

Leaf Beetles (Coleoptera, Chrysomelidae) occurring in Dilek Peninsula Büyük Menderes Delta National Park of Aydın province (Turkey)

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Leaf beetle specimens (Chrysomelidae) were collected from Dilek Peninsula Büyük Menderes Delta National Park (Aydın) and they were identified at the species level. As a result of the field studies, a total of 262 leaf beetles were collected, and 34 species belonging to 8 subfamilies and 26 genera were identified. Sixteen of these species were previously recorded from Aydın province and 18 species are new records for Aydın province. In addition, the host plants and provincial distributions for each species are provided.

Keywords: Chrysomelidae, Coleoptera, Leaf Beetles, National Park.

INTRODUCTION

Leaf beetles are one of the largest families among beetles, with more than 50,000 species and over 2500 genera all over the world (Jolivet *et al.*, 2009; Biondi *et al.*, 2013; Jolivet, 2015). Even if these researchs are not sufficient, many groups of this family are under study in Turkey because they are phytophagous insects and are found in dense populations (Ekiz & Şen *et al.*, 2013). Most of the leaf beetle species are agricultural pests and are economically important insects (Beenen, 2010).

Biodiversity can better be conserved in protected areas because anthropogenic effects are minimum. In this context, it is important to reveal the leaf beetle diversity of Dilek Peninsula Büyük Menderes Delta National Park (DPNP). The materials of this study consist of leaf beetle samples collected from DPNP.

MATERIAL AND METHODS

DPNP is located in Aydın province in southwestern Turkey (**Figure 1**). This national park is one of the most protected national parks in Turkey. DPNP was declared a national park in 1966. This area covers international importance due to its rich biodiversity (DKMPGM, 2022).

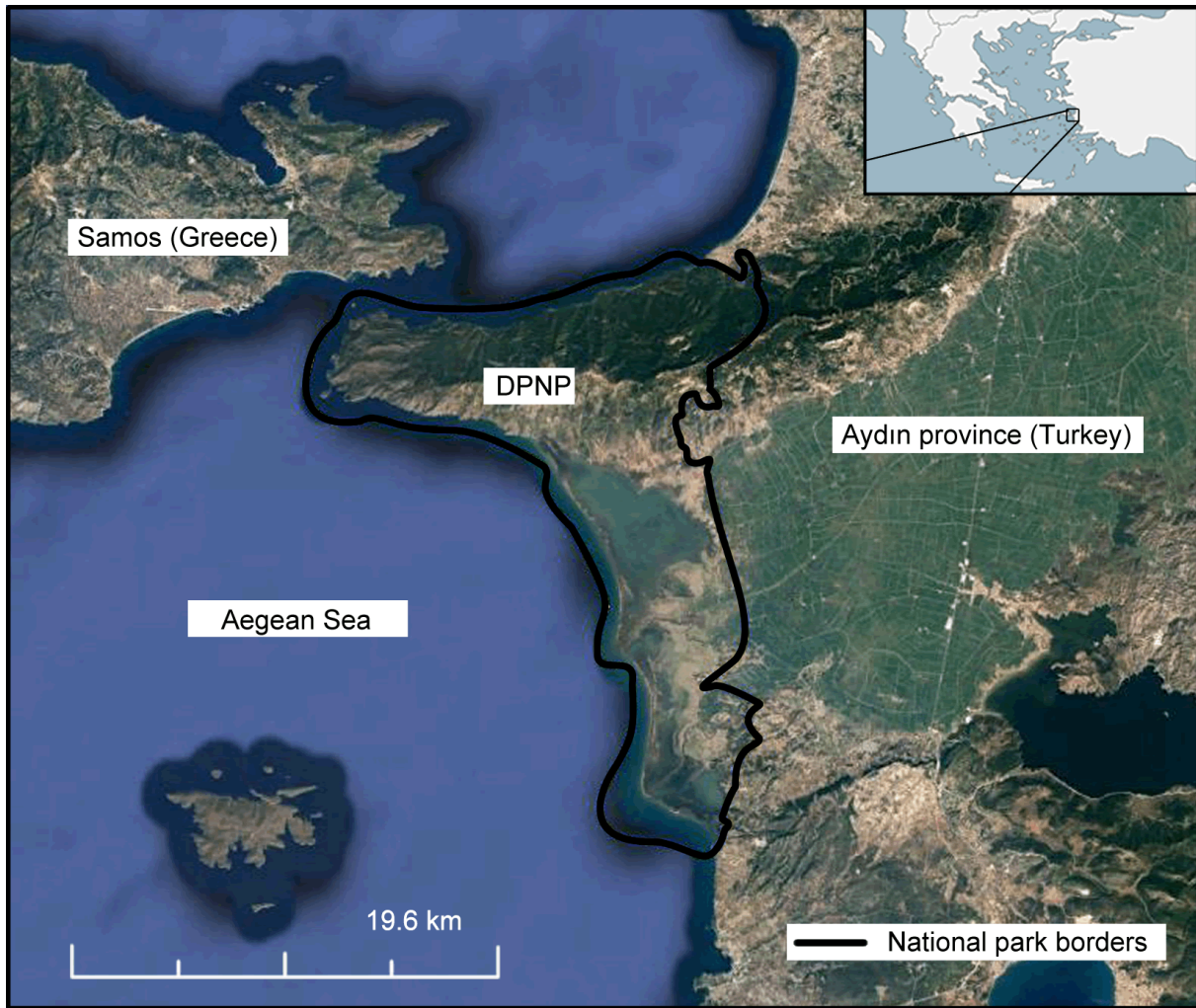


Figure 1: Map of the study area (DPNP for Dilek Peninsula Büyük Menderes Delta National Park). (The map is created using free Google maps)

The samples were collected between 2020-2021 from various habitats (herbaceous vegetation, shrub vegetation and tree vegetation) by using methods suitable for the habitat type, representing the entire national park (**Figure 2**). Sweeping net was used in herbaceous and shrub vegetation, and Japanese umbrella in shrub and tree vegetation. Since it is difficult to determine the host plant in the samplings made with the sweeping net, possible host plants of the species in the area were determined by observation. Coordinates of the sampling areas, altitude information and habitat characteristics of the samples were recorded together with the host plants. The samples were brought to the laboratory in ethyl alcohol. Dissection and preparation of the samples were performed under a Nikon SMZ745T binocular.



