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Full Length Research Paper

Lepidoptera fauna in Bartin province, in western black sea region of Turkey

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This research was performed in the field and laboratory between the years 2007 and 2008 with the aim of identifying species of the order Lepidoptera in Bartin region. The butterfly species that were existing in Bartin centrum, Amasra, Ulus, Kurucasile and in nearby regions like Inkum, Mugada, Kumluca, Kozcagiz, Cakraz etc and plus in the campus of Bartin Faculty of Forestry were brought to the laboratory after having been obtained by various methods such as butterfly net, light traps and pheromones traps. Those species having been examined under a lup and microscope were identified and protected in the laboratory. In the end of the study, the data obtained were 90 species from 21 families of Lepidoptera class. Among these species 15 have been mostly observed in agricultural areas. The samples mostly identified were Lycaenidae, Noctuidae, Nymphalidae and Satyridae.

Key words: Bartin, identification, Lepidoptera, species.

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). 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 (Tolman and Lewington, 1997a).

World butterflies number about 17,280 species representing described taxa that have not been synonymised, and are currently grouped into 1855 genera, 35 sub-families, and 7 families (Shields, 1989) . According to Schappert (2005), the Lepidoptera is the second-largest single group of similar organisms in the world (only the beetles, Coleoptera, have more species). Butterflies constitute only 11% of all lepidopteran species. In other words, more than 89% of all of the scale- winged insects are moths, not butterflies. Besides, Cassie (2007) has declared that there are 17.000 species of butterflies in the world.

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 (Akbulut et al., 2003; Avcı, 1997; Bas and Selmi, 1990; Beskardes, 2000; Can, 2008; Doganlar et al., 1981; Hakyemez, 1994; Karatepe, 2003; Kornosor, 1987; Mol and Avci, 1997; Mol, 1977; Okyar and Aktac, 1998; Okyar and Aktac, 1999; Okyar and Aktac, 2006; Okyar and Kornosor, 1997; Oymen, 1990; Ozay, 1997; Simsek, 2001). Hesselbarth et al. (1995) have declared that there are 345 species in Turkey. Although, according to Koçak and Kemal (2008a), a total of 457 species of the family *Tortricidae* was found in Turkey hence 1555 diurnal Lepidoptera species or subspecies in Turkey (Koçak and Kemal, 2008b).

This study was carried out to determine the Lepidopteran species of Bartin vicinity. Researchers found some Lepidopteran species in Bartin earlier, however this study is important since it is the first and comprehensive study of Lepidopteran species. As a matter of fact, in her master thesis study titled as "The Insects Causing Harm to Poplars in Bartin", Toper (1995) has identified the existing species of Lepidoptera class in Bartin such as *Hyphantria cunea, Lymantria dispar, Cerura vinula, Archips xylosteana*. Furthermore as noted in his master

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thesis study titled “The Insects Causing Harm to + Saplings and Indoor Plants in Bartin”, Sonmezyildiz (2006) has found 4 species (*Libythea celtis* (in Devrek), *Saturnia pavonia, Lymantria dispar, Thaumetopoea pityocampa*). *Thaumetopoea pityocampa* and *L. dispar* have been regarded as the most important forest flora harming species. The damage caused by *T. pityocampa* has been greatly observed and tried to be controlled every year in Bartin. As being a polyphagy (feeding on many types of plants), *L. dispar* has caused harm mostly to the oaks and willows. Other species have been regarded as the leaf harming ones. *L. celtis* has not been added to the butterfly fauna in Bartin as it has existed in Devrek region. In his master thesis study titled “The Insects Damaging on Elm Trees, Alders, Maples and Willows in Bartin”, Arslan (1998) has mentioned that there were *A. xylosteana* (L.), *Acronicta aceris* (L.), *Dasychira pudipunda* (L.), *Erannis defoliaria* (Clerck), *Cossus cossus* (L.), yet the information about thier biology or which plants those butterfly species chose for nourishment have not been expained. Ozkazanc (1998) has noted in his master thesis study titled “The Harmful Insects on Oaks, Beeches and Hornbeams in Forests in Bartin Province” that *A. xylosteana* (L.), *Tortrix viridana* (L.), *H. cunea* (Drury), and *L. dispar* (L.) caused damage to the leaves of oak trees in Bartin.

