



Biodiversity of the subfamily catocalinae boisduval, [1818] (lepidoptera; noctuidae) in iran

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Abstract

The list of subfamily Catocalinae (Lepidoptera; Noctuidae) of Iran is updated. Until now, 111 species belonging to 22 genera of this subfamily are recorded. Also, the Iranian records in different provinces are presented.

Key words: *Anumeta*, Catocalinae, *Catocala*, *Clytie*, *Drasteria*, Iran

Introduction

Iran is the 18th-largest country in the world in terms of area at 1,648,195 km² (636,372 sq mi). It is a mountainous country of particular geopolitical significance owing to its location in three spheres of Asia. Iran's climate ranges from arid or semiarid, to subtropical along the Caspian coast and the northern forests. On the northern edge of the country (the Caspian coastal plain) temperatures rarely fall below freezing and the area remains humid for the rest of the year. The populous western part is the most mountainous, with ranges such as the Zagros and Alborz Mountains; the last contains Iran's highest point. The northern part of Iran is covered by dense rain forests called Shomal or the Jungles of Iran. The eastern part consists mostly of desert basins such as the Dasht-e Kavir, Iran's largest desert, in the north-central portion of the country, and the Dasht-e Lut, in the east, as well as some salt lakes. This is because the mountain ranges are too high for rain clouds to reach these regions. Iran's faunal diversity is comparatively high due to the country's varied geological, altitudinal and climatic structure; therefore it would be expected that there is a rich Lepidoptera fauna in this country. In the present paper the list of the species and subspecies of subfamily Catocalinae in Iran is provided. Totally, 111 species and subspecies belong to 22 genera are listed. In addition, new distributional data for some species are presented here (Table 1).

Martial and Method

Adult specimens were collected using mobile light trap systems (powered by 12 volt batteries and 8 watt Black light UVB tubes) from Iran. Genitalia of both sexes were dissected, stained, and mounted following Fibiger (1997). Prepared genitalia slides were examined using binocular stereomicroscope (Olympus

SZ60). Photographs of adult specimens and genitalia were taken by a Canon Power Shot A3000 Digital Camera, using a stereomicroscope eyepiece for the genitalia. Arc GIS 9.2 software was used to make the geographical map of the Iran (Fig. 1).



Fig 1. Geographical position of Iran's provinces.

Table 1. Checklist of species of subfamily Catocalinae of Iran. Abbreviation: AG- Azarbayjan-e-Gharbi, AS- Azarbayjan-e-Sharghi, Bo- Boushehr, EM- Elburz mountains, E- Esfahan, F- Fars, G- Golestan, H- Hormozgan, K- Kerman, Ke- Kermanshah, Ko- Kordestan, Kh- Khozestan, Khr- Khorasan, L- Lorestan, M- Mazandaran, NI- North of Iran, Q- Qom, SB- Sistan va Balouchestan, SI- South of Iran, T- Tehran.

Serial number	Taxon	Distribution in Iran
Genus: <i>Catephia</i> Ochsenheimer, 1816		
1	<i>Catephia alchymista</i> [Denis & Schiffermuller], 1775	F, T (Ebert & Hacker, 2002).
Genus: <i>Hypersypnoides</i> Berio, 1954		
2	<i>Hypersypnoides submarginata</i> (Walker, 1865)	F (Ebert & Hacker, 2002).
Genus: <i>Zethes</i> Rambur, 1833		
3	<i>Zethes insularis</i> Rambur, 1833	F (Ebert & Hacker, 2002), K, SB.
4	<i>Zethes narghisa</i> Brandt, 1938	F (Brandt, 1938), K, SB.
5	<i>Zethes nemea</i> Brandt, 1938	F (Brandt, 1938), K.
6	<i>Zethes brandti</i> Janzon, 1977	F (Janzon, 1977)
Genus: <i>Pericyma</i> Herrich-Schaffer, 1851		
7	<i>Pericyma albidentaria</i> (Freyer, 1842)	T, F (Ebert & Hacker, 2002).
8	<i>Pericyma squalens</i> Lederer, 1855	T, F, SB (Ebert & Hacker, 2002).
9	<i>Pericyma signata</i> Brand, 1939	SB (Brand, 1939).
Genus: <i>Tyroca</i> Wiltshire, 1970		
10	<i>Tyroca dispar</i> (Pungeler, 1904)	SB, H (Ebert & Hacker, 2002).
11	<i>Tyroca fasciotata</i> (Warren, 1905)	H (Ebert & Hacker, 2002).
Genus: <i>Heteropalpia</i> Berio, 1933		
12	<i>Heteropalpia acrosticta</i> (Pungeler, 1904)	H (Ebert & Hacker, 2002).
13	<i>Heteropalpia vetusta</i> (Walker, 1865)	T, F, SB, H (Ebert & Hacker, 2002).
14	<i>Heteropalpia wiltshirei</i> Hacker & Ebert, 2002	H, L (Hacker & Ebert, 2002)
Genus: <i>Pandesma</i> Guenee, 1852		
15	<i>Pandesma robusta</i> (Walker, 1858)	T, F, Ko, L, H, SB, K (Ebert & Hacker, 2002).

