

A preliminary review of the Megachilidae of Turkey, Part V. Supplement to parts I-IV (Hymenoptera, Apoidea)

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Summary

In this part of the study of the Megachilidae of Turkey in total 80 species are reported. These are from the genera of *Anthocopa* (2), *Osmia* (10), *Hoplosmia* (3), *Protosmia* (1), *Stenosmia* (1), *Hoplitis* (33) in the tribe Osmiini; *Chelostoma* (9) and *Stenoheriades* (1) in Heriadini; *Anthidium* (2), *Rhodanthidium* (1) and *Stelis* (8) in Anthidiini; *Chalicodoma* (1), *Megachile* (4) and *Coelioxys*(4) in Megachilini. Among these, 11 species are new for the Turkish fauna. Type localities of 47 species and subspecies are given in Turkey.

It can be concluded that with previous records 445 species and subspecies of Megachilidae have been reported from Turkey so far.

Introduction

Serial studies have been conducted to determine bees of the megachilid species in Turkey (Özbek and van der Zanden 1992 a, b, 1993 and 1994).

Since the publication of Part I, a number of new species has been described from Turkey. Also, since then new material has been collected by the first author and determined by both authors. This Part V gives a review of all these additions.

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The information relating to material, methods and symbols was given in Part I.

Results

Tribus Osmiini

Genus ***Anthocopa*** Lepeletier et Serville, 1825

Anthocopa picicornis (Morawitz, 1895)

2 males, 14.VI.1994, Erzincan, 1250 m (C. O.).

New for Turkey!

Anthocopa rugidorsis (Pérez, 1895) (= ***fasciculata*** Alfken, 1933)

Male, 9.VIII.1994, Aşkale (Erzurum), 2080 m (C.O.).

New for Turkey!

Genus ***Osmia*** Panzer, 1806

Osmia (Chalcosmia) brevipes van der Zanden, 1994

Type location: Gürün (Sivas).

Osmia (Chalcosmia) fulviventris niveata Fabricius, 1804

Female, 2.V.1994, Side (Antalya) (C.O.).

Osmia (Chalcosmia) milenae Tkalcu, 1992

Type location: Muş.

Osmia (Erytosmia) sybarita Smith, 1853

Female, 23.V.1992, Silifke (İçel); female, 25.V.1992, Çamlıyayla, Tarsus (İçel) (C.O.).

New for Turkey!

Osmia (Melanosmia) parietina Curtis, 1828

Male, 9.VII.1992, Şenkaya (Erzurum), 2400 m (C.O.).

New for Turkey!

Osmia (Platosmia) alchata Warncke, 1990

Type location: Harran (Şanlıurfa).

Osmia (Pyrosmia) hermona Warncke, 1992

Type location: Hakkari.

Male, 14.VII.1991, Suvari-Halil Pass (Hakkari) (Paratype).

Osmia (Pyrosmia) nigricollis Warncke, 1992

Type location: Şemdinli (Hakkari).

Osmia (Prosmia) oramara Warncke, 1992

Type location: Oramar (Hakkari). Also from Elazığ, Varagös and Suvari-Halil Pass (Hakkari) (Paratypes).

Osmia (Pyrosmia) tawildara Warncke, 1992

Type location: Hakkari.

Genus ***Hoplosmia*** Thomson, 1872

Hoplosmia (Odontanthocopa) warnckeii Tkalcu, 1992

Type location: Şırnak and Iran.

2 males, 5.VI.1977, Şırnak (Paratypes) (C.Z.).

Hoplosmia (s.str.) ***croatica*** (Friese, 1893)

Female, 27.VIII.1992, Pazaryolu (Erzurum), 1500 m (C.O.); Silivri and İstanbul (C.Z.).

New for Turkey!

Hoplosmia (s. str.) ***elegans*** Tkalcu, 1992

Type location: Side (Antalya).

Genus ***Protosmia*** Ducke, 1900

Protosmia glutinosa (Giraud, 1871)

Female, 5.VII.1994, Altıparmak, Yusufeli (Artvin) 1300 m; female, 28.VII.1990, Ayvalı, Oltu (Erzurum) 900 m (C.O.).

