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A Survey of the Gasteruptiidae (Hymenoptera) of Turkey

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A b s t r a c t : This study is based upon material collected from different localities of Turkey between years 2001 and 2015, and the other related studies, concerning this context were reviewed. In this study *Gasteruption punctifrons* VAN ACHTERBERG, 2014, *G. minutum* (TOURNIER, 1877), *G. undulatum* (ABEILLE DE PERRIN, 1879), *G. insidiosum* SEMENOV, 1892., *G. freyi* (TOURNIER, 1877), *G. assectator* (LINNAEUS, 1758), *G. hastator* (FABRICIUS, 1804), *G. merceti* KIEFFER, 1904, *G. nigrescens* SCHLETTERER, 1885., *G. schlettereri* MAGRETTI, 1890, *G. scorteum* van ACHTERBERG, 2014, *G. smitorum* VAN ACHTERBERG, 2014, *G. variolosum* (ABEILLE DE PERRIN, 1879), and *G. tournieri* SCHLETTERER, 1885 have been recorded in Turkey so far. Among them, there exists a new location for Turkish fauna. Some new localities are found for some species which have already been reported in Turkey. Separately, distribution of species in Turkey and in the world is presented.

K e y w o r d s : Hymenoptera, Gasteruptiidae, *Gasteruption*, fauna, Turkey.

Introduction

The Gasteruptiidae family involves approximately 500 identified and described species that belong to two subfamilies one of which is Gasteruptiinae (four genera) (MACEDO 2009, 2011; ZHAO et al. 2012) and the other one named Hyptiogastrinae (two genera) (JENNINGS & AUSTIN 2002). Conventionally Gasteruptiidae are categorized in the superfamily named Evanioidea, along with the Aulacidae and Evaniidae (JENNINGS & AUSTIN 2000). Representatives of these family are uncomplicatedly identified from other wasp types by a prolonged neck-like propleuron, very high insertion of the metasoma on the propodeum, clavate hind tibia, 14-segmented antenna in females (13-segmented in males) and a notably long eye, which is practically extending to the mandible (CROSSKEY 1951; JENNINGS & AUSTIN 2004; SMITH 2006). Biologically, species of Gasteruptiidae are predator-inquilines (sometimes known as kleptoparasites) on larvae of bees that are building their nests in soil, stems and in tunnels in wood, including Apinae, Colletinae, Halictinae and Megachilinae. Firstly, the members of those family feed on the bee larva and incept with the stored pollen for consumption; in case if this food is not sufficient, contents of an another cell may be exploited (MALYSHEV 1966). There exists only indirect substantiation of the fact that wasps (Crabronidae, Sphecidae and Vespidae-Eumeninae) are being hosts of Gasteruptiidae (CROSSKEY 1951; GAULD & HANSON 1995; JENNINGS & AUSTIN 1997a, 1997b, 2004). Adults are free-living insects feeding on nectar mainly on flowers with easily accessible nectar, such are of the families Apiaceae, Asteraceae or Euphorbiaceae, but likely at least some *Gasteruption* species feed on both

nectar and pollen (JENNINGS & AUSTIN 2004). Metamorphosis takes place inside the host's nest where the gasteruptiid pupa hibernates until the next spring or summer (MALYSHEV 1966; HE 2004; JENNINGS & AUSTIN 2004).

Faunal studies on the Gasteruptiidae of Turkey have been made by VAN ACHTERBERG & TALEBI (2014) YILDIRIM et al. (2004) MADL (1987, 1988a,b, 1989, 1991), SEDIVY (1958) HEDICKE (1939).

Material and Methods

The Gasteruptiidae samples were collected from Isparta Province situated in the western half of Turkey, between July 2001-October 2015. In Süleyman Demirel University, Faculty of Arts and Sciences, there were found 23 specimens in the insect collection which belong to Gasteruptiidae, collected between 2001 and 2009. With 11 new collected samples from field in 2015 about 34 records of 14 gasteruptiid species were reported. The materials were obtained from grass-type plants by using a standard sweeping-net. The samples are preserved in the collection of the Biology Department at Süleyman Demirel University, Isparta, Turkey.

Results

In this study, 14 species of genus *Gasteruption* were reported in Turkey.

***Gasteruption tournieri* SCHLETTERER, 1885**

Material examined: Osmaniye, mitisin-2, 18.VIII.2008, 1♀.

