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Buprestidae (Coleoptera) species in stone fruit trees in Tekirdağ province

Tekirdağ ili sert çekirdekli meyve ağaçlarında bulunan Buprestidae (Coleoptera) türleri

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ABSTRACT

This study was carried out to determine the Buprestidae (Coleoptera) species of stone fruit trees in Tekirdağ. Field studies was conducted in 4 different districts; Malkara, Muratlı, Şarköy and Süleymanpaşa between March 2014-January 2016. Samplings and observations on cherry, peach and plum orchards will be carried out representing at least 10% of the total area. Species of the family Buprestidae and their densities was determined using different sampling methods as visual observation, trapping, and beating. A total of 13 species belonging to 9 genera were identified. These species were; *Anthaxia (Anthaxia) nitidula signaticollis* Krynicki, 1832, *Anthaxia (Haplantaxia) cichorii* (Olivier, 1790), *Anthaxia (Anthaxia) bicolor* (Faldermann, 1835), *Agrilus viridis* L., 1758, *Capnodis tenebrionis* (Olivier, 1790), *Capnodis tenebrionis* (L., 1758), *Chalcophorella (Chalcophorella) stigmatica* (Schoenherr, 1817), *Chrysobothris (Chrysobothris) affinis* (Fabricius, 1794), *Julodis ehrenbergii* Lamporte & Gory 1835, *Ovalisia (Palmar) balcanica* (Kirschberg, 1876), *Ovalisia (Scintillatrix) gloriosa* (Marseul, 1865), *Perotis lugubris* (Fabricius, 1777) and *Ptosima undecimmaculata* (Herbst, 1784). The most common species was *Capnodis tenebrionis* and the highest population was determined in cherry orchard.

INTRODUCTION

Buprestidae family also known as jewel beetles or metallic wood-boring beetles, is a large group of Coleoptera which has got 15.000 species of beetles (Bellamy 2008, Borror et al. 1989, Mifsudl and Bily 2002). The species is widespread in the Mediterranean region, which has got enclose Turkey (Bonsignore and Bellamy 2007, Kanat and Tozlu 2001, Lodos

and Tezcan 1995, Tezcan 1995a, 1995b, Tozlu and Özbek 2000a, 2000b). Just in our country over 404 species have been identified (Löbl and Smetana 2006).

Adults feed on pollen and leaves, exceptionally on bark of young twigs and even fungi. Larvae, who cause destructive effects, create a tunnel during their feeding activity in fruit

trees branches, roots and basal parts of trunks, especially in dead or dying trees. Therefore, this family has an economic importance in stone fruit orchards (Anonymous 2012, Lodos and Tezcan 1992, Marannino et al. 2006). It is very difficult to control this family because large part of their life cycle passes inside the tree. Because of this reason identifying the species in orchards has a very high importance.

The family problems source focused on most common species of *Capnodis* and firstly *Capnodis tenebrionis*. Many researchers have pointed out *C. tenebrionis* in terms of the losses in the fruit fields especially cherry and apricot trees in Turkey (Çınar et al. 2004, Karaca and Demirel 2011, Öztürk and Ulusoy 2003, Öztürk et al. 2004, Ulusoy et al. 1999). In recent years, problems originating because of this species have increased day by day in Tekirdağ (Anonymous 2012). Therefore, this study was conducted between 2014-2015 in order to determine Buprestidae species on stone fruit trees in Tekirdağ province.

MATERIALS AND METHODS

The study was carried out in 2014-2015 in the cherry, plum and peach orchards in districts of Malkara, Muratlı, Şarköy and Süleymanpaşa in the province of Tekirdağ in which 10% of the existing production areas (Table 1). Adult specimens were collected by different sampling methods such as visual observation, trapping and beating.

Table 1. Current fruit production areas in Tekirdağ province (TUIK 2018)

Fruit	District	Number of trees	Production amount (ton)
Cherry	Malkara	18150	436
	Muratlı	1225	16
	Süleymanpaşa	28355	1134
	Şarköy	40000	800
	Malkara	2100	63
Peach	Muratlı	895	12
	Süleymanpaşa	4900	171
	Şarköy	3900	97
Plum	Muratlı	6400	160
	Süleymanpaşa	16515	743
	Şarköy	6500	228

During the vegetation period, the trees were observed visually for 10-15 days between march-november. For this purpose, a total of 100 part of 10 trees per orchard (branches, roots or shoots) were examined in each survey (Anonymous 2011, Özkan et al. 2005).

