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Inventory of owlet moths from Western Ghats of India (Noctuidae: Lepidoptera)

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Abstract

An inventory of owlet moths has been prepared from Western Ghats of India. As many as 1300 representatives of 41 species referable to 24 genera belonging to family Noctuidae have been collected, studied and 27 species have been reported for the first time from this area.

Keywords: Inventory, Moths, Noctuidae, Western Ghats, India.

1. Introduction

During the recent intensive collection-cum-survey tours conducted in the far flung localities of Western Ghats of India between September 2008-2012 by the second author resulted in the collection of 41 species referable to 24 genera of subfamilies viz., Hadeninae, Heliiothinae, Noctuinae, Plusiinae, Stictopterinae and Amphipyriinae. The authentic identification of various taxa has been based on the works of (Hampson, 1894, 1905) and by comparison of collections lying in the museums of Forest Research Institute, Dehradun and Indian Agriculture Research Institute, PUSA, New Delhi. Comparison has also been made with the types of the Natural History Museum, London. The primary objective of the present communication is to prepare an inventory with, authentic identification, first reference, type species, material examined, distribution and remarks, if any, of all included species.

2. Materials and Methods

Intensive and extensive survey cum collection tours were conducted in the far flung localities of Western Ghats between September 2008 to 2012, which yielded a collection of 1300 adult representatives of subfamilies viz., Hadeninae, Heliiothinae, Noctuinae, Plusiinae, Stictopterinae and Amphipyriinae of family Noctuidae. The entire materials were collected from light traps using a 40W ultraviolet light suspended on one side of a vertical white sheet (approximately 2.0 m x 2.5 m). Sometimes a portable light trap or petromax lamp (during failure of electricity) was also used. Various sampling sites in different localities of Gujarat, Maharashtra, Karnataka, Goa, Kerala, and Tamil Nadu were surveyed exclusively during this period. The adult representatives of different species were collected and killed with ethyl acetate vapours in insect killing jars of different sizes, depending upon the size of the specimen. In order to keep the scales intact on the body of the moths, they were removed from the bottles as soon as they were killed. Each of the killed specimens was pinned properly. This was preceded by spreading of both the wings on the insect stretching board, followed by their drying. Each specimen was labelled. The specimens were preserved in airtight boxes, having naphthalene balls as fumigants. Various morphological characters, such as head appendages, wing maculation, wing venation and genitalia, were examined to identify different species.

3. Observation

The moths belonging to family Noctuidae can be easily recognised from their sitting posture, but doubtful cases can be readily confirmed from neuration of hindwings i.e., after tropical treatment with toluene. A complete list of identified species along with their material examined and old distribution is given below:

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Subfamily Hadeninae

Genus Mythmina Ochsenheimer

Ochsenheimer, 1816, *Schmett Eur.*, 4:78

Type species: *Phalaena turca* Linnaeus.

Distribution: Universally distributed except the Australian region.

***Mythmina reversa* Moore**

Moore, *Lep. Ceyl.*, 3:6.

Old Distribution: Shimla, Sikkim; Ganjam; Nilgiris, Sri Lanka, E.Pegu.

Material Examined:

Karnataka : Medikeri: 30.vii.07, 2♂♂.

Kerala : Devikulam: 2.xi.07, 1♀.

Remarks: This species has been reported for the first time from Western Ghats of India.

Mythimna unipuncta (Haworth)

Haworth, 1809, *Lep. Brit.* 1809: 174

Material Examined

Karnataka : Ganeshgudi: 14.x.05, 2♂♂.

Kerala : Mukkali: 12.viii.07, 1♂, 1♀.

***Mythmina v-album* (Hampson)**

Hampson, *Ill. Het.*, 8:69

Material Examined

Karnataka: Medikeri: 30.vii.07, 2♂♂.

Kerala: Devikulam: 2.xi.07, 1♂.

Remarks: This species has been reported for the first time from Western Ghats of India.

