
Faunistic study on Lepidoptera from different regions of Anatolia, Turkey

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Abstract: This study was carried out in Ankara, Antalya, Denizli, Isparta, Istanbul, Kırşehir, Konya, Malatya, Nevşehir and Ordu (Turkey), during the years of 2003-2006 in order to collect data on Papilionoidea and Hesperioidea species, their distribution and current status. Butterflies samples were caught with sweep nets from 18 localities during the field work. 77 species belonging to 6 families and 2 super families were identified. According to identification results the numbers of species (belonging to families) were given as: Papilionidae (3); Pieridae (13); Argynnidæ (12); Satyridæ (22); Lycaenidae (22) and Hesperidae (5).

Keywords: Lepidoptera, Papilionoidea, Hesperioidea, Fauna, Anatolia, Turkey

1. Introduction

Butterflies are the Charismatic Megafauna of the Insect World. The wings of butterflies are colored and patterned in such a way that the majority of species can be identified on sight. They are holometabolous; that is, they have four distinct stages in their life cycle: egg, caterpillar or larva, the chrysalis or pupa, and adult (Schappert, 2005; Cassie, 2007; Canakcioglu, 1995; Canakcioglu and Mol, 1998). According to Tolman and Lewington, (1997), in view of the importance of camouflage as a survival strategy, it is not surprising that the behaviour of a butterfly is often highly correlated with its physical appearance and the character of its habitat (Kaygin et al., 2009).

Although a lot of studies about Lepidoptera fauna in Turkey, mostly regional have been carried out but Turkey's Lepidoptera fauna are not complete yet. There are several regional studies about Lepidoptera fauna in Turkey (Atay and Yolcu, 2012; Ayberk et al., 2010; Can, 2008; Hüseyinoğlu, 2000; Kaygin et al., 2009; Koçak and Seven, 1994, 1995; Koçak and Kemal, 2008, 2009, 2012; Kudrna, 1983; Lederer, 1855; Okyar and Aktaş, 1998). Hesselbarth et al. (1995) have declared that there are 345 species in Turkey.

2. Main Body

This study was conducted between years 2003 and 2006

for determination fauna of Lepidoptera in Anatolia. The researches have been carried out as field and laboratory studies. The field studies carried out in Ankara, Antalya, Denizli, Isparta, Istanbul, Kırşehir, Konya, Malatya, Nevşehir and Ordu during May- August in 18 localities and different habitat types between altitudes from 30 to 1300m. Specimens were collected using a sweep net. Collected specimens were killed in killing jars with ethyl acetate. During the collection, the collection date, name of the locality and altitude were noted on a piece of envelope for every specimen. Each specimen was then put into this envelope and all materials were brought to the laboratory for preparation and identifications. All the butterfly specimens were pinned with wings spread, dried, and put into collection boxes. For identification of specimens, different studies such as Hesselbarth et al., (1995), Hofmann and Marktanner (1995), Tolman and Lewington (1997) and author's collections of comparative materials were used.

3. Results

A total of 77 species belonging to 6 families and 2 super families of the order Lepidoptera were identified. The highest number of species belongs to Satyridæ (22, 28.6%), and Lycaenidae (22, 28.6%), followed by Pieridae (13, 16.8%), Argynnidæ (12, 15.6%), Hesperidae (5, 6.4%), and Papilionidae (3, 4%). The number of species in each family and their ratios to the families were given in Table 1.

Table 1. Number of species and rates of families in Anatolia.

Family	Number of species	Rate (%)
Papilionidae	3	4
Pieridae	13	16.8
Argynnidæ	12	15.6
Satyridae	22	28.6
Lycaenidae	22	28.6
Hesperiidae	5	6.4
Total	77	100

The systematic list of species has been formed according to Koçak and Kemal (2009). The capturing dates and the collecting locations about each specimen have been arranged as follows.

Order: LEPIDOPTERA

Suborder: RHOPALOCERA

Superfamily: PAPILIONOIDEA Latreille, (1802)

Family: PAPILIONIDAE Latreille, (1802)

Iphiclides podalirius (Linnaeus, 1758)

Antalya Thermossus National park 900m. 27.07.2003; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Denizli Maymun Mountains Göz Location 900m. 20.07.2003; Denizli Acıgöl vicinity 850m. 24.07.2003; İstanbul Şile Bozgoca village 30m. 21.07.2005; Nevşehir Hacıbektaş 1300m. 18.07.2004; Ordu Fatsa Baba village 500m. 28.08.2006.