For beating method, 4 branches of different aspects of each of the trees which were selected according to the size of the garden, were hit 3 times with the help of a stick on the end of the rubber pipe, moving adult pests were allowed to fall on the Japanese umbrella (Grigorov 1974).

Traps were placed only in cherry orchards, because cherry was cultivated in large areas than other stone fruits and high economic importance. Different types and colours of traps were used. In the literature, red, green and purple are selected from the colours determined to be attractive for Buprestidae species (Francese et al. 2008, Francese et al. 2010a, 2010b, Lelito et al. 2008, Marshall et al. 2009, Taylor et al. 2012). Green and red coloured prism sticky traps, were put 1.5 m in height in the crown of the tree. Green and purple basin traps within water were placed under the tree branch. One of each trap types was placed per da and were controlled every 15 days from march to november.

All collected insects were recorded and brought to the laboratory for identification. The specimens were identified by Prof. Dr. Göksel Tozlu (Atatürk University, Faculty of Agriculture, Department of Plant Protection, Erzurum, Turkey) and only one species, *Agrilus viridis* was identified by Mark G. Volkovitsh (Laboratory of Insect Systematics, Zoological Institute, Russian Academy of Science, Saint Petersburg, Russia).

RESULTS AND DISCUSSION

As a result of the study, 13 different species belonging to the Buprestidae family were identified in the province of Tekirdağ (Table 2).

During the study the most number of species were found on cherry trees with 11 species. *Capnodis tenebrionis* and *Chalcopharella stigmatica*, only two species, were found on plum trees but not found on cherry. On the other hand, no species was collected on peach trees. *C. tenebrionis* was determined as the most common and potentially harmful species in cherry orchards as it is in the literature (Ak and Çam 1998, Bonsignore and Vacante 2009, Cravedi and Pollini 2008, Karaca and Demirel 2011, Özkan et al. 2005, Öztürk and Ulusoy 2003, Öztürk et al. 2004, Said et al. 2014, Tezcan 1995c).

Ptosima undecimmaculata and *Capnodis* and *Anthaxia* species have been obtained in the previous studies in cherry

Table 2. Buprestidae species in stone fruit orchards in Tekirdağ in 2014-2015

Species	Collecting Method	Number of samples		Host	
		2014	2015		
<i>Agrilus viridis</i> Linné, 1758	Green prism trap	-	1	Cherry	
<i>Anthaxia (Anthaxia) nitidula</i> subsp. <i>signaticollis</i> Krynicki, 1832	Green prism trap	3	4	Cherry	
	Green basin trap	-	1	Cherry	
	Purple basin trap	-	2	Cherry	
<i>Anthaxia (Haplantaxia) cichorii</i> (Olivier, 1790)	Green prism trap	-	6	Cherry	
<i>Anthaxia (Anthaxia) bicolor</i> Faldermann, 1835	Green prism trap	-	4	Cherry	
<i>Capnodis tenebrionis</i> (L., 1758)	<i>Capnodis tenebricosa</i> (Olivier, 1790)	Visual observation	1	-	Plum
	Visual observation	132	74	Cherry	
	Green basin trap	1	1	Cherry	
	Purple basin trap	2	2	Cherry	
<i>Chalcophorella (Chalcophorella) stigmatica</i> (Schoenherr, 1817)	Visual observation	1	-	Plum	
<i>Chrysobothris (Chrysobothris) affinis</i> (Fabricius, 1794)	Red prism trap	7	1	Cherry	
<i>Julodis ehrenbergii</i> Lamporte & Gory 1835	Visual observation	1	-	Cherry	
<i>Ovalisia (Palmar) balcanica</i> (Kirschberg, 1876)	Green prism trap	2	1	Cherry	
	Green prism trap	6	1	Cherry	
	Red prism trap	8	12	Cherry	
<i>Perotis lugubris</i> (Fabricius, 1777)	Visual observation	1	-	Cherry	
<i>Ptosima undecimmaculata</i> (Herbst, 1784)	Green prism trap	2	-	Cherry	
	Beating	1	-	Cherry	

(Çınar et al. 2004, Özcan 2007, Tezcan 1995a, 1995b, 1995c, Ulusoy et al. 1999). However, *Agrilus viridis*, *Ovalisia balcanica* and *O. gloriosa* were firstly recorded in the cherries in this region with this study. Other species are the same as those found in stone fruit like sour cheery, plum and apricot trees in previous studies (Gürsoy 2015, Karaca and Demirel 2011, Özkan et al. 2005, Öztürk and Ulusoy 2003, Sakalian 2003, Öztürk et al. 2004).

