

## ***Chelonus* Jurine (Hymenoptera: Braconidae: Cheloninae) Species of the Marmara Region**

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**Abstract:** The genus *Chelonus* Jurine (Hymenoptera: Braconidae: Cheloninae) species in the Marmara region of Turkey are defined, 12 species recorded and a key to species is provided. Of these species, *Chelonus asiaticus* Telenga, *Chelonus bidens* Tobias, *Chelonus canescens* Wesmael, *Chelonus microsomus* Tobias, *Chelonus oculator* (Panzer), *Chelonus ocellatus* Alexeev, *Chelonus scabrator* (Fabricius), *Chelonus smirnovi* Telenga, *Chelonus szepligetii* Dalla Torre, *Chelonus tuberculifer* Tobias, and *Chelonus varimaculatus* Tobias are new records for Turkey and *Chelonus inanitus* (Linnaeus) is a new record for the Marmara region of Turkey.

**Key Words:** Braconidae, Cheloninae, *Chelonus*, Marmara region, Turkey.

### **Marmara Bölgesi *Chelonus* Jurine (Hymenoptera: Braconidae: Cheloninae) Türleri**

**Özet:** Bu çalışmada Marmara Bölgesi *Chelonus* Jurine (Hymenoptera: Braconidae: Cheloninae) cinsine ait 12 tür belirlenmiş ve saptanan bu türlere göre tanı anahtarı hazırlanmıştır. Bu türlerden *Chelonus asiaticus* Telenga, *Chelonus bidens* Tobias, *Chelonus canescens* Wesmael, *Chelonus microsomus* Tobias, *Chelonus oculator* (Panzer), *Chelonus ocellatus* Alexeev, *Chelonus scabrator* (Fabricius), *Chelonus smirnovi* Telenga, *Chelonus szepligetii* Dalla Torre, *Chelonus tuberculifer* Tobias, *Chelonus varimaculatus* Tobias Türkiye, *Chelonus inanitus* (Linnaeus) Marmara Bölgesi için yeni kayıt niteliği taşımaktadır.

**Anahtar Sözcükler:** Braconidae, Cheloninae, *Chelonus*, Marmara Bölgesi, Türkiye.

### **Introduction**

Adult chelonines are small- or medium- sized (body usually 2-6 mm) wasps with a compact, sculptured body and a carapace formed by fusion with the first three metasomal terga. The female wasp has a short ovipositor, occasionally concealed inside the carapace, and antennae thickened in the middle with depressions in the apical flagellar segments. The male can be distinguished from the female by thinner and longer, somewhat setaceous antennae. Wing venation is complete but shifted to the middle part of the wing (radial and 2nd radiomedial cells short); only the 1st anal cross-vein is usually somewhat developed. The postpectal ridge is well developed. Eyes are usually pubescent; the body is usually black, rarely light colored (Fig. 1). The genus *Chelonus* Jurine, 1801 includes approximately 180 species worldwide, and nearly half of them are Palearctic species (1).

Cheloninae is closely related to Neoneurinae, Cardiochilinae, Khoikhoiinae and Microgastrinae. Therefore, some genera of these related families have been occasionally added to or taken off the subfamily. It

can be easily distinguished from the other subfamilies of Braconidae in having characteristic metasomal carapaces (2).

Cheloninae includes cosmopolitan species that are solitary koinobiont egg-larval endoparasitoids of Lepidoptera, especially Tortricidae and Pyralidae. *Chelonus* species eventually kill the host larvae by laying their eggs into them. Therefore, they play an effective role in the protection of the ecosystem's natural balance (3,4).

The spread of *Chelonus* fauna in Turkey is not well known. Nineteen species belonging to six genera were reported in the first faunistic study of the Akdeniz region. Six of these species were new records for Turkey (5).

The research area includes deciduous and scrophyllous forests (25%), cultivated land (32%), fallow land (6%), meadow (23%), and unproductive land (14%). Forest habitats are largely situated on the Istranca, Ganos and Koru mountains in the European part of Turkey, and the Samanlı, Uludağ and Kaz mountains in the Asian part. The region may be represented by different faunal elements

