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continued on the back inside cover

Caption: Stripe-backed Weasel *Mustela strigidorsa*. Medium—digital, Software—procreate, Device—iPad + Apple pencil © Dhanush Shetty.



Checklist of moths (Heterocera) of Tadong, Sikkim, India

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Abstract: This study attempts to create a checklist of moths recorded from two different parts of Tadong in Sikkim, located in the northeastern Himalaya of India. Out of 160 photographed specimens of moths, 133 species were identified and classified. Sixteen families of moths were recorded out of which Erebidae (30.83%) had the highest number of species followed by Geometridae (24.81%), and Crambidae (18.05%) while the other families comprised of 26.30% of the total species.

Keywords: Biodiversity, Eastern Himalaya, Erebidae, Geometridae.

Sikkim, a northeastern Himalayan state, is known for its biodiversity and strategic location surrounded by Nepal, Bhutan, and China. Several new species of butterflies, insects, and birds have been identified in the region (Kalawate 2018), but there are few reports on the sighting or identification of moth species. They play important roles in ecosystems as pollinators for many plants, and they are food for many predators, including bats and birds (Scoble 1992).

During 19th–20th Century, Hampson (1892, 1894, 1895, 1896) and Bell & Scott (1973) documented moths of this region. Dudgeon (1898–1901) documented moths from Sikkim and Bhutan. Kirti & Sodhi (2002) recorded 30 species of footman moths from Sikkim.

The State Fauna Series holds records of moths from Ctenuchidae and Limacodidae, with 24 species and 40 species, respectively (Chaudhury 2003), Saturniidae with 26 species (Gupta 2003), Zygaenidae with 66 species (Bhattacharya 2003), Arctiidae with 182 species (Chaudhury 2003), and Geometridae with 265 species (Ghosh 2003). Kirti & Sodhi (2003) recorded 24 species belonging to subfamily Arctiinae from Sikkim. Sanyal et al. (2018) recorded 4,107 species with Sikkim having the greatest moth diversity. Chandra et al. (2019) also recorded 1,274 species of moths in ‘Assemblages of Lepidoptera in Indian Himalaya through Long Term Monitoring Plots,’ where many of the species of moths were recorded from the state of Sikkim.

The aim of the present study is to create a baseline checklist of moths from Tadong region in Sikkim for further update and addition to the inventory of moths of Sikkim.

MATERIALS AND METHODS

An opportunistic survey was conducted where moths were photographed as they came towards light sources (LED, incandescent or compact fluorescent bulbs) illuminating residential premises. They were

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photographed in two different localities in Tadong (Figure 1a–c) viz., Gairi Gaon (27.314N & 88.601E) and 6th Mile area (27.312N & 88.593E) within the period of 2017–2019. The altitude of the sites ranged from 1,099–1,356 m (Table 1). Study sites are located between two watercourses, Rani Khola and Rorochu. The region has taken on urban characteristics as land resources have been encroached continuously due rapid unplanned development (Figure 1d) (Chettri & Lama 2014). There is a gradual change in vegetation from alpine to subtropical and temperate deciduous forest in the region (Tamang et al. 2005). The temperature has been increasing in recent decades and precipitation fluctuates each year (Kumar et al. 2020).

The survey included photographing moths near the light sources using a smartphone camera (12MP).

Table 1. Geographical location of survey sites at Tadong, Sikkim, India.

Survey Sites	GPS Coordinates	Altitude (m)
Gairi Gaon	27.314N & 88.601E	1,099
6 th Mile	27.312N & 88.593E	1,356

Morphological characters were considered for the identification. Different sources were used including Walker (1866), Haruta (1992–2000), Irungbam et al. (2016), Shubhalaxmi (2018), Kirti & Singh (2015), Sondhi & Sondhi (2016), and Uniyal et al. (2016). Online portals such as Indian Biodiversity Portal (Vattakaven et al. 2016), iNaturalist, LepIndex (Beccaloni et al. 2003), and BOLDSYSTEMS (Ratnasingham & Hebert 2007) were also utilised for the identification. Classification has been