When the different methods were evaluated, it was determined that visual observation is a more suitable method for sampling *Capnodis* spp. In the study, over 200 samples were collected by visual observation, while only 6 samples were collected by green and purple basin traps. However,

some of other buprestid species were only collected by traps such as *Anthaxia nitidula*, *A. cichorii*, *A. bicolor*, *O. balcanica*, *O. gloriosa* and *Chrysobothris (Chrysobothris) affinis*. These species were caught by a majority prism traps, but only *Anthaxia nitidula signaticollis* by green and purple basin traps. In terms of colour attractiveness of traps, the green colour (44) was more attractive than others like in literature (Crook and Maestro 2010, McIntosh et al. 2001, Rassati et al. 2014). Beating was not useful method for sampling, because buprestids strongly hold on branches with their legs and they did not easily fall on the Japanese umbrella. Only one adult *Ptosima undecimmaculata* was collected by beating.

Agrilus viridis L., 1758

General distribution: Albania, Europe, Finland, Germany, Hungary, Iran, Italy, Latvia, Macedonia, the Caucasus, Siberia, South Russia, Turkey (Lodos and Tezcan 1995, Sakalian 2000, Barševskis and Savenkov 2001, Barimani Varandi et al. 2009, Corte et al. 2009, Lakatos and Molnar 2009, Molnar et al. 2010, Pentinsaari et al. 2014).

Distribution in Turkey: Non-intensive populations have been reported in Turkey and sampled almost every province from Edirne to Van (Niehuis and Tezcan 1993, Lodos and Tezcan 1995, Tuncer and Ecevit 1997, Sakalian 2003).

Host plant: *Acer pseudoplatanus* L., *Alnus* sp. *Alnus glutinosa* (L.), *Carpinus* sp., *Fagus sylvatica* L., *Salix* sp., *Salix caprea* L., *Tilia* sp., *Ulmus* sp. *Zelkova* sp. as larval hosts and *Fagus sylvatica* L., *Fraxinus excelsior* L., *Tilia* sp., *Salix* sp., *Ulmus* sp. as adult hosts were recorded (Bernhard et al. 2005, Lakatos and Molnar 2009, Pentinsaari et al. 2014, Jendek and Poláková 2014, Jendek 2016, Pellegrino et al. 2017).

Material examined: on *Prunus avium*, Naip (Süleymanpaşa) 24.07.2014 (1); Yazır (Süleymanpaşa) 24.07.2014 (1); 26.07.2014 (1)

Anthaxia (Anthaxia) bicolor Faldermann, 1835

General distribution: Armenia, Azerbaijan, Bulgaria, Eastern Mediterranean, Georgia, Greece, Iran, Iraq, Israel, Spain, the Caucasus, Uzbekistan, Romania, Russia (southern European part), Syria, Turkey, Turkmenistan, Ukraine (south of), Yugoslavia (Bily 1984, 1997, Ruicanescu 1995, Tozlu and Özbek 2000a, 2000b, Abivardi 2001, Sánchez Sobrino and Tolosa Sánchez 2005, Huseynova 2013).

Distribution in Turkey: Adana, Artvin, Aydın, Erzurum, Hakkâri, İçel and İzmir (Bily 1984, 1997, Tozlu and Özbek 2000a).

Host plant: Larvae have been reported to be fed on *Fraxinus*, *Carpinus*, *Ulmus*, *Quercus* species and adults feed on the *Achillea* species *Senecia*, *Crataegus* and *Spiraea* (Ruicanescu 1995, Tozlu and Özbek 2000a, Abivardi 2001).

Material examined: on *P. avium*, Yazır (Süleymanpaşa) 26.05.2015 (4).

Anthaxia (Haplantaxia) cichorii Olivier, 1790

General distribution: Albania, Algeria, Armenia, Austria, Azerbaijan, Belgium, Bulgaria, Crete, Cyprus, Czech Republic, France, Georgia, Greece, Hungary, Iraq, Iran, Israel, Italy, Morocco, Spain, Switzerland, Poland, Portugal, Romania, Russia, Syria, Turkey, Ukraine, Wales, Yugoslavia (Bily 1984, 1997, Tozlu and Özbek 2000a, Sakalian 2003, Sakalian and Langourov 2004, Volkovitsh and Niehuis 2012).