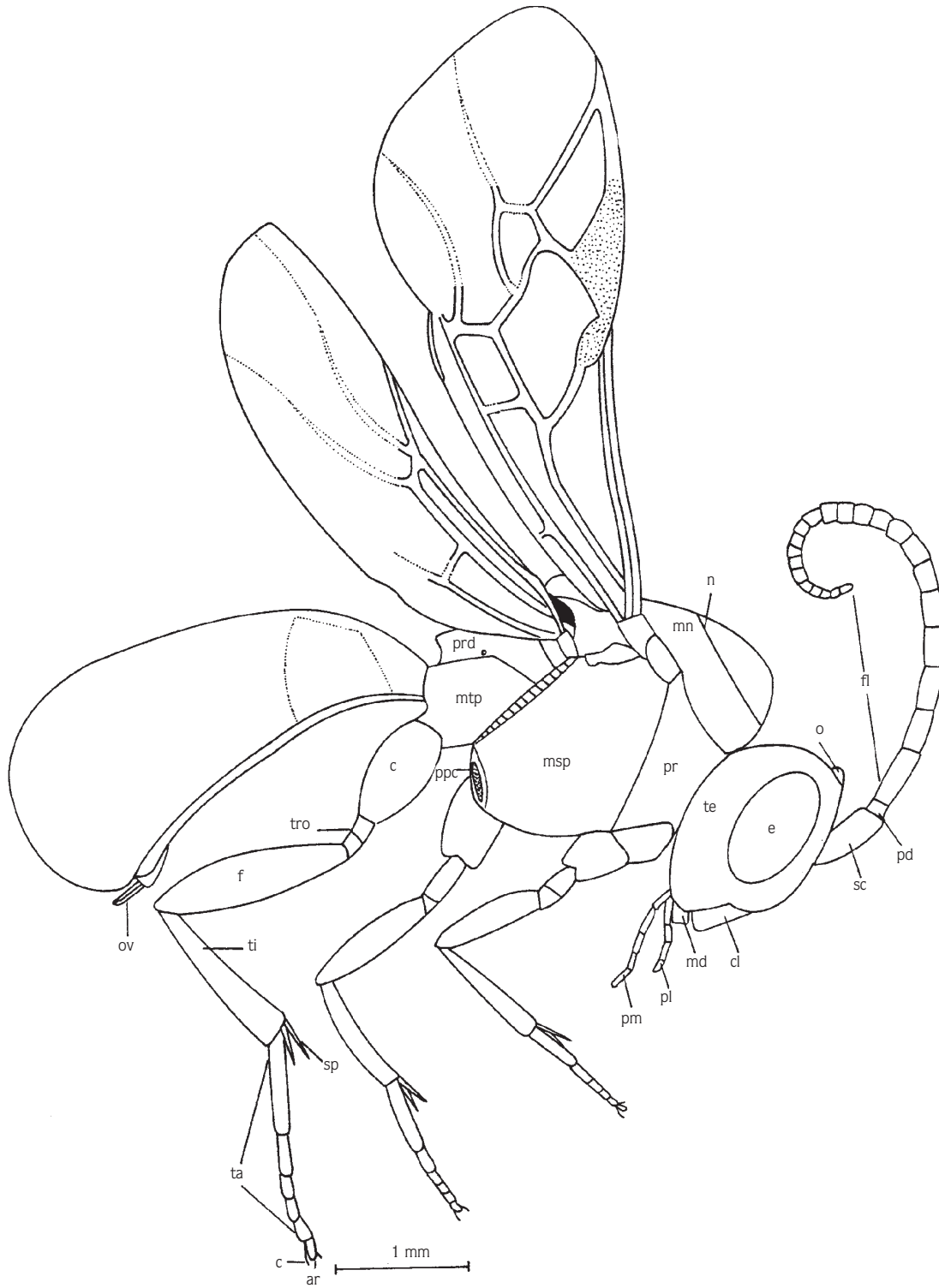


Figure 1. *Chelonus oculator* (Panzer): Lateral view. ar: Arolium, c: Claw, cl: Clypeus, co: Coxa, e: Eyes, f: Femur, fl: Flagellum, md: Mandibul, mn: Mesonotum, msp: Mesopleuron, mtp: Metapleuron, n: Notauli, o: Ocellus, ov: Ovipositor, pd: Pedicel, pl: Palpus labialis, pm: Palpus maxillaris, ppc: Postpectal carina, pr: Propleuron, prd: Propodeum, sc: Scapus, sp: Spurs of tibia ta: Tarsus, te: Temple, ti: Tibia, tr: Trochanter.

since it has different habitats, such as humid forests, dry forests, steppe and cultivated lands. Moreover, from the biogeographic viewpoint, Istranca, Uludag and Kaz mountains are known to have served as refuge zones during the glaciation periods. Also, the Bosphorus and Dardanelles straits constitute effective barriers to minimize the distribution of terrestrial and freshwater animals. Consequently, this study was undertaken to determine the *Chelonus* species of the Marmara region and, therefore, to contribute to knowledge on Turkish fauna as well as present useful data on faunal distribution.

## Material and Methods

Adult specimens of *Chelonus* (Hymenoptera: Braconidae: Cheloninae) from different habitats of the Marmara region were collected between 1985 and 2000 using sweeping nets from grass-type plants. Samples were then stored and labeled according to taxonomic rules and regulations.

The relevant literature was used for the taxonomical examination of materials. The specimens were identified mostly using the keys by Tobias, Beyarslan, Fahringer and Papp (1, 5-7).

## Result and Discussion

Between 1985 and 2000, 418 specimens were collected from 87 localities in the Marmara region (Table 1 and Fig. 2). Twelve species belonging to *Chelonus* (Hymenoptera: Braconidae: Cheloninae) were identified and a key to the species is presented.

### Key to the species of *Chelonus* Jurine, 1801.

1. Hind femora brownish red . . . . .2
- Hind femora black . . . . .3
2. Ovipositor long and thick, distinctly falcate (Fig. 3) . . . . .*inanitus* (Linnaeus)
- Ovipositor shorter and thinner, slightly curved or straight (Fig. 4) . . . . .*oculator* (Panzer)
3. Antennae 17-19 segmented . . . . .4
- Antennae not less than 20 segmented . . . . .5
4. Tegulae yellow, face with dense, short light colored hair (Fig. 5) . . . . .*canescens* Wesmael

- Tegulae black, face weakly pubescent, hairs not conspicuous (Fig. 6) . . . . .*microsomus* Tobias
- 5. Metasoma longitudinally oval, posteriorly slightly curved ventrally, 3.5-4.5 times as long as high in apical third, in apex with pointed tubercle. (Fig. 7, 8) . . . . .*tuberculifer* Tobias
- Metasoma transversely oval, posteriorly curved forward ventrally, 2-3 times as long as high in apical third, in apex uniformly rounded (Fig. 9, 10) . . .6
- 6. Metasoma, slightly narrowed ventrally, at apex with longitudinal groove (Fig. 11); with not more than 5 weak transverse folds (on vertex behind ocelli) . . . . .*scabrator* (Fabricius)
- Metasoma at apex uniformly rounded, at apex without longitudinal groove (Fig. 12); with more than 5 weak transverse folds . . . . .7
- 7. Wings hyaline; pterostigma, tegulae, greater part of tibiae of all legs yellow, hind femora black . . . . .*smirnovi* Telenga
- Wings noticeably darkened; stigma brown, usually tegulae and greater part of legs black . . . . .8
- 8. Antennae 30-35 segmented . . . . .9
- Antennae 20-27 segmented . . . . .10
- 9. Temples significantly longer than eye, longitudinal diameter of eye 2 times height of gena; clypeus with two denticles (Fig. 13); metasoma at base with not yellow spots . . . . .*bidens* Tobias
- Temples approximately as long as eye, longitudinal diameter of eye 3 times height of gena; clypeus without denticles (Fig. 14); metasoma at base with yellow spots . . . . .*szepligetii* Dalla Torre
- 10. Antennae 20-22 segmented, not gradually thinning toward apex, square (Fig. 15) . . . . .11
- Antennae 26 segmented, gradually thinning toward apex (Fig. 16) . . . . .*asiaticus* Telenga
- 11. Metasoma 2 times as long as wide, with yellow spots, occasionally coloration varie (Fig. 17, 18); basal segment of antennae, occasionally only on lower side and often base of flagella also yellowish red . . . . .*varimaculatus* Tobias
- Metasoma 1.7 times as long as wide, metasoma black (Fig. 19, 20); antennae entirely black . . . . .*ocellatus* Alexeev

Table 1. Collection sites (for map reference see fig. 2)