Distribution in Turkey: Biga, Cınardere; Cornelek, 40 km E of Mut; Konya, 30 km S of Akşehir; Bursa, near Caglian; Bursa, Ulu Dagi Mts., near Baraklı; 15 km W of Refahye, W of Erzincan, 1600 m; Eskisehir, Sakri ilica near Gümele; Sultan Daglari, near Yalvac; Hakkari, Akcali, 35 km S of Hakkari; id., 25 km E of Gözeldere, 930 m; Antalya, east of dunes; Acigöl, near Sardak; Mersin, Kuzucubelen; Seydisehir, Teke Gec.; Burdur, 20 km SW of Burdur, 940 m; id., 5 km NE of Yesilova, 1060 m; Mansisa, 35 km SEE of Salihli, 900 m; id., 30 km SEE of Salihli, 430 m; id., 40 km NW of Salihli, 150 m; Denizli, 10 km NE of Denizli, 290 m; Maras, Göksun, 1400 m; Hakkari, Mt. Sat, SW of Yüksekova, Varegös, 1650 m; Bodrum, Salmakis, on ? *Bupleurum*; Burdur, 20 km N of Aglasun, Koruglubeli, 950 m; Adana, 8-15 km N of Adana, 50 m; Gaziantep, 43 km WNW of Kilis, Gözkaya, 600 m (VAN ACHTERBERG & TALEBI 2014).

General Distribution: South and Central Europe, Turkey, Iran. (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption smitorum* VAN ACHTERBERG, 2014**

Material examined: Isparta, kasnak meşesi, 1625 m, 37° 44' K 30° 49' D, 16.VI.2007, 1♂.

Distribution in Turkey: (Van), Van, 15 km E Malatya, Muradiye, Agri, 30 km W [of] Eliskirt, Kayseri, Göreme, NN (VAN ACHTERBERG & TALEBI 2014).

General Distribution: Turkey (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption undulatum* (ABEILLE DE PERRIN, 1879)**

Material examined: Isparta, Atabey, 10.VI.2013, 1♂; The nature park Golcuk/entry akasya (2), 21.VII.-04.VIII.2009, 1♀; Isparta, The nature park Golcuk/entry akasya (11), 21.VII.2009, 1♀; Isparta, Kovada, 12.VI.2015, 1♀; Isparta/ Gölcük Tabiat Parkı (12), 05.VIII.2015, 1♀.

Distribution in Turkey: Bilecik; 20 km NW of Iğdir; Nigde, Camardı; Mezikiran Gecidi, 20 km E of Gurun; 30 km S of Akşehir; Burdur, 20 km SW Burdur, 940 m; 20 km SW of Bitlis; Bolu, near lake; Sultan Dağları, near Yalvac; Sivas, 45 km E of Yarıhisar; Denizli, 35 km SSE of Denizli, 970 m; Mansisa, 40 km NW of Salihli, 150 m; Nevşehir, 20 km S of Nevşehir, Kaymaklı, 1200m (VAN ACHTERBERG & TALEBI 2014).

General Distribution: Central and South Europe, Turkey (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption punctifrons* VAN ACHTERBERG, 2014**

Material examined: Adana, Yumurtalık, 21.V.2007, 1♂; Adana, Yumurtalık, 07.IV.2007, 1♀.

Distribution in Turkey: Burdur, 20 km G-B. Burdur, 5km K-D. (VAN ACHTERBERG & TALEBI 2014).

General Distribution: Cyprus, Iran, Jordan, Syria, Turkey (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption freyi* (TOURNIER, 1877)**

Material examined: Isparta, Atabey, Kaysı, 04.VII.2002, 1♂; Isparta, Atabey, (2), 17.VII.2015, 1♂.

Distribution in Turkey: Isparta, Egirdir Gölü, 5 km N of Akkeçili, 920 m. (VAN ACHTERBERG & TALEBI 2014).

General Distribution: Europe, Turkey.

Host: Predator-inquiline of *Hylaeus* spp. (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption insidiosum* SEMENOV, 1892**

Material examined: Isparta, Beyşehir, 30.VI.2003, 1♀; Isparta, The nature park Golcuk, entry akasya, 21.VII.2009, 1♀; Hatay, Habibi-Neccar, 12.VIII.2007, 1♀.