Papilio machaon Linnaeus, 1758

Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Batıkent Yuva village 900m. 02.07.2003; Ankara Ayaş beli 1150m. 06.07.2004; Denizli Acıgöl vicinity 850m. 24.07.2003; İstanbul Şile Bozgoca village 50m. 25.08.2005.

Zerynthia (Allanacstria) deyröllei (Oberthür, 1869)

Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Malatya Akçadağ ikinciler village 500m. 25.05.2006.

Family: PIERIDAE Duponchel, (1835)

Aporia crataegi (Linnaeus, 1758)

Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Ayaş beli 1150m. 06.07.2004; Konya Akşehir sorkun 960m. 22.06.2004; Konya Akşehir sorkun 960m. 02.07.2004.

Colias crocea (Fourcroy, 1785)

Antalya Thermossus National park 900m. 27.07.2003; Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Batıkent Yuva village 900m. 02.07.2003; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Ankara Ayaş beli 1150m. 06.07.2004; Denizli Acıgöl vicinity 850m. 24.07.2003; İstanbul Şile Bozgoca village 30m. 21.07.2005; Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Konya Akşehir sorkun 960m. 22.06.2004; Konya Akşehir sorkun 960m. 02.07.2004; Nevşehir Hacıbektaş 1300m. 18.07.2004; Ordu Fatsa Baba village 500m. 28.08.2006.

Colias (Neocolias) aurorina Herrich-Schaffer, [1804]

İstanbul Şile Bozgoca village 30m. 21.07.2005.

Colias alfaciensis Ribber, 1905

Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Ayaş beli 1150m. 06.07.2004.

Euchloe ausonia (Hübner, [1804])

Konya Akşehir sorkun 960m. 22.06.2004.

Gonepteryx farinosa (Zeller, 1847)

Ordu Fatsa Baba village 500m. 28.08.2006.

Leptidea duponcheli (Staudinger, 1871)

Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004;

Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004;

Kırşehir Aşıkpaşa Atatürk forest 980m. 04.07.2004.

Leptidea sinapis (Linnaeus, 1758)

Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Denizli Maymun Mountains Göz Location 900m. 20.07.2003.

Pieris brassicae (Linnaeus, 1758)

Antalya Thermossus National park 900m. 27.07.2003; Isparta Eğirdir Boyalıköy 900m. 19.05.2004; İstanbul Şile Bozgoca village 30m. 21.07.2005; İstanbul Şile Bozgoca village 30m. 08.08.2005; İstanbul Şile Bozgoca village 50m. 25.08.2005; Malatya Akçadağ ikinciler village 500m. 25.05.2006.

Pieris (Artogeia) ergane (Geyer, [1828])

Konya Akşehir sorkun 960m. 22.06.2004.

Pieris (Artogeia) rapae (Linnaeus, 1758)

Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Batıkent Yuva village 900m. 02.07.2003; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Denizli Acıgöl vicinity 850m. 24.07.2003; Denizli Acıgöl vicinity 850m. 24.07.2003; İstanbul Şile Bozgoca village 30m. 21.07.2005; İstanbul Şile Bozgoca village 30m. 08.08.2005; İstanbul Şile Bozgoca village 50m. 25.08.2005; Konya Akşehir sorkun 960m. 22.06.2004; Konya Akşehir sorkun 960m. 02.07.2004; Nevşehir Hacıbektaş 1300m. 18.07.2004.

Pieris (Artogeia) pseudorapae Verity, 1908

Ankara Ayaş beli 1150m. 06.07.2004; Denizli Maymun Mountains Göz Location 900m. 20.07.2003; İstanbul Şile Bozgoca village 30m. 21.07.2005; İstanbul Şile Bozgoca village 30m. 08.08.2005; Konya Akşehir sorkun 960m. 22.06.2004; Konya Akşehir sorkun 960m. 02.07.2004; Malatya Akçadağ ikinciler village 500m. 25.05.2006.