MATERIALS

The main material of this study has been the species of Lepidoptera existing in Bartin province. Thus, Lepidoptera samples have been obtained from different habitations and regions. Other materials have been that of various researches formerly done, thesis studies, national and foreign publications. So, information and data obtained in the end of the study have been about the extensional factor of the species identified nationwide and worldwide, the types and forms of their harms, visitors, definitions and their biology. These data gained has been used for conducting the area and laboratory studies during which the butterfly net, light traps and pheromones traps, ethyl acetate, various jars used for obtaining adults from larva, GPS receiver, insect pins, forceps, spreading board, photo camera (Samsung Pro-815) and stereomicroscope have been used as the laboratory materials.

METHODS

The samples have been collected from Bartin Centrum, Amasra, Ulus, Kurucasile, in nearby regions like Inkum, Mugada, Kumluca, Kozcagiz, Cakraz etc. and plus, in the campus of Bartin Faculty of Forestry (Figure 1, Table 1). For the identification of samples obtained, Baytas (2007), Cassie (2007), Hesselbarth et al. (1995), Hofmann and Marktanner (1995), Tolman and Lewington (1997b) have been preferred. The research has been carried out as field and laboratory studies.

Field researches

In order to collect the butterfly species, the agricultural areas, ranges in forests, roads, interior parts of valleys and prairies were scanned (Figure 2).

The nets were used to catch the butterflies that are active during daytime. The collection and preparation technique was based on Canakcioglu (1993) . The butterflies caught were killed as soon as they were collected so that they would not get any harm and their scales would not decompose. With the blotter immersed into ethyl acetate, the butterflies were put into the tightly closed jars. The info about the species, their location and date was recorded in the field notebook. The nocturnal species were collected by light traps. In order to investigate the existence of some species, the pheromones traps were placed in the appropriate areas.

Table 1. Geographic Locality Coordinates of Collected Specimens.

Locality	Locality Coordinates	
	North (N)	South (E)
Bartin central	41° 37' 25"	32° 19' 08"
Bartin forestry faculty campus	41° 36' 02"	32° 20' 47"
Kurucasile	41° 50' 25"	32° 42' 52"
Amasra	41° 44' 04"	32° 23' 18"
Ulus	41° 34' 46"	32° 38' 17"
Apdipasa	41° 30' 56"	32° 33' 22"
Kumluca	41° 26' 56"	32° 27' 34"
Kozcagiz	41° 28' 03"	32° 21' 08"

Laboratory studies

The larva samples taken to the laboratory were put into nutrition jars with the aim of obtaining adults. During nutrition operation, the old leaves left overs were replaced by the fresh leaves in a day or two days time period so as to prevent molding, thus, any potential harm for the larva. Infomation about their biological stages was noted. The wings of butterflies look better and easier to identify when spread, this was done with a spreading board. The date and location of species was noted when placed on the spreading boards. Before the identification process, samples were snaped with Samsung Pro-815. They were placed into collection boxes after their identification in order to protect them from the mold fungus and harmful insects, the naphthalene coated tablets wrapped in papers were also put into those boxes.

RESULTS

At the end of the study, the data obtained were 90 species from 21 families of Lepidoptera. The samples mostly identified have been Lycaenidae, Noctuidae, Nymphalidae and Satyridae. The species number and ratio of the families are given in Table 2 while the species identified in Bartin region, the dates and locations are presented in Table 3.

The Systematic List of Species

The systematic list of species has been formed according to Forster and Wohlfahrt (1955).

