



Taxonomic Studies of
Lepidoptera (Insecta)
of Dalma Wildlife Sanctuary, Jharkhand (India)

S. Sambath

ZOOLOGICAL SURVEY OF INDIA



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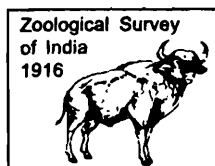
**RECORDS OF THE
ZOOLOGICAL SURVEY OF INDIA**

**Taxonomic Studies of Lepidoptera (Insecta) of
Dalma Wildlife Sanctuary, Jharkhand (India)**

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Edited by the Director, Zoological Survey of India, Kolkata



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INTRODUCTION

Dalma Wildlife Sanctuary is named after mother Goddess, Mai Dalma, has a long legend in its nomenclature. This place is worshipped once a year in the month of Asrah by the members of Mai's family from Bonta village. The Dalma Wildlife sanctuary is situated on the Chota Nagpur plateau near the steel city of Jamshedpur, Jharkhand and lies between 22° 46' 30" and 22° 57' North latitude and 86° 7' and 86° 26' 30" East longitude and cover an area of 193.22 km² in the Dalma hill range of East singhbhum District of Jharkhand. The extent of Dalma hill range itself is 1843 sq.km, traditionally called the Dalma hill range. The area of the sanctuary forms the part of catchment area of river Subernarekha and is encompassed by several hills, among which Dalma hill (926 m) is the highest. The sanctuary (Fig.2) is well demarcated by Patamda block of East Singhbhum District (Fig. 3) forms northern boundary, river Subarnarekha, Jamshedpur town and NH 33 forms southern boundary; Purulia District of West Bengal form the eastern boundary and Sini-Asansol section of South-Eastern railway forms the western boundary. It was declared as sanctuary by the Government of Bihar, under the Wildlife Protection Act, 1972 in 1976 and later was inaugurated by the late Sanjay Gandhi.

The climatic conditions are hot and humid and the temperature during the summer varies from 47°C to 56°C. The average day-night temperature differs by 10°C and the temperature difference between the foothill and the northern and southern slopes is between temperatures of 15°C to 20°C. Due to extreme variations in temperature, considerable variations observed between distribution and abundance of flora and fauna of the sanctuary.

(i). Terrain

The sanctuary comprising of an area of 193.22 sq. km is a part of a hill range running southeast to northwest. The Dalma hill range has several hill peaks having different local names. The highest point of the Dalma hill range is at the height of 926 m above MSL, locally called as Sadhubera bahar and now called as Dalma top falls within the core area of the sanctuary. The Buffer of the sanctuary is 138. 22 sq.km and is divided in to east and west buffer zone and the core area lies in between them. The minimum and maximum elevation of the sanctuary varies from 154 to 544 m above MSL. The buffer zone though it appears as large area in fact mainly made up of degraded forests on the parallel hill range interspersed with agriculture and human habitation. The sanctuary encloses 29 revenue villages within its limit and 73 villages exist along the periphery. The villagers of this sanctuary directly or indirectly exploit the wealth of this sanctuary thereby some alteration and openness of the dense forests of the habitat.

(ii). Vegetation

Rodgers and Panwar (1988) have divided India into 10 biogeographical zones. Dalma wildlife sanctuary is under biotic province of Chota Nagpur (6B) of Deccan Peninsula zone within the Indo-Himalayan region. The sanctuary has been included as one of the localities of great significance to conserve India's biodiversity as it falls under the Dry Deciduous forest type having Sal (*Shorea robusta*), *Cleistanthus* spp. and *Croton* series (Gadgil and Mehar).

According to Champion and Seth (1968), the forest type of this sanctuary is North tropical high deciduous (5b/cic and peninsular Sal forests (6B/C2). The species richness and diversity of fauna of a habitat is directly influenced by the type of vegetation, their structure and complexity etc. The richness of the insect fauna reflexes the type of vegetation, their diversity and evenness of the distribution of a habitat.

(iii). Flora

The flora of the sanctuary mainly consists of Sal, shisham, *Terminalia* spp., *Tamarindus indica*, *Emblia officinalis*, *Bauhinia* spp. *Albizia* spp. etc. in association with many species of herbs and shrubs.

(iv). Fauna

The fauna of this sanctuary mainly consists of elephants, leopard, jackal, deers, fox, sloth bears, macaques, langurs, mongoose and several local birds were observed during the study period.

REVIEW OF LITERATURE

Study of literature revealed that scattered work on insect fauna has been made so far in the state of Jharkhand region (South Bihar). Consolidated detailed accounts of some butterflies of this region were studied by Morrison–Godfrey (1948); Jamal Ara (1960, 1966); Varshney, *et al.*, (1981) and Varshney (1983; 1993, 1994.). Nahar and Sharma (2007) have reported 18 species of butterflies from Dalma Wildlife Sanctuary which are observed during present study and indicated in plus sign (+). Verma (2009) have also studied species composition and seasonal variation of 39 species of butterflies of this sanctuary were indicated in the list of butterflies species in asterick (*) and the species were not observed during the present study were also indicated in asterick (**). The present study recorded 77 species and added 38 more species resulted total of 88 species of butterflies from this sanctuary. Beside these, none of the authors have studied moths of this habitat so far. Hence, attempts have been made for the first time to document the Lepidoptera fauna of this sanctuary for the conservation and management of insect biodiversity of this sanctuary.

MATERIALS AND METHODS

The distribution and abundance of different species of butterflies in selected localities (Pindra bera, Tisco, Maculakocha, Bighilighaty, Bada baandh, Mangeela baandh, Kongadhasa) across the sanctuary was assessed quantitatively during 2007 to 2009 by using the standard butterfly survey method as described by Pollard (1977). The selected transect route covered by 2 km, comprising

6 section of 200m length with buffer zone. Butterflies were captured by using insect net between morning and evening during ideal weather condition. The collected individuals of butterflies were identified with the help of available literatures (Talbot, 1939; 1947; Evans, 1932. Wynter-Blyth, 1957)

Various workers adopted different methods for collecting moths worldwide to assess quantitatively. The common and most convenient method of collecting moths were carried out by installing light trap, having 160 watt mercury vapour lamp and a white cloth sheet (10' X 6'), hung between two vertical poles in such a way that it touches the surface and extends forwards over the ground slightly away from the direct source of light. The source of light should be placed at such a point that the whole sheet from edge to edge brightly reflects the light which allows maximum collection of moths individually without any damage. The light trap was operated from 6.00 PM to 6.00 A.M. Moths were start appear on the trap just after sunset and most of the moths collected between 18.00 to 22.00 hours after that the abundance of moths were slowly declined. The light Trap was installed at different localities (Pindra bera, Tisco, Maculakocha) having maximum forest covers.

The number of moths collected from different localities then were studied, identified and classified with the available literature (Hampson, 1892, 1894-96 and Bell & Scott, 1937). Attempts have been made to follow the current nomenclature of the identified specimens of Lepidoptera is based on LEPINDEX, an online database version of NHM, UK (Beccaloni *et al.*, 2005). However, the hierarchy of different families of Lepidoptera is based on the literature (Varshney, 2003).

INSECT FAUNA

Insects are one of the important animal groups to mankind, adopted rapidly to survive with changing environmental conditions. The abundance and distribution is directly relying on the temperature, humidity, and abundance of food plants (quantitatively and qualitatively). The food plants or vegetation unswervingly help to feed, reproduce, and survival of the insect community and reflect the species richness, diversity and distribution. The insects in turn act as ecological indicator, and efficient pollinators, rather than called as pests etc. Insect pollinators generally belong to the orders, Hymenoptera (Bees, Wasps) and Lepidoptera (Butterflies and moths). The order Lepidoptera has more than 1, 20,000 species of butterflies and moths (second largest insect order) throughout the world (Richard and Davis, 1977). Among butterflies it is estimated that the Indian region harbours 1641 species and subspecies of butterflies representing roughly 9.50 % of the total world occurrence (Varshney, 2006).

Order LEPIDOPTERA

Butterflies and moths are one of the most important groups of insect in the animal world. They are beautiful in colours, diverse in their numbers, and species richness in a geographical region which imitates the heterogeneity of their habitat environs. Thus, they play a pivotal role in the faunal analysis and environmental monitoring and planning of any region. The role of butterflies and some moths in any habitat is best known by even common people nowadays, as good and

potential natural pollinators, ecological indicators etc., which enable to assess or monitor habitat changes. Thus inventorying and monitoring of species richness and diversity of butterflies in any habitat or conservation areas have considerable ecological, socio-economical importance.

Surveys were made during the year 2007-2009 for the collection of butterflies and moths from the Dalma Wildlife Sanctuary and revealed the occurrence of 209 species of Lepidoptera under 163 genera and 25 families. The diagnostic characters and systematic accounts of the butterflies and moth species dealt in this paper is based on Evans (1932), Talbot (1939, 1949), Winter-Blyth (1957), Hampson (1892, 1894, 1895, 1896 and Bell and Scott, 1937). The systematic account of order Lepidoptera is based on Varshney (2003) at the family level and the nomenclature followed as per the edition of LEPINDEX. The Order Lepidoptera described here under in two parts (Part A & Part B).

PART - A (BUTTERFLIES)

LIST OF SPECIES

Order LEPIDOPTERA

Suborder GLOSSATA

Infraorder HETERONEURA

Division DITRYSLA

Section COSSINA

Subsection BOMBYCINA

Superfamily PAPILIONOIDEA

Series HESPERIIFORMES

Family HESPERIIDAE

Subfamily PYRGINAE

1. *Caprona ransonnettii ransonnettii* (Felder, 1868)

2. *Celaenorrhinus ambareesa* (Moore, 1865)

3. *Celaenorrhinus leucocera leucocera* (Kollar, 1848)

4. *Tagiades litigiosa* Moschler, 1878

Subfamily HEPERIINAE

5. *Borbo cinnara* (Wallace, 1866)

6. *Pelopidas mathias mathias* (Fabricius, 1798)

7. *Udaspes folus* (Cramer, 1775)

Series PAPILIONIFORMES

Family LYCAENIDAE

Subfamily CURETINAE

8. *Curetis dentata dentata* Moore, 1879

Subfamily THECLINAE

Tribe AMBLYPODINI

9. *Amblypodia anita dina* (Fruhstorfer, 1907)

Tribe ARHOPALINI

10. *Arhopala amantes amantes* (Hewitson, 1862)

Tribe DEUDORIGINI

11. *Deudorix epijarbas epijarbas* Moore, 185712. *Rapala varuna varuna* (Horsfield, 1829)

Subfamily LYCAENINAE

13. *Edales pandava pandava* (Horsfield, 1829)

Tribe APHNAEINI

14. *Spindasis vulcanus vulcanus* (Fabricius, 1775)

Subfamily POLYOMMATINAE

Tribe POLYOMMATINI

15. *Jamides bochus bochus* Stoll, 1782*16. *Castalius rosimon rosimon* (Fabricius, 1775)*