Distribution in Turkey: 60 km W of Konya, Erflatun Pinar; 50 km S of Kars, Paslı; Konya, 30 km S of Akşehir, 20 km W of Van; 15 km E of Malatya; Zelve, Nevşehir; 25 km E of Malatya, Kopeksiz; near Karabulak; 30 km E of Mansisa; Burdur, 28 km SEE of Burdur, 1350 m; id., 20 km SW of Burdur, 940 m; id., 5 km NE of Yesilova, 1060 m; Isparta, Egirdir Gölü, 5 km N of Akkeçili, 920 m; 54 km W of Kayseri, Göreme; Kayseri, Göreme, 1000 m; Maras, Goksün, 1400 m; Hakkari, Hakkari, 1750 m; Van, Van, 1800 m; Adiyaman, Gölbaşı, 900 m; Hakkari, Mt. Sat, SW of Yüksekova, Vareğös, 1650 m; Van, Baskale, 2200m (VAN ACHTERBERG & TALEBI 2014).

General Distribution: East Europe, Russia, Iran, Turkey. (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption hastator* (FABRICIUS, 1804)**

Material examined: Isparta, Merkez (Dere mh.), 37° 40'K /30° 35'D, 1150 m, 29.VII.2001, 1 ♀; Isparta, Merkez (Dere mh.), 05.VIII.2015, 1 ♀.

Distribution in Turkey: (Bilecik, Baycicoy; Bolu, 17 km S of Seben; 10 km N of Tatvan; 20 km NW of Iğdir; Mezikiran Gecidi, 20 km E of Gurun; Osmaneli; Cornelek, 40 km E of Mut; Sultan Dağları, near Yalvac; 10 km N of Muradya; Paslı, 50 km S of Kars; Eksiler, 20 km W of Silifke; 20 km SW of Bitlis; Canakkale, Gelibolu; 20 km W of Van; Konya, 10 km S of Akşehir Mts.; id., 30 km S of Akşehir; Capadocia, Urgup; near Izmir; 15 km E of Malatya; Tatvan, Van Gölü; Gevas, id.; 20 km SW of Burdur, 940 m; Karadut, 50 km NE of Agiyaman, 1000 m; Karadut, Nemrut Dagi; Bursa, near Caglian; 40 km NE of Muradiye, 2200 m; Muradiye; Hakkari, Akcali, 35 km S of Hakkari, 1700 m; Sile, Konya; near Agri; Sebran, Porsuk Baraji; Adapazar, Sakatya, 25 km S of Adapazar; Aciöl, near Cardak; SE of Elazığ, Hazar Gölü; Burdur, 20 km SW of Burdur, 940 m; id., 28 km SEE of Burdur, 1350 m; id., 5 km NE of Yesilova, 1060 m; Kütahya, 28 km SSE of Kütahya, 1110 m; id., 20 km NEE of Kütahya; Denizli, 35 km SSE of Denizli, 970 m; Mansisa, 30 km SEE of Salihli, 430 m; id., 35 km SEE of Salihli, 900 m; Canakkale, 6 km N of Ezine, 35 m; Hakkari, Yüksekova, 1800 m; Hakkari, Mt. Sat, SW of Yüksekova, Veregös, 1650 m; Adiyaman, Gölbaşı, 900 m; Konya, Beyşehir, 1150 m; Nevşehir, Ürgüp, 1200 m; id., 20 km S of Nevşehir, Kaymaklı, 1200 m; id., 20 km S of Nevşehir, Kaymaklı; Bursa, Bursa, 300 m; SSE of Milas, Çamköy-Sek; Antalya, E Manevgat; id., Side-Titreyengöl; id., W Karabucak; 60 km W of Konya, Eflatun Pinar; Burdur, 20 km N of Aglasun, Koruglubeli, 950 m; Sivas, 10 km S of Gürün, near Gökpınar, 12500-1700 m) (VAN ACHTERBERG & TALEBI 2014).

General Distribution: Europe, N. Africa, Iran, Turkey, Russia (including Far East).

Host: Predator-inquiline of *Osmia* and *Hylaeus* spp. in *Rubus* stems and of *Systropha* nests (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption assectator* (LINNAEUS, 1758)**

Material examined: Osmaniye, mitisin, 18.VIII.2008, 1 ♂; Isparta Merkez, dere mahalle-2, 29.VII.2001 1 ♀; Isparta Merkez, Dere mahalle-4, 03.IX.2015, 1 ♀.

