

*Full Length Research Paper*

# Hymenoptera of Niğde province: Studies on Sphecidae fauna

Ayla Tüzün and Serdar Yüksel

Department of Biology, Faculty of Science, University of Ankara, Tandogan / Ankara 06100, Turkey.

Accepted 19 May, 2010

The present study is based on 1240 specimens obtained from the field studies in the vicinity of Ankara province in Turkey between the years of 2006 - 2008. In fauna studies carried out in Niğde province between May 2006 - October 2008, the specimens of *Sphecinae* Latreille, 1802, *Pempheredoninae* Dahlbom, 1835, *Astatianae* Lepeletier, 1845, *Crabroninae* Latreille, 1802, *Bembicinae* Latreille, 1802, *Philanthinae* Latreille, 1802 sub-families belonging to Sphecidae family were collected. 52 of the collected specimens are new records for Niğde province. *Astata pontica* Pulawski, 1958 species is a new record for Turkey.

**Key words:** Sphecidae, fauna, Niğde, Turkey.

## INTRODUCTION

Turkey is a peninsula extending as a bridge between Europe and Asia continents which has a very diverse fauna structure; thanks to its different geologic, ecologic and climatic characteristics.

Niğde province, which was determined as the study area is located between 37°58'N and 34°41'E. The altitude of the region varies between 1000 - 1700 m.

Temperature: The warmest month average is measured in July and the coldest month average is measured in January. Temperature difference between the seasons and day and night are the most significant indicator of continental climate. According to the observations conducted in Niğde province, average temperature in July was 37.7°C and the lowest temperature -21°C was measured in February.

Precipitation: Heavy rains fall in April, May and mid June and occasionally continuous rains were observed. Average rain in Niğde province is 0.9 mm. The rainiest month is April with 78.5 mm while the least rainy month is July with 0.2 mm.

Humidity: Average relative humidity in Niğde province is 56%. The most humid month was May with 80%, while the least humid month was August with 28%.

Typical continental climate of Central Anatolia Region prevails in Niğde province. Summers are warm and arid, winters are cold and snowy. Snow falls in winter and rain falls in spring season.

Niğde province has a quite limited forest area. Forests and shrubberies constitute 3% of the territory of the province. Mostly distributed tree species are beech, oak, pine, ash-tree and fir. The forests cover an area of 2400 ha mainly in the skirts of Aladağ Mountains.

Sphecidae specimens were collected from all eco-systems in Niğde province. Sphecidae species are solitary. With their leg structure, the species is adapted to digging. The majority of this species lives on the ground and builds their nests by digging sand or the earth and therefore the bees in this group are also known as "digger wasps". However, in addition to the species which build their nests in trunks or branches of trees or in the spaces between the rocks, there are other species in the family which use the galleries opened by other insects or which paste their nests made from mud to tress or resident (Bohart and Menke, 1976).

Adult Sphecid's feeds on various nutrients. Since the majority of the species have short mouth parts, they extract nectar from the plants with short corolla such as Compositae, Euphorbiaceae and Umbellifera. While extracting nectar, the species help the pollination of flowers. On the other hand, some species feed on sweet fluids secreted by small insects such as *Aphis gossypii*

\*Corresponding author. E-mail: [ayla.tuzun@science.ankara.edu.tr](mailto:ayla.tuzun@science.ankara.edu.tr)

or the body fluids of their preys (Bohart and Menke, 1976).

Sphecidae family of Order Hymenoptera represented by approximately 8000 species (Bohart and Menke, 1976; Goulet and Huber, 1993) in the world and 390 species (De Beaumont, 1967, 1969; Pulawski, 1967, 1971; Hensen and Van Ooijen, 1987) in Turkey.

## MATERIALS AND METHODS

The specimens collected from Niğde province between May 2006 and October 2008 were collected with a net. The specimens were killed using ethyl acetate. Field studies were carried out from 09:00 in the morning and 16:00 in the evening. The specimens collected from the field were labeled and kept in paper boxes. Then the dried specimens were softened in humidifier cups and were prepared as museum materials.

The prepared specimens were identified according to Bohart and Menke (1976), Borland (1925), Bitsch et al. (2001), De Beaumont (1949, 1951, 1953a, 1953b, 1954, 1956, 1960, 1961a, 1961b), Dollfuss (1995), Kazenas (2001a), Menke and Pulawski (2000), Nemkov (1991, 1996a, 1996b), Pulawski (1967, 1971, 1979), Roth (1963), Schmid-Egger'e (2000). In addition, some species whose identification were problematic, identified by Christian Schmid-Egger (Germany), Toscha Ljubomirov (Bulgaria) and Yvan Barbier (Belgium).

## STUDY RESULTS

In identification studies, 17 species belonging to *Sphecinae Latreille*, 1802 sub-family, 1 species belonging to *Pemphredoninae* Dahlbom, 1835 sub-family, 3 species belonging to *A. Lepeletier*, 1845 sub-family, 20 species belonging to *C. Latreille*, 1802 sub-family, 13 species belonging to *B. Latreille*, 1802 sub-family and 17 species belonging to *P. Latreille*, 1802 sub-family were collected. Among the identified species, *Astata pontica* Pulawski, 1958 is a new record for Turkey. According to De Beaumont (1967, 1969), Puwlawski (1967), Ljubomirov and Yıldırım (2008), in addition to 31 species identified from Niğde province, 52 new species were recorded. The identified species are listed below.

### Sub-family: *Sphecinae Latreille, 1802*

#### *Chalybion flebile* (Lepeletier, 1845)

Analyzed material: Central District: Dikilitaş, 1526 m, 01.07.07, (3♀♀), 25.08.07, (1♀). Niğde: Central District, 1214 m, 06.07.07, (1♀). Ulukışla: Emirler, 1115 m, 20.06.07, (1♀). Bor: Havuzlu, 1271 m, 24.09.06 (1♀). Central District: Konaklı, 1413 m, 23.06.07, (1♂, 5♀♀). Ciftlik: Kula, 1618 m, 21.06.07, (2♀), 21.06.08, (3♀).

Distribution in the World: Afghanistan, South Europe, South-West Asia, Central Asia (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Istanbul, Izmir (De

Beaumont, 1967).

#### *Sceliphron destillatorium* (Illiger, 1807)

Analyzed materials: Central District: Gümüşler, 1332 m, 08.07.07, (1♀). Ulukışla: Emirler, 1115 m, 20.06.07, (5♀).

Distribution in the world: Europe, South Palearctic region, South – West Asia, Central Asia, Mongolia, China, North Africa (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Amasya, Ankara, Antalya, Bursa, Denizli (De Beaumont, 1967).

#### *Sceliphron spirifex* (Linnaeus, 1758)

Analyzed materials: Bor: Bor, 1115 m, 10.07.07, (8♀♀, 2♂♂). Çiftlik: Gölcük, 1307 m, 24.06.07, (1♀). Central District: İcmeli, 1479 m, 30.06.07, (1♀). Ulukışla: Emirler, 1115 m, 20.06.07, (1♀), 21.06.08, (3♀).

Distribution in the world: Italy, Greece, Spain, France, North Europe (Bohart and Menke, 1976).

Distribution in Turkey: Antakya, Bursa, Mersin (De Beaumont, 1967).

#### *Spheg flavipennis* (Fabricius, 1793)

Analyzed materials: Ulukışla: Ulukışla, 1385 m, 18.06.07, (21♀♀, 5♂♂). Ulukışla: Emirler, 1115 m, 23.07.07, (1♀). Niğde: Central District, 1214 m, 15.07.06, (1♀) 06.07.07, (1♀), 30.05.07, (1♀) 30.06.07, (1♀). Central District: Tepeköy, 1339 m, 23.07.06, (1♀). Bor: Kemerhisar, 1100 m, 23.07.06, (7♀♀, 1♂). Bor: Bor, 1115 m, 16.07.06, (3♀♀), 10.07.07, (15♀♀). Çamardı: Bademdere, 1550 m, 30.07.07, (3♀♀, 1♂). Çiftlik: Çiftlik, 1618 m, 12.08.06, (5♀♀). Ulukışla: Çiftahan, 934 m, 21.05.06, (3♀♀), 30.07.06, (5♀♀), 19.06.07, (15♀♀, 5♂♂), 24.07.07, (13♀♀, 2♂♂), 21.06.08, (1♀).