Subfamily NEMEOBIINAE

17. *Abisara echerius suffusa* Moore, 188218. *Tajuria cippus* (Fabricius, 1798)19. *Virachola isocrates* (Fabricius, 1793)

Family NYMPHALIDAE

Subfamily DANAINAE

Tribe DANAINI

20. *Danaus chrysippus chrysippus* (Linnaeus, 1758)*, +21. *Danaus genutia* (Cramer, 1779) +22. *Tellervo limniace leopardus* (Butler, 1866)*, +

Tribe EUPLOEINI

23. *Euploea core core* (Cramer, 1780)*, +

Subfamily CHARAXINAE

Tribe CHARAXINAE

24. *Charaxes polyxena imna* Butler, 187025. *Polyura arja* (C. & R. Felder, 1867)

Subfamily HELICONIINAE

Tribe ACRAEINI

26. *Acraea violae* (Fabricius, 1775)*, +

Tribe ARGYNNINI

27. *Phalanta phalantha phalantha* (Drury, 1770)*, +

Subfamily LIMENITINAE

Tribe BIBLINI

28. *Ariadne ariadne indica* (Moore, 1884)*
 29. *Ariadne merione* (Cramer, 1779)*

Tribe LIMENITINI

30. *Euthalia lubentina indica* Fruhstorfer, 1904
 31. *Limenitis procris procris* (Cramer, 1777) +
 32. *Pantoporia hordonia hordonia* (Stoll, 1791)
 33. *Parathyma nefte inara* (Doubleday, 1850)
 34. *Parathyma perius perius* (Linnaeus, 1758) +
 35. *Parathyma ranga* (Moore, 1857)
 36. *Phaedyma columella ophiana* (Moore, 1872)
 37. *Symphaedra nais* Forster, 1771*, +
 38. *Tanaecia lepidea lepidea* (Butler, 1868)

Tribe NEPTINI

39. *Neptis clinia* Moore, 1872
 40. *Neptis hylas astola* Moore, 1872*, +

Subfamily CYRESTINAE

41. *Cyrestis thyodamas thyodamas* Boisduval, 1836

Subfamily NYMPHALINAE

Tribe KALLIMINI

42. *Hypolimnas bolina* (Linnaeus, 1758)*, +
 43. *Hypolimnas missippus* (Linnaeus, 1764)
 44. *Junonia almana almana* (Linnaeus, 1758)*
 45. *Junonia atlites* (Linnaeus, 1758)*
 46. *Junonia iphita pluvialis* (Fruhstorfer, 1900)
 47. *Junonia lemonias vaisya* (Fruhstorfer, 1912)*, +
 48. *Junonia orithya swinhoi* Butler, 1885*, +

Subfamily STYRINAE

Tribe MELANITINI

49. *Melanitis leda ismene* (Cramer, 1775)

Tribe ELYMNIINI

50. *Mycalesis mineus polydecta* (Cramer, 1777), +

Tribe SATYRINI

51. *Ypthima inica* Hewitson, 1865

Family PAPILIONIDAE
 Subfamily PAPILIONINAE
 Tribe LEPTOCIRCINI

52. *Graphium antiphates pompilius* (Fabricius, 1775)53. *Graphium (Graphium) doson eleius* (Fruhstorfer, 1908)*54. *Graphium nomius* (Esper, 1793)

Tribe PAPILIONINI

55. *Chilasa clytia f. dissimilis* (Linnaeus, 1758)56. *Papilio crino* (Fabricius, 1793)*57. *Papilio demoleus demoleus* Linnaeus, 1758*, +58. *Papilio polymnestor polymnestor* Cramer, 177559. *Papilio polytes* Linnaeus, 1758*, +60. *Pachliopta aristolochiae* (Fabricius, 1775)

Family PIERIDAE
 Subfamily COLIADINAE
 Tribe COLIADINI

61. *Catopsilia crocale* Cramer, 177562. *Catopsilia florella gnoma* (Fabricius, 1775)63. *Catopsilia pomona* (Fabricius, 1775)*64. *Catopsilia pyranthe pyranthe* (Linnaeus, 1758)*65. *Eurema blanda silhetana* (Wallace, 1867)66. *Eurema brigitta rubella* (Wallace, 1867)*, +67. *Eurema hecabe contubernalis* (Moore, 1886)*68. *Eurema hecabe fimbriata* (Wallace, 1832)69. *Eurema hecabe simulata* (Moore, 1881)70. *Eurema laeta laeta* (Boisduval, 1836)71. *Eurema sari sodalis* (Moore, 1886)

Tribe PIERINAE

72. *Anaphaeis aurota aurota* (Fabricius, 1793)73. *Cepora nerissa phryne* (Fabricius, 1775)*, +74. *Delias eucharis* (Drury, 1773)*75. *Delias hyparete ethire* (Doherty, 1886)76. *Leptosia nina nina* (Fabricius, 1781)*77. *Valeria valeria hippia* (Fabricius, 1787)*

The following species reported by Verma (2009) from Dalma Wildlife Sanctuary were not observed during the study period indicated in asterick (**).

Family LYCAENIDAE

1. *Rathinda amor* (Fabricius)**
2. *Jamides celeno* (Cramer)**
3. *Tarucus nara* (Kollar)** and
4. *Acytolepis puspa* (Horsfield)**

Family NYMPHALIDAE

5. *Euploea klugii* (Moore)**,
6. *Euthalia aconthea* (Cramer)**
7. *Mycalesis perseus* (Fabricius)**
8. *Ypthima hübnéri* (Kirby)**
9. *Elymnias hypermnestra* (Linnaeus)**

Family PIERIDAE

10. *Appias albina* (Boisduval)**
11. *Parantica aglea* (Cramer)**

TAXONOMIC ACCOUNTS

The taxonomic account of 77 species and subspecies of butterflies under 51 genera and 5 families described as hereunder.

PART – A (BUTTERFLIES)

Order LEPIDOPTERA
Suborder GLOSSATA
Infraorder HETERONEURA
Division DITRYZIA
Section COSSINA
Subsection BOMBYCINA
Superfamily PAPILIONOIDEA
Series HESPERIIFORMES
Family HESPERIIDAE
Subfamily PYRGINAE

1. *Caprona ransonnettii ransonnettii* (Felder)
The Golden Angle

1868. *Pterygospidea ransonnettii* Felder, *Verh. Zool. Bot. Gesellsch Wien.*: 284.

1997. *Caprona ransonnettii ransonnettii*: Ghosh and Chaudhury, *Fauna of West Bengal, State Fauna Series, 3 (Part-7)*: 284. *Zool. Surv. India.*

Material examined: DWLS, Pindra bera, 28.ix.2008 (1 ex.)

Diagnostic characters: Fore wing dorsally without hyaline spot. Hind wing dorsally with crowded yellow spots near end of cell and a broad grey border, ventrally white and unmarked except inner round black spot in space between Sc + R₁ and Rs. *Wingspan:* 35 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum, Dhanbad), Arunachal Pradesh, Chhattisgarh, Madhya Pradesh, peninsular India up to Bihar, North Eastern States, Uttarakhand and West Bengal. *Elsewhere:* Myanmar, Pakistan and Sri Lanka.

2. *Celaenorrhinus ambareesa* (Moore) The Malabar Spotted flat

1865. *Plesioneura ambareesa* Moore, *Pro. Zool. Soc. Lond.*: 788.

2008. *Celaenorrhinus ambareesa*: Sharma and Borker, *Insecta: Lepidoptera: Rhopalocera and Grypocera, Fauna of Goa, State Fauna Series*, 16: 206.

Material examined: DWLS, Bighilighaty, 18.iii.2009 (1 ex.)

Diagnostic characters: Adult is dark olive-brown with yellowish brown and white hairs at their base. Fore wing with 3 subapical, semi-hyaline white spots, a discal band of 6 spots and a submarginal series of small lunular yellowish brown spots. Hind wing with 3 rows of pale yellowish spots. Both wings with checkered fringe. Underside paler with markings similar. *Wingspan:* 45 – 55 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum), Goa, Madhya Pradesh, South India and West Bengal.

3. *Celaenorrhinus leucocera leucocera* (Kollar) The Common Spotted Flat

1848. *Hesperia leucocera* Kollar, *In Hugel, Kaschmir*, 4: 454.

1932. *Celaenorrhinus leucocera leucocera*: Evans, *The Identification of Indian Butterflies* : 326.

2007. *Celaenorrhinus leucocera*: Singh & Koshta, *Fauna of Madhya Pradesh (including Chhattisgarh), State Fauna Series*, 15(Part-1): 341-342. *Zool. Surv. India*.

Material examined: DWLS, Maculakocha, 15.xii.2007 (2 exs.).

Diagnostic characters: Adult male dark brown. Fore wing with a white discal band formed of 5 connected semitransparent spots and 5 apical spots. Hind wing with faint median and discal series of non-transparent yellow spots. *Wingspan:* 38-55 mm.

Distribution: India: Jharkhand (East Singhbhum), Andamans, Arunachal Pradesh, Chhattisgarh, Goa, Jammu & Kashmir, Madhya Pradesh, Northeast and South India. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Pakistan.

Habits and Habitats: It remains in the shade, except during early morning and evening. Flight is fast and jerky, comes to flowers and wet soil patches.

4. *Tagiades litigiosa* Moschler The Water Snow Flat

1878. *Tagiades litigiosa* Moschler, *Verh. Zool.Bot. Ges. Wien.*, 28: 236.

2008. *Tagiades litigiosa*: Sharma and Borker, *Insecta: Lepidoptera: Rhopalocera and Grypocera, Fauna of Goa, State Fauna Series*, 16: 207.

Material examined: DWLS, Mangeela baandh, 03.x.2008 (2exs.),

Diagnostic characters: The upperside is blackish brown, fading to dark brown. Forewing with semitransparent, small white discal spots, inner apical spots, two spots at the end of cell, and a costal spot above them. Hind wing is mostly pure except for the costal and apical areas which are of the dark brown ground colour; prominent, large, black marginal spots are present on the white area. *Wingspan:* 38 mm

Status: Not rare.

Distribution: India: Jharkhand (East Singhbhum, Dhanbad), Goa, Himachal Pradesh, Peninsular India up to Central India and Uttaranchal to far Northeast. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Habits and Habitats: The adult butterflies come to damp patches and flowers.

Subfamily HESPERIINAE

5. *Borbo cinnara* (Wallace) The Rice Swift

1866. *Hesperia cinnara* Wallace, *Proc. Zool. Soc. Lond.*: 361.

1949. *Borbo cinnara*: Evans, *A catalogue of the Hesperidae from Europe, Asia, and Australia in Brit. Mus. (nat. Hist.)*, 437.

1997. *Borbo cinnara*: Ghosh and Chaudhury, *Fauna of West Bengal, State Fauna Series*, 3(Part-7): 312. *Zool. Surv. India*.

Material examined: DWLS, Maculakocha, 03.x.2008 (1 ex.).

