

A preliminary review of the Megachilidae of Turkey Part II. Heriadini (Hymenoptera, Apoidea)

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Summary

The results of the study on the Turkish insect fauna reported here deal with the tribe Heriadini of the family Megachilidae. In this study 22 species of *Chelostoma*, two species of *Chelostomopsis*, one species of *Hofferia*, eight species of *Heriades*, and two species of *Pseudoheriades* were recorded. Host plant association of some of the species were given.

Chelostoma distinctum (Stoeckert), *Ch. hebraea* (Benoist), *Ch. lucens* (Benoist), *Heriades dalmaticus* Moidl, *Hr. hissarica* Popov, *Hr. rubicola* Pérez and *Hr. syriaca* Benoist were the new records for Turkish fauna.

Introduction

In the first part of the study of "A preliminary review of the Megachilidae of Türkiye the tribe Osmiini were treated (Özbek and van der Zanden, 1992). The second part deals with the tribe Heriadini that includes the genera *Chelostoma*, *Chelostomopsis*, *Heriades*, *Hofferia*, and *Pseudoheriades*.

This study is based on collection of first autor which included a study of the flowers as visited by the bees. It also incorporates study of the material in various private and museum-collection, by the second author. These provide possibility to give a preliminary list of the species of Megachilidae collected in Türkiye.

The bee-fauna of Türkiye (The country in itself offers a variety of geographic and climatic conditions) consists for the greater part of species which can be found in the Eu-

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ropean part of the Palearctic Region or in North Africa. But also Western Palearctic elements stemming from the Caucasus or from Middle-Asia are present.

The species in each genus was given in alphabetical order, with indication of the subgenus. For each species the sex with the number of specimens, the date, locality, altitude and plant associations (if present) were indicated. Besides that some abbreviations were used. They indicate the location of the material studied, followed by the names of all private collectors and museum-curators, who have supplied material, and to whom we want to express our sincere thanks. The same symbols were used in the text, placed in parenthesis behind all data recorded.

These symbols are:

- M. P. Mus. Nat. d'Hist nat., Paris (J. Casevitz-Weulersse)
- C. E. Pj. A. W. Ebmer, Puchenau bei Linz
- C. O. Hikmet Özbek, Erzurum
- C. R. S. Rişch, Köln
- C. S. M. Schwarz, Ansfelden
- C. Z. G. van der Zanden, Eindhoven

Results

Following is the account of the tribe Heriadini of the Megachilidae so far found in Türkiye.

1. Genus *Chelostoma* Latreille, 1809.

Ch. appendiculatum (Morawitz, 1872)

1 female, 2.VI.1964, Ürgüp (Nevşehir) (C. S.); 1 male, 2 females, 24.VI.1990, Zorkun Yaylası, Osmaniye (Adana) (C. O.).

Literature cited: Smyrna, Bursa, Amasya (Schletterer, 1889), Jaribaschi (Friese, 1921).

Ch. brevifurca (Benoist, 1935)

Type location: Taurus Mountains.

1 male, 26.V.1988, Göksun (Kahramanmaraş) (C. Z.).

Ch. campanularum (Kirby, 1802)

2 females, 2 males, 26.VIII.1981, Tafta, Erzurum on *Centaurea solstitialis* (C. O.)

Literature cited: Poln. Tschifflik (Friese, 1922).

Ch. diodon Schletterer, 1889

Type location: Amasya.

Literature cited: Amasya (Schletterer, 1889), Gülek (Adana) (Friese, 1911).

Ch. distinctum (Stoeckert, 1929)

1 male, 14.VII.1984, Pass of Tortum-Narman, (Erzurum) 1900 m; 2 males, 15.VII.1984, 40 km east of İmranlı (Sivas) 1700 m (C. E.), New to the Turkish fauna.

Ch. dolosa (Benoist, 1935)

Type location: Bursa.

Literature cited: Bursa (Benoist, 1935).

Ch. florisomne (Linnaeus, 1758)

1 female, 6.VII.1990, Turnalı, Şenkaya (Erzurum) (C. O.).

Literature cited: Klein Asien (Schletterer, 1889).

Ch. forcipatum Benoist, 1929

Type location: Taurus Mountains.

Literature cited: Taurus Mts (Benoist, 1929).

Ch. foveolatum (Morawitz, 1868)

1 male, 14.VII.1984, Pass of Tortum-Narman (Erzurum) 2200 m; (C. O.); 1 male, 17.VII.1984, west site of Topuzdağı-Pass, east of Ürgüp (Nevşehir) 1300 m; 2 males, 10.VII.1984, Pass of Tatvan west site (Bitlis), 1900m (C. E.); 2 males, 28.VI.1974, Termassos (Antalya (C. Z.).

Ch. grandis (Nylander, 1852)

Literature cited: Amanus Mts. (Friese, 1921).

Ch. handlirschi Schletterer, 1889

Literature cited: Klein Asien (Schletterer, 1889).

Ch. hebraea (Benoist, 1935)

1 male, 20.V.1988, Eğridir (Isparta) (C. O.). New to the Turkish fauna.