Pontia edusa (Fabricius, 1777)

Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Batıkent Yuva village 900m. 02.07.2003; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Denizli Maymun Mountains Göz Location 900m. 20.07.2003; Denizli Acıgöl vicinity 850m. 24.07.2003; Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 04.07.2004; Konya Akşehir sorkun 960m. 22.06.2004; Malatya Akçadağ ikinciler village 500m. 25.05.2006.

Family: ARGYNNIDAE Duponchel, [1835]

Argynnis (Fabriciana) niobe (Linnaeus, 1758)

Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Malatya Akçadağ ikinciler village 500m. 25.05.2006.

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

Denizli Maymun Mountains Göz Location 900m. 20.07.2003; Denizli Acıgöl vicinity 850m. 24.07.2003.

Argynnis paphia (Linnaeus, 1758)

Antalya Thermossus National park 900m. 27.07.2003; İstanbul Şile Bozgoca village 30m. 21.07.2005; İstanbul Şile Bozgoca village 30m. 08.08.2005.

- Brenthis hecata* ([Denis & Schiffermüller], 1775)
Ankara Ayaş beli 1150m. 06.07.2004.
Issoria lathonia (Linnaeus, 1758)
Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 04.07.2004.
Limnitis reducta Staudinger, 1901
Denizli Maymun Mountains Göz Location 900m. 20.07.2003; Denizli Acıgöl vicinity 850m. 24.07.2003; İstanbul Şile Bozgoca village 30m. 08.08.2005.
Melitaea (phoebe) phoebe (Goeze, 1779)
Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Ayaş Sinanlı 1100m. 01.08.2003.
Melitaea (Didymaeformis) didyma (Esper, [1779])
Ankara Ayaş beli 1150m. 06.07.2004; İstanbul Şile Bozgoca village 30m. 21.07.2005; Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004.
Melitaea (Didymaeformis) fascelis (Fabricius, 1787)
Isparta Eğirdir Boyalıköy 900m. 19.05.2004.
Nymphalis antiopa (Linnaeus, 1758)
Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Nevşehir Hacıbektaş 1300m. 18.07.2004.
Polygonia (Comma) c-album (Linnaeus, 1758)
Ordu Fatsa Baba village 500m. 28.08.2006.
Vanessa cardui (Linnaeus, 1758)
Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Batıkent Yuva village 900m. 02.07.2003; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Denizli Maymun Mountains Göz Location 900m. 20.07.2003; Denizli Acıgöl vicinity 850m. 24.07.2003; İstanbul Şile Bozgoca village 30m. 21.07.2005; Konya Akşehir sorkun 960m. 22.06.2004; Konya Akşehir sorkun 960m. 02.07.2004; Ordu Fatsa Baba village 500m. 28.08.2006.
Family: SATYRIDAE Boisduval, 1833
Brintesia circe (Fabricius, 1755)
Ankara Ayaş beli 1150m. 06.07.2004.
Chazara (Neochazara) anthe (Hoffmannsegg, 1804)
Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 04.07.2004.
Chazara briseis (Linnaeus, 1764)
Ankara Batıkent Yuva village 900m. 02.07.2003; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Ankara Ayaş beli 1150m. 06.07.2004; Denizli Acıgöl vicinity 850m. 24.07.2003; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 04.07.2004; Nevşehir Hacıbektaş 1300m. 18.07.2004.
Chazara bischoffii (Herrich-Schäffer, [1846])
Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 04.07.2004.
Coenonympha pamphilus (Linnaeus, 1758)
Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Malatya Akçadağ ikinciler village 500m. 25.05.2006; Ordu Fatsa Baba village 500m. 28.08.2006.
Hipparchia (Neohipparchia) fatua (Freyer, 1844)
Denizli Acıgöl vicinity 850m. 24.07.2003.
Hipparchia (Parahipparchia) aristaeus (Bonelli, 1826)
Ankara Ayaş Sinanlı 1100m. 01.08.2003; Denizli Maymun Mountains Göz Location 900m. 20.07.2003.
Hipparchia (Parahipparchia) mersina (Staudinger, 1871)
Antalya Thermossus National park 900m. 27.07.2003.
Hipparchia (Parahipparchia) pellucida (Stauder, 1924)
Denizli Acıgöl vicinity 850m. 24.07.2003.
Hipparchia syriaca (Staudinger, 1871)
İstanbul Şile Bozgoca village 30m. 08.08.2005.
Hyponephele lupina (Costa, [1836])
Antalya Thermossus National park 900m. 27.07.2003; Ankara Ayaş beli 1150m. 06.07.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004.
Krinia (Melike) roxelana (Cramer, [1777])
Ankara Ayaş beli 1150m. 06.07.2004.
Lasiommata megera (Linnaeus, 1767)
Ankara Ayaş Sinanlı 1100m. 01.08.2003; İstanbul Şile Bozgoca village 30m. 21.07.2005; İstanbul Şile Bozgoca village 50m. 25.08.2005.
Maniola (Telmessiola) telmessia (Zeller, 1847)
Ankara Batıkent Yuva village 900m. 02.07.2003; İstanbul Şile Bozgoca village 50m. 25.08.2005.
Maniola jurtina (Linnaeus, 1758)
Antalya Thermossus National park 900m. 27.07.2003; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Ankara Ayaş beli 1150m. 06.07.2004; İstanbul Şile Bozgoca village 30m. 08.08.2005; Ordu Fatsa Baba village 500m. 28.08.2006; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004.
Melanargia (Turcargia) larissa (Geyer, [1828])
Ankara Ayaş beli 1150m. 06.07.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 04.07.2004.
Melanargia galathea (Linnaeus, 1758)
İstanbul Şile Bozgoca village 30m. 21.07.2005.
Pararge aegeria (Linnaeus, 1758)
Ordu Fatsa Baba village 500m. 28.08.2006.
Pseudochazara (Achazara) anthelea (Hübner, [1824])
Antalya Thermossus National park 900m. 27.07.2003; Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Nevşehir Hacıbektaş 1300m. 18.07.2004.
Pseudochazara lydia (Staudinger, 1878)
Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 04.07.2004.
Pseudochazara mnischezii (Herrich-Schäffer, [1851])
Ankara Batıkent Yuva village 900m. 02.07.2003; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 04.07.2004.
Pyronia tithonus (Linnaeus, 1771)
İstanbul Şile Bozgoca village 30m. 21.07.2005.
Family: LYCAENIDAE Stephenes, 1829
Celastrina argiolus (Linnaeus, 1758)
Antalya Thermossus National park 900m. 27.07.2003.
Cupido osiris (Meigen, [1829])
Isparta Eğirdir Boyalıköy 900m. 19.05.2004.