Figure 2: Views of habitats from the study area

Specimens were identified by the second author at species level using various diagnostic keys: Mohr (1966), Lopatin (1980), Gruev & Tomov (1984; 1986) and Warchalowski (2003; 2010). All samples were deposited in Uşak University under appropriate conditions.

RESULTS

A total of 34 leaf beetle species belonging to 8 subfamilies and 26 genera are found to be distributed in DPNP. Sixteen species are firstly recorded from Aydın province (**Table 1**). The distributions by provinces of Turkey and host plant information are given below.

Table 1: Leaf beetle species collected from Dilek Peninsula Büyük Menderes National Park. Species marked with an asterisk (*) are new records for Aydın province of Turkey

Subfamily	Species
Bruchinae: Bruchini	<i>Bruchidius nanus</i> (Germar 1824)*
	<i>Bruchidius varius</i> (Olivier 1795)
Donaciinae: Donaciini	<i>Donacia marginata</i> Hoppe 1795*
Criocerinae: Lemini	<i>Oulema melanopus</i> (Linnaeus 1758)
Cassidinae: Cassidini	<i>Cassida rubiginosa</i> Müller 1776*
	<i>Cassida nobilis</i> Linnaeus 1758
	<i>Hypocassida meridionalis</i> (Suffrian 1844)*
	<i>Hypocassida subferruginea</i> (Schrank 1776)
Cassidinae: Hispini	<i>Dicladispa testacea</i> Linnaeu 1767
Cryptocephalinae: Clythrini	<i>Clytra bodemeyeri</i> Weise 1900*
	<i>Clytra novempunctata</i> Olivier 1808
	<i>Coptocephala unifasciata</i> (Scopoli 1763)

	<i>Labidostomis humeralis</i> (Schneider 1792)*
	<i>Macrolenes dentipes</i> (Olivier 1808)
	<i>Smaragdina limbata</i> (Steven 1806)
	<i>Tituboea macropus</i> (Illiger 1800)
Cryptocephalinae: Cryptocephalini	<i>Cryptocephalus anticus</i> Suffrian 1848*
	<i>Cryptocephalus fulvus</i> Goeze 1777*
	<i>Cryptocephalus ilicis</i> Olivier 1808
	<i>Cryptocephalus pygmaeus</i> Fabricius 1792
Chrysomelinae: Chrysomelini	<i>Chrysolina coeruleans</i> (Scriba 1791)*
	<i>Chrysolina herbacea</i> (Duftschmid 1825)*
	<i>Chrysomela populi</i> Linnaeus 1758
	<i>Colaphellus sophiae</i> (Schaller 1783)
	<i>Gonioctena fornicata</i> (Brüggemann 1873)*
Eumolpinae: Bromiini	<i>Pachnephorus pilosus</i> (Rossi 1790)*
Galerucinae: Galerucini	<i>Exosoma neglectum</i> Mohr 1968*
	<i>Radymna fischeri</i> (Faldermann 1837)*
	<i>Xanthogaleruca luteola</i> (Müller 1766)
Galerucinae: Alticini	<i>Altica lythri</i> Aubé 1843*
	<i>Chaetocnema tibialis</i> (Illiger 1807)*
	<i>Longitarsus albineus</i> (Foudras 1860)
	<i>Phyllotreta nigripes</i> (Fabricius 1775)*
	<i>Podagrica malvae</i> (Illiger 1807)*

Family Chrysomelidae Latreille 1802
Subfamily Bruchinae Latreille 1802
Tribus Bruchini Latreille 1802
Genus *Bruchidius* Schilsky 1905
Bruchidius nanus Germar 1824

Material: DPNP, Aydın; 18.vi.2020, 37°36'44''N, 27°12'58''E, 1m, 2 specimens.

Distribution: Adana, Artvin, Bilecik, Bolu, Çorum, İstanbul, İzmir, Karaman, Kırklareli, Konya, Mersin (Bodemeyer, 1906; Sahlberg, 1913; Borowiec, 1984; Decelle & Lodos, 1989; Borowiec & Anton, 1993; Anton, 2010). New record for Aydın province.

Host Plant: *Medicago* spp. (Fabaceae)

Bruchidius varius (Olivier 1795)

Material: DPNP, Aydın; 18.vi.2020, 37°36'44''N, 27°12'58''E, 1m, 3 specimens.

Distribution: Amasya, Ankara, Antalya, Aydın, Bolu, Çanakkale, Çorum, Eskişehir, Iğdır, İzmir, Kahramanmaraş, Karaman, Kars, Kocaeli, Konya, Mersin, Sakarya, Samsun, Tokat, Tunceli, Zonguldak (Ganglbauer, 1905; Sahlberg, 1913; Zampetti, 1981; Borowiec, 1984; Decelle & Lodos, 1989; Borowiec & Anton, 1993; Anton, 2010).

Host Plant: *Trifolium* spp. (Fabaceae)

Subfamily Donaciinae Kirby 1837
Tribus Donaciini Kirby 1837
Genus *Donacia* Fabricius 1775
Donacia marginata Hoppe 1795

Material: DPNP, Aydın; 18.vi.2020, 37°39'09''N, 27°03'41''E, 3m, 1 specimen; 29.06.2021, 37°39'09''K, 27°03'41''D, 3m, 4 specimens.

Distribution: Afyonkarahisar, Ankara, Bolu, Denizli, Düzce, Isparta, İstanbul, Kahramanmaraş, Muğla, Sakarya, Samsun, Tokat (Benato, 1990; Ekiz & Şen *et al.*, 2013, Ekiz & Geiser *et al.*, 2020). New record for Aydın province.