Distribution in Turkey: Anatolia, Lycia, Kemer; Pasli, 50 km S of Kars; 10 km W of Ürgüp; Bursa, near Cagliyan; 15 km W of Refahye, W of Erzincan, 1600 m; Konya, 10 km S of Aksehir Mts.; id., 30 km S of Aksehir; Sakarya, near Karasu; near Agri; near Akyaka, 40 m; near Fethiye; 40 km N of Muradye, 2200 m; Aciöl, near Cardak; Trabzon, near Macka; Avgadi, 30 km NW of Erdemli, 1300 m; Denizli, 10 km NE of Denizli, 270 m; Mansisa, 15 km SEE of Salihli, 170 m; Van, 30 km N of Baskale, 2700 m; Hakkari, Mt. Sat, SW of Yüksekova, Veregös, 1650 m; Nevsehir, Ürgüp, 1100 m; Gümüşhane, Köse Dagħ Gecidi, 1700 m; Pirene (VAN ACHTERBERG & TALEBI 2014).

General Distribution: Holarctic, Turkey, Iran (VAN ACHTERBERG & TALEBI 2014).

Host: Predator-inquiline of *Hylaeus* spp. and small Megachilinae (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption scorteum* VAN ACHTERBERG, 2014**

Material examined: Isprata, Gölcük Tabiat parkı, pilavlı tepe-(8), 21.V.2009, 1♂.

Distribution in Turkey: 15 km W [of] Refahye, W of Erzincan, 1600 m, 7.vii.2000, M. Halada". Paratypes (18♀ + 6♂♂): 12 ♀ + 5♂♂ (BZL, RMNH), same label data as holotype; 1 ♀ (BZL), "TR., Konya, 30 km S [of] Aksehir, 24.vi. [19]98, J. Halada"; 4♀♀ + 1♂ (BZL, RMNH), "Turkey mer., Avgadi, 30 km NW of Erdemli, 1300 m, 20.vi.1996, P. Jelinek"; 1♀ (BZL), "NW (VAN ACHTERBERG & TALEBI 2014).

General Distribution: Jordan, Turkey. (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption minutum* (TOURNIER, 1877)**

Material examined: Isparta, The nature park Golcuk, entry akasya (4), 21.VI.2009, 1♀.; Hatay, samandağı, 31.VI.2008, 1♂; Isparta, The nature park Golcuk, entry akasya (9), 21.VIII.2009, 1♀; Isparta, Süleyman Demirel Üniversitesi Botanik bahçesi, 05.VIII.2015, 1♂.

Distribution in Turkey: 27 km SE of Aksaray, Ihlara; Van, 30 km N of Baskale, 2700 m; Tunceli, 17 km W of Ovacik, 1250 m; Kerman, Sirac, 1640 m; Bolu, lake) (VAN ACHTERBERG & TALEBI 2014).

General Distribution: Europe, Iran, Turkey. New for the fauna of Iran and Turkey (VAN ACHTERBERG & TALEBI 2014).

Host: Probably predator-inquiline of *Hylaeus* nests (WALL 1994).

***Gasteruption nigrescens* SCHLETTERER, 1885**

Material examined: Isparta, The nature park Golcuk, entry akasya (4), 21.VII.-04.VIII.2009, 1♀; Isparta, The nature park Golcuk, entry akasya (10), 21.VII.2009, 1♀. Isparta, The nature park Golcuk, entry akasya (13), 23.VI.2015, 1♀.

Distribution in Turkey: 50 km S of Kars, Pasli; Konya, 30 km S of Aksehir; 20 km W of Van; 25 km E of Malatya, Kopeksiz; Muradiye; Sivas, near Gökpınar, 10 km S Gürün, 1500 m; Sivas, Cumhuriyet Univ.; Sivas, 45 km E of Yarıhisar; 15 km E of Malatya; 20 km E of Gurun, Mezikiran Gecidi; Konya, 30 km S of Aksehir; Yüksekova; 15 km W of Refahye, W of Erzincan, 1600 m; near Karabulak;

