

JOURNAL OF SCIENCE



SAKARYA UNIVERSITY

Sakarya University Journal of Science

ISSN 1301-4048 | e-ISSN 2147-835X | Period Bimonthly | Founded: 1997 | Publisher Sakarya University |
<http://www.saujs.sakarya.edu.tr/>

Title: Contributions to the knowledge of Macroheterocera (Lepidoptera) Fauna of Mutki District (Bitlis Province, East Turkey)

Authors: Erdem Seven, Kesran Akın

Received: 2018-03-07 00:00:00

Accepted: 2019-01-17 00:00:00

Article Type: Research Article

Volume: 23

Issue: 3

Month: June

Year: 2019

Pages: 435-445

How to cite

Erdem Seven, Kesran Akın; (2019), Contributions to the knowledge of Macroheterocera (Lepidoptera) Fauna of Mutki District (Bitlis Province, East Turkey). Sakarya University Journal of Science, 23(3), 435-445, DOI: 10.16984/saufenbilder.402727

Access link

<http://www.saujs.sakarya.edu.tr/issue/41686/402727>

New submission to SAUJS

<http://dergipark.gov.tr/journal/1115/submission/start>

Contributions to the knowledge of Macroheterocera (Lepidoptera) Fauna of Mutki District (Bitlis Province, East Turkey)

Erdem Seven^{*1}, Kesran Akin²

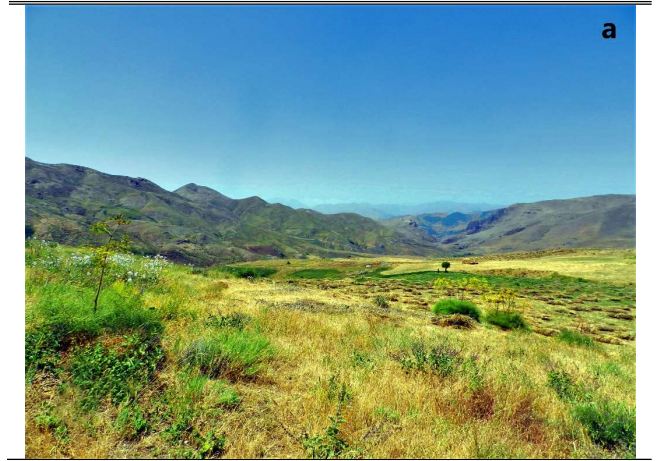
Abstract

In this paper, the contributions to the Macroheterocera fauna of Mutki district of Bitlis Province (East Anatolia) are presented. The samples collected between 2010-2012 are evaluated. All given 192 species are recorded for the first time from moth fauna of Mutki and likewise 85 species are recorded for the first time from moth fauna of Bitlis. Additionally, adult and male genitalia of *Eupithecia gemellata* Herrich-Schäffer, 1861 and *Chondrostega palaestrana* Staudinger, 1892 are illustrated and distribution of them are given.

Keywords: Fauna, Macroheterocera, Lepidoptera, Mutki, Bitlis

1. INTRODUCTION

The terrain of the Mutki district (Bitlis Prov.) is generally composed of hills, mountains and steep valleys (Fig. 1 a, b) and the vegetation in the region is covered with mostly oak forests. Mutki has characteristics of southeast and eastern Anatolia, has rich vegetation and different habitat types [1].



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Figure 1. Some habitat types in Mutki district. a. Kaşak, 1800 m, 26.07.2011, b. Alatoprak, 1190 m, 06.04.10.

Photos: K. Akin

The order Lepidoptera is one of the richest insects group in terms of diversity. Most lepidopteran species are nocturnal, but they also have crepuscular and diurnal species. And, the majority of the Macroheterocera species are active at night.

Studies on the Macroheterocera moth fauna of the research field have been conducted by Kemal et al. [2], Akin [3-4], Koçak and Akin [5], Akin and Kayci [6], Kemal and Koçak [7]. In Mutki district, 333 moth species are known in 21 families and among them 110 species belong to the Macroheterocera [7] group.

In this study, it is aimed to contribute to the fauna of the species belonging to the Macroheterocera fauna which spread within the Mutki district. Faunistically, 192 species of the Macroheterocera are reported here as new to Mutki district according to Kemal and Koçak [7] and 85 species of the Macroheterocera are recorded here new for the fauna of Bitlis Province according to Özkol [8] Kayci [9], Koçak and Kemal [10-11], Kemal and Koçak [7, 12-14]. This study is important in terms of the determination of Lepidoptera fauna of the region.

2. MATERIAL AND METHOD

The material of this study are collected by the second author from Mutki district (Bitlis Prov.) between April and November 2010-2012.

Researches were carried out in 13 localities: Yeniköy (38°23'33"N 41°58'54,2"E), Çatalsöğüt (38°26'27"N 41°54'01"E), Yumrumeşe-Ocaklı (38°27'47"N 41°52'04"E), Kavakbaşı-Koyunlu crossroad (38°28'49"N 41°51'16"E), Çaygeçit 4 km NE (38°25'50"N 41°51'40"E), Ulaş (38°28'53"N 41°46'28"E), İvizler (38°33'38"N 41°37'22"E), Çaygeçit (38°25'00"N 41°50'15"E), Alatoprak (38°23'37"N 41°49'07"E), Kaşak (38°19'59"N 41°54'39"E), Geyikpınar (Bridge) (38°19'34"N 41°48'44"E), Tolgalı (38°20'09"N 41°49'54"E), Gümüşkanat (38°24'22"N 41°44'02"E).