Host Plant: *Carex* spp. (Cyperaceae)

Subfamily Criocerinae Latreille 1804
Tribus Lemiini Heinze 1962
Genus *Oulema* Gozis 1886
Oulema melanopus (Linnaeus 1758)

Material: DPNP, Aydın; 18.iv.2021, 37°36'44''N, 27°12'58''E, 3m, 5 specimens.

Distribution: Adana, Afyonkarahisar, Aksaray, Ankara, Antalya, Ardahan, Aydın, Çorum, Diyarbakır, Eskişehir, Erzincan, Erzurum, Gaziantep, Hatay, Iğdır, İzmir, Kahramanmaraş,

Karaman, Kastamonu, Kırklareli, Konya, Karabük, Kars, Kütahya, Manisa, Muğla, Osmaniye, Samsun, Siirt (Medvedev, 1970; Gül-Zümreoğlu, 1972; Tomov & Gruev, 1975; Gruev & Tomov, 1984; Campobasso *et al.*, 1999; Aslan, 2000; Turanlı *et al.*, 2002; Gök & Çilbıroğlu, 2003; Gök & Gürbüz, 2004; Gruev, 2005a; Özdikmen & Turgut, 2008; Aslan *et al.*, 2009; Özdikmen, 2011; Ekiz & Şen *et al.*, 2013).

Host Plant: *Triticum* spp. (Poaceae)

Subfamily Cassidinae Gyllenhal 1813

Tribus Cassidini Gyllenhal 1813

Genus *Cassida* Linnaeus 1758

Cassida rubiginosa Müller 1776

Material: DPNP, Aydın; 17.vi.2020, 37°39'55''N, 27°00'32''E, 8m, 9 specimens (5 adults, 6 larvae); 18.iv.2021, 37°41'44''N, 27°11'11''E, 85m, 15 specimens (9 adults, 6 larvae).

Distribution: Adana, Afyonkarahisar, Ankara, Antalya, Balıkesir, Bolu, Bursa, Çorum, Edirne, Eskişehir, Erzurum, Giresun, Isparta, İzmir, Kastamonu, Kırklareli, Konya, Karabük, Kütahya, Manisa, Mersin, Sakarya, Samsun, Sivas, Tekirdağ, Zonguldak (Sahlberg, 1913; Tomov & Gruev, 1975; Kısmalı & Sassi, 1994; Aslan & Özbek, 1999; Campobasso *et al.*, 1999; Borowiec, 2007; Aslan *et al.*, 2009; Şen & Gök, 2009; Özdikmen, 2011; Ekiz & Şen *et al.*, 2013). New record for Aydın province.

Host Plant: *Cirsium* spp. (Asteraceae)

Cassida nobilis Linnaeus 1758

Material: DPNP, Aydın; 18.vi.2020, 37°42'08''N, 27°11'18''E, 50m, 1 specimen.

Distribution: Amasya, Ankara, Antalya, Aydın, Balıkesir, Çanakkale, Çorum, Denizli, Erzurum, Isparta, İzmir, Kastamonu, Kocaeli, Konya, Mersin, Niğde, Sakarya, Samsun, Sinop, Tokat (Kısmalı & Sassi, 1994; Ekiz & Şen *et al.*, 2013).

Host Plant: A single specimen was caught with sweeping net. The host plant could not be determined.

Genus *Hypocassida* Weise 1893

Hypocassida meridionalis (Suffrian 1844)

Material: DPNP, Aydın; 23.vii.2020, 37°41'50''N, 27°11'11''E, 85m, 1 specimen.

Distribution: Ordu (Borowiec & Sekerka, 2010; Özdikmen, 2011; Ekiz & Şen *et al.*, 2013). New record for Aydın province.

Host Plant: A single specimen was collected with sweeping net. The host plant could not be determined.

Hypocassida subferruginea (Schrank 1776)

Material: DPNP, Aydın; 17.vi.2020, 37°39'55''N, 27°00'32''E, 8m, 3 specimens.

Distribution: Adana, Ağrı, Aksaray, Amasya, Ankara, Antalya, Aydın, Balıkesir, Bilecik, Bitlis, Bursa, Bolu, Burdur, Çanakkale, Çankırı, Çorum, Denizli, Düzce, Edirne, Erzincan, Eskişehir, Erzurum, Hatay, Isparta; İstanbul, İzmir, Kahramanmaraş, Karaman, Kastamonu, Kayseri, Kocaeli, Konya, Karabük, Kütahya, Manisa, Mersin, Muş, Niğde, Osmaniye, Rize, Sakarya, Samsun, Siirt, Sinop, Sivas, Şanlıurfa, Yozgat, Zonguldak (Sahlberg, 1913; Günther, 1954; Kısmalı & Sassi, 1994; Aslan & Özbek, 1999; Gök & Çilbiroğlu, 2003; Gök & Gürbüz, 2004; Borowiec, 2007; Aslan *et al.*, 2009; Özdikmen, 2011; Ekiz & Şen *et al.*, 2013).

Host Plant: *Convolvulus* spp. (Convolvulaceae)

Tribus Hispini Gyllenhal 1813
Genus *Dicladisa* Gestro 1897
Dicladisa testacea Linnaeus 1767

Material: DPNP, Aydın; 16.vi.2020, 37°42'08''N, 27°11'18''E, 50m, 7 specimens; 16.vi.2020, 37°41'31''N, 27°09'11''E, 27m, 5 specimens; 22.vii.2020, 37°34'55''N, 27°13'37''E, 0m, 2 specimens; 03.ix.2020, 37°40'06''N 27°02'51''E, 90m, 10 specimens; 28.v.2021, 37°39'09''N, 27°03'41''E, 418m, 6 specimens.

