997). From this subfamily 35 species have been previously recorded from Iran (TOWNES et al. 1965; AUBERT 1969; MOMOI 1973; CONSTANTINEANU & PISICA 1977; HERARD et al. 1979; KASPARYAN 1973, 1974, 1981; RAJABI 1986; SELFA et al. 1988; TSANKOV & MIRCHEW 1999; SEDGHIAN 2001; KOLAROV 1987, 1992, 1995, 1997, 1998; KOLAROV & GHAHARI 2005, 2006; MASNADI-YAZDINEJAD 2006).

The subfamily Diplazontinae with 420 regional species contains 170 species in the Palaearctic region (YU & HORSTMANN 1997). From this subfamily 2 species have been previously recorded from Iran (TOWNES et al. 1965; KOLAROV & GHAHARI 2005).

This paper provides additional records of species of these subfamilies from Iran and shows their distribution in the country with references to all recorded species of Ichneumoninae, Pimplinae and Diplazontinae from Iran.

Material and Methods

The material for this study originates from collecting during 1999 - 2006 in many provinces of Iran and also from examinations at the collection of Hayk MIRZAYAN's Insect Museum (HMIM) from 1970 till 2006. The major sampling technique in this study was using a sweeping net, a Malaise trap and light trap. Collected specimens after preserving in Ethyl alcohol 76% or Ditrax solution were carried to laboratory, prepared, pinned and put into collection boxes. For identification of the specimens the following references have been used: KASPARYAN 1973; MEIER 1934; TOWNES 1969, 1971. Some identification and confirmation has been done by M. RIEDEL and the second author.

Result

In this article all known species of three subfamilies, the Ichneumoninae, Pimplinae and Diplazontinae including new records are presented for the Iranian fauna. The new recorded species are marked with one asterisk (*) and new genera with two (**). Resulting from the study, 4 species from 3 genera are listed for the subfamily Diplazontinae, of which 2 species and 2 genera are newly recorded. 80 species from 6 tribes are listed for the subfamily

Ichneumoninae, of which 10 species and 2 genera are new records. 42 species from 4 tribes are given for the subfamily Pimplinae, of which 5 species and 1 genus are new records for the fauna of Iran. The complete list of all known species from these three subfamilies are given in the Tables 1-3 based on both, the material examined by the authors and literature review. The concerned references are cited for each previously recorded species in the tables. The distributional maps of all species are given as figures 1-9. The geographical distribution with date and locality is given for all examined species. A short comment is presented for each examined species. The examined material is deposited in the collection of Hayk MIRZAYANS Insect Museum (HMIM), located in the Insect Taxonomy Research Department of the Iranian Research Institute of Plant Protection in Teheran.

Subfamily Diplazontinae

Diagnosis: Mandible are with wide dorsal tooth, divided into upper and lower points by weak notch; tergum 1 rectangular in dorsal view; hind wing with vein cu_1 about as long as vein $cu-a$. Diplazontinae are well known as koinobiont endoparasitoids of Syrphidae (Diptera). Two species, *Diplazon laetatorius* (FABRICIUS, 1781) and *D. orientalis* CARMERON, 1905, have been previously recorded as parasitoids of Syrphid flies from Iran (TOWNES et al. 1965; MALKESHI & KHIABANI 1996; KOLAROV & GHAHARI 2005).

**Sussaba erigator* (FABRICIUS, 1793)

Ophion festivator FABRICIUS, 1804

Material examined: Tehran, 1 ♂, Firuzkuh, Markazi district, 12 km. N Firuzkuh, Vash, 2200 m, 4.vi.2005, BERG (Coll. R.).

Distribution: Eastern Palaearctic, western Palaearctic, Europe, new for Iran.

Remarks: This species is an ectoparasitoid of *Epistrophe grossulariae* (Dipt., Syrphidae), *Gastrophysa polygoni* (Col., Chrysomelidae) and *Heliodines rosella* (Lep., Heliodinidae).

***Woldstedtius biguttatus* (GRAVENHORST, 1829)

Woldstedtius rufipes GRAVENHORST, 1829

Woldstedtius confusus WOLDSTEDT, 1874

Material examined: East Azarbaijan, 1 ♂, Kaleibar, Vinagh, 800 m, 8.viii.1992, M. PARCHAMI-ARAGHI & H. BADI, Kohghiloye-Boyrahmad, 1 ♂, Yasuj, 2000 m, 4.v.1985, H. MIRZAYANS & A. HASHEMI.

Distribution: Palaearctic, new for Iran.

Remarks: The genus *Woldstedtius* CARLSON, 1979 and the species *W. biguttatus* are newly recorded from Iran

Subfamily Ichneumoninae

The subfamily Ichneumoninae is easily recognized by the distinct clypeus, short sternaulus, straight $m+cu$ of hind wing and deep gastrocoeli. Many species are sexually different coloured and well known as endoparasitoids of Lepidoptera. They lay eggs into larvae (koinobionts) or pupa (idiobionts) (GOULET & HUBER 1993). From this subfamily

73 species from 5 tribes, Alomyini, Callajoppini, Heresiarchini, Ichneumonini and Listrodromini, have been previously recorded from Iran (HEINRICH 1929; KASPARYAN 1981; TOWNES et al. 1965; HERARD et al. 1979; SHOJAEI 1996; KOLAROV & GHAHARI 2005 and MASNADI-YAZDINEJAD 2006). The following data provide more information for 29 examined species, of which 12 species and 2 genera from 4 tribes are new records for the Iranian fauna; tribes: Heresiarchini with 3 new records, Ichneumonini with 8 new records and Phaeogenini with 1 new record.

Tribe Heresiarchini

***Coelichneumon comitator* (LINNAEUS, 1758)**

Coelichneumon nigrata FABRICIUS, 1793

Coelichneumon purpurissatus PERKINS, 1953

Material examined: Tehran: 1 ♂, Firuzkuh, Markazi district, 28 km E Firuzkuh, Peynap valley, 2450 m, 3.vi.2005, O. BERG (Coll. R.).

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (HEINRICH 1929; TOWNES et al. 1965).

Remarks: This species is attracted to light and some of the major host species are Lepidoptera: *Noctua fimbriata* (Noctuidae), *Autographa gamma* (Noctuidae), *Hadena rivularis* (Noctuidae), *Abraxas grossulariata* (Geometridae).

***Coelichneumon deliratorioides* (LINNAEUS, 1758)**

Ichneumon alternatus SCHRANK, 1776

Ichneumon cingulipes STEPHENS, 1835

Ichneumon delirator ZETTERSTEDT, 1838

Material examined: Gilan, Bandar-e Anzali (Pahlavi), 29.x.1970, M. ABAEI.

Distribution: Holarctic, known from Iran (TOWNES et al. 1965).

Remarks: The adults emerge from the pupae of the host, which are mainly *Sphinx pinastri* (Lep., Sphingidae) and *Lacanobia oleracea* (Lep., Noctuidae).

***Coelichneumon microstictus* (GRAVENHORST, 1829)**

Coelichneumon concolor HEINRICH, 1949

Ichneumon metidjensis BERTOUMIEU, 1894

Ichneumon transsylvaniaicus KISS, 1924

Material examined: Fars: 1 ♀, Shiraz, 22.iv.1999, A. MASNADI-YAZDINEJAD; 1 ♀, Ahocchar, 27.vi.2000, A. MASNADI-YAZDINEJAD.

Distribution: Oriental and Palaearctic, known from Iran (MASNADI-YAZDINEJAD & SADEGHI 2006).

Remarks: The major host species are *Cosmia trapezina* (Lep., Noctuidae) and *Graellsia isabellae* (Lep., Saturnidae).

****Coelichneumon orbitator* (THUNBERG, 1822)**

Ichneumon liocnemis THOMSON, 1888

Ichneumon microstictus GRAVENHORST, 1829

Ichneumon ruficauda WESMAEL, 1845

Material examined: Mazandaran, 1 ♀, Chalus, 2050 m, 27.vi.1998, M. MOFIDI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Oriental, new record for Iran.

Remarks: Some of the major host species are *Drymonia ruficornis* (Lep., Notodontidae), *Enargia ypsilon* (Lep., Noctuidae) and *Hyles euphorbiae* (Lep., Sphingidae).

***Coelichneumon singularis* (BERTHOUMIEU, 1829)**

Ichneumon lacrymator FONSCOLOMBE, 1847

Coelichneumon lacrymator (FONSCOLOMBE, 1847)

Ichneumon charkovensis KOKUJEV, 1908

Material examined: Fars: 1 ♂, 1 ♀, Shiraz, 23.vii.1999, A. MASNADI-YAZDINEJAD; 1 ♂, Zarghan, 29.v.2000, A. MASNADI-YAZDINEJAD. Sistan and Baluchestan: 1 ♀, Zabol, Zahak, 557 m, 28.x.2004. M. MOGHADDAM.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (MASNADI-YAZDINEJAD & SADEGHI 2006).

Remarks: Some of the major host species are *Catocala nymphaea* (Lep., Noctuidae) and *Catocala nymphagoga* (Lep., Noctuidae).

****Coelichneumon validus* (BERTHOMIEU, 1894)**

Coelichneumon nigricornis (WESMAEL, 1845)

Ichneumon nigricornis SPINOLA, 1843

Material examined: Tehran: 1 ♂, Tehran, Shemshak, 2700 m, 12.viii.1981, A. HASHEMI; 1 ♂, Tehran, Dizin, 2500 m, 15.iv.1993, E. EBRAHIMI & M. PARCHAMI-ARAGHI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, new for Iran.