1. Adapazarı - Emirdağ - Mezarlık	45. Tekirdağ - Işıklar
2. Adapazarı - Akyazı - Dedeler	46. Tekirdağ - Uçmaktdere
3. Adapazarı - Göktepe	47. Kırklareli - Lüleburgaz - Türkgeldi
4. Adapazarı - Sapanca - İst. Üniv. Tesisleri	48. Tekirdağ - Hayrabolu - Kandamış
5. İzmit - Uzuntarla	49. Kırklareli - Lüleburgaz -Sarmısaklı Farm
6. Bilecik - Bayırköy	50. Tekirdağ - Ganos mountains
7. Bilecik - Osmaneli - İçmeler	51. Kırklareli - Çakmak
8. Bilecik - Demirköy	52. Kırklareli - Kayalıköyü Barajı
9. Bilecik - Ayvacık	53. Çanakkale - Biga
10. Bilecik - Çakırpınar	54. Tekirdağ - Hayrabolu
11. Bursa - İnegöl - Mezitli - Taraklı	55. Kırklareli - Babaeski - Kumköy
12. Bursa - Yenişehir	56. Kırklareli - Ürünü
13. Bursa - İnegöl - Cerrah	57. Tekirdağ - Şarköy
14. Bursa - Burhaniye	58. Tekirdağ - Hayrabolu - Soylu
15. Bursa - Uludağ - Yeşiltarla	59. Çanakkale - Çan - İstiklal Mahallesi
16. Bursa - İncirli - Akçaağaç	60. Edirne - Lalapaşa - Bağlıkderesi
17. Bursa - Uluçam - Doğanlı	61. Edirne - Lalapaşa - Vaysal
18. Bursa - Orhaneli -Çırpı	62. Tekirdağ - Malkara -Yaylagöre
19. İstanbul - Çatalca - Kısırmandıra	63. Tekirdağ - Malkara - Kaşıkçı
20. Bursa - M.Kemalpaşa - Söğütalan	64. Edirne - Lalapaşa - Donköy
21. Bursa - Karacabey - Cambazköy	65. Edirne - Büyükismailce
22. İstanbul - Silivri	66. Edirne - Havsa - Necatiye
23. Bursa - Karacabey - Çingeneleşmesi	67. Edirne - Hacıumur
24. İstanbul - Silivri - Küçüksinekli	68. Edirne - Havsa - Abalar
25. Kırklareli - Demirköy - İğneada	69. Edirne - Tayakadın
26. Tekirdağ - Saray - Safaalan	70. Edirne - Havsa
27. Balıkesir - Manyas - Kuşçenneti	71. Edirne - Havsa - Arpaç
28. Tekirdağ - Çorlu - Seymen	72. Edirne -Trakya Üniv. Kampüsü
29. Tekirdağ - Çorlu - Vakıflar	73. Edirne - Uzunköprü-Kircasalih
30. Tekirdağ - Saray	74. Edirne - Uzunköprü -Yeniköy
31. Balıkesir - Manyas - Kayacaköy	75. Edirne - Hadımağa
32. Tekirdağ - Çorlu - Beyazköy	76. Edirne - Büyükdöllük
33. Balıkesir - Susurluk - Yalçışme	77. Çanakkale - Lapseki - Bayramdere
34. Kırklareli - Vize	78. Edirne -Yolüstü
35. Kırklareli - Yeniceköy	79. Edirne - Eskikadın
36. Balıkesir - Yakupköy	80. Edirne - Meriç kenarı
37. Kırklareli - Demirköy - Boztaş	81. Edirne - Meriç
38. Balıkesir - Dursunbey - Saçayağı	82. Edirne - Meriç - Hasırcaarnavut
39. Tekirdağ - Çorlu - Marmara Ereğlisi	83. Edirne - Keşan - Koyunhisar
40. Balıkesir - Gönen - Gebeçinar	84. Edirne - Meriç - Küçükaltuağaç
41. Balıkesir - Gönen - Tahirova	85. Edirne - İpsala
42. Balıkesir - Gönen - Gündoğan	86. Edirne - Enez - Sultanıçe
43. Tekirdağ - Hayrabolu - Susuzmüsellim	87. Edirne - Enez
44. Tekirdağ - Muratlı - Hanoğlu	



Figure 2. Map reference for the collection sites (Numbers denote the names of the sites in table 1).

Genus: *Chelonus* Jurine, 1801

*Chelonus asiaticus* Telenga, 1941

*Chelonus asiaticus* Telenga, 1941 Fauna SSSR 5 (3): 276, 443, ♀♂.

Length: 3-5 mm.

Material examined: 1♀, 1♂

Kırklareli-Demirköy-İğneada (oak, pasture, h: 10 m., 16.6.1987, 1♀), Kırklareli-Kayalıköyü Barajı (pasture, h: 210 m., 18.8.1986, 1♂).

General Distribution: Kazakhstan, Mongolia, Russia, Siberia (1).

New record for fauna of Turkey.

*Chelonus bidens* Tobias, 1976

*Chelonus bidens* Tobias, 1976, Rev. Entom. USSR., p.145, ♀.

Length: 4,5-6 mm.

Material examined: 30♀♀, 50♂♂

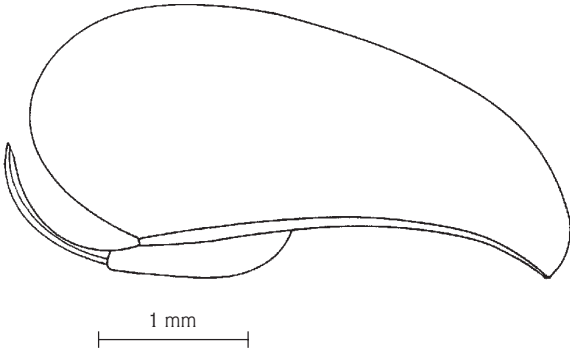


Figure 3. *Chelonus inanitus* (Linnaeus): Metasoma, lateral view.

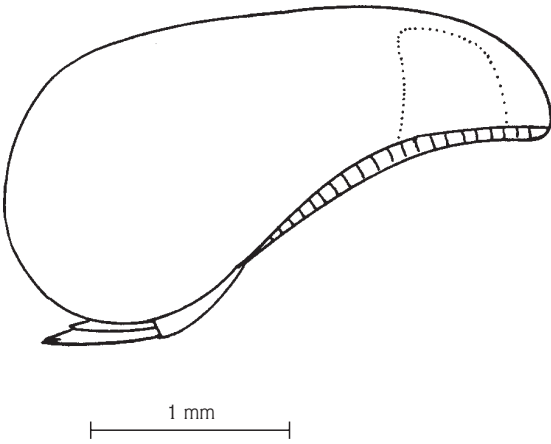


Figure 4. *Chelonus oculator* (Panzer): Metasoma, lateral view.

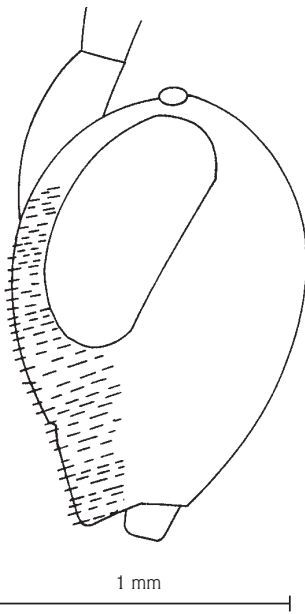


Figure 5. *Chelonus canescens* Wesmael: Head, lateral view.