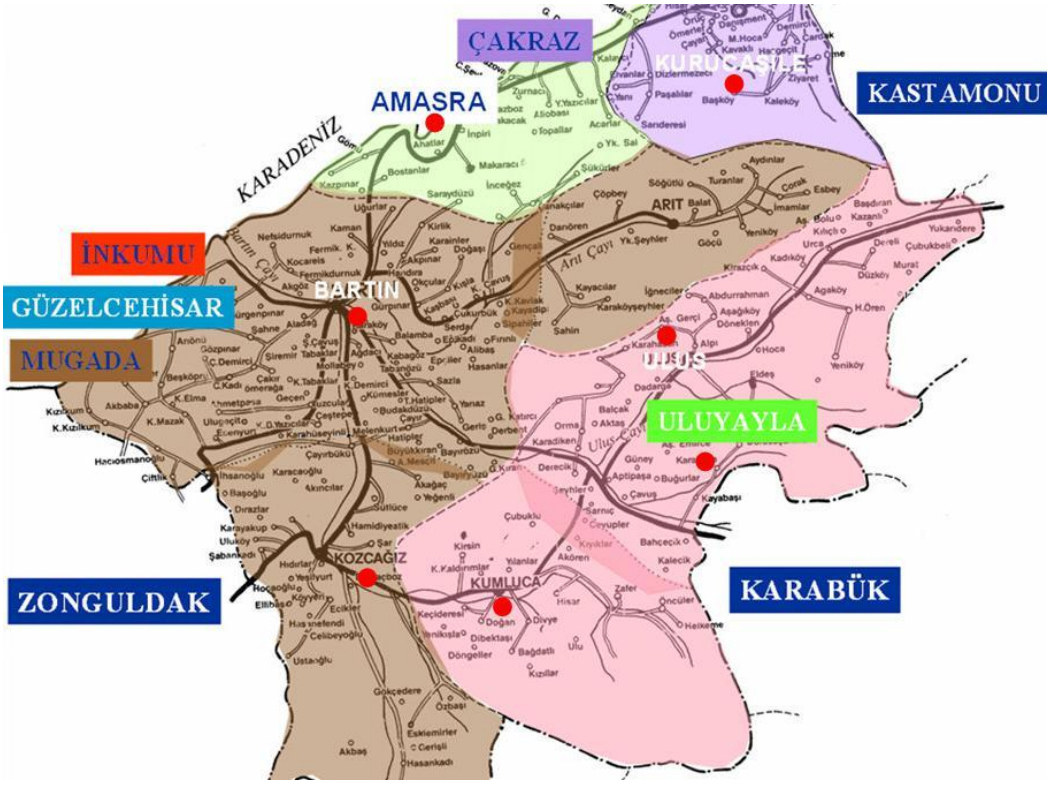

Figure 1. The map of Bartin and the particular regions samples obtained.

Figure 2. An example from the study areas; Uluyayla.

Order LEPIDOPTERA
Suborder RHOPALOCERA
Superfamily **HESPERIOIDEA** Latreille, 1809
Family **HESPERIIDAE** Latreille, 1809
Subfamily **Hesperiinae** Latreille, 1809
Thymelicus sylvestris (Poda, 1761)
Ochlodes venatus (Bremer and Grey, 1853)
Thymelicus acteon (Rottemburg, 1775)

Table 2. Number of Species and Rates of Families in Bartin Province.

Family	Number of species	Rate (%)
Hesperiidae	5	5.6
Papilionidae	2	2.2
Pieridae	7	7.8
Lycaenidae	13	14.5
Nymphalidae	9	10
Satyridae	9	10
Zygaenidae	1	1.1
Cossidae	1	1.1
Pyralidae	7	7.8
Lasiocampidae	1	1.1
Saturniidae	2	2.2
Geometridae	7	7.8
Thaumetopoeidae	1	1.1
Notodontidae	1	1.1
Arctiidae	6	6.7
Noctuidae	10	11.1
Sphingidae	3	3.3
Nolidae	1	1.1
Pterophoridae	2	2.2
Lemoniidae	1	1.1
Tortricidae	1	1.1
Total	90	100

Table 3. Identification species and Localities in Bartin Province.