Distribution in Turkey: Adana, Ankara, Antalya, Artvin, Aydın, Bartın, Bolu, Bitlis, Diyarbakır, Gaziantep, Hakkâri, Hatay, İçel, İzmir, Karabük, Karaman, Malatya, Manisa, Mardin, Muğla, Sivas, Şırnak, Osmaniye and Tokat (Ak and Çam 1998, Ulay and Tezcan 1998, Tozlu and Özbek 2000a, Yardibi and Tozlu 2013, Gürsoy 2015).

Host plant: *Achillea millefolium* L., *Centaurea* sp., *Daucus carota* L., *Ficus* sp., *Leucanthemum* sp., *Malus* sp., *Matricaria* sp., *Melilotus* sp., *Paliurus* sp., *Populus* sp., *Prunus* sp., *P. avium*, *P. domestica*, *Pyrus* sp., *Rosa* sp., *Rubus* sp., *Quercus* sp., *Triticum* sp. (Ulay and Tezcan 1998, Akşit et al. 2005, Özcan 2007, Gürsoy 2015).

Material examined: on *P. avium*, Yazır (Süleymanpaşa) 26.06.2014 (1); Naip (Süleymanpaşa) 24.07.2014 (1); Yurtbekler (Muratlı) 26.06.2014 (1), 22.07.2015 (5).

Anthaxia (Anthaxia) nitidula signaticollis Krynicki, 1832

General distribution: Balkan countries, Hungary, Slovakia, Syria, Ukraine, Turkey (Bily 1997, Sakalian 2000, Tozlu and Özbek 2000a, Domingue et al. 2013).

Distribution in Turkey: This species can be seen almost anywhere in Turkey from Izmir to Erzurum (Lodos and Tezcan 1995, Bily 1997, Ak and Çam 1998, Tozlu and Özbek 2000a).

Host plant: *Prunus avium*, *P. domestica*, *Rubus* sp., *Quercus* sp., *Crataegus orientalis* Pall., *Malus* sp., *Corylus avellana* L., *Malus sylandstris* subsp. *mitis* (Wallr.) (Tezcan 1995b, Ak and Çam 1998, Karaman and Tezcan 1998, Domingue et al. 2013, Gürsoy 2015).

Material examined: on *P. avium*, Yazır (Süleymanpaşa) 26.06.2014 (1); Yurtbekler (Muratlı) 26.06.2014 (1); Naip (Süleymanpaşa) 24.07.2014 (1).

Chalcophorella (Chalcophorella) stigma Schoenherr, 1817

General distribution: Albania, Bulgaria, Bosnia and Herzegovina, Croatia, Greece, Iran, Iraq, Israel, Macedonia, Egypt, Syria and Turkey (Lodos 1989, Sakalian 2003, Anonymous 2017a, TUIK 2018).

Distribution in Turkey: It was one of the most common species in Central Anatolia, Aegean, Mediterranean regions and eastern provinces such as Erzurum, Erzincan and Artvin (Lodos 1989, Bahadroğlu et al. 2007, Anonymous 2017a).

Host plant: *Prunus*, *Ficus*, *Quercus* and *Amygdalus* (Sakalian 2003).

Material examined: on *Prunus cerasifera*, Naip (Süleymanpaşa) 01.07.2014 (1).

Capnodis tenebricosa (Olivier, 1790)

General distribution: Afghanistan, Albania, Algeria, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, France, Greece, Iraq, Iran, Italy, Morocco, Macedonia, Moldova, Portugal, Romania, Slovenia, Spain, Tajikistan, Ukraine, Yugoslavia (Lodos and Tezcan 1995, Tozlu and Özbek 2000b, Sakalian 2003, Barimani Varandi et al. 2009, Anonymous 2017a, Anonymous 2018).

Distribution in Turkey: It has been identified in Western and Central Anatolia (Lodos and Tezcan 1995, Tozlu and Özbek 2000b, Anonymous 2017a).

Host plant: *Rumex* and *Prunus* (Lodos and Tezcan 1995, Sakalian 2003).

Material examined: on *P. cerasifera*, Naip (Süleymanpaşa) 01.07.2014 (1).