Distribution in the world: Mediterranean Region, Hungary Bulgaria, Afghanistan, South Europe, North Africa, South West Asia, Central Asia, Kazakhstan, Arabia, Iran (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Çankırı, Çorum, Denizli, Giresun Kütahya, Mersin, Samsun, Tekirdağ, Yozgat (De Beaumont, 1967).

#### *Spheg pruinosus* (Germar, 1817)

Analyzed materials: Bor: Bor, 1115 m, 10.07.07, (12♀♀, 2♂♂). Ulukışla: Çiftahan, 934 m, 24.07.07, (18♀♀, 5♂♂). Ulukışla: Ulukışla, 1385 m, 18.06.07, (12♀♀, 3♂♂).

Distribution in the world: North Africa, from Mediterranean to Ethiopia, South West Asia, Kazakhstan, South Europe and Burma (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Ankara, Antalya, Mersin

(De Beaumont, 1967).

***Isodontia paludosa* (Rossi, 1790)**

Analyzed material: Çamardı: Çamardı, 1439 m, 27.06.07, (3♀♀).

Distribution in the world: North Mediterranean Region, Turkey, South West Asia, Turkmenistan (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Erzurum (De Beaumont, 1967).

***Sphex (Prionyx) viduatus* (Christ, 1791)**

Analyzed materials: Central District: Tepeköy, 1339 m, 18.08.07 (1♀). Niğde: Central District, 1214 m, 1214 m, 07.04.07 (1♀), 15.10.06 (1♀).

Distribution in the world: Africa, East Mediterranean, Iran, Caucasus, Central Asia, Kazakhstan, Mongolia, China (Bohart and Menke 1976).

Distribution in Turkey: Ankara, Çankırı, Denizli, Kars, Mersin, Niğde (De Beaumont, 1967).

***Palmodes strigulosus* (A. Costa, 1861)**

Analyzed materials: Bor: Kemerhisar, 1100 m, 13.07.08 (1♀). Central District: Edikli, 1385 m, 27.07.07 (1♀).

Distribution in the world: Greece, Russia, Kazakhstan, Italy, Israel, Spain, (Bohart and Menke 1976).

Distribution in Turkey: Kayseri, Ankara, Konya (De Beaumont, 1967).

***Podalonia affinis* (Kirby, 1798)**

Analyzed materials: Niğde: Central District, 1214 m, 15.7.06, (1♀), 15.10.06, (1♀). Central District: İçmeli, 1479 m, 30.06.07, (2♀♀). Altunhisar: Altunhisar, 21.07.07, (2♀♀), 1264 m, 16.06.07, (4♀♀, 1♂). Çamardı: Kavlaktepe, 1698 m, 31.07.07, (1♀). Çamardı: Bademdere, 1550 m, 30.07.07, (2♀♀), 1550 m, 25.06.07, (2♀♀). Central District: Gümüşler, 1332 m, 09.06.06, (1♀), 21.07.07, (1♀). Niğde: Central District, 1214 m, 06.07.07, (2♀♀, 1♂), 07.04.07, (1♀). Central District: İçmeli, 1479 m, 30.06.07, (1♀), 25.08.07, (1♀). Bor: Balcı, 1115 m, 22.07.07, (2♀♀). Çamardı: Çamardı, 1439 m, 04.08.07, (2♀♀). Çamardı: Demirkazık, 1627 m, 28.06.07, (2♀♀), 11.08.07, (2♀♀), Çiftlik: Gölcük, 1307 m, 29.07.07, (1♀). Çiftlik: Çiftlik, 1618 m, 12.08.06, (1♀). Central District: Edikli, 1385 m, 22.06.07, (1♀). Çiftlik: Asmasız, 1700 m, 21.06.07, (1♀). Çiftlik: Kiledere, 1281 m, 22.06.07, (1♀). Ulukışla: Emirler, 1115 m, 20.06.07, (1♀), 25.07.07, (2♀♀), 21.06.08, (3♀♀).

Distribution in the world: Romania, Central Asia (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Amasya, Artvin, Erzurum, Kars, Mersin, Sivas, Trabzon (De Beaumont, 1967).

***Ammophila (Podalonia) ebenina* (Spinola, 1839)**

Analyzed material: Niğde: Central District, 1214 m, 06.07.07, (8♀♀), 15.07.06, (1♀).

Distribution in the world: Palearctic region (Bohart and Menke 1976).

Distribution in Turkey: Ankara, Bolu, Kayseri, Kırsehir, Konya, Niğde, Sivas (De Beaumont, 1967).

***Podalonia FERA* (Lepeletier, 1845)**

Analyzed material: Çamardı: Çamardı, 1439 m, 09.07.06, (3♀♀), 27.06.07, (1♀). Central District: Çavdarlı, 1410 m, 08.09.07, (1♀). Niğde: Central District, 1214 m, 06.07.07, (1♀). Ulukışla: Çiftehan, 934 m, 24.07.07 (1♀). Altunhisar: Akçaören, 1317 m, 22.07.07 (1♀).

Distribution in the world: Europe, Middle East, South West Asia, Central Asia, Caucasus, Kazakhstan (Bohart and Menke, 1976).

Distribution in Turkey: Amasya, Ankara, Erzurum, Konya, Kütahya, Mersin, Niğde (De Beaumont, 1967).

***Podalonia hirsuta* (Scopoli, 1763)**

Analyzed materials: Niğde: Central District, 1214 m, 07.04.07, (3♀♀), 06.07.07 (9♀♀, 3♂♂), 06.10.07 (3♀♀). Central District: İçmeli, 1479 m, 26.08.06, (3♀♀), 30.06.07 (1♀). Central District: Çavdarlı, 1410 m, 04.07.08, (8♀♀, 2♂♂), 08.09.07, (5♀♀). Çamardı: Kavlaktepe, 1698 m, 31.07.07, (1♀). Central District: Gümüşler, 1332 m, 08.07.07, (1♀). Çamardı: Çamardı, 1439 m, 09.07.06 (3♀♀), 27.06.07 (1♀), 21.06.08, (3♀♀).

Distribution in the world: Mediterranean islands, Central Asia, Turkey (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Amasya, Ankara, Artvin, Aydın, Bilecik, Bolu, Bursa, Çorum, Erzurum, Giresun, Gümüşhane, İzmir, Kahramanmaraş, Kars, Kastamonu, Kayseri, Konya, Kütahya, Manisa, Mersin, Samsun, Sivas, Trabzon, Uşak (De Beaumont, 1967).

***Podalonia tydei* (Le Guillou, 1841)**

Analyzed materials: Central District: Setevler, 1264 m, 06.07.07, (14♀♀, 2♂♂). Central District: Koyunlu, 1260 m, 09.07.07, (1♀). Central District: Gümüşler, 1332 m, 21.04.07, (11♀, 2♂♂). Altunhisar: Altunhisar, 1264 m, 21.07.07, (11♀). Niğde: Central District, 1214 m, 06.07.07 (3♀♀). Central District: Edikli, 1385 m, 22.06.07 (1♀). 27.07.07 (1♀), Çiftlik 23.06.07 (3♀♀), Niğde: Central District, 1214 m, 06.07.07, (18♀♀, 3♂♂).

15.07.06, (1♀), 07.04.07, (6♀♀, 2♂♂), 06.10.07, (7♀♀). Central District: Koyunlu, 1260 m, 07.07.07, (5♀♀), 28.04.07, (3♀♀). Central District: Gümüşler, 1332 m, 21.04.07, (2♀♀), 09.06.06, (1♀). Central District: Sazlıca, 1119 m, 07.07.07, (3♀♀), 14.04.07, (3♀♀). Central District: Tepeköy, 1339m, 18.08.07, (1♀). Altunhisar: Altunhisar, 1264 m, 16.06.07, (1♀). Altunhisar: Akçaören, 1317 m, 22.07.07, (1♀). Çiftlik: Çiftlik, 1618 m, 12.08.07, (1♀), 23.06.07, (1♀). Central District: Edikli, 1385 m, 27.07.07, (1♀), 22.06.07, (1♀). Çiftlik: Asmasız, 1700 m, 26.07.07, (1♀). Ulukışla: Çiftehane, 934 m, 24.07.07, (1♀), 22.06.08, (2♀♀).

Distribution in the world: Africa, Europe, Iran, Saudi Arabia, Caucasia, Central Asia. Mongolia (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Artvin, Aydın, Bursa, İstanbul, Kars, Mersin (De Beaumont, 1967).