Species	Date and location
Thymelicus sylvestris	22.05.2007 Karakoy and 23.05.2007 BFF Campus; 23.06.2008 Vicinity of Imamhatip High School (adult)
Ochlodes venatus	03.07.2007 and 04.07.2007, Uluyayla; 24.06.2008 Amasra (adult)
Thymelicus acteon	19.07.2008, Uluyayla (adult)
Pyrgus melotis	14.07.2007, BFF Campus; 21.07.2007 Catmaca (adult)
Carcharodus alceae	15.05.2007'de Karakoy; 04.08.2007, Kasapoglu village (adult)
Iphiclides podalirius	24.05.2007, Agdaci 15.06.2007 and 12.07.2007, BFF Campus, Uluyayla, 02.07.2008 Karakoy; 19.07.2008 Uluyayla (adult)
Zerynthia cerisy	19.04.2008 and 12.06.2008, Apdipasa (adult)
Leptidea sinapis	10.05.2007, Karakoy- Burial Place; 24.06.2007 Amasra; 20.04.2008 BFF Campus (adult)
Colias crocea	16.05.2007 and 28.05.2007, BFF Campus, 05.06.2007 Agdaci, 23.06.2008, Vicinity of Imamhatip High School and Amasra; 25.06.2008, Kurucasile (adult)
Gonepteryx rhamni	03.07.2007, Uluyayla; 20.06.2008, Imamhatip (adult)
Pieris brassicae	28.04.2007, 08.06.2007, 14.06.2007, 17.07.2007, 20.09.2007, 05.10.2007, 20.04.2008, BFF Campus, 07.05.2007 Apdipasa, 23.06.2008 Amasra, 02.07.2008 Karakoy, 25.06.2008 Kurucasile (adult)
Pieris napi	15.05.2007, 16.05.2007 and 20.04.2008 BFF Campus; 08.06.2007 Catmaca (adult)
Pontia edusa	24.06.2007, Amasra; 15.05.2007, Catmaca (adult)
Anthocharis cardamines	19.04.2008, Apdipasa (adult)
Satyrium sp	24.08.2007, Kurucasile (adult)
Lycaena dispar	14.07.2007, Amasra yolu (adult)
Lycaena phlaeas	11.05.2007, Agdaci; 16.05.2007, Karakoy; 01.11.2007, Dallica; 20.04.2008 BFF Campus; 24.06.2008 Amasra (adult)
Lycaena thersoman	24.08.2007, Kozcagiz (adult)
Leptotes pirithous	26.06.2007, Kurucasile (adult)
Cupido alcates	12.05.2007, BFF Campus (adult)
Chilades trochylus	01.11.2007, Dallica village (adult)
Plebejus agestis	11.07.2007, BFF Campus (adult)
Plebejus argus	12.05.2007, BFF Campus (adult)
Polyommatus thersites	15.05.2007, Kozcagiz (adult)
Polyommatus icarus	11.05.2007, Agdaci; 13.05.2007 and 17.05.2007, BFF Campus; 13.06.2007, Catmaca; 24.06.2008 Amasra; 01.07.2008, Kasapoglu village (adult)
Lampides boeticus	18.07.2008, Uluyayla (adult)
Plebejus pylaon	10.07.2007, BFF Campus (adult)
Chazara persephone	03.07.2007, Uluyayla (adult)
Pararge aegeria	24.06.2007, Amasra; 04.07.2007; Uluyayla (adult)
Coenonympha pamphilus	08.05.2007, BFF Campus; 11.05.2007, BFF Campus and Agdaci; 17.05.2007, 13.06.2007, 20.04.2008, 29.04.2008 and 05.05.2008 BFF Campus (adult)
Coenonympha arcania	04.07.2007, Uluyayla (adult)
Maniola jurtina	07.09.2007 and 03.06.2008 BFF Campus; 05.06.2007, Agdaci; 02.07.2008 Karakoy; 23.06.2008 Balamba; 24.06.2008 Amasra (adult)
Melanargia galathea	10.05.2007, Karakoy (Burial Place); 13.06.2007, Agdaci; 24.06.2007, Amasra; 23.06.2008, Vicinity of Imamhatip High School and Balamba (adult)
Brintesia circe	12.07.2007 and 19.07.2008, Uluyayla (adult)
Lasiommata megera	24.06.2008 Amasra; 25.06.2008, Kurucasile (adult)
Pyronia tithonus	22.07.2008 Esenyurt and Siremircavus (adult)
Argynnis aglaja	06.06.2007, Apdipasa (adult)
Argynnis pandora	01.08.2007, Epciler village; 06.09.2007, Karakisla-Ovacuma (adult)
Issoria lathonia	05.06.2007, Agdacı village; 14.06.2007, BFF Campus ; 04.07.2007, Uluyayla (adult), 23.06.2008 Imamhatip vicinity; 25.06.2008 Kurucasile; 02.07.2008 Karakoy (adult)
Vanessa atalanta	08.06.2007, BFF Campus ; 12.06.2007, Agdacı village; 01.11.2007, Dallıca village (adult)
Vanessa cardui	13.05.2007, BFF Campus ; 04.07.2007 Uluyayla (adult)
Melitaea didyma	08.06.2007, BFF Campus ; 09.06.2007, Catmaca; 26.06.2007, Kurucasile; 10.08.2007, Agdacı village; 24.06.2008 Amasra (adult)
Melitaea cinxia	10.05.2007, Ovacuma (adult)
Melitaea athalia	04.07.2007, Uluyayla (adult)
Nymphalis polychloros	23.05.2007, Agdacı village (larva)
Zygaena filipendulae	01.08.2007, Bartın Forest Enterprise park (adult)