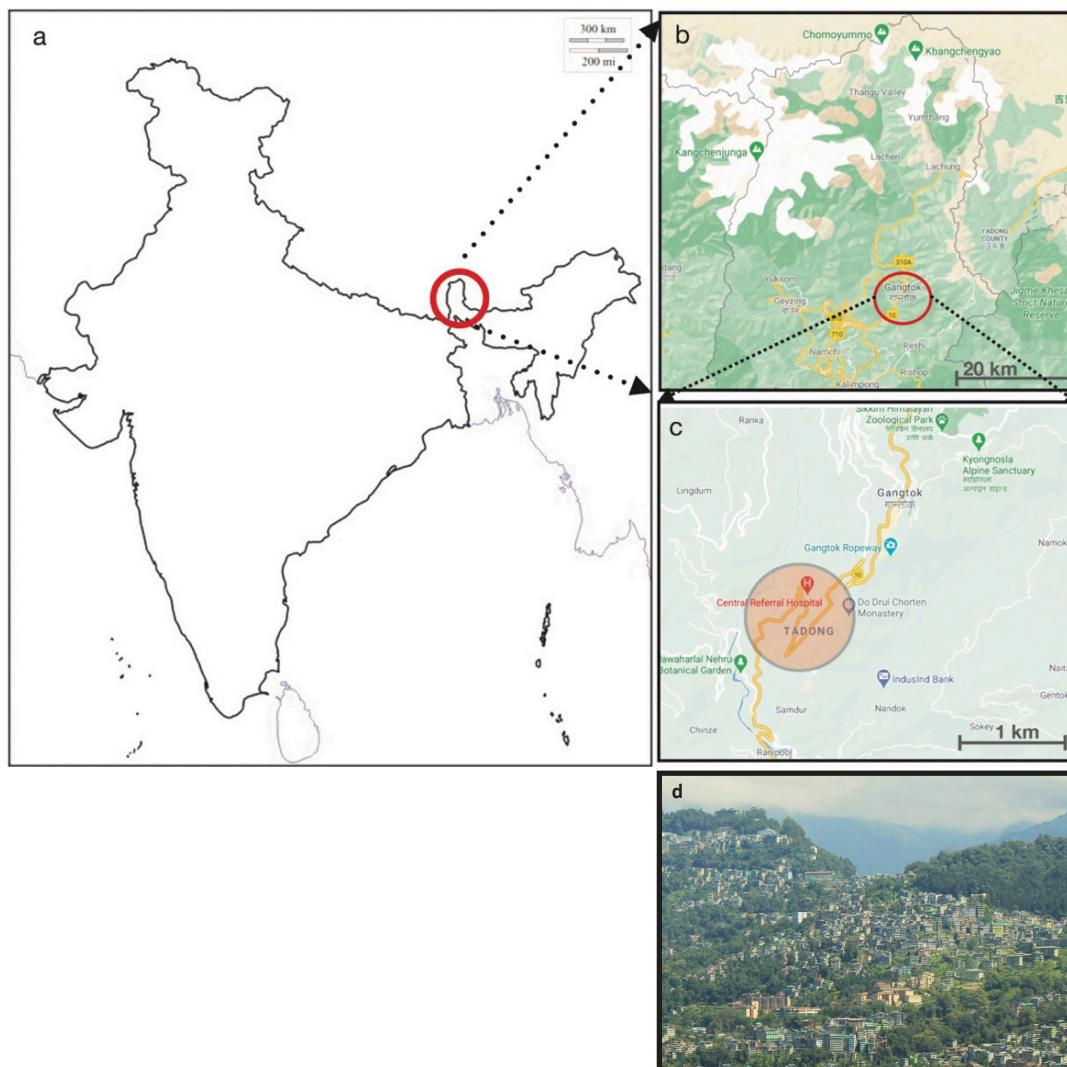


Figure 1. Location of survey site: a—Border region where the survey sites were located with respect to the map | b—Magnified scale indicating topography within the geographical boundary | c—GPS beacon showing approximate location of survey sites (Gairi Gaon and 6th Mile), Tadong, Sikkim | d—Close-up view of the study sites showing human settlement encroached landscape.



followed according to van Nieukerken et al. (2011) and Nuss et al. (2003–2021). PAST3 (Computer Software) was used to calculate diversity indices. Species contribution to diversity of each family was determined by calculating the dominance index= $n_i \times 100/N$ where (n_i) is individuals of particular species and (N) is the total no. of species (Mishra et al. 2016).

RESULTS AND DISCUSSION

During the study a total of 160 individual moths were photographed, from which 133 species were identified from the region. Of the identified specimens 112 were identified to species level, and 21 to the genus level (Images 1–133). Looking at species contribution to the diversity it was found that family Erebidae had the highest number of moths with 41 species, followed by Geometridae with 33 species and Crambidae with 24 species. Other families including Noctuidae, Notodontidae, Pyralidae, Drepanidae, Eupterotidae, Nolidae, Zyginaidae, Bombycidae, Limacodidae, Lasiocampidae, and Thyrididae accounted for 26% of total species (Table 2, Figure 2). All the identified species are listed in Table 3. Diversity indices were calculated using Past3 software, which showed Fisher's alpha, Shannon index, evenness, and Chao-1 to be 4.752, 1.975, 0.4504, and 21, respectively. Hence, the species diversity seems quite high. These values could be later used to collate species diversity (abundance, richness,

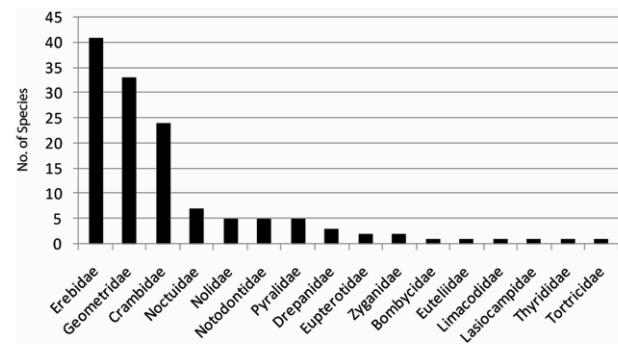


Figure 3. Histogram showing distribution of number of identified species belonging to different families.

evenness) of moths of this region.

CONCLUSION

In this study, we have attempted to create a baseline checklist of moths from Tadong, Sikkim region. This work adds to the inventory of moths of this region which could be utilised for future studies.

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Table 2. Number of moth species belonging to different families.

	Family	No. of species
1	Erebidae	41
2	Geometridae	33
3	Crambidae	24
4	Noctuidae	7
5	Nolidae	5
6	Notodontidae	5
7	Pyralidae	5
8	Drepanidae	3
9	Eupterotidae	2
10	Zyginaidae	2
11	Bombycidae	1
12	Euteliidae	1
13	Limacodidae	1
14	Lasiocampidae	1
15	Thyrididae	1
16	Tortricidae	1
Total		133

Table 3. Checklist of moths recorded during this survey.

