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Erebid Moths of Lonavala: A tourist spot in the Western Ghats with tremendous anthropogenic pressure, and a new range extension record

Aparna Sureshchandra Kalawate^{1*}, Shital Pawara², Prachee Surwade¹

¹Zoological Survey of India, Western Regional Centre, Vidhya Nagar, Sector 29, P.C.N.T. (PO), Rawet Road, Akurdi, Pune, Maharashtra 411044, India.

²GSDP & Ph.D. Student S.G. Patil Arts, Science & Commerce College, Sakri, Maharashtra 424304, India.

Corresponding author: devarpanento@gmail.com (<https://orcid.org/0000-0001-6595-6749>)

Abstract

The present study was taken up with an aim to document the diversity of Erebid moth from Lonavala, Maharashtra. A total of 44 species of 36 genera in 10 subfamilies belonging to Erebidae, Lepidoptera have been reported. It was a part of a short project conducted by the Green Skilled Development Programme (GSDP) students of the certificate course on para-taxonomy [including Peoples Bio-diversity Register (PBRs)] at Zoological Survey of India (ZSI), Western Regional Centre (WRC), Pune. This article also presents a new distribution and range extension of *Calesia* sp. One endemic moth, *Olepa clavatus* (Swinhoe, 1885) is also reported from the studied site. Additionally, the data on type species, type locality along with their distributional record from India and outside India, bionomics for each species are also presented.

Key words: Moths, Northern Western Ghats, diversity, anthropogenic, *Calesia*.

Introduction

Insects are the most successful creatures on the earth. Among them, Lepidoptera is one of the most diverse insect orders. Moths and butterflies are the insect groups under Lepidoptera. There are approximately 160,000 species of moths (Nieukerken *et al.*, 2011) and most of them are major and minor pest. Moths are nocturnal feasting on the varied crops, wild trees, ornamental plants, etc. They are of economic importance as the larvae of majority of the moths feed voraciously on the plant parts (leaves, flowers, stem, seeds) and are the

damaging stage responsible for food losses. Erebidae moths are of immense economic importance as some adults (fruit sucking moth) feed on the commercial fruits like citrus, causing economic loss to the farmers. In case of a widely distributed fruit sucking moth, *Eudocima phalonia* (Linnaeus, 1763), the adults have destructive feeding habits and not the larvae. Larvae of this moth feed on wild trees (Menispermaceae and Fabaceae) (Kumar and Lal, 1983). The damage in citrus orchard in India may vary from 10–55% (Dadmal and Pawar, 2001) and 57% in pomegranate (Mote *et al.*, 1991). Some microorganisms introduced

on the citrus orchards due to the feeding habits of these moths cause rotting and premature fruit fall (Sands *et al.*, 1993). The damage caused by the moth is also severe in economic crops like cotton, brinjal, citrus, tomato, sugarcane, cereals, millets, pulses, vegetables and plantation crops.

Besides, some are indicator taxa that utilize lichens as a food source and are useful in pollution monitoring (Kendrick, 2002). They are preyed in different life stages by bats, birds, lizards, amphibians, dragonflies, spiders, small mammals, fungi, bacteria etc. It is one of the most speciose families with the species count of 24,569 in 1,760 genera (Nieukerken *et al.*, 2011) and are well-studied. From Maharashtra, 86 species have been reported by Mitra *et al.*, (2019); 128 species from northern Western Ghats of Maharashtra by Subhalaxmi *et al.*, (2011); 101 species from the northern Maharashtra (Gurule and Nikam, 2013); 10 species from Pench National Park, Maharashtra (Kalawate & Sharma, 2017); 44 species from northern Western Ghats of Maharashtra (Kalawate, 2018a); two species of erebid moths, *Gurna indica* (Moore 1879) (Kalawate *et al.*, 2019) and *Mecodina metagraptia* Hampson, 1926 (Kalawate, 2018b) were recently rediscovered from India.

The present study was a part of short project undertaken by the GSDP students of Para-Taxonomy [including Peoples Biodiversity Register (PBR)] certificate course of ZSI, WRC, Pune, and hence was a time bound

project (course duration: 03 months). The nearby study site selected was Lonavala, a small town and a hill station in Pune district of Maharashtra and a part of Western Ghats, which is an important Biodiversity Hotspots and a UNESCO world heritage site. It is surrounded by the highly urbanised cities like Mumbai and Pune, thus faces lot of pressure of tourists being a hills station. The biodiversity in Northern Western Ghats faces degradation by human exploitation. The global conservation problem is the loss and fragmentation of tropical rainforest forming a major proportion of the world's biodiversity (Whitmore, 1997; Kapoor, 2006). Fragmentation of natural habitat is a problem in the northern Western Ghats, and moths are sensitive to habitat fragmentation and the species whose larvae are monophagous are more affected by the loss of habitat than the polyphagous (Ockinger *et al.*, 2010).

The distributional records of the species from India and outside India along with the type species and type locality data and bionomics have been provided in this paper. On perusal of literature, it was found that less or no work on the moth fauna of Lonavala in general and Erebidae in particular has been carried out and hence in the present study an attempt has been made to assess the Erebid moth fauna of Lonavala.

Materials and methods

Moths were collected from Lonavala, Maharashtra (Fig. 2) using light trap (Fig. 1).

The light trap is consisting of white cloth measuring 3 m long x 1.5 m and was hung in between the two poles. The light source used was Mercury Vapour Lamp of 160 W powered by portable generator and was hanged middle of the white cloth. The collected specimens were euthanized by ethyl acetate vapors and preserved as dry. The specimens were relaxed, pinned and preserved in the laboratory for further studies. They were studied under Leica EZ 4 HD stereozoom microscope. All identified specimens were labelled, duly registered and deposited at National Zoological Collection, ZSI, WRC, Pune, Maharashtra, India. The latitude and longitude coordinate of the collection site was 18.7546171°N & 73.4062342°E and elevation 626m. The map of the study site (Fig. 2) was prepared using open free software QGIS. Images of the moths are depicted in Fig. 4 to Fig. 5.

The identification of the moths was done with the help of Hampson (1894, 1895). The classification and sequences of the subfamilies followed is as per Kononenko & Pinratana (2013); Zahiri *et al.*, 2011, 2012. The distribution and larval host plants have been consulted from Hampson (1894; 1895); Shubhalaxmi *et al.*, (2011); Gurule & Nikam (2013); Smetacek (2008) and Sivasankaran *et al.*, (2017).

In the foregoing pages, the taxonomic account along with their distributional record and bionomics has been documented.

Abbreviations used: Coll.: Collected by; WRC: Western Regional Centre; ZSI: Zoological Survey of India.

Results and discussion

This study was a part of the short-term project conducted by the students of the Certificate course on Para-taxonomy [including Peoples Bio-diversity Register (PBRs)] of GSDP at ZSI, WRC, Pune. The certificate course was of three months duration and hence was given a short period bound project to the students. Lonavala, a part of the Sahyadri ranges is a famous hills station near metro cities like Mumbai and Pune and hence, faces tremendous anthropogenic pressure. On literature review, it was found that report on moths of Lonavala is lacking.

