

A Study on Diurnal and Nocturnal Lepidoptera in Osmaniye, Turkey

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ABSTRACT: In this study, the fauna of diurnal and nocturnal Lepidoptera which are active day and night has been investigated in the east of the Mediterranean region of Turkey, Osmaniye province. Field studies were carried out during the years 2006-2008. By using sweep net and light traps a total of 407 specimens of butterflies and moths were collected from six different localities for this study. These specimens belong to 56 diurnal and 31 nocturnal species distributed in 14 families. The distribution of species, according to families, is as follows: Zygaenidae, 2; Hesperidae, 5; Nymphalidae, 21; Papilionidae, 1; Pieridae, 11; Lycaenidae, 13; Crambidae, 2; Pyralidae, 1; Drepanoidea, 1; Lasiocampidae, 1; Sphingidae, 1; Geometridae, 10; Erebiidae, 9 and Noctuidae, 9. The evaluation of literature revealed that all of the butterflies and moths species determined in this study are newly recorded for the Lepidoptera fauna of Zorkun plateau in the Osmaniye province.

Keywords: Biodiversity, butterfly, hasanbeyli, moth, zorkun

Osmaniye’de Diurnal ve Nocturnal Lepidoptera Türleri Üzerine Bir Araştırma

ÖZET: Bu çalışmada, Türkiye’nin Akdeniz bölgesinin doğusunda bulunan Osmaniye İlinde, gece ve gündüz aktif olan Lepidoptera takımı üzerine bir araştırma yapılmıştır. Arazi çalışmaları 2006-2008 yıllarında gerçekleştirilmiştir. Bu çalışma için gündüz ve gece arazi çalışmaları sırasında atrap ve ışık tuzakları kullanarak, altı farklı lokaliteden toplam 407 örnek toplanmıştır. Bu örneklerden, 56 tür gündüz ve 31 tür ise gece aktif olan Lepidoptera takımına ait türler olduğu tespit edilmiştir. Tür sayısının, familyalara göre dağılımı ise şu şekilde: Zygaenidae, 2; Hesperidae, 5; Nymphalidae, 21; Papilionidae, 1; Pieridae, 11; Lycaenidae, 13; Crambidae, 2; Pyralidae, 1; Drepanoidea, 1; Lasiocampidae, 1; Sphingidae, 1; Geometridae, 10; Erebiidae, 9 ve Noctuidae, 9. Bu çalışmada tespit edilen kelebek ve güve türlerinin tamamı, Osmaniye İli Zorkun yaylası Lepidoptera faunası için yeni kayıttır.

Anahtar Kelimeler: Biyoçeşitlilik, güve, hasanbeyli, kelebek, zorkun

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INTRODUCTION

The Lepidoptera, commonly known as butterflies and moths, is one of the major insect orders, both in terms of size, with some 160.000 described species in more than 120 families, and in popularity, with many amateur and professional entomologists studying them, especially butterflies (Gullan and Granston, 2010). The lepidopteran members have received more attention from entomologists and naturalists than any other insects, and certain Lepidoptera have been important in the development of ideas in evolutionary biology and ecology (Daly et al., 1998).

Lepidoptera is one of the largest orders among insects in terms of the number of species. Studies carried out in Turkey to determine the fauna and distribution of Lepidoptera are not complete yet. There are a lot of faunistic, taxonomic and ecologic studies about the Lepidoptera fauna of Turkey. The following represents a selected list of faunistic, ecologic and taxonomic studies pertaining the Lepidoptera fauna of the study area, these are arranged in chronological order: Röber, 1896; Röber, 1897; Staudinger, 1899; Wagnener, 1929; Pfeiffer, 1931; Forster, 1960; Higgins, 1966; Koçak, 1979; Leestmans et al., 1986; Oorschot and Brink, 1989; Koçak and Seven, 1994; Hesselbarth et al., 1995; Koçak and Kemal, 2008; Koçak and Kemal, 2009; Koçak and Kemal, 2012; Atay and Yolcu, 2012; Hüseyinoğlu, 2013 and Hüseyinoğlu, 2014.