Remarks: Some of the major host species are *Euthrix potatoria* (Lep., Lasiocampidae) and *Gortyna flavago* (Lep., Noctuidae).

****Sympasis scutellator* (GRAVENHORST, 1829)**

Ichneumon digrammus GRAVENHORST, 1829

Ichneumon rufescens RETZIUS, 1783

Stenichneumon iberica SEYRIG, 1927

Material examined: Tehran: 1 ♀, 1 ♂, Karaj, Azadbar, 2400 m, 7.v.1995, A. SARAFRAZI & H. BADI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, new for Iran.

Remarks: Overwinter as adult and the female oviposit in pupal stage of hosts which are *Abraxas grossulariata* (Lep., Geometridae), *Panolis flammea* (Lep., Noctuidae) and *Euproctis chrysorrhoea* (Lep., Lymantriidae).

Tribe Ichneumonini

***Amblyteles armatorius* (FOERSTER, 1771)**

Amblyteles fasciatorius HEINRICH, 1929

Amblyteles regius TISCHBEIN, 1868

Material examined: Azarbayejan-e Shargi, 2 ♂♂, Almas, 2100 m, 29.vi.1985, H. MIRZAYANS & A. PAZUKI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (HEINRICH 1929).

Remarks: Overwinter as adult. Emerge from pupa. Solitary. Some of the major host species are *Agrotis segetum*, *Autographa gamma* and *Noctua orbona* (Lep., Noctuidae), *Lymantria dispar* (Lep., Lymantriidae).

***Ctenichneumon castigator* (FABRICIUS, 1793)**

Ichneumon castigator FABRICIUS, 1793

Ichneumon abrogator SCHRANK, 1786

Ichneumon cardui SCHRANK, 1786

Ichneumon pulsator PANZER, 1804

Material examined: Mazandaran, 1 ♂, Kelar Dasht, 22.viii.1970, M. SAFAVI. Tehran, 1 ♂, Shemshak, Dizin, 2700 m, 21.vii.2003, S. SERI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Neotropical, known from Iran (HEINRICH 1929).

Remarks: Some of the major host species are *Agrotis segetum* and *Orthosia incerta* (Lep., Noctuidae), *Vanessa cardui* and *V. atalanta* (Lep., Nymphalidae).

****Ctenichneumon devylderi* (HOLMGREN, 1871)**

Ichneumon ineptus HOLMGREN, 1871

Amblyteles ineptus (HOLMGREN, 1871)

Material examined: Ghom: 1 ♂, Sughe, 2200 m, 24.vi.1981, A. HASHEMI.

Distribution: Western Palaearctic, Europe, new for Iran.

Remarks: Its noctuid hosts are famous *Pyrrhia trietschekii* and *P. victorina*.

***Ctenichneumon panzeri* (WESMAEL, 1845)**

Amblyteles panzeri WESMAEL, 1845

Amblyteles denticornis HEINRICH, 1938

Amblyteles nigrifemur ULBRICHT, 1929

Material examined: Mazandaran, 1 ♂, Tonekabon, Jirbalan, 1100 m, 7.x.1990, E. EBRAHIMI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Oriental, Australasian, known from Iran (HEINRICH 1929).

Remarks: Emerges from pupa. Solitary. The major host species are several economically important pests from the lepidopterous family Noctuidae as *Agrotis segetum*, *A. ipsilon*, *Helicoverpa zea*, and *Spodoptera exigua*.

***Diphyus mercatorius* (FABRICIUS, 1793)**

Ichneumon infractorius LINNAEUS, 1761

Ichneumon nugatorius (FABRICIUS, 1794)

Amblyteles nigricaudus BERTHOUMIEU, 1894

Material examined: Ardabil, 1 ♀, Khalkhal, 2100 m, 29.vi.1985, H. MIRZAYANS & A. PAZUKI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (TOWNES et al. 1965; HEINRICH 1978).

Remarks: Overwinters as adult. The major host species are *Agapanthia cardui* (Col., Cerambycidae), *Agrotis segetum* and *A. ipsilon* (Lep., Noctuidae).

****Diphyus ochromelas* (GMELIN, 1790)**

Ichneumon pulchellus (CHRIST, 1791)

Ichneumon negatorius (FABRICIUS, 1793)

Amblyteles trialbatus CONSTANTINEANU, 1954

Material examined: Ardabil: 3 ♂♂, Khalkhal, 2100 m, 29.vi.1985, H. MIRZAYANS & PAZUKI; Gilan: 3 ♂♂, Asalem, 29.vi.1985, H. MIRZAYANS & A. PAZUKI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, new for Iran.

Remarks: Overwinters as adult and its noctuid host species are *Agrotis exclamationis*, *A. segetum*, *Euxoa tritici* and *Noctua pronuba*.

***Eutanyacra glauatoria* (FABRICIUS, 1793)**

Amblyteles bimaculatus CONSTANTINEANU, 1954

Material examined: Gorgan, 1 ♀, Golestan, 2.iii.1985, A. PAZUKI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (HEINRICH 1929).

Remarks: Overwinters as adult. Emerge from larva/nymph. Some of the major host species are *Amphipyra tragopoginis* (Lep., Noctuidae), *Cucullia artemisiae* (Lep., Noctuidae), *Hadena compta* (Lep., Noctuidae) and *Smerinthus ocellatus* (Lep., Sphingidae).

***Eutanyacra picta* (SCHRANK, 1776)**

Ichneumon affirmatorius THUNBERG, 1822

Ichneumon concinnus Say, 1829

Ichneumon laboratorius FABRICIUS, 1793

Material examined: Golestan, 1 ♂, Park-e Mell-e Golestan, Almeh, 1650 m, 17.vii. 1996, E. EBRAHIMI & V. NAZARYAN.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Oriental, known from Iran (HEINRICH 1929; TOWNES et al. 1965).

Remarks: Overwinters as adult. This species is a solitary parasitoid of the pupal stage of *Agrotis ipsilon*, *Agrotis segetum*, *Noctua pronuba* and *Mamestra brassicae* from the family Noctuidae.

*****Fileanta flavolaeta* (BERTHOUMIEU, 1892)**

Amblyteles flavoetus RUDOW, 1888

Material examined: Ghom: 4 ♂♂, Surge, 2200 m, 24.vi.1981, A. HASHEMI.

Distribution: Western Palaearctic, new for Iran.

Remarks: The genus *Fileanta* CAMERON, 1901 and the species *F. flavolaeta* are new records for the Iranian fauna.

****Hoplismenus lamprolabus* WESMAEL, 1857**

Amblyteles violaceus RUDOW, 1888

Material examined: Tehran: 1 ♂, Rudbar-e Ghasran, 2300 m, 14.vii.1993, E. EBRAHIMI & M. PARCHAMI-ARAGHI; 1 ♂, Abali, Mosha, 1950 m, 19.vii.1995, V. NAZARI. Lorestan, 1 ♂, Oshkuh, Kamandan, 2040 m, 22.vii.1981, A. PAZUKI.

Distribution: Western Palaearctic, Europe, new for Iran.

****Ichneumon caloscelis* WESMAEL, 1845**

Ichneumon caloscelus MARSHALL, 1872

Material examined: Tehran: 3 ♂♂, Evin, 13.vi.1973, L. T.
Distribution: Western Palaearctic, Europe, new for Iran.

***Ichneumon proletarius* WESMAEL, 1848**

Ichneumon areolator SELFA, BORDERA & JIMENEZ, 1990

Ichneumon rufipes STEPHENS, 1835

Ichneumon pictus CURVIER, 1833

Material examined: Tehran, 1 ♀, Evin, 11.8.1971, L. T. Golestan, 1 ♂, Gorgan, Ramian, Paghaleh, 1300 m, 21.vi.1995, H. MIRZAYANS & H. BADI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (HEINRICH 1929).

Remarks: Overwinters as adult and its major host species are *Agrotis segetum* and *Panolis flammea* (Lep., Noctuidae).

***Ichneumon sarcitorius* LINNAEUS, 1758**

Euchneumon sarcitorius HEINRICH, 1929

Ichneumon ruficornis KISS, 1929

Ichneumon farctor DALLA TORRE, 1901

Ichneumon niger SCOPOLI, 1786

Material examined: Azarbayejan-e Gharbi, 1 ♂, Oromie, 28.viii.1976.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Oceanic, known from Iran (HEINRICH 1929, 1978; HILPERT 1992).

Remarks: Overwinters as adult. This species is a solitary parasitoid of immature stages of *Agrotis segetum*, *A. radians*, *Hadena caesia*, *Helicoverpa armigera*, *H. zea* (Lep., Noctuidae), *Lymantria dispar* (Lep., Lymantriidae) and *Zeuzera pyrina* (Lep., Cossidae).

***Ichneumon xanthorius* FOERSTER, 1771**

Ichneumon flaviniger GRAVENHORST, 1829

Ichneumon quadrifasciatus GRAVENHORST, 1829

Physcoteles nassavicus HABERMEHL, 1917

Material examined: Mazandaran, 1 ♂, Amol, 43 m, 15.v.2006, A. MASNADI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (HEINRICH 1929).

Remarks: Overwinters as adult and its major host species from the family Noctuidae are *Acronicta cinerea*, *Hadenia irregularis* and *Polyphaenis sericata*.