Distribution: Adana, Antalya, Aydın, Bursa, Giresun, Hatay, Isparta, İstanbul, İzmir, Kastamonu, Manisa, Mersin, Muğla, Osmaniye, Sakarya, Sivas, Trabzon, Zonguldak (Tomov & Gruev, 1975; Giray, 1980; Kısmalı, 1989; Gök & Çilbiroğlu, 2003; Gruev, 2005b; Şen & Gök, 2009; Özdikmen, 2011; Ekiz & Şen *et al.*, 2013).

Host Plant: *Cistus* spp. (Cistaceae)

Subfamily Cryptocephalinae Gyllenhal 1813
Tribus Clytrini Kirby 1837
Genus *Clytra* Laicharting 1781
Clytra bodemeyeri Weise 1900

Material: DPNP, Aydın; 16.vi.2020, 37°42'08''N, 27°11'18''E, 50m, 1 specimen; 02.ix.2020, 37°39'20''N, 27°04'43''E, 590m, 1 specimen.

Distribution: Ankara, Antalya, Bilecik, Erzurum, Gaziantep, Hatay, Isparta, Konya, Kırşehir, Mersin, Muğla, Niğde, Osmaniye (Weise, 1900; Tomov & Gruev, 1975; Kasap, 1987b; Aydın & Kısmalı, 1990; Aslan & Özbek, 1998; Warchalowski, 2003; Gök & Çilbiroğlu, 2005; Şen & Gök, 2009; Özdikmen *et al.* 2010; Özdikmen, 2011; Ekiz & Şen *et al.*, 2013). New record for Aydın province.

Host Plant: *Quercus* spp. (Fagaceae)

Clytra novempunctata Olivier 1808

Material: DPNP, Aydın; 03.ix.2020, 37°39'20''N, 27°04'43''E, 590m, 1 specimen.

Distribution: Adana, Amasya, Ankara, Antalya, Artvin, Aydın, Bartın, Bolu, Burdur, Çorum, Denizli, Elazığ, Erzurum, Gaziantep, Giresun, Isparta, İzmir, Hatay, Kahramanmaraş, Karaman, Kastamonu, Kayseri, Konya, Karabük, Manisa, Mardin, Mersin, Muğla, Niğde, Osmaniye, Siirt,

Sinop, Sivas, Tokat, Tunceli, Yozgat, Uşak (Gül-Zümreoğlu, 1972; Tomov & Gruev, 1975; Gruev & Tomov, 1984; Kasap, 1987b; Aydın & Kısmalı, 1990; Aslan & Özbek, 1998; Gök, 2003; Gök & Çilbiroğlu, 2003, 2005; Warchałowski, 2003; Gruev, 2004, 2005a; Şen & Gök, 2009; Özdikmen *et al.* 2010; Özdikmen, 2011).

Host Plant: *Quercus* spp. (Fagaceae)

Genus *Coptocephala* Chevrolat 1836
Coptocephala unifasciata (Scopoli 1763)

Material: DPNP, Aydın; 22.vii.2020, 37°39'55''N, 27°00'32''E, 8m, 4 specimens; 03.ix.2021, 37°41'44''N, 27°11'11''E, 85m, 1 specimen.

Distribution: Adana, Afyonkarahisar, Amasya, Ankara, Antalya, Aydın, Balıkesir, Bartın, Çanakkale, Çankırı, Erzincan, Erzurum, Hatay, Isparta, İzmir, Kahramanmaraş, Kastamonu, Kayseri, Konya, Karabük, Mersin, Muğla, Nevşehir, Niğde, Osmaniye, Sivas (Kasap, 1987a; Aydın & Kısmalı, 1990; Aslan & Özbek, 1998; Gök, 2003; Gök & Çilbiroğlu, 2003; Şen & Gök, 2009; Özdikmen, 2011).

Host Plant: *Ecninophora* spp. (Apiaceae)

Genus *Labidostomis* Germar 1822
Labidostomis humeralis (Schneider 1792)

Material: DPNP, Aydın; 02.ix.2020, 37°39'20''N, 27°04'43''E, 590m, 2 specimens; 28.v.2021, 37°39'09''N, 27°03'41''E, 418m, 1 specimen.

Distribution: Çorum, İzmir, Bolu (Tomov & Gruev, 1975; Gruev & Tomov, 1984; Aydın & Kısmalı, 1990; Warchałowski, 2003; Gruev, 2004; Özdikmen, 2011). New record for Aydın province.

Host Plant: *Quercus* spp. (Fagaceae)

Genus *Macrolenes* Chevrolat 1836
Macrolenes dentipes (Olivier 1808)

Material: DPNP, Aydın; 17.vi.2020, 37°39'54''N, 27°02'57''E, 140m, 2 specimens; 28.v.2021, 37°41'44''N, 27°11'11''E, 85m, 1 specimen.

Distribution: Aydın, Balıkesir, Bursa, Çanakkale, Isparta, İzmir, Manisa, Muğla (Gruev & Tomov, 1979; Aydın & Kısmalı, 1990; Gruev, 2005b; Ekiz & Şen *et al.*, 2013).

Host Plant: *Quercus* spp. (Fagaceae); *Olea* spp. (Oleaceae)

Genus *Smaragdina* Chevrolat 1836
Smaragdina limbata (Steven 1806)

Material: DPNP, Aydın; 17.vi.2020, 37°42'08''N, 27°11'18''E, 50m, 3 specimens; 04.ix.2020, 37°39'54''N, 27°02'57''E, 140m, 2 specimens; 18.vi.2021, 37°39'55''N, 27°00'32''E, 8m, 6 specimens.