Genus: <i>Cerocala</i> Boisduval, 1829		
16	<i>Cerocala sana</i> Staudinger, 1901	SB, H (Ebert & Hacker, 2002).
Genus: <i>Ophiusa</i> Ochsenheimer, 1816		
17	<i>Ophiusa trihaca</i> (Cramer, 1773)	F, K (Ebert & Hacker, 2002).
Genus: <i>Minucia</i> Moore, [1885]		
18	<i>Minucia bimaculata</i> Osthelder, 1933	H (Ebert & Hacker, 2002).
19	<i>Minucia lunaris</i> ([Denis & Schiffermuller], 1775)	NI (Hacker, 1990)
Genus: <i>Clytie</i> Hubner, [1823]		
20	<i>Clytie delunaris</i> (Staudinger, 1889)	F, Q, T (Ebert & Hacker, 2002).
21	<i>Clytie syriaca</i> (Bugnion, 1837)	H (Ebert & Hacker, 2002).
22	<i>Clytie gracilis</i> (Bang-Haas, 1907)	M, F, E, SB, H (Ebert & Hacker, 2002), K.
23	<i>Clytie sancta</i> (Staudinger, 1898)	Kh, H, SB, Ke (Ebert & Hacker)
24	<i>Clytie devia</i> (Swinhoe, 1884)	SB, H (Ebert & Hacker, 2002), K.
25	<i>Clytie terrulenta</i> (Christoph, 1893)	F, SB (Ebert & Hacker, 2002).
26	<i>Clytie infrequens</i>	SB, Bo (Ebert &

	(Swinhoe, 1884)	Hacker, 2002).
27	<i>Clytie distincta iranica</i> Brandt, 1939	SB (Brandt, 1939b), K, H (Ebert & Hacker, 2002).
Genus: <i>Dysgonia</i> Hubner, [1823]		
28	<i>Dysgonia rogenhoferi</i> (Bohatsch, 1880)	NI (Hacker, 1990)
29	<i>Dysgonia torrida</i> (Guenee, 1852)	SI (Ebert & Hacker, 2002).
30	<i>Dysgonia algira</i> (Linnaeus, 1767)	AG, T, M (Ebert & Hacker, 2002).
31	<i>Dysgonia latifasciata</i> Warren, 1888	SI (Ebert & Hacker, 2002).
Genus: <i>Grammodes</i> Guenee, 1852		
32	<i>Grammodes paerambar</i> Brandt, 1939	F, L (Brandt, 1939a).
33	<i>Grammodes stolidia</i> (Fabricius, 1775)	F, AS, L (Ebert & Hacker, 2002).
Genus: <i>Anydrophila</i> John, 1909		
34	<i>Anydrophila fouadi grisea</i> Wiltshire, 1949	F (Ebert & Hacker, 2002).
35	<i>Anydrophila sirdar</i> Brandt, 1939	H (Ebert & Hacker, 2002), SB (Brandt, 1939b).
36	<i>Anydrophila distincta</i> Brandt,	SB (Brandt,