The present study resulted in enumeration of 44 species in 36 genera belonging to 10 Subfamilies of Erebid moth fauna of Lonavala, Maharashtra. One new range extension records of the species, *Calesia fuscicorpus* Hampson, 1891 is reported in this study. To confirm the new distributional record and its range extension, Hampson (1891) and Sondhi *et al.*, (2018) were consulted. One endemic moth to India has been recorded from the study area. From Fig. 3, it can be seen that the maximum number of species recorded was from the subfamily Erebinae (17 species) followed by Arctiinae (13 species), Aganainae (05 species), Tinoliinae (02 species), Calpinae (01 species), Lymantriinae (01 species), Hypeninae (01 species), Hypocalinae (01 species) and Scoliopteryginae (01 species).

Taxonomic account					
Superfamily NOCTUOIDEA Latreille, 1809					
Family EREBIDAE Leach, [1815]					
Subfamily EREBINAE Leach [1815]					
Genus	Species	Type locality	Material Examine	Distribution	Bionomics
<i>Hyospila</i> Guenée, 1852 Type Species: <i>Hyospila bolinoides</i> Guenée, 1852.	<i>Hyospila bolinoides</i> Guenée, 1852	Java.	05 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1605).	India: Throughout India including Maharashtra (Mumbai, Satara, Nashik and Dhule). Elsewhere: Australia, China, Japan, Malaysia, Myanmar, New Guinea, Sri Lanka. Elsewhere: Australia, Cambodia, China, Indonesia, Japan, Korea, Malaysia, Nepal, New Guinea, Sri Lanka, Thailand, Vietnam (Mitra <i>et al.</i> , 2019).	The larval host plant is <i>Derris</i> (Leguminosae) (Holloway, 2005). In present study, it is reported in the late July, and Mitra <i>et al.</i> , (2019) recorded it in October from Raigad, Maharashtra. As per Holloway (2005) it is a lowland species and is recorded up to a level of 1930m.
<i>Hamodes</i> Guenée, 1852 Type Species: <i>Ophiusa propitia</i> Boisduval, 1832 [= <i>Hamodes propitia</i> (Guerin-Meneville, 1831)].	<i>Hamodes propitia</i> (Guerin-Meneville, 1831)	Nouvelle-Irlande [Bismarck Archipelago].	03 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1585).	Throughout India including Maharashtra (Nashik, Dhule, Jalgaon and Nandurbar). Elsewhere: Australia, Indonesia, Malaysia, Myanmar, New Ireland, Philippines, Solomon Islands, Thailand (Mitra <i>et al.</i> , 2019).	The larval host plant is <i>Dalbergia</i> (Leguminosae) (Holloway, 2005). This species is found in the altitude ranging from sea-level to almost high-altitude level of 2110m and in various forest types and also in cultivated area of agricultural lands.
<i>Erebus</i> Latreille, 1810 Type Species: <i>Phalaena crepuscularis</i> Linnaeus, 1758.	<i>Erebus caprimulgus</i> (Fabricius, 1781)	China.	01 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1608).	Throughout India including Maharashtra (Amravati, Pune, Sindhudurg, Nashik and Dhule). Elsewhere: Indonesia, Malaysia, Myanmar, Sri Lanka (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Smilax macrophylla</i> , <i>Smilax ovalifolia</i> (Smilacaceae) (Leong and Kueh, 2011). Adult feeds on the ripened fruits of <i>Melastoma malabathricum</i> (Melastomataceae) (Leong and Kueh, 2011). The species prefers mostly lowland forest but some are recorded from the high altitudinal areas (Holloway, 2005).
	<i>Erebus macrops</i> (Linnaeus, 1768)	"India Orientali" [India].	02 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1609).	India: Kerala, Maharashtra, Tamil Nadu, Uttarakhand. Elsewhere: China, Indonesia, Malaysia, Myanmar, Nepal, Sri Lanka, Thailand (Kalawate, 2018; Mitra <i>et al.</i> , 2019).	The larval host plant is <i>Acacia</i> (Leguminosae) (Holloway, 2005); adult is a fruit piercer (Bänziger, 1982). It is a common species and found commonly near the human dwellings.
<i>Artena</i> Walker, 1858 Type Species: <i>Artena submira</i> Walker, 1858.	<i>Artena dotata</i> (Fabricius, 1794)	"India Orientali" [India].	04 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1606).	India: Throughout India including Maharashtra (Mumbai, Pune, Sindhudurg, Nashik, Dhule, Jalgaon and Nandurbar). Elsewhere: Indonesia, Japan Malaysia, Sri Lanka, Taiwan (Mitra <i>et al.</i> , 2019).	The larval host plants recorded are <i>Combretum</i> , <i>Getonia</i> , <i>Quisqualis</i> , <i>Terminalia</i> (Combretaceae) (Holloway, 2005). Adult feeds on fruits by piercing it and sucking the juice (Bänziger, 1982). As per Holloway (2005), the species prefers lowland forest areas, with secondary vegetation after logging. The recorded flight period is from April to June and August to December.
	<i>Artena submira</i> Walker, 1858	Hindustan.	01 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1795).	India: Jharkhand, Kerala, Maharashtra. Elsewhere: Bangladesh, Myanmar, Thailand, Vietnam (Singh & Ranjan, 2016; Mitra <i>et al.</i> , 2019).	The Larval food plants are <i>Getonia floribunda</i> , <i>Quisqualis indica</i> , <i>Terminalia paniculate</i> , <i>T. tomentosa</i> (Combretaceae) (NHM, 2021). It is reported in the month of July in this study.
<i>Thyas</i> Fabricius, 1775 Type Species: <i>Thyas honesta</i> Hübner, 1824.	<i>Thyas honesta</i> Hübner, 1806	[India. Indies]? East	01 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1607).	India: Throughout India including Maharashtra (Pune, Satara, Nashik, Dhule, Jalgaon, Nandurbar). Elsewhere: Borneo, Indonesia, Malaysia, Myanmar, Philippines, Sumatra, Thailand (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Careya</i> , <i>Barringtonia</i> , <i>Planchonia</i> (Lecythidaceae); <i>Terminalia</i> Combretaceae (Holloway, 2005); <i>Citrus</i> (Rutaceae) (Ngampongsai <i>et al.</i> , 2005). It is recorded in August in this study and by Sambath (2014) from Jharkhand. It is recorded from 300m to 1620m (Holloway, 2005).

