

# New distribution reports of Heterocera (Lepidoptera) from Batman, Hakkari, Mardin, Şanlıurfa and Şırnak provinces of Turkey

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## Abstract

The present paper deals with 102 species of moths in Erebidae, Noctuidae, Nolidae, Thaumetopoeidae, Notodontidae, Geometridae, Pyralidae, Crambidae, Lasiocampidae, Drepanidae, Sphingidae, Brahmaeidae, Cossidae, Psychidae taxa. The materials were caught by UV light traps from Batman, Hakkari, Mardin, Şanlıurfa and Şırnak provinces in Southeast and East Anatolian Regions of Turkey in 2018-2020. After the materials were softened and stretched, they were labeled. Diagnosis were made according to internal and external morphological structures based on literature data and protected in storage boxes. Of these species, 13 for Batman, 1 for Hakkari, 30 for Mardin, 4 for Şanlıurfa and, 10 for Şırnak are new reported.

**Keywords:** Fauna, Moth, Heterocera, Lepidoptera, Turkey

## Türkiye'nin Batman, Hakkari, Mardin, Şanlıurfa ve Şırnak illerinden Heterocera'nın (Lepidoptera) yeni dağılım kayıtları

## Öz

Bu makale Erebidae, Noctuidae, Nolidae, Thaumetopoeidae, Notodontidae, Geometridae, Pyralidae, Crambidae, Lasiocampidae, Drepanidae, Sphingidae, Brahmaeidae, Cossidae, Psychidae taksonlarındaki 102 güve türüyle ilgilidir. Materyaller UV ışık tuzakları ile 2018-2020 yıllarında Türkiye'nin Güneydoğu ve Doğu Anadolu Bölgelerinde Batman, Hakkari, Mardin, Şanlıurfa ve Şırnak illerinden toplanmıştır. Materyaller yumuşatılıp gerildikten sonra etiketlenmiştir. Literatür

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verilerine dayalı iç ve dış morfolojik yapılarına göre teşhis yapılmıştır ve saklama kutularında koruma altına alınmıştır. Bu türlerin 13'ü Batman, 1'i Hakkari, 30'u Mardin, 4'ü Şanlıurfa ve 10'u Şırnak ilinde yeni rapor edilmiştir.

**Anahtar kelimeler:** Fauna, Güve, Heterocera, Lepidoptera, Turkey

## 1. Introduction

The Lepidoptera order consists of a fairly large proportion of the insect fauna. The order is quite similar in aspect; their size varies over a wide range and bodies are covered with scales. Lepidoptera species feed mainly on plants and traditional classification divided the order into butterflies (Rhopalocera), which are day-flying and moths (Heterocera), commonly night-flying. The order is split into two suborders: Zeuglotera and Glossata currently, based on precise anatomical characteristics [1]. Members of the Lepidoptera order have a tremendous variety in behavior, nutrition, and habitat. Except for Antarctica, they live in other known habitat types. The geometroid, with the noctuid and pyraloid moths, constitute the most massive families of Lepidoptera known. Totally of 165 000 species of lepidopter have been reported in the world and nearly 7000 occurring in Europe [1]. In Turkey, 5577 taxa of the butterfly and moth were listed in 76 families [2].

Investigations on the Lepidoptera species of Southeast and East Regions of Turkey have increased especially in recent years. The studies in the research areas on the moth species are evaluated: Ünlü and Kornoşor [3] determined and published 47 species of noctuid moths from Şanlıurfa province. Koçak and Kemal [4] reported 236 species in Şırnak province. Koçak and Kemal [5] listed a total of 294 lepidopter species from Mardin province. Koçak and Kemal [6] published results of the expeditions to Hakkari Province between the years 1972 and 2014 as an annotated list of 773 species. Kemal et al. [7] evaluated faunistically 390 Lepidoptera species from Hakkari province, vicinity of Dağlıca, and presented 87 new species for Hakkari. Kemal et. al. [8] gave 598 species of Lepidoptera recorded from Zap Valley. Seven [9] presented a collection of autumnal Lepidoptera species from Dağlıca vicinity of Hakkari province and determined 21 species for the first time for the province. Seven [10] gave the first comprehensive faunistic list on the Lepidoptera species of Batman province with 177 species and 111 new records. Seven and Çakır [11] identified 21 species of the geometrid moths from Şırnak province with 15 first reports. Aykal [12] carried out studies on the Geometridae (Lepidoptera) fauna of Hasankeyf district of Batman and mentioned about 67 species. Seven [13] provided comments on the Sphingidae species of south-eastern Turkey by the field surveys conducted between 2015-2017 and determined 15 species. The present paper deals with 102 species of moths, collected from the Southeast and East Anatolia Regions of Turkey. It presents new records on the basis of provinces and, contributes to the distribution of the species.