Table 3. Contd.

Zeuzera pyrina	01.07.2008, Kaynarca (adult)
Tortrix viridana	22.07.2008, hsanoglu (adult)
Chrysocrambus craterellus	23.06.2007, Catmaca (adult)
Synaphe sp.	23.09.2007, Bartin Credit And Housing Agency Park (adult)
Uresiphita polygonalis	12.07.2007, BFF Campus (adult)
Endotricha flamealis	30.06.2007, BFF Campus (adult)
Hypsopygia costalis	03.08.2007, Catmaca (adult)
Pyrausta purpuralis	23.09.2007, Bartin Credit And Housing Agency Park (adult)
Plodia interpunctella	05.06.2007, Catmaca (adult)
Lasiocampa quercus	01.08.2007, Bartın Orman letme Müdürlü ü (adult)
Saturnia pavonia	05.04.2007 Kozcagiz (adult)
Saturnia pyri	30.05.2007, Amasra (adult)
Scopula imitaria	12.06.2007, Catmaca (adult)
Scopula rubiginata	17.06.2007, A dacı village (adult)
Ematurga atomaria	06.08. 2007, Catmaca; 23.08.2007, Kutlubey village (adult)
Aspitates ochrearia	10.04.2007, BFF Campus ; 07.05.2007, Apdipa a yolu (adult)
Fritzwagneria waltheri	10.06.2008, A dacı village (adult)
Idaea degeneraria	10.06.2007, Bartin Credit And Housing Agency Park (adult)
Proteuchloris neriaria	01.06.2007, Bartin Credit And Housing Agency Park (adult)
Agrius convolvuli	08.09.2007, A dacı village (adult)
Laothoe populi	30.05.2007 ve 01.06.2007, Bartin Credit And Housing Agency Park (adult)
Macroglossum stellatarum	06.08.2007, Amasra; 05.07.2008, Uluyayla (adult)
Thaumetopoea pityocampa	05.04 2007, Kumluca; 26.11.2007, Yıldız village; 04.04.2008 Kurucasile (larva)
Arctia villica	30.05.2007, Kozcagiz ; 06.08.2007, BFF Campus (adult)
Hyphoraia aulica	08.05.2007, Uluyayla (larva)
Spiris striata	19.08.2007 ve 03.06.2008, BFF Campus (adult)
Phragmatobia placida	11.05.2007, Bartın-Centrum Kirtepe (adult)
Dysgonia algira	03.08.2007, Catmaca; 09.09.2007, BFF Campus (adult)
Catocala elocata	11.09.2007 and 20.09.2008 BFF Campus (adult)
Mythimna vitellina	30.05.2007, Bartin Credit And Housing Agency Park (adult)
Hedana rivularis	01.06.2007, Bartin Credit And Housing Agency Park (adult)
Mormo maura	06.08.2007, BFF Campus (adult)
Noctua pronuba	06.08.2007, Agdaci (adult)
Tyta luctuosa	15.05.2007, Karakoy; 20.04.2008 and 05.05.2008, BFF (adult)
Helicoverpa armigera	13.08.2008, BFF Campus (adult)
Phalera bucephala	06.08.2007, Bartin Credit And Housing Agency Park (adult)
Nycteola asiatica	24.05.2007, Vicinity of industrial zon (Larva)
Pterophorus pentadactyla	18.06.2007 and 20.04.2008, BFF Campus (adult)
Stenoptilia zophodactylus	14.11.2007, BFF Campus (adult)
Lemonia balcanica	06.11.2007, BFF Campus (adult)