Genus Aletia Ochsenheimer

Ochsenheimer, 1816, *Schmett. Eur.*, 4: 78.

Type species: *Phalaena turca* Linnaeus.

Distribution: Universally distributed

***Aletia l-album* Linnaeus**

Linnaeus, 1767, *Syst. Nat.*, 1(2):850

Old Distribution: Assam, Nilgiris, Sri Lanka; Andamans, Sumatra.

Material Examined

Tamil Nadu: Kotagiri, 24.viii.06, 2♂♂.

***Aletia decisissima* Walker**

Walker, 1894, *Ill. Het.*, 6:78

Old Distribution: Sikkim, Assam, Nilgiris, Sri Lanka, Andamans, Sumatra.

Material Examined

Karnataka: Medikeri: 11.viii.07, 3♀♀.

Remarks: This species has been reported for the first time from Western Ghats state *i.e.*, Karnataka from India.

Genus Sasunaga Moore

Moore, 1881, *Proc. Zool. Soc. Lond.* 1881: 342

Type species: *Hadena tenebrosa* Moore.

Distribution: S. America; India and Sri Lanka.

***Sasunaga tenebrosa* Moore**

Moore, 1865, *P.Z.S.*, 1865: 59.

Old Distribution: Shimla; Sikkim; Poona; Nilgiris; Sri Lanka.

Material Examined

Karnataka : Dandali: 1. viii.07, 1♀.

Remarks: This species has been reported for the first time from Western Ghats state *i.e.*, Karnataka from India.

Genus Leucania Ochsenheimer

Ochsenheimer, 1816, *Eur. Schmett.* 1816: 81

Type species: *Leucania comma* Linnaeus.

Distribution: Universally distributed except the Australian region.

***Leucania venalba* Moore**

Moore, 1867, *Cat.*, 4: 81.

Old Distribution: Dharmasala, Khasis, Sri Lanka.

Material Examined

Tamil Nadu: Gudalur: 13. xii. 06, 1♂, 1♀.

Remarks: This species has been reported for the first time from Western Ghats state *i.e.*, Tamil Nadu from India.

***Leucania albicosta* Swinhoe**

Swinhoe, 1877, *Lep. Ceyl.*, 6: 12.

Old Distribution: Dharmasala; Sikkim; Khasis; Nagas; Nilgiris; Bernadmyo.

Material Examined:

Karnataka: Panhala: 7.ix.07, 2♂♂, 4♀♀.

Remarks: This species has been reported for the first time from Western Ghats state *i.e.*, Karnataka from India.

Genus Egira Duponchel

Duponchel, [1845] 1844, *Cat. Meth. Lepid. Eur.*, 2: 162.

Type species: *Phalaena conspicillaris* Linnaeus.

Distribution: Universally distributed.

***Egira v-album* Hampson**

Hampson, 1894, *Ill. Het.*, 8: 78.

Old Distribution: Nilgiris.

Material Examined

Tamil Nadu: Cornoor: 20.xi.05, 1♂.

Genus *Calloplistria* Hübner

Hübner [1821] 1816, *Verz. bekannter Schmett.*: 216.

Type species: *Phalaena juvenina* Stoll.

Distribution: Universally distributed

***Calloplistria rivularis* Walker**

Walker, 1816, *Cat.*, **12**: 867

Old Distribution: N.W Himalayas; Nilgiris; Sri Lanka, Fiji.

Material Examined

Karnataka : BR Hills: 9.xii.07, 1♂.

Tamil Nadu : Kotagiri: 14.viii.05, 2♂♂.

Kerala : Periyar: 22.xi.09, 1♂.

***Calloplistria placodoides* (Guenée)**

Guenée, 1816, *Noct.*, **2**: 296

Old Distribution: Nilgiris, Borneo, Java.

Material Examined:

Karnataka : Vadaserikera: 20. xi. 08, 1♀, Medikeri: 27.ix.06, 2♀♀.