Distribution: Adana, Afyonkarahisar, Amasya, Ankara, Antalya, Aydın, Balıkesir, Bilecik, Bursa, Bolu, Burdur, Çanakkale, Çankırı, Çorum, Denizli, Diyarbakır, Düzce, Erzincan, Eskişehir, Erzurum, Gaziantep, Hakkari, Hatay, Isparta, İstanbul, İzmir, Kahramanmaraş, Kastamonu, Konya, Karabük, Manisa, Mersin, Muğla, Niğde, Osmaniye, Sakarya, Samsun, Sinop, Uşak, Yozgat, Zonguldak (Sahlberg, 1913; Medvedev, 1970; Tomov & Gruev, 1975; Gruev & Tomov, 1979, 1984; Kasap, 1987b; Aydın & Kısmalı, 1990; Aslan & Özbek, 1998; Gök, 2003; Warchałowski, 2003; Gök & Gürbüz, 2004; Gruev, 2004, 2005a; Gök & Çilbiroğlu, 2005; Aslan *et al.*, 2009; Şen & Gök, 2009; Özdikmen, 2011).

Host Plant: *Quercus* spp. (Fagaceae).

Genus *Tituboea* Lacordaire 1848

Tituboea macropus (Illiger 1800)

Material: DPNP, Aydın; 02.ix.2020, 37°39'20''N, 27°04'43''E, 590m, 2 specimens; 28.v.2021, 37°39'09''N, 27°03'41''E, 418m, 1 specimen; 18.vi.2021, 37°39'55''N, 27°00'32''E, 8m, 3 specimens.

Distribution: Adana, Aksaray, Ankara, Antalya, Artvin, Aydın, Bolu, Çanakkale, Çankırı, Çorum, Erzurum, Hatay, Isparta, İzmir, Kahramanmaraş, Kastamonu, Kayseri, Kilis, Konya, Karabük, Kars, Mersin, Muğla, Nevşehir, Niğde, Osmaniye, Sivas, Edirne, İstanbul (Gruev & Tomov, 1984; Kasap, 1987a; Aydın & Kısmalı, 1990; Aslan & Özbek, 1998; Regalin, 2002; Gök, 2003; Warchałowski, 2003; Özdikmen & Aslan, 2009; Özdikmen, 2011).

Host Plant: *Quercus* spp. (Fagaceae)

Tribus *Cryptocephalini* Gyllenhal 1813

Genus *Cryptocephalus* Geoffroy 1762

Cryptocephalus anticus Suffrian 1848

Material: DPNP, Aydın; 24.vii.2020, 37°37'53''N, 27°07'43''E, 7m, 1 specimen.

Distribution: Adana, Aksaray, Ankara, Antalya, Bayburt, Bilecik, Bolu, Bursa, Çanakkale, Çankırı, Denizli, Diyarbakır, Eskişehir, Erzurum, Hakkari, Isparta, İzmir, Kayseri, Kocaeli, Konya, Karabük, Tokat, Gümüşhane, Kırklareli, Kocaeli, Manisa, Mardin, Mersin, Muş, Nevşehir, Niğde, Sakarya, Samsun, Sinop, Sivas, Tekirdağ, Tokat, Tunceli, Zonguldak (Medvedev, 1975; Tomov & Gruev, 1975; Gruev & Tomov, 1984; Tomov, 1984; Aslan & Özbek, 1997a; Sassi & Kısmalı, 2000; Gök, 2002; Turanlı *et al.*, 2002; Warchałowski, 2003; Gök & Gürbüz, 2004; Gruev, 2005a; Atay & Çam, 2006; Aslan *et al.*, 2009; Özdikmen, 2011). New record for Aydın province.

Host Plant: A single specimen was caught with sweeping net. The host plant could not be determined.

Cryptocephalus fulvus Goeze 1777

Material: DPNP, Aydın; 24.vii.2020, 37°37'53''N, 27°07'43''E, 7m, 1 specimen.

Distribution: Ankara, Antalya, Çanakkale, Denizli, Edirne, Erzincan, Erzurum, Gümüşhane, Isparta, İzmir, Kırklareli, Manisa, Mersin, Muğla, Tokat, Tunceli, (Medvedev, 1975; Gruev &

Tomov, 1984; Aslan & Özbek, 1997a; Campobasso *et al.*, 1999; Sassi & Kısmalı, 2000; Gök, 2002; Turanlı *et al.*, 2002; Gök & Çilbıroğlu, 2003; Warchałowski, 2003; Atay & Çam, 2006; Maican, 2007). New record for Aydın province.

Host Plant: A single specimen was caught with sweeping net. The host plant could not be determined.

***Cryptocephalus ilicis* Olivier 1808**

Material: DPNP, Aydın; 28.v.2021, 37°39'09"N, 27°03'41"E, 418m, 4 specimens; 18.iv.2021, 37°39'55"N, 27°00'32"E, 8m, 2 specimens.

Distribution: Aydın, Balıkesir, Bursa, İstanbul, İzmir, Konya, Manisa, Kırklareli (Sahlberg, 1913; Aslan & Özbek, 1997a; Sassi & Kısmalı, 2000; Schöller, 2002; Turanlı *et al.*, 2002).

Host Plant: *Quercus* spp. (Fagaceae)

***Cryptocephalus pygmaeus* Fabricius 1792**

Material: DPNP, Aydın; 17.vi.2020, 37°41'50"N, 27°11'11"E, 85m, 17 specimens; 18.vi.2020, 37°36'44"N, 27°12'58"E, 1m, 5 specimens; 18.iv.2021, 37°39'55"N, 27°00'32"E, 8m, 6 specimens; 28.v.2021, 37°39'09"N, 27°03'41"E, 3m, 6 specimens.

Distribution: Adana, Afyonkarahisar, Aksaray, Antalya, Aydın, Bursa, Denizli, Erzurum, Isparta, İzmir, Kocaeli, Manisa, Mersin, Muğla, Niğde, (Sahlberg, 1913; Giray, 1982; Gruev & Tomov, 1984; Tomov, 1984; Aslan & Özbek, 1997a; Sassi & Kısmalı, 2000; Gök, 2002; Schöller, 2002; Turanlı *et al.*, 2002; Gök & Çilbıroğlu, 2003; Warchałowski, 2003; Gruev, 2004; Şen & Gök, 2009; Özdikmen, 2011).