	<i>Thyas coronata</i> (Fabricus, 1775)	China.	03 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1610).	Throughout India including Maharashtra. Elsewhere: Australia, Borneo, Indonesia, Myanmar, Sri Lanka (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Quisqualis indica</i> (Combretaceae) (Hampson, 1894); <i>Terminalia</i> (Combretaceae), <i>Litsea</i> (Lauraceae), <i>Anamirta</i> (Menispermaceae), <i>Pinus</i> (Pinaceae), <i>Nephelium</i> (Sapindaceae) (Holloway, 2005). The adult is a piercer of fruit on <i>Citrus</i> (Rutaceae) (Bänziger, 1982) and commonly called as fruit piercing moth. It is mainly found in the forests, disturbed habitats and upto 2600m (Holloway, 2005).
<i>Buzara</i> Walker, [1865] 1864 Type Species: <i>Buzara chrysomela</i> Walker, 1865.	<i>Buzara onelia</i> (Guenee, 1852)	Silhet, Bangladesh.	02 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1807).	Distribution: India: Himachal Pradesh, Maharashtra (Satara, Sindhudurg). Elsewhere: Bangladesh, China, Indonesia, Malaysia, Myanmar, Malay Peninsula, Nepal, Philippines, Singapore, Sri Lanka, South Japan, Taiwan, Thailand, Vietnam, (Kononenko & Pinratana, 2013; Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Breynia</i> , <i>Phyllanthus</i> , <i>Sauropus</i> (Euphorbiaceae) (Holloway & Miller, 2003). This species found from lowland to mid montane forest. In this study the specimen is collected in August.
<i>Polydesma</i> Boisduval, 1833 Type Species: <i>Polydesma umbricola</i> Boisduval, 1833.	<i>Polydesma boarmioides</i> Guenee, 1852	Java.	03 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1661).	India: Sikkim, Uttar Pradesh, Maharashtra (Mumbai, Pune, Dhule, Jalgaon). Elsewhere: Australia, Bangladesh, Fiji, Hawaii, Malaysia, New Caledonia, Sri Lanka (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Gmelina</i> (Lamiaceae); <i>Acacia</i> , <i>Albizia</i> , <i>Pithecellobium</i> (Leguminosae); <i>Salix</i> (Salicaceae); <i>Litchi</i> (Sapindaceae) (Holloway, 2005). This species is recorded in August, November and December.
<i>Ericeia</i> Walker, [1858] Type Species: <i>Ericeia sobria</i> Walker, 1858.	<i>Ericeia inangulata</i> (Guenee, 1852)	Silhet.	01 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1813).	India: Throughout India including Andaman and Nicobar Islands, Himachal Pradesh, Madhya Pradesh, Maharashtra (Mumbai, Pune, Nashik and Jalgaon) and Uttarakhand, West Bengal. Elsewhere: Africa, Australia, China, Myanmar, Sri Lanka (Mitra <i>et al.</i> , 2019).	The Larval host plants are <i>Acacia</i> , <i>Albizia</i> , <i>Cassia</i> , <i>Dalbergia</i> , <i>Mimosa</i> , <i>Paraserianthes</i> , <i>Senna</i> , <i>Xylia</i> (Leguminosae); <i>Adiantum</i> (Adiantaceae); <i>Lagerstroemia</i> (Lythraceae); <i>Citrus</i> (Rutaceae) (Holloway, 2005). The adult moth is a fruit piercer (Bänziger, 1982). Records have been made from the lowlands to 2600m, but the species is commoner above 1500m.
<i>Parallelia</i> Hübner, 1818 Type Species: <i>Parallelia bistriaris</i> Hübner, 1818.	<i>Parallelia stuposa</i> (Fabricius, 1794)	"India Orientali" [India].	01 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1810).	India: Maharashtra (Mumbai, Pune, Sindhudurg, Nashik, Dhule, Jalgaon, Nandurbar). Elsewhere: China, Indonesia, Japan, Korea, Philippines, Sri Lanka (Mitra <i>et al.</i> , 2019).	The Larval host plants are Salicaceae; Euphorbiaceae; Rosaceae; Lythraceae (Leley, 2016). In the present study it is reported in August.
<i>Achaea</i> Hübner, [1823] Type Species: <i>Phalaena melicerta</i> Drury, 1773 [= <i>Achaea janata</i> (Linnaeus, 1758)].	<i>Achaea (Acanthodelta) janata</i> (Linnaeus, 1758)	Indiis [India].	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1603).	India: Andaman and Nicobar Islands, Himachal Pradesh, Maharashtra (Pune, Sindhudurg, Satara, Mumbai, Nashik, Dhule, Jalgaon, Nandurbar). Elsewhere: Australia, China, Indonesia, Japan, Myanmar, New Guinea, New Zealand, Philippines (Mitra <i>et al.</i> , 2019).	Polyphagous: The larval host plants are <i>Ricinus</i> (Euphorbiaceae); Leguminosae; <i>Agathis</i> , <i>Araucaria</i> (Araucariaceae); <i>Anogeissus</i> , <i>Terminalia</i> (Combretaceae); <i>Ipomoea</i> (Convolvulaceae); <i>Brassica</i> , <i>Raphanus</i> , <i>Cucurbita</i> (Cucurbitaceae); <i>Cupressus</i> (Cupressaceae); <i>Shorea</i> (Dipterocarpaceae); <i>Acalypha</i> , <i>Aleurites</i> , <i>Andrachne</i> , <i>Bischofia</i> , <i>Chamaesyce</i> , <i>Codiaeum</i> , <i>Croton</i> , <i>Euphorbia</i> , <i>Excoecaria</i> , <i>Flueggea</i> , <i>Jatropha</i> , <i>Manihot</i> , <i>Pedilanthus</i> , <i>Phyllanthus</i> , <i>Ricinus</i> , <i>Sapium</i> (Euphorbiaceae); <i>Saccharum</i> (Gramineae); <i>Planchonia</i> (Lecythidaceae); <i>Acacia</i> , <i>Albizia</i> , <i>Arachis</i> , <i>Bauhinia</i> , <i>Dalbergia</i> , <i>Desmanthus</i> , <i>Glycine</i> , <i>Leucaena</i> , <i>Mimosa</i> , <i>Paraserianthes</i> , <i>Phaseolus</i> , <i>Prosopis</i> , <i>Vigna</i> , <i>Zylia</i> (Leguminosae); <i>Strychnos</i> (Loganiaceae); <i>Lagerstroemia</i> , <i>Punica</i> (Lythraceae); <i>Abutilon</i> , <i>Gossypium</i> (Malvaceae); <i>Ficus</i> (Moraceae); <i>Eucalyptus</i> , <i>Psidium</i> (Myrtaceae); <i>Cocos</i> (Palmae); <i>Emex</i> (Polygonaceae);