Capnodis tenebrionis (Linnaeus, 1758)

General distribution: Bulgaria, the Caucasus, around the Mediterranean, Central Europe, South Russia, Yugoslavia, Romania, and Iran (Lodos and Tezcan 1995, Sakalian 2000, Tozlu and Özbek 2000b, Levey 2006, Gashtarov 2006, Bonsignore et al. 2007, Bonsignore and Vacante 2009, Mfarrej and Sharaf 2010, Said et al. 2014).

Distribution in Turkey: Adana, Çanakkale, Diyarbakır, Elazığ, İzmir, Kahramanmaraş, Malatya, Mardin, Niğde, Tokat provinces in the West and Central Anatolia, Marmara Regions (Akman and San 1975, Lodos and Tezcan 1995, Tezcan 1995b, Ak and Çam 1998, Öztürk and Ulusoy 2003, Sakalian 2003, Öztürk et al. 2004, Çınar et al. 2004, Bahadıroğlu et al. 2007, Ertop and Özpınar 2010, Karaca and Demirel 2011, Bolu and Özgen 2011, Öztürk and Kalkar 2011).

Host plant: *C. tenebrionis* is a most important pest in stone fruit orchards (Ben-Yehuda et al. 2000). In the Rosacea family, stone core fruit trees are the main hosts. Fruit trees of the genus *Prunus*; *P. armeniaca* L., *P. avium* L., *P. domestica* L., *P. cerasus* L., *P. persica* L., *P. amygdalus* Batsch., *Armeniaca vulgaris* are the main hosts (Lodos and Tezcan 1995, Ak and Çam 1998, Öztürk and Ulusoy 2003, Sakalian 2003, Öztürk et al. 2004, Çınar et al. 2004, Bonsignore et al. 2007, Uygun et al. 2010, Ertop and Özpınar 2010, Karaca and Demirel 2011).

Material examined: on *P. avium*, Çınarlı (Şarköy) 17.07.2014 (2); Işıklar (Süleymanpaşa) 26.06.2014 (2), 17.07.2014 (9), 08.07.2015 (3), 14.08.2015 (3); Kirazlı (Şarköy) 17.07.2014 (1), 05.08.2015 (1), 31.08.2015 (2), Naip (Süleymanpaşa) 25.04.2014 (2), 29.05.2014 (1), 09.06.2014 (1), 01.07.2014 (1), 14.07.2014 (1), 17.07.2014 (54), 24.07.2014 (1), 25.09.2014

(1), 05.05.2015 (2), 10.07.2015 (22), 14.07.2015 (10), 22.07.2015 (4), 23.07.2015 (2), 26.07.2015 (2), 31.07.2015 (4), 19.08.2015 (10), 25.08.2015 (1), 28.08.2015 (1), 04.09.2015 (2), 05.09.2015 (2), 21.09.2015 (1); TBAEM (Süleymanpaşa) 01.07.2014 (22), 16.07.2014 (8), 16.07.2014 (1), 17.07.2014 (1), 18.08.2014 (1), 24.08.2014 (3), 15.08.2015 (1); Yazır (Süleymanpaşa) 17.04.2014 (1), 15.05.2014 (4), 26.06.2014 (4), 17.07.2014 (9), 17.07.2014 (1), 07.08.2014 (3), 15.07.2015 (1), 18.07.2015 (1), 24.08.2015 (1).

Chrysobothris (Chrysobothris) affinis (Fabricius, 1794)

General distribution: In the vast majority of Europe except in England and Northern Scandinavia, also Caucasus, Great Russia, Siberia and Egypt (Lodos and Tezcan 1995, Sakalian 2000, Tozlu and Özbek 2000b).

Distribution in Turkey: Marmara (Thrace, Kocaeli, Istanbul), a part of the Aegean Region (between İzmir and Muğla), Central Anatolia and some of East Anatolia (such as Artvin and Erzurum) (Lodos and Tezcan 1995, Tezcan 1995b, Ak and Çam 1998, Tozlu and Özbek 2000b, Sakalian 2003, Bolu et al. 2005).

Host plant: Within the wide host range, fruit trees (cherries, apricots, peaches, figs, plums), poplar, linden, wild roses, acacia, willow and oak forest, park and ornamental plants, in addition to hazelnut, mulberry, cranberry species among the species gets. However, economic damage does not create much damage. In some periods, by decreasing the value of timber, it causes losses. There is no data on economic importance in our country (Lodos and Tezcan 1995, Sakalian 2003, Bolu et al. 2005).

