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## Faunastic Records of Noctuid Moths (Lepidoptera: Noctuoidea) from Chamba District of Himachal Pradesh

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### Abstract

The occurrence of various kinds of flora and fauna in a region reflects its biological diversity. India is gifted with rich moth fauna, about 4438 moths recorded by Cotes, E.C. and Swinhoe, C. (1887-89) in catalogue of moths of India & 5277 moths recorded by Hampson G.F. (1892-96) in Fauna of British India. Moths are known to be one of the most appropriate taxonomic groups for environmental evaluation and have great economic importance. The study attempted to identify macro moth species diversity of family Noctuidae in Chamba district. A total 144 specimens were collected from various localities.

**Keywords:** Faunistic, Moth, Lepidoptera, Chamba.

### Introduction

According to recent estimates, over 1, 27,000 species of moths from all over the world (Alfred *et al.* 1998) <sup>[1]</sup> are recorded, of which, over 12,000 species are recorded from India (Chandra & Nema 2007) <sup>[2]</sup>. Their immense diversity and ability to adapt to virtually any climate has made them some of the most successful creatures on earth. The economic damage caused by Lepidopteron pests in field crops and on stored grain exacerbates the problem of food security and malnutrition in many developing countries. The moths belonging to order Lepidoptera are scale winged insects, which includes butterflies and moths (Richards D.W. 1977) <sup>[17]</sup>. Lepidoptera is probably one of the most suitable groups for most quantitative comparisons between insect faunas to be valid, for the many reasons elaborated by Holloway (1985 and 1989), especially their abundance, species richness, response to vegetation and climate, their ease of sampling using light traps and relatively advanced taxonomy. Although light trapping of macrolepidoptera has been carried out widely in temperate and tropical regions throughout the world but generally result are not directly comparable between areas because of different light sources, trap design, trapping periods and taxonomic coverage.

Superfamily Noctuoidea is one of the largest groups among the macrolepidopteran families in tropical and subtropical countries includes dominating families like Noctuidae, Erebidae and Notodontidae etc. Family Noctuidae is probably the largest macrolepidopteran family with more than 20,000 described species (Ajay Srivastava, 2002) <sup>[19]</sup>. It includes numerous species of economic, but also stems borer, root feeders, many defoliators, flower, fruit and seed feeders and also predators. The noctuid moths are very important component of natural and agricultural ecosystems. Due to the high diversity of species, the abundance of many species is highly reproductive, migratory and phytophagous feeding of their larvae, many species have posed serious problem of agricultural and forest pests. Family Noctuidae representing large fruit piercing owlet and underwing armyworms, wainscots, brocades, quakers, sharks moths. Noctuid moths can easily be attracted by baiting such as sugaring, wine- roping (Kendrick 2002) <sup>[13]</sup>. These are also known for their pollination, predation and pest abilities and constitute one of the well-studied insect group.

### Collection and Preparation of Specimens

The study areas includes Dalhousie, Banikhet, Khajjair, Chamera Lake, Mankote, Lakkadmandi, Kalatop, Tissa, Saluni, Chamba, Lahru and Nainikhand in Chamba district of Himachal Pradesh. Most of the moths are nocturnal in habit and very few are active in

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evening as well as diurnal. The collection was made through the light traps, using mercury vapour bulb. Moths were killed with ethyl acetate. The collected moths were killed and preserved in air tight wooden boxes.

The moth specimens collected from the trap and sheet were extracted, pinned and labelled in the field while relaxing, spreading and sorting to family level. The preserved specimens studied with the stereoscopic binocular microscope. Identification of moths was carried out with the help of identification keys, internet sources and by comparison with reference collections lying in Entomology section of Zoological Museum in Department of Zoology, Punjabi University, Patiala.

**Discussion**

The result of collection-cum-survey tour concentrates on detailed information on moth fauna of various localities of Chamba district. A total number of 144 specimens of moths belonging to 26 species, 15 genera and 7 subfamilies were recorded during the months of September and October, 2014. The list of all the species cited in Table-1.

The study involved examination of various morphological characters such as antennae, labial palpi, legs, and wing venation and external genitalia. The authentic identification was done by comparisons with the collections lying at different National Museums like Indian Agriculture Research Institute (IARI), New Delhi and Forest Research Institute, Dehradun.

**Conclusion**

Extensive faunistic surveys, along with proper identification and documentation, at least to species level, provide the most reliable data for conservation and management of different habitats. Total 26 species of moths belonging to 15 genera and 7 subfamilies are recorded from Chamba District.

The data illustration of Genus-species and list of all the species cited in Table:-1 and 2 respectively. Subfamily

Catocalinae includes the most of the species (8), followed by the family Hadeninae (6), Noctuidae (5), Plusiinae (3) Agaristinae (2), Stictopterinae (1) and Acronictinae (1).