					<i>Polypodium</i> (Polypodiaceae); <i>Macadamia</i> (Proteaceae); <i>Ziziphus</i> (Rhamnaceae); <i>Rosa</i> (Rosaceae); <i>Litchi</i> , <i>Nephelium</i> , <i>Schleichera</i> (Sapindaceae); <i>Madhuca</i> , <i>Mimusops</i> , <i>Palaquium</i> (Sapotaceae); <i>Capsicum</i> (Solanaceae); <i>Sterculia</i> , <i>Theobroma</i> (Sterculiaceae); <i>Grewia</i> (Tiliaceae); <i>Tribulus</i> (Zygophyllaceae) (Holloway, 2005). The adult makes the fruit unfit for consumption by piercing it and feasting upon it (Bänziger, 1982). The adult moth is attracted to the light traps
<i>Bastilla</i> Swinhoe, 1918 Type Species: <i>Ophiusa redunca</i> Swinhoe, 1900 [= <i>Bastilla hamatilis</i> (Guenée, 1852)].	<i>Bastilla joviana</i> (Stoll, 1782)	Cote de Coromandel [India].	02 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (Reg. No. ZSI-WRC-L-1604).	India: Adaman Islands, Maharashtra (Pune, Sindhudurg, Nashik), West Bengal. Elsewhere: Australia, Bangladesh, Bhutan, China, Indonesia, Malaysia, Myanmar, Nepal, New Guinea, Pakistan, Sri Lanka, Thailand (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Acalypha</i> , <i>Breynia</i> and <i>Phyllanthus</i> (Euphorbiaceae) (Holloway & Miller, 2003). It is like other fruit sucking moths' pierces fruit (Bänziger, 1982). Recorded from lowlands to 1930m and from forested and cultivated areas as per Holloway (2005). In this study it is recorded from 626m.
<i>Grammodes</i> Guenée, 1852 Type Species: <i>Noctua geometrica</i> Fabricius, 1775 [= <i>Grammodes geometrica</i> (Fabricius, 1775)].	<i>Grammodes geometrica</i> (Fabricius, 1775)	India Orientali [India].	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1793).	India: Andaman and Nicobar Islands, Assam, Madhya Pradesh, Maharashtra (Mumbai, Pune, Satara, Sindhudurg, Nashik, Dhule, Jalgaon and Nandurbar), Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh, West Bengal. Elsewhere: Africa, Australia, Bangladesh, China, Europe, Indonesia, Myanmar, New Guinea, Singapore, Sri Lanka, Taiwan (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Phyllanthus</i> , <i>Sapium</i> (Euphorbiaceae); <i>Cistus</i> (Cistaceae); <i>Diospyros</i> (Ebenaceae); <i>Ricinus</i> (Euphorbiaceae); <i>Oryza</i> (Gramineae); <i>Polygonum</i> (Polygonaceae); <i>Ziziphus</i> (Rhamnaceae); <i>Tamarix</i> (Tamaricaceae) (Holloway, 2005). Adults are fruit piercer (Bänziger, 1982). It is recorded in forests and cultivated area. Adults are attracted to the light trap.
<i>Spirama</i> Guenée, 1852 Type Species: <i>Phalaena retorta</i> Clerck, 1764 [= <i>Spirama retorta</i> (Clerck, 1764)].	<i>Spirama retorta</i> (Clerck, 1764)	Not known.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1611).	India: Andaman and Nicobar Islands, throughout India including Himachal Pradesh, Maharashtra (Mumbai, Pune, Sindhudurg, Matheran, Nashik, Dhule, Jalgaon, Nandurbar). Elsewhere: Japan, China, Sri Lanka, Mynamar, Andamans, Java (Sekhon and Singh, 2015; Mitra <i>et al.</i> , 2019).	The larval host plant are <i>Vitis</i> (Vitaceae); <i>Acacia mangium</i> (Fabaceae) (NHM, 2021). It is attracted to light and recorded at an altitude of 626m.
<i>Mocis</i> Hübner, [1823] Type Species: <i>Phalaena virbia</i> Cramer, 1780 (= <i>Mocis undata</i> (Fabricius, 1775)).	<i>Mocis undata</i> (Fabricius, 1775)	East Indies.	01 ex., Amby valley Road, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1903).	India: Throughout India including Andaman and Nicobar Islands, Himachal Pradesh, Madhya Pradesh, Maharashtra, Uttarakhand, West Bengal. Elsewhere: Africa, throughout Oriental region (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Cytisus</i> , <i>Desmodium</i> , <i>Wisteria</i> (Fabaceae); <i>Arachis</i> , <i>Butea</i> , <i>Cajanus</i> , <i>Calopogonium</i> , <i>Crotalaria</i> , <i>Derris</i> , <i>Desmodium</i> , <i>Glycine</i> , <i>Indigofera</i> , <i>Mucuna</i> , <i>Phaseolus</i> , <i>Pueraria</i> , <i>Rhynchosia</i> , <i>Tephrosia</i> , <i>Vigna</i> (Leguminosae); <i>Shorea</i> (Dipterocarpaceae); <i>Hevea</i> (Euphorbiaceae); <i>Gossypium</i> (Malvaceae); <i>Nephelium</i> (Sapindaceae); <i>Solanum</i> (Solanaceae) (Holloway, 2005). It is recorded mostly from the open habitat, cultivation and disturbed forest. It is usually found from lowlands to 1200m (Holloway, 2005).
EREBINAE incertae sedis					
<i>Ischyja</i> Hubner, [1823] 1816 Type species: <i>Phalaena manlia</i> Cramer, 1776.	<i>Ischyja manlia</i> (Cramer, 1776)	Cote de Coromandel (=Tamil Nadu).	01 ex., Amby valley Road, 23.viii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1584).	India: Throughout India including Maharashtra. Elsewhere: Indonesia, Myanmar, Sri Lanka (Sambath, 2014).	The larval host plants are Lauraceae, Lardizabalaceae, Ebenaceae, Rosaceae, Combretaceae, Rubiaceae (Leley, 2016), Theaceae (Holloway, 2005). As per Kononenko and Pinratana (2013) the flight period is from August – November. But, in the present study, it is reported in late July.