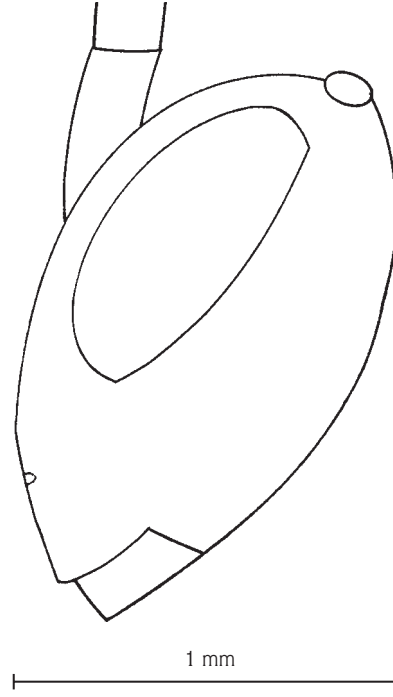


Figure 6. *Chelonus microsomus* Tobias: Head, lateral view.

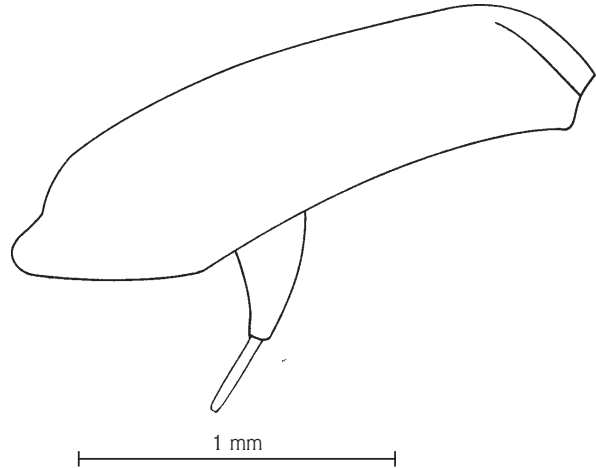
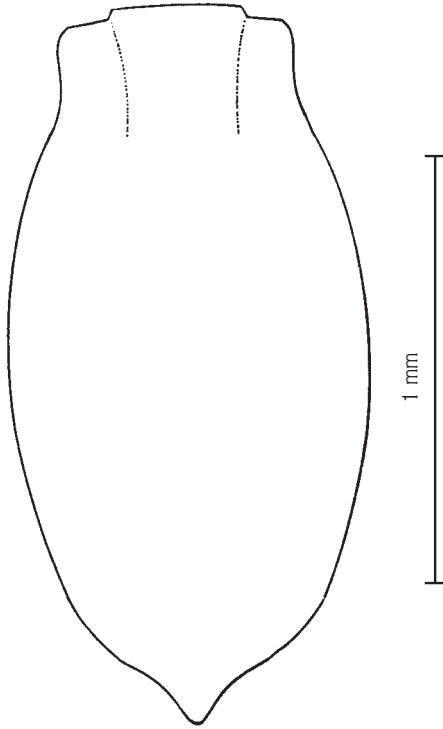
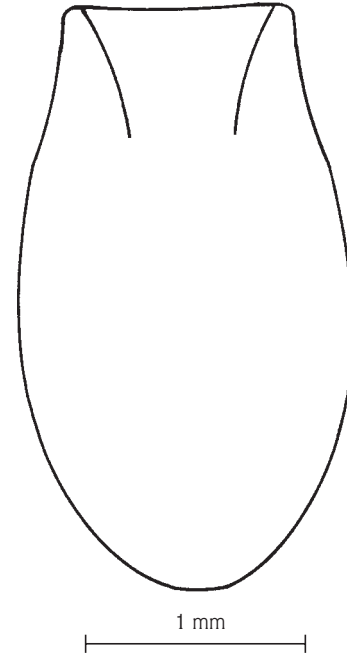
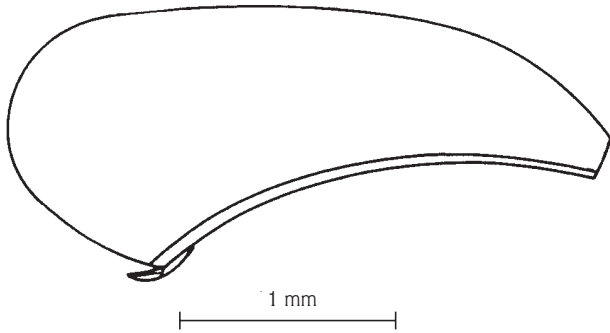
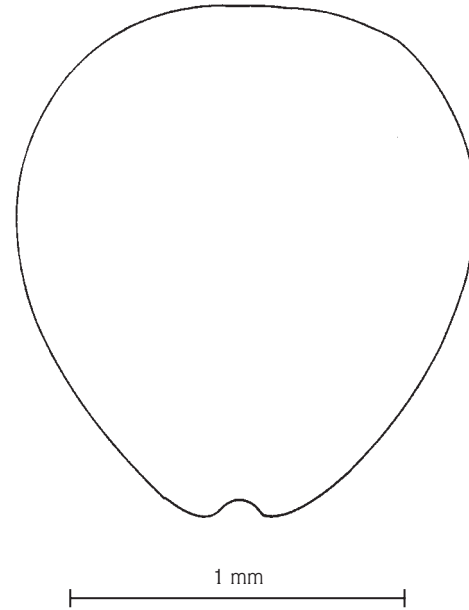


Figure 7. *Chelonus tuberculifer* Tobias: Head, frontal view.

Adapazarı-Sapanca-İstanbul Üniversitesi Tesisleri (fruit garden, h: 60 m., 16.8.1994, 1♀), Balıkesir-Manyas-Kayacaköy (clover field, oak, pasture, h: 100 m., 15.7.1993, 9♀♀, 6♂♂), Balıkesir-Manyas-Kuşçenneti (mixed forest h: 15 m., 15.7.1993, 1♂), Balıkesir-Dursunbey-Saçayağı (pine forest, h: 500 m., 14.7.1993, 1♀, 1♂), Balıkesir-Gönen-Tahirova (clover field, pasture, h: 100 m., 15.7.1993, 2♀♀), Bilecik-Ayvacık, (Mera, h:

Figure 8. *Chelonus tuberculifer* Tobias: Metasoma, dorsal view.Figure 10. *Chelonus bidens* Tobias: Metasoma, dorsal view.Figure 9. *Chelonus bidens* Tobias: Metasoma, lateral view.Figure 11. *Chelonus scabrator* (Fabricius): Metasomal apex, from behind.