Diagnostic characters: Adult fore wing dorsally with a conspicuous non-hyaline spot in space between Cu_{1a} and Cu_{1b} and discal series of spots in space between M_1 to R_4 and also on upper cell spot. Hind wing dorsally with 1-2 dots, ventrally with olive ochreous scaling and spots in space between Cu_{1b} and M_1 . *Wingspan:* 30 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum), Andaman and Nicobar islands, Goa, Himachal Pradesh, Madhya Pradesh, Manipur, Sikkim, South India and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Habits and Habitats: Often common in low elevations, as well as near human habitations where rice is grown.

6. *Pelopidas mathias mathias* (Fabricius) The Small Branded Swift

1798. *Hesperia mathias* Fabricius, *Ent. Syst. Suppl.* : 433.

1949. *Pelopidas mathias mathias*: Evans, *A catalogue of the Hesperidae from Europe, Asia, and Australia in Brit. Mus. (nat. Hist.)*, 441.

1997. *Pelopidas mathias mathias*: Ghosh and Chaudhury, *Fauna of West Bengal, State Fauna Series, 3(Part-7)*: 313. *Zool. Surv. India*.

Material examined: DWLS, Maculakocha, 15.xii.2007 (1 ex.).

Diagnostic characters: Adult is olive-brown; fore wing with nearly 9 small yellowish semi-transparent spots, those in the apex and disc prominent. Hind wing often with one very indistinct pale discal spot. Underside pale greyish brown with distinct markings. *Wingspan:* 32-38 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum), Assam, Chhattisgarh, Goa, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Punjab, Rajasthan, Sikkim, South India, Tripura, Uttar Pradesh and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

7. *Udaspes folus* (Cramer) The Grass Demon

1775. *Papilio folus* Cramer, *Pap. Exot.*, 1: 118.

1997. *Udaspes folus*: Ghosh and Chaudhury, *Fauna of West Bengal, State Fauna Series, 3(Part-7)*: 294. *Zool. Surv. India*.

Material examined: DWLS, Mangeela baandh, 03.x.2008 (1 ex.).

Diagnostic characters: Upperside of adult blackish brown, fore wing with 9 semi-transparent yellowish white spots. Hind wing with a large semi-transparent yellowish white patch in the middle. Underside FW as above, HW with the white patch broadened with dark brown streak extending to the base and the outer margin mostly greyish white. *Wingspan:* 40 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum, Dhandbad, Hazaribagh), Assam, Chhattisgarh, Goa, Madhya Pradesh, North West Himalaya, Orissa, Sikkim, South India and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Habits and Habitats: Flight is observed very fast and erratic and observed under trees..

Series PAPILIONIFORMES

Family LYCAENIDAE

Subfamily CURETINAE

8. *Curetis dentata dentata* Moore

The Angled Sunbeam

1879. *Curetis dentata* Moore, *Proc. Zool. Soc. Lond.*, : 137.

1932. *Curetis acuta dentata*: Evans, *The Identification of Indian Butterflies*: 254.

1997. *Curetis dentata dentata*: Gupta. *Fauna of West Bengal, State Fauna Series, 3 (Part-7)*: 458. *Zool. Surv. India*.

Material examined: DWLS, Mangeela baandh, 28.ix.2008 (1 ex.).

Diagnostic characters: Adults are similar to the *Curetis bulis* Westwood, but in upper hind wing the discal band in 6 and 7 is in line with bar end-cell. Very variable. In male upper broad border, widens rapidly to broad dark dorsal area, and there is more or less a prominent basal streak above the cell, leaving only a basal red discal patch. *Wingspan*: 45 mm.

Status: Not rare

Distribution: India: Jharkhand (Dhanbad, East Singhbhum), Arunachal Pradesh, Assam, Goa, Himachal Pradesh, Madhya Pradesh, Sikkim, South India, Uttar Pradesh and West Bengal. *Elsewhere*: Bangladesh, Bhutan, Myanmar and Nepal.

Habits and Habitats: It is swift and powerful flier. Visit damp patches.

Subfamily THECLINAE

Tribe AMBLYPODINI

9. *Amblypodia anita dina* (Fruhstorfer)

The Purple Leaf Blue

1907. *Horsefieldia dina* Fruhstorfer, *I. Ent. Zeitschr*, 21: 150.

1932. *Horsefieldia anita dina*: Evans, *The Identification of Indian Butterflies*: 255.

1962. *Amblypodia anita dina*: Cantlie, *The lycaenidae portion of Brigadier Evans, The Identification of Indian Butterflies*, 1932: 106.

1997. *Amblypodia anita dina*: Gupta, *Insecta: Lepidoptera: Lycaenidae, State Fauna Series, 3, Fauna of West Bengal (Part-7)*: 460. *Zool. Surv. India*.

Material examined: DWLS, Maculakocha, 10.viii.2008 (2 exs.).

Diagnostic characters: Adult male and female have a broad lobe with a tail at hind wings. Upper side of male deep purple or blue; black border of fore wing broader and narrower in upper hind wing. Upperside of female dark brown, with bright purple on discal area. Underside leaf-like markings, a dark line always present from apex of under fore wing to tornus of under hind wing. *Wingspan*: 45-52 mm.

Status: Not rare.

Distribution: India: Jharkhand (East Singhbhum), Assam, Bihar, Goa, Maharashtra, Orissa, Sikkim, South India and West Bengal. *Elsewhere:* Bangladesh, Myanmar and Sri Lanka.

Tribe ARHOPALINI

10. *Arhopala amantes amantes* (Hewitson)

The Large Oak Blue

1862. *Amblypodia amantes* Hewitson, *Cat. Lyc. B. M.*: 4 t. 2: 1- 3.

1890. *Arhopala amantes*: de Niceville, *The Butterflies of India, Burmah and Ceylon*, 3: 239-240.

1932. *Amblypodia amantes amantes*: Evans, *The Identification of Indian Butterflies*: 264.

Material examined: DWLS, Bighilighaty, 27.vi.2009 (4 exs.).

Diagnostic characters: Adult male of upperside dark shining blue, female paler. Under forewing of male and female with 3 spots in the cell of which the spot at the base is the smallest. A discal band of conjoined spots of which the middle one is out of line. Under hindwing have basal and subbasal spots and irregular bands. *Wingspan:* 50–55 mm.

Status: Locally common.

Distribution: India: Jharkhand (East Singhbhum), Andamans, Arunachal Pradesh, peninsular India up to Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Sikkim, Uttarakhand, Uttar Pradesh and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Habits and Habitats: Prefers forested regions, flies fast usually remains among foliage.

Tribe DEUDORIGINI

11. *Deudorix epijarbas epijarbas* Moore

The Cornelian

1857. *Dipsas epijarbas* Moore, *Cat. Lep. E. I. C.* 1 : 32.

1890. *Deudorix epijarbas*: De Nicevilli, *The Butterflies of India, Burmah and Ceylon*, 3: 449.

1997. *Deudorix epijarbas epijarbas*: Ghosh and Chaudhury, *Fauna of West Bengal, State Fauna Series*, 3 (Part-7): 477. *Zool. Surv. India*.

Material examined: DWLS, Bighilighaty, 22.iii.2009 (3 exs.).

Diagnostic characters: Adult male with upperside is red, forewing bearing dark brown borders on the costal and terminal margins. The cell is marked with black. On the upperside of the hindwing the basal portion of the costal area is dark. Underside is brown, varying from pale brown with broad bands in the cell edged with white, and a white-edged band on the discal area. The hindwing bears a single, slender tail at the termination of vein 2. and on the underside, bears a black spot in interspace 2 encircled with a yellow ring. *Wingspan:* 34–44 mm.

Status: Not common.

Distribution: India: Jharkhand (East Singhbhum, Dhanbad), Goa, Orissa, South India and West Bengal. *Elsewhere:* Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

Habits and Habitats: Flight rapid, found in forests and open plains, between March and April and July to December.

12. *Rapala varuna varuna* (Horsefield)
The Indigo Flash

1829. *Thecla varuna* Horsefield, *Cat. Lep. E.I.C.* : 91.

1881. *Rapala varuna*, Moore, *Lep. Ceyl.*, 1: 105.

1932. *Rapala varuna varuna*: Evans, *The Identification of Indian Butterflies.* : 298.

Material examined: DWLS, Pindra bera, 09.xii.2008 (1 ex.).

Diagnostic characters: In adult male upper forewing with dull shining dark blue, not blue shot, shading to dark border; female with pale shing steel blue with dark border. Underside ground-colour slaty-brown, often with purple or green gloss to almost white in dyr season form. *Wingspan:* 35 mm.

Status: Not rare.

Distribution: India: Jharkhand (East Singhbhum), Andaman and Nicobar Island, Arunachal Pradesh, Goa, Himachal Pradesh, South India and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Subfamily LYCAENINAE

13. *Edales pandava pandava* (Horsfield)
The Plains Cupid

1829. *Lycaena pandava* Horsefield, *Cat. Lep. Ins. East India voy.* : 84.

1907. *Catochrysops pandava*: Bingham, *The Fauna of British India (Butterflies)*, 2: 413.

1962. *Euchrysops pandava*: Cantlie, *The lycaenidae portion of Brigadier Evans, The Identification of Indian Butterflies*, 1932: 66.

1980. *Edalus pandava*: Swinhoe, in Moore, *Lep. Indica*, 8: 37.

1997. *Euchrysops pandava pandava*: Gupta, *Insecta: Lepidoptera: Lycaenidae, State Fauna Series, 3, Fauna of West Bengal (Part-7)*: 442, *Zool. Surv. India*.

Material examined: DWLS, Maculakocha, 03.x.2008 (2 exs.).

Diagnostic characters: Adult male above bright lavender-blue, often with veins darkened; dark outer borders broader. Adult male and female below, darker, brownish grey. Under hindwing discal band as in small cupid, tornal black spots may be absent, but if present spot in 2 is much larger. *Wingspan:* 25 mm.

Status: Locally common.

Distribution: India: Jharkhand (East Singhbhum), Andaman and Nicobar Islands, Chhattisgarh, Goa, Karnataka, Madhya Pradesh and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

Tribe APHNAEINI

14. *Spindasis vulcanus vulcanus* (Fabricius)

The Common Silverline

1775. *Papilio vulcanus* Fabricius, *Syst. Ent.*: 519.

1890. *Aphaneus vulcanus*: De Nicevilli, *The Butterflies of India, Burmah and Ceylon*, 3: 349.

1925. *Spindasis vulcanus*: Gans, *J. Bombay Nat. Hist. Soc.*, 30: 758.

1962. *Spindasis vulcanus vulcanus*: Cantlie, *The Icaenidae portion of Brigadier Evans, The Identification of Indian Butterflies*, 1932: 114.

Material examined: DWLS, Maculakocha, 26.vi.2008 (1 ex.).

Diagnostic characters: Adult is dark brown. Fore wing with conspicuous, black spotted orange-yellow transverse band, more bluish gloss in male. Hind wing outer border at the tornal area bright yellowish or orange with 2 spots and 2 delicate tails. Underside pale yellow with prominent black or brown bordered reddish bands. *Wingspan:* 32 mm.