Host Plant: *Mentha* spp. (Lamiaceae)

Subfamily Chrysomelinae Latreille 1802

Tribus Chrysomelini Latreille 1802

Genus *Chrysolina* Motschulsky 1860

***Chrysolina coerulea* (Scriba 1791)**

Material: DPNP, Aydın; 17.vi.2020, 37°37'53"N, 27°07'43"E, 7m, 5 specimens.

Distribution: Ankara, Antalya, Artvin, Erzincan, Erzurum, Hatay, İzmir, Kahramanmaraş, Kastamonu, Kars, Mersin (Sahlberg, 1913; Medvedev, 1970; Kasap, 1988a; Aslan, Gruev *et al.*, 2003; Gök & Çilbıroğlu, 2003; Gök & Gürbüz, 2004; Gruev, 2004, 2005a; Maican, 2007; Özdikmen, 2011). New record for Aydın province.

Host Plant: *Mentha* spp. (Lamiaceae)

***Chrysolina herbacea* (Duftschmid 1825)**

Material: DPNP, Aydın; 18.vi.2020, 37°36'44"N, 27°12'58"E, 1m, 2 specimens; 18.iv.2021, 37°41'56"N, 27°10'25"E, 4m, 9 specimens; 28.v.2021, 37°39'55"N, 27°00'32"E, 8m, 2 specimens; 28.v.2021, 37°39'09"N, 27°03'41"E, 3m, 6 specimens.

Distribution: Aksaray, Ankara, Antalya, Artvin, Bartın, Bilecik, Bolu, Bursa, Burdur, Çankırı, Çorum, Denizli, Düzce, Edirne, Erzincan, Eskişehir, Erzurum, Isparta, İstanbul, İzmir, Kahramanmaraş, Karaman, Kastamonu, Kayseri, Kırklareli, Kocaeli, Konya, Karabük, Kırşehir, Manisa, Mersin, Muş, Nevşehir, Niğde, Ordu, Osmaniye, Samsun, Sinop, Sivas, Tokat, Trabzon, Yozgat, Zonguldak (Medvedev, 1970; Tomov & Gruev, 1975; Gruev & Tomov, 1979; Giray, 1982; Kasap, 1988a; Aslan & Özbek, 1999; Bienkowski, 2001; Aslan, Gruev *et al.*, 2003; Gök & Çilbırođlu, 2003; Warchałowski, 2003; Gök & Gürbüz, 2004; Gruev, 2004, 2005a; Atay & Çam, 2006; Aslan *et al.*, 2009; Kippenberg, 2010; Özdikmen, 2011). New record for Aydın province.

Host Plant: *Mentha* spp. (Lamiaceae)

Genus *Chrysomela* Linnaeus 1758

Chrysomela populi Linnaeus 1758

Material: DPNP, Aydın; 18.iv.2021, 37°37'18''N, 27°13'14''E, 4m, 9 specimens.

Distribution: Aksaray, Amasya, Ankara, Antalya, Aydın, Artvin, Bilecik, Bitlis, Burdur, Çorum, Denizli, Erzincan, Eskişehir, Erzurum, Isparta, İstanbul, İzmir, Kahramanmaraş, Karaman, Kastamonu, Kayseri, Kocaeli, Konya, Karabük, Kars, Manisa, Nevşehir, Niğde, Ordu, Osmaniye, Samsun, Sinop, Sivas, Tokat, Trabzon, Zonguldak (Gül-Zümreođlu, 1972; Tomov & Gruev, 1975; Gruev & Tomov, 1979; Kasap, 1988b; Aslan, 1997; Aslan & Özbek, 1999; Aslan, Gruev *et al.*, 2003; Gök & Çilbırođlu, 2005; Gruev, 2005a; Atay & Çam, 2006; Şen & Gök, 2009; Özdikmen, 2011).

Host Plant: *Populus* spp. (Salicaceae)

Genus *Colaphellus* Weise 1916

Colaphellus sophiae (Schaller 1783)

Material: DPNP, Aydın; 17.vi.2020, 37°39'55''N, 27°00'32''E, 8m, 3 specimens; 18.vi.2020, 37°39'55''N, 27°00'32''E, 8m, 4 specimens.

Distribution: Afyonkarahisar, Aksaray, Amasya, Ankara, Aydın, Bolu, Çanakkale, Denizli, Diyarbakır, Erzurum, Isparta, İstanbul, İzmir, Kastamonu, Kayseri, Konya, Karabük, Manisa, Nevşehir, Niğde, Tokat, Yozgat, Edirne (Sahlberg, 1913; Tomov & Gruev, 1975; Gruev & Tomov, 1979; Kasap, 1988b; Aslan & Özbek, 1999; Campobasso *et al.*, 1999; Aslan, Gruev *et al.*, 2003; Warchałowski, 2003; Gruev, 2004, 2005a; Atay & Çam, 2006; Şen & Gök, 2009; Özdikmen, 2011).

Host Plant: *Mentha* spp. (Lamiaceae)

Genus *Gonioctena* Chevrolat 1836

Gonioctena fornicata (Brüggemann 1873)

Material: DPNP, Aydın; 17.vi.2020, 37°30'35''N, 27°21'51''E, 3m, 9 specimens.

Distribution: Adana, Afyonkarahisar, Aksaray, Ankara, Antalya, Artvin, Bolu, Bilecik, Çankırı, Çorum, Denizli, Diyarbakır, Düzce, Erzincan, Eskişehir, Erzurum, Gaziantep, Hatay, Isparta, İzmir, Kahramanmaraş, Karaman, Kastamonu, Kayseri, Konya, Karabük, Mardin, Mersin, Muş, Nevşehir, Niğde, Osmaniye, Sinop, Tokat, Tunceli, Yozgat, Zonguldak (Sahlberg, 1913;

Medvedev, 1970; Gruev & Tomov, 1979; Kasap, 1988b; Aslan & Özbek, 1999; Aslan, Gruev *et al.*, 2003; Gök & Çilbırođlu, 2003; Warchalowski, 2003; Gök & Gürbüz, 2004; Gruev, 2004, 2005a; Atay & Çam, 2006; Aslan *et al.*, 2009; Şen & Gök, 2009; Özdikmen, 2011). New record for Aydın province.