## 2. Material and methods

The materials were collected from Batman, Hakkari, Mardin, Şanlıurfa, and Şırnak provinces during the years 2018-2020. The specimens were caught by UV light traps and equipment that consisted of UV LED strip lights, battery (12 volts and 7 amperes), killing bottle (ethyl acetate), and a funnel box. They were relaxed, pinned, and preserved in the

laboratory according to standard entomological methods. The specimens were determined by external characters and preparations of some genitalia were carried out for exact diagnosis, boiled in 10% KOH solution, embedded with Euparal as permanent slides under a Nikon SMZ1000 stereomicroscope. Identification and terminology follows that of de Freina and Witt [14], Hacker [15-16], Fibiger [17], Hausmann [18-19], Ronkay et al. [20], Hacker et al. [21], Goater et al. [22], Mironov [23], Zilli et al. [24], Leraut [1, 25], Fibiger and Hacker [26], Fibiger et al. [27-28], Hausmann and Viidalepp [29], Skou and Sihvonen [30], Arnscheid and Weidlich [31], Müller et al. [32]. All identified specimens were labeled and deposited in the Batman University, Faculty of Science and Arts, Department of Biology, Entomology laboratory, Batman, Turkey.

The altitude and coordinate information of the locations are as follows: Şırnak, İdil, Yeşilce (540 m, 37°07'44"N, 41°40'56"E), Hakkari, Çukurca (920 m, 37°20'41"N, 43°30'45"E), Şanlıurfa, Siverek, Takora Cave (545 m, 37°55'11"N, 39°03'40"E), Mardin, Savur, Çınaraltı (865 m, 37°32'28" N 40°51'02" E), Mardin, Yeşilli (900 m, 39°29'05" N 40°49'32" E), Batman, Batı Raman (550 m, 37°46'23"N, 41°03'59"E), Batman, Hasankeyf, Saklı (580 m, 37°42'58"N, 41°32'22"E), Batman, Hasankeyf, Akalın 1 km-N (900 m, 37°41'10"N, 41°32'60"E), Batman, Hasankeyf, Gürbüz (820 m, 37°38'20"N, 41°25'39"E), Batman, Hasankeyf, Büyükdere 2 km-N (1250 m, 37°39'25"N, 41°32'20"E), Batman, Hasankeyf, Kumluca (510 m, 37°44'16"N, 41°16'27"E), Batman, Hasankeyf, Büyükdere (950 m, 37°40'41"N, 41°32'42"E), Batman, Hasankeyf, Ağlayan Cave (550 m, 37°42'19"N, 41°25'41"E), Batman, Hasankeyf, Güzelöz (1100 m, 37°38'20"N, 41°33'54"E), Batman, Hasankeyf, Akalın (750 m, 37°41'56"N, 41°32'47"E).

### 3. Results

In this study, 102 species are determined in the Noctuoidea, Geometroidea, Pyraloidea, Lasiocampoidea, Drepanoidea, Bombycoidea, Cossioidea, Tineoidea superfamilies:

#### Superfamily Noctuoidea Latreille, 1809

##### Family Erebidae Leach, [1815]

- 1) *Acantholipes regularis* (Hübner, [1813]) **Material.** 1♂, Şırnak, İdil, Yeşilce, 15.07.2019.
- 2) *Catocala diversa* (Geyer, [1828]) **Material.** 3♂, Mardin, Yeşilli, 23.06.2019; 1♂, Hakkari, Çukurca 06.07.2019, 16.07.2019.
- 3) *Catocala abacta* Staudinger, 1900 **Material.** 1♀, Hakkari, Çukurca, 06.07.2019; 1♂, Mardin, Savur, Çınaraltı, 22.06.2019, 2♂, Yeşilli, 23.06.2019.
- 4) *Catocala hymenaea* ([Denis & Schiffermüller], 1775) **Material.** 3♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 5) *Dysgonia torrida* (Guenée, 1852) **Material.** 4♂ 1♀, Şırnak, İdil, Yeşilce, 15.07.2019.
- 6) *Eublemma polygramma* (Duponchel, [1842]) **Material.** 2♂ 2♀, Şırnak, İdil, Yeşilce, 15.07.2019.
- 7) *Eublemma ostrina* (Hübner, [1808]) **Material.** 1♂, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 8) *Pericyma squalens* Lederer, 1855 **Material.** 1♂ 2♀, Şırnak, İdil, Yeşilce, 15.07.2019.
- 9) *Plecoptera inquinata* (Lederer, 1857) **Material.** 1♂ 1♀, Hakkari, Çukurca, 30.07.2019.