- Cupido minimus* (Fuessly, 1775)
Isparta Eğirdir Boyalıköy 900m. 19.05.2004.
Glaucopteryx (Apelles) astraea (Freyer, [1851])
Isparta Eğirdir Boyalıköy 900m. 19.05.2004.
Glaucopteryx alexis (Poda, 1761)
Isparta Eğirdir Boyalıköy 900m. 19.05.2004.
Lampides boeticus (Linnaeus, 1767)
Ankara Ayaş Sinanlı 1100m. 01.08.2003; Ankara Ayaş bel 1150m. 06.07.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Nevşehir Hacıbektaş 1300m. 18.07.2004.
Lycaena (Thersamon) thersamon (Esper, [1784])
Ankara Ayaş Sinanlı 1100m. 01.08.2003; Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004.
Lycaena phlaeas (Linnaeus, 1761)
Ankara Batıkent Yuva village 900m. 02.07.2003; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Ordu Fatsa Baba village 500m. 28.08.2006.
Plebejus (Kretania) carmon (Gerhard, [1851])
Denizli Acıgöl vicinity 850m. 24.07.2003; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004.
Plebejus (Lycaeides) idas (Linnaeus 1761)
Denizli Acıgöl vicinity 850m. 24.07.2003; Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004.
Plebejus (Plebejides) sephirus (Frivaldzky, 1835)
Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004.
Polyommatus (Albulina) loewii (Zeller, 1847)
Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004.
Polyommatus (Aricia) anteros (Freyer, [1838])
İstanbul Şile Bozgoca village 50m. 25.08.2005.
Polyommatus (Aricia) agestis ([Denis & Schiffermüller], 1775)
Antalya Thermossus National park 900m. 27.07.2003; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004.
Polyommatus (Agrodiaetus) menalcas (Freyer, [1837])
Ankara Batıkent Yuva village 900m. 02.07.2003; Denizli Maymun Mountains Göz Location 900m. 20.07.2003.
Polyommatus (Lysandra) bellargus (Rottemburg, 1775)
Malatya Akçadağ ikinciler village 500m. 25.05.2006.
Polyommatus (Plebicula) amandus (Schneider, 1792)
Antalya Thermossus National park 900m. 27.07.2003; Isparta Eğirdir Boyalıköy 900m. 19.05.2004.
Polyommatus (Thersitesia) thersites (Canterer, [1835])
Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004.
Polyommatus icarus Rottemburg, 1775
Isparta Eğirdir Boyalıköy 900m. 19.05.2004; Ankara Ayaş Sinanlı 1100m. 01.08.2003; Ankara Ayaş bel 1150m. 06.07.2004; Denizli Maymun Mountains Göz Location 900m. 20.07.2003; Denizli Acıgöl vicinity 850m. 24.07.2003; İstanbul Şile Bozgoca village 30m. 21.07.2005; Kırşehir Aşıkpaşa Atatürk forest 980m. 27.06.2004; Konya Akşehir sorkun 960m. 22.06.2004; Konya Akşehir sorkun 960m. 02.07.2004; Nevşehir Hacıbektaş 1300m. 18.07.2004; Malatya Akçadağ ikinciler village 500m. 25.05.2006; Ordu Fatsa Baba village 500m. 28.08.2006.
Pseudophilotes vicrama (Moore, 1865)
Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004.
Polyommatus (Agrodiaetus) wagneri (Forster, 1956)
Nevşehir Hacıbektaş 1300m. 18.07.2004.
Satyrus (Nordmannia) acaciae (Fabricius 1787)
Isparta Eğirdir Boyalıköy 900m. 19.05.2004.
Superfamily: HESPERIOIDEA Latreille, 1809
Family: HESPERIIDAE Latreille, 1809
Erynnis (Hesperopegasus) marloyi (Boisduval, [1834])
Denizli Maymun Mountains Göz Location 900m. 20.07.2003.
Hesperia comma (Linnaeus, 1758)
İstanbul Şile Bozgoca village 30m. 21.07.2005.
Pyrgus melotis (Duponchel, [1834])
Isparta Eğirdir Boyalıköy 900m. 19.05.2004.
Spialia (Neaspialia) orbifer (Hübner, [1823])
Kırşehir Aşıkpaşa Atatürk forest 980m. 20.06.2004.
Thymelicus lineolus (Ochsenheimer, 1808)
Ankara Batıkent Yuva village 900m. 02.07.2003;