Akyaka, 3 m; Avgadi, 30 km NW of Erdemli, 1300 m; Nemrut Dagi, Karadut; Hakkari, Aksali, 35 km S of Hakkari, 1700 m; Bolu, near lake; Isparta, Egirdir Gölü, 5 km N of Akkeçili, 920 m; id., 8 km NE of Isparta, 1020 m; Kütahya, 20 km NEE of Kütahya; Mansisa, 35 km NW of Salihli, 900 m; 60 km W of Konya, Erflatun Pinar; Bursa, near Caglian; Cornelek, 40 km E of Mut; Burdur, 28 km SEE of Burdur, 1350 m; id., 20 km SW of Burdur, 940 m; id., 5 km NE of Yesilova, 1060 m; Van, Van, 1800 m; Agri, 30 km W of Eleskirt, 2200 m; Nevşehir, 5 km S of Avanos, Zelve, 1000 m; id., 10 km S of Avanos, Göreme, 1000 m; Ankara, Kizilcohaman, 1100 m; Adiyaman, Gölbası, 900 m; Erzurum, Tortum, 1700 m; Hakkari, Mt. Sat, SW of Yüksekova, Vargös, 1650 m; Sivas, near Gökpinar, 10 km S of Gürün, 1500–1700 m (VAN ACHTERBERG & TALEBI 2014).

General Distribution: C. and SE. Europe, Turkey (SCHMID-EGGER & SAURE, 2010), Iran (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption merceti* KIEFFER, 1904**

Material examined: Isparta, The nature park Golcuk, entry akasya (1), 21.VII.2009, 1 ♀; Isparta, The nature park Golcuk, entry akasya (5), 21.VII.-04. VIII. 2009, 1 ♀; Isparta, The nature park Golcuk, entry akasya (14), 25.VIII.2015, 1 ♀.

Distribution in Turkey: Ankara, Beynam; Konya, 30 km S of Akşehir; 50 km S of Kars Parsli; 20 km NW of Iğdir; Kabahaydar Urfa; 20 km E of Gurun, Mezikiran Gecidi; Capadocia, Ürgüp; Birecik, Halfeti; Antakya; 15 km E of Malatya; 60 km E of Mut Kirobasi; Osmaneli; near Akyaka, 40 m; Burdur, 20 km SW of Burdur, 940 m; id., 5 km NE of Yesilova, 1060 m; id., 28 km SEE of Burdur, 1350 m; Sivas, 45 km E of Yarhisar; Göreme; near Halfeti; Gevas, Van Gölü; Isparta, Karakus Dagi centr., 1460 m; Mansisa, 30 km SEE of Salihli, 430 m; Denizli, 35 km SEE of Denizli, 970 m; Nevşehir, 20 km S of Nevşehir, Kaymakli, 1200 m; Hakkari, Mt. Sat, SW of Yüksekova, Vargös, 1650 m; Van, 30 km N of Baskale, 2700 m; Kayseri, Pınarbası, 1500 m; Nevşehir, 5 km S of Avanos, Zelve, 1000 m; Agri, 30 km W of Eleskirt, 2200 m; Maras, Göksun, 1400 m; Diyarbakir, Diyarbakir, 650 m; SSE of Milas, Çamköy – Sek; Inner Anatolia, 5 km W of Koyulhisar (VAN ACHTERBERG & TALEBI 2014).

General Distribution: Central and South Europe, N. Africa, Israel, Turkey, Iran (VAN ACHTERBERG & TALEBI 2014).

Host: Predator-inquiline of *Ceratina* spp.

***Gasteruption variolosum* (ABEILLE DE PERRIN, 1879)**

Material examined: Isparta Merkez (gökçay) 22.X.2005, 1 ♂; 26.VII.2015, 1 ♂.