Subfamily Arctiinae (Leach, 1815)					
<i>Amata</i> Fabricius, 1807 Type Species: <i>Zygaena passalis</i> Fabricius, 1781.	<i>Amata passalis</i> (Fabricius, 1781)	[India or Sri Lanka?].	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1806).	India: Andhra Pradesh, Assam, Karnataka, Maharashtra (Aurangabad, Solapur, Pune, Mumbai), Manipur, Tamil Nadu, West Bengal. Elsewhere: Sri Lanka (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Ipomoea</i> (Convolvulaceae); <i>Phaseolus</i> , <i>Cajanus</i> (Leguminosae); <i>Dahlia</i> , <i>Cosmos</i> (Compositae); <i>Santalum album</i> (Santalaceae); <i>Vigna unguiculata</i> (Leguminosae) (Venkatesha and Gopinath, 1992). This species breeds throughout the year and passes through 6-11 generations a year.
	<i>Amata bicincta</i> (Kollar, [1844])	Not known.	03 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1586).	Arunachal Pradesh, Himachal Pradesh, Maharashtra, Meghalaya, North West India, Sikkim, Uttarakhand, West Bengal, Elsewhere: China (Hampson, 1898; Shubhalaxmi <i>et al.</i> , 2011; Singh <i>et al.</i> , 2014).	The larval host plant is not known.
	<i>Amata bicincta</i> (Kollar, [1844])	Not known.	03 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1586).	India: Arunachal Pradesh, Meghalaya, North West India, Sikkim, West Bengal, (Singh <i>et al.</i> , 2014).	The larval host plant is not known.
<i>Cretonotos</i> Hubner, 1819 Type Species: <i>Phalaena interrupta</i> Linnaeus, 1767.	<i>Cretonotos gangis</i> (Linnaeus, 1763)	Not known.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1587).	India: Throughout India including Maharashtra (Nashik, Nandurbar). Elsewhere: Australia, China, Japan, Malaysia, Nepal, New Guinea, Pakistan, Philippines, Sri Lanka, Taiwan, Thailand (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Arachis hypogaea</i> , <i>Medicago sativa</i> , <i>Vigna mungo</i> (Fabaceae); <i>Eleusine coracana</i> , <i>Oryza sativa</i> , <i>Pennisetum glaucum</i> , <i>Zea mays</i> (Poaceae); <i>Ipomoea batatas</i> (Convolvulaceae); <i>Mimulus gracilis</i> (Phrymaceae) (NHM, 2021). They found in the secondary habitats from the lowlands to the montane region. They are attracted to light. The males of this species have four eversible coremata at the tip of the abdomen which emit pheromones, and is longer than the abdomen. It breeds throughout the year.
	<i>Cretonotos transiens</i> (Walker, 1855)	Assam.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1588).	India: Arunachal Pradesh, Assam, Maharashtra, (Mumbai, Pune, Satara, Sindhudurg, Nashik), Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Uttarakhand, West Bengal. Elsewhere: China, Indonesia, Japan, Malaysia, Nepal, Philippines (Mitra <i>et al.</i> , 2019).	The larval host plants are Polyphagous: <i>Beta</i> (Chenopodiaceae); <i>Dioscorea</i> (Dioscoreaceae); <i>Paspalum</i> , <i>Zea</i> (Gramineae); <i>Pithecellobium</i> , <i>Vigna</i> , <i>Wisteria</i> (Leguminosae); <i>Toona</i> (Meliaceae); <i>Musa</i> (Musaceae); <i>Salix</i> (Salicaceae); <i>Cayratia</i> , <i>Cissus</i> (Vitidaceae) (Holloway, 1988). The species is common in cultivated agricultural fields, open habitats and secondary vegetation. Adults are commonly attracted to light.
<i>Mangina</i> Kaleka & Kirti, 2001 Type Species: <i>Euprepia argus</i> Kollar, [1844] (= <i>Argina argus</i> Kollar, 1844).	<i>Mangina syringa</i> (Cramer, 1775)	“Coromandel” [India].	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1589).	India: Throughout India including Maharashtra (Pune). Elsewhere: Australia, Sri Lanka (Mitra <i>et al.</i> , 2019).	Larval host plants are <i>Crotalaria assamica</i> , <i>Crotalaria juncea</i> , <i>Crotalaria longipes</i> , <i>Crotalaria saltiana</i> (Leguminosae); <i>Musa × paradisiaca</i> (Musaceae) (Kirti and Singh, 2015). In this study it is recorded in August. It is not a frequent visitor at light trap.
<i>Olepa</i> Watson, 1980 Type Species: <i>Alope ocellifera</i> (Walker, 1855) [= <i>Olepa</i>	<i>Olepa clavatus</i> (Swinhoe, 1885)	Bombay (India).	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1590).	India: South India, Maharashtra (Cotes and Swinhoe, 1887; Dubatolov, 2010; Kalawate <i>et al.</i> , 2020).	The larval host plant is not known. It is usually attracted to the light. Remark: Endemic to India.

<i>ocellifera</i> (Walker, 1855)].	<i>Olepa ricini</i> (Fabricius, 1775)	“Indiae orientalis ricino” (India).	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1826).	India: Throughout India including Maharashtra (Mumbai, Pune, Ahmednagar, Satara). Elsewhere: Bangladesh, Nepal, Northern Pakistan, Sri Lanka, Thailand (Cotes and Swinhoe, 1887; Dubatolov, 2010; Kalawate <i>et al.</i> , 2020).	Larval host plants are <i>Calotropis procera</i> (Apocynaceae); <i>Camellia sinensis</i> (Theaceae); <i>Campsis grandiflora</i> (Bignoniaceae); <i>Gossypium</i> (Malvaceae), <i>Ricinus communis</i> (Euphorbiaceae); <i>Helianthus</i> (Asteraceae), <i>Zea mays</i> (Poaceae); <i>Coccinia grandis</i> (Cucurbitaceae); <i>Solanum melongena</i> (Solanaceae); <i>Ipomoea batatas</i> (Convolvulaceae); <i>Musa</i> (Musaceae) (Farooqui <i>et al.</i> , 2020; TNAU, 2021; Shubhalaxmi, 2018). They are attracted to light.
	<i>Olepa zedesi</i> Kalawate, 2020	Pune, India.	01 ex., Lonavala, Pune, 23.viii.2017, coll. A.S. Kalawate (ZSI-WRC-L-2154).	India: Maharashtra (Pune, Lonavala, Satara) (Kalawate, 2021).	Data deficient.
<i>Rajendra</i> Moore, 1879 Type Species: <i>Rajendra lativitta</i> Moore, 1879.	<i>Rajendra biguttata</i> (Walker, 1855)	Canara, Malabar Coast [India].	03 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1591).	India: Arunachal Pradesh, Bihar, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Orissa, Punjab, Sikkim, Tamil Nadu, West Bengal. Elsewhere: Bangladesh (Dubatolov <i>et al.</i> , 2007).	The larval host plants is <i>Elettaria cardamomum</i> (Zingiberaceae) (Kirti and Singh, 2015). The flight period is from April to December. It is attracted to light.
<i>Argina</i> Hübner, [1819] Type species: <i>Phalaena cribraria</i> Clerck, 1764 (= <i>Argina astrea</i> (Drury, 1773)).	<i>Argina astrea</i> (Drury, 1773)	[Ghana], Africa, Gold Coast.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1595).	India: Throughout India including Maharashtra (Pune, Mumbai, Satara, Amravati) (Dubatolov, 2010; Cotes and Swinhoe, 1887). Elsewhere: China, Myanmar, Mauritius, New Guinea, Sri Lanka (Kaleka and Kirti, 2001).	The larval host plants are <i>Crotalaria</i> spp., <i>Lablab purpureus</i> , <i>Melilotus indica</i> (Leguminosae); <i>Beaumontia</i> (Apocynaceae); <i>Buddleja</i> (Buddlejaceae); <i>Theobroma cacao</i> (Sterculiaceae) (Holloway, 1988; NHM, 2021). The flight period is throughout the year. It is attracted to the light. It is found in the lowlands, cultivated areas and open habitats.
<i>Cyana</i> Walker, 1854 Type Species: <i>Cyana detrita</i> Walker, 1854.	<i>Cyana puella</i> (Drury, 1773)	Madras [India].	02 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1592).	India: Chhattisgarh, Himachal Pradesh, Madhya Pradesh, Maharashtra (Mumbai, Pune), North West Himalayas, Sikkim, South India, Uttarakhand. Elsewhere: Africa, Indonesia, Madagascar, Nepal, Sri Lanka (Mittra <i>et al.</i> , 2019).	The larval host plant is unknown. In this study, the specimen was collected in August.
<i>Brunia</i> Moore, 1878 Type Species: <i>Lithosia antica</i> Walker, 1854.	<i>Brunia antica</i> (Walker, 1854)	Ceylon (=Sri Lanka).	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1594).	India: Andaman and Nicobar Islands, Maharashtra (Mumbai, Pune, Satara, Nashik, Dhule), West Bengal. Elsewhere: China, Indonesia, Malaysia, Sri Lanka (Mittra <i>et al.</i> , 2019).	The larval host plants are <i>Hevea</i> (Euphorbiaceae), <i>Terminalia</i> (Combretaceae) and <i>Theobroma</i> (Sterculiaceae) (Holloway, 2005). It's a lowland species and observed frequently in coastal vegetation and mangrove (Holloway, 2001). In this study it is found in August and at an altitude of 626m and is attracted to light.
<i>Nannoarctia</i> Koda, 1988 Type Species: <i>Pericallia takanoi</i> Sonan, 1934. Subgenus <i>Pseudorajendra</i> Dubatolov, 2007 Type Species: <i>Aloa dentata</i> Walker, 1855.	<i>Nannoarctia (Pseudorajendra) dentata</i> (Walker, 1855)	Canara [India].	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1593).	India: Eastern India, Karnataka, Maharashtra (Mumbai, Pune), Kerala, Tamil Nadu (Dubatolov, 2010; Mittra <i>et al.</i> , 2019).	The larval host plant is unknown. This species is attracted to light. Remarks: This species is endemic to India.