	1939	1939b)
37	<i>Anydrophila hoerhammeri</i> <i>hoerhammeri</i> Brandt, 1939	SB (Brandt, 1939b).
38	<i>Anydrophila hoerhammeri kasyi</i> Wiltshire, 1976	H (Wiltshire, 1976), SB.
39	<i>Anydrophila banghaasi</i> Brandt, 1939	SB (Brandt, 1939b).
Genus: <i>Euclidia</i> Ochsenheimer, 1816		
40	<i>Euclidia munita</i> (Hubner, 1813)	NI (Hacker, 1990)
Genus: <i>Drasteria</i> Hubner, [1818]		
41	<i>Drasteria flexuosa</i> (Menetries, 1848)	AG, AS, T, Ko, K, Q, SB, Bo (Ebert & Hacker, 2002).
42	<i>Drasteria caucasica</i> (Kolenati, 1846)	T (Ebert & Hacker, 2002).
43	<i>Drasteria picta</i> (Christoph, 1877)	NI (Hacker, 1990), K, SB.
44	<i>Drasteria cailino</i> (Lefebvre, 1827)	T, AG, Kh, Ko, H, Z, K (Ebert & Hacker, 2002), SB, K.
45	<i>Drasteria saisani</i> (Staudinger, 1882)	T, Khr (Ebert & Hacker, 2002), SB, K.
46	<i>Drasteria yerburii</i> (Butler,	L, H, SB (Ebert &

	1892)	Hacker, 2002) K.
47	<i>Drasteria rada</i> (Boisduval, 1848)	AG (Ebert & Hacker, 2002).
48	<i>Drasteria kabyalaria columbina</i> (Brandt, 1941)	SB (Brandt, 1941), H (Ebert & Hacker, 2002), K.
49	<i>Drasteria sinuosa</i> (Staudinger, 1884)	SI (Ebert & Hacker, 2002), K.
50	<i>Drasteria austere</i> (John, 1921)	SB (Ebert & Hacker, 2002).
Genus: <i>Catocala</i> Schrank, 1802		
51	<i>Catocala lesbia</i> Christoph, 1887	T, L, F (Ebert & Hacker, 2002).
52	<i>Catocala lupina kastshenkoi</i> Sheljuzhko, 1943	NI (Hacker, 1990), K
53	<i>Catocala mesopotamica</i> Kuznezov, 1903	Ko, L, F (Ebert & Hacker, 2002).
54	<i>Catocala nymphaea</i> (Esper, 1787)	T, Kh (Ebert & Hacker, 2002).
55	<i>Catocala luscini</i> Brandt, 1938	F (Brandt, 1938).
56	<i>Catocala neonympha</i> (Esper, 1805)	Ha, Ke (Ebert & Hacker, 2002).
57	<i>Catocala fredii</i> Bytinski-Salz, 1937	T (Bytinski-Salz, 1937), Ko (Ebert & Hacker, 2002).

58	<i>Catocala nymphagoga</i> (Esper, 1787)	Kh (Ebert & Hacker, 2002).
59	<i>Catocala brandti</i> Hacker & Kautt, 1999	E (Hacker & Kautt, 1999), Fars, Ko, M (Ebert & Hacker, 2002).
60	<i>Catocala diversa</i> (Geyer, 1828)	F (Ebert & Hacker, 2002).
61	<i>Catocala hymenaea</i> ([Denis & Schiffermuller], 1775)	Ko (Ebert & Hacker, 2002).
62	<i>Catocala fraxini</i> (Linnaeus, 1758)	NI (Hacker, 1990).
63	<i>Catocala electa</i> (Vieweg, 1790)	NI, SI (Hacker, 1990), SB.
64	<i>Catocala elocata</i> (Esper, [1787])	T, Kh (Ebert & Hacker, 2002).
65	<i>Catocala afghana</i> Swinhoe, 1885	SB (Ebert & Hacker, 2002).
66	<i>Catocala deducta</i> Eversmann, 1843	F (Ebert & Hacker, 2002).
67	<i>Catocala puerpera</i> (Giorna, 1791)	T, Ko, L, Khr (Ebert & Hacker, 2002).
68	<i>Catocala abacta iranica</i> Brandt, 1938	AG, Ko, F (Brandt, 1938)
69	<i>Catocala sponsa</i> (Linnaeus, 1767)	NI (Hacker, 1990).