Field studies were performed day and night as the individuals belonging to the Macroheterocera fauna were active at different times of the day. In the daytime collection, samples were collected with help of an insect net and a light trap was used for attract specimens for the collection at night. The light trap was prepared by a white cloth covered the light source. As the light source, a 160 Watt mercury steam lamp, which burns with the generator, was preferred. Collected moths, were killed in jars containing ethyl acetat. After the pinned and softened, the specimens were stretched as standard museum material.

Diagnosis procedures were initially based on external characters (wing color and patterns, antennas, mouth structures, etc.). Genital structures were used when morphological characters were not enough to diagnose or to support diagnosis. Identification were done according to these sources: De Freina and Witt [15], Fibiger [16-18], Varga and Ronkay [19], Hausmann [20-22], Ronkay et al. [23], Hacker et al. [24], Goater et al. [25], Mironov [26], Zilli et al. [27], Leraut [28-29], Fibiger and Hacker [30], Zolotuhin and Zahiri [31], Fibiger et al. [32-33], Rajei [34], Hausmann and Viidalepp [35], Stadie et al. [36]. The samples are stored in Biology Laboratory of Bitlis University.

In the results part, species are presented in alphabetical order within the families. Additionally, an asterisk (*) is suffixed to after the name of the species for the new records in Bitlis province. Furthermore, studied materials are added for each species.

3. RESULTS

Arctiidae

1. *Andala semiramis* (Staudinger, 1892)

Materials. 2♂♂, Yeniköy, 1650 m, 27.vi.2010.

2. *Axiopoenia karelini* Ménériés, 1863*

Materials. 1♂, Alatoprak, 1190 m, 29.vii.2011.

3. *Euplagia quadripunctaria* (Poda, 1761)

Materials. 1♂, 1♀, Çaygeçit, 1260 m, 15.ix.2011;

1♂, Çaygeçit-4 km NE, 1150 m, 14.viii.2011.

4. *Lacydes spectabilis* (Tauscher, 1806)

Materials. 1♂, Çaygeçit, 1260 m, 15.ix.2011.

5. *Paidia rica* (Freyer, [1855])*

Materials. 3♂♂, 1♀, Alatoprak, 1190 m, 17.v.2010; 2♂♂, 4♀♀, 11.vii.2012; 2♂♂, 13.viii.2012; 1♂, 1♀, Tolgalı, 1220 m, 29.vi.2011; 1♀, Yumrumeşe-Ocaklı, 1660 m, 15.vii.2010.

6. *Phragmatobia fuliginosa* (Linnaeus, 1758)

Materials. 2♂♂ 1♀, Alatoprak, 1190 m,

01.viii.2010; 1♂, Kavabaşı-Koyunlu crossroad, 1610 m, 22.vii.2011.

Cimeliidae

7. *Axia theresiae* (Korb, 1900)

Materials. 1♂, Alatoprak, 1190 m, 10.vi.2010.

Ctenuchidae

8. *Amata kruegeri* (Ragusa, 1904)*

Materials. 1♂, 1♀, Çaygeçit, 1260 m, 02.vi.2010.

9. *Dysauxes famula* (Freyer, 1836)

Materials. 2♂♂ 1♀, Alatoprak, 1190 m, 21.08.2011; 1♀, Tolgalı, 1220 m, 22.ix.2011.

Geometridae

10. *Aplocera plagiata* (Linnaeus, 1758)

Materials. 1♂, 2♀♀, Geyiklipınar (Bridge), 1330 m, 27.v.2011.

11. *Ascotis selenaria* ([Denis & Schiffermüller], 1775)*

Materials. 2♂♂, Tolgalı, 1220 m, 22.ix.2011.

12. *Catalysme subtilisparsata* Wehrli, 1932*

Materials. 1♂, 1♀, Gümüşkanat, 1120 m, 28.vi.2012.

13. *Chiasmia clathrata* (Linnaeus, 1758)

Materials. 1♀, Tolgalı, 1220 m, 24.v.2012.

14. *Chlorissa cloraria* (Hübner, [1813])*

Materials. 3♂♂, Alatoprak, 1190 m, 10.vi.2010; 1♂, İkizler, 1500 m, 10.vi.2012.

15. *Colotois pennaria* (Linnaeus, 1761)

Materials. 4♂♂ 1♀, Çaygeçit-4 km NE, 1150 m, 11.x.2011; 2♂♂, Alatoprak, 1190 m, 05.xi.2011.

16. *Comibaena bajularia* ([Denis & Schiffermüller], 1775)

Materials. 1♀, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010.

17. *Cyclophora pendularia* (Clerck, 1759)*

Materials. 3♂♂, Yeniköy, 1650 m, 15.viii.2012.

18. *Eumera hoeferi* Wehrli, 1934*

Materials. 1♂, 1♀, Alatoprak, 1190 m, 02.x.2010; 2♂♂, Tolgalı, 1220 m, 23.x.2011.

19. *Eupithecia gemellata* Herrich-Schäffer, 1861* (Fig. 2)

Materials. 2♂♂, Çaygeçit, 1260 m, 02.vi.2010.