Ch. lucens (Benoist, 1928).

2 females, 20.V. - 3.VI.1963, Namrun (İçel) (C. S.). New to the Turkish fauna.

Ch. maidli (Benoist, 1935)

1 male, 12.VII.1984, Hosep Başkale, Güzeldere-Pass (Van), 2500 m (C. Z.)

Type-location: Bursa.

Literature cited: Bursa (Benoist, 1935).

Ch. mocsary Schletterer, 1889

1 male, 4.V.1987, Kınalıçam Yusufeli (Artvin), on *Sinapis arvensis* (C. O.).

Literature cited: Amasya (Schletterer, 1889).

Ch. nasutum Pérez, 1896

Literature cited: Jaribaschi (Friese, 1921) as, *Ch. truncatus*.

Ch. proximum Schletterer, 1889

4 males, 11.VIII.1977, Otlu (Erzurum), on *Centaurea solstitialis*; 1 male, 29.VI.1990, Pehlivanlı, Tortum (Erzurum) on *Salvia* sp. (C. O.); 1 male, 14.VII.1984, 50 km east of Erzurum, 1900 m (C. Z.).

Literature cited: Bursa (Friese, 1899).

Ch. rapunculi (Lepeletier, 1841)

1 male, 20.VII.1980, Oltu, (Erzurum), on *Centaurea solstitialis*; 1 female, 6.VIII.1988, Turnalı Şenkaya (Erzurum), 2000 m (C. O.); 2 males, 14.VII.1984, west of Tortum-Narman Pass, (Erzurum) 1900 m; 1 male, 3.VII.1984, Sivrihisar Pass, 40 km south east of Aksaray, 1600m (C. E.).

Literature cited: Bursa, Amasya (Schletterer, 1889).

Ch. schlettereri (Friese, 1899)

Type location: Bursa (Friese, 1899).

1 female, 31.VII.1986, Suğul-Pass Gürün (Sivas) 1400 m; 2 females, 1 male, 23.IV.1988, Beldibi (Antalya) (C. Z.).

Ch. subnitida (Benoist, 1935)

Type location: Tauros Mts.

Literature cited: Tauros Mts. (Benoist, 1935)

Ch. transversum (Friese, 1897)

1 male, 15.VI.1940, Tauros Mts. (coll. Benoist, P.).

Ch. ventrale Schletterer, 1889

1 female, 1 male, Bursa (coll. Senskenberg, Frankfurt).

2. Genus *Chelostomopsis* Cockerell, 1925

Chm. depauperata (Benoist, 1929)

Type location: Anatolia.

Literature cited: Anatolia (Benoist, 1929)

Chm. longiceps (Friese, 1899)

3 females, 22.V.1988, Kovada Gölü, Eğridir (Isparta) (C. R.); 2 females, 6.VII.1990/Tauros Mts. north of Akseki, Irmasan-Pass (Antalya) 1550 m (C. E., C. Z.).

3. Genus *Hofferia* Tkalcu, 1984

H. schmiedeknechti (Schletterer, 1889)

1 female, 4.VII. 1990, Bey Dağları, 28 km south of Elmalı (Antalya) cedar forest, 1700 m (C. Z.).

Literature cited: Tauros Mts. (Benoist, 1929), as *Hr. tumida* and *Hr. gibba*.

4. Genus *Heriades* Spinola, 1808

Hr. (Eutrypetes) clavicornis Morawitz, 1875

5 males, 4.VII.1990, Bey Dağları 24 km south of Elmalı (Antalya) cedar forest, 1650 m (C. E., C. Z.); 1 male, 8.VII.1990, Tauros, Sertavul Pass, south site Mut

(İçel), 1550 m (C. Z.); 1 male, 17.VII.1984, Topuz Dağı-Pass east of Ürgüp (Nevşehir) 1300 m; 1 male, 18.VII.1990, Sultan Dağları, south of Akşehir (Konya) 1500 m (C. Z.).

Literature cited: Ürgüp (van der Zanden, 1989).

Hr. (s. str.) crenulatus Nylander, 1856

1 male, 12.VII.1979, Oltu (Erzurum); 7 females, 5 males, 17-20.VII.1977, Sinop on *Carduus* sp. and *Centaurea* sp. (C. O.); 1 female, 4.VII.1990, Bey Dağları, 28 km south of Elmalı (Antalya) cedar forest, 1700 m; 1 male, 5.VII.1977, Amasya; 1 female, 1 male, 27.VII.1983, Silivri (İstanbul); 3 males, 25.VII.1983, Edrine; 2 males, 15.VI.1986, 10 km west of Kerkyre, Pelekas, 250 m (C. Z.).

Literature cited: Toprakkale (Friese, 1921).

Hr. (Eutrypetes) dalmaticus Maidl, 1922

1 female, 28.VIII.1983, Belen 18 km south east of İskenderun (Antakya) (C. Z.).
New to the Turkish fauna.

Hr. (Eutrypetes) hissarica Popov, 1955

1 female, 7.VIII.1985, Halfeti (Şanlıurfa) 500 m (C. Z.). New to the Turkish fauna.