Subfamily **Pyrginae** Burmeister, 1878
Pyrgus melotis [Duponchel, (1834)]
Carcharodus alceae [Esper, (1780))
Superfamily **PAPILIONOIDEA** Latreille, (1802)
Family **PAPILIONIDAE** Latreille, (1802]
Subfamily **Papilioninae** Latreille, (1802)
Iphiclides podalirius (Linnaeus, 1758)
Zerynthia cerisy [God, (1824)]
Family **PIERIDAE** Duponchel, (1835)
Subfamily **Dismorphiinae** Schatz, 1887
Leptidea sinapis (Linnaeus, 1758)
Subfamily **Coliadinae** Swainson, 1827
Colias crocea (Fourcroy, 1785)
Gonepteryx rhamni (Linnaeus, 1758)
Subfamily **Pierinae** Duponchel, [1835]
Pieris brassicae (Linnaeus, 1758) *Pieris napi* (Linnaeus, 1758) *Pontia edusa* (Fabricius, 1777)

Anthocharis cardamines (Linnaeus, 1758)
Family **LYCAENIDAE** Stephens, 1829
Subfamily **Theclinae** Swainson, 1831
Satyrium sp. [Esper, (1779)]
Subfamily **Lycaeninae** [Leach], [1815]
Lycaena dispar (Linnaeus, 1758)
Lycaena phlaeas (Linnaeus, 1761)
Lycaena thersamon [Esper, (1784))
Subfamily **Polyommatinae** Swainson, 1827
Leptotes pirithous (Linnaeus, 1767)
Cupido (Everes) alcates (Pallas, 1771)
Chilades trochylus Freyer,[1843]
Plebejus (Aricia) agestis (Denis Schiffermüller, 1775)
Plebejus argus (Linnaeus, 1758)
Polyommatus thersites (Cantener, [1835])
Polyommatus icarus (Rottemburg, 1775)
Lampides boeticus (Linnaeus, 1767)
Plebejus (Plebijides) pylaon (Fischer von Waldheim, 1832)
Family **SATYRIDAE** Boisduval, 1833
Subfamily **Satyrinae** Boisduval, 1833
Chazara persephone (Hübner, [1805])
Pararge aegeria (Linnaeus, 1758)
Coenonympha pamphilus (Linnaeus, 1758)
Coenonympha arcania (Linnaeus, 1761)
Maniola jurtina (Linnaeus, 1758)
Melanargia galathea (Linnaeus, 1758)
Brintesia circe (Fabricius, 1775)
Lasiommata megera (Linnaeus, 1767)
Pyronia tithonus (Linnaeus, 1771)
Family **NYMPHALIDAE** Swainson, 1827
Subfamily **Heliconiinae** Swainson, 1827
Argynnis aglaja (Linnaeus, 1758) *Argynnis pandora* ([Denis&Schiffermüller], 1775)