***Obtusodonta equitatoria* (PANZER, 1786)**

Amblyteles carnifex KRIECHBAUMER, 1882

Ichneumon cingulatorius GRAVENHORST, 1820

Ichneumon flaviceps TISCHBAIN, 1879

Material examined: Ardabil, 1 ♂, Meshinkshahr, Ilandu, 1800 m, 3.vii.1997, H. BADI. Kashan, 1 ♂, Tahagh, 2000 m, 14.vi.1984, A. PAZUKI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (HEINRICH 1929).

Remarks: Overwinters as adult and its major host species are *Erannis defoliaria* (Lep., Geometridae), *Agrotis segetum* and *Panolis flammea* (Lep., Noctuidae).

****Obtusodonta erythrocephalus* (MEYER, 1927)**

Amblyteles ferrugineus BERTHOUMIEU, 1895

Material examined: Fars, 1 ♀, Dashtarjen, 21.v.2000. A. MASNADI-YAZDINEJAD.

Distribution: Eastern Palaearctic, new for Iran.

Remarks: The major host species is *Euxoa lidia* (Lep., Noctuidae).

*****Probolus culptatorius* (LINNAEUS, 1758)**

Ichneumon femorator KIRBY, 1802

Ichneumon alticola GRAVENHORST, 1820

Probolus fossorius (WESMAEL, 1845)

Probolus nigrosternus KISS, 1926

Material examined: Golestan: 1 ♂, Park-e Melli-e Golestan, Yakhtikalan, 1650 m, 20.vii.1996, E. EBRAHIMI & V. NAZARI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, new for Iran.

Remarks: Overwinters as adult. Adult emerges from pupa. Its host species are *Abrostola triplasia*, *Hadena rivularis* (Lep., Noctuidae) and *Setina aurita* (Lep., Arctiidae).

***Triptognathus bolivari* (BERTHOUMIEU, 1894)**

Triptognathus incerta HEINRICH, 1929

Material examined: Ardabil, 1 ♂, Sabalan, 2300 m, 28.6.1985, H. MIRZAYANS & A. PAZUKI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (HEINRICH 1929).

***Triptognathus unifasciatus* (SPINOLA, 1843)**

Amblyteles jugorum (STROBL, 1901)

Exephanes hungaricus KISS, 1915

Triptognathus dammholzi HEINRICH, 1929

Material examined: Tehran: 2 ♂♂, Taleghan, Parachan, 2200 m, 27.vi.1991, E. EBRAHIMI & M. BADII. Ghazvin, 2 ♂♂, Ghazvin, 25 km NE, 2150 m, 11.vi.1995, M. PAR-CHAMI-ARAGHI & E. EBRAHIMI; 3 ♂♂, Alamut, Gazorkhan, 2080 m, 20.vi.1995, M. PAR-CHAMI-ARAGHI & E. EBRAHIMI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (HEINRICH 1929).

Remarks: Its host species is *Choerocampa porcellus* (Lep., Sphingidae).

****Virgichneumon callicerus* (GRAVENHORST, 1820)**

Ichneumon eremita KOKUJEV, 1909

Ichneumon plurialbatus WESMAEL, 1855

Material examined: Ardabil, 1 ♀, Sabalan, 2300 m, 28.6.1985, H. MIRZAYANS & A. PAZUKI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, new for Iran.

Remarks: Its major host species is *Callophrys rubi* (Lep., Lycaenidae).

Tribe Listrodromini

***Anisobas cingulatellus* HORSTMANN, 1997**

Material examined: Tehran, 1 ♀, Karaj, Arangeh, Sarziarat, 1750 m, 10.vii.1996, H. BADII.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (HEINRICH 1929).

Remarks: Its major host species is *Lycaena phlaeas* (Lep., Lycaenidae).

Tribe Phaeogenini

****Herpestomus brunnicornis* (GRAVENHORST, 1829)**

Herpestomus padella (GOUREAU, 1847)

Herpestomus hyponomeutae VIERECK, 1912

Ichneumon padella GOUREAU, 1847

Material examined: Tehran, 1 ♂, Shemshak, 20.v.1986, M. SHOJAEI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, new for Iran.

Remarks: This species is a potential biological agent of the apple ermine moth "*Yponomeuta malinellus*" (Lep., Yponomeutidae). There are more host species in the family Yponomeutidae such as *Plutella xylostella*, *Yponomeuta euonymella*, *Y. malinellus*, *Y. padella*, *Y. rorrella* and *Y. variables*.

Subfamily Pimplinae

Diagnosis: Clypeus apical half thin and with apical median notch; Propodeum without transverse carina and female tarsal claws often with basal lobe. They are mostly ectoparasitoids (idiobiont) of immature stages of holometabolous insects (GOULET & HUBER 1993). There are 38 recorded species of the subfamily Pimplinae in 4 tribes, Delomeristini (2 species), Ephialtini (20 species), Pimplini (16 species) and Polysphinctini (2 species), from Iran (TOWNES et al. 1965; AUBERT 1969; MOMOI 1973; CONSTANTINEANU & PISICA 1977; HERARD et al. 1979; KASPARYAN 1973, 1974, 1981; RAJABI 1986; SELFA et al. 1999; TSANKOV & MIRCHEW 1999; SEDGHIAN 2001; KOLAROV 1987, 1992, 1995, 1998; KOLAROV & GHAHARI 2005, 2006; MASNADI-YAZDINEJAD 2006.). Out of 13 examined species 2 species tribe Ephialtini are newly recorded for the Iranian fauna.

Tribe Ephialtini

****Dolichomitus tuberculatus* (GEOFFROY, 1758)**

Ephialtes dentiventris HELLEN, 1915

Ephialtes gigas WALSH, 1873

Ichneumon crispus CHRIST, 1791

Material examined: Fars, 1 ♂, Shiraz, 15.v.1999, A. MASNADI-YAZDINEJAD.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Nearctic, Oriental, new for Iran.

Remarks: Some of the major host species are *Acanthocinus aedilis*, *Cerambyx cerdo* (Col., Cerambycidae) and *Yponomeuta padella* (Lep., Yponomeutidae).

****Endromopoda detrita* (HOLMGREN, 1860)**

Endromopoda laevidorsum VOLLENHOVEN, 1873

Endromopoda brunnea BRISCHKE, 1880

Pimpla brunnea BRISCHKE, 1880

Pimpla nigricoxis ULRICH, 1910

Material examined: Gilan, 1 ♀, Loshan, Amarloo-Damash, 1750 m, 15.vi.2006, A. MASNADI-YAZDINEJAD.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Nearctic, Oriental, new for Iran.

Remarks: This species is a gregarious ectoparasitoid of *Anthonomus pomorum* (Col., Curculionidae), *Cephus pygmeus* (Hym., Cephidae), *Cydia pomonella*, *Tortrix viridana* (Lep., Tortricidae), *Malacosoma neustria* (Lep., Lasiocampidae).

***Exeristes ruficollis* (GRAVENHORST, 1829)**

Pimpla variegata RATZEBURG, 1844

Material examined: Markazi, 1 ♂, Ashtianm Dare-e Bidsokhte, 7.III.1997, H. BARARI & M. MOFIDI.

Distribution: Western Palaearctic, Europe, known from Iran (MASNADI-YAZDINEJAD 2007).

Remarks: Some of the major host species are *Andricus lucidus* (Hym., Cynipidae), *Cydia coniferana* (Lep., Tortricidae) and *Malacosoma neustria* (Lep., Lasiocampidae).

***Liotryphon caudatus* (RATZEBURG, 1848)**

Ephialtes brevivalvis HENSCH, 1929

Ephialtes incertus HENSCH, 1929

Neoephialtes foveolatus CONSTANTINEANU & PISICA, 1970

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Oceanic, known from Iran (RAJABI 1986).

Remarks: This species is endoparasitoid of cocoon and ectoparasitoid of larva. This solitary species is used as a biocontrol agent of *Cydia pomonella* (Lep., Tortricidae) as idiobiont parasitoid. Another tortricid host for *L. caudatus* is *Grapholita molesta*.

***Gregopimpla inquisitor* (SCOPOLI, 1763)**

Ichneumon scanicus SCHMIEDEKNECHT, 1929

Ichneumon albipes GEOFFROY, 1758

Pimpla pini HARTIG, 1838

Material examined: Tehran, 1 ♀, Damavand, 26.VII.1970, M. SAFAVI & A. HASHEMI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Nearctic, known from Iran (MASNADI-YAZDINEJAD 2007).

Remarks: It is a newly recorded endoparasitoid species from Iran, that emerges from larva/nymph or pupa. More than 70 hosts are reported for this species such as *Anobium punctatum* (Col., Anobiidae), *Lymantria dispar* (Lep., Lymantriidae) and *Aporia crataegi* (Lep., Pieridae).

***Scambus planatus* (HARTIG, 1838)**

Pimpla nucum RATZEBURG, 1844

***Pimpla longiventris* RATZEBURG, 1848**

Material examined: Azarbeyjan-e Sharghi, 1 ♀, Arasbaran, 2001, SEDGHIAN.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Nearctic, known from Iran (SEDGHIAN 2001).

Remarks: The species overwinters as prepupa and is known as common larva/nymphal parasitoid of 92 lepidopterous species such as *Archips rosana* and *Tortrix viridana* (Lep., Tortricidae).