Tamil Nadu : Kuttu: 9.x.06, 4♂♂.

Remarks: This species has been reported for the first time from Western Ghats state *i.e.*, Karnataka from India.

***Calloplistria aethiops* Butler**

Butler, 1816, *A.M.N.H.*, **1** (5):200

Old Distribution: Japan, Nilgiris.

Material Examined

Tamil Nadu : Kuttu: 10.x.06, 2♀♀.

Karnataka : Medikeri: 29.ix.08, 2♂♂.

Remarks: This species has been reported for the first time from Western Ghats state *i.e.*, Karnataka from India.

***Calloplistria repleta* Walker**

Walker, 1816, *Cat.*, **13**: 865

Old Distribution: Japan; N.W. Himalayas.

Material Examined

Karnataka: Medikeri: 30.vii.07, 1♀.

Remarks: This species has been reported for the first time from Western Ghats of India.

***Calloplistria indica* (Butler)**

Butler, *A.M.N.*, **8** (6):76,

Old Distribution: N.W. Himalayas; Canara; Borneo.

Material Examined

Kerala: Makkali: 11.vii.07, 1♂.

Remarks: This species has been reported for the first time from Western Ghats of India.

Subfamily Heliothinae

GENUS *ADISURA* MOORE

Moore, 1881, *Proc. Zool. Soc. Lond.* **1881**: 367.

Type species: *Adisura atkinsoni* Moore.

Distribution: Sikkim, Assam Hills and throughout Peninsular India and Sri Lanka.

***Adisura dulcis* (Moore)**

Moore, 1881, *P. Z. S.*, **1881**: 368.

Old Distribution: N W Himalayas, Sikkim; Bombay Presidency; Kolkata, Ganjam.

Material Examined

Karnataka: Dandali: 10.viii.10, 1♀, 1♂.

***Adisura atkinsoni* Moore**

Moore, 1881, *Proc. Zool. Soc. Lond.*, **1881**: 368.

Old Distribution: Sikkim; Nagas; Karachi and throughout the Bombay and Madras Presidencies, Sri Lanka.

Material Examined

Kerala: Periyar: 23.xi.08, 2♀♀.

Maharashtra: Malshejghat: 3.ix.06, 1♀.

Karnataka: BR Hills: 27.ix.07, 1♀.

Subfamily: Noctuinae

Genus *Agrotis* Ochseneheimer

Ochseneheimer, 1816, *Schnett. Eur.*, **4**: 66.

Type species: *Noctua segetum* Schiffermüller.

Distribution: Universally distribution.

***Agrotis renalis* (Moore)**

Moore, 1881, *Proc. Zoo. Soc.*, **1881**: 341

Old Distribution: N.W. Himalayas; Punjab; Sind.

Material Examined:

Karnataka: Dubare: 4.x.10, 1♀.

Remarks: This species has been reported for the first time from Western Ghats state *i.e.*, Karnataka from India.

***Agrotis sicca* Guenée**

Guenée, 1852, *Noct.*, **1**: 135.

Old Distribution: Punjab.

Material Examined

Karnataka: Dandali: 12.viii.10, 3♂♂, Medikeri: 7.viii.10, 1♂.

Remarks: This species has been reported for the first time from Western Ghats state *i.e.*, Karnataka from India.

***Agrotis plecta* Linnaeus**

Linnaeus, 1867, *Syst. Noct.*, **1867**: 851.

Old Distribution: N. America; Europe; S. Africa; Japan; Sikkim; Sri Lanka.

Material Examined

Karnataka: Mornala: 12.vi.08, 1♀, 1♂.

Remarks: This species has been reported for the first time from Western Ghats state *i.e.*, Karnataka from India.

***Agrotis putris* Linnaeus**

Linnaeus, 1758, *Syst. Nat.*, **1**: 850.

Old Distribution: Europe, Japan, Dharamshala.