	Family	Subfamily	Scientific name	Author and Year of description	Months observed (2017–2019)	Location
1	Bombycidae	Bombycinae	<i>Penicillifera apicalis</i>	Walker, 1862	September	GG
2	Crambidae	Acentropinae	<i>Eristena</i> sp.		June	SM
3	Crambidae	Acentropinae	<i>Parapoynx fluctuosalis</i>	Meyrick, 1899	August, June	SM
4	Crambidae	Odontiinae	<i>Heortia vitessoides</i>	Moore, 1885	May	SM
5	Crambidae	Pyraustinae	<i>Hyalobathra coenostolalis</i>	Snellen, 1890	October	SM
6	Crambidae	Pyraustinae	<i>Pagyda auroralis</i>	Moore, 1888	September	GG
7	Crambidae	Pyraustinae	<i>Sclerocona</i> sp.		October	SM
8	Crambidae	Spilomelinae	<i>Agrotera basinotata</i>	Hampson, 1891	June	SM
9	Crambidae	Spilomelinae	<i>Arthroschista hilaralis</i>	Walker, 1859	August	SM
10	Crambidae	Spilomelinae	<i>Bradina diagonalis</i>	Guenée, 1854	November	GG
11	Crambidae	Spilomelinae	<i>Cnaphalocrocis medicinalis</i>	Guenée, 1854	October	GG
12	Crambidae	Spilomelinae	<i>Diaphania indica</i>	Saunders, 1851	June	SM
13	Crambidae	Spilomelinae	<i>Glyphodes crithealis</i>	Walker, 1859	May	GG
14	Crambidae	Spilomelinae	<i>Leucinodes orbonalis</i>	Guenée, 1854	July	SM
15	Crambidae	Spilomelinae	<i>Cnaphalocrocis trapizalis</i>	Guenée, 1854	November	SM
16	Crambidae	Spilomelinae	<i>Maruca vitrata</i>	Fabricius, 1787	October	GG
17	Crambidae	Spilomelinae	<i>Metoeca foedalis</i>	Guenée, 1854	November	GG
18	Crambidae	Spilomelinae	<i>Patania scinisalis</i>	Walker, 1859	September	GG
19	Crambidae	Spilomelinae	<i>Perisyntrocha ossealis</i>	Hampson, 1896	October	GG
20	Crambidae	Spilomelinae	<i>Pycnarmon aeriferalis</i>	Moore, 1877	November	SM
21	Crambidae	Spilomelinae	<i>Pygospila tyres</i>	Cramer, 1780	March, August	GG
22	Crambidae	Spilomelinae	<i>Rhimphelea trogusalis</i>	Walker, 1859	July	SM,GG
23	Crambidae	Spilomelinae	<i>Spoladae recurvalis</i>	Fabricius, 1775	August	GG
24	Crambidae	Spilomelinae	<i>Synclera cf. univocalis</i>	Walker, 1859	August	SM
25	Crambidae	Spilomelinae	<i>Talanga</i> sp.		August	GG
26	Drepanidae	Drepaninae	<i>Callidrepana</i> sp.		September	SM
27	Drepanidae	Drepaninae	<i>Drepana pallida</i>	Warren, 1922	November, October	GG
28	Drepanidae	Drepaninae	<i>Macroclix maia</i>	Leech, 1888	October	GG
29	Erebidae	Aganainae	<i>Asota caricae</i>	Fabricius, 1775	May	SM
30	Erebidae	Aganainae	<i>Asota plana</i>	Walker, 1854	April	GG,SM
31	Erebidae	Aganainae	<i>Mecodina cineracea</i>	Butler, 1879	September	SM
32	Erebidae	Arctiinae	<i>Adites frigida</i>	Walker, 1854	July	SM
33	Erebidae	Arctiinae	<i>Aemene taprobanis</i>	Walker, 1854	October	GG
34	Erebidae	Arctiinae	<i>Aglaomorpha plagiata</i>	Walker, 1855	March	GG
35	Erebidae	Arctiinae	<i>Barsine cf. cuneonotata</i>	Walker, 1855	July	GG
36	Erebidae	Arctiinae	<i>Indiana eccentrica</i>	Meyrick, 1894	May	GG
37	Erebidae	Arctiinae	<i>Camptoloma binotatum</i>	Butler, 1881	June	SM
38	Erebidae	Arctiinae	<i>Creatonotos transiens</i>	Walker, 1855	June	SM
39	Erebidae	Arctiinae	<i>Cyana cf. coccinea</i>	Moore, 1878	October	SM
40	Erebidae	Arctiinae	<i>Cyana cf. neopuer</i>	Singh et al. 2019	August	GG
41	Erebidae	Arctiinae	<i>Cyana cf. weerawoothi</i>	Lourens, 2017	October	SM
42	Erebidae	Arctiinae	<i>Lyclene cf. clamaria</i>	Moore, 1888	October	SM
43	Erebidae	Arctiinae	<i>Lyclene conjunctana</i>	Walker, 1866	July	GG
44	Erebidae	Arctiinae	<i>Lyclene dasara</i>	Moore, 1859	October	SM
45	Erebidae	Arctiinae	<i>Barsine phaeodonta</i>	Hampson, 1911	October	GG