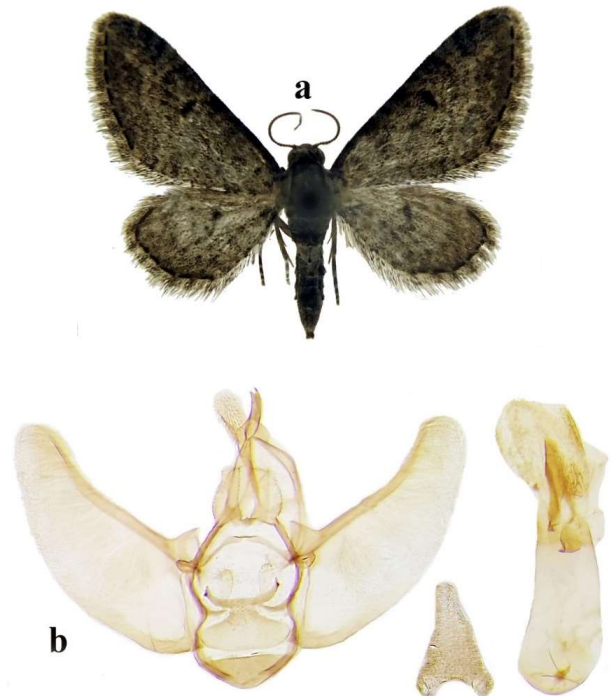


Figure 2. *Eupithecia gemellata*. a. Male adult, b. Male genitalia with sternit (GP571). Photos: E. Seven

20. *Eupithecia silenicolata* Mabille, 1867*

Materials. 1♀, Alatoprak, 1190 m, 05.xi.2010.

21. *Eupithecia spissilineata* (Metzner, 1846)*

Materials. 1♂, Alatoprak, 1190 m, 14.iv.2010.

22. *Eupithecia venosata* (Fabricius, 1787)*

Materials. 2♂♂, 1♀, Tolgalı, 1220 m, 29.vi.2011; 1♂, 24.v.2012.

23. *Gnopharmia irakensis* Wehrli, 1938*

Materials. 3♂♂, 2♀♀, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010; 2♀♀, Yeniköy, 1650 m, 27.vi.2010.

24. *Charissa dubitaria* (Staudinger, 1892)*

Materials. 2♂♂, 1♀, Kavakbaşı-Koyunlu, 1660 m, 14.vi.2011.

25. *Idaea degeneraria* (Hübner, [1799])*

Materials. 3♂♂, 1♀, Alatoprak, 1190 m, 27.iv.2011.

26. *Idaea elongaria* (Rambur, 1833)*

Materials. 1♂, 1♀, Alatoprak, 1190 m, 17.v.2010.

27. *Idaea filicata* (Hübner, [1799])*

Materials. 1♀, Alatoprak, 1190 m, 17.v.2010.

28. *Idaea ochrata* (Scopoli, 1763)*

Materials. 2♂♂, Çaygeçit, 1260 m, 21.vii.2011.

29. *Idaea troglodytaria* (Herrich-Schäffer, [1852])*

Materials. 1♀, Alatoprak, 1200 m, 05.xi.2011.

30. *Isturgia murinaria* ([Denis & Schiffermüller], 1775)

Materials. 2♂♂, 1♀, Çaygeçit, 1260 m, 23.viii.2010; 1♂, Kavakbaşı-Koyunlu crossroad, 1610 m, 22.vii. 2011.

31. *Lithostege palaestinensis* Amsel, 1935*

Materials. 1♂, Çaygeçit, 1260 m, 24.iii.2010.

32. *Lobophora halterata* (Hufnagel, 1767)*

Materials. 1♂, Alatoprak, 1190 m, 10.vi.2010.

33. *Lythria cruentaria* (Hufnagel, 1767)

Materials. 2♂♂, Tolgalı, 1220 m, 29.vi.2011; 1♂, Gümüşkanat, 1120 m, 28.vi.2012.

34. *Lythria purpuraria* (Linnaeus, 1758)*

Materials. 1♀, Kaşak, 1800 m, 26.vi.2011.

35. *Nebula senectaria* (Herrich-Schäffer, [1852])

Materials. 2♂♂, 3♀♀, Çaygeçit, 1260 m, 24.iii.2010; 1♀, 02.x.2010.

36. *Odezia atrata* (Linnaeus, 1758)

Materials. 1♀, Alatoprak, 1190 m, 18.iv.2010.

37. *Orthonama obstipata* (Fabricius, 1794)

Materials. 1♂, 1♀, Alatoprak, 1190 m, 18.iv.2010; 2♂♂, Çaygeçit, 1260 m, 24.iii.2010; 1♀, İkizler, 1500 m, 10.vi.2012.

38. *Orthostixis cribraria* (Hübner, [1799])

Materials. 3♂♂, 2♀♀, Alatoprak, 1190 m, 29.vii.2011.

39. *Peribatodes correptaria* (Zeller, 1847)*

Materials. 1♂, Kaşak, 1800 m, 26.vii.2011.

40. *Peribatodes umbrarius* (Hübner, [1809])*

Materials. 2♂♂, 3♀♀, Kavakbaşı-Koyunlu, 1610 m, 22.vii.2011; 1♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011; 1♀, 11.10.2011.

41. *Perizoma flavofasciata* (Thunberg, 1792)*

Materials. 1♂, İkizler, 1500 m, 10.vi.2012.

42. *Protorhoe unicata* (Guenée, [1858])*

Materials. 1♂, Alatoprak, 1190 m, 17.v.2010.

43. *Pseudopanthera syriacata* (Guenée, 1852)

Materials. 2♀♀, Kavakbaşı-Koyunlu, 1610 m, 22.vii.2011.

44. *Pydna badiaria* (Freyer, [1841])*

Materials. 2♂♂, Gümüşkanat, 1120 m, 28.vi.2012.