Material Examined

Karnataka: Dubare: 4.xi.10, 1 ♂.
Tamil Nadu: Kuttu: 5.xi.10, 2 ♂♂.

Remarks: This species has been reported for the first time from Western Ghats of India.

Genus *Hermonassa* Walker

Walker, 1865, *Cat. Lep. Het.*, **32**: 631.

Type species: *Hemonassa consignata* Walker.

Distribution: Japan, Himalayas.

***Hermonassa consignata* Walker**

Walker, 1865, *Cat.*, **32**: 632.

Old Distribution: Kashmir, Dharamshala, Sikkim.

Material Examined

Tamil Nadu: Gurdalur: 3.viii.06, 3 ♂♂.

Remarks: This species has been reported for the first time from Western Ghats of India.

Genus *Xestia* Hübner

Hübner, 1818, *Zutrage Samml. Exot. Schmett.* **1**: 16.

Type species: *Noctua ochreago* Hübner.

Distribution: Palaerctic and Oriental region.

***Xestia triangulum* (Hufnagel)**

Hufnagel, 1766, *Proc. Zool. Soc.*, **2**: 55.

Old Distribution: Japan; N.W. Himalayas; Sikkim; Satara; Nilgiris.

Material Examined

Karnataka: Agumbe, 18.09.07, 4 ♀♀; Jogfalls, 09.08.06, 2 ♀♀.

***Xestia semiherbida* (Walker)**

Walker, 1857, *Cat. Lep. Het.*, **11**: 743.

Old Distribution: Japan; Dharamsala; Sikkim.

Material Examined

Karnataka: Gharkhal: 03.v.06. 2 ♂♂, 4 ♀♀.

Remarks: This species has been reported for the first time from Karnataka from India.

Subfamily Plusiinae

Genus *Plusia* Ochsenheimer

Ochsenheimer, 1816, *Schmett. Eur.*, **4**: 89.

Type species: *Phalaena festucae* Linnaeus.

Distribution: Universally Distributed.

***Plusia argyrosigna* (Moore)**

Moore, 1961, *Lep. Atk.*, **12**: 149.

Old Distribution: Europe; Japan; China; Dharamsala; Nilgiris.

Material Examined

Karnataka: Medikeli: 5.x.2006, 1 ♂.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Karnataka from India.

Genus *Scriptoplusia* Ronkay

Ronkay, 1987, *Annl. Hist. Nat. Mus. Natn. Hung.*, **79**: 170.

Type species: *Phalaena nigriluna* Walker.

Distribution: Universally distributed.

***Scriptoplusia nigriluna* (Walker)**

Walker, 1856, *Cat. Lep. Het.*, **12**: 931.

Old Distribution: Sikkim; Sri Lanka.

Material Examined

Tamil Nadu: Gudular: 20.x.6, 2 ♂♂.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Tamil Nadu from India.

Genus *Trichoplusia* McDunnough

McDunnough, 1944, *Mem. Soc. Calif. Acad. Sci.*, **2**: 204.

Type species: *Plusia brassicae* Riley.

Distribution: Universally distributed.

***Trichoplusia ciliaris* (Walker)**

Walker, 1856, *Cat. Lap. Het.*, **12**: 928.

Old Distribution: Europe; Sengal; Congo; Himalayas as far as east Sikkim.

Material Examined

Kerala: Devi Kulum: 2.xi.07, 1 ♂, 3.xi.07, 2 ♂♂, 1.xi.11, 1 ♂, Ramhajee: 5.x.06, 1 ♂.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Kerala from India.

***Trichoplusia lectula* (Walker)**

Walker, 1856, *Cat. Lep. Het.*, **15**: 1679.

Old Distribution: Bengal; Canara; Sri Lanka.

Material Examined

Kerala: Devi Kulum: 1.xi.07, 1 ♀.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Kerala from India.