Material examined: on *P. avium*, Yurtbekler (Muratlı) 26.06.2014 (7).

Julodis ehrenbergii Lamporte & Gory, 1835

General distribution: Southern Western Europe (Balkans), Cyprus, Egypt, Iran, Iraq, Syria, Israel (Sakalian 2003, Anonymous 2017b, 2017c, 2017d).

Distribution in Turkey: It is reported that there are about 15 species of *Julodis* and most of them are in South Eastern Anatolia (Lodos and Tezcan 1995).

Host plant: There are not many studies on host plants of the genus *Julodis*. It is stated in the literature that individuals belonging to this genus are fed in the roots of various plants and some species are fed in pistachio, oak, blackberry apricot and *Pistacia terebinthus* plants (Lodos and Tezcan 1995, Anonymous 2017b, 2017c).

Material examined: on *P. avium*, Naip (Süleymanpaşa) 20.06.2014 (1).

Ovalisia (Palmar) balcanica (Kirschberg, 1876)

General distribution: Azerbaijan, Armenia, Bulgaria, Greece, Iran, Macedonia, Turkey, Yugoslavia (Bellamy 2008, Löbl and Löbl 2016, Anonymous 2017a, 2017d).

Distribution in Turkey: This species has been reported in Thrace region (Anonymous 2017a).

Host plant: *Prunus avium* and *P. cerasus* (Hellrigl 1972).

Material examined: on *P. avium*, Yurtbekler (Muratlı) 24.07.2014 (2).

Ovalisia (Scintillatrix) gloriosa (Marseul 1865)

General distribution: Bosnia and Herzegovina, Armenia (Yerevan), Iran, Israel, Italy, Yugoslavia, Bulgaria, Greece, Macedonia, Cyprus, Syria, Iraq (Tozlu and Özbek 2000a, 2000b, Mühle et al. 2000, Sakalian 2003, Kubáň 2006, Anonymous 2018).

Distribution in Turkey: Istanbul and Erzurum (Obenberger 1958, Tozlu and Özbek 2000a).

Host plant: *Carpinus*, *Malus*, *Salix* (Tozlu and Özbek 2000a, Sakalian 2003).

Material examined: on *P. avium*, Yurtbekler (Muratlı) 26.06.2014 (5), 17.07.2014 (3), 24.07.2014 (6).

Perotis lugubris (Fabricius, 1777)

General distribution: Algeria, Austria, Balkans, Crimea, Caucasus, Cyprus, Czechoslovakia, Germany, Hungary, Israel, Iraq, Iran, Italy, Russia, Turkmenistan, Ukraine, South and Central Europe Spain, Syria, North Africa, Lebanon, (Lodos and Tezcan 1995, Sakalian 2000, 2003, Levey 2006).

Distribution in Turkey: Except of Black Sea and Eastern Anatolia, in all other regions of Turkey, it has been identified, but more intensively reported in the neighborhoods of İçel and Adana (Ak and Çam 1998, Ulusoy et al. 1999, Tozlu and Özbek 2000b, Bolu 2002, Öztürk and Ulusoy 2003, Çınar et al. 2004, Öztürk et al. 2004, Özkan et al. 2005, Agrass 2006, Bolu and Özgen 2011, Kaplan and Yücel 2014, Gürsoy 2015).

Host plant: Rosaceae species of fruit trees are the hosts (Lodos and Tezcan 1995). Oil roses and cherry trees in Bulgaria; In Russia, stone fruit trees and roses; in Italy, *Acer camprestis*, *Arbutus unedo*, apple and some stone fruit trees were identified (Lodos and Tezcan 1995, Sakalian 2003, Bolu et al. 2005). It was determined on wild pear, buckthorn, oak and roses as well as many soft and stone fruit trees (Lodos and Tezcan 1995, Tezcan 1995b, Ak and Çam 1998, Çınar et al. 2004, Özkan et al. 2005, Öztürk et al. 2004, Bolu et al. 2005, Agrass 2006, Bolu and Özgen 2011).

Material examined: on *P. avium*, Naip (Süleymanpaşa) 25.04.2014 (1).