Issoria lathonia (Linnaeus, 1758)
Subfamily **Nymphalinae** Swainson, 1827
Vanessa atalanta (Linnaeus, 1758)
Vanessa cardui (Linnaeus, 1758) *Melitaea didyma* (Esper, 1779)
Melitaea cinxia (Linnaeus, 1758)
Melitaea athalia (Rottemburg, 1775)
Nymphalis polychloros (Linnaeus, 1758)
Suborder **HETEROCERA**
Superfamily **ZYGAENOIDEA** Latreille, 1809
Family **ZYGAENIDAE** Latreille, 1809
Subfamily **Zygaeninae** Latreille, 1809
Zyggena filipendulae (Linnaeus, 1758)
Superfamily **COSSOIDEA** Leach, [1815]
Family **COSSIDAE** Leach, [1815]
Subfamily **ZEUZERINAE** Boisduval, 1828 *Zeuzera pyrina* (Linnaeus, 1761)
Superfamily **TORTRICOIDAE** Latreille, 1803
Family **TORTRICIDAE** Latreille, 1803
Subfamily **TORTRICINAE** *Tortrix viridana* (Linnaeus, 1758)
Superfamily **PYRALOIDEA** Latreille, 1809
Family **PYRALIDAE** Latreille, 1809
Subfamily **Crambinae** Latreille, 1809
Chrysocrambus craterellus (Scopoli, 1763)
Endotricha flammealis (Denis and Schiffermüller, 1775)
Hypsopygia costalis (Fabricius, 1775)
Synaphe sp.
Uresiphita polygonalis (Denis and Schiffermüller, 1775)
Subfamily **Pyraustinae** Meyrick, 1890
Pyrausta purpuralis (Linnaeus, 1758)
Subfamily **Phycitinae** Zeller, 1839
Plodia interpunctella (Hübner, 1813)
Superfamily **BOMBYCOIDEA** Latreille, [1803]
Family **LASIOCAMPIDAE** Harris, 1841
Subfamily **Lasiocampinae** Aurivillius, 1927
Lasiocampa quercus (Denis & Schiffermüller, 1775)
Family **SATURNIIDAE** Boisduval, 1837
Subfamily **Saturniinae** Boisduval, 1837
Saturnia pavonia (Linnaeus, 1758)
Saturnia pyri (Denis and Schiffermüller, 1775)
Superfamily **GEOMETROIDEA** Leach, [1815] Family **GEOMETRIDAE** Leach, [1815]
Subfamily **Geometrinae**
Proteuchloris neriaria (Herrich-Schaffer, [1852]) Subfamily **Scopulinae** Duponchel, [1845]
Scopula imitaria (Hübner, 1799) *Idaea degeneraria* (Hübner, 1799) *Scopula rubiginata* (Hufnagel, 1767) Subfamily **Ennominae (**Duponchel, 1845) *Ematurga atomaria* (Linnaeus, 1758) *Aspilates ochrearia* (Rossi, 1794) *Fritzwagneria waltheri* Wagner, 1919
Superfamily **SPHINGOIDEA** Latreille, [1802]
Family **SPHINGIDAE** Latreille, [1802]
Subfamily **Sphinginae** Latreille, [1802]
Agrius convolvuli (Linnaeus, 1758)
Laothoe populi (Linnaeus, 1758)
Subfamily **Macroglossinae** Harris, 1839
Macroglossum stellatarum (Linnaeus, 1758)
Superfamily **NOCTUOIDEA** Latreille, 1809
Family **THAUMETOPOEIDAE** Stephens, 1920
Thaumetopoea pityocampa (Denis and Schiffermüller, 1775)
Family **ARCTIIDAE** Leach, [1815]
Subfamily **Lithosiinae** Bilberg, 1820
Arctia villica (Linnaeus, 1758)
Hyphoraia aulica (Linnaeus, 1758)
Subfamily **Arctiinae** Leach, 1815)
Spiris striata (Linnaeus, 1758)
Phragmatobia placida (Frivaldszky, 1835)
Eilema caniola (Hübner, 1808)
Tyria jacobaeae (Linnaeus, 1758)
Family **NOCTUIDAE (**Latreille, 1809)
Subfamily **Acontiinae (**Boisduval, 1840)

Emmelia trabealis (Scopoli, 1763)
Subfamily **Plusiinae** Boisduval, 1828
Autographa gamma (Linnaeus, 1758)
Subfamily **Catocalinae** Boisduval, 1828
Dysgonia algira (Linnaeus, 1758)
Catocala elocata (Esper, 1787)
Subfamily **Hadeninae** Guneè, 1838
Mythimna vitellina (Hübner, [1808])
Hadena rivularis Fabricius, 1775
Subfamily **Noctuinae** Latreille, 1809
Noctua pronuba (Linnaeus, 1758)
Mormo maura (Linnaeus, 1758)
Subfamily **Ophiderinae** Guenee, 1852
Tyta luctuosa (Denis & Schiffermüller, 1775)
Subfamily **Heliothinae**
Helicoverpa armigera (Hübner, 1805)
Family **NOTODONTIDAE**
Subfamily **Phalerinae**
Phalera bucephala (Linnaeus, 1758)
Family **NOLIDAE**
Nycteola asiatica (Krulikovsky, 1904)
Family **PTEROPHORIDAE**
Subfamily **Pterophorinae** (Zeller, 1841)
Pterophorus pentadactyla (Linnaeus, 1758)
Stenoptilia zophodactylus (Duponchel, 1840)
Family **LEMONIIDAE**
Subfamily **Lemoniinae (**Neumoegen and Dyar, 1894)
Lemonia balcanica Herrich-Schaffer, 1843