The study area is located in Osmaniye province, Turkey. The Hasanbeyli and Zorkun plateaus are located in the eastern side of the Mediterranean region, Osmaniye province (Turkey). The Hasanbeyli and Zorkun plateaus are of significant research interest because of different ecosystem types in both forests and agricultural lands.

According to (Karaçetin and Welch, 2011) a total of 380 butterfly species distributed in five families have been recorded in Turkey. From the 87 species collected in the study area, only, butterflies species have been reported for the Hasanbeyli plateau (Hesselbarth et al., 1995), and there is not any record about the moths in this area. Also there is not any record about butterflies and moths in the Zorkun plateau from the study area.

The objectives of this study were to investigate the butterflies and moths fauna of the Hasanbeyli and Zorkun plateaus in the Osmaniye province and to contribute to the knowledge of the Lepidoptera species and their distribution in Turkey.

MATERIAL AND METHOD

This study was conducted during the years 2006 and 2008 in the Hasanbeyli and Zorkun plateaus (Osmaniye province) of Turkey in order to determine the diurnal and nocturnal lepidopteran fauna in the area. The specimens collected from the study area were taken from six stations, each with different localities and habitat types between altitudes 600 and 1700 m. These stations are listed in Table 1.

The field studies were carried out during May and June (from 2006 to 2008). Specimens were collected using sweep net and light traps. Collected specimens were placed in killing jars with ethyl acetate. The collection data, name of the locality altitude and geographic coordinates were noted on an envelope for every specimen collected. Each specimen was then put into this envelope. All the material was brought to the laboratory for preparation and identification. All the butterfly and moth specimens were pinned with wings spread, dried and put into collection boxes in the Entomological Research Laboratory of the Department of Biology, Mersin University. Identifications were based on different publications and reference books as: Hesselbarth et al., 1995; Fibiger, 1997; Kitching and Cadiou, 2000; Hausmann, 2001; Hacker et al., 2002; Goater et al., 2003; Miranov, 2003; Hausmann, 2004; Goater et al., 2005; Zilli and Ronkay, 2005; Fibiger and Hacker, 2007; Schintlmeister, 2008; Fibiger et al., 2009; Redondo et al., 2009; Skinner, 2009; Fibiger et al., 2010; Fibiger et al., 2011; Hausmann and Viidalepp, 2012 and author's reference collections.

All the collected material was kept in the Entomological Research Laboratory of the Department of Biology, Mersin University. The specimens have been collected from different stations during the six field studies. The altitudes, collecting dates and geographic coordinates of all collecting localities, are chronologically listed in Table 1.

Table 1. Geographic information about field studies and collecting data in the Osmaniye, Turkey

Locality	Altitude	Date of Collection	Coordinates
Hasanbeyli plateau	600 m	5.V.2006	37° 08' 23" N; 36° 29' 07" E
Hasanbeyli, Kaypak	1100 m	25.V.2006	37° 06' 41" N; 36° 27' 17" E
Zorkun, Derviş Pınarı	1500 m	9.VI.2007	36° 58' 15" N; 36° 20' 56" E
Küllü N.	1700 m	9.VI.2007	36° 57' 09" N; 36° 23' 54" E
Zorkun, Kent Ormanı	800 m	10.VI.2007	37° 01' 19" N; 36° 16' 30" E
Zorkun, Çift Mazı	800 m	5.VI.2008	37° 01' 10" N; 36° 18' 17" E

RESULTS AND DISCUSSION

During the field surveys, 407 butterfly and moth specimens have been collected. In this study, a total of 87 (56 diurnal and 31 nocturnal) species belonging to 61 genera within fourteen families and eight superfamilies' of Lepidoptera order were identified.