- 10) *Tathorhynchus exsiccatus* (Lederer, 1855) **Material.** 2♂, Mardin, Savur, Çınaraltı, 22.06.2019.

#### Subfamily Arctiinae Leach, [1815]

- 11) *Cymbalophora oertzeni* (Lederer, 1855) **Material.** 2♂ 1♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019; 1♂, Batman, Hasankeyf, Akalın 1km-N, 08.01.2019.
- 12) *Dysauxes famula* (Freyer, 1836) **Material.** 2♂ 3♀, Batman, Hasankeyf, Kumluca, 29.09.2019.
- 13) *Eilema caniola* (Hübner, [1808]) **Material.** 1♂, Batman, Hasankeyf, Büyükdere 2km-N, 29.09.2019.
- 14) *Ocnogyna loewii* (Zeller, 1846) **Material.** 3♂, Batman, Hasankeyf, Gürbüz, 20.11.2018.
- 15) *Paidia rica* (Freyer, [1855]) **Material.** 2♂ 1♀, Hakkari, Çukurca, 06.07.2019; 1♀, Mardin, Yeşilli, 23.06.2019; 1♂, Batman, Hasankeyf, Büyükdere 2km-N, 29.09.2019.
- 16) *Phragmatobia fuliginosa* (Linnaeus, 1758) **Material.** 1♀, Batman, Hasankeyf, Büyükdere 2-kmN, 15.08.2019; 1♂, Akalın, 24.08.2019.
- 17) *Utetheisa pulchella* (Linnaeus, 1758) **Material.** 2♂, Batman, Hasankeyf, Ağlayan Cave, 31.07.2018, 2♂ 1♀, Batı Raman, 05.05.2018.

#### Subfamily Lymantriinae Hampson, 1893

- 18) *Euproctis chrysoorrhoea* (Linnaeus, 1758) **Material.** 3♂, Batman, Hasankeyf, Kumluca, 27.06.2019, 05.07.2019.
- 19) *Euproctis melania* (Staudinger, 1892) **Material.** 3♂ 2♀, Hakkari, Çukurca, 16.07.2019; 1♀, Batman, Hasankeyf, Kumluca, 27.06.2019; 1♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 20) *Leucoma salicis* (Linnaeus, 1758) **Material.** 2♂ 3♀, Hakkari, Çukurca, 30.07.2019.
- 21) *Ocnerogyia amanda* Staudinger, [1892] **Material.** 2♂, Batman, Hasankeyf, Akalın, 03.10.2019, 1♂, Ağlayan Cave, 08.08.2019, 1♂, Kumluca, 16.05.2019; 1♂, Hakkari, Çukurca, 16.07.2019.
- 22) *Parocneria terebynthina* (Staudinger, [1895]) **Material.** 2♂, Batman, Hasankeyf, Akalın, 28.08.2019.
- 23) *Polymona lapidicola* (Herrich-Schäffer, [1852]) **Material.** 1♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019; 2♂, Batman, Hasankeyf, Akalın, 03.10.2019, 14.11.2018.

#### Family Noctuidae Latreille, 1809

- 24) *Acontia titania* (Esper, [1798]) **Material.** 1♂ 1♀, Mardin, Savur, Çınaraltı, 22.06.2019.
- 25) *Acronicta rumicis* (Linnaeus, 1758) **Material.** 2♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 26) *Agrotis bigramma* (Esper, [1790]) **Material.** 3♂ 4♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 27) *Agrotis ipsilon* (Hufnagel, 1766) **Material.** 4♂ 1♀, Mardin, Savur, Çınaraltı, 22.06.2019; 2♂ 3♀, Şırnak, İdil, Yeşilce, 23.06.2019.
- 28) *Agrotis segetum* ([Denis & Schiffermüller], 1775) **Material.** 3♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 29) *Aporophyla australis* (Boisduval, 1829) **Material.** 2♂, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 30) *Caradrina bodenheimeri* (Draudt, 1934) **Material.** 1♂, Batman, Batı Raman, 27.10.2020.