4. Discussion

The butterfly population has decreased or vanished due to the destruction of agricultural areas and urbanization, and accordingly, the disintegration and loss of habitats (Avcı, 1994). For proper and efficient sampling, Lepidoptera species were collected in different localities possessing, different vegetation types (agricultural crops to Pinus and Quercus forests) and altitudes from 30 to 1300m. In this study it is clearly all these characteristics (locality, vegetation type, altitude and date) have an effect on distribution of living organisms, including butterflies.

In this study 77 species belonging to 6 families from order Lepidoptera identified. These families and number of species are: *Papilionidae* (3); *Pieridae* (13); *Argynniidae* (12); *Satyridae* (22); *Lycaenidae* (22) and *Hesperiidae* (5).

Ipodalirius; *P. machaon*; *C. crocea*; *P. brassicae*; *P. rapae*; *P. pseudorapae*; *P. edusa*; *V. cardui*; *C. briseis*; *M. jurtina* and *P. icarus* are the species were determined as widespread.

This study makes contribution to the Lepidoptera fauna of Ankara, Antalya, Denizli, Isparta, İstanbul, Kırşehir, Konya, Malatya, Nevşehir and Ordu in Turkey. Scientific and taxonomic studies on Lepidoptera in Anatolia are very limited in number. New studies considering insect orders should be carried out before agricultural and forest ecosystems are destroyed. On the other hand, the continuing illegal use of forests and incorrect land use practices threaten to destroy the diversity in Anatolia. Therefore, detailed studies should be carried out as quickly as possible to determine the biological diversity in Turkey.

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