Total species numbers according to families are as follows: Zygaenidae (2); Hesperidae (5); Nymphalidae (21); Papilionidae (1); Pieridae (11); Lycaenidae (13); Crambidae (2); Pyralidae (1); Drepanoidea (1); Lasiocampidae (1); Sphingidae (1); Geometridae (10); Erebidae (9) and Noctuidae (9).

Table 2. Number of genera, species and Rates of families in the study area, Osmaniye, Turkey.

Superfamily	Family	Number of Genera	Number of Species	Rate %
Zygaenoidea	Zygaenidae	2	2	2.30
Papilionoidea	Hesperidae	4	5	6.00
	Nymphalidae	14	21	24.10
	Papilionidae	1	1	1.00
	Pieridae	6	11	13.00
	Lycaenidae	6	13	15.00
Pyraloidea	Crambidae	2	2	2.30
	Pyralidae	1	1	1.00
Drepanoidea	Drepanoidea	1	1	1.00
Lasiocampoidea	Lasiocampidae	1	1	1.00
Bombycoidea	Sphingidae	1	1	1.00
Geometroidea	Geometridae	8	10	11.50
Noctuoidea	Erebidae	7	9	10.40
	Noctuidae	7	9	10.40
Total 8	14	61	87	%100

The highest number of collected species in butterflies, according to families, belonged to Nymphalidae (24.10%) followed by Lycaenidae (15.00%) and Pieridae (13.00%); and highest number of species in moths, belonged to Geometridae (11.50%) followed by Erebidae and Noctuidae (10.40%). Additionally, all of the families, number of genera, species and their collecting frequency are cited in Table 2.

In this study, the highest number of genera in butterflies, according to families, belonged to Nymphalidae (14) followed by Lycaenidae and Pieridae (6); and in moths, belonged to Geometridae (8) followed by Erebidae and Noctuidae (7).

The list of species has been arranged using the higher level classification of van Nieukerken et al., 2011. The systematic list of Lepidoptera species collected in the Osmaniye province of Turkey and material examined are as follows:

Clade: APODITRYZIA Minet, 1982

Superfamily: ZYGAENOIDEA Latreille, 1809

Family: Zygaenidae Latreille, 1809

Rhagades pruni ([Denis and Schiffermüller], 1775)

Material examined: Osmaniya: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 2 ♂♂.

Zygaena loti (Denis and Schiffermüller, 1775)

Material examined: Osmaniye: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, ♂♂.

Clade: Obtectomera Minet, 1986

Superfamily: PAPILIONOIDEA Latreille, (1802)

Family: Hesperiiidae Latreille, 1809 *Carcharodus alcea* (Esper, 1780)

Material examined: Osmaniye: Hasanbeyli plateau, 600 m, 5.V.2006, ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 2 ♂♂.

Pyrgus melotis (Duponchel, 1834)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 2 ♂♂.

Pyrgus serratulae (Rambur, 1839)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 2 ♂♂.

Spialia (Neaspialia) orbifer (Hübner, [1823])

Material examined: Osmaniye: Hasanbeyli plateau, 600 m, 5.V.2006, ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, ♂♂.

Thymelicus sylvestris (Poda, 1761) Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, ♂♂.

Family: Nymphalidae Swainson, 1827

Issoria lathonia (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 4 ♂♂.

Lasiommata megera (Linnaeus, 1767)

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, ♂♂.

Argynnis (Pandoriana) pandora ([Denis and Schiffermüller], 1775)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂; Zorkun, Çift mazı, 800 m, 5.VI.2008, ♂♂.

Argynnis paphia (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂.

Melitaea athelia (Rottemburg, 1775)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂.

Melitaea (Didymaeformis) didyma (Esper, [1779])

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, 2 ♂♂.

Melitaea cinxia (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, ♂♂; Küllü N., 1700 m, 9.VI.2007, ♂♂.