### ***Ammophila terminata* (Smith, 1856)**

Analyzed materials: Çamardı: Çamardı, 1439 m, 27.06.07, (1♀). Çamardı: Demirkazık, 1627 m, 28.06.07, (1♀, 1♂). Çiftlik: Azatlı, 1832 m, 26.07.07, (2♀♀). Çiftlik: Asmasız, 1700 m, 21.06.07, (1♀), 26.07.07, (1♀). Çiftlik: Kiledere, 1281 m, 22.06.07, (1♀). Ulukışla: Çiftehane, 934 m, 21.05.06, (1♀), 19.06.07, (1♀). Central District: Gümüşler, 1332 m, 08.07.07, (2♀♀). Central District: Dikilitaş, 1526 m, 01.07.07, (1♀). Çamardı: Çamardı, 1439 m, 04.08.07, (1♀). Çiftlik: Kayırlı, 1416 m, 27.07.07, (1♀).

Distribution in the world: Canary Islands, South Europe, West Asia, Turkmenistan, Tajikistan, Uzbekistan (Bohart and Menke, 1976; Kazenas, 2001).

Distribution in Turkey: Ankara (Gülmez, 2002).

### ***Ammophila heydeni* (Dahlbom, 1845)**

Analyzed materials: Bor: Balcı, 1115 m, 17.06.07 (1♀). Central District: Kocapınar, 1479 m, 25.08.07 (4♀♀). Central District: İçmeli, 1479 m, 26.08.06 (14♀♀), 25.08.07 (1♀). Central District: Gümüşler, 1332 m, 08.07.07, (5♀♀, 1♂), 21.04.07, (4♀♀), 08.07.07, (10♀♀, 3♂♂), 09.06.06, (5♀♀). Niğde: Central District, 22.04.06 (1♀), 06.07.07 (1♀), 1214 m, 15.10.06, (5♀♀), 22.04.06, (3♀♀), 07.04.07, (5♀♀), 06.07.07, (8♀♀, 1♂), 06.10.07, (6♀♀). Central District: Koyunlu, 1260 m, 14.04.07, (3♀♀), 07.07.07, (5♀♀), 09.07.07, (3♀♀). Central District: Sazlıca, 1119 m, 07.07.07, (8♀♀, 2♂♂), 14.04.07, (5♀♀). Central District: İçmeli, 1479 m, 26.08.06, (7♀♀), 30.06.07, (3♀♀). Central District: Kocapınar, 1479 m, 25.08.07, (5♀♀). Altunhisar: Altunhisar, 1264 m, 16.06.07, (10♀♀). Bor: Balcı, 1115 m, 22.07.07, (2♀♀). Bor: Bor, 1115 m, 16.07.06, (1♀). Çamardı: Çamardı, 1439 m, 27.06.07, (7♀♀), 20.10.07, (1♀). Demirkazık: 1627 m, 28.06.07, (5♀♀), 01.08.07, (7♀♀). Çiftlik: Çiftlik, 1618 m, 23.06.07, (2♀♀). Çiftlik:

Gölcük, 1307 m, 29.07.7, (7♀♀), Central District: Edikli, 1385 m, 22.06.07, (1♀). Çiftlik: Asmasız, 1700 m, 21.06.07, (3♀♀), 26.07.07, (3♀♀). Central District: Konaklı, 1413 m, 23.06.07, (4♀♀), 28.07.07, (3♀♀). Çiftlik: Kula, 1618 m, 26.07.07, (3♀♀). Central District: Çiftlik: Kiledere, 1281 m, 1281 m, 22.06.07, (5♀♀). Ulukışla: Çiftehane, 934 m, 21.05.06, (1♀), 15.06.07 (1♀). Ulukışla: Ulukışla, 1385 m, 23.07.07, (1♀). Ulukışla: Emirler, 1115 m, 25.07.07, (5♀♀), 29.06.08, (3♀♀).

Distribution in the world: Mediterranean, Bulgaria, Romania, Turkey, Caucasia, Asia, South West Siberia (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Ankara, Amasya, Antakya, Çankırı, Çorum, Edirne, Erzurum, Gümüşhane, Kars, Konya, Kütahya, Mersin, Niğde, Sinop, Tekirdağ (De Beaumont, 1967).

### ***Ammophila sabulosa* (Linnaeus, 1758)**

Analyzed materials: Central District: Gümüşler, 1332 m, 08.07.07, (5♀♀, 1♂), 21.04.07, (4♀♀), 08.07.07, (10♀♀, 3♂♂), 09.06.06, (5♀♀). Niğde: Central District, 1214 m, 15.10.06, (5♀♀), 22.04.06, (3♀♀), 07.04.07, (5♀♀), 06.07.07, (8♀♀, 2♂♂), 06.10.07, (4♀♀), 21.06.08, (3♀♀). Central District: Koyunlu, 1260 m, 14.04.07, (3♀♀), 07.07.07, (5♀♀), 09.07.07, (3♀♀). Central District: Sazlıca, 1119 m, 07.07.07, (8♀♀, 2♂♂), 14.04.07, (5♀♀). Central District: İçmeli, 1479 m, 26.08.06, (7♀♀, 2♂♂), 30.06.07, (3♀♀). Central District: Kocapınar, 1479 m, 25.08.07, (5♀♀), 29.06.08, (4♀♀). Altunhisar: Altunhisar, 1264 m, 16.06.07, (8♀♀, 1♂). Bor: Balcı, 1115 m, 22.07.07, (2♀♀). Bor: Bor, 1115 m, 16.07.06, (1♀). Çamardı: Çamardı, 1439 m, 27.06.07, (7♀♀), 20.10.07, (1♀). Demirkazık: 1627 m, 28.06.07, (5♀♀, 1♂), 01.08.07, (7♀♀, 3♂♂). Çiftlik: Çiftlik, 1618 m, 23.06.07, (2♀♀). Çiftlik: Gölcük, 1307 m, 29.07.07, (7♀♀). Central District: Edikli, 1385 m, 22.06.07, (1♀). Çiftlik: Asmasız, 1700 m, 21.06.07, (3♀♀), 26.07.07, (3♀♀). Central District: Konaklı, 1413 m, 23.06.07, (4♀♀), 28.07.07, (3♀♀). Çiftlik: Kula, 1618 m, 26.07.07, (3♀♀, 1♂). Central District: Çiftlik: Kiledere, 1281 m, 22.06.07, (5♀♀). Ulukışla: Çiftehane, 934 m, 21.05.06, (1♀). Ulukışla: Ulukışla, 1385 m, 23.07.07, (1♀). Ulukışla: Emirler, 1115 m, 25.07.07, (2♀♀).

Distribution in the world: Europe, almost whole of Asia and Palearctic region (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Ankara, Amasya, Antakya, Çankırı, Çorum, Edirne, Erzurum, Gümüşhane, Kars, Konya, Kütahya, Mersin, Niğde, Sinop, Tekirdağ (De Beaumont, 1967).

### ***Ammophila pubescens* Curtis, 1836**

Analyzed material: Çiftlik: Gölcük, 1307 m, 29.07.07, (1♀).

Distribution in the world: Palearctic region (Bohart and

Menke, 1976).

Distribution in Turkey: Erzurum (Ljubomirov and Yıldırım, 2008).

**Sub family: Pempheredoninae (Dahlbom, 1835)**

***Pemphredon rugifer* (Dahlbom, 1844)**

Analyzed material: Ulukışla: Çiftehan, 934 m, 24.07.07, (1♀). Ulukışla: Ulukışla, 1385 m, 23.07.07, (1♀).

Distribution in the world: Finland, Kazakhstan, Romania, Russia, Greece (Dolphuss, 2001).

Distribution in Turkey: Malatya, Iğdır, Niğde (De Beaumont, 1967).

**Sub Family: Astatianae (Lepelletier, 1845)**

***Astata (s.s) boops* (Schrank, 1781)**

Analyzed materials: Çamardı: Kavlaktepe, 1698 m, 26.06.07 (1♀). Bor: Kızılca, 1046 m, 09.06.07 (1♀). Niğde: Central District, 1214 m, 06.07.07 (2♀♀).

Distribution in the world: Europe, Turkey, North Africa, Central - West Asia, India (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Konya: Meram, Mersin, Adana, Maraş, Antakya, Trabzon, Kars (De Beaumont, 1967).

***Astata pontica* (Pulawski, 1958)**

Analyzed materials: Central District: Gümüşler, 1332 m, 21.07.07, (10♀♀, 4♂♂), 08.07.07 (1♀). Central District: İçmeli, 1479 m, 25.08.07, (3♀♀). Çamardı: Bademdere, 1550 m, 30.07.07, (1♀).