Subfamily Aganainae Boisduval, 1833					
<i>Mecodina</i> Guenée, 1852 Type Species: <i>Mecodina lanceola</i> Guenée, 1852.	<i>Mecodina metagrapt</i> Hampson, 1926	Bali.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (Reg. No. ZSI-WRC-L-1808).	India: Karnataka, Maharashtra (Lonavala). Elsewhere: Bali, Singapore, Java, Sulawesi (Hampson, 1926; Holloway, 2005; Kalawate, 2018b).	The larval host plant is unknown. The species rarely attracted to the light.
<i>Asota</i> Hubner, [1819] Type Species: <i>Phalaena javana</i> Cramer, [1780] [= <i>Asota javana</i> (Cramer, [1780])].	<i>Asota producta</i> (Butler, 1875)	Not known.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1597).	India: Assam, Sikkim, South India, Maharashtra, Kerala. Elsewhere: Borneo, Burma, Malaysia, Penang, Sri Lanka, Sumatra, (Gurule, 2013; Sondhi <i>et al.</i> , 2018).	The larval host plants is unknown. The species is attracted to light and is recorded from the disturbed cultivated land.
	<i>Asota ficus</i> (Fabricius, 1775)	India.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1597).	India: Throughout India including Maharashtra. Elsewhere: China, Japan, Malaysia, Myanmar, Nepal, Sri Lanka, Taiwan, Thailand (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Ricinus communis</i> (Euphorbiaceae); <i>Ficus carica</i> , <i>F. hispida</i> , <i>F. racemosa</i> , <i>F. pumila</i> , <i>F. infectoria</i> , <i>F. religiosa</i> , <i>Ficus</i> sp. (Moraceae); <i>Mitragyna diversifolia</i> (Rubiaceae) (ICAR-NBAIR, 2020). It is generally attracted to light trap.
<i>Digama</i> Moore, [1860] Type Species: <i>Digama hearseyana</i> Moore, 1858.	<i>Digama marchali</i> (Guérin-Méneville, 1843)	Not known.	15 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1598).	India: Gujarat, Maharashtra (Mumbai, Pune and Raigad), South India. Elsewhere: Myanmar (Mitra <i>et al.</i> , 2019).	The larval host plant is <i>Carissa carandus</i> (Apocynaceae) (NHM, 2021). The flight period is from January to March and June to November. It is attracted to light.
<i>Psimada</i> Walker, 1858 Type Species: <i>Psimada quadripennis</i> Walker, 1858.	<i>Psimada quadripennis</i> Walker, 1858	Canara.	03 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1599).	India: Andaman and Nicobar Islands, Chhattisgarh, Himachal Pradesh, Madhya Pradesh, Karnataka, Kerala, Maharashtra (Pune, Nashik and Nandurbar). Elsewhere: China, Myanmar, Sri Lanka, Thailand (Mitra <i>et al.</i> , 2019).	The larval host plant is <i>Ficus</i> (Moraceae) (Holloway, 2005). The adult of this species is attracted to the light. They are recorded in forest and cultivated lands.
Subfamily Tinoliinae Moore, [1885]					
<i>Calesia</i> Guenée, 1852 Type Species: <i>Calesia comosa</i> Guenée, 1852 [= <i>Calesia dasypterus</i> (Kollar, 1844)].	<i>Calesia stillifera</i> Felder & Rogenhofen, 1874	Manila.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1812).	India: Throughout India including Maharashtra (Satara, Nashik). Elsewhere: Sri Lanka, Thailand (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Thunbergia</i> sp., <i>Neuracanthus phaerostachys</i> (Acanthaceae) (Anonymous, 2021a). It is recorded from July to November.
	<i>Calesia fuscicorpus</i> Hampson, 1891	Nilgiri.	08 ex., Lonavala, Pune, 23.vii.2017, A.S. Kalawate & party (ZSI-WRC-L-1801).	India: Nilgiris (Tamil Nadu), Travancore (Kerala). Elsewhere: Ceylon (Sri Lanka) (Hampson, 1894).	The larval host plant is <i>Justicia wynaadensis</i> (Acanthaceae) (NHM, 2021). Not much known about its habitat. Remark: New distributional and Range extension in Northern Western Ghats' Maharashtra.
Subfamily Hypeninae Herrich-Schäffer, [1851]					
<i>Dichromia</i> Guenée, 1854 Type Species: <i>Phalaena orosia</i> Cramer, 1780 [= <i>Dichromia sagitta</i> (Fabricius, 1775)].	<i>Dichromia pullata</i> Moore, 1885	Ceylon Lanka.	07 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1600).	India: Maharashtra (Pune, Sindhudurg, Nashik, Dhule). Elsewhere: Sri Lanka (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Anacardium occidentale</i> (Anacardiaceae); <i>Tylophora</i> , <i>Dregea</i> (Apocynaceae) (Swafvan and Sureshan, 2021).