700 m., 9.7.1993, 2♀♀), Bursa-İnegöl-Cerrah (pasture, h: 400 m., 10.7.1993, 1♀), Bursa-Karacabey-Cambazköy (meadow, h: 500 m., 12.7.1993, 2♂♂), Bursa-Uluçam-Doğanlı (pine forest, h: 300 m., 13.7.1993, 7♂♂), Bursa-Orhaneli-Çırpı (pasture, h: 350 m., 13.7.1993, 1♀, 1♂), Çanakkale-Çan-İstiklal Mahallesi (pasture, h: 80 m., 16.7.1993, 2♀♀, 8♂♂), Edirne-Meriç-Küçükaltıağaç (pasture, h: 70 m., 30.7.1992, 1♀), Edirne-Keşan-Koyunhisar (pasture, h: 250 m., 5.8.1993, 1♀, 2♂♂), Edirne-Büyükdöllük (crop

field, h: 130 m., 31.8.1991, 1♀), Edirne-Trakya Üniversitesi Kampüsü (pasture, h: 40 m., 26.5.1991, 2♀♀, 1♂), Edirne-Enez-Sultaniçe (pasture, h: 20 m., 12.8.1991, 1♀, 1♂), Edirne-Meriç (clover field, h: 60 m.,

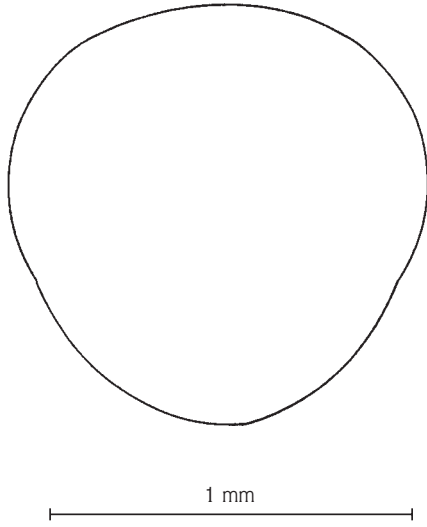


Figure 12. *Chelonus smirnovi* Telenga: Metasomal apex, from behind.

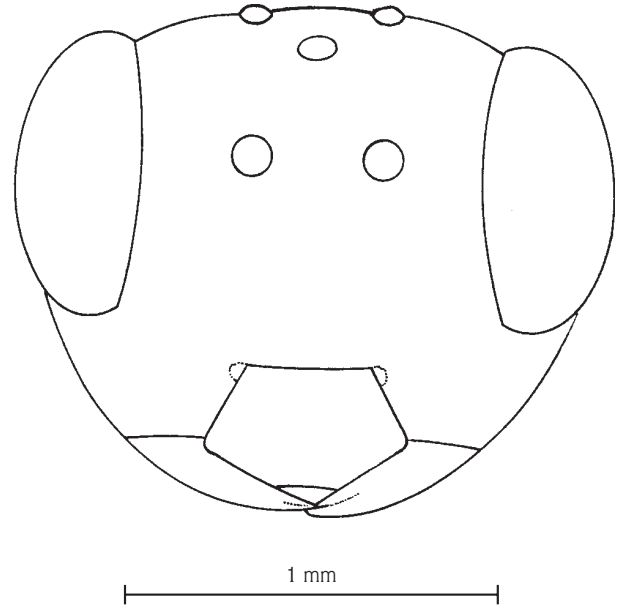


Figure 14. *Chelonus szepligetii* Dalla Torre: Head, frontal view.

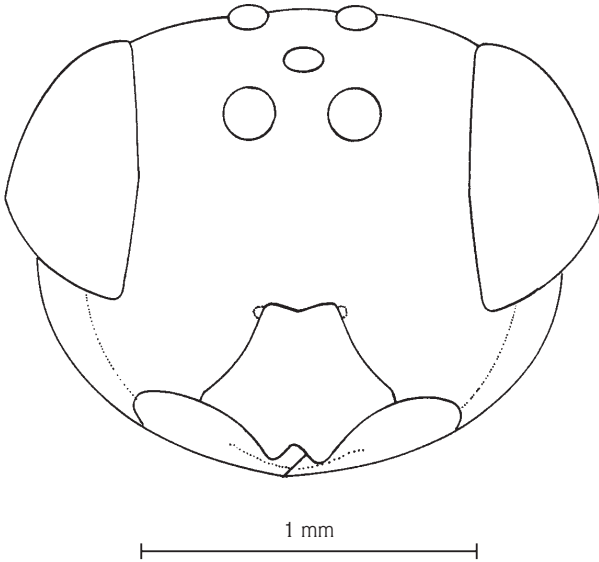


Figure 13. *Chelonus bidens* Tobias: Head, frontal view.



Figure 15. *Chelonus varimaculatus* Tobias: Antenna.

30.7.1992, 1♀, 2♂♂), Edirne-Uzunköprü-Kırcasalih (pasture, h: 100 m., 1.8.1992, 1♀, 1♂), Edirne-Yolüstü (clover field, h: 45 m., 26.7.1992, 1♂), Edirne-Lalapaşa-Bağlık Deresi (pasture, h: 150 m., 5.6.1988, 1♀), Kırklareli-Lüleburgaz-Türkgeldi (pasture, h: 60 m., 13.8.1992, 1♀, 1♂), Kırklareli-Yeniceköy (oak forest, pasture, h: 500 m., 6.7.1997, 4♂♂), Tekirdağ-Çorlu-Marmara Ereğlisi (pasture, h: 20 m., 12.8.1993, 1♀), Tekirdağ-Çorlu-Seymen (pasture, h: 100 m., 12.8.1993,

2♂♂), Tekirdağ-Hayrabolu-Susuzmüsellim (meadow, h: 100 m., 3.8.1993, 1♂) Tekirdağ-Işıklar (meadow, h: 350 m., 6.8.1991, 1♂), Tekirdağ-Ganos mountains (oak forest, h: 350 m., 14.7.1986, 2♂♂).

General Distribution: South Russia, Kazakhstan (1).

New record for fauna of Turkey.





1 mm

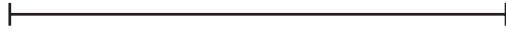
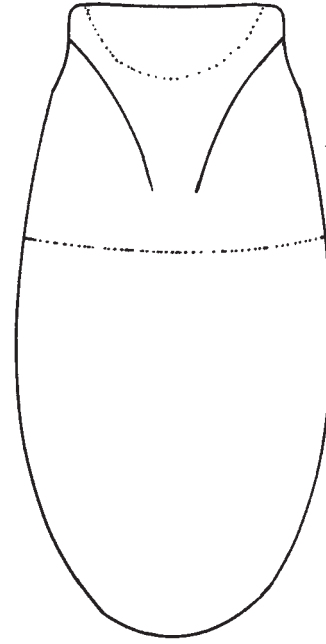


Figure 16. *Chelonus asiaticus* Telenga: Antenna.



1 mm

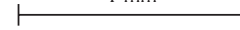
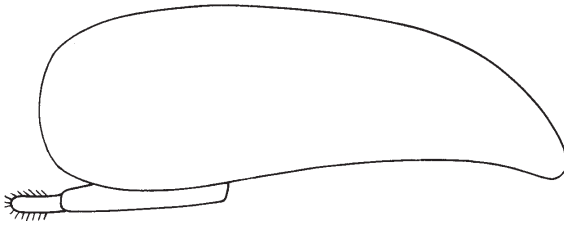


Figure 18. *Chelonus varimaculatus* Tobias: Metasoma, dorsal view.