45. *Rhodometra sacraria* (Linnaeus, 1767)*

Materials. 2♂♂, 3♀♀, Kavakbaşı-Koyunlu, 1610 m, 22.vii.2011; 1♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

46. *Rhodostrophia discopunctata* Amsel, 1935

Materials. 2♂♂, 1♀, Kaşak, 1800 m, 26.vii.2011.

47. *Scopula beckeraria* (Lederer, 1853)

Materials. 2♂♂, 5♀♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

48. *Scopula rubiginata* (Hufnagel, 1767)

Materials. 1♂, Tolgalı, 1220 m, 24.v.2012.

49. *Scotopteryx bipunctaria* ([Denis & Schiffermüller], 1775)

Materials. 2♂♂, Alatoprak, 1190 m, 27.iv.2011.

50. *Scotopteryx vicinaria* (Duponchel, 1830)

Materials. 2♂♂, Alatoprak, 1190 m, 27.iv.2011.

51. *Thalera fimbrialis* (Scopoli, 1763)

Materials. 1♀, Tolgalı, 1220 m, 29.vi.2011.

Limacodidae

52. *Latoia inexpectata* (Staudinger, [1896])

Materials. 1♂, Tolgalı, 1220 m, 29.vi.2011.

Lasiocampidae

53. *Chondrostege palaestrana* Staudinger, 1892* (Fig. 3)

Materials. 2♂♂, 1♀, Kavakbaşı, 1610 m, 14.viii.2010.





Figure 3. *Chondrostega palaestrana*. a. Male adult, b. Male genitalia (Gp545). Photos: E. Seven

54. *Eriogaster rimicola* (Schrank, 1802)

Materials. 1♂, Çaygeçit, 1260 m, 02.x.2010.

55. *Malacosoma franconica* ([Denis & Schiffermüller], 1775)*

Materials. 1♂, 1♀, İkizler, 1500 m, 10.vi.2012.

56. *Phyllodesma tremulifolium* (Hübner, [1810])

Materials. 3♂♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

Lymantriidae

57. *Leucoma salicis* (Linnaeus, 1758)

Materials. 2♀♀, Tolgalı, 1220 m, 29.vi.2011.

58. *Ocneroxia amanda* Staudinger, [1892]*

Materials. 1♂, Tolgalı, 1220 m, 29.vi.2011; 1♂, Kaşak, 1800 m, 26.vii.2011.

59. *Parocneria terebynthina* (Staudinger, [1895])*

Materials. 2♂♂, 2♀♀, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010; 2♀♀, Yeniköy, 1650 m, 27.vi.2010; 1♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

Noctuidae

60. *Abrostola triplasia* (Linnaeus, 1758)

Materials. 2♂♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

61. *Acontia trabealis* (Scopoli, 1763)

Materials. 1♂, 1♀, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010.

62. *Acontia lucida* (Hufnagel, 1766)

Materials. 3♂♂, Alatoprak, 1190 m, 17.v.2010.

63. *Acontiola lascivalis* (Lederer, 1855)*

Materials. 1♂, Alatoprak, 1190 m, 10.vi.2010.

64. *Acontiola moldavicola* (Herrich-Schäffer, [1851])*

Materials. 1♀, Alatoprak, 1190 m, 10.vi.2010.

65. *Acronicta aceris* (Linnaeus, 1758)

Materials. 1♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

66. *Acronicta psi* (Linnaeus, 1758)*

Materials. 1♂, 1♀, Alatoprak, 1190 m, 28.ix.2011.

67. *Aedia funesta* (Esper, [1786])*

Materials. 4♂♂, Tolgalı, 1220 m, 29.vi.2011; Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

68. *Aedophron phlebophora* Lederer, 1858

Materials. 1♂, Alatoprak, 1190 m, 02.x.2010.

69. *Agrochola gratiosa* (Staudinger, 1882)

Materials. 2♂♂, 1♀, Alatoprak, 1190 m, 02.x.2010.

70. *Agrochola osthelderi* Boursin, 1951*

Materials. 1♂, 1♀, Alatoprak, 1190 m, 02.x.2010.

71. *Agrochola mansueta* (Herrich-Schäffer, [1850])

Materials. 1♀, Alatoprak, 1190 m, 02.x.2010.

72. *Agrotis bigramma* (Esper, [1790])

Materials. 5♂♂, 3♀♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

73. *Agrotis obesa* (Boisduval, 1829)

Materials. 1♂, 1♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

74. *Amphipyra boursini* Hacker, 1998*

Materials. 1♂, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010; 1♂, 1♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

75. *Anthracia eriopoda* (Herrich-Schäffer, [1851])

Materials. 2♂♂, 1♀, Alatoprak, 1190 m, 02.x.2010.

76. *Apamea lithoxylaea* (Fabricius, 1787)*

Materials. 1♂, Kaşak, 1800 m, 26.vii.2011.

77. *Apamea monoglypha* (Hufnagel, 1766)

Materials. 3♂♂, 1♀, Gümüşkanat, 1120 m, 28.vi.2012; 2♂♂, Alatoprak, 1190 m, 17.v. 2010.

78. *Aporophyla canescens* (Duponchel, 1826)*

Materials. 3♂♂, Alatoprak, 1190 m, 02.x.2010.

79. *Aporophyla nigra* (Haworth, [1809])*

Materials. 1♂, 1♀, Tolgalı, 1220 m, 22.ix.2011; Çaygeçit 4 km NE, 1150 m, 11.x. 2011.

80. *Atethmia centrigo* (Haworth, [1809])*

Materials. 1♂, 1♀, Tolgalı, 1220 m, 22.ix.2011.

81. *Autophila einsleri* Amsel, 1935

Materials. 2♂♂, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010.