	Family	Subfamily	Scientific name	Author and Year of description	Months observed (2017–2019)	Location
46	Erebidae	Arctiinae	<i>Nyctemera adversata</i>	Schaller, 1788	May	SM
47	Erebidae	Arctiinae	<i>Padenia duplicitana</i>	Walker, 1863	August	SM
48	Erebidae	Arctiinae	<i>Zardara distorta</i>	Moore, 1894	June	SM
49	Erebidae	Arctiinae	<i>Pseudoblabes oophora</i>	Zeller, 1853	October	GG
50	Erebidae	Arctiinae	<i>Schistophleps bipuncta</i>	Hampson, 1891	October	GG
51	Erebidae	Arctiinae	<i>Juxtarxia multiguttata</i>	Walker, 1855	May, August	SM
52	Erebidae	Arctiinae	<i>Spilarctia sp.</i>		September	SM
53	Erebidae	Arctiinae	<i>Stictane sp.</i>		April	GG
54	Erebidae	Arctiinae	<i>Syntomoides imaon</i>	Cramer, 1780	October	SM
55	Erebidae	Boletobiinae	<i>Singara diversalis</i>	Walker, 1865	August	GG
56	Erebidae	Calpinae	<i>Eudocima sp.</i>		July	SM
57	Erebidae	Erebinae	<i>Anomis flava</i>	Anomis flava	April	GG
58	Erebidae	Erebinae	<i>Artena dotata</i>	Fabricius, 1794	October	GG
59	Erebidae	Erebinae	<i>Erebus gemmans</i>	Guenée, 1852	September	GG
60	Erebidae	Hypeninae	<i>Dichromia quadralis</i>	Walker, 1858	November	GG
61	Erebidae	Lymantriinae	<i>Cifuna locuples</i>	Walker, 1855	May	GG
62	Erebidae	Lymantriinae	<i>Euproctis bipunctapex</i>	Hampson, 1891	May	GG
63	Erebidae	Lymantriinae	<i>Euproctis cf. postica</i>	Walker 1865	May	GG
64	Erebidae	Lymantriinae	<i>Euproctis sp.</i>		November	SM
65	Erebidae	Lymantriinae	<i>Ilema sp.</i>		July	GG
66	Erebidae	Lymantriinae	<i>Pida apicalis</i>	Walker, 1865	December	GG
67	Erebidae	Lymantriinae	<i>Somena scintillans</i>	Walker, 1856	May	SM
68	Erebidae	Lymantriinae	<i>Somena similis</i>	Moore, 1860	October	GG
69	Erebidae	Pangraptinae	<i>Pangrapta pseudalbistigma</i>	Yoshimoto, 1993	October	GG
70	Eupterotidae	Eupterotinae	<i>Apha sp.</i>		October	GG
71	Eupterotidae	Eupterotinae	<i>Eupterote geminata</i>	Walker, 1855	September	GG
72	Euteliidae	Stictopterinae	<i>Lophoptera squammigera</i>	Guenée, 1852	August	SM
73	Geometridae	Desmobathrinae	<i>Eumelea cf. atomata</i>		November	SM
74	Geometridae	Ennominae	<i>Abraxas neomartaria</i>	Inoue, 1970	November	GG
75	Geometridae	Ennominae	<i>Archanna transfasciata</i>	Warren, 1893	May	SM
76	Geometridae	Ennominae	<i>Biston contectaria</i>	Walker, 1863	September	SM
77	Geometridae	Ennominae	<i>Cassyma cf. deletaria</i>	Moore, 1888	September	SM
78	Geometridae	Ennominae	<i>Celenna festivaria</i>	Fabricius, 1794	June	GG
79	Geometridae	Ennominae	<i>Chorodna mauraria</i>	Guenée, 1858	May	GG
80	Geometridae	Ennominae	<i>Cleora fraterna</i>	Moore, 1888	August, November	GG
81	Geometridae	Ennominae	<i>Cleora sp.</i>		August	GG
82	Geometridae	Ennominae	<i>Corymica immaculata</i>	Warren, 1897	October	GG
83	Geometridae	Ennominae	<i>Darisa fratercula</i>	Moore, 1888	March	GG
84	Geometridae	Ennominae	<i>Ectropis dentilineata</i>	Moore, 1867	May, June	SM
85	Geometridae	Ennominae	<i>Gonodontis aethocrypta</i>	Prout, 1962	November	SM
86	Geometridae	Ennominae	<i>Erebomorpha fulgorita</i>	Walker, 1860	September	GG
87	Geometridae	Ennominae	<i>Parasynechia pluristriaria</i>	Walker, 1863	September	GG
88	Geometridae	Ennominae	<i>Heterostegane subtessellata</i>	Walker, 1862	November	GG
89	Geometridae	Ennominae	<i>Durapteryx clara</i>	Butler, 1880	October	SM
90	Geometridae	Ennominae	<i>Hypomecis sp.</i>		October	GG
91	Geometridae	Ennominae	<i>Thinopteryx crocoptera</i>	Kollar, 1844	April	GG