New for Turkey!

Genus ***Stenosmia*** Michener, 1941

Stenosmia kotschisa (Warncke, 1991)

Type localiton: Şereflikoçhisar (Ankara).

Genus ***Hoplitis*** Klug, 1807

Hoplitis (Alcidamea) antennata (Morawitz, 1876)

Sarıkamış (Kars) (Warncke, 1991).

Hoplitis (Alcidamea) bicallosa (Morawitz, 1876)

Akseki (Antalya), Sarıkamış (Kars) (Warncke, 1991).

Hoplitis (Alcidamea) ciliaris (Pérez, 1902)

Konya, Erzincan, Hakkari (Warncke, 1991).

Hoplitis (Alcidamea) claviventris (Thomson, 1872)

Abant Gölü (Bolu) (Warncke, 1991)

Hoplitis (Alcidamea) curtula (Pérez, 1896)

44 specimens from various locations such as Ankara, Kırıkkale, Konya, Karaman, Sivas, Nevşehir, Kayseri, Niğde, İçel, Elazığ and Bayburt (Warncke, 1991).

Hoplitis (Alcidamea) decaocta (Warncke, 1991)

Type location: Erçek (Van), Kaman (Kırşehir).

Hoplitis (Alcidamea) eburnea (Warncke, 1991)

Type location: Uludere (Hakkari).

Hoplitis (Alcidamea) galbula (Warncke, 1991)

Type location: Yüksekova (Hakkari).

Hoplitis (Alcidamea) garzetta (Warncke, 1991)

Type location: Nemrut Mnt. (Adıyaman).

Warncke (1991) mentioned 52 more specimens from various locations (Konya, Hakkari).

Hoplitis (Alcidamea) limassolica (Mavromoustakis, 1937)

Warncke (1991) collected 9 specimens at various locations (Gaziantep, Şanlıurfa, Kahramanmaraş, Siirt).

Hoplitis (Alcidamea) mollis Tcalcu, 1995

Type location: Erzurum.

Male, 9.IV.1970; female, 28.V.1970; 2 females, 4.VI.1970; female, 9.VI.1970; 3 females, 12.VI.1970; 2 females, 17.VI.1970; female,

26.VI.1970; 2 females, 30.VI.1970; male, 2.VII.1970; 3 females, 5.VII.1970; male, 10.VII.1970; female, 12.VII.1970; female, 29.VII.1970; female, 6.VII.1971; female, 20.VI.1974; 2 females, 23.VI.1974; female, 2.VII.1974; female, 26.VII.1974; female, 30.VII.1976; Erzurum (C.O.). All material collected from *Onobrychis viciifolia* in the research field of the Atatürk University in Erzurum.

Hoplitis (Alcidamea) stellaris (Warncke, 1991)

Type location: Başkale (Van).

Pamukkale (Denizli) (Warncke, 1991)

Hoplitis (Alcidamea) subbutea (Warncke, 1991)

Type location: Suvani-Halil Pass (Hakkari).

Ürgüp (Nevşehir), Gürün (Sivas), Nemrut Mnt. (Adıyaman), Tenin Pass, Hakkari (Warncke, 1991).

Hoplitis (Alcidamea) xanthoprymna (Warncke, 1991)

Type location: Madenşehir (Konya).

Hoplitis (Annosmia) chucar (Warncke, 1991)

Type location: Serpil (Hakkari).

Warncke (1991) collected 26 more specimens from Hakkari and Konya.

Hoplitis (Annosmia) elaziga (Warncke, 1991)

Type location: Elazığ.

Hoplitis (Annosmia) eremophila (Warncke, 1991)

Type location: Mt. Gavaruk (Hakkari), Sat Mts. and Nemrut lake, Bitlis (Warncke, 1991).

Female, 21.VI.1994, Palandöken, Erzurum, 2200 m. (C.O.).

Hoplitis (Annosmia) fulica (Warncke, 1991)

Type location: Erciş (Van).

