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New records of Pompilidae (Hymenoptera) from Iran

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A b s t r a c t : The present paper mentions 43 species of the family Pompilidae. They were collected from different parts of Iran and identified by Raymond Wahis and Christian Schmid-Egger. The list is a first step towards a faunal review of this family in Iran. Some zoogeographical viewpoints are discussed.

K e y w o r d s : Pompilidae, Hymenoptera, Fauna, Iran.

Introduction

The fauna of spider wasps (Pompilidae) from Iran is nearly unknown. Until now, there is no summarizing faunal publication about the country. Only scattered records are published in the literature (e.g. ESMAILI & RASTEGAR 1954, WOLF 2003). But from zoogeographical viewpoint, Iran is a very important country because it is markedly rich in species, and influenced from various zoogeographical zones.

The present species list is an evaluation of a pompilid collection of an Iranian scientific Institution ("Iranian Research Institute of Plant Protection " in Tehran). A few additional unpublished records are added. The list represent a first step towards a faunal research about Iranian Pompilidae.

Material and Methods

The specimens were collected by different researchers and originates from the collection of the "Iranian Research Institute of Plant Protection" in Tehran/Iran. These records are marked with "col. Tehran". Some other records originate from the coll. Schmid-Egger (SE) and from a present revisional project (Schmid-Egger in prep).

The specimens were identified by Raymond Wahis (various genera) and Christian Schmid-Egger (esp. *Cryptocheilus* and others). We do not list literature for identification here, because there are only few recent revisions or summarizing papers useful for Iran. The species identification bases mainly on the long experience and large collection of Raymond Wahis. The genus *Cryptocheilus* is recently "under revision" by Christian Schmid-Egger, therefore species identification base on these (not yet published) results, and types comparison. Some exception in literature citations are made for important recent papers.

A part of the material, send by E. Ebrahimi, could not be identified, because the defective state of some specimens or it belongs to unclear, difficult or not revised genera (e.g. *Tachyagetes*, *Dicyrtomellus*, *Agenioideus* etc.). The specimens as well as the mentioned species are deposited in Hayk Mirzayans Insect Museum, based at Iranian Research Institute of Plant Protection in Tehran, until a full revision can be made.

List of species

Agenioideus excisus (MORAWITZ)

R e c o r d s : male Mazandaran, Babol, 7.VII.1948, Babai (col. Tehran); male Tehran, Malard, Khoshnam, 3.X.1991, Ebrahimi (col. Tehran); female Golestan: Maraveh Tappeh, 1470m., 27.VI.2001, Ebrahimi (col. Tehran), female Khorasan: Mashad, Aghonge, 23.VI.1973, leg. Ayatollahi (col. Tehran).

Agenioideus melas (KLUG)

R e c o r d s : female Kerman, Jiroft, 43 km. N. Kahnuj, 540m., Safavi/Pazuki (col. Tehran).

Agenioideus rytiphorus (KOHLE)

R e c o r d s : female Kordestan: Divandareh, 16.VII.1968, leg. Abaii/Mojib (col. Tehran); male Golestan, Golestan N. Park, Cheshmehkhan, 1060m., 29.VI.2001, Mofidi/Ebrahimi (col. Tehran).

Amblyellus hasdrubal (KOHLE)

R e c o r d s : female Tehran, Malard, Khoshnam, 25.IX.1991, Ebrahimi (col. Tehran).

Anoplius concinnus (DAHLBOM)

R e c o r d s : female Golestan, Gorgan, Naharkhoran, 25.VI.1965, Dezfulian (col. Tehran).

Anoplius infuscatus (V. LINDEN)

R e c o r d s : female Tehran, Malard, Khoshnam, 13.IX.1991, Ebrahimi (col. Tehran); female Gilan: Astaneh, 10.X.1945, R. A (col. Tehran).