	Family	Subfamily	Scientific name	Author and Year of description	Months observed (2017–2019)	Location
92	Geometridae	Ennominae	<i>Thinopteryx nebulosa</i>	Butler, 1883	October	SM
93	Geometridae	Geometrinae	<i>Comibaena integranota</i>	Hampson, 1893	September	SM
94	Geometridae	Geometrinae	<i>Cosmostolodes albicantena</i>	Warren, 1895	March	GG
95	Geometridae	Geometrinae	<i>Maxates cf. protrusa</i>	Butler, 1878	May	SM
96	Geometridae	Geometrinae	<i>Thalassodes quadraria</i>	Guenée, 1857	November	SM
97	Geometridae	Larentiinae	<i>Acolutha pictaria</i>	Moore, 1888	December	SM
98	Geometridae	Larentiinae	<i>Harutalcis cf. vialis</i>	Moore, 1888	November	SM
99	Geometridae	Larentiinae	<i>Syzeuxis sp.</i>		May	SM
100	Geometridae	Larentiinae	<i>Polynesia truncapex</i>	Swinhoe, 1892	July	GG
101	Geometridae	Oenochrominae	<i>Sarcinodes restitutoria</i>	Walker, 1863	August	GG
102	Geometridae	Sterrhinae	<i>Perixera absconditaria</i>	Walker, 1862	December	GG
103	Geometridae	Sterrhinae	<i>Scopula cf. ferrilineata</i>	Moore, 1888	November	GG
104	Geometridae	Sterrhinae	<i>Synegiodes histriornaria</i>	Swinhoe, 1892	March	SM
105	Geometridae	Sterrhinae	<i>Timandra correspondens</i>	Hampson, 1895	June	GG
106	Lasiocampidae	Lasiocampinae	<i>Trabala vishnou</i>	Lefèvre, 1827	May, November	SM
107	Limacodidae	Limacodinae	<i>Chalcoscelides castaneipars</i>	Moore, 1865	August	SM
108	Noctuidae	Aganainae	<i>Cymatophoropsis sinuata</i>	Moore, 1879	May	SM
109	Noctuidae	Catocalinae	<i>Arcte modesta</i>	Hoeven, 1840	August	GG
110	Noctuidae	Heliothinae	<i>Heliothis peltigera</i>	Denis & Schiffermüller, 1775	April	SM
111	Noctuidae	Noctuinae	<i>Mythimna intertexta</i>	Chang, 1991	June	SM
112	Noctuidae	Noctuinae	<i>Mythimna separata</i>	Walker, 1865	April	GG
113	Noctuidae	Noctuinae	<i>Trachea auriplena</i>	Walker, 1857	April	GG
114	Noctuidae	Plusiinae	<i>Ctenoplusia agnata</i>	Staudinger, 1892	April	GG
115	Nolidae	Chloephoriinae	<i>Gabala polypilalis</i>	Walker, 1865	May	GG
116	Nolidae	Chloephoriinae	<i>Kerala sp.</i>		May, October	GG
117	Nolidae	Chloephoriinae	<i>Nycteola sp.</i>		October	GG
118	Nolidae	Chloephoriinae	<i>Tyana cf. chloroleuca</i>	Walker, 1866	July	SM
119	Nolidae	Risobinae	<i>Risoba sp.</i>		November	GG
120	Notodontidae	Cerurinae	<i>Syntypistis pallidifascia</i>	Hampson, 1892	October	SM
121	Notodontidae	Dudusinae	<i>Netria multispinae</i>	Schintlmeister, 2006	July	GG
122	Notodontidae	Phalerinae	<i>Phalera grotei</i>	Moore, 1859	July	SM
123	Notodontidae	Thaumetopoeinae	<i>Gazalina chrysolopha</i>	Kollar, 1844	September	SM
124	Notodontidae	Thaumetopoeinae	<i>Gazalina transversa</i>	Moore, 1879	April	SM
125	Pyralidae	Epipaschiinae	<i>Orthaga sp.</i>		October	GG
126	Pyralidae	Epipaschiinae	<i>Salma sp.</i>		September	GG
127	Pyralidae	Epipaschiinae	<i>Teliphasa sp.</i>		September	GG
128	Pyralidae	Pyralinae	<i>Endotricha sp.</i>		April	GG
129	Pyralidae	Pyralinae	<i>Pyralis pictalis</i>	Curtis, 1834	September	GG
130	Thyrididae	Striglininae	<i>Telchines vialis</i>	Moore, 1883	May	GG
131	Tortricidae	Tortricinae	<i>Archips sp.</i>		July	GG
132	Zygaenidae	Chalcosiinae	<i>Agalope bifasciata</i>	Hope, 1840	August	GG
133	Zygaenidae	Chalcosiinae	<i>Pidorus glaucopis</i>	Drury, 1773	August	SM

Note: 1) Survey sites: Gairi Gaon (GG) and 6th Mile (SM); 2) Months observed: Includes months on which the species were sited which might indicate flying duration or seasonal presence; 3) Scientific name: Genus level identifications are represented as sp. Provisional identifications as cf. or near, the former for close matches and the latter for poor matches.