Status: Common.

Distribution: India: Jharkhand (Dhanbad, Hazaribagh, East Singhbhum, Ranchi), Chhattisgarh, Goa, Madhya Pradesh, West Bengal and rest of mainland except Northeast and drier Northwest. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

Habits and Habitats: Flight is extremely fast, keeps low bushes. Search open lightly wooded areas as well as gardens. Frequently visits flowers and damp patches.

Subfamily POLYOMMATINAE

Tribe POLYOMMATINI

15. *Jamides bochus bochus* Stoll

The Dark Cerulean

1782. *Jamides bochus* Stoll, *Uitl. Kapellen*, 4(33): 210.

1932. *Jamides bochus bochus*: Evans, *The Identification of Indian Butterflies*: 237.

Material examined: DWLS, Maculakocha, 27.viii.2008 (1 ex.).

Diagnostic characters: Male with brilliant dark metallic blue with very broad black outer border and apex. Female similar, but of a dull non-metallic blue and with marginal black spot on upper hindwing. Underside, both male and female with dark brown, markings much more disconnected. *Wingspan:* 34 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum), Andamans, Arunachal Pradesh, Assam, Goa, Madhya Pradesh and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

**16. *Castalius rosimon rosimon* (Fabricius)
The Common Pierrot**

1775. *Papilio rosimon* Fabricius, *Syst. Ent.*, 523.

1907. *Castalius rosimon*: Bingham, *Fauna Brit. India*, Butterflies, 2: 424.

1997. *Castalius rosimon rosimon*: Gupta, *Fauna of West Bengal, State Fauna Series*, 3 (Part-7): 434. *Zool. Surv. India*.

Material examined: DWLS, Maculakocha, 02.x.2008 (1 ex.); Bighilighaty, 06.xii.2008 (1 ex.).

Diagnostic characters: A white with blue base butterfly and black markings. Fore wing with a narrow blackish brown costal band, an outer marginal band, a large discocellular spot and an outer discal row of 5 spots. Hind wing basal spots clouded by blue scales. Outer marginal band traversed by a row of slender white conical rings. Tail black with white tip. Underside white with deep black markings. *Wingspan:* 32 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum), Arunachal Pradesh, Chhattisgarh, Goa, Himachal Pradesh, Madhya Pradesh, Meghalaya, Tamil Nadu, Tripura and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka and Thailand.

Habits and Habitats: Common throughout India except drier northern areas. It flies in fairly open country as well as jungle. Fond of sunshine, weak flight, and always close to the ground.

Subfamily NEMEOBIINAE

**17. *Abisara echerius suffusa* Moore
The Plum Juddy**

1901. *Abisara suffusa* Moore, *Lep. Ind.*, 5: 90.

1905. *Abisara echerius*: Bingham, *The Fauna of British India (Butterflies)*, 1: 492.

1932. *Abisara echerius suffusa*: Evans, *The Identification of Indian Butterflies*. : 197.

1987. *Abisara echerius suffusa*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap.* No. 106 : 40.

Material examined: DWLS, Mangeela baandh, 27.ix.2008 (3 exs.); Bighilighaty, 20.iii.2009 (2 exs.).

Diagnostic characters: The adult female is much duller than male and suffused with grey, the medial transverse dark fasciae less angular on both wings, and the outer fasciae much less distinct, broader and more suffused. *Wingspan:* 40–45mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh), Arunachal Pradesh, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh and West Bengal. *Elsewhere:* Bangladesh, Bhutan, China, Myanmar, Nepal and Sri Lanka and Thailand.

Habits and Habitats: Shade loving, more active during afternoon and evening. Flight is up and down paths with an erratic jerky.

18. *Tajuria cippus* (Fabricius)
The Peacock Royal

1798. *Hesperia cippus*, Fabricius, *Ent. Syst. Suppl.* : 429.

1912. *Tajuria cippus*: Fruhstorfer, *Berl.ent. Zt.*, 56: 211.

2007. *Tajuria cippus*: Chandra *et. al.*, A checklist of butterflies of Madhya Pradesh and Chhattisgarh. *Zoos'Print Journal*, 22(8): 2796.

Material examined: DWLS, Bighilighaty, 03.iv.2010 (1 ex.).

Diagnostic characters: Adult male upperside of wings cyaneus blue, underside, both wings satin-grey with a common striga of minute black arcs, beyond the middle. *Wingspan:* 42 mm.

Status: Uncommon.

Distribution: India: Jharkhand (East Singhbhum), Chhattisgarh, Himachal Pradesh and Madhya Pradesh and outer Himalaya. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

19. *Virachola isocrates* (Fabricius)
The Guava Blue

1793. *Hesperia isocrates* Fabricius, *Ent. Syst.*, 3(1): 266.

1881. *Virachola isocrates*: Moore, *Lep. Ceyl.*, 1: 104.

2007. *Virachola isocrates*: Chandra *et. al.*, A Checklist of butterflies of Madhya Pradesh and Chhattisgarh. *Zoos'Print Journal*, 22(8): 2796.

Material examined: DWLS, Bighilighaty, 04.iv.2010 (2 exs.).

Diagnostic characters: Male with both wings deep violet-blue, fore wing with a very indistinct ochreous spot, hind wing with a slender black marginal line and small anal spots, the latter grey speckled. Underside, both wings pale vinous-grey. *Wingspan:* 35-40 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum), Chhattisgarh, Himachal Pradesh and Madhya Pradesh. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka

Family NYMPHALIDAE

Subfamily DANAINAE

Tribe DANAINI

20. *Danaus chrysippus chrysippus* (Linnaeus)

The Plain Tiger

1758. *Papilio chrysippus* Linnaeus, *Syst. Nat.*, ed. 10, 1: 471.

1947. *Danaus chrysippus chrysippus*: Talbot, *Fauna of British India*, Butterflies, 2: 20.

Material examined: DWLS, Pindra bera, 22.viii.2007 (2 exs.).

Diagnostic characters: Upperside reddish brown with black borders in both wings and black apex in fore wing with variable number of white spots in the costa and apex. Hind wings with 4 small black spots around the cell. Under side dull orange. Abdomen yellowish above and whitish below.

Wingspan: 65 mm.

Status: Very common.

Distribution: India: Jharkhand (Dhanbad, East Singhbhum, Hazaribagh), Assam, Andaman & Nicobar Islands, Bihar, Chhattisgarh, Delhi, Goa, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Manipur, Orissa, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere*: China, Indonesia, Myanmar, Nepal, Pakistan and Sri Lanka.

Habits and Habitats: Commonest butterfly, found everywhere and seen morning to dusk in any areas, flutters low among bushes or stems of grass for resting.

21. *Anosia genutia* (Cramer)

The Common Tiger

1779. *Papilio genutia* Cramer, *Pap. Exot.*, 3: 23.

1886. *Danaus genutia*: Doherty, *J. Asiat. Soc. Beng.*, 55(2):114.

1947. *Danaus plexippus plexippus*: Talbot, *Fauna of British India*, Butterflies, 2: 25.

1987. *Danaus genutia*: Gupta & Shukla, *Rec. Zool. Surv. India*, Occ. Pap. No. 196: 17.

Material examined: DWLS, Pindra bera, 22.viii.2007 (2 exs.); Maculakocha, 28.ix.2008 (2 exs.).

Diagnostic characters: Upperside, forewing with costal and dorsal margins and apical half of wing black. The cell, interspaces 1 and 2 and a spot at base of interspace 3 tawny red. Three white spots above and beyond apex of cell followed by a pre-apical white band crossed by the veins; an incomplete subterminal and terminal series white spots. Hind wing tawny-red, veins and terminal margin black, the latter with two more or less complete rows of white spots. Underside similar. *Wingspan*: 70 - 75 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh, Ranchi), Andaman & Nicobar Islands, Assam, Arunachal Pradesh, Bihar, Chhattisgarh, Goa, Himachal Pradesh, Karnataka, Madhya Pradesh, Manipur, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* Afganistan, China, Myanmar, Nepal, Pakistan, Sri Lanka and Thailand.

Habits and Habitats: it is abundant in forested and scrub jungle than open place and is more active than the *D. chrysippus chrysippus*.

22. *Tellevervo limniace leopardus* (Butler)

The Blue Tiger

1866. *Danais limniace* var. *leopardus* Butler, *Proc. Zool. Soc. Lond.*: 52.

1932. *Danais limniace mutina*: Evans, *Identification of Indian Butterflies*: 87.

1947. *Danaus limniace leopardus*: Talbot, *Fauna of British India*, *Butterflies*, 2: 31.

1991. *Tirumala limniace leopardus*: Mandal & Maulik, *Fauna of Orissa, State Fauna Series*, 1 (Part-3): 235. *Zool. Surv. India*.

Material examined: DWLS, Pindra bera, 22.viii.2007 (2 exs.); Maculakocha, 29.ix.2008 (3 exs.).

Diagnostic characters: Adult, head and thorax spotted and streaked with white, abdomen yellowish beneath spotted with white. Upperside, black with irregular pale bluish white spots and streaks. Underside basal two thirds of fore wing dusky-black. *Wingspan:* 98 - 106 mm.

Status: Common.

Distribution : India : Jharkhand (Dhanbad, East Singhbhum, Hazaribagh), Andaman & Nicobar Islands, Assam, Bihar, Chhattisgarh, Delhi, Goa, Himachal Pradesh, Karnataka, Lakshadweep, Madhya Pradesh, Manipur, Nagaland, Orissa, Punjab, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* China, Myanmar, Pakistan, Sri Lanka, Taiwan and Thailand.

Habits and Habitats: This butterfly can be found throughout the plains and hills of India. It is an inhabitant of lightly wooded country.

Subfamily EUPLOEINI

Tribe EUPLOEINI

23. *Euploea core core* Cramer

The Comon Crow

1780. *Papilio core* Cramer, *Pap. Exot.*, 3 : 133. pl. 266, figs. E, F.

1932. *Euploea core core*: Evans, *Identification of Indian Butterflies*: 90.

1947. *Euploea core core*: Talbot, *Fauna of British India*, *Butterflies*, 2: 67-69.

Material examined: DWLS, Maculakocha, 22.viii.2007 (4 exs.); Pindra bera, 29.ix.2008 (2 exs.).

Diagnostic characters: Adult: upperside glossy brown with marginal and terminal white spots either equal or decreasing in size. Fore wing much darker than hind wing with short band. Hind wing

marginal spots more prominent Underside light brown with markings as above. *Wingspan*: 75 - 80 mm.

Status: Very Common.

Distribution : India : Jharkhand (East Singhbhum, Hazaribagh), Bihar, Andaman & Nicobar Islands, Chhattisgarh, Delhi, Karnataka, Lakshadweep, Madhya Pradesh, Manipur, Nagaland, Orissa, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere*: Myanmar, Nepal and Pakistan.