- 31) *Caradrina clavipalpis* (Scopoli, 1763) **Material.** 3♂ 2♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019; 3♀, Şırnak, İdil, Yeşilce, 15.07.2019; 1♂ 3♀, Batman, Batı Raman, 27.10.2020.
- 32) *Caradrina aspersa* (Rambur, 1834) **Material.** 1♂ 2♀, Batman, Batı Raman, 17.07.2020.
- 33) *Caradrina kadenii* (Freyer, 1836) **Material.** 2♀, Mardin, Savur, Çınaraltı, 22.06.2019, 2♂ 1♀, Yeşilli, 23.06.2019.
- 34) *Chersotis fimbriola* (Esper, [1798]) **Material.** 1♂ 1♀, Hakkari, Çukurca, 06.07.2019.
- 35) *Chloantha hypericii* (Fabricius, 1787) **Material.** 2♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 36) *Cornutiplusia circumflexa* (Linnaeus, 1767) **Material.** 4♂ 3♀, Mardin, Savur, Çınaraltı, 22.06.2019, 2♂, Yeşilli, 23.06.2019; 1♂ 2♀, Şırnak, İdil, Yeşilce, 15.07.2019.
- 37) *Cryphia raptricula* ([Denis & Schiffermüller], 1775) **Material.** 1♂ 3♀, Mardin, Savur, Çınaraltı, 22.06.2019, 2♀, Yeşilli, 23.06.2019.
- 38) *Cryphia occidentalis* (Osthelder, 1933) **Material.** 2♂, Şırnak, İdil, Yeşilce, 15.07.2019.
- 39) *Cryphia recepticula* (Hübner, [1803]) **Material.** 2♂ 3♀, Hakkari, Çukurca, 06.07.2019; 1♂ 2♀, Mardin, Savur, Çınaraltı, 22.06.2019, 1♂ 1♀, Yeşilli, 23.06.2019.
- 40) *Dichagyris nigrescens* (Hofner, 1888) **Material.** 4♂ 3♀, Mardin, Yeşilli, 23.06.2019.
- 41) *Episema korsakovi* (Christoph, 1885) **Material.** 2♂, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 42) *Episema tersa* ([Denis & Schiffermüller], 1775) **Material.** 1♂, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 43) *Hecatera spinaciae* (Vieweg, 1790) **Material.** 2♂ 1♀, Mardin, Savur, Çınaraltı, 22.06.2019; 1♂, Şırnak, İdil, Yeşilce, 15.07.2019.
- 44) *Helicoverpa armigera* (Hübner, [1808]) **Material.** 3♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 45) *Heliothis peltigera* ([Denis & Schiffermüller], 1775) **Material.** 1♀, Mardin, Savur, Çınaraltı, 22.06.2019, 1♂, Yeşilli, 23.06.2019.
- 46) *Hoplodrina ambigua* ([Denis & Schiffermüller], 1775) **Material.** 5♂ 2♀, Mardin, Yeşilli, 23.06.2019.
- 47) *Hypeuthina fulgurita* Lederer, 1855 **Material.** 3♂, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 48) *Leucania punctosa* (Treitschke, 1825) **Material.** 2♂ 1♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 49) *Mythimna unipuncta* (Haworth, [1809]) **Material.** 1♂ 1♀, Mardin, Savur, Çınaraltı, 22.06.2019, 1♀, Yeşilli, 23.06.2019.
- 50) *Noctua comes* (Hübner, [1813]) **Material.** 5♂ 1♀, Mardin, Savur, Çınaraltı, 22.06.2019, 2♂ 3♀, Yeşilli, 23.06.2019.
- 51) *Noctua janthina* ([Denis & Schiffermüller], 1775) **Material.** 1♂, Mardin, Yeşilli, 23.06.2019.
- 52) *Noctua pronuba* (Linnaeus, 1758) **Material.** 3♂, Mardin, Savur, Çınaraltı, 22.06.2019.
- 53) *Phylapora canescens* (Duponchel, 1826) **Material.** 4♂ 1♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 54) *Spodoptera exigua* (Hübner, [1808]) **Material.** 2♀, Mardin, Savur, Çınaraltı, 22.06.2019, 4♂ 1♀, Yeşilli, 23.06.2019.
- 55) *Stilbina hypaenides* Staudinger, 1892 **Material.** 4♂ 2♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.