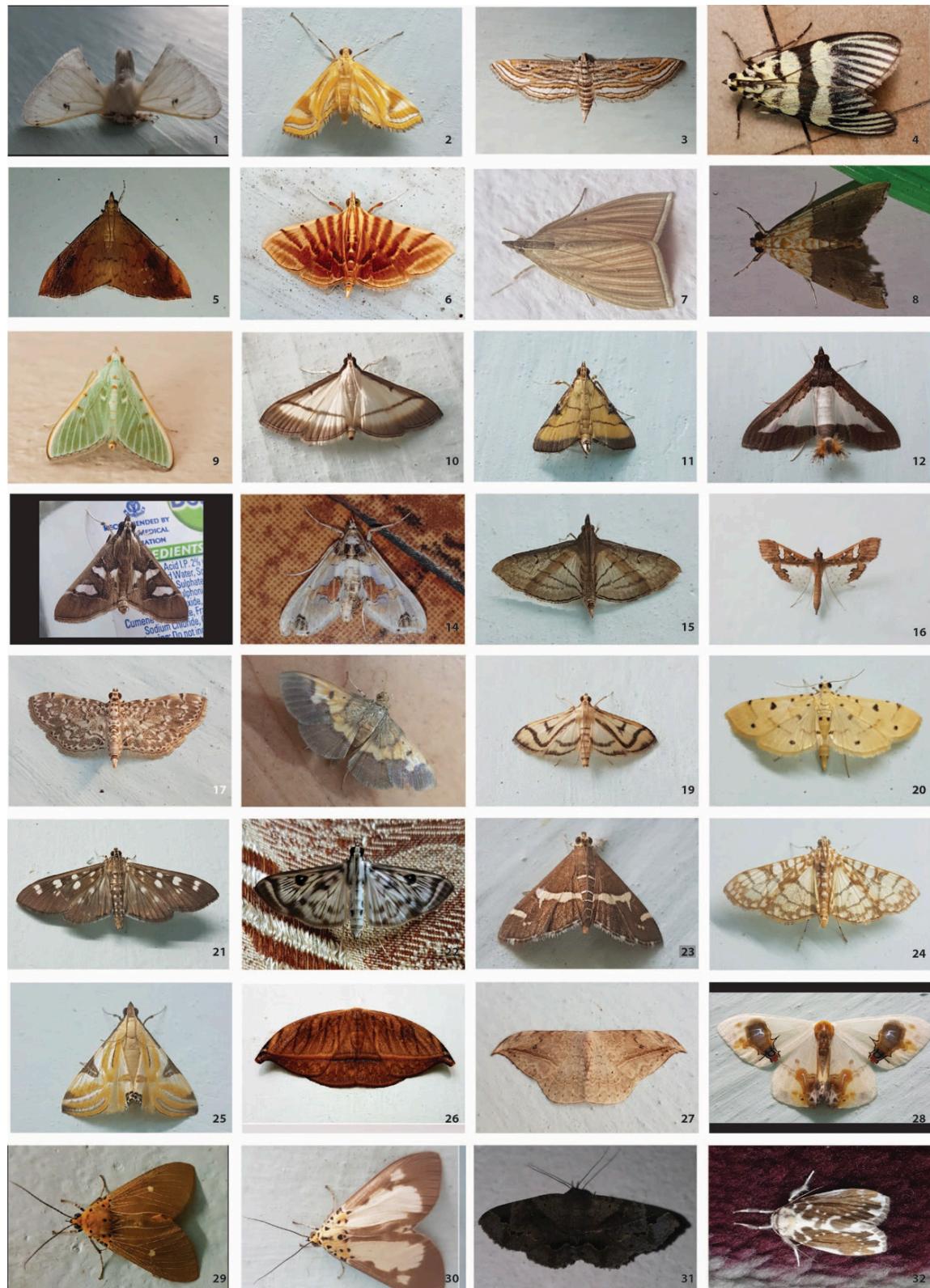


Image 1—*Penicillifera apicalis* | 2—*Eristena* sp. | 3—*Parapoynx fluctuosalis* | 4—*Heortia vitessoides* | 5—*Hyalobathra coenostolalis* | 6—*Pagyda auroralis* | 7—*Sclerocona* sp. | 8—*Agrotera basinotata* | 9—*Arthroschista hilaralis* | 10—*Bradina diagonalis* | 11—*Cnaphalocrocis medicinalis* | 12—*Diaphania indica* | 13—*Glyphodes crithealis* | 14—*Leucinodes orbonalis* | 15—*Cnaphalocrocis trapizalis* | 16—*Maruca vitrata* | 17—*Meteoeca foedalis* | 18—*Patania scinisalis* | 19—*Perisynstrocha ossealis* | 20—*Pycnarmon aeriferalis* | 21—*Pygospila tyres* | 22—*Rhimpheala trogusalis* | 23—*Spoladea recurvalis* | 24—*Synclera* cf. *univocalis* | 25—*Talanga* sp. | 26—*Callidrepana* sp. | 27—*Drepana pallida* | 28—*Macrocilix maia* | 29—*Asota caricae* | 30—*Asota plana* | 31—*Mecodina cineracea* | 32—*Adites frigida* | 33—*Aemene taprobanis*.



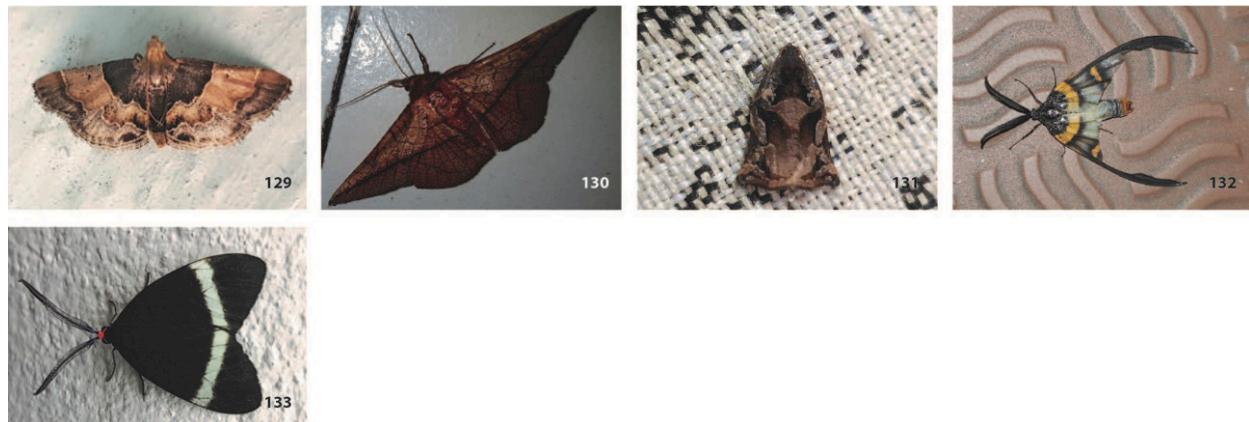
Image 34—*Aglaomorpha plagiata* | 35—*Barsine cf. cuneonotata* | 36—*Indiana eccentrica* | 37—*Camptoloma binotatum* | 38—*Creatonotos transiens* | 39—*Cyana cf. coccinea* | 40—*Cyana cf. neopuer* | 41—*Cyana cf. weerawoothi* | 42—*Lycleme cf. clamaria* | 43—*Lycleme conjunctana* | 44—*Lycleme dasara* | 45—*Barsine phaeodonta* | 46—*Nyctemera adversata* | 47—*Padenia duplicana* | 48—*Zadadra distorta* | 49—*Pseudoblabes oophora* | 50—*Schistophleps bipuncta* | 51—*Juxtarxia multiguttata* | 52—*Spilarctia* sp. | 53—*Stictane* sp. | 54—*Syntomoides imao* | 55—*Singara diversalis* | 56—*Eudocima* sp. | 57—*Anomis flava* | 58—*Artena dotata* | 59—*Erebis gemmans* | 60—*Dichromia quadralis* | 61—*Cifuna locuples* | 62—*Euproctis bipunctapex* | 63—*Euproctis cf. postica* | 64—*Euproctis* sp. | 65—*Illema* sp.