Anoplius samariensis PALLAS

R e c o r d s : female Azarbaijan-e Sharghi: Tabriz, VII.1970, leg. Yusefi (col. Tehran); male Golestan, Golestan National Park, 23.VI.1965, leg. Dezfulian (col. Tehran); female Golestan, Golestan N. Park, Kolar, 1250m., 23.VII.1990, Ebrahimi/V.Nazari (col. Tehran); female Mazandaran, ?, Moayyeri (col. Tehran); female Tehran, Karaj, Kandavan, Sarchal, 2800m., 4-8.VII.1977, Pazuki/Mortazaviha (col. Tehran).

Anoplius schlettereri hierosolymae HAUPT

R e c o r d s : female Tehran, Karaj, Kondor, 1800m., 29.VI.1991, Ebrahimi/Badii (col. Tehran) – 2 males Chorasani, Cheshmeh Khan, 30.VI.2001 [id. as *schlettereri niger* Priesner by H. Wolf] (coll. Schmid-Egger).

***Anoplus viaticus* (LINNAEUS)**

R e c o r d s : male Tehran, Malard, Khoshnam, 4.XI.1991, Ebrahimi (col. Tehran); male Tehran: Malard, Khoshnam, 7.X.1991, leg. Ebrahimi (col. Tehran); male Tehran: Taleghan, Taleghan Dam, 1650m. alt., 18.VI.1992, leg. Ebrahimi (col. Tehran); female Azarbaijan-e Sharghi, Kaleybar, Gheshlagh, 1280m, 9.VIII.2005, Ebrahimi (col. Tehran).

***Arachnospila consobrina* (DAHLBOM)**

R e c o r d s : female Tehran, Varamin, Salmanabad, 20.XI.1991, Ebrahimi (col. Tehran).

***Arachnospila fumipennis* (ZETTERSTEDT)**

R e c o r d s : female Azarbaijan-e Sharghi, Kaleybar, Amalu, 1345m., 10.VIII.2005, Gilasian/Ebrahimi (col. Tehran).

***Arachnospila fuscomarginata* (THOMSON)**

R e c o r d s : female Golestan, Golestan N.Park, Dasht-e Shad, 1390m., 25-26.VII.1996, Ebrahimi/V.Nazari (col. Tehran).

***Auplopus carbonarius* (SCOPOLI)**

R e c o r d s : female Azarbaijan-e Sharghi, Kaleybar, Gheshlagh, 1280m, 9.VIII.2005, Gilasian/Ebrahimi (col. Tehran), female Tehran: Karaj, Malard, Khoshnam, 25.XI.1991, leg. Ebrahimi (col. Tehran); female Tehran: Malard, Khoshnam, 4.XI.1991, leg. Ebrahimi (col. Tehran); female Tehran: Malard, Khoshnam, 4.XI.1991, leg. Ebrahimi (col. Tehran).

***Batozonellus fuliginosus* (KLUG)**

R e c o r d s : female Baluchestan, Saravan, 7.VI.1957, B. El., (col. Tehran).

***Batozonellus lacerticida* (PALLAS)**

R e c o r d s : female Gilan, 10 km S SE Kalacay 2001 (coll. Schmid-Egger).

***Batozonellus maculifrons* (SMITH)**

R e c o r d s : female Hormozgan, Minab, 23.IV.1977, Mortazaviha (col. Tehran).

***Ceropales maculata* (FABRICIUS)**

R e c o r d s : female Tehran, Damavand, 24.VII.1970, Safavi/Hashemi (col. Tehran).

***Cryptocheilus alternatus* (LEPELETIER)**

R e c o r d s : female Golestan, Gorgan, Sulgerd, 1100m., 16-18.VII.1985, Pazuki (col. Tehran); female Fars: Sepidan, Kakan, 13.V.1966, leg. Mirzayans (col. Tehran); male Khuzestan, Ramhormoz, 18.V.1946, Damavandi (col. Tehran); female Markazi, Tafresh, Gharejaghaye, 13.IX.2002, Sobhani (col. Tehran) - female 30.VI.2001 Chorosan, Chesmeh Kahn 37°18'N56°07'E (Schmid-Egger in prep.).