Subfamily CHARAXINAE

Tribe CHARAXINI

24. *Charaxes polyxena imna* Butler The Tawny Rajah

1870. *Charaxes imna* Butler, *Tran. Ent. Soc. Lond.*, : 122.

1932. *Charaxes polyxena imna*: Evans, *The identification of Indian Butterflies*: 141.

Material Examined: DWLS, Bada baandh, 24.viii.2007 (5 exs.).

Diagnostic characters: Adult male with rich yellowish or orange-brown. Fore wing with a broad black outer border, a broad white discal band, and black outer border with a series of yellowish brown spots on its inner margin in dry season form. Hind wing apical area black with 2 small white streak-like dots followed by subterminal series of black spots. Tail at vein 4. Underside purple brown or orange with silvery iridescence on both wings. *Wingspan*: 85–90 mm.

Status: Distinctly Rare.

Distribution: India: Jharkhand (Dhanbad, East Singhbhum), South India to Orissa and West Bengal.

Habits and Habitats: It confined to inside the thick forests, flies very fast, extremely very difficult to catch and observed in group (4-6 individuals) on the decomposing organic matters (elephant's dung).

25. *Polyura arja* (C. & R. Felder) The Pallid Nawab

1867. *Charaxes arja* Felder & Felder, *Reise Novara*, 2 (2): 438.

1912. *Eulepis arja*: Evans, *J. Bombay nat. Hist. Soc.*, 21(2): 572.

1978. *Polyura arja*: Haribal, *Butterflies of Himalaya*, : 151-152.

Material Examined: DWLS, Tisco, 24.viii.2007 (3exs.).

Diagnostic characters: The adult is very similar to *Polyura athamas* (Drury), but can be easily identified by the discal band being white or pale greenish-white, never yellowish. *Wingspan*: 75-85 mm.

Status: Fairly common.

Distribution: India: Jharkhand (East Singhbhum), Arunachal Pradesh, Assam, Himachal Pradesh, Karnataka, Meghalaya, Sikkim, Uttar Pradesh and West Bengal. *Elsewhere:* Bangladesh, Bhutan and Myanmar.

Habits and Habitats: Mainly observed inside the forests and settling on sap and damp patches.

Subfamily HELICONIINAE

Tribe ACRAEINI

26. *Acraea violae* (Fabricius)

The Tawny Coster

1775. *Papilio violae* Fabricius, *Syst. Nat.*, (3)1 : 460.

1905. *Telbinia violae*: Bingham, *Fauna of British India*, (Butterflies), 1: 471.

1988. *Acraea violae*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No. 109*: 2.

Material Examined: DWLS, Maculakocha, 15.xii.2007 (2 exs.).

Diagnostic characters: Adult male is brick red. Fore wing with black apex and prominent black spots and streaks. Hind wing with a marginal black border with a row of pale yellow spots. Adult female is pale colour with broad markings and marginal bands. Underside male is glossy red. Hind wing with a cluster of 5 black-ringed white spots in the base and the marginal band with larger yellowish white spots and inner border. Female dull coloured, hind wing with large spots in the marginal band. *Wingspan:* 45 - 60 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh), Bihar, Gujarat, Lakshadweep, Madhya Pradesh, Punjab, Sikkim, Uttar Pradesh and West Bengal. *Elsewhere:* Bangladesh, Nepal, Pakistan and Sri Lanka.

Habits and Habitats: It is commonest butterfly available round the year at low elevations of forests. It settles frequently and visit flowers.

Tribe ARGYNNINI

27. *Phalanta phalantha phalantha* (Drury)

The Common Leopard

1770. *Papilio phalantha* Drury, *Exot. Inst.*, 1: 41.

1905. *Atella phalantha*: Bingham, *Fauna of British India* (Butterflies), 1: 412-413, fig. 75.

1980. *Phalanta phalantha phalantha*: Varshney et al., *Rec. Zool. Surv. India, Occ. Pap. No. 31*: 18-19.

Material Examined: DWLS, Tisco, 21.viii.2007 (2 exs.); Bighilighaty, 19.iii.2009 (2 exs.).

Diagnostic characters: Male and female are dark yellow spotted and marked with black. Forewing with the cell crossed by three fine black lines and another at apex of cell a number of discal spots, a postdiscal series of lunules. A subterminal fine line and a terminal series of spots at the apices

of the veins. Hindwing with a number of discal spots, a postdiscal series of lunules, a subterminal waved line and a terminal row of spots at the apices of the vein. Underside paler, the marking is very much fainted and reddish brown. *Wingspan*: 55 - 60 mm.

Status: Common.

Distribution : India : Jharkhand (Dhanbad, East Singhbhum, Hazaribagh, Ranchi), Arunachal Pradesh, Bihar, Chhattisgarh, Delhi, Goa, Himachal Pradesh, Madhya Pradesh, Maharashtra, Nicobar, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere*: Myanmar, Pakistan and Sri Lanka.

Habits and Habitats: The species avoid shady places, found near the edges of forests, on the plains and in gardens, flying mostly during dry weather. Flowers are more attractive to this butterfly (*Lantana* species).

Subfamily LIMENITINAE

Tribe BIBLINI

28. *Ariadne ariadne indica* (Moore)

The Angled Castor

1884. *Ergolis indica* Moore, *J. Asiat. Soc. Beng*, 53: 20

1905. *Ergolis ariadne*: Bingham, *The fauna of British India (Butterflies)*, 1: 461.

1932. *Ergolis ariadne indica*: Evans, *The Identification of Indian Butterflies*, : 191.

1997. *Ariadne ariadne indica*: Gupta, *Insecta: Amathusiidae: Acraeidae, State Fauna Series 3, Fauna of West Bengal (Part-7)*: 555-556.

Material Examined: DWLS, Maculakocha, 13.xii.2007 (2 exs.).

Diagnostic characters: Adult is reddish-yellow, the wings are crossed by slender, highly waved, transverse dark brown lines. The terminal margins of wings especially fore wing, highly scalloped, a small white subcostal spot before apex of fore wing. Underside browner, both wings with dark chestnut-brown markings and transverse bands of same colour, the subterminal zigzag and terminal waved lines, dark brown. Female slightly paler. *Wingspan*: 45-60 mm.

Status: Uncommon.

Distribution: India: Jharkhand (Dhandbad, East Singhbhum), South India and West Bengal. *Elsewhere*: Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Habits and Habitats: It prefers the drier, open plains and lower elevations. The flight is always low, slow sailing, jerky irregular flight with a series of up and down beats of wings and very easy to catch.

29. *Ariadne merione* (Cramer)

The Common Castor

1779. *Papilio merione* Cramer, *Pap. Exot.*, 2 : 76, pl. 144, figs. G, H.

1987. *Ergolis merione*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No. : 106*: 28.

1994. *Ariadne merione*: Varshney, *Oriental Ins.*, **28**: 167.

Material examined: DWLS, Maculakocha, 13.xii.2007 (5 exs.).

Diagnostic characters: Adult is reddish brown, the transverse lines much as in *Ariadne ariadne* but in pairs forming obscure bands. On the fore wing there is in addition a series of obscure spots between the postdiscal and subterminal markings and a small white subcostal spot before the apex. Underside as in *ariadne* but the transverse dark bands broader and more diffuse. Female similar, the transverse lines broader with a greater tendency to form bands. *Wingspan*: 45–60 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum, Palamu), Bihar, Chhattisgarh, Delhi, Kashmir, Kerala, Madhya Pradesh, Maharashtra, Orissa and Uttar Pradesh. *Elsewhere*: Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Habits and Habitats: Prefers forested to lightly wooded areas. Flight is weak, jerky and often sailing near the ground. Visit flowers.

Tribe LIMENITINI

30. *Euthalia lubentina indica* Fruhstorfer

The Gaudy Baron

1904. *Euthalia lubentina indica* Fruhstorfer, *Zeit. Zg.*, **65**: 350.

1932. *Euthalia lubentina indica*: Evans, *The identification of Indian Butterflies*: 155.

1991. *Euthalia lubentina indica*: Gupta, *Fauna of West Bengal, State Fauna Series, Zool.Surv. India*, (Part-7), **3**: 581-582.

Material examined: DWLS, Bighilighaty, 19.iii.2009 (2 exs.).

Diagnostic characters: The adult male is dark greenish-brown. Fore wing with a crimson bar across middle of cell and another beyond apex of cell bordered with black, a discal series of small white spots followed by a pre-apical curved row of four similar spots and a subterminal row of obscure dark spots. Hind wing with a black loop near apex of cell, a postdiscal series of four or five bright crimson spots bordered with black and a subterminal series of three crimson spots inwardly bordered with black, the tornal angle with a bright crimson spot, the terminal border metallic green. Underside dark brown. *Wingspan*: 60–80 mm

Status: Rare in Jharkhand.

Distribution: India: Jharkhand (East Singhbhum), Arunachal Pradesh, Chhattisgarh, Goa, Himachal Pradesh, Madhya Pradesh, Maharashtra, North Eastern states and West Bengal. *Elsewhere*: Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Habits and Habitats: Strong flier, mainly observed inside forests.

Remark: It is included in the Schedule-IV of the Indian Wildlife Protection Act, 1972.

**31. *Limenitis procris procris* (Cramer)
The Commander**

1777. *Papilio procris* Cramer, *Pap. Exot.*, 2 : pl. 106.

1905. *Moduza procris*: Bingham, *The Fauna of British India (Butterflies)*, 1: 291.

1932. *Limenitis procris procris*: Evans, *The Identification of the Indian Butterflies*, : 161.

1988. *Moduza procris procris*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No. 109*: 36.

1994. *Moduza procris*: Varshnay: *Oriental Ins.*, 28: 181.

Material Examined: DWLS, Kongadhasa, 10.xii.2007 (2exs.); Bighilighaty, 19.iii.2009 (2 exs.).

Diagnostic characters: Upperside of male and female rufous brown, base of wings with short transverse black lines, a broad discal white band across both wings on a dusky black background, and two pre-apical white spots on forewing; the hind wing with a postdiscal series of black spots. Underside with similar markings but more clearly defined. *Wingspan*: 60–70 mm.

Status: Fairly common.

Distribution: India: Jharkhand (Dhanbad, East Singhbhum, Hazaribagh), Assam, Arunachal Pradesh, Bihar, Chhattisgarh, Goa, Himachal Pradesh, Peninsular India, South of Madhya Pradesh, Sikkim, Uttar Pradesh and West Bengal. *Elsewhere*: Bangladesh, Myanmar and Sri Lanka.

Habits and Habitats: Swift flier, mostly found in low elevation of inside the forests, appears after rains.

**32. *Pantoporia hordonia hordonia* (Stoll)
The Common Lascar**

1791. *Papilio hordonia* Stoll, Cramer's *Pap. Exot. Suppl.*, pl. 33, fig. 4, 4D.

1905. *Robinda hordonia*: Bingham, *The Fauna of British India (Butterflies)*, 1: 344.

1932. *Neptis hordonia hordonia*: Evans, *The Identification of Indian Butterflies*: 172.