Melitaea fascelis (Fabricius, 1787)

Material examined: Osmaniye: Hasanbeyli plateau, 600 m, 5.V.2006, 2 ♀♀, 2 ♂♂.

Melitaea phoebe (Denis and Schiffermüller, 1775)

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, ♂♂.

Vanessa atalanta (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, ♂♂.

Vanessa cardui (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 3 ♂♂; Zorkun; Kent ormanı, 800 m, 10.VI.2007, 3 ♂♂.

Hipparchia pellucida (Stauder, 1924)

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, 3 ♂♂.

Hyponphele Iycaon (Rottemburg, 1775)

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, 2 ♂♂.

Kirinia roxelana (Cramer, 1777)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 2 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♂♂.

Limenitis reducta Staudinger, 1901

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 2 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♂♂.

Maniola megala (Oberthür, 1909)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 2 ♂♂.

Maniola telmessia (Zeller, 1847)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 5 ♀♀, 12 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 3 ♂♂.

Melanargia syriaca (Oberthür, 1894)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 2 ♀♀, 4 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 3 ♀♀, 5 ♂♂.

Pararge aegeria (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂.

Pseudochazara telephassa (Geyer, [1827])

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, 3 ♂♂.

Polygonia c-album (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂.

Family: Papilionidae Latreille, (1802)

Iphiclides podalirius (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, ♂♂.

Family: Pieridae Duponchel, (1835)

Aporia crataegi (Linnaeus, 1758)

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, 2 ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 6 ♂♂; Zorkun, Kent ormanı,

800 m, 10.VI.2007, 2 ♀♀, 2 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Colias crocea (Fourcroy, 1785)

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, 2 ♀♀, 4 ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 3 ♂♂; Zorkun, Kent ormanı, 800 m, 10.VI.2007, 1 ♀♀, 4 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Gonepteryx cleopatra (Linnaeus, 1767)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 4 ♀♀, 6 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 3 ♀♀, 6 ♂♂.

Gonepteryx farinose (Zeller, 1847)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 1 ♀♀, 4 ♂♂.

Leptidea duponcheli (Staudinger, 1871)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂.

Leptidea sinapis (Linnaeus, 1758)

Material examined: Osmaniye: Hasanbeyli plateau, 600 m, 5.V.2006, 3 ♂♂.

Pieris brassicae (Linnaeus, 1758)

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, 2 ♀♀, 4 ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 2 ♀♀, 5 ♂♂; Zorkun, Kent ormanı, 800 m, 10.VI.2007, 3 ♀♀, 8 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♀♀, 5 ♂♂.

Pieris (Artogeia) mannii (Mayer, 1851)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 09 June, 2007, 3 ♂♂.

Pieris (Artogeia) pseudorapae Verity, 1908

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 09 June, 2007, 2 ♀♀, 3 ♂♂.

Pieris (Artogeia) rapae (Linnaeus, 1758)

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, 2 ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 3 ♀♀, 8 ♂♂; Zorkun, Kent ormanı, 800 m, 10.VI.2007, 3 ♀♀, 8 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 3 ♂♂.

Pontia edusa (Fabricius, 1777)

Material examined: Osmaniye: Hasanbeyli plateau, 600 m, 5.V.2006, 2 ♂♂; Hasanbeyli, Kaypak, 1100 m, 25.V.2006, 6 ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 4 ♂♂.

Family: Lycaenidae Stephens, 1829

Glaucapsyche alexis (Poda, 1761)

Material examined: Osmaniye: Hasanbeyli plateau, 600 m, 5.V.2006, 2 ♀♀, 4 ♂♂.

Iolana iolas (Ochsenheimer, 1816)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, ♂♂.

Celastrina argiolus (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, ♂♂; Zorkun, Kent ormanı, 800 m, 10.VI.2007, 2 ♂♂.