***Scambus vesicularius* (RATZEBURG, 1844)**

Pimpla cryptocampi BOIE, 1857

Pimpla euurae ASHMEAD, 1890

Pimpla gallicola MORLEY, 1908

Material examined: Fars: 1 ♀, Shiraz, 11.viii.1999, A. MASNADI-YAZDINEJAD; 2 ♂♂, Ghareghomshe, 23.vi.2000, A. MASNADI-YAZDINEJAD.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Nearctic, known from Iran (MASNADI-YAZDINEJAD 2006).

Remarks: Overwinters as prepupa or adult. It is well known as endoparasitoid species, that oviposits in brooding cells and larva/nymph, or as ectoparasitoid species, that oviposits on larva and emerges from larva/nymph. It has more than 78 known host species, including *Apion minimum* (Col., Curculionidae), *Lobesia botrana* (Lep., Tortricidae) and *Paranthrene tabaniformis* (Lep., Sesiidae).

Tribe Pimplini

***Itoplectis melanocephala* (GRAVENHORST, 1829)**

Pimpla ephippium RUDOW, 1883

Pimpla bicolor BOIE, 1855

Pimpla cleopatra SCHMIEDEKNECHT, 1897

Material examined: Hamedan, 1 ♀, Dare-e Moradbeik, 26.VII.1995, H. MIRZAYANS & H. BADII.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Ethiopian, known from Iran (MASNADI-YAZDINEJAD 2007).

Remarks: The host species are *Chilo phragmitellus* and *Ostrinia nubilalis* (Lep., Pyralidae).

***Pimpla flavicoxis* THOMSON, 1877**

Pimpla apricaria COSTA, 1877

Pimpla conmixta KISS, 1929

Pimpla mixta RATZEBURG, 1848

Material examined: Fars: 1 ♂, Shiraz, 23.vi.1999, A. MASNADI-YAZDINEJAD; 2 ♂♂, 1 ♀, Maharloo, 15.v.2000, A. MASNADI-YAZDINEJAD; 1 ♂, Tion, 16.v.2000, A. MASNADI-YAZDINEJAD.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (MASNADI-YAZDINEJAD 2006).

Remarks: This species is an endoparasitoid of *Aporia crataegi* (Lep., Pieridae), *Magdalisa frontalis* (Col., Curculionidae) and *Tortrix viridana* (Lep., Tortricidae). This

solitary species attracts to light.

Pimpla rufipes (MILLER, 1759)

Ichneumon hypochondriaca RETZIUS, 1783

Ichneumon instigator ROSSI, 1790

Material examined: Tehran: 1 ♂, Tehran, 1986, MERCADIER & HERARD / ABAEI; Azarbayjan-e sharghi, 1 ♀, Oroomie, A. ESKANDARI. Fars, 1 ♀, Bamu, 1650 m, 13.vi.1996, A. SARAFRAZI.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Oceanic, Oriental, known from Iran (HERARD et al. 1979; RAJABI 1986).

Remarks: Overwinters as larva or prepupa. It is well known as endoparasitoid wasp that oviposits in prepupa and emerges from larva/nymph or from pupa. This species has more than 128 known host species such as *Arctia caja* (Lep., Arctidae), *Lixus irisidis* (Col., Curculionidae), *Malacosoma neustria* (Lep., Lasiocampidae) and *Lymantria dispar* (Lep., Lymantriidae).

Pimpla sodalis RUTHE, 1859

Pimpla cheloniae GIRAUD, 1869

Pimpla nordenskioldii HOLMGREN, 1872

Pimpla longiceps THOMSON, 1877

Pimpla nigrohirsuta STROBL, 1902

Material examined: 1 ♀, Aligudarz, Ghalkh, 2200 m, 4.10.1990, MASHAY.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, Nearctic, known from Iran (KASPARYAN 1974).

Remarks: The host species are *Aporia crataegi* (Lep., Pieridae) and *Udea murinalis* (Lep., Crambidae).

Strongylopsis belua KUZIN, 1950

Material examined: Golestan, 2 ♂♂, Parke-e Melli Golestan, Solgerd, 28.VII.2001, R. GHAYORFAR.

Distribution: Eastern Palaearctic, western Palaearctic, Europe, known from Iran (MASNADI-YAZDINEJAD 2007).

Remarks: The genus *Strongylopsis* BRAUNS, 1896 and species *B. belua* are newly recorded from Iran.

Tribe Polysphinctini

Zatypota bohemani (HOLMGREN, 1860)

Polysphincta drewseni HOLMGREN, 1860

Material examined: Fars: 2 ♀♀, Shiraz, 11.viii.1999, A. MASNADI-YAZDINEJAD; 1 ♂, Bajgah, 6.iv.2000, A. MASNADI-YAZDINEJAD.

Distribution: Western Palaearctic, Europe, Nearctic, known from Iran (MASNADI-YAZDINEJAD 2006).

Remarks: Its host species are *Theridion mystaceum* (Spider) and *Yponomeuta malinella* (Lep., Yponomeutidae).

Table 1: Species of subfamily Diplazontinae known from Iran with references

<i>Diplazon laetatorius</i> (FABRICIUS, 1781)	TOWNES et al. 1965; MALKESHI & KHIABANI, 1997; NIKDEL et al. 2004; KOLAROV & GHASHARI 2005
<i>Diplazon orientalis</i> CAMERON, 1905	TOWNES et al., 1965
<i>Sussaba erigator</i> (FABRICIUS, 1793)	New record
<i>Woldstedtius biguttatus</i> (GRAVENHORST, 1829)	New record

Table 2: Species of the subfamily Ichneumoninae known from Iran with references
Alomyini

<i>Aethcerus nitidus persicator</i> AUBERT, 1970	HEINRICH, 1929
<i>Colpognathus celestor</i> (GRAVENHORST, 1807)	HEINRICH 1929; TOWNES et al. 1965
Callajoppini	
<i>Callajoppa caspica</i> (HEINRICH, 1929)	KASPARYAN, 1981
Heresiarchini	
<i>Coelichneumon comitator</i> (LINNAEUS, 1758)	HEINRICH 1929; KASPARYAN 1981
<i>Coelichneumon delitatorius</i> (HOLMGREN, 1871)	TOWNES et al. 1965
<i>Coelichneumon microstictus</i> (GRAVENHORST, 1829)	MASNADY-YAZDINEJAD & SADEGHY 2006
<i>Coelichneumon nigerrimus</i> (STEPHENSON, 1835)	HEINRICH 1929
<i>Coelichneumon nigratus</i> (BERTHOUMIEU, 1894)	HEINRICH 1929
<i>Coelichneumon orbitator</i> (THUNBERG, 1824)	New record
<i>Coelichneumon singularis</i> (BERTHOUMIEU, 1829)	MASNADY-YAZDINEJAD & SADEGHY 2006
<i>Coelichneumon validus</i> (BERTHOUMIEU, 1894)	New record
<i>Lymantrichneumon dispar</i> (PODA, 1761)	HERARD et al. 1979
<i>Protichneumon fusorius fusorius</i> (LINNAEUS, 1761)	TOWNES et al. 1965; KASPARYAN 1981; KOLAROV & GHASHARI 2005 (without locality)
<i>Protichneumon fusorius persicus</i> (MORLEY, 1915)	HEINRICH 1929
<i>Protichneumon pisorioides</i> (LINNAEUS, 1758)	KASPARYAN 1981; KOLAROV & GHASHARI 2005 (without locality)
<i>Protichneumon simulatorius</i> (FABRICIUS, 1798)	KASPARYAN 1981; KOLAROV & GHASHARI 2005 (without locality)
<i>Syssapis rufina</i> (GRAVENHORST, 1829)	HEINRICH 1929
<i>Syssapis scutellator</i> (GRAVENHORST, 1829)	New record
Ichneumonini	
<i>Amblyteles armatorius</i> FOERSTER, 1771	HEINRICH 1929; TOWNES et al. 1965
<i>Chasmias masanderanicus</i> (HEINRICH, 1929)	HEINRICH 1929
<i>Cratichneumon coruscator</i> (LINNAEUS, 1758)	KASPARYAN 1981
<i>Cratichneumon stenocarus</i> (THOMSON, 1887)	HEINRICH 1929
<i>Cratichneumon versator</i> (THUNBERG, 1822)	HEINRICH 1929
<i>Ctenichneumon castigator</i> (FABRICIUS, 1793)	HEINRICH 1929
<i>Ctenichneumon devylderi</i> (HOLMGREN, 1871)	New record
<i>Ctenichneumon edictiorius</i> (LINNAEUS, 1758)	HEINRICH 1929
<i>Ctenichneumon melanocastanus</i> (GRAVENHORST, 1820)	HEINRICH 1929
<i>Ctenichneumon panzeri panzeri</i> (WESMAEL, 1845)	HEINRICH 1929
<i>Ctenichneumon repentinus</i> (GRAVENHORST, 1820)	KASPARYAN 1981; KOLAROV & GHASHARI 2005 (without locality)
<i>Diphyus amatorius</i> (MÜLLER, 1776)	HEINRICH 1929
<i>Diphyus elbursicus</i> (HEINRICH, 1929)	HEINRICH 1929
<i>Diphyus mercatorius mercatorius</i> (FABRICIUS, 1793)	HEINRICH 1929 (without locality)
<i>Diphyus mercatorius ponticus</i> (HEINRICH, 1978)	KOLAROV & GHASHARI 2005 (without locality)
<i>Diphyus ochromelas</i> (GMELIN, 1790)	New record
<i>Diphyus pedatus</i> (BERTHOUMIEU, 1895)	HEINRICH 1929
<i>Diphyus pseudocastigator</i> (HEINRICH, 1929)	HEINRICH 1929