Hoplitis (Annosmia) gentilis (Warncke, 1991)

Type location: Sille (Konya).

Hoplitis (Annosmia) idaensis (Warncke, 1991)

Type location: Nemrut Mnt. (Adıyaman).

Hoplitis (Annosmia) lapidaria (Morawitz, 1877)

Mut (İçel) and Avanos (Nevşehir) (Warncke, 1991).

Hoplitis (Annosmia) mutica (Warncke, 1991)

Type location: Madenşehir (Konya).

Warncke (1991) gave 23 more specimens from various locations (Şereflikoçhisar, Ürgüp, Karaman, Niğde, Adıyaman, Sertavul (İçel), Şanlıurfa, Van, Hakkari).

Hoplitis (Annosmia) uncaticornis cursoria Warncke, 1991

Type location: Harran (Şanlıurfa).

Hoplitis (Pentadentoscia) gallinula (Warncke, 1991)

Type location: Ceylanpınar (Şanlıurfa).

Female, 12.VIII.1992, Güzelova (Erzurum) 2200 m; male, 28.VII.1992, Palandöken, Erzurum 2300 m (C.O.).

Hoplitis (Pentadentoscia) pomarina (Warncke, 1991)

Type location: Erciş (Van).

Also Tutak, Yüksekova, Karakurt, Ararat, Mut (Warncke, 1991).

Hoplitis (Pentadentoscia) ridibunda (Warncke, 1991)

Type location: Antalya.

Mut and Elazığ (Warncke, 1991).

Hoplitis (Pentadentoscia) tringa (Warncke, 1991).

Type location: Elazığ.

Sarıkişla, Ankara, Sille and Karaman (Warncke, 1991).

Hoplitis (Platosmia) alchata (Warncke, 1990)

Type location: Harran (Şanlıurfa).

Hoplitis (s.str.) adunca (Panzer, 1798)

Female, 7.VII.1991, Süngübayır, Olur (Erzurum) 1700 m (C.O.). Since Friese (1922) only one specimen has been collected in this country so far.

Hoplitis (s.str.) bombiformis van der Zanden, 1991

Type location: Yüksekova (Hakkari).

Female 8.VIII.1992, Zerneke Barajı, Başkale (Van) 2000 m (C.O.).

Hoplitis (s.str.) flabellifera (Morice, 1901)

2 females, 23.V.1992, Silifke (İçel), 75 m; female, 23.V.1992, Erdemli (İçel); female, 7.VII.1991, Süngübayır, Olur (Erzurum) 2000 m (C.O.).

New for Turkey!

Hoplitis (s.str.) illustris van der Zanden, 1992

Type location: Ürgüp (Nevşehir).

Female, male, 9.VII.1978, Sertavul (C.S.).

Hoplitis (s.str.) libanensis (Morice, 1901)

2 males, 2.VI.1965, Antalya (C.S.).

Tribus: Heriadini

Genus ***Chelostoma*** Latreille, 1809

Chelostoma (Foveosmia) bytinskii (Mavromoustakis, 1948)

Belen-Pass (Amanus Mts. and Maraş) (Warncke, 1991).

Chelostoma (Foveosmia) emarginatum (Nylander, 1856)

Female, 25.V.1992, Çamlıyayla, Tarsus (İçel) (C.O.).

New for Turkey!

Chelostoma (Foveosmia) forcipata (Benoist, 1928)

Gülek, Taurus (Benoist, 1928) Muğla, Antalya, Kahramanmaraş, Siirt and İçel (Warncke, 1991).

Chelostoma (Gyrodromella) rapunculi (Lepelletier, 1841)

Male, 20.VII.1970, Oltu (Erzurum) 1300 m (C.O.).

Chelostoma (Foveosmia) galierida (Warncke, 1991)

Type location: Anamur (İçel).

21 more specimens from İçel and various localities of Antalya (Warncke, 1991).

Chelostoma (Foveosmia) garrula (Warncke, 1991)

Type location: Sarıkamış (Kars).