Subfamily Scoliopteryginae Herrich-schaffer, [1851]					
<i>Rusicada</i> Walker, 1858 Type Species: <i>Rusicada nigritarsis</i> Walker, 1858.	<i>Rusicada fulvida</i> (Anomis) Guenée, 1852)	Java	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1601).	India: Throughout India including Maharashtra (Nashik, Dhule, Nandurbar). Elsewhere: Africa, Australia, Sri Lanka. (Mitra <i>et al.</i> , 2019)	The larval host plants are <i>Abutilon</i> , <i>Alcea</i> , <i>Gossypium</i> , <i>Hibiscus</i> , <i>Kydia</i> , <i>Pterospermum</i> , <i>Sterculia</i> , <i>Thespesia</i> Urena, <i>Waltheria</i> (Malvaceae); <i>Cissampelos</i> (Menispermaceae) (Anonymous, 2021a). Adult moth appears rarely to light traps.
Subfamily Calpinae Boisduval, 1840					
<i>Eudocima</i> Billberg, 1820 Type Species: <i>Phalaena salamina</i> Cramer, 1777.	<i>Eudocima phalonia</i> (Linnaeus, 1763)	Africa.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1602).	India: Karnataka, Madhya Pradesh, Maharashtra (Mumbai, Pune, Satara, Sindhudurg, Nashik, Dhule, Jalgaon, Nandurbar), Punjab, Tamil Nadu, Uttar Pradesh, Uttarakhand. Elsewhere: Australia, China, Indonesia, Japan, Korea, New Guinea, New Zealand (Mitra <i>et al.</i> , 2019).	Polyphagous: The larval host plant are <i>Leschenaultia</i> (Goodeniaceae); <i>Anamirta</i> , <i>Arcangelisia</i> , <i>Cissampelos</i> , <i>Cocculus</i> , <i>Coscinium</i> , <i>Cyclea</i> , <i>Diploclisia</i> , <i>Legnephora</i> , <i>Sinomedium</i> , <i>Stephania</i> , <i>Tiliacora</i> , <i>Tinomiscium</i> , <i>Tinospora</i> (Menispermaceae); <i>Theobroma</i> (Sterculiaceae); <i>Erythrina</i> (Leguminosae) (Holloway, 2005) preferred for egg laying (Leong and Kueh, 2011). Adult sucks fruit juice from ripe or ripening fruit and is a major pest on <i>Citrus</i> sp. (Rutaceae) (Leong and Kueh, 2011); <i>Punica granatum</i> (Lythraceae) (Jayanthi <i>et al.</i> , 2015); <i>Lycopersicon</i> (Solanaceae); <i>Malus pumila</i> (Rosaceae); <i>Mangifera indica</i> (Anacardiaceae) (Bhumannavar, and Viraktamath, 2000). This species is attracted to light.
Subfamily Lymantriinae Hampson, 1893					
<i>Nygmia</i> Hübner, [1820] Type species: <i>Phalaena icilia</i> Stoll, 1790.	<i>Nygmia icilia</i> (Stoll, [1790])	Coromandel coast.	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1817).	India: Jharkhand, Karnataka, Kerala, Maharashtra (Pune, Mumbai), NW. Himalaya, S. India, Tamil Nadu. Elsewhere: Sri Lanka (Cotes and Swinhoe, 1887; Sambath, 2014).	The larval host plants are <i>Dendrophthoe glabrescens</i> , <i>Loranthus</i> (Loranthaceae); <i>Mallotus paniculatus</i> (Euphorbiaceae) (NHM, 2021). In the present study it was recorded in August.
Subfamily Hypocalinae Guenée, 1852					
<i>Hypocala</i> Guenée, 1852 Type Species: <i>Hyblaea deflorata</i> Fabricius, 1794.	<i>Hypocala deflorata</i> (Fabricius, 1794)	India Orientalis [India].	01 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1794).	India: Himachal Pradesh, Karnataka, Maharashtra (Sindhudurg, Nashik, Dhule, Jalgaon, Nandurbar), North West Himalayas, Tamil Nadu. Elsewhere: Africa, Australia, China, Hong Kong, Indonesia, Japan, Korea, Madagascar, Malaysia, Nepal, New Zealand, Sri Lanka, Taiwan, Thailand (Mitra <i>et al.</i> , 2019).	The larval host plants are <i>Diospyros dichrophylla</i> (Ebenaceae); <i>Pouteria sapota</i> (Sapotaceae) (Holloway, 2005). The adult moth sucks fruit juice making it unfit for consumption.
Erebidae incertae sedis					
<i>Chrysopera</i> Hampson, 1894 Type Species: <i>Achaea combinans</i> Walker, 1858 [= <i>Chrysopera combinans</i> (Walker, 1858)].	<i>Chrysopera combinans</i> (Walker, 1858)	Ceylon Lanka). (Sri	15 ex., Lonavala, Pune, 23.vii.2017, coll. A.S. Kalawate & party (ZSI-WRC-L-1575).	India: Maharashtra (Mumbai, Pune, Satara, Nashik, Dhule), North Western Himalayas, Peninsular India. Elsewhere: Australia, China, Indonesia, Malaysia, Nepal, Sri Lanka, Thailand. Elsewhere: Australia, China, Indonesia, Malaysia, Nepal, Sri Lanka, Thailand (Mitra <i>et al.</i> , 2019).	The larval host plant is not known. In the present study it is recorded from 626m elevation and as per Holloway (2005) the highest report of this species is from 500m.

Erebinae emerged as the dominant subfamily with 39% (Fig. 3) diversity in the present survey and this finding is in consistent with Farooqui *et al.*, (2020). The subfamily Arctiinae resulted as the second dominant with 30% diversity and this is in consistent with the reports of Shivaperuman (2014) and Gurule & Nikam (2013). Recently, Arctiidae family has been incorporated in the Erebidae as the subfamily due to the results of phylogenetic study. Noctuoidea is the highly unstable superfamily hence, studies on this group is warrant to resolve the instability in this economic important group. Noctuoidea is a cosmopolitan superfamily and the highest diversity of these moths is in Oriental tropics. In the present study an attempt has been made to document the diversity of Erebid moth fauna from Lonavala, which comes under an important Biodiversity Hotspots i.e. Western Ghats, a UNESCO world heritage site (Anonymous, 2021b). Diversity study plays a very important role in decision making for planning conservation and management actions. The present study may be helpful to the decision-making authority for making conservation and management plans.

Conclusions

The study resulted in identification of 44 species placed in 36 genera of Erebid moths. One new distributional and range extension record of *Calesia fuscicorpus* Hampson, 1891 has been recorded. To exactly predict the diversity of this important eco-region and other parts in the Sahyadri ranges, more extensive surveys are warranted for all the families of the moth.

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Conflict of Interest: The authors declare that they have no conflict of interest.

Declaration

"We declare that the manuscript has not been published in any journal/book or proceedings or in any other publication, or offered for publication elsewhere in substantially the same or abbreviated form, either in print or electronically.



Fig. 1 Light trap for moth study.

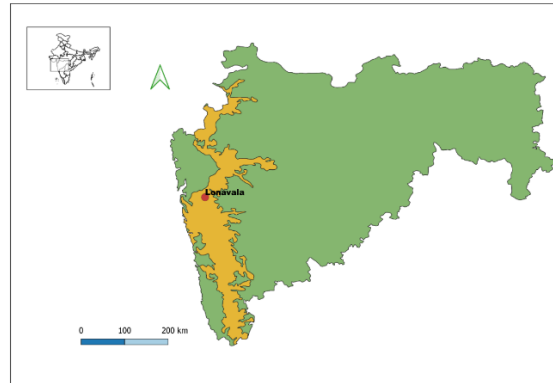


Fig. 2 Map showing survey locality.