Images 66–97: 66—*Pida apicalis* | 67—*Somena scintillans* | 68—*Somena similis* | 69—*Pangrapta pseudalbistigma* | 70—*Apha* sp. | 71—*Eupterote* cf. *geminata* | 72—*Lophoptera squammigera* | 73—*Eumelea* cf. *atomata* | 74—*Abraxas neomartaria* | 75—*Archanna transfasciata* | 76—*Biston contextaria* | 77—*Cassyma* cf. *deletaria* | 78—*Celenna festivaria* | 79—*Chorodna mauraria* | 80—*Cleora fraternal* | 81—*Cleora* sp. | 82—*Corymica immaculata* | 83—*Darisa fratercula* | 84—*Ectropis dentilineata* | 85—*Gonodontis aethocrypta* | 86—*Erebomorpha fulgurita* | 87—*Parasynechia pluristriaria* | 88—*Heterostegane subtessellata* | 89—*Ourapteryx clara* | 90—*Hypomecis* sp. | 91—*Thinopteryx crocoptera* | 92—*Thinopteryx nebulosa* | 93—*Comibaena integranota* | 94—*Cosmostolodes albicantena* | 95—*Maxates* cf. *protrusa* | 96—*Thalassodes quadraria* | 97—*Acolutha pictaria*.



Image 98—*Harutalcis* cf. *vialis* | 99—*Syzeuxis* sp. | 100—*Polynesia truncapex* | 101—*Sarcinodes restitutaria* | 102—*Perixera absconditaria* | 103—*Scopula* cf. *ferrilineata* | 104—*Synegiodes histrionaria* | 105—*Timandra correspondens* | 106—*Trabala vishnou* | 107—*Chalcoscelides castaneipars* | 108—*Cymatophoropsis sinuata* | 109—*Arte modesta* | 110—*Heliothis peltigera* | 111—*Mythimna intertexta* | 112—*Mythimna separata* | 113—*Trachea auriplena* | 114—*Ctenoplusia agnata* | 115—*Gabala polyspilalis* | 116—*Kerala* sp. | 117—*Nycteola* sp. | 118—*Tyana* cf. *chloroleuca* | 119—*Risoba* sp. | 120—*Syntypistis pallidifascia* | 121—*Netria multispinae* | 122—*Phalera grotei* | 123—*Gazalina chrysolopha* | 124—*Gazalina transversa* | 125—*Orthaga* sp. | 126—*Salsma* sp. | 127—*Teliphasa* sp. | 128—*Endotricha* sp. | 129—*Pyralis pictalis*.



Images 130–133: 130—*Telchines vialis* | 131—*Archips* sp. | 132—*Agalope bifasciata* | 133—*Pidorus glaucopis*.

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Images 134–160. Photographs of unidentified moths.

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Articles

Roosting habits and habitats of the Indian Flying Fox *Pteropus medius* Temminck, 1825 in the northern districts of Tamil Nadu, India
– M. Pandian & S. Suresh, Pp. 19675–19688

Diversity and distribution of avifauna at Warathenna-Hakkinda Environmental Protection Area in Kandy, Sri Lanka
– Dinelka Thilakarathne, Tithira Lakkana, Gayan Hirimuthugoda, Chaminda Wijesundara & Shalika Kumburegama, Pp. 19689–19701

Grass species composition in tropical forest of southern India

– M. Ashokkumar, S. Swaminathan & R. Nagarajan, Pp. 19702–19713

Communications

Habitat use and conservation threats to Wild Water Buffalo *Bubalus arnee* (Mammalia: Artiodactyla: Bovidae) in Koshi Tappu Wildlife Reserve, Nepal
– Reeta Khulal, Bijaya Neupane, Bijaya Dhami, Siddhartha Regmi, Ganesh Prasad Tiwari & Manita Parajuli, Pp. 19714–19724

Get my head around owls: people perception and knowledge about owls of Andaman Islands

– Shamugavel Sureshmarimuthu, Santhanakrishnan Babu, Nagaraj Rajeshkumar & Honnavalli Nagaraj Kumara, Pp. 19725–19732

Abundance and diversity of threatened birds in Nangal Wetland, Punjab, India

– Rajwinder Kaur & Onkar Singh Brach, Pp. 19733–19742

Evaluation of fish diversity and abundance in the Kabul River with comparisons between reaches above and below Kabul City, Afghanistan

– Ugen Kelzang, Ahmad Farid Habibi & Ryan J. Thoni, Pp. 19743–19752

New record of *Myrmarachne melanocephala* MacLeay, 1839 (Araneae: Salticidae) from Jharkhand, India and biogeographical implications of the co-occurrence of its ant model *Tetraponera rufonigra* Jerdon, 1851