3 males and female, 28.VII.1992, Başaklı, Oltu (Erzurum), 1700 m (C.O.).

Warncke (1991) mentioned 29 more specimens from various locations (Erzurum, Rize, Bitlis and Hakkari).

Chelostoma (Foveosmia) isabellina (Warncke, 1991)

Type location: Uludere (Hakkari).

Kahramanmaraş, Amanus Mts. and Midyat (Warncke, 1991).

Chelostoma (Foveosmia) palaestina (Benoist, 1935)

Belen-Pass (Amanus Mts.) (Warncke, 1991).

Chelostoma (Foveosmia) torquilla (Warncke, 1991)

Type location: Suvari-Halil-Pass (Hakkari). Warncke (1991) gives 105 more specimens (Kayseri, Kars, Bitlis, Van and Hakkari).

Genus ***Stenoheriades*** Tkalcu, 1984

Stenoheriades hofferi (Tkalcu, 1984)

3 males, female, 12.V.1991, Amanus, Tarsus (İçel) (C.O.).

Tribus: Anthidiini

Genus ***Afranthidium*** Michener 1948

Afranthidium (Mesanthidium) carduele (Morawitz, 1876)

In Part III this species was cited as ***A. schulthessii*** (Friesse), which was a misidentification.

Genus ***Anthidium*** Fabricius, 1804

Anthidium (s.str.) ***senile*** Eversmann, 1852

Female, 10.VII.1994, Dikyar, Uzundere (Erzurum) (C.O.).

New for Turkey!

Anthidium (s.str.) ***waltlii*** Spinola, 1838

Female, 6.VII.1994, Sebzeçiler, Yusufeli (Artvin) 500 m.

New for Turkey!

Genus **Rhodanthidium** Isensee, 1927

Rhodanthidium (Asianthidium) aculeatum (Klug, 1832)

2 females, 3 males, 7.VII.1994, Akarsu, Ardanuç (Artvin); 2 females, male, 5.VII.1994, Altıparmak, Yusufeli (Artvin); male, 8.VIII.1994, İspir (Erzurum).

Pasteels (1969) indicated as Anatolia but no location.

Genus **Stelis** Panzer, 1806

Stelis annulata (Lepeletier, 1841)

Sille (Konya), Namrun (İçel), Hasanbeyli, Amanus Mts. (Warncke, 1992).

Stelis breviscula (Nylande, 1848)

İspir (Erzurum), Çamlıbel (Sivas) (Warncke, 1992).

Stelis denticulata Friese, 1899

Tutak (Ağrı), Gölbaşı (Adıyaman), Erciş (Van), Madenşehir, Tanyeri (Konya), Erzincan, Vargöz (Hakkari) (Warncke, 1992).

Stelis iugae Noskiewicz, 1925

Lüleburgaz (Kırklareli) (Warncke, 1992)

Stelis odontopyga Noskiewicz, 1925

Male, 23.VII.1992, Süngübayır, Olur (Erzurum) 1700 m (C.O.), İstanbul (Warncke, 1992).

Stelis punctulatissima hellenica Mavromoustakis, 1959

Germencik (Aydın) (Warncke, 1992).

Stelis scutellaris Morawitz, 1894

Konya, Ankara (Warncke, 1992).

Stelis simillima Morawitz, 1876

Karakurt (Kars) (Warncke, 1992).

Tribus: Megachilini

Genus **Chalicodoma** Lepeletier, 1841

Chalicodoma (Pseudomegachile) ericetorum turneri Tkalcu,
1994

Type location: Ayvalık (Balıkesir) and Ağrı.

Genus ***Coelixys*** Latreille, 1809

Coelixys alata Förster, 1853

Female, 20.VII.1992, Fındıklı (Rize), 100 m (C.O.).

New for Turkey!

Coelixys caudata Spinola, 1838

Female, 30.VII.1994, Erzincan (C.O.).

Konya, Niğde, Sivas, Isparta, Ağrı, Bitlis, Hakkari (Warncke,
1992).