82. *Basistriga flammata* ([Denis & Schiffermüller], 1775)

Materials. 1♂, Alatoprak, 1190 m, 02.x.2010.

83. *Behounekia freyeri* (Frivaldsky, 1835)

Materials. 1♂, 2♀♀, Çaygeçit 4 km NE, 1150 m, 23.iv.2010. 2♂♂, Çaygeçit, 1260 m, 24.iii.2010.

84. *Bena bicolorana* (Fuessly, 1775)

Materials. 1♀, Tolgalı, 1220 m, 29.vi.2011.

85. *Bryophilopsis roederi* (Standfuss, 1892)

Materials. 2♂♂, 1♀, Alatoprak, 1190 m, 10.vi.2010; 1♂, 1♀, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010.

86. *Calophasia lunula* (Hufnagel, 1766)

Materials. 1♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

87. *Calophasia platyptera* (Esper, [1788])*

Materials. 3♂♂, 1♀, Ulaş, 1220 m, 24.iv.2010.

88. *Caradrina surchica* (Boursin, 1937)*

Materials. 1♂, 2♀♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

89. *Caradrina bodenheimeri* (Draudt, 1934)*

Materials. 2♂♂, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010; 3♂♂, 1♀, Ulaş, 1220 m, 24.iv.2010.

90. *Caradrina clavipalpis* (Scopoli, 1763)

Materials. 2♂♂, 5♀♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011; 1♂, 1♀, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010; 2♂♂, Alatoprak, 1190 m, 17.v. 2010.

91. *Caradrina flavirena* (Guenée, 1852)

Materials. 1♂, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010; 2♂♂, Alatoprak, 1190 m, 17.v. 2010.

92. *Caradrina agrotina* (Staudinger, 1892)*

Materials. 1♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

93. *Catocala abacta* Staudinger, 1900

Materials. 1♂, 1♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011; 2♂♂, Alatoprak, 1190 m, 17.v. 2010.

94. *Catocala conversa* (Esper, 1783)

Materials. 1♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

95. *Catocala elocata* (Esper, [1787])

Materials. 1♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

96. *Catocala nymphagoga* (Esper, [1787])*

Materials. 2♂♂, 1♀, Alatoprak, 1190 m, 10.vi.2010.

97. *Chazarina incarnata* (Freyer, 1838)

Materials. 1♂, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010.

98. *Chersotis margaritacea* (Villers, 1789)*

Materials. 2♀♀, Alatoprak, 1190 m, 02.x.2010.

99. *Chloantha hypericii* (Fabricius, 1787)

Materials. 1♂, 1♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

100. *Chrysodeixis chalcites* (Esper, [1789])*

Materials. 2♂♂, Alatoprak, 1190 m, 02.x.2010.

101. *Cleonymia opposita* (Lederer, 1870)*

Materials. 3♂♂, 1♀, Ulaş, 1220 m, 24.iv.2010.

102. *Clytie syriaca* (Bugnion, 1837)

Materials. 1♂, 1♀, Çaygeçit 4 km NE, 1150m, 14.viii. 2011; 1♂, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010.

103. *Colobochyla platyzona* (Lederer, 1870)*

Materials. 1♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

104. *Cornutiplusia circumflexa* (Linnaeus, 1767)

Materials. 3♂♂, Ulaş, 1220 m, 24.iv.2010.

105. *Cryphia petricolor* (Lederer, 1870)*

Materials. 1♂, 1♀, Tolgalı, 1220 m, 29.vi.2011.

106. *Cryphia raptricula* ([Denis & Schiffermüller], 1775)

Materials. 2♂♂, Alatoprak, 1190 m, 10.vi.2010; 1♂, 1♀, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010.

107. *Cryphia rectilinea* (W. Warren, 1909)

Materials. 1♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

108. *Cryphia tephrocharis* Boursin, 1954

Materials. 1♂, Çaygeçit 4 km NE, 1150m, 14.viii. 2011.

109. *Cryphia amasina* (Draudt, 1931)

Materials. 2♀♀, İkizler, 1500 m, 10.vi.2012.

110. *Dichagyris erubescens* (Staudinger, 1892)*

Materials. 2♂♂, Yumrumeşe-Ocaklı, 1660 m, 24.iv.2010; 1♂, 05.v.2010.

111. *Dichagyris fredii* (Brandt, 1938)

Materials. 2♀♀, Alatoprak, 1190 m, 28.ix.2011; 02.x.2010; 1♂, 1♀, Tolgalı, 1220 m, 14.ix.2012.

112. *Dichagyris singularis* (Staudinger, 1877)*

Materials. 3♂♂, Alatoprak, 1190 m, 28.ix.2011; 1♂, 02.x.2010.

113. *Dichagyris celsicola* (Bellier, 1858)

Materials. 1♂, 1♀, Gümüşkanat, 1120 m, 28.vi.2012.

114. *Dichagyris signifera* ([Denis & Schiffermüller], 1775)

Materials. 2♂♂, Alatoprak, 1190 m, 17.v.2010; 1♀, Çaygeçit 4 km NE, 1150, 14.viii.2011.

115. *Dicycla oo* (Linnaeus, 1758)*

Materials. 1♀, Yeniköy, 1650 m, 27.vi.2010; 1♂, Çatalsöğüt, 1500 m, 22.vii.2012; 2♂♂, 1♀, Yumrumeşe-Ocaklı, 1660 m, 05.v.2010.

116. *Drasteria saisani* (Staudinger, 1882)

Materials. 2♂♂, 1♀, Çatalsöğüt, 1500 m, 22.vii.2012.