Lycaena (Alciphronia) alciphron (Rottemburg, 1775)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 3 ♀♀, 7 ♂♂; Küllü N., 1700 m, 9.VI.2007, ♂♂.

Lycaena phlaeas (Linnaeus, 1761)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 2 ♂♂; Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Lycaena (Loweia) tityrus (Poda, 1761)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 2 ♂♂.

Polyommatus (Aricia) agestis ([Denis and Schiffermüller], 1775)

Material examined: Osmaniye: Hasanbeyli plateau, 600 m, 5.V.2006, ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 3 ♂♂; Zorkun; Kent ormanı, 800 m, 10.VI.2007, ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Polyommatus (Sublysandra) cornelius (Freyer, [1850])

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, ♂♂.

Polyommatus icarus Rottemburg, 1775

Material examined: Osmaniye: Hasanbeyli plateau, 600 m, 5.V.2006, 1 ♀♀, 2 ♂♂; Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 4 ♀♀, 4 ♂♂; Zorkun; Kent ormanı, 800 m, 10.VI.2007, 2 ♀♀, 5 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Polyommatus semiargus (Rottemburg, 1775)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 2 ♀♀, 6 ♂♂.

Satyrium (Nordmannia) acaciae (Fabricius 1787)

Material examined: Osmaniye: Hasanbeyli,

Kaypak, 1100 m, 25.V.2006, ♂♂.

Satyrium (Nordmannia) ilicis (Esper, 1779)

Material examined: Osmaniye: Zorkun; Kent ormanı, 800 m, 10.VI.2007, 2 ♀♀, 5 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♂♂.

Satyrium (Strymonidia) spini (Fabricius 1787)

Material examined: Osmaniye: Hasanbeyli, Kaypak, 1100 m, 25.V.2006, ♂♂.

Superfamily: PYRALOIDEA Latreille, 1809

Family: Crambidae Latreille, 1810

Pyrausta sanguinalis (Linnaeus, 1767)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Palpita vitrealis (Rossi, 1794)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Family: Pyralidae Latreille, 1809

Dioryctria mendacella (Staudinger, 1859)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Clade: MACROHETEROCERA Chapman, 1893

Superfamily: DREPANOIDEA Boisduval, 1828

Family: Drepanidae Boisduval, 1828

Cilix glaucata (Scopoli, 1763)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Superfamily: LASIOCAMPOIDEA Harris, 1841

Family: Lasiocampidae Harris, 1841

Dendrolimus pini (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Superfamily: BOMBYCOIDEA Latreille, 1802

Family: Sphingidae Latreille, 1802

Deilephila elpenor (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Superfamily: GEOMETROIDEA Leach, 1815

Family: Geometridae Leach, 1815

Ascotis selenaria (Denis and Schiffermüller, 1775)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Gnophos sartata Treitschke, 1827

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♂♂.

Hypomecis punctinalis (Scopoli, 1763)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 2 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♀♀, 8 ♂♂.

Hypomecis roboraria (Denis and Schiffermüller, 1775)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 2 ♂♂; Zorkun, Çift mazi, 800 m, 5.VI.2008, 5 ♂♂.

Camptogramma bilineata (Linnaeus, 1758)

Material examined: Osmaniye: Küllü N., 1700 m, 9.VI.2007, 2 ♂♂.

Eulithis testata (Linnaeus, 1761)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂.

Cyclophora puppillaria (Hübner, 1799)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♂♂.

Idaea consanguinaria (Lederer, 1853)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♀♀, 3 ♂♂.

Scopula imitaria (Hübner, 1799)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Scopula ochraceata (Staudinger, 1901)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Superfamily: NOCTUOIDEA Latreille, 1809

Family: Erebidae Leach, 1815

Amata marjana (Stauder, 1913)

Material examined: Osmaniye: Küllü N., 1700 m, 9.VI.2007, 2 ♀♀, 3 ♂♂.