70	<i>Catocala promissa</i> ([Denis & Schiffermuller], 1775)	NI (Hacker, 1990).
71	<i>Catocala lupina</i> Herrich-Schaffer, 1851	T, F (Ebert & Hacker, 2002).
72	<i>Catocala timur richteri</i> Wiltshire, 1961	SB (Ebert & Hacker, 2002).
73	<i>Catocala persimilis</i> Warren, 1888	F (Ebert & Hacker, 2002).
Genus: <i>Acantholipes</i> Lederer, 1857		
74	<i>Acantholipes regularis</i> (Hubner, [1813])	M, Ke, SB (Ebert & Hacker, 2002).
75	<i>Acantholipes circumdata</i> (Walker, 1858)	SB, H (Ebert & Hacker, 2002).
Genus: <i>Anumeta</i> Walker, 1858		
76	<i>Anumeta atosignata</i> Walker, 1858	SB, H (Ebert & Hacker, 2002).
77	<i>Anumeta spilota</i> (Ershov, 1874)	SB, H (Ebert & Hacker, 2002).
78	<i>Anumeta asiatica</i> Wiltshire, 1961	NI, SI (Hacker, 1990), K.
79	<i>Anumeta arenosa</i> Brandt, 1939	SB (Brandt, 1939b).
80	<i>Anumeta henkei</i> (Staudinger,	SB (Ebert &

	1877)	Hacker, 2002), K.
81	<i>Anumeta cestis</i> (Menetries, 1848)	SB, H (Ebert & Hacker, 2002), K.
Genus: <i>Lygephila</i> Billberg, 1820		
82	<i>Lygephila pallida subpicata</i> Wiltshire, 1971	T (Wiltshire, 1971), F, Kh (Ebert & Hacker, 2002).
83	<i>Lygephila fereidun</i> Wiltshire, 1961	EM(Ebert & Hacker, 2002).
84	<i>Lygephila schachti</i> Behounek & Hacker, 1986	NI (Hacker, 1990).
85	<i>Lygephila craccae</i> ([Denis & Schifermuller], 1775)	M, T, Kh, Ko, L (Ebert & Hacker, 2002), SB, K.
86	<i>Lygephila procax</i> (Hubner, 1813)	M (Ebert & Hacker, 2002).
87	<i>Lygephila exsiccata</i> (Lederer, 1855)	T, F, SB, H (Ebert & Hacker, 2002).
Genus: <i>Autophila</i> Hubner, [1823]		
88	<i>Autophila glebicolor</i> (Ershov, 1874)	F (Ebert & Hacker, 2002).
89	<i>Autophila hirsuta</i> (Staudinger, 1870)	T (Ebert & Hacker, 2002).
90	<i>Autophila cinnamonea</i>	NI (Ronkay,

	Ronkay, 1989	1989).
91	<i>Autophila libanotica</i> (Staudinger, 1901)	F (Ebert & Hacker, 2002), SB.
92	<i>Autophila depressa depressa</i> (Pungeler, 1914)	Khr (Ebert & Hacker, 2002), SB.
93	<i>Autophila depressa draudti</i> Osthelder, 1933	F, T (Ebert & Hacker, 2002).
94	<i>Autophila depressa perornata</i> Boursin, 1947	SB (Boursin, 1947).
95	<i>Autophila banghaasi</i> Boursin, 1940	F, T, SB (Ebert & Hacker, 2002).
96	<i>Autophila sinesevida</i> Wiltshire, 1952	F (Wiltshire, 1952).
97	<i>Autophila iranica</i> Ronkay, 1989	EM (Ronkay, 1989).
98	<i>Autophila limbata</i> (Staudinger, 1871)	F, T, Kh (Ebert & Hacker, 2002).
99	<i>Autophila luxuriosa nigromarginata</i> Schwingenschuss, 1939	T (Schwingenschuss, 1939).
100	<i>Autophila luxuriosa clara</i>	F (Wiltshire,

	Wiltshire, 1952	1952), SB.
101	<i>Autophila luxuriosa garmsira</i> Wiltshire, 1952	F (Wiltshire, 1952).
102	<i>Autophila eurytaenia</i> Boursin, 1963	T (Ebert & Hacker, 2002).
103	<i>Autophila subfusca latistria</i> Ronkay, 1989	T (Boursin, 1963).
104	<i>Autophila subfusca brandti</i> Ronkay, 1989	SB (Ronkay, 1989).
105	<i>Autophila asiatica</i> (Staudinger, 1888)	T, F, K (Ebert & Hacker, 2002).
106	<i>Autophila cerealis amseli</i> Draudt,	G (Draudt, 1936).