117. *Drasteria sesquilinea* (Staudinger, 1888)

Materials. 4♂♂, Çaygeçit, 1260 m, 22.v.2010; 02.vi.2010; 21.vii.2011; 1♂, Alatoprak, 1190 m, 17.v.2010.

118. *Dryobotodes monochroma* (Esper, 1790)*

Materials. 1♂, Çaygeçit, 1260 m, 22.v.2010.

119. *Earias insulana* (Boisduval, 1833)*

Materials. 1♂, 1♀, Gümüşkanat, 1120 m, 09.viii.2012.

120. *Egira anatolica* (Hering, 1933)

Materials. 2♂♂, 1♀, Çaygeçit, 1260 m, 24.iii.2010.

121. *Epilecta linogrisea* ([Denis & Schiffermüller], 1775)*

Materials. 3♂♂, 2♀♀, Alatoprak, 1190 m, 28.ix.2011.

122. *Episema korsakovi* (Christoph, 1885)*

Materials. 3♂♂, 2♀♀, Alatoprak, 1190 m, 02.x.2010; 2♀♀, 05.xi.2010.

123. *Eublemma aureola* Fibiger & Hacker, 2002

Materials. 2♀♀, Alatoprak, 1190 m, 10.vi.2010.

124. *Eublemma ochreola* (Staudinger, 1900)

Materials. 1♂, Alatoprak, 1190 m, 10.vi.2010.

125. *Eublemma polygramma* (Duponchel, [1842])

Materials. 1♂, 1♀, Alatoprak, 1190 m, 17.v.2010; 21.viii.2011; 2♂♂, Tolgalı, 1220 m, 29.vi.2011; 1♀, Gümüşkanat, 1120 m, 13.vii.2012.

126. *Eublemma ostrina* (Hübner, [1808])

Materials. 2♂♂, 1♀, Alatoprak, 1190 m, 17.v.2010; 21.viii.2011; 2♂♂, Tolgalı, 1220 m, 29.vi.2011; 1♂, Gümüşkanat, 1120 m, 13.vii.2012.

127. *Eublemma parva* (Hübner, [1808])

Materials. 2♀♀, Alatoprak, 1190 m, 28.ix.2011.

128. *Euchalcia dorsiflava* (Standfuss, 1892)

Materials. 1♂, Yumrumeşe-Ocaklı, 1660 m, 05.v.2010.

129. *Eugnorisma chaldaica* (Boisduval, 1840)

Materials. 2♂♂, Gümüşkanat, 1120 m, 13.vii.2012.

130. *Eulocastra diaphora* (Staudinger, 1879)

Materials. 1♂, 1♀, Yumrumeşe-Ocaklı, 1660 m, 13.vi.2010.

131. *Eutelia adulatrix* (Hübner, [1813])*

Materials. 2♂♂, Tolgalı, 1220 m, 29.vi.2011; 1♀, 21.vii.2012;

132. *Exophyla rectangularis* (Geyer, [1828])*

Materials. 1♂, Çaygeçit, 1260 m, 24.iii.2010.

133. *Grammodes stolidia* (Fabricius, 1775)*

Materials. 1♂, Alatoprak, 1190 m, 17.v.2010; 1♀, Tolgalı, 1220 m, 14.ix.2012.

134. *Hadena sancta* (Staudinger, 1859)*

Materials. 2♂♂, Alatoprak, 1190 m, 17.v.2010.

135. *Hadena roseocandida* Hacker, 1996

Materials. 1♂, Alatoprak, 1190 m, 17.v.2010.

136. *Hadena gueneei* (Staudinger, 1901)

Materials. 1♂, Alatoprak, 1190 m, 17.v.2010.

137. *Hadena drenowski* (Rebel, 1930)*

Materials. 2♀♀, Kavakbaşı-Koyunlu crossroad, 1610 m, 22.vii.2011.

138. *Hadena impressa* (Esper, [1790])*

Materials. 1♂, 1♀, Tolgalı, 1220 m, 21.vii.2012; 1♀, 22.viii.2011.

139. *Hadena magnolii* (Boisduval, 1828)

Materials. 1♀, Alatoprak, 1190 m, 17.v.2010.

140. *Hadula mendica* (Staudinger, [1895])

Materials. 1♂, Çaygeçit, 1260 m, 02.vi.2010.

141. *Heliothis peltigera* ([Denis & Schiffermüller], 1775)

Materials. 1♀, Kavakbaşı-Koyunlu crossroad, 1610 m, 22.vii.2011; 1♂, Çaygeçit 4 km NE, 1150, 14.viii.2011.

142. *Hoplodrina ambigua* ([Denis & Schiffermüller], 1775)

Materials. 2♀♀, Kavakbaşı-Koyunlu crossroad, 1610 m, 22.vii.2011; 1♂, Çaygeçit 4 km NE, 1150, 14.viii.2011.

143. *Hypena obesalis* Treitschke, 1829*

Materials. 1♂, Alatoprak, 1190 m, 14.iv.2010; 1♀, 17.v.2010.

144. *Lacanobia splendens* (Hübner, [1808])*

Materials. 1♂, Alatoprak, 1190 m, 21.viii.2011.

145. *Leucania loreyi* (Duponchel, 1827)

Materials. 3♂♂, 1♀, Tolgalı, 1220 m, 29.vi.2011.

146. *Leucania punctosa* (Treitschke, 1825)*

Materials. 2♀♀, Tolgalı, 1220 m, 29.vi.2011.