***Trichoplusia orichalcea* (Fabricius)**

Fabricius, *Sp. Ins.*, **2**: 227.

Old Distribution: Azores, Madeira; Canaries; St. Helena; Ascension; South Africa; Mauritius; Arabia; Japan; China; Formosa; throughout India and Sri Lanka.

Material Examined

Kerala: Agali: 27.x.07, 1 ♀.
Karnataka: Medikeri: 13.xi.5, 1 ♀.

Genus *Autographa* Hübner

Hübner 1821, *Verz. bek. Schmett.* **16**: 251.

Type species: *Phalaena gamma* Linnaeus.

Distribution: Universally distributed.

***Autographa nigrisigna* (Walker)**

Walker, 1857, *Cat. Lep. Het.*, **12**: 928.

Old Distribution: N. W. Province; the Himalayas from Shimla to Sikkim.

Material Examined

Karnataka: Ganeshgudi: 7.viii.09, 2 ♀ ♀, 1 ♂.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Karnataka from India.

Genus *Cornutiplusia* Kostrowicki

Kostrowicki, 1961, *Acta. Zool. Cracov.*, **6**: 432.

Type species: *Phalaena circumflexa* Linnaeus.

Distribution: Universally distributed.

***Cornutiplusia circumflexa* (Linnaeus)**

Linnaeus, 1777, *Syst. Nat.*, **1**(2): 844.

Old Distribution: Europe; Teneriffe; S. Africa; Nilgiris.

Material Examined

Karnataka: Ganeshgudi: 13.x.5, 1 ♂, Medikeri: 27.vii.06, 3 ♂ ♂.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Karnataka from India.

Genus *Erythroplusia* Ichinose

Ichinose, 1962, *Kontyu*, **30**: 249.

Type species: *Plusia rutilifrons* Walker.

Distribution: Universally distributed.

***Erythroplusia pyropia* (Butler)**

Butler, 1881, *Amer. Mus. Nat. Hist.*, **4** (5): 367.

Old Distribution: Japan; Dharamsala; Sikkim; Nagas.

Material Examined

Karnataka: Jogfalls: 7.x.06, 1 ♀.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Karnataka from India.

Genus *Ctenoplusia* Dufay

Dufay, 1970, *Faune Madagascar*, **31**: 91.

Type species: *Plusia limbirena* Guenée.

Distribution: Africa; N.E. Asia; Kenya; Uganda; Mauritius; Palaearctic region.

***Ctenoplusia limbirena* (Guenée)**

Guenée, 1852, *Noct.*, **2**: 350.

Old Distribution: Sikkim; Sri Lanka; St. Helena; S. Africa; Madagascar; Aden; N. W. Himalayas; Nilgiris.

Material Examined

Karnataka: B.R. Hills: 9.xii.06, 2 ♂ ♂, Medikeri: 13.xi.05, 2 ♂ ♂.

Tamil Nadu: Kotagiri: 22.xi.03, 1 ♂.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Karnataka from India.

***Ctenoplusia placida* (Moore)**

Moore, 1884, *Lap. Ceyl.*, **3**: 73

Old Distribution: Abyssinia; Congo; N. India; Nilgiris; Sri Lanka.

Material Examined

Karnataka: Medikeri: 11.ix.07, 2 ♀ ♀.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Karnataka from India.

Genus *Zonoplusia* Chou & LU

Chou & Lu, 1979, *Entomotaxonomia*, **1** (1): 15

Type species: *Plusia ochreatea* Walker.

Distribution: Universally distributed.

***Zonoplusia ochreatea* (Walker)**

Walker, 1826, *Cat. Lep. Het.*, **33**: 839.

Old Distribution: Hongkong; Formosa; Shimla; Nagas; Nilgiris.

Material Examined

Karnataka: Medikeri: 30.vii.07, 1 ♂.

Maharastra: Malshej Ghat: 11.xi.10, 1 ♂.