Distribution in the world: Central Europe, Bulgaria (Bohart and Menke, 1976).

Distribution in Turkey: New record for Turkey.

***Dinetus pictus* (Fabricius, 1793)**

Analyzed material: Altunhisar: Altunhisar, 1264 m, 16.06.07 (1♀) 22.07.07 (2♀♀).

Distribution in the world: Europe (Bohart and Menke, 1976).

Distribution in Turkey: Bayburt, Erzincan, Erzurum (Ljubomirov and Yıldırım, 2008).

**Sub family: Crabroninae (Latreille, 1802)**

***Larra anathema* (Rossi, 1790)**

Analyzed materials: Niğde: Central District, 1214 m,

06.07.07, (5♀♀). Ulukışla: Ulukışla, 1385 m, 23.07.07, (3♀♀). Çamardı: Çamardı, 1439 m, 04.08.07, (1♀). Çamardı: Demirkazık, 1627 m, 11.08.07, (1♀).

Distribution in the world: South and Central Europe, Slovakia, North Africa, Iraq, Turkey, Central Asia (Bohart and Menke, 1976).

Distribution in Turkey: Aydın, İstanbul, İzmir, Kars, Kırıkkale, Kırşehir, Manisa, Mersin, Niğde, Trabzon (De Beaumont, 1967).

***Tachytes matronalis* (Dahlbom, 1845)**

Analyzed materials: Niğde: Central District, 1214 m, 06.07.07, (1♀), 06.10.07, (1♀), 12.07.08, (3♀♀). Central District: Koyunlu, 1260 m, 07.07.07, (1♀). Central District: Gümüşler, 1332 m, 08.07.07, (8♀♀, 2♂♂), 21.07.07 (5♀♀, 1♂). Central District: İçmeli, 1479 m, 25.08.07, (5♀♀). Central District: Dündarlı, 1493 m, 02.07.07, (3♀♀). Central District: Kocapınar, 1479 m, 25.08.07, (1♀). Bor: Halaç, 1421 m, 11.07.07, (1♀). Bor: Bor, 1115 m, 10.07.07, (1♀). Çamardı: Kavlaktepe, 1698 m, 26.06.07, (1♀), 31.07.07, (4♀♀, 1♂). Çamardı: Çamardı, 1439 m, 04.08.07, (5♀♀, 1♂). Çamardı: Bademdere, 1550 m, 25.06.07, (1♀). Çiftlik: Çiftlik, 1618 m, 23.06.07, (3♀♀), 28.06.07, (5♀♀). Çiftlik: Azatlı, 1832 m, 26.07.07, (2♀♀, 1♂). Çiftlik: Asmasız, 1700 m, 26.07.07, (1♀). Çiftlik: Kula, 1618 m, 26.07.07, (1♀). Central District: Çayırılı, 1390 m, 05.07.07, (1♀). Central District: Dündarlı, 1493 m, 02.07.07, (1♀). Central District: Tepeköy, 1339 m, 18.08.07, (1♀). Çiftlik: Çiftlik, 1618 m, 28.07.07, (1♀). Çamardı: Bademdere, 1550 m, 30.07.07, (1♀). Bor: Kemerhisar, 1100 m, 13.07.07, (1♀).

Distribution in the world: Iberian peninsula, North Africa, East Mediterranean, South West Russia, Turkey, Israel, Lebanon, Central Asia, Afghanistan, Spain, Greece (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Ankara, Denizli, Kayseri, Konya, Mersin, Niğde, Sivas, Tekirdağ (De Beaumont, 1967).

***Tachysphex (s.s) bicolor* (Brulle) 1833**

Analyzed material: Çiftlik: Kula, 1618 m, 13.07.07 (1♀). Ulukışla: Ulukışla, 1385 m, 24.07.07 (1♀).

Distribution in the World: Palearctic region (Bohart and Menke, 1976).

Distribution in Turkey: Muğla, Konya, Niğde, Ulukışla: Çiftehan, 934 m, Ankara, Çorum, Amasya, Sivas, and Erzurum. (De Beaumont, 1967).

***Tachysphex incertus* (Radoszkowski, 1877)**

Analyzed materials: Çamardı: Bademdere, 1550 m, 25.06.07 (1♀). Çamardı: Çamardı, 1439 m, 04.08.07

(2♀♀). Central District: Gümüşler, 1332 m, 08.07.07, (5♀♀), 21.07.07, (3♀♀). Altunhisar: Altunhisar, 1264 m, 16.06.07, (1♀). Bor: Balcı, 1115 m, 17.06.07, (1♀, 1♂), 04.08.07, (3♀♀), 22.07.07, (1♀). Central District: Çayırılı, 1390 m, 05.07.07, (5♀♀, 2♂♂), 08.09.07, (3♀♀). Central District: Karaatlı, 1410 m, 03.07.07, (3♀♀), 01.09.07, (5♀♀). Niğde: Central District, 1214 m, 06.07.07, (1♀), 12.07.08, (3♀♀). Central District: Dünderli, 1493 m, 02.07.07, (9♀♀). Central District: Dikilitaş, 1526 m, 25.08.07, (1♀). Central District: Tepeköy, 1339 m, 18.08.07, (3♀♀). Bor: Halaç, 1421 m, 12.05.07, (5♀♀). Bor: Klavuz, 1697 m, 15.07.07, (3♀♀, 1♂). Bor: Kızılca, 1046 m, 14.07.07, (1♀). Central District: Edikli, 1385 m, 27.07.07, (2♀♀). Çiftlik: Asmasız, 1700 m, 21.06.07, (2♀♀). Çiftlik: Kula, 1618 m, 21.06.07, (1♀). Niğde: Central District, 1214 m, 06.07.07 (5♀♀, 2♂♂). Central District: Gümüşler, 1332 m, 08.07.07, (1♀). Çamardı: Bademdere, 1550 m, 25.06.07 (1♀). Çamardı: Çamardı, 1439 m, 04.08.07 (1♀). Central District: Koyunlu, 1260 m, 07.07.07 (1♀).

Distribution in the World: South Europe, North West Africa (Bohart and Menke, 1976).

Distribution in Turkey: Antakya, Istanbul, Konya, Mersin, Urfa (De Beaumont, 1967).

### ***Tachysphex julliani* Kohl, 1883**

Analyzed material: Çiftlik: Çiftlik, 1618 m, 28.07.07, (1♀).

Distribution in the world: Mediterranean Region, Morocco, Algeria, Libya, Turkey, Iran, Israel, Jordan, South West Russia, Central Asia, Mongolia.

Distribution in Turkey: Ankara, Antalya, Mersin. (De Beaumont, 1967).

### ***Tachysphex nitidus* (Spinola, 1805)**

Analyzed materials: Bor: Kemerhisar, 1100 m, 13.07.07 (1♀). Bor: Bor, 1115 m, 10.07.07 (1♀). Central District: Gümüşler, 1332 m, 08.07.07 (2♀♀). Bor: Bor, 1115 m, 10.07.07, (5♀♀). Bor: Halaç, 1421 m, 11.07.07, (1♀, 1♂). Bor: Havuzlu, 1271 m, 11.07.07, (1♀). Bor: Kemerhisar, 1100 m, 13.07.07, (1♀).

Distribution in the world: Europe (Bohart and Menke 1976).

Distribution in Turkey: Istanbul, Kütahya, Ankara, Kayseri (De Beaumont, 1967).

### ***Tachysphex (s. s.) pompiliformis* (Panzer, 1804)**

Analyzed materials: Ulukışla: Ulukışla, 1385 m, 23.07.07, (1♀). Altunhisar: Altunhisar, 1264 m, 21.07.07 (1♀). Central District: Gümüşler, 1332 m, 08.07.07 (3♀). Ulukışla: Çiftehan, 934 m, 24.07.07, (1♀, 1♂). Ulukışla: Çiftehan, 934 m, 24.07.07, (1♀). Central District: Dikilitaş,

1526 m, 01.07.07, (1♀). Çamardı: Çamardı, 1439 m, 04.08.07, (1♀). Çiftlik: Kayırılı, 1416 m, 27.07.07, (1♀).

Distribution in the world: Europe, North West Africa, the area from South Palearctic region to Siberia and North West India, Iran, Central Asia, Morocco, United States of America, Canada (Bitsch et al. 2001, Bohart and Menke, 1976).

Distribution in Turkey: Bursa, Bolu, Kastamonu, Sinop, Ankara, Kırşehir, Konya, Kayseri, Niğde, Antakya, Trabzon (Pulawski, 1967).