**Table 1:** List of species recorded in present study:

<b>Subfamily Acronictinae</b>	
1.	<i>Diphthera discibrunea</i> Moore
<b>Subfamily Catocalinae</b>	
2.	<i>Bastilla crameri</i> (Moore)
3.	<i>Bastilla arcototaenia</i> (Guenee)
4.	<i>Dysgonia latifascia</i> Warren
5.	<i>Pericyma glaucinans</i> (Guenee)
6.	<i>Pericyma umbrina</i> (Guenee)
7.	<i>Ophiusa onelia</i> Guenee
8.	<i>Hypocala moorei</i> Butler
9.	<i>Hypocala sabsatura</i> Guenee
<b>Subfamily Hadeninae</b>	
10.	<i>Mythmina unipuncta</i> (Haworth)
11.	<i>Mythmina v-album</i> (Hampson)
12.	<i>Leucania albicosta</i> Swinhoe
13.	<i>Leucania venalba</i> Moore
14.	<i>Callopietria rivularis</i> Walker
15.	<i>Callopietria indica</i> (Butler)
<b>Subfamily Agaristinae</b>	
16.	<i>Aegocera bimacula</i> Walker
17.	<i>Aegocera venulia</i> Cramer
<b>Subfamily Noctuidae</b>	
18.	<i>Agrotis putris</i> (Linnaeus)
19.	<i>Agrotis renalis</i> Moore
20.	<i>Agrotis sicca</i> Hampson
21.	<i>Xestia triangulum</i> (Hufnagel)
22.	<i>Xestia semiherbida</i> (Walker)
<b>Subfamily Plusiinae</b>	
23.	<i>Plusia argyrosigna</i> (Moore)
24.	<i>Trichoplusia ciliaris</i> (Walker)
25.	<i>Trichoplusia orichalea</i> Fabricius
<b>Subfamily Stictopterinae</b>	
26.	<i>Lophoptera illucida</i> (Walker)

**Table 2:** Diversity of genera and species recorded in present study:

	FAMILY	SUBFAMILY	NUMBER OF GENUS	NUMBER OF SPECIES	NUMBER OF SPECIMENS
1	Noctuidae	Plusiinae	3	3	17
2		Acronictinae	1	1	6
3		Agaristinae	1	2	18
4		Hadeninae	3	6	27
5		Stictopterinae	1	1	5
6		Noctuidae	2	5	21
7		Catocalinae	5	8	50
	Total				144

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**References**

1. Alfred JRB, AK Das and AK Sanyal. *Faunal Diversity in India. ENVIS Centre Zoological Survey of India*, Kolkata 1998; 311-318.

2. Chandra K, DK Nema. *Fauna of Madhya Pradesh (including Chhattisgarh) part-I, State Fauna series 15: 347*. Published by Director, Zoological Survey of India, Kolkata.2007.

3. Cotes EC and C Swinhoe. *Catalogue of the Moths of India*, Calcutta. Cramer, 1887-89. Uitlandsche Kapellan.

4. Hampson GF. *Illustrations of typical specimens of Lepidoptera: Heterocera in the collection of the British museum part VIII. The Lepidoptera Heterocera of the Nilgiri district London Taylor and Francis 1891. 144 pp. IV, 18 plates.*

5. Hampson GF. The fauna of British India indicating Ceylon and Burma, Moths 1892; volume 1. Taylor and Francis, London.
6. Hampson GF. The fauna of British India indicating Ceylon and Burma, Moths 1893; volume 2. Taylor and Francis, London.
7. Hampson GF. The fauna of British India indicating Ceylon and Burma, Moths 1894; volume 3. Taylor and Francis, London.
8. Hampson GF. A Description of new Heterocera from India. *Transaction of the Entomology Society of London*. 1895; 277-315.
9. Hampson GF. The fauna of British India indicating Ceylon and Burma, Moths. 1896; volume 4. Taylor and Francis, London.
10. Holloway JD. The Moths of Borneo: Part 14; Family Noctuidae: Subfamilies Euteliinae, Stictopterinae, Plusiinae, Pantheninae. *Malayan Nature Journal* 1985; 38: 1-317.
11. Holloway JD. The Moths of Borneo: Part 12; Noctuidae: Noctuinae, Heliiothinae, Hadeninae, Arconictinae, Amphipyrrinae, Agaristinae. *Malayan Nature Journal* 1989; 43: PP 1-226.
12. Sodhi JS and Gill NS. Inventory of Arctiidae of North-Eastern India (Arctiidae: Lepidoptera). *Journal of Entomological Research*, 2005; 29(3): 243-249.
13. Kendrick RC. Thesis: Moths (Insecta: Lepidoptera) of Hong Kong. University of Hong Kong. 2002. PP 1- 660, 47 plates.
14. Kirti JS, Jassal R and Sekhon CK. An inventory of Calpinae (Noctuidae:Lepidoptera) from Western Ghats of India. *Journal of Applied Biosciences*, 2011; **38(1)**:82-88.
15. Kirti JS, Sekhon, CK and Jassal R. An inventory of Catocalinae (Noctuidae:Lepidoptera) from Western Ghats of India. *Journal of Applied Biosciences*, 2011; **37(2)**: 97-104.
16. Kononenko VS and Pinratana A. Moths of Thailand Vol. 3: Noctuidae. *an illustrated catalogue of the Noctuidae (Insecta, Lepidoptera) in Thailand: Part 1: Subfamilies Herminiinae, Rivulinae, Hypeninae, Catocalinae, Aganainae, Euteliinae, Stictopterinae, Plusiinae, Pantheinae, Acronictinae and Agaristinae. Brothers of St Gabriel in Thailand*. 2005. PP 1-261.
17. Richards DW. Imm's General text book of Entomology. Volume 2: classification and biology 10th Edition, B. I. Publications, New Delhi. 1977:1072-1161.
18. Schintlmeister A. and Pinratana A. Moths of Thailand Vol. 5: Notodontidae. Brothers of St Gabriel in Thailand. 2007: 1-320.
19. Srivastava A. Taxonomy of Moths in India, Dehradun: International Book Distribution. 2002 : 1-334.
20. Swinhoe C. Lepidoptera of Bombay and the decan Heterocera part II proceeding of the zoological society of London 1885: 287- 307, 2 plates. garh.
21. Varshney RK. Modern classification of Insecta above family level. *Bionotes*. 2003: 5(3&4) & 6(1,2&3): 61-62 & 85-87; 9-11; 43-44; 67-69.