147. *Leucochlaena muscosa* (Staudinger, 1892)*

Materials. 1♂, 1♀, Alatoprak, 1190 m, 02.x.2010.

148. *Megalodes eximia* (Freyer, 1845)

Materials. 1♂, Tolgalı, 1220 m, 29.vi.2011.

149. *Mesoligia furuncula* ([Denis & Schiffermüller], 1775)

Materials. 1♂, Alatoprak, 1190 m, 02.x.2010.

150. *Mesoligia literosa* (Haworth, [1809])*

Materials. 3♀♀, Gümüşkanat, 1120 m, 28.vi.2012.

151. *Metalopha gloriosa* (Staudinger, 1892)*

Materials. 2♂♂, Yumrumeşe-Ocaklı, 1660 m, 24.iv.2010.

152. *Metopoplus boursini* Brandt, 1938*

Materials. 1♂, 1♀, Tolgalı, 1220 m, 21.vii.2012.

153. *Micriantha decorata* (Frivaldsky, 1845)*

Materials. 1♂, Yumrumeşe-Ocaklı, 1660 m, 24.iv.2010.

154. *Minucia bimaculata* Osthelder, 1933

Materials. 1♂, 2♀♀, Yumrumeşe-Ocaklı, 1660 m, 24.iv.2010.

155. *Mythimna alopecuri* (Boisduval, 1840)*

Materials. 1♂, 1♀, Tolgalı, 1220 m, 14.ix.2012.

156. *Mythimna l-album* (Linnaeus, 1767)

Materials. 3♂♂, 1♀, Yumrumeşe-Ocaklı, 1660 m, 24.iv.2010; 2♂♂, Tolgalı, 1220 m, 14.ix.2012.

157. *Mythimna vitellina* (Hübner, [1808])

Materials. 3♂♂, Yumrumeşe-Ocaklı, 1660 m, 24.iv.2010; 4♂♂, Tolgalı, 1220 m, 14.ix.2012.

158. *Mythimna ferrago* (Fabricius, 1787)

Materials. 1♀, Tolgalı, 1220 m, 14.ix.2012.

159. *Mythimna unipuncta* (Haworth, [1809])

Materials. 1♂, Alatoprak, 1190 m, 02.x.2010.

160. *Noctua janthina* ([Denis & Schiffermüller], 1775)*

Materials. 2♂♂, Alatoprak, 1190 m, 28.ix.2011.

161. *Noctua fimbriata* (Schreber, 1759)

Materials. 1♂, 1♀, Çaygeçit, 1260 m, 02.vi.2010.

162. *Noctua orbona* (Hufnagel, 1766)

Materials. 3♂♂, 1♀, Çaygeçit, 1260 m, 02.vi.2010; 2♂♂, Alatoprak, 1190 m, 28.ix.2011.

163. *Noctua comes* (Hübner, [1813])

Materials. 1♂, 1♀, Çaygeçit, 1260 m, 02.vi.2010; 2♂♂, Alatoprak, 1190 m, 28.ix.2011.

164. *Ophiusa lunaris* (Goeze, 1781)

Materials. 1♂, Alatoprak, 1190 m, 14.iv.2010.

165. *Opigena polygona* (Fabricius, 1787)

Materials. 1♂, Alatoprak, 1190 m, 28.ix.2011.

166. *Periphanes treitschkii* (Frivaldszky, 1835)

Materials. 2♂♂, Gümüşkanat, 1120 m, 28.vi.2012.

167. *Periphanes victorina* (Sodoffsky, 1849)*

Materials. 1♀, Gümüşkanat, 1120 m, 28.vi.2012.

168. *Plecoptera inquinata* (Lederer, 1857)

Materials. 2♀♀, Kavakbaşı-Koyunlu crossroad, 1610 m, 22.vii.2011; 1♂, Çaygeçit 4 km NE, 1150, 14.viii.2011.

169. *Polia sagittigera* (Hufnagel, 1766)

Materials. 1♂, Tolgalı, 1220 m, 29.vi.2011.

170. *Polypogon schwingenschussi* (Wagner, 1937)*

Materials. 2♂♂, 1♀, Çaygeçit 4 km NE, 1150, 14.viii.2011.

171. *Pseudenargia deleta* (Osthelder, 1933)

Materials. 1♂, Alatoprak, 1190 m, 28.ix.2011.

172. *Pseudenargia regina* (Staudinger, 1892)

Materials. 1♂, Alatoprak, 1190 m, 28.ix.2011.

173. *Setoctena dentula* (Lederer, 1869)*

Materials. 1♂, 1♀, Tolgalı, 1220 m, 29.vi.2011.

174. *Sideridis luteago* ([Denis & Schiffermüller], 1775)

Materials. 2♂♂, Çaygeçit 4 km NE, 1150, 14.viii.2011.

175. *Simyra dentinosa* Freyer, 1839*

Materials. 2♂♂, Yumrumeşe-Ocaklı, 1660 m, 05.v.2010.

176. *Spodoptera exiguum* (Hübner, [1808])

Materials. 1♂, 2♀♀, Kavakbaşı-Koyunlu crossroad, 1610 m, 22.vii.2011; 3♂♂, Çaygeçit 4 km NE, 1150, 14.viii.2011.

177. *Ulochlaena hirta* (Hübner, [1813])

Materials. 1♂, 1♀, Alatoprak, 1190 m, 28.ix.2011.

178. *Victrix boursini* (Draudt, 1936)

Materials. 1♂, Alatoprak, 1190 m, 28.ix.2011.