1 mm

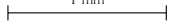
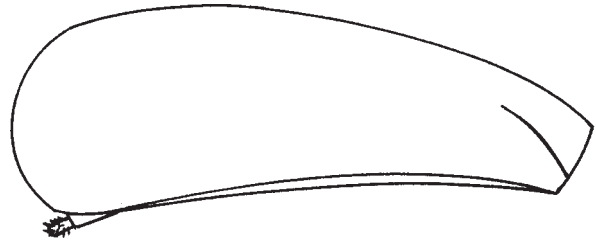


Figure 17. *Chelonus varimaculatus* Tobias: Metasoma, lateral view.



1 mm

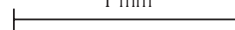


Figure 19. *Chelonus ocellatus* Alexeev: Metasoma, lateral view.

***Chelonus canescens* Wesmael, 1835**

*Chelonus canescens* Wesmael, 1835, Nouv. Mem. Acad. Sc. Bruxelles, IX, p.224, n.S. ♀.

Length: 3-4 mm.

Material examined : 2♀♀, 4♂♂

Bilecik-Çakırpınar (pasture, h: 80 m., 9.7.1993, 1♂), Edirne-Büyükdöllük (crop field, h: 130 m., 31.8.1991, 2♀♀, 2♂♂), Kırklareli-Yeniceköy (oak forest, pasture, h: 500 m., 6.7.1997, 1♂).

General Distribution: Belgium, Czechoslovakia, France, England, Germany, Scotland, Spain, Sweden, Switzerland, Italy, Mongolia, Poland, Rumania, Russia (8).

New record for fauna of Turkey.

***Chelonus inanitus* (Linnaeus, 1767)**

*Cynips inanita* Linnaeus, 1767 Syst. nat., Ed. 122: 919.

*Chelonus inanitus*: Nees von Esenbeck 1834 Hym. Ichn. affin. Mon. 1: 289.

Length: 8-9 mm.

Material examined: 76♀♀, 25♂♂

Adapazarı-Göktepe (pasture, h: 50 m., 8.7.1993, 1♂), Adapazarı-Sapanca-İstanbul Üniversitesi Tesisleri (fruit garden, h: 60 m., 16.8.1994, 1♀), Balıkesir-Gönen-Tahirova (clover field, pasture, h: 100 m.,

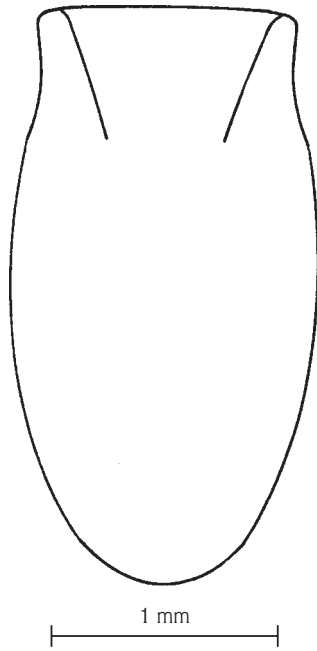


Figure 20. *Chelonus ocellatus* Alexeev: Metasoma, dorsal view.

15.7.1993, 6♀♀, 3♂♂), Balıkesir-Gönen-Gündoğan (pasture, h: 900 m., 15.7.1993, 2♀♀), Balıkesir-Manyas-Kayacaköy (clover field, oak, pasture, h: 100 m., 15.7.1993, 18♀♀, 3♂♂), Balıkesir-Susurluk-Yalıçesme (pasture, h: 600 m., 14.7.1993, 1♂) Balıkesir-Manyas-Kuşcenneti (mixed forest, h: 15 m., 15.7.1993, 4♀♀), Balıkesir-Dursunbey-Saçayağı (pine forest, h: 500 m., 14.7.1993, 2♀♀, 1♂), Bilecik-Demirköy (pasture, h: 400 m., 10.7.1993, 1♀), Bursa-İnegöl-Cerrah (pasture, h: 400 m., 10.7.1993, 1♂), Bursa-Orhaneli-Çırpı (pasture, h: 350 m., 13.7.1993, 4♀♀), Bursa-Uluçam-Doğanlı (pine forest, h: 300 m., 13.7.1993, 1♀, 14.7.1993, 1♂), Bursa-İnegöl-Mezitli-Taraklı (mixed forest, meadow h: 1270 m., 11.7.1993, 1♂), Bursa-Karacabey-Cambazköy (meadow, h: 500 m., 12.7.1993, 2♀♀, 1♂), Bursa-M.Kemalpaşa-Söğütalan (mixed forest, h: 400 m., 12.7.1993, 4♀♀), Çanakkale-Çan-İstiklal Mahallesi (pasture, h: 80 m., 16.7.1993, 4♀♀, 4♂♂), Çanakkale-Biga (clover field, pasture, h: 50 m., 16.7.1993, 3♀♀), Edirne-Havsa-Abalar (pasture, h: 60 m., 1.8.1992, 1♂), Edirne-Uzunköprü-Yeniköy (pasture, h: 80 m., 30.7.1992, 1♀), Edirne-Uzunköprü-Kırcasalih (pasture, h: 100 m., 1.8.1992, 3♀♀), Edirne-Tayakadın (clover field, rice, h: 40 m., 1.8.1992, 2♀♀), Edirne-Keşan- Koyunhisar (pasture, h: 250 m., 5.8.1993, 1♂),

Edirne-Lalapaşa-Vaysal (oak, pasture, h: 560 m., 30.8.1992, 1♀), Edirne-Hadımağa (pasture, h: 41 m., 8.7.1990, 5♀♀), Edirne-Eskikadın (pasture, h: 40 m., 26.7.1992, 1♀), Edirne-Havsa (pasture, h: 60 m., 18.8.1991, 2♀♀), Edirne-Yolüstü (clover field, 45 m., 26.7.1992, 1♀), Kırklareli-Çakmak (pasture, h: 90 m., 21.6.1993, 1♂), Kırklareli-Yeniceköy (oak forest, pasture, h: 500 m., 6.7.1997, 1♀), Kırklareli-Babaeski-Kumköy (pasture, h: 60 m., 5.7.1992, 1♀), Tekirdağ-Saray-Safaalan (pasture, h: 110 m., 25.8.1992, 1♀), Tekirdağ-Hayrabolu-Susuzmüsellim (meadow, h: 100 m., 3.8.1993, 2♀♀, 1♂), Tekirdağ-Çorlu-Seymen (pasture, h: 100 m., 12.8.1993, 2♀♀), Tekirdağ-Çorlu-Beyazköy (pasture, h: 50 m., 12.8.1993, 1♀), Tekirdağ-Ganos mountains (oak forest, h: 350 m., 14.7.1986, 1♀).

Distribution in Turkey: İçel-Erdemli (5).

General Distribution: Algeria, Belgium, Czechoslovakia, Denmark, Finland, France, England, Germany, Holland, Hungary, Italy, Ireland, Japan, Lithuania, Mongolia, Norway, Poland, Russia, Sakhalin, Siberia, Spain, Switzerland, Yugoslavia (8), Turkey (5).