- 56) *Trichoplusia ni* (Hübner, [1803]) **Material.** 3♀, Şırnak, İdil, Yeşilce, 15.07.2019; 2♂ 1♀, Mardin, Savur, Çınaraltı, 22.06.2019, 1♂, Yeşilli, 23.06.2019.
- 57) *Tyta luctuosa* ([Denis & Schiffermüller], 1775) **Material.** 2♂, Mardin, Yeşilli, 23.06.2019.

#### Family Nolidae Bruand, 1847

- 58) *Earias clorana* (Linnaeus, 1761) **Material.** 2♀, Mardin, Savur, Çınaraltı, 22.06.2019.

#### Family Thaumetopoeidae Aurivillius, 1891

- 59) *Thaumetopoea solitaria* (Freyer, [1838]) **Material.** 1♂, Batman, Hasankeyf, Kumluca, 29.09.2019.

#### Family Notodontidae Stephens, 1829

- 60) *Spatalia argentina* ([Denis & Schiffermüller], 1775) **Material.** 1♀, Batman, Batı Raman, 17.07.2020.

#### Superfamily Geometroidea Leach, 1815

##### Family Geometridae Leach, 1815

- 61) *Camptogramma bilineata* (Linnaeus, 1758) **Material.** 3♂, Mardin, Savur, Çınaraltı, 22.06.2019, 1♀, Yeşilli, 23.06.2019; 1♂ 1♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 62) *Charissa mardinaria* (Staudinger, 1901) **Material.** 2♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 63) *Chiasmia aestimaria* (Hübner, [1809]) **Material.** 2♂, Hakkari, Çukurca, 16.07.2019.
- 64) *Dasycorsa modesta* (Staudinger, 1879) **Material.** 3♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 65) *Eilicrinia cordiaria* (Hübner, 1790) **Material.** 2♂ 1♀, Hakkari, Çukurca, 06.07.2019.
- 66) *Ennomos quercinaria* (Hufnagel, 1767) **Material.** 3♂, Mardin, Savur, Çınaraltı, 22.06.2019.
- 67) *Eumera hoeferi* Wehrli, 1934 **Material.** 2♂ 3♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 68) *Glossotrophia sacraria* (A.Bang-Haas, 1910) **Material.** 2♂, Hakkari, Çukurca, 30.07.2019.
- 69) *Gnopharmia colchidaria* (Lederer, 1870) **Material.** 3♂ 4♀, Hakkari, Çukurca, 06.07.2019.
- 70) *Gnopharmia irakensis* Wehrli, 1938 **Material.** 2♂ 2♀, Mardin, Savur, Çınaraltı, 22.06.2019, 1♂, Yeşilli, 23.06.2019.
- 71) *Idaea subsericeata* (Haworth, [1809]) **Material.** 1♂ 1♀, Hakkari, Çukurca, 06.07.2019.
- 72) *Neognopharmia stevenaria* (Boisduval, 1840) **Material.** 2♀, Hakkari, Çukurca, 30.07.2019; 1♂, Mardin, Savur, Çınaraltı, 22.06.2019.
- 73) *Nychiodes divergaria* (Staudinger, 1892) **Material.** 3♂ 2♀, Mardin, Savur, Çınaraltı, 22.06.2019.
- 74) *Orthonama obstipata* (Fabricius, 1794) **Material.** 1♂, Şırnak, İdil, Yeşilce, 15.07.2019.
- 75) *Phaiogramma etruscaria* (Zeller, 1849) **Material.** 2♂ 2♀, Mardin, Savur, Çınaraltı, 22.06.2019.
- 76) *Pseudopanthera syriacata* (Guenée, 1858) **Material.** 1♂, Mardin, Yeşilli, 23.06.2019.

- 77) *Rhodometra sacraria* (Linnaeus, 1767) **Material.** 1♂, Hakkari, Çukurca, 16.07.2019; 1♂, Mardin, Savur, Çınaraltı, 22.06.2019, 1♂, Yeşilli, 23.06.2019; 1♂, Şırnak, İdil, Yeşilce, 15.07.2019; 2♂ 1♀, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 78) *Scopula submutata* (Treitschke, 1828) **Material.** 3♂ 3♀, Hakkari, Çukurca, 06.07.2019; 2♂, Mardin Savur, Çınaraltı, 22.06.2019.
- 79) *Stegania dilectaria* (Hübner, 1790) **Material.** 2♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 80) *Wehrliola revocaria* (Staudinger, 1892) **Material.** 1♂, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.