<i>Diphyus quadripunctarius</i> (MÜLLER, 1776)	KASPARYAN 1981; KOLAROV & GHAHARI 2005 (without locality)
<i>Diphyus septemguttatus</i> (GRAVENHORST, 1829)	HEINRICH 1929
<i>Eutaniacra glaucatoria sanguinolenta</i> (HEINRICH, 1929)	HEINRICH 1929
<i>Eutaniacra picta</i> (SCHRANK, 1776)	HEINRICH 1929
<i>Exephanes occupator</i> (GRAVENHORST, 1829)	HEINRICH 1929
<i>Fileanta flavolaeta</i> (BERTHOUMIEU, 1892)	New record
<i>Hoplismenus bidentatus</i> (GMELIN, 1790)	KASPARYAN 1981; KOLAROV & GHAHARI 2005 (without locality)
<i>Hoplismenus lamprolabus</i> WESMAEL, 1857	New record
<i>Ichneumon caloscelis</i> WESMAEL, 1845	New record
<i>Ichneumon cerinthius</i> GRAVENHORST, 1820	HEINRICH 1929
<i>Ichneumon cessator</i> MÜLLER, 1776	KASPARYAN 1981
<i>Ichneumon curthulus</i> KRIECHBAUMER, 1882	HEINRICH 1929; KOLAROV & GHAHARI 2005 (without locality)
<i>Ichneumon eumerus</i> WESMAEL, 1857	HEINRICH 1929
<i>Ichneumon haemorrhoicus crassigena</i> KRIECHBAUMER, 1887	HEINRICH 1929
<i>Ichneumon iranicus</i> HEINRICH, 1929	HEINRICH 1929
<i>Ichneumon languidus</i> WESMAEL, 1845	HEINRICH 1929
<i>Ichneumon molitorius</i> LINNAEUS, 1761	HEINRICH 1929
<i>Ichneumon novemalbatus</i> KRIECHBAUMER, 1875	KASPARYAN 1981; KOLAROV & GHAHARI 2005 (without locality)
<i>Ichneumon novemalbatus persicus</i> HEINRICH, 1929	HEINRICH 1929
<i>Ichneumon proletarius</i> WESMAEL, 1848	TOWNES et al. 1965
<i>Ichneumon ruficinctus</i> (TOWNES & MOMOI 1965)	KOLAROV & GHAHARI 2005
<i>Ichneumon sarcitorius sarcitorius</i> LINNAEUS, 1758	KASPARYAN 1981
<i>Ichneumon sarcitorius caucasicus</i> MEYER, 1926	HEINRICH 1929
<i>Ichneumon sexcinctus</i> GRAVENHORST, 1829	KASPARYAN 1981; SELEFA & BORDERA 1994
<i>Ichneumon vafer meridionalis</i> HEINRICH, 1929	HEINRICH 1929
<i>Ichneumon xanthorius</i> FOERSTER, 1771	TOWNES et al. 1965
<i>Obtusodonta equitatoria equitatoria</i> (PANZER, 1786)	RASNITSIN 1984; KOLAROV & GHAHARI 2005 (without locality)
<i>Obtusodonta equitatoria carnifex</i> (KRIECHBAUMER, 1882)	HEINRICH 1929
<i>Obtusodonta erythrocephalus</i> (MEYER, 1927)	New record
<i>Probolus culpatorius</i> (LINNAEUS, 1758)	New record
<i>Pseudoamblyteles homocerus</i> (WESMAEL, 1854)	TOWNES et al. 1965; KOLAROV & GHAHARI 2005 (without locality)
<i>Spirichneumon tennecabunensis</i> (HEINRICH, 1929)	TOWNES et al. 1965
<i>Spiloathyreates punctus</i> (GRAVENHORST, 1829)	HEINRICH 1929; KOLAROV & GHAHARI 2005
<i>Stenichneumon culpator</i> (SCHRANK, 1802)	HEINRICH 1929; KOLAROV & GHAHARI 2005
<i>Thryateles camelinus</i> (WESMAEL, 1845)	HEINRICH 1929; KOLAROV & GHAHARI 2005
<i>Triptognathus atripes</i> (GRAVENHORST, 1820)	HEINRICH 1929; KOLAROV & GHAHARI 2005
<i>Triptognathus bolivari</i> (BERTHOUMIEU, 1894)	HEINRICH 1929; KOLAROV & GHAHARI 2005
<i>Triptognathus fumigator</i> (GRAVENHORST, 1820)	SELEFA 1996; KOLAROV & GHAHARI 2005 (without locality)
<i>Triptognathus rubrocinctus</i> (LUCAS, 1849)	HEINRICH 1929; KOLAROV & GHAHARI 2005
<i>Triptognathus unifasciatus</i> (SPINOLA, 1843)	HEINRICH 1929; KOLAROV & GHAHARI 2005
<i>Virgichneumonim callicerus</i> (GRAVENHORST, 1820)	New record
<i>Vulgichneumon bimaculatus</i> (SCHRANK, 1776)	HEINRICH 1929; KOLAROV & GHAHARI 2005
<i>Vulgichneumon saturatorius</i> (LINNAEUS, 1758)	HEINRICH 1929; KOLAROV & GHAHARI 2005
<i>Vulgichneumon suavis</i> (GRAVENHORST, 1820)	HEINRICH 1929; KOLAROV & GHAHARI 2005

Listrodromini*Anisobas australis* HABERMEHL, 1917

HEINRICH 1929; KOLAROV & GHAHARI 2005

Phaeogenini*Herpestomus brunnicornis* (GRAVENHORST, 1829)

New record

Table 3: Species of the subfamily Pimplinae known from Iran with references**Ephialtini**

<i>Acrodactyla madida</i> HALIDAY, 1839	KOLAROV & GHAHARI 2006
<i>Clistopyga rufator</i> HOLMGREN, 1856	KOLAROV & GHAHARI 2006
<i>Dolichomitus dux</i> (TSCHEK, 1869)	KOLAROV & GHAHARI 2006
<i>Dolichomitus kriechbaumeri</i> (SCHULZ, 1906)	KOLAROV & GHAHARI 2006
<i>Dolichomitus tuberculatus</i> (GEOFFROY, 1758)	New record
<i>Endromopoda arundinator</i> (FABRICIUS, 1804)	KOLAROV & GHAHARI 2006
<i>Endromopoda detrita</i> (HOLMGREN, 1860)	New record
<i>Ephialtes manifestator</i> (LINNAEUS, 1758)	KOLAROV & GHAHARI 2006
<i>Exeristes arundinis</i> (KRIECHBAUMER, 1887)	KOLAROV & GHAHARI 2006
<i>Exeristes roborator</i> (FABRICIUS, 1793)	TOWNES et al. 1965; AUBERT 1969; MOMOI 1973; KASPARIAN 1981; SELEFA et al. 1999; TALEBI & et al. 2004; KOLAROV & GHAHARI 2005 (without locality)
<i>Exeristes ruficollis</i> (GRAVENHORST, 1829)	MASNADI-YAZDINEJAD 2007
<i>Litotryphon caudatus</i> (RATZBURG, 1848)	RAJABI 1986
<i>Gregopimpla inquisitor</i> (SCOPOLI, 1763)	MASNADI-YAZDINEJAD 2007
<i>Gregopimpla malacosoma</i> (SEYRIG, 1927)	KARIMPOUR & HORSTMANN 2007
<i>Paraperithous gnathaulax</i> (THOMSON, 1877)	KOLAROV & GHAHARI 2006
<i>Scambus brevicornis</i> (GRAVENHORST, 1829)	KOLAROV & GHAHARI 2006
<i>Scambus nigricans</i> (THOMSON, 1877)	TOWNES et al. 1965; MOMOI 1973
<i>Scambus planatus</i> (HARTIG, 1838)	KOLAROV & GHAHARI 2005 (without locality)
<i>Scambus vesicarius</i> (RATZEBURG, 1844)	SEDGHIAN 2001
<i>Schizopyga podagrica</i> GRAVENHORST, 1829	MASNADI-YAZDINEJAD 2006
<i>Zaglyptus multicolour</i> (GRAVENHORST, 1829)	KOLAROV & GHAHARI 2006
<i>Zaglyptus varipes</i> (GRAVENHORST, 1829)	KOLAROV & GHAHARI 2006
Delomeristini	
<i>Perithous divinatory</i> (ROSSI, 1790)	KOLAROV & GHAHARI 2006
<i>Perithous septemcinctorius</i> (THUNBERG, 1822)	KOLAROV & GHAHARI 2006
Pimplini	
<i>Itoplectis maculator</i> (FABRICIUS, 1775)	KOLAROV & GHAHARI 2006
<i>Itoplectis melanocephala</i> (GRAVENHORST, 1829)	MASNADI-YAZDINEJAD 2007
<i>Itoplectis tunetana</i> (SCHMIEDEKNECHT, 1914)	AUBERT 1969; KASPARIAN 1973; KASPARIAN 1974; CONSTANTINEANU & PISICA 1977; KASPARIAN 1981; KOLAROV 1987; TSANKOV & MIRCHEW 1999; KOLAROV & GHAHARI 2005 (without locality)
<i>Itoplectis viduata</i> (GRAVENHORST, 1829)	KASPARIAN 1973; KOLAROV & GHAHARI 2005 (without locality)
<i>Pimpla arcadica</i> KASPARIAN, 1973	KOLAROV & GHAHARI 2005 (without locality)
<i>Pimpla cheloniae</i> GIRAUD, 1869	KASPARIAN 1973; KOLAROV & GHAHARI 2005 (without locality)
<i>Pimpla contemplator</i> (MÜLLER, 1776)	KOLAROV & GHAHARI 2006
<i>Pimpla flavocoxis</i> THOMSON, 1877	MASNADI-YAZDINEJAD 2006
<i>Pimpla hypochondriaca</i> (RETIUS, 1783)	KASPARIAN 1974; KOLAROV & GHAHARI 2005
<i>Pimpla illecebulator</i> (VILLERS, 1789)	KOLAROV & GHAHARI 2006
<i>Pimpla rufipes</i> (MILLER, 1759)	HERARD et al. 1979; RAJABI 1986
<i>Pimpla sodalist</i> RUTHE, 1859	KASPARIAN 1974