1978. *Pantoporia hordonia*: Corbet & Pendlebury, *The Butterflies of Malay Peninsula*: 188.

1997. *Pantoporia hordonia hordonia*: Gupta, *Fauna of West Bengal, State Fauna Series, 3, (Part-7)*: 568. *Zool. Surv. India*.

Material examined: DWLS, Bighilighaty, 18.iii.2009 (2 exs.).

Diagnostic characters: the upperside of adult male and female black with orange markings. Fore wing streak in cell broad twice indented anteriorly, extending into interpace 3 at apex; posterior discal spots joined, the anterior obliquely placed spots also joined; a post-discal transverse pale line and a very fine, obscure, subterminal orange line. Hindwing a broad subbasal band and a narrow postdiscal band. Underside, the orange markings as on upperside but broader and less clearly defined; the ground-colour chestnut-brown covered with short, slender, transverse brown lines. *Wingspan*: 45–50 mm.

Distribution: India: Jharkhand (East Singhbhum), Arunachal Pradesh, Assam, Chhattisgarh, Orissa, South India, Uttar Pradesh and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Habits and Habitats: Flight similar to sailers, but much weaker, close to the ground, seen along forest paths.

33. *Parathyma nefte inara* (Doubleday) The Colour Sergeant

1850. *Limenitis inera* Doubleday, In Doubleday: *Gen. Diurn. Lep.* 2: pl. 34, fig. 30.

1905. *Pantoporia nefte*: Bingham, *The Fauna Brit. India* (Butterfly), 1: 304.

1932. *Patoporia nefte inara*: Evan, *The identification of Indian Butterflies*: 162.

1978. *Athyma nefte*: Corbet & Pendlebury, *The butterflies of the Malay Peninsula*: 189.

Material Examined: DWLS, Mangeela baandh, 22.viii.2007 (1 ex.); 27.viii.2008 (2 exs.).

Diagnostic characters: Adults have sexual dimorphism; male upperside discal band white, blue lined at the edges. Forewings do not have prominent spot in 3, orange apical markings and cell streak broken but obscure with prominent white spot end cell. Upper hindwing with orange outer discal band. Under forewing, cell streak much broken. In female the discal spots in 4-6 form a continuous even edged bands and markings broad and orange. *Wingspan:* 55–70 mm.

Status: Not rare

Distribution: India: Jharkhand (East Singhbhum), Andamans, Arunachal Pradesh, Chhattisgarh, Goa, Orissa, Sikkim, South India and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar and Nepal.

34. *Parathyma perius perius* (Linnaeus) The Common Sergeant

1758. *Papilio perius* Linnaeus, *Syst. Nat.*, 10: 471.

1905. *Athyma perius*: Bingham, *The Fauna of India* (Butterflies), 1: 315.

1932. *Pantoporia perius*: Evans, *The Identification of Indian Butterflies*: 164.

1978. *Athyma perius*: Corbet & Pendlebury, *The Butterflies of the Malay Peninsula*, : 189.

1987. *Pantoporia perius*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No.* 106: 31.

1994. *Athyma perius*: Varshney, *Oriental Ins.*, 28: 180.

Material examined: DWLS, Tisco, 22.viii.2007 (2 exs.).

Diagnostic characters: Similar to the studded Sergeant. In upper hindwing the discal band with black spots on inner margin and a wavy marginal band. Underside yellow with white spots edged with black, outer discal band with a series of black spots towards inner edge. *Wingspan:* 55–65 mm.

Status: Fairly common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh), Arunachal Pradesh, Bihar, Chhattisgarh, Goa, Himachal Pradesh, Madhya Pradesh, Orissa, Uttar Pradesh and West Bengal.

Elsewhere: Myanmar.

35. *Parathyma ranga* (Moore)

The Black Vein Sergeant

1857. *Athyma ranga* Moore, *Cat. Lep. Mus. E.I.C.*, 1: 175.

1995. *Parathyma ranga*: Chaudhury, *Fauna of Indravati Tiger Reserve, Fauna of Conservation areas*, 6: 49. *Zool. Surv. India*.

Material examined: DWLS, Mangeela baandh, 27.ix.2008 (1 ex.).

Diagnostic characters: Male and female, upperside black suffused with lightly with bluish. Fore wing with the cell has white spot in the middle and another largest spot at apex; also in the cell, beyond its apex and at base of interspace 1 are some obscure blue spots; a discal series of white spots followed by an inner and outer subterminal line of transverse white marks dusted with dark scales. In hind wing a subbasal white band, a postdiscal series of white spots dusted with dark scales and a subterminal line of pale spots. Fringe of both wings alternate black and white. Underside dark brown, blotched with black between the white markings. *Wingspan:* 60–70 mm.

Status: Not common.

Distribution: India; Jharkhand (East Singhbhum), Chhattisgarh, Karnataka, Sikkim to Arunachal Pradesh. *Elsewhere:* Bangladesh, Bhutan, Myanmar and Nepal.

36. *Phaedyma columella ophiana* (Moore)

The Short Banded Sailor

1872. *Neptis ophiana* Moore, *Proc. Zool. Soc. Lond.*, : 561.

1905. *Neptis columella*: Bingham, *The Fauna of Brit. India, (Butterflies)*, 1: 326.

1932. *Neptis columella ophiana*: Evans, *The Identification of Indian Butterflies*. 164.

1978. *Phaedyma columella*: Corbet & Pendlebury, *The Butterflies of the Malay Peninsular*. 187.

Material examined: DWLS, Bighilighaty, 18.iii.2009 (3 exs.).

Diagnostic characters: Similar to common sailor, upper forewing discal spots in 2 and 3 is in line being directed towards costa well before apex. Under hindwing basal markings consists of a narrow short white streak at base, brown streak outside it which reaches and runs along costa and a pale streak beyond the brown streak running across the base of cell. Upper hindwing has prominent outer discal band of separate white spots. Underside termen broadly chequered, black at the end of the veins and white in-between. *Wingspan:* 60–70 mm.

Status: Common.

Distribution: India: Jharkhand (Dhandad, East Singhbhum), Andamans, Arunachal Pradesh, Chhattisgarh, Madhya Pradesh, Maharashtra, South India, Uttaranchal and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar and Sri Lanka.

37. *Symphaedra nais* (Forster)

The Baronet

1771. *Papilio nais* Forster, *Nov. Spec. Ins. Cent.*, 1: 73.

1932. *Euthalia nais*: Evans, *The Identification of Indian Butterflies*: 157.

1994. *Symphaedra nais*: Varshney, *Oriental Ins.*, 28: 184.

Material examined: DWLS, Tisco, 15.xii.2007 (2 exs.).

Diagnostic characters: Upperside brownish orange. Forewing with 3 black bands and a large black spot. Hindwing with large black spot at mid costa, a row of discal spots and black margin. Underside reddish brown; forewing with 2 basal black spots, an oblique discal brown band and 4 brownish white spots. Hindwing with a small crimson line at the base, 2 black bordered crimson spots, a transverse discal white band and a postdiscal series of black spots. *Wingspan:* 60–70 mm.

Status: Locally common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh, Dhanbad), Bihar, Chhattisgarh, Goa, Gujarat, Madhya Pradesh, Orissa, Sikkim, South India, Uttarakhand and West Bengal. *Elsewhere:* Nepal and Sri Lanka.

Habits and Habitats: It is an inhabitant of the drier forest areas at low elevations. This butterfly is fond of sunshine and is attracted by sap and over-ripe fruits. Flies low, easy to catch.

38. *Tanaecia lepidea lepidea* (Butler, 1868)

The Grey Count

1868. *Euthalia Lepidea* Butler, *Ann. Mag. Nat. Hist. Lond.*, 4 (1): 71.

1932. *Euthalia lepidea lepidea*: Evans, *The identification of Indian Butterflies*: 150.

1991. *Tanaecia lepidea lepidea*: Gupta, *Fauna of West Bengal, State Fauna Series, Zool. Surv. India*, (Part-7), 3: 584.

Material examined: DWLS, Bighilighaty, 19.iii.2009 (1 ex.).

Diagnostic characters: Upperside dark brown with faint, black transverse markings at the base of both wings. Forewings with apex produced and outer margin falcate below apex, outer margin of hind wing slightly angled at vein Cu_{1a} thereafter straight upwards; a pale grey marginal band which broadens gradually from the apex of forewing to the tornus of the hindwing; and duller and darker in male. Underside forewing yellowish brown in male and bright yellow in female. *Wingspan:* 60–80 mm

Status: Rare in Jharkhand.

Distribution: India: Jharkhand (East Singhbhum), Arunachal Pradesh, Chhattisgarh, Goa, Himachal Pradesh, Madhya Pradesh, Maharashtra, North Eastern states and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Remark: Evans (1932) referred to its *Status* as not rare. It is included in the Schedule-II (Part-2) of the Indian Wildlife Protection Act, 1972.

Tribe NEPTINI

39. *Neptis clinia* Moore The Clear Wing

1872. *Neptis clinia* Moore, *Proc. Zool. Soc. Lond.*; p. 563.

1886. *Neptis clinia*: de Niceville, *The Butterflies of India, Burma and Ceylon*, 2: 104.

Material examined: DWLS, Bighilighaty, 18.iii.2009 (2 exs.).

Diagnostic characters: Upperside male black with marking white; forewing with a rather broad discoidal and short contiguous streak; curved discal band of closely united spots; marginal black-bordered lunular line indistinct. Hindwing with a very broad straight inner band and narrow brownish outer lunular line. Underside bright ferruginous, marking as in *Neptis soma*, but very prominent. *Wingspan:* 45–60mm

Status: Common.

Distribution: India: Jharkhand (East Singhbhum), Andamans, Arunachal Pradesh, Goa, Madhya Pradesh, Sikkim and West Bengal. *Elsewhere:* Bhutan, Myanmar and Nepal.

Habits and Habitats: Flight typical, but more cautious, tend to kept to higher level than Common sailer. Abundant in forested areas.

40. *Neptis hylas astola* Moore The Common Sailor

1872. *Neptis asota* Moore, *Proc. Zool. Soc. Lond.*; 560.

1932. *Neptis hylas astola*: Evans, *The Identification of Indian Butterflies*: 166.

1987. *Neptis hylas astola*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No. 106*: 36.

Material examined: DWLS, Tisco, 22.viii.2007 (1 ex.).

Diagnostic characters: upperside black with white marking. Forewing with white streaks and a triangular spot with series of spots. Hindwing with a broad white band at the basal region and outer series of squarish white spots. Underside golden brown with white marking. *Wingspan:* 50–55 mm.

Status: Common.

Distribution : India : Jharkhand (East Singhbhum, Hazaribagh), Assam, Arunachal Pradesh, Chhattisgarh, Goa, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Maharashtra, Uttar Pradesh and West Bengal. *Elsewhere*: Myanmar.