#### Superfamily Pyraloidea Latreille, 1809

##### Family Pyralidae Latreille, 1809

- 81) *Pyralis farinalis* (Linnaeus, 1758) **Material.** 1♂ 1♀, Şırnak, İdil, Yeşilce, 15.07.2019.
- 82) *Pyralis regalis* [Denis & Schiffermüller], 1775 **Material.** 2♂ 1♀, Mardin, Yeşilli, 23.06.2019.
- 83) *Teliphasa lophotalis* (Hampson, 1900) **Material.** 1♂, Hakkari, Çukurca, 06.07.2019.

##### Family Crambidae Latreille, 1810

- 84) *Pyrausta ferrealis* (Hampson, 1900) **Material.** 2♂, Mardin, Savur, Çınaraltı, 22.06.2019.

#### Superfamily Lasiocampoidea Harris, 1841

##### Family Lasiocampidae Harris, 1841

- 85) *Lasiocampa eversmanni* (Kindermann, 1843) **Material.** 2♂ 1♀, Batman, Hasankeyf, Güzelöz, 29.09.2019, 2♂, Kumluca, 19.10.2018.
- 86) *Lasiocampa grandis* (Rogenhofer, 1891) **Material.** 3♂, Batman, Hasankeyf, Gürbüz, 25.10.2018; 2♂, Şanlıurfa, Siverek, Takora Magarası, 13.10.2019.
- 87) *Malacosoma neustria* (Linnaeus, 1758) **Material.** 1♂ 1♀, Mardin, Savur, Çınaraltı, 22.06.2019.

#### Superfamily Drepanoidea Boisduval, 1828

##### Family Drepanidae Boisduval, 1828

- 88) *Watsonalla binaria* (Hufnagel, 1767) **Material.** 3♂ 1♀, Batman, Hasankeyf, Büyükdere, 24.08.2019.

##### Subfamily Thyatirinae Smith, 1893

- 89) *Tethea or* ([Denis & Schiffermüller], 1775) **Material.** 2♂, Batman, Hasankeyf, Saklı, 13.03.2019.

#### Superfamily Bombycoidea Latreille, 1802

##### Family Sphingidae Latreille, [1802]

- 90) *Akbesia davidi* (Oberthür, 1884) **Material.** 2♂ 1♀, Batman, Hasankeyf, Ağlayan Cave, 08.08.2018, Gürbüz, 02.08.2018.
- 91) *Dolbina elegans* A.Bang-Haas, [1913] **Material.** 3♀, Batman, Hasankeyf, Büyükdere 2km-N, 15.08.2019.
- 92) *Hyles euphorbiae* (Linnaeus, 1758) **Material.** 2♂, Batman, Hasankeyf, Ağlayan Cave, 31.07.2018.
- 93) *Hyles livornica* (Esper, [1780]) **Material.** 2♂, Batman, Hasankeyf, Ağlayan Cave, 31.07.2018.

- 94) *Marumba quercus* ([Denis & Schiffermüller], 1775) **Material.** 2♂ 1♀, Mardin, Savur, Çınaraltı, 22.06.2019, 1♀, Yeşilli, 23.06.2019; 1♂, Batman, Hasankeyf, Büyükdere, 24.08.2019.
- 95) *Smerinthus kindermanni* Lederer, 1852 **Material.** 2♂, Batman, Hasankeyf, Ağlayan Cave, 08.08.2018.
- 96) *Theretra alecto* (Linnaeus, 1758) **Material.** 1♂, Batman, Hasankeyf, Ağlayan Cave, 25.07.2019.

#### Family Brahmaeidae Swinhoe, 1892

- 97) *Lemonia ballioni* (Christoph, 1888) **Material.** 2♂, Batman, Hasankeyf, Gürbüz, 25.10.2018.
- 98) *Lemonia pia* Püngeler, 1902 **Material.** 2♂ 1♀, Batman, Hasankeyf, Ağlayan Cave, 08.08.2018.

#### Superfamily Cossoidea Leach, [1815]

##### Family Cossidae Leach, [1815]

- 99) *Cossus cossus* (Linnaeus, 1758) **Material.** 2♂ 1♀, Batman, Hasankeyf, Ağlayan Cave, 01.06.2019.
- 100) *Dysspessa ulula* (Borkhausen, 1790) **Material.** 5♂ 2♀, Batman, Hasankeyf, Ağlayan Cave, 26.04.2019.
- 101) *Stygia mosulensis* Daniel, 1965 **Material.** 1♂, Batman, Hasankeyf, Güzelöz, 02.08.2018.