Pimpla spuria GRAVENHORST, 1829

KASPARYAN 1974, 1981; KOLAROV 1987, 1992, 1995, 1997, 1998; KOLAROV & BEYARSLAN 1994; KOLAROV & ANDONI 1995; GLAVENDEKIC & KOLAROV 1994; KOLAROV & GHAHARI 2005 (without locality)

Pimpla turionellae (LINNAEUS, 1758)

KASPARYAN 1974; KOLAROV & GHAHARI 2005 (without locality)

Strongylopsis belua KUZIN, 1950

MASNADI-YAZDINEJAD 2007

Theronia atlantae atlantae (PODA, 1761)

KOLAROV & GHAHARI 2006

Polysphinctini

Zatypota bohemani (HOLMGREN, 1860)

MASNADI-YAZDINEJAD 2006

Zatypota gracilis (HOLMGREN, 1860)

KOLAROV & GHAHARI 2006

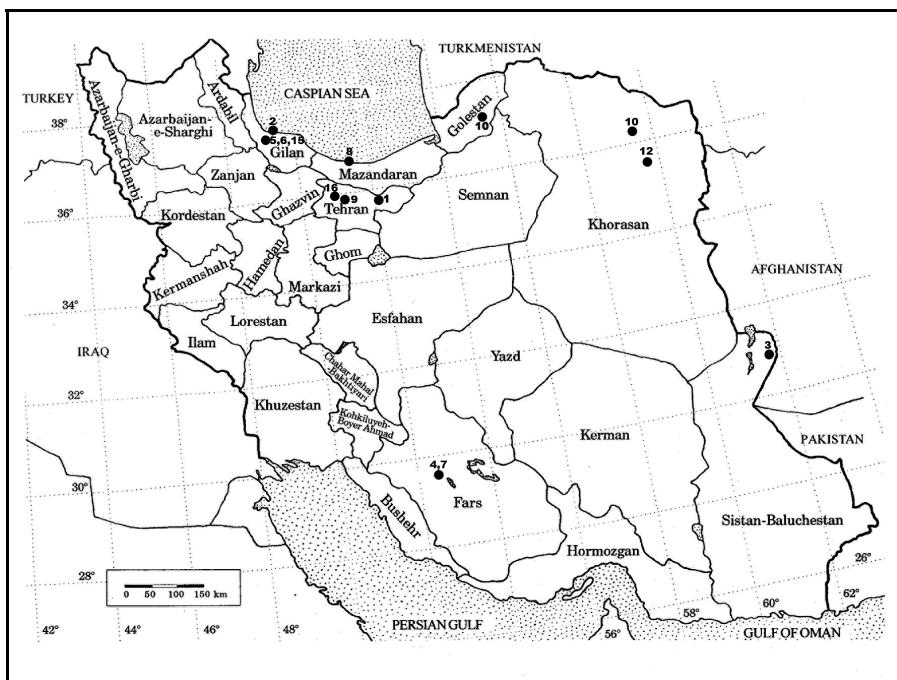


Fig. 1. Map of locality records for the species of tribe Heresiarchini (Ichneumoninae) from Iran: 1 *Coelichneumon comitator*, 2 *C. deliratorius* (800m), 3 *C. lacrymator* (Syn. *C. singularis*), 4 *C. microstictus*, 5 *C. nigerrimus* (400-800m), 6 *C. nigritatus* (2500m), 7 *C. singularis*, 8 *C. orbitator*, 9 *C. validus*, 10 *Lymantrichneumon dispar*, 11 *Protichneumon fusorius fusorius* (recorded by KOLAROV & GHAHARI 2006 without locality), 12 *P. fusorius persicus*, 13 *P. pisorioides* (recorded by KOLAROV & GHAHARI 2005 without locality), 14 *P. similatorius* (recorded by KOLAROV & GHAHARI 2005 without locality), 15 *Syspasis rufina* (800m), 16 *S. scutellator*.

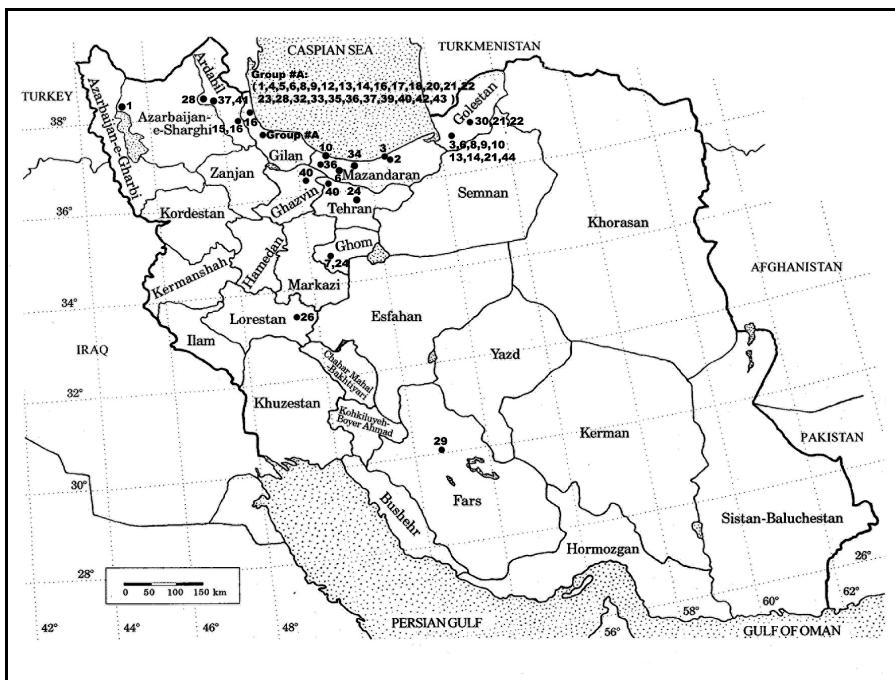


Fig. 2. Distributional map of the subfamily Ichneumoninae, Tribe Ichneumonini (except the genus *Ichneumon*), from Iran: 1 *Amblyteles armatorius*, 2 *Chasmias masanderanicus*, 3 *Cratichneumon coruscator*, 4 *C. stenocarus*, 5 *C. versator*, 6 *Ctenichneumon castigator*, 7 *C. devylderi*, 8 *C. edictorius*, 9 *C. melanocastanus*, 10 *C. panzeri panzeri*, 11 *C. repentinus*, 12 *Diphyus amatorius*, 13 *D. elbursicus*, 14 *D. mercatorius mercatorius*, 15 *D. mercatorius ponticus*, 16 *D. ochromelas*, 17 *D. pedatus*, 18 *D. pseudocastigator*, 19 *D. quadripunctarius*, 20 *D. septemguttatus*, 21 *Eutaniacra glaucatoria*, 22 *E. picta*, 23 *Exephanes occupator*, 24 *Fileanta flavolaeta*, 25 *Hoplismenus bidentatus*, 26 *H. lamprolabus*, 27 *Obtusodonta equitatoria equitatoria*, 28 *O. equitatoria carnifex*, 29 *O. erythrocephalus*, 30 *Probolus culpatorius*, 31 *Pseudoamblyteles homocerus*, 32 *Spilichneumon tennecabunensis*, 33 *Spilothyrateles punctus*, 34 *Stenichneumon culpator*, 35 *Thryateles camelinus*, 36 *Triptognathus atripes*, 37 *T. bolivari*, 38 *T. fumigator*, 39 *T. rubrocinctus*, 40 *T. unifasciatus*, 41 *Virgichneumon callicerus*, 42 *Vulgichneumon bimaculatus*, 43 *V. saturatorius*, 44 *V. suavis*. (The species of "Group # A" are recorded by KOLAROV & GHAHARI in 2005 with the single locality name Gilan, and also the species of the numbers 11, 15, 19, 25, 27, 31, 38 are previously recorded without any exact locality from Iran).