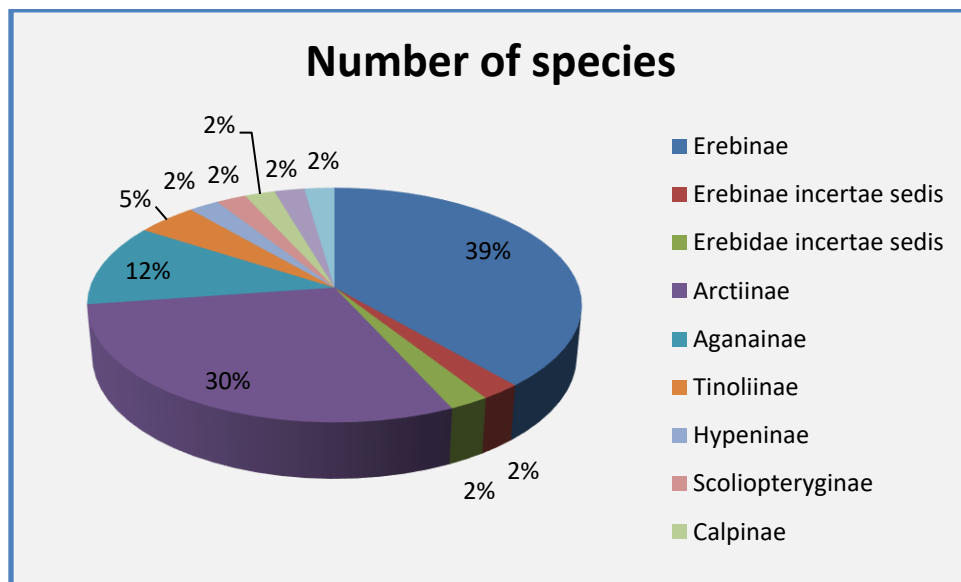


Fig. 3 Number of species recorded from the subfamilies of Erebidae from Lonavala, Maharashtra.

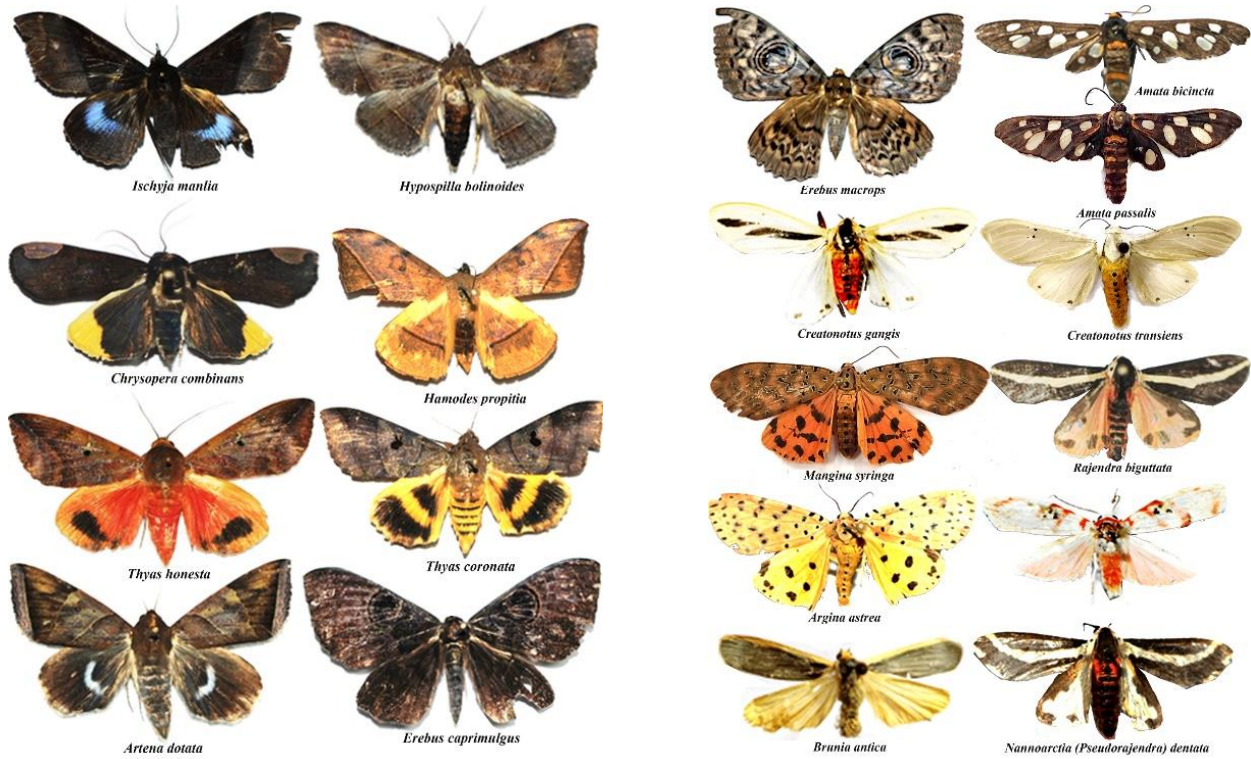


Fig. 4 Some erebid moths from the studied area.

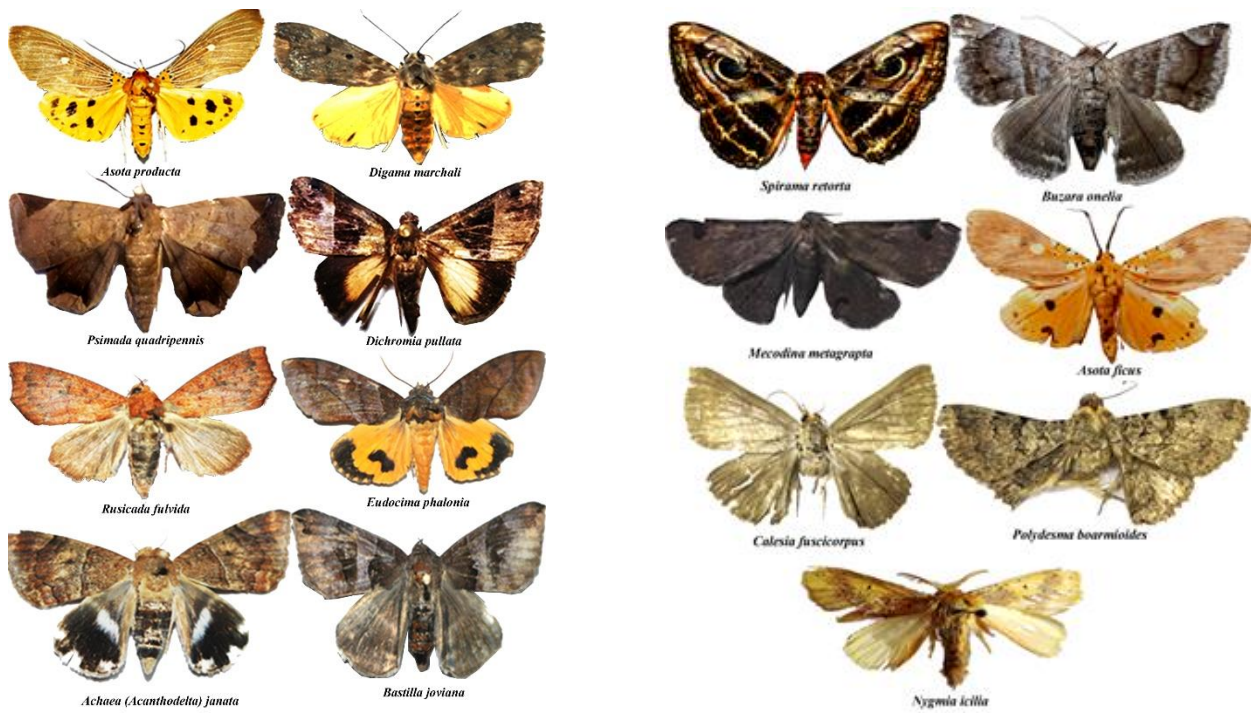


Fig. 5 Some erebid moths from the studied area.

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