Coelixys elytrura Spinola, 1838

Alata (İçel) (Warncke, 1992).

Coelixys pulchella Moravitz, 1884

Ceylanpınar (Şanlıurfa), Ürgüp (Nevşehir), Nemrut lake (Bitlis)
(Warncke, 1992).

Genus ***Megachile*** Latreille, 1802

Megachile (Neoentricharaea) leucomella Gerstaecker, 1869

Male, 7.VII.1994, Ferhatlı, Ardanuç (Artvin)(C.O.).

Megachile (s.str.) armenia Tkalcu, 1992

Type location: Palandöken, Erzurum.

Female, male, 30.VII.1980, Palandöken, Erzurum, 2300 m;
female, 7.VIII.1980, Palandöken; female, male, 22.VIII.1991, Şenyurt
(Erzurum), 2400 m (C.O.); male 2.IX.1993, Bolkar Toros Mts., 2700 m
(C.Z.).

Megachile (s. str.) ligniseca (Kirby, 1802)

Female, 14.VII.1990, Karagöl, Borçka (Artvin), 1050 m; female, 7
males, 10.IX.1992, Arhavi (Artvin), 100 m, ***Cirsium*** sp.; male,
12.IX.1992, Trabzon, 300 m (C.O.).

***Megachile (Xanthosarus) maritima* (Kirby, 1802)**

Female, 18.V.1992, Erzincan; female, 14.VI.1994, Erzincan; male, 18.VI.1971, Oltu (Erzurum); female, 23.VI.1994, Üniversite (Erzurum); female, 24.VI.1989, Karakurt, Sarıkamış (Kars); 4 males, 2 females 27.VI.1975, Kayseri; 3 males, 5.VII.1994, Altıparmak, Yusufeli (Artvin); 2 males, female, 5. VII.1994, Sarıgöl, Yusufeli; 2 males, female, 6.VII.1994; Zeytinlik, Yusufeli; male, 6.VII.1994, Yağcılar, Yusufeli; 3 females, 4 males 6.VII.1994, Demirkent, Yusufeli; male, 11.VII.1994, Erzincan; male, 11.VII.1991, Oltu; female, 17.VII.1981, Arpaçay (Kars); male, 18.VII.1991, Akyumak (İğdır); female, 20.VII.1994, Beytepe (Ankara); female, 22.VII.1991, Ankara; female, 24.VII.1992, Mersin; 2 females, 25.VII.1980, Erzurum; male, female, 25.VII.1990, Kazan (Ankara); 2 females, 27.VII.1990, Ayvalı, Oltu; female, 28.VII.1990, Ayvalı, Oltu; female, 28.VII.1993, Akçatoprak, Horasan (Erzurum); female, 30.VII.1990, İspir (Erzurum); male, 1.VIII.1979, Erzurum; female, 3.VIII.1991, Paşalı, Şenkaya (Erzurum); female, 8.VIII.1992, Paşinler (Erzurum); female, 2 males, 8.VIII.1991, Umudum Yaylası, Erzurum 2800 m; female, 10.VIII.1992, Üniversite; female, 14.VIII.1991, Sebzeciler, Yusufeli; female, 15.VIII.1993, Taşlıköy, Olur (Erzurum); female, 22.VIII.1991, Şenyurt, Erzurum; male, 23.VIII.1991, Kargapazarı, Erzurum; male, 31.VIII.1983, Çıldır (Kars); female, 7.IX.1987, Kayseri; male, female, 12.IX.1976, male, 14.IX.1978, Oltu; female, 20.IX.1977, Bağbaşı, Tortum (Erzurum); 2 females, 20.IX.1992, Üniversite (Erzurum) (C.O.).

Discussion

At the results of these serial studies conducted on the bees of the family Megachilidae of Turkey, a total of 445 species and subspecies have been reported for the time being.