***Cryptocheilus discolor* (FABRICIUS)**

R e c o r d s : female Khorasan: daregaz, Tandureh, 600m, 4.VIII.1971, leg. Ayatollahi/Pazuki (col. Tehran), female Khorasan: Sarakhs, Bezangan, Daryacheh-e Kolbibibi, 200m., 8.IV.1997, leg. V. Nazari (col. Tehran); female Kordestan: Bijar, 9.VII.1967, leg. Dezfulian (col. Tehran); female Khorasan, ?, 1942, (col. Tehran); female Khorasan, Mashhad, Torogh, 8.IV.1973, Ayatollahi (col. Tehran) - female 50 km S Koramant (Schmid-Egger in prep.)

R e m a r k : The female is not distinguishable from *Cryptocheilus semicastaneus* MORAWITZ, males can be recognized by a different propodeal structure. Both taxa are separated by distribution pattern: *Cryptocheilus discolor* occurs in the Mediterranean area and Turkey, *Cryptocheilus semicastaneus* is restricted to Central Asia east of the Caspian Sea. Until now, we could not examine males of these species from Iran, so the true identity of these findings in Iran is not verified. Iran represents the transition area between *Cryptocheilus semicastaneus* and *Cryptocheilus discolor*.

***Cryptocheilus exiguus* ŠUSTERA**

R e c o r d s : female AV- Gan (?), 18.VI.1970, leg. Pazuki (col. Tehran).

***Cryptocheilus fischeri* (SPINOLA)**

R e c o r d s . female 11.V.1999 Bandar-e-Busehr (Schmid-Egger in prep.).

***Cryptocheilus guttulatus* (COSTA)**

R e c o r d s : female 7.VI.2000 50 km NE Orumyie 37°39'N 44°45'E (Schmid-Egger in prep.)

***Cryptocheilus notatus* (ROSSI)**

R e c o r d s : female Tehran, Malard, Khoshnam, 5.XI.1991, Ebrahimi (col. Tehran) - male 1977 Elburs 30 km SE Chalus (Schmid-Egger in prep.).

***Cryptocheilus octomaculatus* (ROSSI)**

R e c o r d s : female Fars: Maharlu, 1400m., 4.VI.2001, leg. Ebrahimi (col. Tehran); male Tehran, Taleghan, Kalanak, 1800m., 26.VI.1991, Ebrahimi (col. Tehran) - Golestan, 5 km E Khanbeben 37°01'N 55°01'E; female Kaspi-See, Babol Sar (Schmid-Egger in prep.).

***Cryptocheilus richardsi* MOCZAR**

R e c o r d s : female Tehran: Damavand, 23.VII.1970, leg. Safavi/Hashemi (col. Tehran).

***Cryptocheilus rogenhoferi* (RADOSZKOWSKI)**

R e c o r d s : female Zanjan, Yucharichay, 1600m., 7.VII.1997, Barari/Mofidi (col. Tehran).

***Cryptocheilus rubellus* (EVERSMANN)**

R e c o r d s : male Esfahan, Kashan, Karkas, 2800m., 29.VII.1974, Hashemi/Zairi (col. Tehran); male Khorasan, ?, (col. Tehran); female Lorestan, Aligudarz, Ghalikuh, 2400m., 1.VII.1990, Hashemi/Ebrahimi (col. Tehran) - female 8.VII.2001 80 km NE Esfahan, 3000 m 32.53N 52.22E; male female 1996 Bandar e Buseher – female 1908 Asterabad (Schmid-Egger in prep.).

***Cryptocheilus variabilis* (ROSSI)**

R e c o r d s : female Golestan: Golestan National Park, Dasht-e Shad, 1400m.alt., 23.VII.2001, leg. Gilasian/Moghaddam (col. Tehran) - female 20.VII.1977 60 km E Minudasht: female Kopeth Dagh, 30 km N Quchan (Schmid-Egger in prep.).

***Cryptocheilus versicolor* (SCOPOLI)**

R e c o r d s : female Ardabil, 10km. N. Namin, 1450m., 15.VIII.1991, Hashemi/Parchami (col. Tehran) - female Elburs, 60 km S Chalus; female Gorgan (Schmid-Egger in prep.).