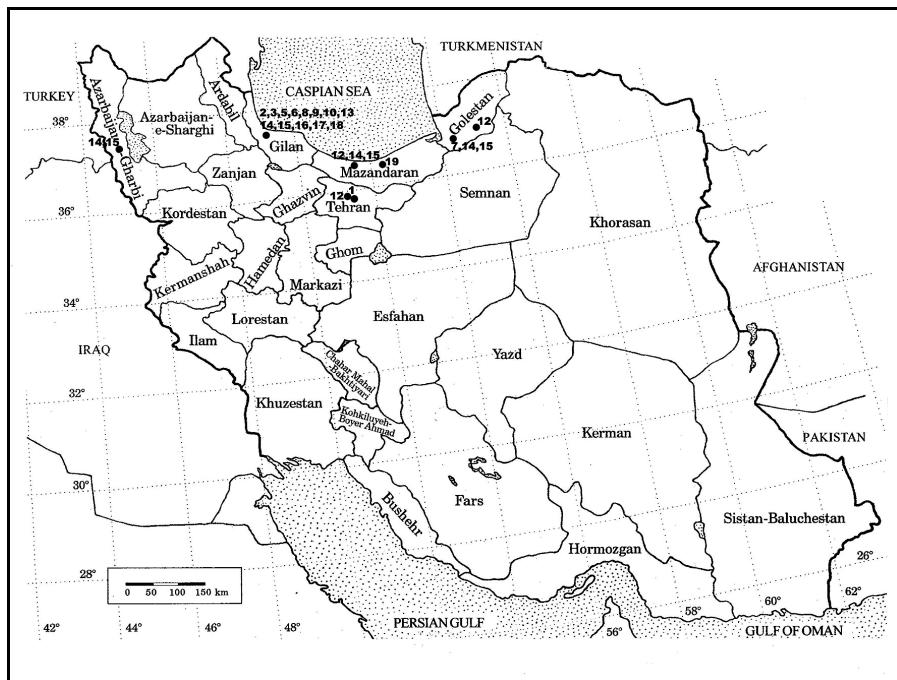


Fig. 3. Map of locality records for the species of the genus *Ichneumon* (Ichneumoninae, Ichneumonini) from Iran: 1 *Ichneumon caloscelis*, 2 *I. cerinthius*, 3 *I. cessator*, 4 *I. curthulus*, 5 *I. eumerus*, 6 *I. haemorrhoicus*, 7 *I. iranicus*, 8 *I. languidus*, 9 *I. molitorius*, 10 *I. novemalbatus*, 11 *I. novemalbatus persicus*, 12 *I. proletarius*, 13 *I. ruficinctus*, 14 *I. sarcitorius sarcitorius*, 15 *I. sarcitorius caucasicus*, 16 *I. sexcinctus*, 17 *I. vafer*, 18 *I. meridionalis*, 19 *I. xanthorius*. (The species *I. curthulus* and *I. novemalbatus* are recorded by KOLAROV & GHAHARI in 2005 without any locality from Iran).

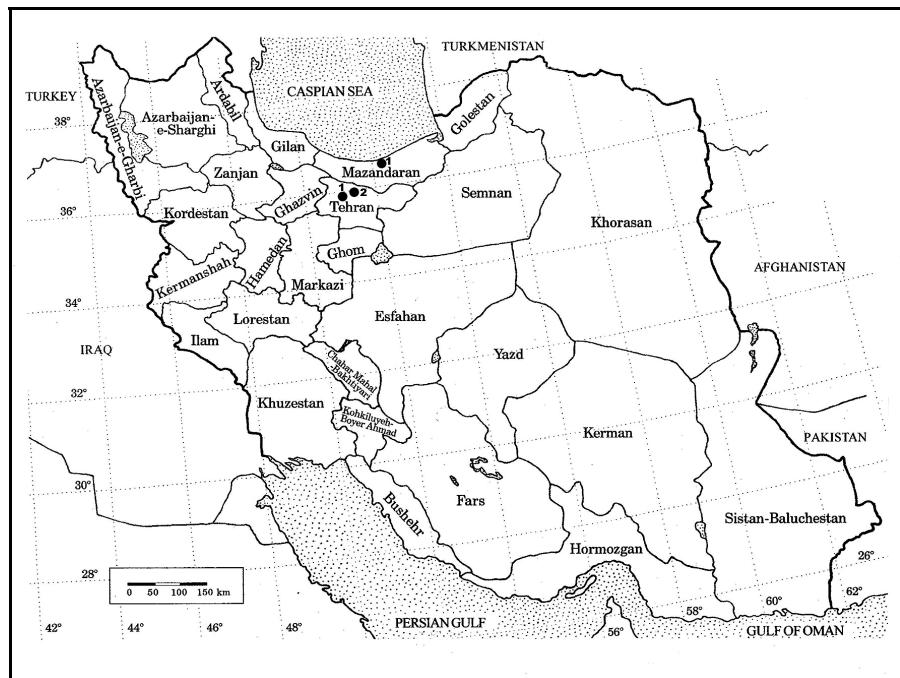


Fig. 4. Distributional map of the subfamily Ichneumoninae, Tribes Listrodromini and Phaeogenini, from Iran: 1 *Anisobas australis* (Listrodromini), 2 *Herpestomus brunnicornis* (Phaeogenini).

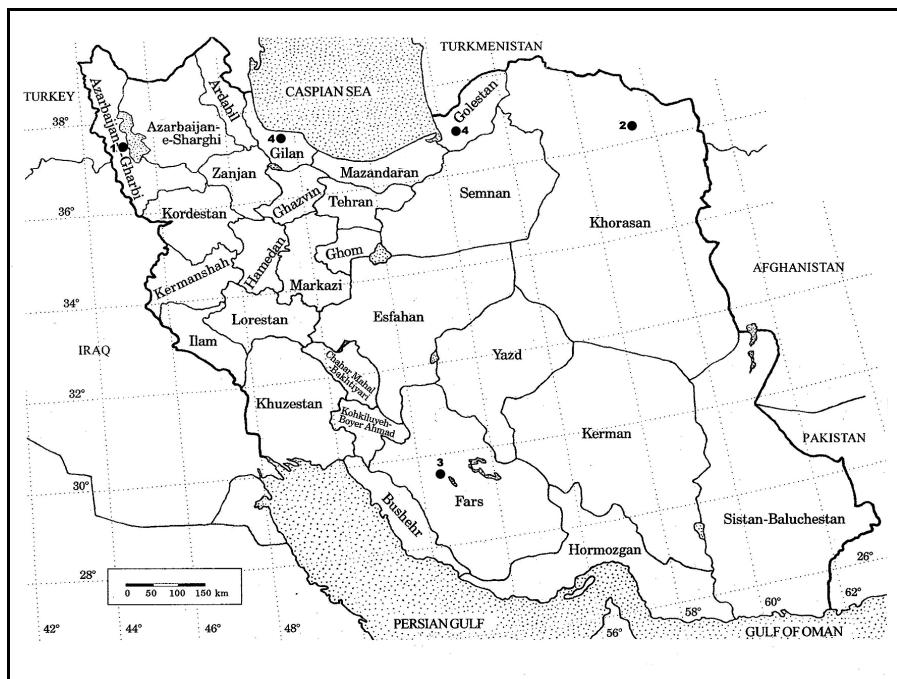


Fig. 5. Distributional map of the subfamily Pimplinae, Tribes Delomeristini and Polysphinctini, from Iran: 1 *Perithous divinator*, 2 *P. septemcinctorius* (Delomeristini); 3 *Zatypota bohemani*, 4 *Z. gracilis* (Polysphinctini).

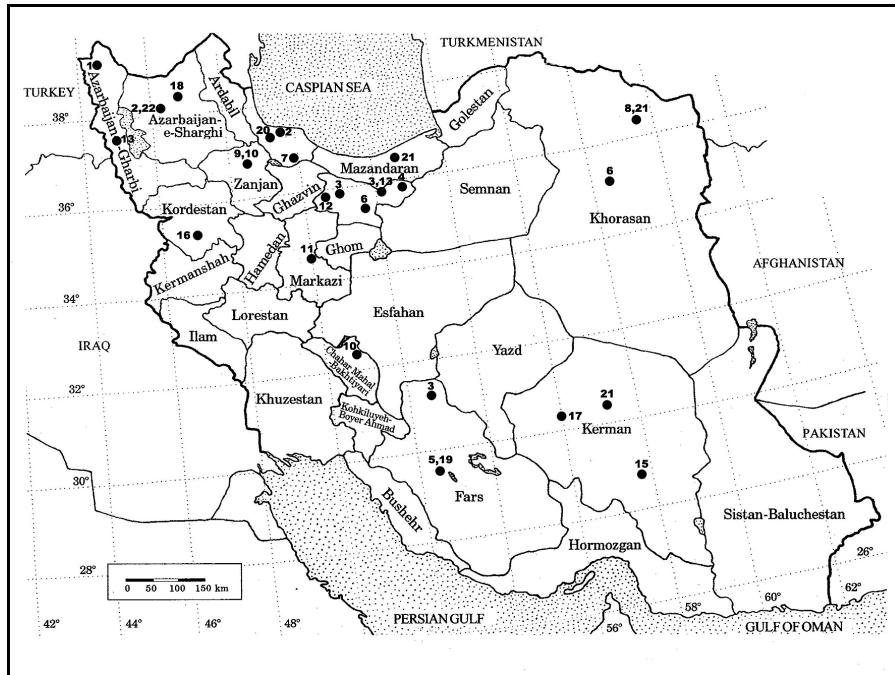


Fig. 6. Distributional map of the subfamily Pimplinae, Tribe Ephialtini, from Iran: 1 *Acrodactyla madida*, 2 *Clistopyga rufator*, 3 *Dolichomitus dux*, 4 *D. kriechbaumeri*, 5 *D. tuberculatus*, 6 *Endromopoda arundinator*, 7 *E. detrita*, 8 *Ephialtes manifestator*, 9 *Exeristes arundinis*, 10 *E. robotor*, 11 *E. ruficollis*, 12 *Litotryphon caudatus*, 13 *Gregopimpla inquisitor*, 14 *G. malacosomae*, 15 *Paraperithous gnathaulax*, 16 *Scambus brevicornis*, 17 *S. nigricans*, 18 *S. planatus*, 19 *S. vesicarius*, 20 *Schizopyga podagrifica*, 21 *Zaglyptus multicolour*, 22 *Z. varipes*.