Number of species for each genus is listed below: ***Anthidiellum* 9, *Anthidium* 31, *Anthocopa* 44, *Archianthidium* 4, *Chalicodoma* 24, *Chelostoma* 31, *Chelostomopsis* 2, *Coelioxys* 23, *Creightonella* 6, *Dioxys* 9, *Heriades* 8, *Hofferia* 1, *Hoplitis* 69, *Hoplosmia* 3, *Icteranthis* 9, *Lithirgus* 4, *Liothyrapis* 1, *Megachile* 41, *Metallinella* 1, *Osmia* 76, *Protosmia* 12, *Pseudoanthidium* 6, *Pseudoheriades* 2, *Rhodanthidium* 9, *Stelis* 17, *Stenoheriades* 1, *Stenosmia* 1 and *Trachusa* 1.**

<i>Anthocopa agis</i> (Benoist)	<i>H. pici</i> (Friese) ⁶	<i>C. handlirschi</i> Schletterer ¹²
<i>A. andrenoides</i> (Spinola)	<i>Osmia aeruginosa</i> Warncke	<i>Chelostomia nasutum</i> Pérez ¹³
<i>A. bipartita</i> (Friese)	<i>O. caelestina</i> Benoist	<i>C. subnitida</i> Benoist ¹⁴
<i>A. cristatula</i> van der Zanden	<i>O. dilaticornis</i> Mor.	<i>Chelostomopsis depauperata</i> Benoist ¹⁵
<i>A. cypriaca bayburtensis</i> (Tkalcu)	<i>O. diomedea</i> Warncke	<i>Anthidium aculeatum</i> Klug ¹⁶
<i>A. dalmatica</i> (Mor.)	<i>O. frieseana</i> Ducke	<i>A. schultessii</i> (Friese)
<i>A. duckeana</i> (Kohl)	<i>O. kuznetzovi</i> (Cockerell)	<i>A. senile</i> Everesmann
<i>A. erythrogastra</i> (Ferton)	<i>O. laticauda</i> Stanek	<i>A. waltili</i> Spinola
<i>A. furcula</i> (Mor.)	<i>O. mutensis</i> Peters	<i>Anthidiellum nascicum</i> (Friese)
<i>A. mocsaryi</i> (Friese) ¹	<i>O. pennata</i> Warncke	<i>Archanthidium maximum</i> (Friese) ¹⁷
<i>A. obtusa</i> (Friese)	<i>O. peregrina</i> Warncke	<i>Stelis ruficornis</i> Mor. ¹⁸
<i>A. olgae</i> Tkalcu	<i>O. prasina</i> (Mor.)	<i>Chalicodoma albonotata</i> (Rod.)
<i>A. papaveris</i> Latreille ²	<i>O. sita</i> Nurse	<i>C. asiaticum</i> (Mor.)
<i>A. pratincola</i> (Warncke)	<i>O. sogdiana</i> Mor.	<i>C. manicata</i> Griaud
<i>A. saundersi</i> (Vachal) ³	<i>O. torquata</i> Warncke	<i>C. nigrita</i> (Rad) ¹⁹
<i>A. scutellaris</i> (Mor.)	<i>Protosmia glutinosa</i> (Giraud)	<i>C. pyrenaica</i> (Lep.) ¹⁹
<i>A. singularis</i> (Mor.)	<i>P. humeralis</i> (Pérez)	<i>C. roeweri</i> Alfken
<i>A. spinigera</i> (Latreille)	<i>P. magnicapitus</i> (Stanek) ⁷	<i>Megachile boops</i> Friese ²⁰
<i>A. urfensis</i> van der Zanden	<i>P. paradoxa</i> (Friese)	<i>M. communis</i> Mor. ²¹
<i>A. villosa</i> (Schenck)	<i>P. sideritis</i> Tkalcu	<i>M. deceptorla</i> Pérez
<i>Hoplitis adunca</i> (Panzer) ⁴	<i>P. stigmatica</i> (Pérez) ⁸	<i>M. metatarsalis</i> Mor.
<i>H. bischoffi</i> (Atanassov)	<i>P. tauricola</i> Popov	<i>M. minutissima</i> Rad.
<i>H. bombiformis</i> van der Zanden	<i>Chelostoma dolosa</i> (Benoist) ⁹	
<i>H. brachypogon</i> (Pérez) ⁵	<i>C. forcipatum</i> Benoist ¹⁰	
<i>H. campanularis</i> (Mor.)	<i>C. grandis</i> (Nylander) ¹¹	

¹Since Friese (1921) has not been encountered.