New record for fauna of Marmara region.

#### *Chelonus microsomus* Tobias, 1964

*Chelonus microsomus* Tobias, 1964 trudy zool. Inst., Leningr. 34:189, ♀.

Length: 2.5 mm.

Material examined: 1♀

Kırklareli-Dereköy (pasture, h: 500 m., 25.4.1985, 1♀).

General Distribution: Kazakhstan (1).

New record for fauna of Turkey.

#### *Chelonus oculator* (Panzer, 1779)

*Ichneumon oculator* Panzer, 1779 Faunae Insect. German.:72.

*Sigalphus oculator* Latreille, 1809 Genera Crust. Insect. 4: 13.

*Chelonus oculator* Panzer, 1806 Krit. Rev. Insekt. Dtls: 99.

Length: 6-8 mm.

Material examined: 105 ♀♀, 72 ♂♂

Adapazarı-Akyazı-Dedeler (pasture, h: 200 m., 22.9.1992, 1♀), Adapazarı Emirdağ-Mezarlık (corn field, pasture, h: 150 m., 21.9.1992, 4♀♀), Balıkesir-Yakupköy (pine forest, h: 600 m., 14.7.1993, 1♂), Balıkesir-Gönen-Gebeçinar (clover field, h: 24 m., 20.8.1994, 1♀, 1♂), Balıkesir-Gönen-Tahirova (clover field, pasture, h: 100 m., 15.7.1993, 2♀♀), Balıkesir-Manyas-Kayacaköy (clover field, oak, pasture, h: 100 m., 15.7.1993, 1♀, 1♂), Balıkesir-Manyas-Kuşcenneti (mixed forest, h: 15 m., 15.7.1993, 3♀♀), Balıkesir-Susurluk-Yalıçesme (pasture, h: 600 m., 14.7.1993, 1♂), Bilecik-Osmaneli-İçmeler (pasture, h: 100 m., 21.9.1992, 1♂), Bursa-Karacabey-Çingeneleşmesi (crop field, meadow, h: 700 m., 19.8.1994, 3♀♀, 1♂), Bursa-Uludağ-Yeşiltarla (pasture, h: 700 m., 19.9.1992, 1♂), Bursa-İncirli-Akçaağaç (pasture, h: 300 m., 20.9.1992, 1♂), Çanakkale-Çan-İstiklal Mahallesi (pasture, h: 80 m., 16.7.1993, 1♀), Çanakkale-Biga (clover field, pasture h: 50 m., 16.7.1993, 1♀), Çanakkale-Lapseki-Bayramdere (fruit garden, h: 60 m., 20.8.1994, 1♀, 2♂♂), Edirne-Havsa-Abalar (pasture, h: 60 m., 1.8.1992, 3♀♀, 4♂♂), Edirne-Lalapaşa-Donköy (pasture, h: 370 m., 6.6.1987, 1♀), Edirne-Uzunköprü-Yeniköy (pasture, h: 80 m., 30.7.1992, 1♀), Edirne-Havsa-Arpaç (clover field, h: 60 m., 30.8.1992, 1♂), Edirne-Meriç-Hasırcaarnavut (clover field, h: 80 m., 30.7.1992, 1♀, 1♂), Edirne-Büyükismailce (pasture, h: 60 m., 26.7.1992, 1♀), Edirne-Enez (pine, h: 20 m., 8.8.1991, 1♀), Edirne-Enez-Sultaniçe (pasture, h: 20 m., 12.8.1991, 1♀), Edirne-Meriç kenarı (pasture, h: 40 m., 8.6.1993, 1♀), Edirne-Keşan-Koyunhisar (pasture, h: 250 m., 5.8.1993, 1♀), Edirne-Havsa-Necatiye (pasture, h: 70 m., 30.8.1992, 4♀♀, 1♂), Edirne-Lalapaşa-Bağlık Deresi (pasture, h: 150 m., 5.6.1988, 1♂), Edirne-Hacıumur (crop field, h: 45 m., 13.6.1987, 1♂), İstanbul-Silivri (pasture, h: 50 m., 25.8.1992, 9♀♀, 3♂♂), İstanbul-Çatalca-Kısırmandıra (mixed forest, meadow h: 70 m., 25.6.1993, 1♀), İstanbul-Silivri- Küçüksinekli (fruit garden, h: 170 m., 25.8.1992, 4♀♀), Kırklareli-Ürünlü (pasture, h: 60 m., 22.8.1992, 1♂), Kırklareli-Vize (pasture, h: 150 m., 25.9.1992, 1♀), Kırklareli-Demirköy-İğneada (oak forest, meadow, h: 10 m., 16.6.1987, 1♀, 1♂), Kırklareli-Lüleburgaz-Sarmısaklı Farm (pasture, h: 60 m., 18.8.1991, 6♀♀, 5♂♂), Kırklareli-Kaynarca (pasture, h: 130 m., 6.9.1988, 1♀), Kırklareli-Lüleburgaz-Türkgeldi (pasture, h: 60 m., 13.8.1992, 2♀♀, 1♂), Kırklareli-Yeniceköy (oak forest, pasture h: 500 m., 6.9.1988, 14♀♀, 6♂♂; 6.7.1997,

7♀♀, 5♂♂), Tekirdağ- Hayrabolu (pasture, h: 50 m., 26.8.1992, 3♀♀, 1♂), Tekirdağ-Saray (clover field, pasture, h: 110 m., 25.8.1992, 10♀♀, 3♂♂), Tekirdağ-Hayrabolu-Soylu (sunflower field, h: 50 m., 26.8.1992, 3♀♀, 4♂♂), Tekirdağ-Ganos mountains (oak forest, h: 350 m., 14.7.1986, 1♀, 3♂♂), Tekirdağ-Muratlı-Hanoğlu (oak, pasture, h: 60 m., 26.8.1992, 1♀, 2♂♂; 23.8.2000, 3♀♀, 11♂♂), Tekirdağ-Çorlu-Marmara Ereğlisi (pasture, h: 20 m., 12.8.1993, 1♀), Tekirdağ-Hayrabolu (pasture, h: 50 m., 26.8.1992, 3♀♀, 1♂), Tekirdağ-Malkara-Kaşıkçı (pasture, h: 190 m., 26.8.1992, 3♀♀, 2♂♂), Tekirdağ-Saray-Safaalan (pasture, h: 110 m., 25.8.1992, 1♀), Tekirdağ-Malkara-Yaylagöre (pasture, h: 250 m., 26.9.1992, 2♀♀), Tekirdağ-Işıklar (meadow, h: 350 m., 6.8.1991, 1♀, 1♂), Tekirdağ-Şarköy (pasture, h: 120 m., 7.8.1991, 2♂♂).

General Distribution: Albania, Austria, Belgium, Caucasia, Center Asia, Czechoslovakia, Finland, France, England, Germany, Holland, Hungary, Italy, North Africa, Romania, Russia, Siberia, Switzerland, West Asia (1).