– Rahul Kumar, Mirtunjay Sharma & Ajay Kumar Sharma, Pp. 19753–19761

Diversity of spiders (Arachnida: Araneae) and the impact of pruning in Indian sandalwood plantations from Karnataka, India

– S. Padma 1 & R. Sundararaj, Pp. 19762–19772

New records of cheilostome Bryozoa from the eastern coast of India encrusting on the exoskeleton of live horseshoe crabs of Indian Sundarbans

– Swati Das, Maria Susan Sanjay, Basudev Tripathy, C. Venkatraman & K.A. Subramanian, Pp. 19773–19780

On the pteridophytes of Bherjan-Borajan-Padumoni Wildlife Sanctuary, Assam, India

– Pranjal Borah & Jayanta Barukial, Pp. 19781–19790

Population status of *Heritiera fomes* Buch.-Ham., a threatened species from

Mahanadi Mangrove Wetland, India

– Sudam Charan Sahu, Manas Ranjan Mohanta & N.H. Ravindranath, Pp. 19791–19798

Additions to the lichenized and lichenicolous fungi of Jammu & Kashmir from Kishtwar High Altitude National Park

– Vishal Kumar, Yash Pal Sharma, Siljo Joseph, Roshinikumar Ngangom & Sanjeeva Nayaka, Pp. 19799–19807

Short Communications

Is release of rehabilitated wildlife with embedded lead ammunition advisable? Plumbism in a Jaguar *Panthera Onca* (Mammalia: Carnivora: Felidae), survivor of gunshot wounds
– Eduardo A. Díaz, Carolina Sáenz, E. Santiago Jiménez, David A. Egas & Kelly Swing, Pp. 19808–19812

New record of the Sewing Needle Zipper Loach *Paracanthocobitis linypha* Singer & Page, 2015 (Teleostei: Cypriniformes: Nemacheilidae) from the Chindwin drainage of Manipur, India

– Yumnam Rameshori, Yengkhom Chinglemba & Waikhom Vishwanath, Pp. 19813–19817

Field identification characters to diagnose *Microhyla mukhlesuri* from closely related *M. mymensinghensis* (Amphibia: Microhylidae) and range extension of *M. mukhlesuri* up to West Bengal State, India

– Suman Pratihar & Kaushik Deuti, Pp. 19818–19823

First report of *Scipinia horrida* (Stål) (Heteroptera: Reduviidae) from Assam, with comments on related genus *Irantha* Stål

– Anjana Singha Naorem, Santana Saikia, Anandita Buragohain, Rubina Azmeera Begum, Swapnil S. Boyane & Hemant V. Ghate, Pp. 19824–19830

Flesh fly (Diptera: Sarcophagidae): male terminalia, diversity and expanded geographical distribution from India

– Kanholi Sreejith, Shuvra Kanti Sinha, Santanu Mahato & Edamana Pushpalatha, Pp. 19831–19836

Checklist of moths (Heterocera) of Tadong, Sikkim, India

– Prayash Chettri, Yuki Matsui, Hideshi Naka & Archana Tiwari, Pp. 19837–19848

New distribution records of *Begonia* L., *B. murina* Craib and *B. poilanei* Kiew (Begoniaceae: Cucurbitales) for Laos

– Phongphayboun Phonepaseuth, Phetsaly Souladeth, Soulinvan Lanorsavanh, Shuichiro Tagane, Thyraphon Vongthavone & Keooudone Souvannakhoummane Pp. 19849–19854

Notes

A recent sighting of the Stripe-backed Weasel *Mustela strigidorsa* (Mammalia: Carnivora: Mustelidae) in Hkkabro Razi Landscape, Myanmar

– Sai Sein Lin Oo, Tun Tun, Kyaw Myo Naing & Paul Jeremy James Bates, Pp. 19855–19859

Are the uplifted reef beds in North Andaman letting nesting Olive Ridley Sea Turtle *Lepidochelys olivacea* stranded?

– Nehru Prabakaran, Anoop Raj Singh & Vedagiri Thirumurugan, Pp. 19860–19863

First record of the orb-weaving spider *Araneus tubabdominus* Zhu & Zhang, 1993 (Araneae: Araneidae) from India

– Souvik Sen, John T.D. Caleb & Shelley Acharya, Pp. 19864–19866

The genus *Catapiestus* Perty, 1831 (Coleoptera: Tenebrionidae: Cnadaloniini) from Arunachal Pradesh with one new record to India

– V.D. Hegde & Sarita Yadav, Pp. 19867–19869

Rediscovery and extended distribution of *Indigofera santapaui* Sanjappa (Leguminosae: Papilionoideae) from the states of Maharashtra and Gujarat, India

– Kumar Vinod Chhotupuri Gosavi, Sanjay Gajanan Auti, Sharad Suresh Kambale & Munivenkatappa Sanjappa, Pp. 19870–19873

Additional distribution records of *Ceropegia anjanerica*, an endemic and 'Endangered' lantern flower of the northern Western Ghats, India

– Samir Shrikant Maiti, Ajay Natha Gangurde, Sharad Suresh Kambale, Avinash Ramchandra Gholave, Avinash Asraji Adsul, Ganesh Babaso Pawar & Kumar Vinod Chhotupuri Gosavi, Pp. 19874–19877

Notes on the extended distribution of *Impatiens megamalayana*, a recently described balsam in Western Ghats, India

– Anoop P. Balan & A.J. Robi, Pp. 19878–19883

Book Review

A look over on the scented tree of India (*Santalum album*)

– S. Suresh Ramanan & A. Arunachalam, Pp. 19884–19886

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