### ***Pison sericeum* Kohl, 1888**

Analyzed materials: Bor: Halaç, 1421 m, 11.07.07, (4♀♀, 2♂♂). Bor: Bor, 1115 m, 10.07.07, (6♀♀, 1♂), 13.07.08, (1♀). Bor: Klavuz, 1697 m, 15.07.07, (1♀). Bor: Havuzlu, 1271 m, 11.07.07 (5♀♀, 3♂♂). Çiftlik: Kayırılı, 1416 m, 27.07.07, (1♀). Bor: Kemerhisar, 1100 m, 13.07.07 (3♀♀).

Distribution in the world: South Europe, Mediterranean, Central Asia, Israel, Pakistan, Uzbekistan, Turkmenistan (Bohart and Menke, 1976).

Distribution in Turkey: Amasya, Ankara, Bursa, Denizli (De Beaumont, 1967)

### ***Oxybelus bipunctatus* Olivier, 1812**

Analyzed material: Ulukışla: Ulukışla, 1385 m, 20.07.07, (1♀). Central District: Gümüşler, 1332 m, 08.07.07, (2♀♀).

Distribution in the world: Europe, Japan, Canada, America (Bohart and Menke 1976).

Distribution in Turkey: Ankara, Mersin, Kütahya, Samsun, Tokat, Yozgat, (De Beaumont, 1967), Diyarbakır, Erzincan, Erzurum (Ljubomirov and Yıldırım. 2008).

### ***Oxybelus latro* Olivier, 1811**

Analyzed material: Bor: Kemerhisar, 1100 m, 13.07.07 (2♀♀). Central District: Gümüşler, 1332 m, 08.07.07, (8♀♀, 1♂).

Distribution in the world: Europe, Turkey, Central Asia, Mongolia (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Kars, Kastamonu, Kayseri, Kırıkkale, Kütahya, Mersin, Tokat (De Beaumont, 1967).

### ***Oxybelus mucronatus* (Fabricius, 1793)**

Analyzed material: Çiftlik: Azatlı, 1832 m, 26.07.07, (2♀♀).

Distribution in the world: Europe, North Africa, South

West Asia, Kazakhstan (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Bursa, Giresun, Kastamonu, Kırıkkale, Kütahya, Mersin, Tokat, Trabzon (De Beaumont, 1967).

### ***Oxybelus subspinosus* Klug, 1835**

Analyzed material: Bor: Kızılca, 1046 m, 14.07.07, (1♀).  
Central District: Gümüşler, 1332 m, 07.07.07, (1♀).

Distribution in the world: South Europe, Middle East, North Africa (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Amasya, Ankara, Antakya, Bursa, Eskişehir, Kayseri, Kırıkkale, Kırşehir, Konya, Kütahya, Mersin, Tekirdağ, Tokat (De Beaumont, 1967).

### ***Oxybelus quattuordecimnotatus* Jurine, 1807**

Analyzed material: Bor: Klavuz, 1697 m, 15.07.07, (2♀♀).  
Bor: Bor, 1115 m, 10.07.07, (2♀♀). Çiftlik: Çiftlik, 1618 m, 23.06.07, (1♀).

Distribution in the world: Central and South Europe, North Africa, South West Asia, Central Asia (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Amasya, Ankara, Antakya, Aydın, Eskişehir, İstanbul, İzmir, Kırıkkale, Konya, Kütahya, Mersin, Samsun, Sinop, Tokat (De Beaumont, 1967).

### ***Oxybelus uniglumis* (Linnaeus, 1758)**

Analyzed material: Central District: Gümüşler, 1332 m, 07.07.07, (1♀).

Distribution in the world: From Europe to Mongolia, North America (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Kayseri, Kütahya, (De Beaumont, 1967), Bayburt, Erzurum, Konya (Ljubomirov and Yıldırım, 2008).

### ***Oxybelus dissectus elegans* Mocsary, 1879**

Analyzed material: Central District: Gümüşler, 1332 m, 07.07.07, (1♀).

Distribution in the world: Europe, Russia, Turkey (Bohart and Menke, 1976).

Distribution in Turkey: Konya (Ljubomirov and Yıldırım, 2008).

### ***Ectemnius (Thyreocerus) crassicornis* (Spinola, 1808)**

Analyzed material: Central District: Dündarlı, 1493 m, 01.09.07, (1♀). Altunhisar: Altunhisar, 1264 m, 16.06.07, (2♀♀), 21.07.07, (1♀). Çiftlik: Kayırlı, 1416 m, 22.06.07

(1♀). Çiftlik: Çiftlik, 1618 m, 28.07.07 (1♀).

Distribution in the world: Palearctic Region (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Amasya, Ankara, Antakya, Bursa, Denizli, Edirne, Konya, Kütahya, Maraş, Mersin, Muğla, Niğde (De Beaumont, 1967).

### ***Ectemnius hypsae* (Spinola, 1808)**

Analyzed material: Altunhisar: 1264 m, 21.07.08, (1♀).

Distribution in the world: Europe (Bohart and Menke, 1976).

Distribution in Turkey: Erzurum (Ljubomirov and Yıldırım, 2008).

### ***Lestica clypeata* (Schreber, 1759)**

Analyzed material: Niğde: Central District, 1214 m, 06.07.07, (2♀♀). Central District: Dikilitaş, 1526 m, 25.08.07, (2♀♀).

Distribution in the world: Europe, Middle East, Central Asia (Bohart and Menke, 1976; Kazenas, 2001b).

Distribution in Turkey: Adana, Amasya, Ankara, Antakya, Aydın, Bursa, Giresun, Kahramanmaraş, Kars, Kastamonu, Kırıkkale, Konya, Kütahya, Mersin, Niğde, Rize, Samsun, Tekirdağ, (De Beaumont, 1967).

### ***Miscophus pretiosus* Kohl, 1884**

Analyzed material: Altunhisar: Altunhisar, 1264 m, 16.06.07 (1♀).

Distribution in the world: Europe, Iran, Russia (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Mersin (Ljubomirov and Yıldırım, 2008).

### **Sub-family: *Bembicinae* Latreille, 1802**

#### ***Argogorytes fargeii* (Schuckart, 1837)**

Analyzed materials: Çamardı: Çamardı, 1439 m, 27.06.07, (3♀♀). Çamardı: Bademdere, 1550 m, 25.06.07 (1♀).

Distribution in the world: Eurasia (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Ankara, Amasya, Antakya, Çankırı, Çorum, Edirne, Erzurum, Gümüşhane, Kars, Konya, Kütahya, Mersin, Niğde, Sinop, Tekirdağ (De Beaumont, 1967).

#### ***Bembecinus anatolicus* Beaumont, 1968**

Analyzed materials: Bor: Klavuz, 1697 m, 15.07.07 (1♀).

Altunhisar: Altunhisar, 1264 m, 21.07.07, (1♀). Çamardı: Kavlaktepe, 1698 m, 31.07.07 (1♀). Bor: Kemerhisar, 1100 m, 13.07.07 (1♀).

Distribution in the world: Syria, Jordan, Israel (Schmid - Egger, 2004).

Distribution in Turkey: Mersin, Antalya, Side, Konya, Gaziantep, Ankara (Schmid - Egger, 2004).

### ***Bembecinus tridens* (Fabricius, 1781)**

Analyzed materials: Central District: Gümüşler, 1332 m, 21.07.07 (1♀) 12.07.08, (3♀♀). Bor: Kızılca, 1046 m, 14.07.07 (5♀♀, 2♂♂). Bor: Bor, 1115 m, 10.07.07 (3♀♀). Bor: Havuzlu, 1271 m, 11.07.07 (3♀♀). Bor: Halaç, 1421 m, 11.07.07 (2♀♀). Bor: Klavuz, 1697 m, 15.07.07 (1♀). Bor: Kemerhisar, 1100 m, 13.07.07 (1♀). Bor: Halaç, 1421 m, 11.07.07 (3♀♀). Central District: Gümüşler, 1332 m, 21.07.07 (1♀), 08.07.07 (5♀♀). Bor: Kızılca, 1046 m, 14.07.07 (2♀♀). Bor: Kemerhisar, 1100 m, 13.07.07 (2♀♀, 1♂), Bor: Havuzlu, 1271 m, 11.07.07 (1♀). Bor: Klavuz, 1697 m, 15.07.07 (1♀). Central District: Karaatlı, 1410 m, 11.09.07 (1♀). Bor: Bor, 1115 m, 10.07.07 (1♀).