***Ctenagenia ozbeki* WAHIS**

R e c o r d s : female Fars, Dasht-e Arjan, 1900m., 14.IX.1974, Abai (col. Tehran).

R e m a r k : The species was recently described from southeastern Turkey, Afghanistan and Pakistan (WAHIS 2002).

***Dicyrtomellus kizilkumi* (RADOSZKOWSKI)**

R e c o r d s : male Baluchestan, Khash, 26.III.1949, Mirzayans (col. Tehran)

***Dicyrtomellus tingitanus* (WOLF)**

R e c o r d s : female Kermanshah: Kerend, 20.VI.1968, leg. Dezfulian (col. Tehran); male Golestan, Golestan N. Park, Almeh, Karkoli, 1700m., Ebrahimi (col. Tehran).

***Eoferreola anatolica* PRIESNER**

R e c o r d s : female Ardabil: Moghan, 20.VIII.68, leg. Abai (col. Tehran); female Golestan: Golestan National Park, Almeh, 1650m. 17-18.VII.1996, leg. Ebrahimi (col. Tehran); female Golestan National Park, Cheshmehkhan, 1060m., 29.VI.2001, leg. Ebrahimi (col. Tehran); female Azarbajjan-e Gharbi, Ghooshchi, 1970m., 19.VI.1970, Pazuki (col. Tehran).

R e m a r k : *Eoferreola* can be identified with the key of WAHIS & SCHMID-EGGER (2002).

***Episyrion rufipes* (LINNAEUS)**

R e c o r d s : female Golestan: Golestan National Park, Almeh, 1650m. 18.VII.1996, leg. Ebrahimi (col. Tehran); female Golestam, Gonbad, Soltanali, 0m., 2.VII.2001, Ebrahimi (col. Tehran); female Mazandaran, Nur, Panjab, 1940m., 8.IX.1983, Hashemi (col. Tehran).

***Evagetes fabrei* SMISSEN**

R e c o r d s : female Tehran: Taleghan, Kalanak 1800m. alt., 26.VI.1991, leg. Ebrahimi/Badii (col. Tehran).

R e m a r k : The species was recently described by SMISSEN (2003) with three females from Turkey (Konya env.; Hakkari env.). The author mentions two further specimens from Iran (Elburs, Polur) and Turkmenistan (Ashabad), which could not be identified finally because of damage. With the recent finding, *Evagetes fabrei* is confirmed for the fauna of Iran.

***Hemipepsis brunnea* (KLUG)**

R e c o r d s : female Baluchestan, Sarbaz, 25.IV.1959, Mirzayans/Salavatian (col. Tehran); Records: female Lorestan, Khoramabad, 29. VIII.1946 (col. Tehran).

***Hemipepsis semenovi* (GUSSAKOWSKIJ)**

R e c o r d s : female Kerman, Jiroft, Esfandagheh, 20.IV.1971, Safavi/Zairi (col. Tehran); male Fars, Darab, Rostagh, 1250m., 21-23.IV.1992, Mirzayans/Badii (col. Tehran); male Azarbaijan-e Gharbi: Sardasht, 1650m., 3.VII.1975, Pazuki (col. Tehran); male Golestan: Gorgan, Golestan National Park, 20.V.1977, leg. Pazuki/Abaii (col. Tehran); male Hormozgan: Bashagerd 20km. E. Senderk, 300m., 11.V.1977, Safavi/Pazuki (col. Tehran); male Hormozgan: Kuhe Geno, Bagh Tang, 410m., 8.V.1977, Pazuki (col. Tehran); female Kerman: Sirjan, 7.IV.1948, leg. Esfandiari (col. Tehran).

***Homonotus sanguinolentus* (FABRICIUS)**

R e c o r d s : female Khorassan: ?(with a russian label) (col. Tehran)

***Mygymia flava* (FABRICIUS)**

R e c o r d s : female Azarbaijan-e Sharghi, Tabriz, 19.VI.1966, Daneshpajuh (col. Tehran).