Ptosima undecimmaculata (Herbst, 1784)

General distribution: Albania, Algeria, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Cyprus, Egypt, France, Germany, Greece, Hungary, Iran, Iraq, Israel, Italy, Jordan, Lebanon, Macedonia, Montenegro, Morocco, Romania, Portugal, Spain, Switzerland, South of Russia, Serbia, Slovakia, Syria, Ukraine (Bregant et al. 1999, Sakalian 2000, Levey 2006, Monerat et al. 2016, Anonymous 2017a).

Distribution in Turkey: Adana, Adıyaman, Afyonkarahisar, Aksaray, Ankara, Antalya, Aydın, Balıkesir, Bilecik, Bingöl, Burdur, Bursa, Çanakkale, Denizli, Diyarbakır, Edirne, Elazığ, Erzincan, Erzurum, Eskişehir, Gaziantep, Hatay, Isparta, İzmir, Kahramanmaraş, Karaman, Kayseri, Kırıkkale, Kırklareli, Konya, Kütahya, Malatya, Manisa, Mardin, Mersin, Muğla, Muş, Nevşehir, Niğde, Osmaniye, Şanlıurfa, Tekirdağ, Tokat, Uşak (Tezcan 1995b, Ak and Çam 1998, Tozlu and Özbek 2000a, Öztürk et al. 2004, Tezcan 2009, Bolu and Özgen 2011, Gürsoy 2015).

Host plant: Larvae have been reported to be fed with *Amygdalus*, *Armenica*, *Cerasus*, *Crataegus*, *Malus*, *Persica*, *Prunus* and *Pyrus* species (Sakalian 2003). *Crataegus aronia* L., *Malus silandstris* (L.) Mill., *Prunus mahaleb*, *P. spinosa*, *P. avium*, *P. domestica*, *P. armeniaca*, *P. avium*, *P. dulcis*, *P. salicina* Lindl. (Tezcan 1995b, Ak and Çam 1998, Tozlu and Özbek 2000a, Öztürk et al. 2004, Bolu and Özgen 2011, Gürsoy 2015, Monerat et al. 2016). In addition to these plants, *Cydonia vulgaris*, *Mespilus germanica*, *Elaeagnus angustifolia*, *Morus alba* and *Styrax* spp. plants are also hosts of *P. undecimmaculata* (Tezcan 2009).

Material examined: on *P. avium*; Naip (Süleymanpaşa) 24.07.2014 (1); Yurtbekler (Muratlı) 24.07.2014 (2).

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ÖZET

Bu çalışma Tekirdağ ilinde sert çekirdekli meyvelerdeki Buprestidae (Coleoptera) türlerini araştırmak üzere gerçekleştirilmiştir. Araştırma 4 ilçede; Malkara, Muratlı, Şarköy ve Süleymanpaşa'da Mart 2014 ile Ocak 2016 aralığında yapılmıştır. Bu ilçelerdeki kiraz, şeftali ve erik bahçelerinde örneklemeler ve gözlem çalışmaları toplam alanın en az %10'unu temsil edecek şekilde gerçekleştirilmiştir. Buprestidae familyası türleri ve yoğunlukları farklı örnekleme metodları olarak gözle inceleme, tuzak ve silkme yöntemleri kullanılarak tespit edilmiştir. Toplam 9 cins'e ait 13 tür teşhis edilmiştir. Bu türler; *Anthaxia (Anthaxia) nitidula signaticollis* Krynicky, 1832, *Anthaxia (Haplantaxia) cichorii* (Olivier, 1790), *Anthaxia (Anthaxia) bicolor* Faldermann, 1835, *Agrilus viridis* L., 1758, *Capnodis tenebricosa* (Olivier, 1790), *Capnodis tenebrionis* (L., 1758), *Chalcophorella (Chalcophorella) stigmatica* (Schoenherr, 1817), *Chrysobothris (Chrysobothris) affinis* (Fabricius, 1794), *Julodis ehrenbergii* Lamporte & Gory 1835, *Ovalisia (Palmar) balcanica* (Kirschberg, 1876), *Ovalisia (Scintillatrix) gloriosa* (Marseul, 1865), *Perotis lugubris* (Fabricius, 1777), *Ptosima undecimmaculata* (Herbst, 1784). Tespit edilen türlerden en yaygın tür *Capnodis tenebrionis* olup, kiraz bahçelerinde en yüksek popülasyonu oluşturduğu belirlenmiştir.

Anahtar kelimeler: Buprestidae, kiraz, şeftali, erik, *Capnodis tenebrionis*, Tekirdağ, Türkiye

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