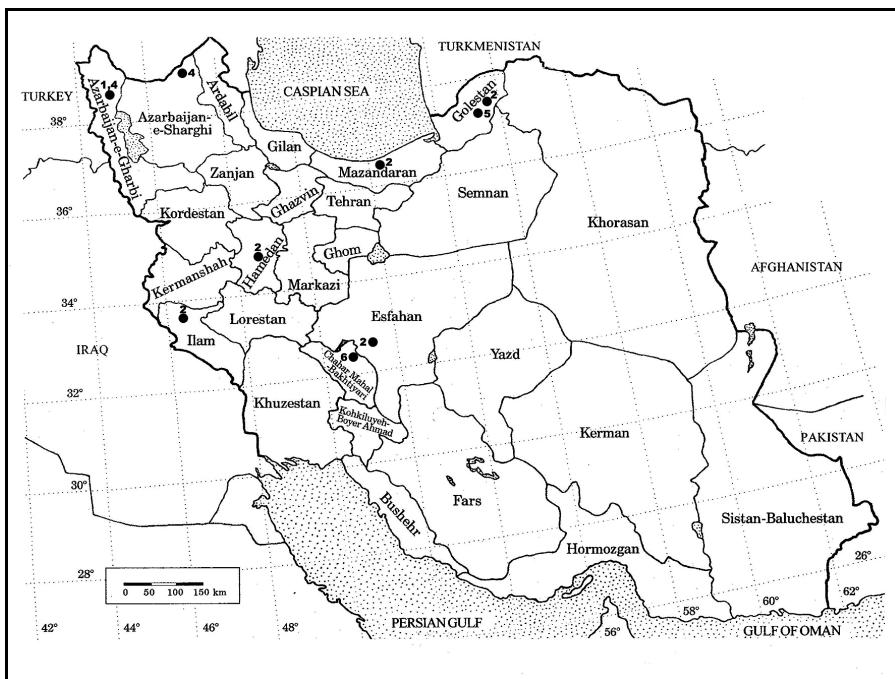


Fig. 7. Distributional map of the subfamily Pimplinae, Tribe Pimplini (except the genus *Pimpla*), from Iran: 1 *Itoplectis maculator*, 2 *I. melanocephala*, 3 *I. tunetana*, 4 *I. viduata*, 5 *Strongylopsis belua*, 6 *Theronia atalantae*. (The species *Itoplectis tunetana* is recorded by KOLAROV & GHAHARI in 2005 without any locality from Iran).

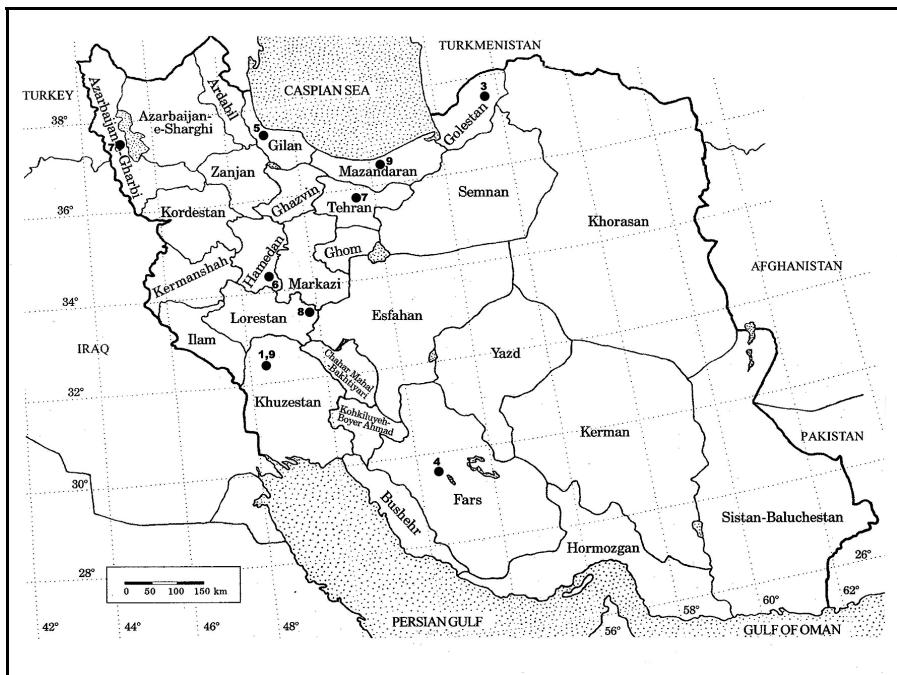


Fig. 8. Map of locality records for the species of the genus *Pimpla* (Pimplinae, Pimplini) from Iran: 1 *Pimpla arcadica*, 2 *P. cheloniae*, 3 *P. contemplator*, 4 *P. flavicoxis*, 5 *P. hypochondriaca*, 6 *P. illecebulator*, 7 *P. rufipes*, 8 *P. sodalis*, 9 *P. spuria*, 10 *P. turionellae*. (The species *Pimpla turionellae* is recorded by KOLAROV & GHAHARI in 2005 without any locality from Iran).

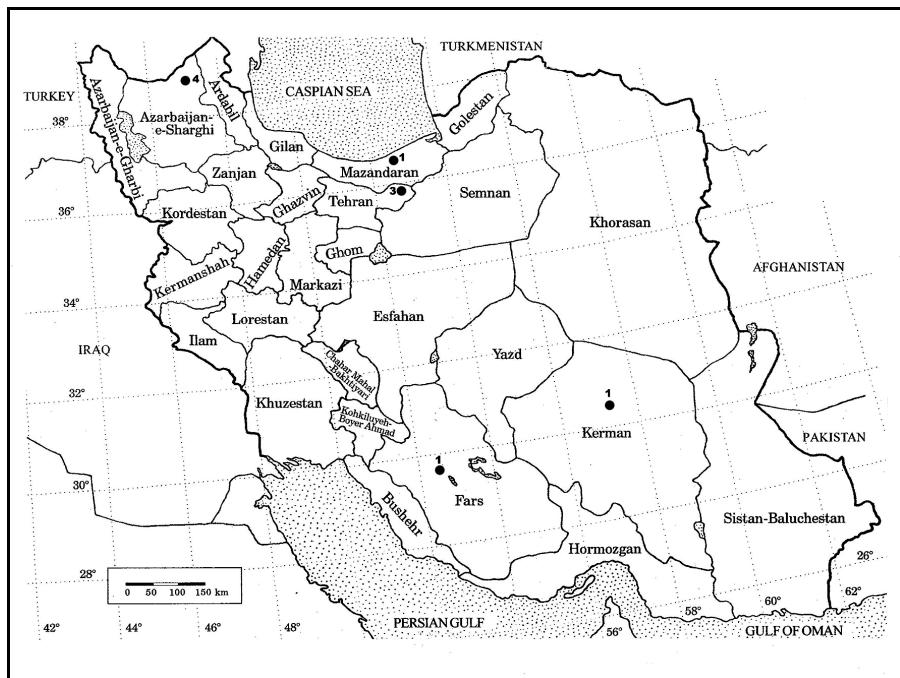


Fig. 9. Distributional map of the subfamily Diplazontinae from Iran: 1 *Diplazon laetatorius*, 2 *D. orientalis*, 3 *Sussaba erigator*, 4 *Woldstedtius biguttatus*.

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Addresses of authors:

Ashkan MASNADI-YAZDINEJAD
Insect Taxonomy Research Department
Iranian Research Institute of Plant Protection
P. O. Box 1454
Teheran
19395, Iran
E-Mail: amasnadi@yahoo.com

Reijo JUSSILA
University of Turku
Zoological Museum
Centre for Biodiversity
Department of Biology
FI-20014 Turku
Finland
E-Mail: reijo.jussila@utu.fi

Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:
Maximilian SCHWARZ, Konsulent für Wissenschaft der Oberösterreichischen Landesregierung,
Eibenweg 6, A-4052 Ansfelden, E-Mail: maximilian.schwarz@liwest.at.

Redaktion: Erich DILLER, ZSM, Münchhausenstraße 21, D-81247 München;
Fritz GUSENLEITNER, Lungitzerstraße 51, A-4222 St. Georgen / Gusen;
Wolfgang SCHACHT, Scherrerstraße 8, D-82296 Schöngreising;
Wolfgang SPEIDEL, MW/M, Tengstraße 33, D-80796 München;
Thomas WITT, Tengstrasse 33, D-80796 München.
Adresse: Entomofauna Redaktion und Schriftentausch c/o Museum Witt, Tengstrasse 33,
80796 München, Deutschland, E-Mail: thomas@witt-thomas.com;
Entomofauna Redaktion c/o Fritz Gusenleitner, Lungitzerstraße 51, 4222 St. Georgen/Gusen,
Austria, E-mail: f.gusenleitner@landesmuseum.at.

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Entomofauna](#)

Jahr/Year: 2008

Band/Volume: [0029](#)

Autor(en)/Author(s): Masnadi-Yazdinejad Ashkan, Jussila Reijo

Artikel/Article: [Contribution to the knowledge of ichneumonid wasps of Iran.
Subfamilies Ichneumoninae, Pimplinae and Diplazoninae \(Hymenoptera,
Ichneumonidae\) 293-320](#)