Habits and Habitats: One of the most common of the sailers in wooded forests and gardens, fond of sunshine and frequently bask on leaves and rocks. During dry weather they settle on damp patches

Subfamily CYRESTINAE

41. *Cyrestis thyodamas thyodamas* Boisduval

The Common Map

1836. *Cyrestis thyodamas thyodamas* Boisduval, *Cur. Res. Anim. Ins.*, 2: pl.138, fig. 4.

1932. *Cyrestis thyodamas thyodamas*: Evans, *The Identification of Indian Butterflies*: 173.

1988. *Cyrestis thyodamas thyodamas*: Gupta & Shukla, *Rec. zool. Surv. India, Occ. Paper No. 109*: 49.

Material examined: DWLS, Bighilighaty, 18.iii.2009 (1 ex.).

Diagnostic characters: Adults are white, the vein black, both wings transversely crossed by fine black lines. Forewing with the base and costal area with greyish-brown markings as also the apex, terminal border and tornal area which latter has a yellow spot bearing two black spots, the post-discal transverse fine line broadening posteriorly and of a bluish-grey colour. Hindwing with a bluish-grey post-discal band bordered on both sides by dark lines, a dark line from apex of wing to interspace 4 and thence as two parallel fine brown lines to the tornus where it is joined by a similar marking from the termen at vein 4, apex of vein 4 produced into a tail. Underside similar but paler.

Wingspan: 50–60 mm.

Status: Fairly Rare.

Distribution: India: Jharkhand (East Singhbhum), Goa, Himachal Pradesh, Sikkim to Arunachal Pradesh and West Bengal. *Elsewhere*: Afghanistan, Bangladesh, Bhutan, Myanmar and Nepal.

Habits and Habitats: Fly low and jerky sailing with wings held horizontal, but can fly faster.

Subfamily NYMPHALINAE

Tribe KALLIMINI

42. *Hypolimnas bolina* (Linnaeus)

The Great Eggfly

1758. *Papilio bolina* Linnaeus, *Syst. Nat.*, (ed. 10) 1: 479.

1932. *Hypolimnas bolina*: Evans, *The Identification of Indian Butterflies*: 174.

1987. *Hypolimnas bolina*: Gupta & Shukla, *Rec. zool. Surv. India, Occ. Pap. No. 106*: 29.

Material Examined: DWLS, Tisco, 13.xii.2007 (1 ex.); Maculakocha, 02.x.2008 (1 ex.).

Diagnostic characters: Adult male is black with iridescent, egg-shaped, bluish white spots in the centre of each wing; spots bigger in hindwing. Forewing with a row of small white ocelli from the apex to the tornus of hindwing. Female bigger, dark brown with outer discal row of small, pale yellow or white spots on both wings. Forewing with concave margin, having more or less obscure marginal and inner terminal markings; 2 blue spots in the cell in the wet season form and one blue spot in the dry season form. Hindwing with broad pale yellow or white termen, bearing dark wavy line or band. Underside with bands of white spots and patches. *Wingspan:* 70–85 mm.

Status: Common.

Distribution: India: Jharkhand (Dhanbad, East Singhbhum, Hazaribagh), Andaman & Nicobar Islands, Arunachal Pradesh, Bihar, Chhattisgarh, Delhi, Goa, Himachal Pradesh, Kashmir, Kerala, Madhya Pradesh, Meghalaya, Orissa, Uttar Pradesh and West Bengal. *Elsewhere:* Bangladesh, Myanmar, Pakistan and Sri Lanka.

Habits and Habitats: More abundant during rains.

43. *Hypolimnas misippus* (Linnaeus) The Danaid Eggfly

1764. *Papilio misippus* Linnaeus, *Mus. Utr.*: 264.

1932. *Hypolymnas misippus*: Evan, *The identification of Indian Butterflies*: 173.

2007. *Hypolymnas misippus*: Singh & Khosta, *Fauna of Madhya Pradesh (including Chhatisgarh), State Fauna Series, 15* (Part-1): 326-327. *Zool. Surv. India*.

Material examined: DWLS, Bighilighaty, 18.iii.2009 (1 ex.).

Diagnostic characters: Male with dark iridescent blue or violet-ringed white, oval patch on both wings. Fore wing with a small oval spot in the apex. Underside oval spots prominent which in the hindwing occupy the entire discal area and a prominent black costal spot. Female upperside orange or orange-brown, like Plain Tiger. Forewing with the white spotted, black apex and costa. Hindwing with a prominent black costal spot and more wavy margin. Underside orange or orange-brown. *Wingspan:* 70–85 mm.

Status: Male not common; Female very common.

Distribution: India: Jharkhand (Dhanbad, East Singhbhum), Andaman and Nicobar, Arunachal Pradesh, Bihar, Chhattisgarh, Delhi, Goa, Madhya Pradesh, Orissa, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* Afghanistan, Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

Habits and Habitats: A fast flier, available throughout the year in suitable habitat, and prefer to visit flowers.

**44. *Junonia almana almana* (Linnaeus)
The Peacock Pansy**

1758. *Papilio almana* Linnaeus, *Syst. Nat* (ed. 10): 472.

1905. *Junonia almana*: Bingham, *Fauna of British India* (Butterflies): 176.

1932. *Precis almana almana*: Evans, *The identification of Indian Butterflies*. 176.

1994. *Junonia almana*: Varshney, *Oriental Ins.*, 28: 176.

2007. *Junonia almana almana*: Singh & Khosta, *Fauna of Madhya Pradesh (including Chhatisgarh), State Fauna Series, 15* (Part-1): 326-327. *Zool. Surv. India*.

Material Examined: DWLS, Maculakocha, 10.viii.2008 (1 ex.); Bighilighaty, 18.iii.2009 (1 ex.).

Diagnostic characters: Adult is light yellowish brown with 2 ocelli each in both wings and, bigger near apex of hind wing, having 2 white spots in peacock background and surrounded by yellow and black rings. Forewing with the dark costal bars and both wings with brown wavy margins. Underside leaflike, brownish in male and yellowish in female. *Wingspan*: 60–65 mm.

Status: Common.

Distribution: India: Jharkhand (Dhandbad, East Singhbhum, Hazaribagh), Andamans, Bihar, Chhattisgarh, Delhi, Goa, Madhya Pradesh, Orissa, Tamil Nadu, Uttarakhand and West Bengal. *Elsewhere*: Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

**45. *Junonia atlites* (Linnaeus)
The Grey Pansy**

1758. *Papilio atlites* Linnaeus, *Centur. Ins.*: 24.

1905. *Junonia atlites*: Bingham, *Fauna of British India* (Butterflies), 1: 359.

1932. *Precis atlites*: Evans, *The identification of Indian Butterflies*: 176.

1987. *Precis atlites*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No. 106*: 34.

1994. *Junonia atlites*: Varshney, *Oriental Ins.*, 28: 176.

Material examined: DWLS, Bighilighaty, 07.xii.2008 (2 exs.).

Diagnostic characters: Adult is pale grey or lavender-brwon with dark greyish brown markings. Forewing with four transeverse wavy lines in the cell, a discal wavy band, a complete row of outer discal ocelli. Hindwing with a faint loop in the cell and outer-discal row of 5 ocelli, some of the ocelli in both the wings orange-yellow on the inside. Underside paler with markings as above. *Wingspan*: 60–65 mm.

Status: Common in Jharkhand.

Distribution: India: Jharkhand (Dhanbad, East Singhbhum), Andaman and Nicobar Islands, Bihar, Chhattisgarh, Goa, Himachal Pradesh, Madhya Pradesh, Orissa, Uattarkhand, and West Bengal. *Elsewhere*: Bangladesh, Bhutan, China, Myanmar, Nepal and Sri Lanka.

Habits and Habitat: It prefers paddy fields and forests, flight close to ground, visit flowers.

**46. *Junonia iphita pluviatalis* (Fruhstorfer)
The Chocolate Soldier**

1900. *Precis pluviatalis* Fruhstorfer, *Berl. Ent. Z. Berlin*, **45**: 22.

1987. *Precis iphita pluviatalis*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No. 106*: 34.

Material examined: DWLS, Bighilighaty, 07.xii.2008 (2 exs.); Pindra bera, 18.iii.2009 (1 ex.).

Diagnostic characters: Upperside dark olive-brown with indistinct dark brown bands. Basal area of both wings more greenish. Forewing with one or two minute ocelli and in hindwing an indistinct row of five dark brown ocelli. The apex of forewing and tornus of hindwing slightly produced and termen of forewing concave. Underside dark brown with wavy lines and less distinct ocelli.
Wingspan: 55–65.

Status: Common

Distribution: India: Jharkhand (East Singhbhum), Chhattisgarh, Maldives, Madhya Pradesh and Central and South India. *Elsewhere*: Myanmar.

**47. *Junonia lemonias vaisya* (Fruhstorfer)
The Lemon Pansy**

1912. *Precis vaisya* Fruhstorfer, In Seitz: *The Macrolepidoptera of the World*, **9**: 520.

1987. *Precis lemonias vaisya*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No. 106*:34.

1994. *Junonia lemonias*: Varshney, *Oriental Inst.*, **28**: 176.

Material examined: DWLS, Pindra bera, 06.xii.2007 (1 ex.); Tisco, 09.xii.2007 (2 exs.); Maculakocha, 15.xii.2007 (1 ex.).

Diagnostic characters: Adult is dark brown or greyish brown. Forewing with black lines, yellowish brown spots and two red ocelli, the lower one larger and prominent. Hindwing with a large apical red ocellus enclosing two minute white spots and smaller lower black spot. Underside yellowish brown in male and pinkish brown in female with several wavy lines. *Wingspan*: 45–60 mm.

Status: Common.

Distribution: India: Jharkhand (Dhandbad, East Singhbhum, Hazaribagh and Ranchi), Assam, Bihar, Chhattisgarh, Goa, Himachal Pradesh, Madhya Pradesh, Orissa and South India and West Bengal. *Elsewhere*: Myanmar.

Habits and Habitats: The commonest among pansies, flight is very close to the ground around flowering shrubs and herbs.

**48. *Junonia orithya swinhoei* (Butler)
The Blue Pansy**

1885. *Junonia swinhoer*: Butler, *Ann. Mag. Nat. Hist.*, (5)**16** : 309.

1927. *Precis orithya*: Seitz, *The Macrolepidoptera of the World*, 9. *The Indo-Australian Rhopalocera*: 522.

1932. *Precis orithya swinhoer*: Evans, *The Identification of Indian Butterflies*: 176.

1987. *Precis orithya swinhoer*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No. 106*: 33.

1994. *Junonia orithya*: Varshney, *Oriental Ins.*, 28: 176.

Material examined: DWLS, Tisco, 15.xii.2007 (1 ex.); Maculakocha, 08.xii.2008 (1 ex.).

Diagnostic characters: Adult male forewing basal two-thirds black and apex pale brown with white transvers bands. Hindwing predominantly bright blue. Both wings with 2 orange-ringed ocelli each. Female larger, pale almost light brown. Blue marking in the hindwing slight and orange-ringed spots bigger than in male. Underside greyish-brown with white markings and wavy lines. Ocelli visible in forewing only. *Wingspan*: 45–60 mm.