²Since Alfken (1935) only one specimen has been collected in 1979.

³Since Alfken (1935) has not been encountered.

⁴Since Friese (1922) has not been encountered.

⁵Since Alfken (1935) has not been encountered.

⁶Type location is Bursa but since Friese (1899) has not been encountered.

⁷Type location is Şanlıurfa but since Stanek (1969) has not been encountered.

⁸Since Stanek (1969) has not been encountered.

⁹Type location is Bursa but since Benoist (1935) has not been encountered.

¹⁰Type location is Toros Mnts. but since Benoist (1929) has not been encountered.

¹¹Since Friese (1921) has not been encountered.

¹²Since Schletterer (1889) has not been encountered.

¹³Since Friese (1921) has not been encountered.

¹⁴Type location is Toros Mnts. but since Benoist (1935) has not been encountered.

¹⁵Type location is Anatolia but since Benoist (1929) has not been encountered.

¹⁶Since Pasteels (1969) has not been encountered.

¹⁷Type location is Toros Mnts. but since Friese (1921) has not been encountered.

¹⁸Since Friese (1895) has not been encountered.

¹⁹Since Fahringer (1922) has not been encountered.

²⁰Type location is Amanos Mountains but since Friese (1921) has not been encountered.

²¹Since Alfken (1935) has not been encountered.

Our studies and literature knowledge show that the megachilid bee fauna of Turkey is rich, but it should be pointed out that all wild bees are under threat. The conditions for wild bees have become worse

during the last 20-25 years due to changes of landscape, destruction and modification of habitats, intensification of farming and practice of growing monocultures in large fields, using pesticides irregularly and intensively in some localities, destruction of woods and bushes by cutting and forest fires, increasing erosion, development of transport and increasing the tourism, increasing residential areas particularly along coastal region, and changes in construction of farm houses and other buildings contrary to traditional way. Unfortunately a practice, peculiar to Turkey, that farmers burn cereal residue left in the field after harvest, to make ploughing easier. But in general, this practice is not restricted to the arable fields and causes the burning of the neighbouring natural land including plants on roadsides, inevitably bushes, and trees as well. The number of bee species found in agricultural landscape depends on the nesting sites, the size of food base, density of food plants and presence of refuge habitats. This practice annihilates all habitats, and causes reducing or perishing the wild bee populations evidently.

Vulnerable or rare bee species of the family Megachilidae are listed in the Plate 1. Some of them are on the verge of extinction or are probably already extinct in the country. Seventeen species whose occurrence in Turkey in about half-century (even more) has not been confirmed despite repeated search conducted by various workers (Plate 1).

Özet

Türkiye'nin Megachilidae (Hymenoptera, Apoidea) türleri V.

Megachilidae familyasına bağlı arı türlerini tespit amacına yönelik çalışmaların bu son bölümünde; ilk çalışmanın yayınlandığı 1992 yılından bu yana ülkemizde tanımlanan ve tespit edilen değişik cinslere ait türler ele alınmış ve 80 tür ve alttürün daha ülkemizde bulunduğu ortaya konmuş, bunların 47'sinin tip lokalitelerinin Türkiye olduğu belirlenmiştir. Ayrıca, *Anthocopa picicornis* (Morawitz), *A. rugidorsis* (Pérez), *Osmia parietina* Curtis, *Osmia sybarita* Smith, *Hoplosmia croatica* (Friese), *Protosmia glutinosa* (Giraud), *Hoplitis flabellifera* (Morice), *Chelostoma emarginatum* (Nylander), *Anthidium senile* Eversmann, *A. waltlii* Spinola ve *Coelioxys alata* Förster Türkiye faunası için yeni olan türlerdir.

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