DISCUSSIONS

Bartin province has got a rich flora and fauna. In this rich fauna, the abundance of variety of Lepidoptera has formerly taken the attention of many observers. 16 butterfly species (*H. cunea*, *L. dispar*, *Cerura vinula*, *A. xylosteana*, *S. pavonia*, *T. pityocampa*, *A. aceris*, *D. pudipunda*, *E. defoliaria*, *C. cossus*, *T. viridana, P. nebulosa, L. thalassina, S. reticulata, M. vitellina, L. comma*) identified as a result of 5 different studies have formed some of the harmful insects causing harm to different trees (Toper, 1995; Arslan, 1998; Ozkazanc, 1998; Sonmezyildiz, 2006; Cakan and Okyar, 2007). However, no particular study has been performed until this research that is regarded as the first study about the identification of species of Lepidoptera existing in Bartin. As a result of this study, 90 species from 21 families of Lepidopteria have been obtained. Among these, the species *S. pavonia*, *T. pityocampa* and *T. viridana* have been reidentified. The remaining 87 species is regarded as the first record for Bartin region. Adding the former data gained, the total amount of species identified in Bartin is 103.

In this study, some of the species identified have been noted as harmful or potentially harmful (incase of reproduction) for forests. These are; *A. villica, P. bucephala, L. populi, T. viridana*, *E. atomaria, T. pityocampa, A. gamma, C. elocata, D. algira*, *N. polychloros*, *N. asiatica*, *Z. pyrina*. Among these species, *P. icarus*, *P. brassicae*, *P. napi*, *Arctia villica* have been mostly observed in agricultural areas. *P. brassicae* is very harmful to *B. oleracea* var. *acephala*, also *P. napi* feeds on watercress, *N. polychlo-ros* on *F. vesca* and *P. avium, M. vitellina* on Graminea,
D. algira on *R. fructicosus*, *A. gamma* on *B. rapa*, *R. nigrum*, *Rosa sp.* and *M. domestica*; *A. villica* on *Fragaria vesca*, *S. pyri* on *Pirus* sp., *J. regia*, *Malus* sp., *Prunus* sp., *Saturnia pavonia* on *Rosa* sp., *Rubus* sp., *M. domestica*;
V. cardui and *P. icarus* on *Phaseolus* spp., *L. boeticus* on *P. vulgaris* and *P. sativum*, *I. podalirius* on *C. vulgaris*, *P. spinosa*, *P. vulgaris* and *P. avium*, and *L. sinapis* feeds on Birdsfoot, *Lotus corniculatus* in Bartın.

Most of the species have been caught in the champaign and prairies because of the abundance of flowers and the variety of plants.

There is a relationship between the compatible weather conditions and the flights of butterflies. It has been observed that their flights stopped when it is windy or rainy; and begin to fly actively again when it is sunny.

Research about the habitats, the preference of height degree of species Papilionoidea (Lepidoptera), the abundance of variety of butterfly species in low altitude and the high butterfly density in agricultural regions, bushes and plains areas have been investigated and determined (Lien andYuan, 2003). The data presented has been overlapped with ours.
The abundance of variety of butterfly species and the various species obtained was been observed in summer. The reason can be explained that summer is the most suitable season for the nourishment and growing processes of butterfly larva and adults.

Some of the butterfly species has been in utmost danger due to the illegal use of pesticides, the destruction of habitats and uncontrolled butterfly collecting activities. These species have been announced on a “red” list. In this study, *Lycaena dispar* (Lycaenidae) that is included on the red list has been identified.

The butterfly population has decreased or vanished due to the destruction of agricultural areas and urbani-zation, and accordingly, the disintegration and loss of habitats. The decrease of their population will probably be reduced if their important biological needs and necessary environmental factors are well investigated and put into practice like bringing the extinct species to their former habitats (Avcı, 1994).

The unconscious and excessive collecting of butter-flies should be avoided by the legal sanctions. More-over, the habitats, where the butterfly species have been abundantly observed, should be protected and these particular locations should be preserved as butterfly protection areas.

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