Distribution in the world: Eurasia, Romania, Hungary (Bohart and Menke, 1976).

Distribution in Turkey: Amasya, Ankara, Antakya, Artvin, Bursa, Denizli, Erzurum, Eskişehir, Kahramanmaraş, Kayseri, Kütahya, Mersin, Samsun, Sinop, Tekirdağ, Tokat, Trabzon, Yozgat (De Beaumont, 1967).

### ***Bembix bidentata* van der Linden, 1829**

Analyzed materials: Central District: Çavdarlı, 1410 m, 04.07.07, (2♀♀). Central District: Gümüşler, 1332 m, 08.07.07, (2♀♀). Çiftlik: Çiftlik, 1618 m, 23.06.07, (1♀). Çiftlik: Asmasız, 1700 m, 26.07.07, (2♀♀).

Distribution in the world: Europe, Asia (Bohart and Menke, 1976).

Distribution in Turkey: Amasya, Ankara, Antakya, Artvin, Balıkesir, Çankırı, Denizli, Giresun, Gümüşhane, İzmir Kars, Kayseri, Konya, Kütahya, Mersin, Muğla, Samsun, Sivas, Tokat (De Beaumont, 1967; Tüzün et al., 1999).

### ***Bembix rostrata* (Linnaeus, 1758)**

Analyzed material: Altunhisar: Altunhisar, 1264 m, 21.07.07, (2♀♀). Bor: Halaç, 1421 m, 11.07.07, (3♀♀).

Distribution in the world: Palearctic Region, (Bohart and Menke, 1976; Kazenas, 2001b)

Distribution in Turkey: Balıkesir, Erzurum, İstanbul, İzmir, Kars, Kayseri, Muğla, Sinop (De Beaumont, 1967; Tüzün et al., 1999).

### ***Bembix sinuata* Panzer, 1804**

Analyzed material: Central District: Dikilitaş, 1526 m, 25.08.07, (4♀♀). Central District: Kocapınar, 1479 m, 25.08.07, (1♀). Bor: Halaç, 1421 m, 11.07.07, (1♀).

Distribution in the world: Italy, Spain, Algeria, France, Czechoslovakia.

Distribution in Turkey: Balıkesir, İzmir, Manisa, Muğla, Kars (Tüzün et al.1999).

### ***Bembix oculata* Panzer, 1801:**

Analyzed material: Çamardı: Çamardı, 1439 m, 04.08.07, (5♀♀).

Distribution in the world: North Africa, South Europe, Middle East, Iran, South West Asia, Kazakhstan, Mongolia, Afghanistan (Bohart and Menke, 1976; Kazenas, 2001b).

Distribution in Turkey: Adana, Antakya, Aydın, Balıkesir, İzmir, Kars, Mersin, Muğla (De Beaumont, 1967; (Tüzün et al., 1999).

### ***Stizus pubescens* (Klug) 1835**

Analyzed material: Bor: Bor, 1115 m, 17.06.07 (3♀♀).

Distribution in the world: Palearctic region (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Antakya, Antalya, Antalya, Denizli, Kayseri, Kütahya, Kahramanmaraş, Mersin, Niğde, Yozgat. (De Beaumont, 1967).

### ***Palarus variegatus* (Fabricius, 1781)**

Analyzed material: Bor: Halaç, 1421 m, 11.07.07, (17♀♀, 4♂♂).

Distribution in the world: Palearctic region (Bohart and Menke, 1976).

Distribution in Turkey: Artvin, Aydın, Kayseri, Tokat (De Beaumont, 1967).

### ***Synnevrus militaris* (Gerstaecker, 1867)**

Analyzed material: Bor: Halaç, 1421 m, 11.07.07, (2♂♂).

Distribution in the world: Europe (Bohart and Menke, 1976).

Distribution in Turkey: Konya, Artvin, Erzurum (Ljubomirov and Yıldırım, 2008).

### ***Gorytes quinquecinctus* (Fabricius, 1793)**

Analyzed materials: Central District: Gümüşler, 1332 m, 08.08.07, (3♀♀), 21.07.07 (1♀), 16.06.06 (1♀). Çiftlik:



Çiftlik, 1618 m, 23.06.07, (2♀♀). Çamardı: Bademdere, 1550 m, 25.06.07 (3♀♀). Central District: Gümüşler, 1332 m, 08.07.2007, (3♀♀). Altunhisar: Altunhisar, 1264 m, 21.07.07 (1♀). Çamardı: Çamardı, 1439 m, 04.08.07, (1♀).

Distribution in the world: Eurasia (Bohart and Menke, 1976).

Distribution in Turkey: Istanbul, Ağrı, Antalya, Batman, Nevşehir, Hakkari, Hatay, Izmir, Kars, Van (Ljubomirov and Yıldırım, 2008).

#### ***Ammatomus rogenhoferi* (Handlirsch, 1888)**

Analyzed material: Niğde: Central District, 1214 m, 16.10.07, (1♀).

Distribution in the world: Palearctic (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Amasya, Ankara, Antakya, Artvin, Denizli, Erzurum, Kütahya, Manisa, Mersin, Niğde (De Beaumont, 1967).

#### ***Ammatomus coarctatus* (Spinola, 1808)**

Analyzed materials: Çamardı: Çamardı, 1439 m, 04.07.08, (1♀). Niğde: Central District, 1214 m, 06.01.07, (1♀). Çamardı: Bademdere, 1550 m, 25.06.07, (1♀).

Distribution in the world: Europe, Yemen, Cyprus, Kazakhstan (Bohart and Menke, 1976).

Distribution in Turkey: Erzurum, Mersin, Konya, Iğdır (Ljubomirov and Yıldırım, 2008).

#### **Sub-family: *Philanthinae* Latreille, 1802**

#### ***Philanthus coronatus* (Thunberg, 1784)**

Analyzed materials: Central District: Gümüşler, 1332 m, 08.07.07, (1♀). Altunhisar: Altunhisar, 1264 m, 16.06.07, (2♀♀). Bor: Klavuz, 1697 m, 15.7.07, (2♀♀).

Distribution in the world: Central and North Europe, Turkey, Kazakhstan, Russia (Bohart and Menke, 1976).

Distribution in Turkey: Gümüşhane, Kayseri, Kütahya, Niğde, Sivas, Erzurum (De Beaumont, 1967).

#### ***Philanthus triangulum* (Fabricius, 1775)**

Analyzed materials: Niğde: Central District, 1214 m, 16.10.07, (1♀), 12.07.08, (1♀). Bor: Balcı, 1115 m, 17.06.07, (1♀), 22.07.07, (1♀). Altunhisar: Akçaören, 1317 m, 17.06.07, (1♀). Bor: Halaç, 1421 m, 11.07.07, (1♀). Bor: Klavuz, 1697 m, 15.07.07, (1♀). Çamardı: Çamardı, 1439 m, 04.08.07, (1♀). Ulukışla: Çifttehan, 934 m, 30.07.06, (4♀♀, 2♂♂).

Distribution in the world: Palearctic Region (Bohart and

Menke, 1976).

Distribution in Turkey: Kayseri, Afyonkarahisar, Antalya, Aydın, Istanbul, Izmir, Artvin, Balıkesir, Bingöl, Mersin, İçel, Kars, Konya, Malatya, Manisa. (De Beaumont, 1967).

#### ***Philanthus venustus* (Rossi, 1790)**

Analyzed material: Niğde: Central District, 1214 m, 16.10.07, (1♀).

Distribution in the world: From South Europe to Israel, Kazakhstan, Mongolia (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Ankara, Antalya, Artvin, Kayseri, Konya, Kütahya, Manisa, Mersin, Samsun, Tokat, Trabzon (De Beaumont, 1967).

#### ***Cerceris arenaria* (Linnaeus, 1758)**

Analyzed materials: Ulukışla: Ulukışla, 1385 m, 23.07.07, (1♀). Central District: Gümüşler, 1332 m, 08.07.07, (3♀♀), 21.07.07, (1♀). Niğde: Central District, 1214 m, 06.07.07 (4♀♀, 1♂), 19.07.08, (1♀). Ulukışla: Emirler, 1115 m, 25.07.07, (3♀♀). Central District: Çavdarlı, 1410 m, 04.07.07, (2♀♀). Altunhisar: Akçaören, 1317 m, 22.07.07, (1♀). Çiftlik: Kayırlı, 1416 m, 22.06.07, (3♀♀).