#### Superfamily Tineoidea Latreille, 1810

##### Family Psychidae Boisduval, 1828

- 102) *Megalophanes viciella* ([Denis & Schiffermüller], 1775) **Material.** 3♂ 2♀, Batman, Hasankeyf, Akalın, 24.08.2019.

#### 4. Conclusion

In this paper, 102 Heterocera species are determined in Erebidae (23), Noctuidae (34), Nolidae (1), Thaumetopoeidae (1), Notodontidae (1), Geometridae (20), Pyralidae (3), Crambidae (1), Lasiocampidae (3), Drepanidae (2), Sphingidae (7), Brahmaeidae (2), Cossidae (3), Psychidae (1). Most new reports are from Mardin province in the families of Noctuidae and Geometridae (Table 1).



Table 1. New records for Batman, Hakkari, Mardin, Şanlıurfa and Şırnak provinces

Family/ Subfamily	Species	Batman	Hakkari	Mardin	Şanlıurfa	Şırnak
Erebidae	<i>Acantholipes regularis</i>					+
	<i>Catocala diversa</i>			+		
	<i>Catocala hymenaea</i>			+		
	<i>Dysgonia torrida</i>					+
	<i>Eublemma polygramma</i>					+
	<i>Pericyma squalens</i>					+
	<i>Tathorhynchus exsiccatus</i>			+		
Arctiinae	<i>Eilema caniola</i>	+				
	<i>Paidia rica</i>			+		
Lymantriinae	<i>Euproctis chrysorrhoea</i>	+				
	<i>Parocneria terebynthina</i>	+				
Noctuidae	<i>Acronicta rumicis</i>			+		
	<i>Agrotis segetum</i>			+		
	<i>Caradrina bodenheimeri</i>	+				
	<i>Caradrina clavipalpis</i>					+
	<i>Caradrina aspersa</i>	+				
	<i>Caradrina kadenii</i>			+		
	<i>Cryphia raptricula</i>			+		
	<i>Cryphia occidentalis</i>					+
	<i>Dichagyris nigrescens</i>			+		
	<i>Episema korsakovi</i>				+	
	<i>Episema tersa</i>				+	
	<i>Hecatera spinaciae</i>			+		+
	<i>Heliothis peltigera</i>			+		
	<i>Hoplodrina ambigua</i>			+		
	<i>Leucania punctosa</i>			+		
	<i>Mythimna unipuncta</i>			+		
	<i>Noctua comes</i>			+		
	<i>Noctua janthina</i>			+		
<i>Noctua pronuba</i>			+			
<i>Trichoplusia ni</i>			+		+	
<i>Tyta luctuosa</i>			+			
Nolidae	<i>Earias clorana</i>			+		
Notodontidae	<i>Spatalia argentina</i>	+				
Geometridae	<i>Camptogramma bilineata</i>			+		
	<i>Dasycorsa modesta</i>			+		
	<i>Ennomos quercinaria</i>			+		
	<i>Eumera hoeferi</i>				+	
	<i>Gnopharmia irakensis</i>			+		
	<i>Neognopharmia stevenaria</i>			+		
	<i>Orthonama obstipata</i>					+
	<i>Phaiogramma etruscaria</i>			+		
	<i>Rhodometra sacraria</i>		+	+		
	<i>Stegania dilectaria</i>			+		
<i>Wehrliola revocaria</i>				+		
Pyralidae	<i>Pyralis farinalis</i>					+
	<i>Pyralis regalis</i>			+		
Lasiocampidae	<i>Malacosoma neustria</i>			+		
Drepanidae	<i>Watsonalla binaria</i>	+				
Thyatirinae	<i>Tethea or</i>	+				
Sphingidae	<i>Theretra alecto</i>	+				
Brahmaeidae	<i>Lemonia ballioni</i>	+				
	<i>Lemonia pia</i>	+				
Cossidae	<i>Cossus cossus</i>	+				
Psychidae	<i>Megalophanes viciella</i>	+				
	<b>Total</b>	<b>13</b>	<b>1</b>	<b>30</b>	<b>4</b>	<b>10</b>

When the number of species in 9 superfamilies identified in the area is evaluated, Noctuoidea is in the first place with a rate of 60 percent. More than half of the species make up this large group. The superfamilies Tineoidea and Drepanoidea include the least species (Figure 1).