Amata phegea (Linnaeus, 1758)

Material examined: Osmaniye: Küllü N., 1700 m, 9.VI.2007, 2 ♀♀, 4 ♂♂.

Eilema muscula (Staudinger, 1899)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, 1 ♀♀, 3 ♂♂.

Catocala conversa (Esper, 1783)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Catocala eutychea Treitschke, 1835

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 4 ♀♀, 11 ♂♂; Zorkun, Çift

mazi, 800 m, 5.VI.2008, 3 ♀♀, 12 ♂♂.

Dysgonia algira (Linnaeus, 1767)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, 1 ♀♀, 4 ♂♂.

Euclidia (Euclidia) glyphica (Linnaeus, 1758)

Material examined: Osmaniye: Küllü N., 1700 m, 9.VI.2007, ♂♂.

Ophiusa tirhaca (Cramer, 1773)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Ocneria (Parocneria) detrita (Esper, [1785])

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂.

Family: Noctuidae Latreille, 1809

Acronicta aceris (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♂♂.

Acontia (Emmelia) trabealis (Scopoli, 1763)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, ♂♂.

Noctua orbona (Hufnagel, 1766)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂.

Hoplodrina ambigua (Denis and Schiffermüller, 1775)

Material examined: Osmaniye: Zorkun, Çift mazi, 800 m, 5.VI.2008, 2 ♂♂.

Mythimna (Hyphilare) l-album (Linnaeus, 1767)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 2 ♂♂.

Mythimna (Prodigithymna) prominens (Walker, 1856)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 2 ♂♂.

Mythimna (Pseudaletia) unipuncta (Haworth, 1809)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, 4 ♂♂.

Peridroma saucia (Hübner, 1808)

Material examined: Osmaniye: Zorkun, Kent ormanı, 800 m, 10.VI.2007, ♂♂.

Autographa gamma (Linnaeus, 1758)

Material examined: Osmaniye: Zorkun, Derviş pınarı, 1500 m, 9.VI.2007, 2 ♂♂.

CONCLUSION

Detailed studies must be done for the determination of the biological richness in all the regions of Turkey. At this point, there is not sufficient faunistic, taxonomic and ecological information in the literature about the Osmaniye.

In industrialized countries Lepidoptera species are confronted with extinction due to environmental pollution, destruction of biotopes, as well as factors such as the effect of pesticides and chemicals. In addition to this, some species are in danger of extinction as a result of over-collection for commercial purposes. Also, the continuing illegal use of forests and incorrect land use practices threaten to destroy the fauna diversity in the Osmaniye; therefore, illegal use of forests, incorrect land use and also the unconscious and excessive collecting of butterfly and moth specimens should be avoided and punished with legal sanctions. Additionally, detailed studies should be carried out as quickly as possible to determine the biological diversity of the Osmaniye.

This is the first study of the Lepidoptera fauna in the Osmaniye. The different ecosystem types in both agricultural lands and forests in the study area, provide richness in habitat types for animals and plants. For proper and efficient sampling, butterfly and moth species were collected in different localities possessing different vegetation types (agricultural crops, Pinus, Quercus and Cedrus forests, steppe and herbaceous) and from altitudes 600 to 1700m.

During the six field studies a total of 87 species belonging to fourteen families and eight superfamilies of Lepidoptera order were collected. 51 butterfly and 36 moth species were identified from the study area. All of the diurnal and nocturnal Lepidoptera species which were identified in this study, are first records for the Lepidoptera fauna of Zorkun plateau in the Osmaniye province. Additionally, all of the moth species, are newly records for Hasanbeyli plateau.

This study has contributed to the knowledge of the Lepidoptera fauna of the Osmaniye in the Eastern Mediterranean region of Turkey. Faunistic, ecologic and taxonomic studies from this region are very limited in number. New studies considering other insect groups should be carried out before

agricultural and forest ecosystems are destroyed. Also, plant species used by Lepidoptera as a source of food, should be identified and protected.

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