Distribution in Turkey: Agri, Patnos, 1650 m; Capadocia, Ürgüp; 10 km W of Ürgüp; Burdur, 20 km SW of Burdur, 940 m; 20 km E of Alanya; Kopeksiz, 25 km E of Malatya; Nidge, Camardi; Uzuncaburç, 30 km N of Silifke; Kafr. 10 km SE of Suwayda; 20 km NW of Iğdir; Cornelek, 40 km E of Mut; near Agri; Hakkari, Akcalı, 35 km S of Hakkari, 1700 m; Gevas, Van Gölü; Sivas, 45 km E of Yarhisar; Burdur, 5 km NE of Yesilova, 1060 m; N of Sivas; Isparta, 8 km NE of Isparta, 1020 m; id., Egirdir Gölü, 5 km N of Akkeçili, 920 m; Beyşehir; Manisa, 15 km SEE of Salihli, 170 m; Nevşehir, 20 km S of Nevşehir, Kaymakli, 1200 m; Nevşehir, 5 km S of Avanos, Zelve, 1000 m; id., 10 km S of Avanos, Göreme, 1000 m; id., 10 km E of Ürgüp, W of

Aksalur, 1350 m; Gümüşhane, Gümüşhane, 1200 m; Hakkari, Mt. Sat, SW of Yüksekova, Vargös, 1650 m; Inner Anatolia, 5 km W of Koyulhisar) 179 (VAN ACHTERBERG & TALEBI 2014).

General Distribution: South Europe, Iran, Turkey (VAN ACHTERBERG & TALEBI 2014).

***Gasteruption schlettereri* MAGRETTI, 1890**

Material examined: Isparta, The nature park Golcuk, pilavlı tepe (7), 27.VII.-04.VIII.2009, 1 ♀; Isparta, The nature park Golcuk, pilavlı tepe (15), 26.VII.2015, 1 ♀.

Distribution in Turkey: Hakkari, Habur Deresi Valley, S. Beytishap, 1100 m; id., Akcali, 35 km S of Hakkari, 1700 m; 20 km W of Van; 30 km N of Erdemli Aslanli; 10 km W of Gaziantep; 40 km E of Mut, Cornelek; 60 km E of Mut, Kirobasi; 80 km SW of Malatya Erkenek; 25 km E of Malatya, Kopeksiz; 50 km S of Kars Pasli; Zelve, Mevsehir; near Izmir; 20 km NW of Igdir; Adiyaman, Kahta; Mezikiran Gecidi, 20 km E of Gurun; 40 km N of Muradiye, 2200 m; near Muradiye, 120 km NE of Van, 2000 m; Burdur, 20 km SW of Burdur, 940 m; id., 5 km NE of Yesilova, 1060 m; Muradiye; Van; Göreme; Gevas, Van Gölü; Antalya, Alanya, 50–250 m; Mansisa, 40 km NW of Salihli, 150 m; Anatolia, 10 km S of Kusadasi, W. Davutlar, 0 m; Isparta, 8 km NE of Isparta, 1020 m; id., Egirdir Gölü, 5 km N of Akkecili, 920 m; SW Anatolia, Kusadasi; Hakkari, Mt. Sat, Vargös, SW of Yüksekova, 1700 m; Anatolia, 5 km N of Manavgat, Side, 10 m; Mersin, 30 km N of Silifke, Uzuncaburc, 400 m; Denizli, 20 km NE of Denizli, Pamukkale, 1000 m; Nevsehir, 20 km S of Nevsehir, Kaymakli, 1200 m; Agri, Mt. Ararat, 1800 m; Mardin, Mardin, 1000 m; Van, Mengene Dagi, N of Baskale, 2700–3000 m; Adana, near Feke, 800 m (VAN ACHTERBERG & TALEBI 2014).

General Distribution: SE Europe, Syria, Iran, Turkey (VAN ACHTERBERG & TALEBI 2014).

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Zusammenfassung

Vorliegende Bearbeitung behandelt Material (Gasteruptionidae, Hymenoptera), das zwischen 2001 und 2015 an verschiedenen türkischen Fundorten gesammelt wurde. Die Arten *Gasteruption punctifrons* VAN ACHTERBERG, 2014, *G. minutum* (TOURNIER, 1877), *G. undulatum* (ABEILLE DE PERRIN, 1879), *G. insidiosum* SEMENOV, 1892., *G. freyi* (TOURNIER, 1877), *G. assectator* (LINNAEUS, 1758), *G. hastator* (FABRICIUS, 1804), *G. merceti* KIEFFER, 1904, *G. nigrescens* SCHLETTERER, 1885., *G. schlettereri* MAGRETTI, 1890, *G. scortum* van ACHTERBERG, 2014, *G. smitorum* VAN ACHTERBERG, 2014, *G. variolosum* (ABEILLE DE PERRIN, 1879) und *G. tournieri* SCHLETTERER, 1885 wurden nachgewiesen.

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