Distribution in the world: Palearctic Region. (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Amasya, Ankara, Antakya, Aydın, Balıkesir, Bursa, Denizli, Edirne, Kastamonu, Kayseri, Kars, Konya, Kütahya, Manisa, Mersin, Samsun, Sinop, Sivas, Tekirdağ (De Beaumont, 1967).

#### ***Cerceris circularis dacica* (Schletterer, 1887)**

Analyzed materials: Central District: Gümüşler, 1332 m, 21.07.07, (2♀♀), 08.07.07, (1♀). Çamardı: Bademdere, 1550 m, 25.06.07, (1♀). Niğde: Central District, 1214 m, 06.07.07 (1♀). Central District: Dikilitaş, 1526 m, 01.07.07, (1♀).

Distribution in the world: North Africa, Turkey. (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Antakya, Kars, Kayseri, Mersin, Ankara (De Beaumont, 1967).

#### ***Cerceris eryngii* (Marquet, 1875)**

Analyzed material: Niğde: Central District, 1214 m, 06.07.07, (2♀♀). Central District: Dikilitaş, 1526 m, 01.07.07, (1♀).

Distribution in the world: South Europe, East Mediterranean Region, Iran (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Ankara, Denizli,

Eskişehir, Giresun, Kayseri, Konya, Kütahya, Mersin, Tekirdağ, Yozgat, Tokat (De Beaumont, 1967).

***Cerceris eversmanni caucasica* (Shestakov, 1915)**

Analyzed material: Çiftlik: Kayırlı, 1416 m, 22.06.07 (2♀♀).

Distribution in the world: Europe and Russia (Bohart and Menke, 1976).

Distribution in Turkey: Hakkari, Erzurum (Ljubomirov and Yıldırım, 2008).

***Cerceris flavilabris* (Fabricius, 1793)**

Analyzed material: Altunhisar: Akçaören, 1317 m, 17.07.07, (1♀).

Distribution in the world: South and Central Europe, Turkey, East Mediterranean, South West Asia, Central Asia, Kazakhstan, Siberia, North West Africa (Bohart and Menke, 1976).

Distribution in Turkey: Amasya, Antakya, Kars, Kastamonu, Mersin, Niğde, Ankara (Ljubomirov and Yıldırım, 2008).

***Cerceris odontophora* (Schletterer, 1887)**

Analyzed materials: Çamardı: Bademdere, 1550 m, 25.06.07, (1♀). Çamardı: Çamardı, 1439 m, 25.06.07, (1♀). Central District: Dünderli, 1493 m, 01.09.07, (1♀).

Distribution in the world: Europe, Russia (Bohart and Menke, 1976).

Distribution in Turkey: Artvin, Aydın, İçel, İzmir, Kayseri ve Hakkari, (Ljubomirov and Yıldırım, 2008).

***Cerceris lunata* A. (Costa, 1867)**

Analyzed material: Central District: Gümüşler, 1332 m, 08.07.07, (1♀), 21.07.07, (2♀♀).

Distribution in the Worlds: South Europe, South West Asia (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Amasya, Ankara, Antakya, Bursa, Kütahya, Mersin, Samsun, Tekirdağ (Ljubomirov and Yıldırım, 2008).

***Cerceris media* (Klug, 1835)**

Analyzed materials: Central District: Gümüşler, 1332 m, 08.07.07, (1♀). Çamardı: Bademdere, 1550 m, 25.06.07, (1♀), 30.07.07, (1♀).

Distribution in the World: Europe, East Mediterranean, Central Asia (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Kahramanmaraş, Mersin (Ljubomirov and Yıldırım, 2008).

***Cerceris quinquefasciata* (Rossi, 1792)**

Analyzed materials: Altunhisar: Akçaören, 1317 m, 22.07.07, (1♀). Altunhisar: Altunhisar, 1264 m, 16.06.07 (1♀). Niğde: Central District, 1214 m, 06.07.07 (1♀). Çiftlik: Gölcük, 1307 m, 24.06.07, (3♀♀).

Distribution in the World: Palearctic (Bohart and Menke, 1976)

Distribution in Turkey: Konya, Erzurum, Kars (Ljubomirov, T., Yıldırım, E., 2008).

***Cerceris ruficornis* (Fabricius, 1793)**

Analyzed material: Çamardı: Çamardı, 1439 m, 25.06.07, (1♀). Altunhisar: Akçaören, 1317 m, 22.07.07, (2♀♀).

Distribution in the world: Europe, Turkey, Central Asia, Kazakhstan, East Russia, China (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Bursa, Kütahya, Samsun (Ljubomirov and Yıldırım, 2008).

***Cerceris rybyensis* (Linnaeus, 1771)**

Analyzed material: Central District: Gümüşler, 1332 m, 21.07.07, (2♀♀), 08.07.07, (2♀♀, 1♂). Çamardı: Bademdere, 1550 m, 25.06.07, (3♀♀). Niğde: Central District, 1214 m, 06.07.07 (5♀♀).

Distribution in the world: Palearctic Region, Siberia (Bohart and Menke, 1976).

Distribution in Turkey: Amasya, Ankara, Çankırı, Erzurum, İstanbul, Kırşehir, Konya, Manisa (Ljubomirov and Yıldırım, 2008).

***Cerceris sabulosa* (Panzer, 1799)**

Analyzed material: Ulukışla: Çiftahan, 934 m, 27.07.07 (1♀). Central District: Dünderli, 1493 m, 01.09.07, (1♀). Central District: İçmeli, 1479 m, 30.06.07, (1♀), 19.06.08, (1♀). Çiftlik: Gölcük, 1307 m, 24.06.07, (3♀♀). Bor: Halaç, 1421 m, 11.07.07, (1♀). Ulukışla: Ulukışla, 1385 m, 23.07.07, (1♀, 1♂). Çiftlik: Kula, 1618 m, 26.07.07, (1♀).

Distribution in the world: Palearctic Region. (Bohart and Menke, 1976).

Distribution in Turkey: Adana, Amasya, Ankara, Antakya, Aydın, Balıkesir, Bursa, Eskişehir, Denizli, İzmir, Kars, Konya, Kütahya, Manisa, Mersin, Niğde, Sinop, Tekirdağ, Tokat, Trabzon. (Ljubomirov and Yıldırım, 2008).

***Cerceris specularis* Costa, 1869**

Analyzed material: Central District: Gümüşler, 1332 m, 08.07.07, (1♀). Çamardı: Bademdere, 1550 m, 25.06.07 (1♀).

Distribution in the world: South Europe, South West Russia, North Africa (Bohart and Menke, 1976).

Distribution in Turkey: Ankara, Antakya, Denizli, Erzurum, Konya, Mersin, Sivas (Ljubomirov, T., Yıldırım, E., 2008).

### ***Cerceris tuberculata* (de Villers, 1789)**

Analyzed material: Bor: Balçı, 1115 m, 22.07.07, (2♀♀).

Distribution in the world: Europe, Middle East, Iran (Bohart and Menke, 1976).

Distribution in Turkey: Bursa, Manisa, Adana, Ankara, Hatay (Ljubomirov and Yıldırım, 2008).