Hr. (Eutrypetes) punctulifera Schletterer, 1889

Type location: Adana

Literature cited: Adalı Karataş (Adana) (Schletterer, 1889).

1 female, 2.VI.1988, 20 km east of Alanya (Antalya) (C. Z.).

Hr. (s. str.) rubicola Pérez, 1890

3 females, 26.VII.1977, Mersin (C. Z.); 1 female, 25.VII.1990, Antalya (C. R.).
New to the Turkish fauna.

Hr. (Eutrypetes) syriaca Benoist, 1929

2 females, 4 males, Side (Antalya) 8 - 20.VI.1985, on *Salvia* sp., *Centaurea solstitialis*. (C. Z.). New to the Turkish fauna.

Hr. (s. str.) truncorum (Linnaeus, 1758)

16 females, 3 males, 12.VII - 18.IX.1977 and 1979, Oltu (Erzurum) on *Salvia* sp., *Centaurea solstitialis*; 1 female, 26.VII.1981, Tafta, Erzurum; 2 females, 20.IX.1978, Bağbaşı, Tortum, on *Arctium lappa* and *Onopordum* sp, 1200 m (C. O.); 2 females, 20.VIII.1985, Bursa; 2 females, 15.VII.1984, Anadolu kavağı (İstanbul) 50 m; 1 male, 19.VIII.1983, Iğdır (Kars) (C. Z.).

Literature cited: Poln. Tschifflik (Friese, 1922).

5 Genus *Pseudoheriades* Peters, 1970

Ps. (Stenoheriades) asiaticus (Friese, 1921)

Type location: Ayran Halfeti (Şanlıurfa)

3 males, Taurus Mts., 14.VI. and 16.VII. no year, ex coll. Vachal (M. P.); 1 male, 18.VI.1987, Beyşehir (Konya) (C. Z.); 1 female, 1 male, 11.V.1990, Kızkalesi Silifke (İçel); 1 male, 13.V.1990, Taurus Mts.(Antalya) Gündoğmuş 1000 m., (C. R.).

Literature cited: Namrun (İçel) (Van der Zanden, 1989).

Ps. (Stenoheriades) coelostoma (Benoist, 1935)

Type location: Taurus Mts.

1 male, 10.V.1963, Námrun (İçel); 2 males, 23.IV. - 5.V.1988, Beldibi (Antalya);
1 female, 1 male, 3.VI.1988, 40 km north of Kahramanmaraş (C. Z.).

Özet

Türkiye'nin Megachilidae türleri II: Heriadini (Hymenoptera, Apoidea)

Türkiye'nin yabancı türlerini tesbite yönelik seri halindeki araştırmalardan bu çalışmada; Megachilidae familyasının Heriadini tribus'u ele alınmıştır. Çalışmanın materyalini birinci yazarın 1970'li yıllardan bu yana ülkenin muhtelif yörelerinden topladığı örnekler ile ikinci yazarın Avrupa'daki değişik müzelerde ve kimi bilim adamlarının özel koleksiyonlarında incelediği numuneler oluşturmaktadır.

Bu çalışma sonunda, *Chelostoma* cinsine ait 22, *Chelostomopsis*'de 2, *Hofferia*'da 1, *Heriades*'de 8, *Pseudoheriades*'de ise 2 olmak üzere toplam 35 türün varlığı saptanmıştır. Bunlardan *Chelostoma distinctum* (Stoeckert), *Ch. hebraea* (Benoist), *Ch. lucens* (Benoist), *Heriades dalmaticus* Maidl, *Hr. hissarica* Popov, *Hr. rubicola* Peréz ve *Hr. syriaca* Benoist Türkiye faunası için yeni türlerdir.

Literature

- Benoist, R., 1929. Descriptions d'espèces nouvelles d'Hyménoptères du genre *Heriades*. Bull. musée d'hist. nat. Paris, 34: 332-336.
- Benoist, R., 1935. Descriptions d'espèces nouvelles paléarctiques du genre *Heriades*. Bull. Soc. ent. France, 19: 277-280.
- Friese, H., 1899. Neue palaarktische Sammelbienen. Entom. Nachr., 25 (21/22): 321-346.
- Friese, H., 1921. Apoidea, Ergebnisse der zweiten deutschen Zentral-Afrika-Expedition, 1, Leipzig 1091-1112.
- Friese, H., 1922. Eine Kiegsausbeute von Apiden (Bienen) aus Makedonien. Zool. Jahrb. Abt. System., 46: 175-216.
- Özbek, H. and G. van der Zanden, 1992. A preliminary review of the Megachilidae of Turkey, Part I: The Osmiini (Hymenoptera: Apoidea) Türk. entomol. derg., 16 (1): 13-32.
- Schletterer, A., 1889. Monographie der Bienen-Gettungen *Chelostoma* Latr. und *Heriades* Spin. Zool. Jahrb., Abt. Syst., 4: 591-691.
- Zanden, G. van der, 1989. Neue oder wenig bekannte Arten un Unterarten der Paläarktischen Megachiliden. Entom. Abhandl., 53 (6): 71-86.