Remarks: This species has been reported for the first time from Western Ghats states *i.e.*, Karnataka, Maharashtra from India.

Subfamily Stictopterinae

Genus *Lophoptera* Guenée

Guenée 1852, *Hist. Nat. Insects Lepid.*, **3**: 54

Type species: *Lophoptera squammigera* Guenée.

Distribution: Australia; India; Sri Lanka.

***Lophoptera illucida* (Walker)**

Walker, 1865, *List. Specimens lepid. Insects Colln Br. Mus.*, **33**: 918

Old Distribution: Formosa, Punjab, Ganjam, Moulmein.

Material Examined

Karnataka: Hulikal: 5.viii.06, 2 ♀ ♀, Agumbe: 1.viii.06, 5 ♂ ♂.

Genus *Odontodes* Guenée
Guenée, 1852, *Noct.*, **3**: 50

Type species: *Odontodes aleuca* Guenée.

Distribution: W. Africa; throughout India, Sri Lanka, and Mynamar; Java.

***Odontodes aleuca* Guenée**
Guenée, 1852, *Hist. Nat. Ins.*, **7**: 51.

Old Distribution: W. Africa, Throughout India and Burma.

Material Examined
Kerala: Devi Kulum: 24.vii.08, 1♂.

Subfamily Amphipyridae

Genus *Euplexia* Stephens
Stephens, 1829, *Nom. Br. Insects.*, **1829**: 41.

Type species: *Euplexia lucipara* Linnaeus.

Distribution: Nearctic and Palaerctic regions; throughout India, Sri Lanka and Mayanmar; Fiji.

***Euplexia conducta* Walker**
Walker, 1829, *Cat.*, **10**: 296.

Old Distribution: Throughout India, Sri Lanka & Burma; Andamans; Fiji.

Material Examined
Karnataka: Medikeri: 11.ix.07, 2♀♀.

***Euplexia semifascia* (Walker)**
Walker, 1856, *Cat. Lep. Het.*, **33**: 737.

Old Distribution: N. W. Himalayas; Satara; Nilgiris.

Material Examined
Karnataka: Medikeri: 11.ix.07, 4♀♀.

Genus *Caradrina* Ochsenheimer
Ochsenheimer, 1816, *Schmetz. Eur.*, **4**:80

Type species: *Phalaena morpheus* Hufnagel.

Distribution: Universally distributed.

***Caradrina plagiata* Walker**
Walker, 1877, *Cat.*, **15**: 1758.

Old Distribution: Moulmein; Rangoon.

Material Examined
Karnataka: Medikeri: 27.ix.06, 1♂., Augmbe: 1.viii.06, 2♀♀.

Remarks: This species has been reported for the first time from India.

Genus *Ercheia* Walker
Walker [1858] 1857, *List Specimens lepid. Insects Colln. Br. Mus.*, **13**: 1078, 1107.

Type species: *Ercheia diversipennis* Walker.

Distribution: Australia; India; Sri Lanka

***Ercheia cyllaria* (Cramer)**
Cramer, 1857, *Cram. Pap. Exot.*, **3**: 251.

Old Distribution: Throughout India, Sri Lanka and Burma; Borneo.

Material Examined
Goa: Castle Rock: 17.ix.07, 2♂♂.

Genus *Sesamia* Guenée
Guenée, 1852, in Boisduval & Guenée, *Hist. nat. Insectes.*, **5**:95.

Type species: *Cursus nonagrioides* Lefebvre.

Distribution: Palearctic region and throughout India, Sri Lanka and Burma.

***Sesamia inferens* (Walker)**
Walker, 1816, *Cat.*, **9**: 105.

Old Distribution: Sind; Bombay; Mhow; Sri Lanka; Burma.

Material Examined
Gujrat: Waghai: 1.x.07, 2♀♀.
Tamil Nadu: Gudalur: 17.ix.05, 2♀♀.

Remarks: This species has been reported for the first time from Western Ghats of India.

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