## **DISCUSSION**

*Chalybion flebile* (Lepeletier, 1845), *Sceliphron destillatorium* (Illiger, 1807), *Sceliphron spirifex* (Linnaeus, 1758), *Sphex flavipennis* Fabricius, 1793, *Sphex pruinosis* Germar, 1817, *Isodontia paludosa* (Rossi, 1790), *Palmodes strigulosus* (A. Costa, 1861), *Podalonia affinis* (Kirby, 1798), *Podalonia hirsuta* (Scopoli, 1763), *Podalonia tydei* (Le Guillou, 1841), *Ammophila terminata* Smith, 1856, *Ammophila pubescens* Curtis, 1836, *Astata* (s.s.) *boops* (Schrank, 1781), *Dinetus pictus* (Fabricius, 1793), *Tachysphex incertus* (Radoszkowski, 1877), *Tachysphex julliani* Kohl, 1883, *Tachysphex nitidus* (Spinola, 1805), *Pison sericeum* Kohl, 1888, *Oxybelus bipunctatus* Olivier, 1812, *Oxybelus latro* Olivier, 1811, *Oxybelus mucronatus* (Fabricius, 1793), *Oxybelus subspinosus* Klug, 1835, *Oxybelus quattuordecimnotatus* Jurine, 1807, *Oxybelus uniglumis* (Linnaeus, 1758), *Oxybelus dissectus elegans* Mocsary, 1879, *Ectemnius hypsae* (Spinola, 1808), *Miscophus pretiosus* Kohl, 1884, *Bembecinus anatolicus* Beaumont, 1968, *Bembecinus tridens* (Fabricius, 1781), *Bembix bidentata* van der Linden, 1829, *Bembix rostrata* (Linnaeus, 1758), *Bembix sinuata* Panzer, 1804, *Bembix oculata* Panzer, 1801, *Palarus variegatus* (Fabricius, 1781), *Synnevrus militaris* (Gerstaecker, 1867), *Gorytes quinquecinctus* (Fabricius, 1793), *Ammatomus coarctatus* (Spinola, 1808), *Philanthus triangulum* (Fabricius, 1775), *Philanthus venustus* (Rossi, 1790), *Cerceris arenaria* (Linnaeus, 1758), *Cerceris circularis dacica* Schletterer, 1887, *Cerceris eryngii* Marquet, 1875, *Cerceris eversmanni caucasica* (Shestakov, 1915), *Cerceris odontophora* Schletterer, 1887, *Cerceris lunata* A. Costa, 1867, *Cerceris media* Klug, 1835, *Cerceris quinquefasciata* (Rossi, 1792), *Cerceris ruficornis* (Fabricius, 1793), *Cerceris rybyensis* (Linnaeus, 1771), *Cerceris specularis* Costa, 1869, *Cerceris tuberculata* (de Villers, 1789), species are new records for Niğde province and *Astata pontica* Pulawski, 1958 species is a new record for Turkey Hymenoptera, Sphecidae fauna.

The species belonging to *Sphex*, *Ammophila*, and

*Podalonia* genus of Sphecidae sub-family of Sphecidae family are generally observed between April-October, while the species belonging to *Philanthus*, *Cerceris* genus of Philanthinae sub-family and *Tachytes*, *Tachysphex*, and *Larra* species belonging to Laritane sub-family are generally observed in July and August. *Bembix* and *Stizus* species belonging to Bembicinae sub-family were observed to be active between July and September.

Since Sphecidae family has many sub-families and life-style and habitats of the species of these sub-families vary, it is possible to see species having a wide variety of morphologic characteristics. For this reason, many species of Sphecidae family are confused with the species belonging to other groups of Order Hymenoptera. Therefore, identification studies should be carried out with utmost attention.

## **REFERENCES**

- Bohart RM, Menke AS (1976). Sphecid Wasps of the World: A generic revision. University of California Press, Berkeley, Los Angeles, London. 1 color plate, 9 : 695
- Borland L (1925). Faune de France Hymenopteres vespiformes. (Sphegidae, Pompilidae, Scolidae, Sapygidae, Mutillidae). Paul Lechevalier, Paris.10(8) : 364
- Bitsch J, Dollfuss H, Boucek Z, Schmidt K, Schmid-Egger CH, Gayubo AV, Antropov SF, Barbier Y (2001). Hymenopteres Sphecidae d'Europe Occid., 3 : 457
- De Beaumont J (1949). Contribution a l'etude du genre Palarus Latr. (Hym. Sphecid). Rev Suisse Zool. 56: 627-673.
- De Beaumont J (1951). Les especes europeennes du genre Philanthus (Rym. Stci.) Mitt. Schweiz. Entomol. Ges. 24: 299-315.
- De Beaumont J (1953a). Le genre Olgia Radoszk. (Hym. Sphecid.) Rev. Suisse Zool. 60: 205 - 223.
- De Beaumont J (1953b). Les Gorytes s.s. (=Hoplisis) de la region palearctique Mitt. Schweiz. Entomol. Ges. 26: 161-200.
- De Beaumont J (1954). Les Bembecinus de la region palearctique (Hym. Sphecid.) Mitt. Schweiz. Entomol. Ges. 27: 241-276.
- De Beaumont J (1956). Notes sur les Lindenius palearctiques (Hym. Sphecid.). Mitt.Schweiz. Entomol. Ges. 29: 145-185.
- De Beaumont J (1960). Le genre Dinetus (Hym. Sphecid.). Polskie Pismo Entomol. 30: 251-271.
- De Beaumont J (1961a). Les especes mediterraneernes du genre pison Jur. (Hym. Sphecid.). Mitt. Schweiz. Entomol. Ges. 34: 53-56.
- De Beaumont J (1961b). Les Liris du bassin mediterraneen (Hym. Sphecid.). Mitt. Schweiz. Entomol. Ges. 34: 213-252.
- De Beaumont J (1967). Hymenoptera from Turkey. Sphecidae, I. Bull. Brit. Mus. (Nat.Hist.) Entomol. 19: 253-382.
- De Beaumont J (1969). Sphecidae de Turquie (Hym.). Mitt. Schweiz. Entomol. Ges. 42: 79-95.
- Dollfuss H (1995). A worldwide revision of Pempredon Latreille (Hymenoptera, Sphecidae). Linz. Biolog. Beitr. 27: 905 - 1019.
- Goulet H, Huber JT (1993). Hymenoptera of the world: An identification guide to families. Centre for Land and Biol. Res. Res., 7: 668.
- Gulmez Y (2002). Ankara ili Sphecidae Faunası üzerine taksonomik çalışmalar ve ekolojik gözlemler Doctoral Thesis Ank. Univ. Fen Bil. Enst. Ankara.
- Hensen RV, Van Ooijen PDJ (1978). Notes on Turkish *Tachysphex* Kohl (Hymenoptera: Sphecidae). Entomol. 47: 12-16.
- Kazenas VL (2001a). A key to the identification of *Cerceris* Latreille (Hymenoptera, Sphecidae) of Kazakhstan and Middle Asia. Tethys ENT. Res. 3: 105-124.
- Kazenas VL (2001b). Fauna i biologiya royiosih os (Hymenoptera, Sphecidae) Kazakstana isrednei azii [Rusca]. 333 s. Alma - ata.
- Ljubomirov T, Yıldırım E (2008). Annotated Catalogue of the

- Ampulicidae, Sphecidae, and Crabronidae (Insecta: Hymenoptera) of Turkey, ISBN 978-954-642-312-2, Pensoft Series Faunistica ISSN 1312-0174. p. 71.
- Menke AS, Pulawski WJ (2000). A review of the *Sphex flavipennis* species group (Hymenoptera: Apoidea: Sphecidae: Sphecini). *J. Hym. Res.* 9(2): 324-346.
- Nemkov PG (1991). Digger wasps of the tribe Gorytini (Hymenoptera, Sphecidae) of the USSR Gorytes, Pseudoplisus and Kohlia. *Entomol. Rev.* 70(3): 136-153.
- Nemkov PG (1996a). Digger wasps of the tribe Gorytini (Hymenoptera, Sphecidae) of the Fauna of Russia and neighboring countries. Genera *Sphecius* Dahlbom and *Ammatomus* A. Costa. *Entomol. Rev.*, 75(4): 34-43.
- Nemkov PG (1996b). Digger wasps of the tribe Gorytini (Hymenoptera, Sphecidae) of the fauna of Russia and adjacent countries genus *Harpactus*. *Entomol. Rev.* 76(3): 438-445.
- Pulawski WJ (1967). Hymenoptera from Turkey. - Sphecidae, II (Genera *Astata* Latreille and *Tachysphex* Kohl). *Bull. Brit. Mus. (Nat. Hist.) Entomol.* 19: 383-410.
- Pulawski WJ (1971). Les *Tachysphex* de la region palearctique occidentale et centrale. *Zaklad Zool. Syst., Polskiej Akad. Nauk, Wroclaw.* p. 464.
- Pulawski WJ (1979). A revision of the World *Prosopigastra* Costa (Hymenoptera, Sphecidae). *Polskie Pismo Entomol.*, 49: 3-134.
- Roth P (1963). *Les sphex palearctique du sous-genre Palmodes*. *Mem. Mus. Natl. Hist. Nat. (N.S.), Ser. A, Zool.* 18: 139-186.
- Schmid-Egger C (2000). A revision of *Entomosericus* Dahlbom 1845 (Hymenoptera: Apoidea: " Sphecidae") with description of a new species. *J. Hym. Res.*, 9(2): 352-362.
- Schmid-Egger C (2004). Revision of *Bembecinus* (Hymenoptera, Crabronidae) of the Palaearctic region notes fauniques de Gembloux. 54: 3-69.
- Tuzun A, Gulmez Y, Bagriacik N (1999). Studies on Sphecidae of Aegean Region (Insecta: Hymenoptera). *Entomofauna*, 20(23): 381-388.