Nolidae

179. *Meganola gigantula* (Staudinger, 1879)*

Materials. 3♂♂, Tolgalı, 1220 m, 29.vi.2011

180. *Meganola togatulalis* (Hübner, 1796)*

Materials. 1♂, 1♀, Tolgalı, 1220 m, 21.vii.2012; 1♀, 22.viii.2011.

Notodontidae

181. *Cerura vinula* (Linnaeus, 1758)

Materials. 2♂♂, 1♀, Yumrumeşe-Ocaklı, 1660 m, 24.iv.2010.

182. *Clostera pigra* (Hufnagel, 1766)*

Materials. 1♂, Yumrumeşe-Ocaklı, 1660 m, 24.iv.2010.

183. *Furcula bicuspis* (Borkhausen, 1790)

Materials. 1♂, Alatoprak, 1190 m, 21.viii.2011.

184. *Furcula interrupta* (Christoph, 1867)

Materials. 1♀, Tolgalı, 1220 m, 29.vi.2011.

185. *Notodonta tritophus* ([Denis & Schiffermüller], 1775)

Materials. 2♂♂, Tolgalı, 1220 m, 29.vi.2011.

186. *Stauropus fagi* (Linnaeus, 1758)

Materials. 1♂, Tolgalı, 1220 m, 29.vi.2011.

Saturniidae

187. *Saturnia pyri* ([Denis & Schiffermüller], 1775)

Materials. 1♂, 1♀, Alatoprak, 1190 m, 14.iv.2010.

Thyatiridae

188. *Tethea or* ([Denis & Schiffermüller], 1775)

Materials. 1♂, Alatoprak, 1190 m, 14.iv.2010.

Zygaenidae

189. *Theresimima ampellophaga* (Bayle-Barelle, 1808)*

Materials. 1♂, 1♀, Gümüşkanat, 1120 m, 29.v.2012.

190. *Zygaena sedi* Fabricius, 1787*

Materials. 1♂, Gümüşkanat, 1120 m, 29.v.2012.

191. *Zygaena cuvieri* Boisduval, 1828

Materials. 1♂, Tolgalı, 1220 m, 29.vi.2011.

192. *Zygaena grasilini* Lederer, 1855*

Materials. 1♀, Alatoprak, 1190 m, 17.v.2010.

4. DISCUSSION AND CONCLUSION

Totally 192 species in the Arctiidae, Cimeliidae, Ctenuchidae, Geometridae, Limacodidae, Lasiocampidae, Lymantriidae, Noctuidae, Nolidae, Notodontidae, Saturniidae, Thyatiridae and Zygaenidae families are discovered for the first time from Mutki district and 85 species are reported for the first time from Bitlis Province, faunistically. And, with the 110 previously known species [7], the total Macroheterocera species has reached to 302.

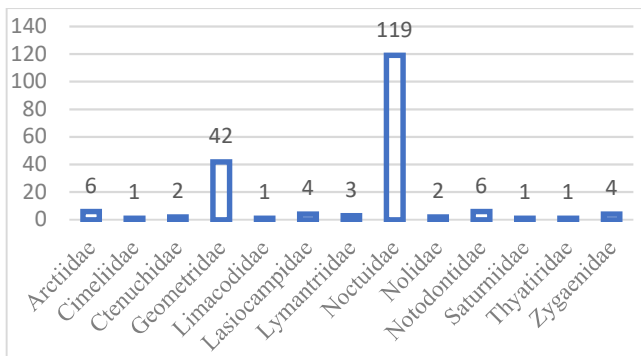


Figure 4. Number of determined species in the study region according to the families

The majority of the determined species, nearly 62%, consist of noctuid moths. And,

approximately 22% of the species are geometrid moths. The remaining 31 species are within the other 11 families (Fig. 4).

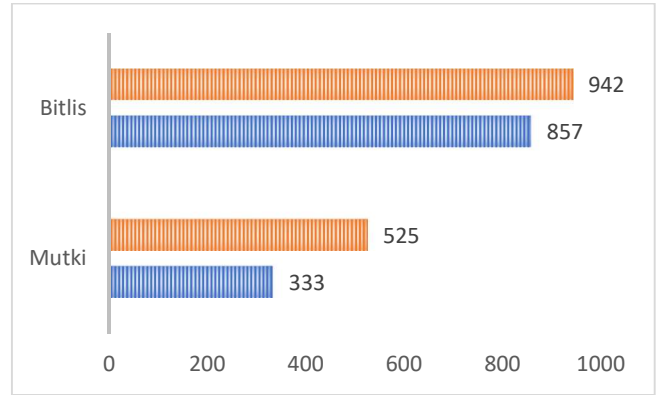


Figure 5. Total number of moths before and after the research in the Mutki district and Bitlis Province

As the result of this study compared with before researches [7, 10], the number of moth species in Mutki district reached to 525 and in Bitlis Province rose to 942 (Fig. 5).

Moreover, distribution of *Eupithecia gemellata* Herrich-Schäffer, 1861 (Fig. 2) is known from southwest and southern Europe, Balkans and Asian Turkey (only Bursa and Kahramanmaraş Provinces) [10, 26] and distribution of *Chondrostega palaestrana* Staudinger, 1891 (Fig. 3) is known from eastern Turkey (Van Province), Syria, Israel and Iran [31]. In this way, the research has also contributed to the distribution areas of these species which are rare in Turkey.

ACKNOWLEDGMENTS

We are grateful to Dr. Vladimir Mironov (Zoological Institute RAS, Russia) for considerable help in identification of *Eupithecia gemellata* Herrich-Schäffer, 1861 species.

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