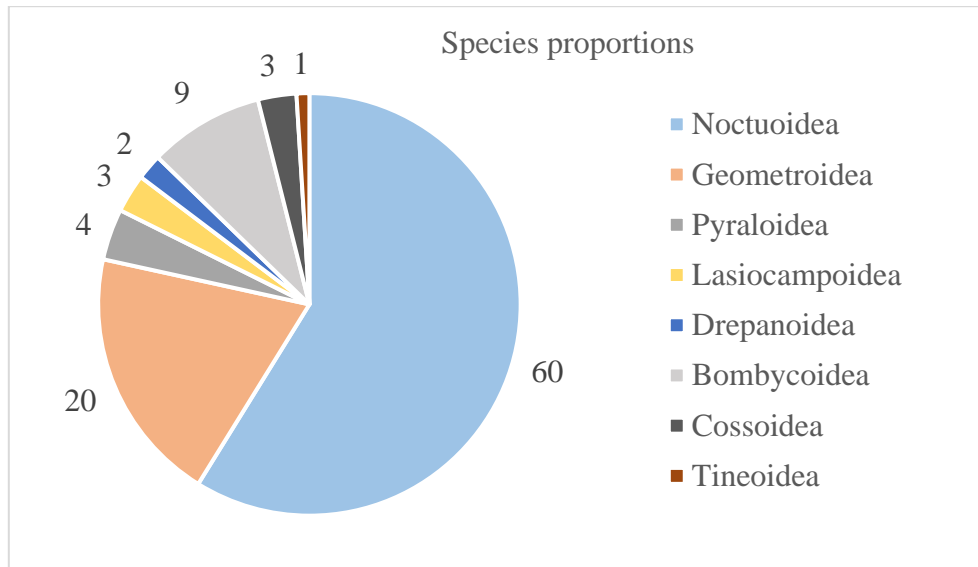


Figure 1. Species proportions in the determined superfamilies

As the number of species is examined by provinces, it is seen that the most species are detected from Mardin province with 44 species following Batman province with 34 species, and the least species are diagnosed from Şırnak province with 13 species (Figure 2).

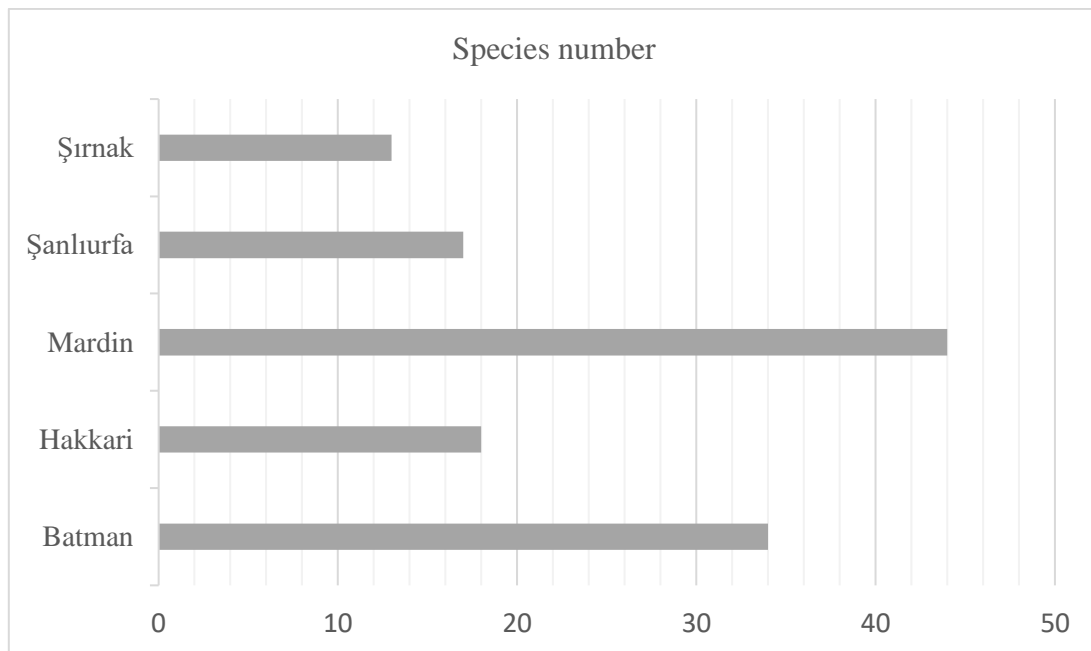


Figure 2. Number of determined species according to studied provinces

Surveys on the butterfly and moth species of Southeast and East Anatolia Regions of Turkey have risen especially in recent years. But particularly rural areas have still not been sufficiently investigated yet. Studies and researchers should be supported more and the fauna elements should be revealed for the sustainability and conservation of species.

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