Host Plant: *Trifolium* spp. (Fabaceae)

Subfamily Eumolpinae Hope 1840
Tribus Bromiini Baly 1865
Genus *Pachnephorus* Chevrolat 1836
Pachnephorus pilosus (Rossi 1790)

Material: DPNP, Aydın; 24.vii.2020, 37°39'55''N, 27°00'32''E, 8m, 2 specimens; 03.ix.2020, 37°41'50''N, 27°11'11''E, 85m, 1 specimen.

Distribution: The exact locality information about the distribution of this species in Turkey was not known until now (Warchalowski, 2003; Ekiz & Şen *et al.*, 2013). New record for Aydın province.

Host Plant: Specimens have been caught with sweeping net. The host plant could not be determined.

Subfamily Galerucinae Latreille 1802
Tribus Galerucini Latreille 1802
Genus *Exosoma* Jacoby 1903
Exosoma neglectum Mohr 1968

Material: DPNP, Aydın; 17.vi.2020, 37°39'55''N, 27°00'32''E, 8m, 14 specimens; 28.v.2021, 37°39'55''N, 27°00'32''E, 8m, 7 specimens.

Distribution: Adana, Amasya, Ankara, Antalya, Burdur, Diyarbakır, Erzincan, Eskişehir, Isparta, Konya, Mersin, Osmaniye (Mohr, 1968; Tomov & Gruev, 1975; Gruev & Tomov, 1979; Aslan *et al.* 2000, 2009; Warchalowski, 2003; Gök & Duran, 2004; Şen & Gök, 2009; Özdikmen, 2011). New record for Aydın province.

Host Plant: *Allium* spp. (Amaryllidaceae)

Genus *Radymna* Reitter 1913
Radymna fischeri (Faldermann 1837)

Material: DPNP, Aydın; 28.v.2021, 37°39'55''N, 27°00'32''E, 8m, 2 specimens.

Distribution: Ankara, Erzurum, Gaziantep, Iğdır, Isparta, Kayseri, Kars, Niğde (Gruev & Tomov, 1979; Aslan 1998, 2000; Warchalowski, 2003; Gök & Duran, 2004; Şen & Gök, 2009; Özdikmen, 2011). New record for Aydın province.

Host Plant: Two specimens were caught with sweeping net. The host plant could not be determined.

Genus *Xanthogaleruca* Laboissiere 1934
Xanthogaleruca luteola (Müller 1766)

Material: DPNP, Aydın; 18.iv.2021, 37°30'35''N, 27°21'51''E, 3m, 2 specimens.

Distribution: Ankara, Antalya, Aydın, Balıkesir, Bilecik, Bolu, Eskişehir, Erzurum, Iğdır, İstanbul, İzmir, Karabük, Muğla, Samsun, Sinop, Tekirdağ, Trabzon, Zonguldak (Sahlberg, 1913; Medvedev, 1970; Tomov & Gruev, 1975; Gruev & Tomov, 1979; Aslan 1998; Aslan *et al.* 2000; Turanlı & Kısmalı, 2003; Gruev, 2004, 2005a; Maican, 2007; Özdikmen, 2011).

Host Plant: *Ulmus* spp. (Ulmaceae)

Tribus *Alticini* Newman 1835
Genus *Altica* Müller 1764
Altica lythri Aubé 1843

Material: DPNP, Aydın; 17.vi.2020, 37°39'55''N, 27°00'32''E, 8m, 4 specimens; 24.vii.2020, 37°36'44''N, 27°12'58''E, 1m, 1 specimen.

Distribution: Antalya, Denizli, Erzurum, Isparta, İzmir, Trabzon (Aslan *et al.*, 1999, 2009; Çilbiroğlu, 2003; Warchałowski, 2003; Çilbiroğlu & Gök, 2004; Gruev, 2004; Aslan, 2007; Şen & Gök, 2009; Aslan, 2010; Özdikmen, 2011). New record for Aydın province.

Host Plant: *Epilobium* spp. (Onagraceae)

Genus *Chaetocnema* Stephens 1831
Chaetocnema tibialis (Illiger 1807)

Material: DPNP, Aydın; 22.vii.2020, 37°30'35''N, 27°21'51''E, 3m, 6 specimens.

Distribution: Aksaray, Amasya, Ankara, Antalya, Balıkesir, Burdur, Çanakkale, Düzce, Erzincan, Eskişehir, Erzurum, Isparta, İzmir, Kocaeli, Konya, Kars, Malatya, Samsun (Sahlberg, 1913; Gruev & Kasap, 1985; Gruev & Döberl, 1997; Aslan *et al.*, 1999, 2009; Aslan, Özbek *et al.* 2003; Çilbiroğlu 2003; Warchałowski, 2003; Aslan & Gök, 2006; Aslan, 2007; Aslan & Ayvaz, 2009; Şen & Gök, 2009; Konstantinov *et al.*, 2011; Özdikmen, 2011). New record for Aydın province.

Host Plant: *Beta* spp. (Amaranthaceae)

Genus *Longitarsus* Latreille 1829
Longitarsus albineus (Foudras 1860)

Material: DPNP, Aydın; 22.vii.2020, 37°30'35''N, 27°21'51''E, 3m, 4 specimens.

Distribution: Antalya, Aydın, Burdur, Erzurum, Isparta, İzmir, Kayseri, Konya, Mersin, Niğde (Sahlberg, 1913; Gruev & Kasap, 1985; Gruev & Döberl, 1997; Gruev, 1998, 2004; Aslan *et al.*, 1999, 2009; Çilbiroğlu, 2003; Warchałowski, 2003; Aslan & Gök, 2006; Aslan, 2007, 2010).

Host Plant: Specimens were caught with sweeping net. The host plant could not be determined.