***Priocnemis pusilla* (SCHIOEDTE)**

R e c o r d s : female Golestan, Maraveh-Tappeh, Chenaran, 950m., 7.X.2000, Ghayourfar/ Gilasian (col. Tehran).

***Schistonyx umbrosus* (KLUG)**

R e c o r d s : female Khorasan, Sarakhs, 21.VI.1953, Ayatolahi (col. Tehran); female Halghedar, 27.V.1968, leg. Ayatolahi (col. Tehran).

***Tachypompilus analis* (FABRICIUS)**

R e c o r d s : female Hormazgan, Siahu, Sikhoran, 830m., 25.V.2001, Mofidi/Ebrahimi (col. Tehran).

***Telostegus melanurus* (KLUG)**

R e c o r d s : female Hormozgan, Bandar-e Lengeh, 25.III.1956, Safavi (col. Tehran); female Hormazgan: Bandar Lengeh, 25.III.1956, leg. Safavi (col. Tehran) – female Hormozgan, Gurban, 22 km W Minap, 2001 (coll. Schmid-Egger).

Discussion

The present examination represents 43 species. Most of them are new to the fauna of Iran, which means they never had been published before. But this fact is not so important comparing the overall situation in this country, with an practically unknown Pompilidae fauna and an estimated species number of Pompilidae between 250 and 300 at least.

The recorded species belong to four important zoogeographical zones, which should be discussed below.

A. Most recorded species are widely distributed in the Mediterranean area including Turkey, and/or Central Europe. Some of these species also occur in Central Asia. Among this group are some species subgroups with different extension in their distribution. *Cryptocheilus notatus*, *Episyron rufipes*, and *Priocnemis pusilla* represent species with the largest distribution area in the present examination. Northwestwards, they reach Central Europe, and northeastwards, they also occur in Central Asia. Other species as *Hemipepsis brunnea* or *Schistonyx umbrosus* are restricted to the southern Mediterranean area only (northern Africa, Israel, Syria). *Eoferreola anatolica* is restricted to the eastern Mediterranean area and Greece only.

B. The second species group contains species, which are restricted to a small area in Turkey and Iran only. *Evagetes fabrei* is an example of this distribution pattern.

C. The third group are species, which occur in Central Asia and (northern) Iran only. Examples are *Hemipepsis semenovi* and *Dicyrtomellus kizilkumi*.

D. A fourth, important species group is widely distributed in India, Southeast Asia and southeast Iran. Three species of the present examination belongs to the southeast Asian fauna: *Batozonellus maculifrons*, *Mygymia flava* and *Tachypompilus analis*. The first and the latter species were found in southeastern Iran near the border to Pakistan, what agree with the expected distribution pattern. The second species, *Mygymia flava*, comes from the Tabriz area in northwest Iran, what is unexpected, because it is far from the warm and subtropical zone of southeast Iran. *Ctenagenia ozbeki* also belongs to this group, it is restricted to the southern central Palearctic zone only (Pakistan to Turkey).

Further examination of the Pompilidae fauna of Iran is necessary to understand the zoogeographical situation in a better way. As a problem remains the unclear situation in many species groups or genera. Often, it is not possible to identify a single specimen in a difficult genera, and the number of undescribed species probably is high in Iran.

Zusammenfassung

In der vorliegenden Arbeit werden 43 iranische Wegwespen-Arten vorgestellt, die größtenteils neu für die Fauna des Iran sind. Das Material stammt aus verschiedenen Landesteilen und ist größtenteils im Institut für Pflanzenschutz in Teheran deponiert. Die Liste stellt einen ersten Schritt zur Erfassung der Wegwespenfauna des Iran dar, die derzeit noch praktisch unbekannt ist. Zudem werden zoogeografische Aspekte diskutiert. Nach ersten Erkenntnissen treffen im Iran vier Verbreitungstypen aufeinander: Arten, die in der Paläarktis weit verbreitet sind und im Westen bis Europa, im Osten bis Zentralasien vorkommen, Arten aus Zentralasien, Arten aus Südostasien, sowie Arten mit einem kleinen Verbreitungsareal in der Türkei und dem Nordiran.

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