New record for fauna of Turkey.

#### *Chelonus ocellatus* Alexeev, 1971

*Chelonus ocellatus* Alexeev, 1971, Rev. Entom. USSR., 50(2): 410, ♀.

Material examined: 1♀

Bilecik-Bayırköy (fruit garden, h: 700 m., 17.8.1994, 1♀).

General Distribution: Crimea, Middle Asia (1).

New record for fauna of Turkey.

#### *Chelonus scabrator* (Fabricius, 1793)

*Ichneumon scabrator* Fabricius, Entom. System., II, 1793, p. 171, n. 167.

*Sigalphus scabrator* Latreille, Gen. Crust. U. Insect., IV, 1809, p.13.

*Sigalphus scaber* Nees von Esenbeck, Magaz. Ges. Naturf. Fr. Berlin, VII, 1813, p. 272, n.3.

*Chelonus scabrator* Trentepohl, Revis. Crit. Gen. Ichneum., 1825.

Length: 5-8 mm.

Material examined: 9♀♀, 26♂♂

Bursa-Burhaniye (pasture, h: 400 m., 18.9.1992, 1♀), Bursa-İnegöl-Cerrah (pasture, h: 400 m., 10.7.1993, 1♀, 9♂♂), Bursa-İnegöl-Mezitli-Taraklı (mixed forest, meadow, h: 1270 m., 11.7.1993, 1♀, 1♂), Bursa-Yenişehir (clover field, meadow, h: 250 m., 20.9.1992, 1♂), Edirne-Lalapaşa-Donköy (pasture, h: 370 m., 6.6.1987, 1♀), Edirne-İpsala (pasture, h: 10 m., 5.8.1993, 1♀), İstanbul-Çatalca-Kısırmandıra (mixed forest, meadow, h: 70 m., 25.6.1993, 1♂), İzmit-Sapanca-İstanbul Üniversitesi Tesisi (pasture, h: 60 m., 16.8.1994, 1♂), İzmit-Uzuntarla (pine, pasture, h: 100 m., 7.7.1993, 1♀, 6♂♂), Tekirdağ-Ganos Mountains (oak forest, h: 350 m., 14.7.1986, 1♀), Tekirdağ-Şarköy (pasture, h: 120 m., 7.8.1991, 1♂), Tekirdağ-Hayrabolu-Soylu (sunflower field, h: 50 m., 26.8.1992, 1♂), Tekirdağ-Işıklar (meadow, h: 350 m., 6.8.1991, 1♂; 24.8.2000, 1♂), Tekirdağ-Hayrabolu (pasture, h: 50 m., 26.8.1992, 1♀), Tekirdağ-Hayrabolu-Kandamış (pasture, h: 70 m., 26.8.1992, 1♀), Tekirdağ-Uçmakdere (pasture, h: 110 m., 7.8.1991, 3♂♂).

General Distribution: Albania, Austria, Belgium, Czechoslovakia, Finland, France, England, Germany, Holland, Hungary, Italy, Iran, Sweden, Switzerland, Mongolia, Poland, Russia, Siberia, Yugoslavia (8).

New record for fauna of Turkey.

#### *Chelonus smirnovi* Telenga, 1953

*Chelonus smirnovi* Telenga, 1953 Zool. Zh. 32: 1176, ♀, ♂.

Length: 4 mm.

Material examined: 1♀

Kırklareli-Demirköy-Boztaş (oak, h: 450 m., 6.7.1997, 1♀).

General Distribution: South Russia (1).

New record for fauna of Turkey.

#### *Chelonus szepligetii* Dalla Torre, 1898

*Chelonus szepligetii* Dalla Torre, 1898 Cat. Hym. 4: 208.

Length: 4 mm.

Material examined: 10♀♀, 4♂♂

İstanbul-Silivri (pasture, h: 50 m., 25.8.1992, 9♀♀, 3♂♂), Kırklareli-Lüleburgaz-Sarmısaklı Farm (pasture, h:

60 m., 18.8.1991, 1♂), Tekirdağ- Şarköy (pasture, h: 100 m., 7.8.1991, 1♀).

General Distribution: Hungary, Russia (1).

New record for fauna of Turkey.

#### *Chelonus tuberculifer* Tobias, 1967

*Chelonus tuberculifer* Tobias, 1967, Trudy. zool. Inst., 38:387, ♀.

Length: 2,5-3 mm.

Material examined: 1♀

Edirne-Enez (pine, h: 20 m., 8.8.1991, 1♀).

General Distribution: Crimea, Trans-Ural (1).

New record for fauna of Turkey.

#### *Chelonus varimaculatus* Tobias, 1986

*Chelonus varimaculatus* Tobias, S.S.C.B. Band III: Hymenoptera IV. Nauka, Leningrad, 1986, 553, ♀.

Length: 4,7-5 mm.

Material examined: 7♀♀, 2♂♂

Çanakkale-Çan-İstiklal Mahallesi (pasture, h: 80 m., 16.7.1993, 1♂), Edirne-Büyükdöllük (crop field, h: 130 m., 31.8.1991, 5♀♀), Tekirdağ-Çorlu-Vakıflar (pasture, h: 40 m., 12.8.1993, 1♂), Tekirdağ-Şarköy (pasture, h: 100 m., 7.8.1991, 2♀♀).

General Distribution: South Azerbaijan (1).

New record for fauna of Turkey.

The results revealed that *C. asiaticus*, *C. bidens*, *C. canescens*, *C. microsomus*, *C. oculator*, *C. ocellatus*, *C. scabrator*, *C. smirnovi*, *C. szepligetii*, *C. tuberculifer*, *C. varimaculatus* are new records fauna of Turkey. *C. inanitus* is a new record for Marmara region.

The genus *Chelonus* is rerepresented by approximately 180 species worldwide. Half of these are common in Palearctic. Twelve species were determined in our study area. Although *C. carbonator* (Adana-Feke, İçel-Silifke); *C. erythrogaster* (K.Maraş-Merkez); *C. gravenhorstii* (K.Maraş-Merkez); *C. inanitus* (İçel-Erdemli); *C. mucronatus* (Adana-Feke); and *C. obscurator* (Adana-Karaisalı, Adana-Yumurtalık, Adana-Merkez, Antalya-Gazipaşa, Burdur-Merkez, Gazintep-İslahiye-Hinzırlı, Isparta-Aliköy, İçel-Namrun, K.Maraş-Alaçayır,

K.Maraş-Merkez) were recorded before (Beyarslan, 1985), they were not found in our study area. That is, 11% of the species known in the Palearctic were determined. This may be due to the representation of *Chelonus* with a few and rare species.

With this study, Turkey's known number of *Chelonus* species increased to 17 by the recording of 11 new species of Turkish fauna, and the number of *Chelonus* species in the Marmara region were found to be 12.

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