	1936	
107	<i>Autophila ligaminosa subligaminosa</i> (Staudinger, 1888)	SB, H (Ebert & Hacker, 2002).
108	<i>Autophila plattneri</i> Boursin, 1955	T (Ebert & Hacker, 2002).
Genus: <i>Apopestes</i> Hubner, [1823]		
109	<i>Apopestes spectrum</i> (Esper, [1787])	T, F (Ebert & Hacker, 2002).
110	<i>Apopestes noe</i> Ronkay, 1990	Ko (Ebert & Hacker, 2002).
111	<i>Apopestes phantasma</i> (Eversmann, 1843)	T, F, SB (Ebert & Hacker, 2002).

Result and Discussion

Totally, 111 species and subspecies belong to 22 genera of Subfamily Catocalinae from Iran are listed. Among these genera, Catocala, Authophila, Drasteria include 49 percent of all genera in this subfamily.

References

- Ebert, G. and Hacker, H. (2002). Beitrag zur Fauna der Noctuidae des Iran: Verzeichnis der bestände im staatlichen Museum für Naturkunde Karlsruhe, taxonomische Bemerkungen und beschreibung neuer Taxa. *Esperiana*. 9: 237-409.
- Boursin, Ch. (1947). Über zwei *Autophila* arten aus den Brandt'schen ausbeuten aus Sud-und Ost-Iran. *Zeitschrift der Wiener Entomologischen Gesellschaft*, 32: 142-148.
- Boursin, Ch. (1963). Un nouveau *Mythimna* o. De la region du Gulf Persique. *Arkiv för Zoologii* (Ser. 2), 16, 8, 165-167.

- Brandt, W. (1938). Beitrag zur Lepidopteren-fauna von Iran. *Entomologische Rundschau*, 55: 72 pp.
- Brandt, W. (1939a). Beitrag zur Lepidopteren-Fauna von Iran. Einige neue Agrotiden aus Luristan und Belutschistan. *Entomologische Rundschau*, 56, 241-246.
- Brandt, W. (1939b). Beitrag zur Lepidopteren-Fauna von Iran. Einige neue Agrotiden aus Luristan und Belutschistan. *Entomologische Rundschau*, 56, 268-273.
- Brandt, W. (1941). Beitrag zur Lepidopteren-Fauna von Iran (3). Neue Agrotiden nebst Faunenverzeichnissen. *Mitteilungen der Münchner Entomologische Gesellschaft*, 31, 835-863.
- Bytinsky-Salz, H. & Brandt, W. (1937). New Lepidoptera from Iran. *Entomologist's Record* 49 (Suppl.), 1-9.
- Draudt, M. (1934-1938). Phalaenae. [in] Seitz, A., Die palaearktischen Eulenartigen Nachtfalter. Die Gross-Schmett. Erde 3 (Suppl.): 96-332, Taf. Stuttgart.
- Hacker, H. (1990). Die Noctuidae Vorderasiens (Lepidoptera). Systematische List mit einer Übersicht über die Verbreitung unter besondere Berücksichtigung der fauna der Türkei (einschließlich der Nachbargebiete Balkan, Südrußland, Westturkestan, Arabische Halbinsel, Ägypten). *Neue Entomologische Nachrichten*, 27: 1-707, 16 Taf.
- Janzon, L. A. (1977). Beiträge zur Kenntnis der noctuiden Irans 1. Beitrag: *Zethes brandti* n. sp. from Iran (Lepidoptera: Noctuidae). *Entomologica Scandinavica*, 8: 173-176.
- Ronkay, L. (1989). Taxonomic studies on the genus *Autophila* Hubner, 1823 (Lepidoptera, Noctuidae), II. *Acta Zoologica Hungarica*, 35: 1, 2, 111-141.
- Schwingenschuss, L. (1939). Beitrag zur Lepidopterenfauna von Iran (Persien) insbesondere des Elbursgebirges im Nordiran. *Entomologische Rundschau*, 53: 200-210.
- Wiltshire, E. P. (1952). Middle East Lepidoptera X. More new Species and Forms from Persia (Iran) and Syria. *Bulletin de la Société Fouad Ier Entomologie*, 36: 187-201.
- Wiltshire, E. P. (1971). Österreichische Expeditionen nach Persien und Afghanistan. Beiträge zur Lepidopterenfauna, Teil 15. Noctuidae-Quadrianae. *Annalen der Naturhistorisches Museums Wien*, 75: 627-649.
- Wiltshire, E. P. (1976). Middle East Lepidoptera XXXIII: Some new Lasiocampidae, Noctuidae, Geometridae and Limacodidae. *Zeitschrift der Arbeitsgemeinschaft Oster. Entomologen*, 27: 73-82.