Genus *Phyllotreta* Chevrolat 1836
***Phyllotreta nigripes* (Fabricius 1775)**

Material: DPNP, Aydın; 22.vii.2020, 37°30'35''N, 27°21'51''E, 3m, 16 specimens; 03.ix.2020, 37°36'44''N, 27°12'58''E, 1m, 3 specimens; 18.iv.2021, 37°39'55''N, 27°00'32''E, 8m, 3 specimens.

Distribution: Adana, Ankara, Antalya, Bayburt, Bilecik, Erzincan, Eskişehir, Erzurum, Hatay, Iğdır, Isparta, Kayseri, Konya, Kars, Manisa, Mersin, Sivas, Yozgat, Edirne (Sahlberg, 1913; Král, 1967; Tomov & Gruev, 1975; Gruev & Kasap, 1985; Gruev & Döberl, 1997; Aslan *et al.*, 1999, 2009; Aslan *et al.*, 2003; Warchałowski, 2003; Aslan & Gök, 2006; Aslan, 2007, 2010; Aslan & Ayvaz, 2009; Şen & Gök, 2009; Özdikmen, 2011). New record for Aydın province.

Host Plant: *Brassica* spp. (Brassicaceae)

Genus *Podagrica* Chevrolat 1836
***Podagrica malvae* (Illiger 1807)**

Material: DPNP, Aydın; 18.vi.2020, 37°41'54''N, 27°10'34''E, 15m, 1 specimen.

Distribution: Ankara, Antalya, Artvin, Bursa, Eskişehir, Erzurum, Giresun, Iğdır, Isparta, İstanbul, İzmir, Kayseri, Kırklareli, Konya, Manisa, Mersin, Niğde, Osmaniye, Sivas (Sahlberg, 1913; Král, 1967; Gruev & Kasap, 1985; Gruev & Döberl, 1997; Aslan *et al.*, 1999, 2009; Çilbıroğlu, 2003; Warchałowski, 2003; Gök & Çilbıroğlu 2004; Gruev, 2004; Aslan & Gök, 2006; Aslan, 2007, 2010; Aslan & Ayvaz, 2009; Özdikmen, 2011). New record for Aydın province.

Host Plant: *Malva sylvestris* (Malvaceae)

Species Numbers and Subfamily Composition in Dilek Peninsula Büyük Menderes Delta National Park

So far the number of Chrysomelidae species including 29 Bruchinae species (Ekiz, 2022) were recorded in Aydın increased from 60 to 78 (**Table 2**).

Table 2: Summary of species numbers recorded from Aydın province

	N. of species
Previously recorded Chrysomelidae species excluding Bruchinae	31
Previously recorded Bruchinae species	29
Species recorded in this study	34
New records for Aydın province in this study	18
Total Chrysomelidae species known from Aydın province	78

The number of species on the basis of the subfamilies was determined and Cryptocephalinae has the first place with a share of 32% and 11 species, and followed by Galerucinae containing Alticini with 8 species and a share of 23% (**Figure 3**). This composition matches with the dominant shrub vegetation of the area.

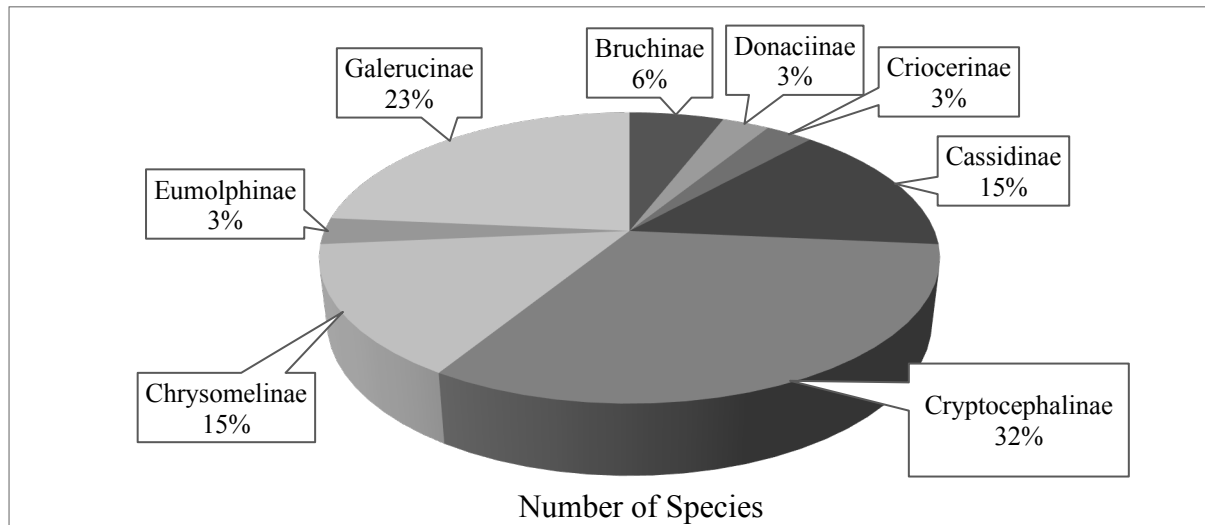


Figure 3: Proportion of species based on subfamilies

DISCUSSION AND CONCLUSIONS

A monitoring study on leaf beetles (Chrysomelidae) in DPNP of Aydın province has not been done before. From different areas of Aydın province, 31 species of leaf beetles were reported so far (Ekiz & Şen *et al.*, 2013; Aslan *et al.* 2013; Aslan *et al.* 2014; Bayram & Aslan 2015). In this study, 34 species belonging to 8 subfamilies and 26 genera were determined within the borders of DPNP. Of these species, 16 were previously recorded from Aydın province and 18 are new records for Aydın province (**Table 1**).

Biodiversity is one of the most important natural values of a country. Especially the invertebrate fauna of our country has not been studied sufficiently yet. Recently, similar studies have been carried out in many insect groups and contribute to revealing Turkey's biological diversity. New localities and species records resulting from faunistic studies will provide a better knowledge of our biodiversity.

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