Status: Fairly common.

Distribution: India: Jharkhand (Dhanbad, East Singhbhum, Hazaribagh, Palamu, Ranchi,), Bihar, Chhattisgarh, Delhi, Himachal Pradesh, Madhya Pradesh, Orissa, South India, Uttarkhand and Uttar Pradesh. *Elsewhere*: Afghanistan, Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

Habits and Habitats: Flight swift, close to the ground, active during hottest part of the the day. It is very difficult to catch and fond of visiting flowers.

Subfamily SATYRINAE

Tribe MELANITINI

49. *Melanitis leda ismene* (Cramer)

The Common Evening Brown

1775. *Papilio ismene* Cramer, *Pap. Exot.*, 1 : 40, pl. 26, figs. A, B.

1947. *Melanitis leda ismene*: Talbot, *Fauna of Brit. India, Butterflies*, 2: 366-369.

1987. *Melanitis leda ismene*: Gupta & Shukla, *Rec. Zool. Surv. India, Occ. Pap. No. 106*: 23.

Material examined: DWLS, Pindra bera, 22.viii.2007 (2 exs.); Tisco, 24.viii.2007 (1 ex.); Maculakocha, 28.viii.2007 (1 ex.).

Diagnostic characters: Upperside of adult dull dark brown. Forewing with 2 white pupilled black ocelli, having orange inner borders. Hindwing with three ocelli, more prominent in female and tail also present in female. Forewing produced and angled prominently in female during wet season, rich brown with black spots having yellow inner borders and a bar above them in dry season form. Forewing angled in male and falcate in female. Hindwing with a single white spot above the tail in male and three spots in female. Underside grey with striated dark brown lines and 3-4 ocelli in forewing and 6 ocelli in hindwing. *Wingspan*: 65–80 mm.

Status: Very common.

Distribution : India : Jharkhand (Dhanbad, East Singhbhum, Ranchi), Andaman & Nicobar, Assam, Bihar, Chhattisgarh, Delhi, Himachal Pradesh, Lakshadweep, Madhya Pradesh, Orissa, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere*: Bangladesh, Bhutan, China, Myanmar, Nepal, Pakistan and Sri Lanka.

Tribe ELYMNIINI

50. *Mycalesis mineus polydecta* (Cramer)
The Dark-Brand Bushbrown

1777. *Papilio polydecta* Cramer, *Pap. Exot.*, 2: 76.

1947. *Mycalesis mineus polydecta*: Talbot, *Fauna Brit. India*, Butterflies, 2: 136.

Material examined : DWLS, Pindra bera, 22.viii.2007 (2 exs.); Tisco, 24.viii.2007 (1 ex.); Maculakocha, 28.viii.2007 (1 ex.).

Diagnostic characters: Adult is brown with marginal and submarginal yellow lines. Forewing with a yellow-ringed, white pupilled ocellus. Hindwing with a small sub-anal ocellus. Underside greyish brown. Both wings with a prominent broad yellowish white transverse discal band and yellow outer marginal lines. Forewing with 2 purple-ringed ocelli, the lowest large. Hindwing with 7 purple-ringed ocelli, in a line, the upper second, third and the last smaller. *Wingspan*: 40–50 mm.

Status: Fairly common.

Distribution: Jharkhand (East Singhbhum, Hazaribagh), Andaman, Assam, Chhattisgarh, Goa, Himachal Pradesh, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Uttar Pradesh and West Bengal. *Elsewhere*: Bangladesh, Bhutan, China, Myanmar, Nepal and Sri Lanka.

Habits and Habitats: Low jerky flight over grass and shrubs.

Tribe SATYRINI

51. *Ypthima inica* Hewitson,
The lesser Three Wing

1865. *Ypthima inica* Hewitson, *Trans. Ent. Soc. Lond.*, (3)2:284.

1947. *Ypthima inica*: Talbot, *Fauna Brit. India*, Butterflies, 2: 319-320.

Material examined: DWLS, Tisco, 28.viii.2007 (1 ex.).

Diagnostic characters: Upperside dark brown. Forewing with large pre-apical ocellus, bipupilled and yellow-ringed. Hindwing with one similar but smaller uni-pupilled sub-tornal ocellus. Forewing with the eye-spot as on upperside. Hindwing with an apical and two posterior similar smaller ocelli.

Wingspan: 30-44 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum), Madhya Pradesh, Punjab and West Bengal.

Family PAPILIONIDAE
Subfamily PAPILIONINAE
Tribe LEPTOCIRCINI

52. *Graphium antiphates pompilius* (Fabricius)
The Five-bar Swordtail

1775. *Papilio antiphates* Cramer, *Util. Kapellen*, 1(6): 113

1787. *Papilio pompilius* Fabricius. *Mant. Ins.* 2: 8.n. 66.

1983. *Graphium (Pathysa) antiphates*: Hancock, *Smithersia*, 2: 46 (ssp. *pompilius*, 1939, p. 215).

Material Examined: DWLS, Bada baandh, 08. xii.2008 (3 exs.); 18.iii.2009 (2 exs.).

Diagnostic characters: Adult is greyish white. All the black markings shorter and narrower. Fore wing has five black band, the second band from base reaching vein 1. Hind wing with basal three-fourths uniform white, the black marking showing through from below. The grey anal area reduced to a small patch of grey at the apices of area 2 to 4, tail is long outwardly boarded with white and distal portion white. *Wingspan*: 83–90 mm.

Status: Common

Distribution: India: Jharkhand (East Singhbhum), Arunachal Pradesh, Assam, Sikkim, Tamil Nadu and West Bengal. *Elsewhere*: Bhutan, China, Malaysia, Myanmar, Sri Lanka, Thailand and Vietnam.

53. *Graphium (Graphium) doson eleius* (Fruhstorfer)
The Common Jay

1908. *Papilio doson eleius* Fruhstorfer. *Ent. Zeit.*, 21 (34) : 209

1983. *Graphium (Graphium) doson*: Hancock, *Smithersia*, 2: 47 (ssp. *eleius*, Talbot, 1939, p.223).

Material Examined: DWLS, Pindra bera, 22.viii.2007 (1 ex.).

Diagnostic characters: Very similar to *Graphium doson doson* (C. & F.), Upper side of fore wing with the green spots in the apical half some what more yellowish, discal band somewhat broader, subbasal green line prominent. Hind wing with the median vein less black on the inner part of discal band. *Wingspan*: 80 mm.

Status: Not Common.

Distribution: India: Jharkhand (East Singhbhum), West Bengal and Southern Peninsula. *Elsewhere*: Myanmar, Nepal and Sri Lanka.

54. *Graphium nomius* (Esper)
The Spot Swordtail

1793. *Papilio nomius* Esper, *Auslandische Schmetterlinge*: 210.

1932. *Pathysa nomius*: Evans, *The Identification of Indian Butterflies*: 54.

1961. *Graphium (Pathysa) nomius*: Munroe, *Can. Ent. Suppl.* 17: 42.

Material examined: DWLS, Bighilighaty, 03.iv.2010 (1 ex.).

Diagnostic characters: Adult is blueish white. Fore wing crossed by five broad black bands, the basal and subbasal bands reach the inner margin, the discal band is generally extended into area 2, the fourth band ends on the median vein, the fifth extends from the costa on both sides of the discocellulars and terminates at lower angle of cell. Beyond the fifth band is a short macular transverse bar of the ground colour that terminates on vein 5. A broad black marginal band that occupies about one-third of the width of the wing and is traversed by a submarginal series of small spots of the ground colour. Hind wing with the ground colour whitish along the inner margin and above vein 7. A streak along inner margin, a subbasal and an inner discal transverse band from costa across cell, and a very broad marginal band, black. Tail black, edged and tipped with white. Underside white with the black markings similar to above but bronze-brown. *Wingspan:* 70–80 mm.

Status: Locally common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh, Ranchi), Peninsular India up to Gujarat, Chhattisgarh, Himachal Pradesh, Madhya Pradesh, Sikkim, Uttar Pradesh and Uttaranchal to Arunachal Pradesh. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka.

Tribe PAPILIONINI

55. *Chilasa clytia* f. *dissimilis* (Linnaeus)

The Common Mime

1758. *Papilio clytia* Linnaeus, *Sys. Nat. ed.* 10: 479

1889. *Chilasa clytia*: Hampson, *J. Asiatic Soc. Bengal*, 1 (7): 363.

1993. *Chilasa clytia*: Varshney, *Oriental Insects*, 27: 353.

Material examined: DWLS, Mangeela Baandh, 29.ix.2008 (1 ex.).

Diagnostic characters: Ground colour black with creamy-white stripes and spots. Upperside of fore wing with four cell-streaks coalescent at the base, four subapical spots, a long streak in area 1a, in area 1 two streaks with, beyond them, two spots which are more or less coalescent with them, submarginal and marginal markings as in form *clytia*. Hind wing with the cell white, long discal white streaks that reach quite up to the outer margin of the cell, submarginal and marginal markings as in form *clytia*. *Wingspan:* 90–120 mm.

Status: The common mime appears in August–September and has two forms, of which form *dissimilis* is very rare, endangered species and protected by Indian Wildlife Protection Act, 1972 (IWA). Morrison and Godfrey (1948) were also observed that the form *dissimilis* is not common in South Bihar (Rajdaha Reservoir).

Distribution: India: Jharkhand (East Singhbhum, Dhanbad), Andaman Islands, Assam, Chhattisgarh, Goa, Himachal Pradesh, Madhya Pradesh, Maharashtra, North-East Regions, Peninsular India, Sikkim and Tamil Nadu. *Elsewhere:* Bangladesh, Hong Kong, Indonesia, Kampuchea, Laos, Myanmar, Nepal, Peninsular Malaysia, Philippines and Southern China (including Hainan), Sri Lanka, Thailand and Vietnam.

**56. *Papilio crino* (Fabricius)
The Common Banded Peacock**

1793. *Papilio crino* Fabricius, *Ent. Syst.* : 5.

1881a. *Harimala montanus*: Moore, *Lep. Ceylon*: 146.

1903. *Harimala crino*: Moore, *Lep. Indica*: 146.

1998. *Papilio (Achillides) crino*: Bauer & Frankenbach, *Butterflies of the world*, 1: (2).

Material Examined: DWLS, Bighilighaty, 08.xii.2008 (1 ex.).

Diagnostic characters: Adults are uniformly dusted with green and with a post-discal band on both wings. The tail is tipped with green. The bluish-green postdiscal band does not enter cell, is slightly sinuous and curved, and distinctly decreases in width towards the costal margin. Hind wing with the bluish-green post discal band very variable in width, not entering the cell and inner edge fairly straight. Tonal ocellus claret-red with a large black centre inwardly edged with blue. Underside dull pale brown to blackish-brown irrorated with scattered yellowish scales. *Wingspan*: 80-100 mm.

Status: Rare.

Distribution: India; Jharkhand (East Singhbhum), Chhattisgarh, Orissa, TamilNadu and West Bengal.
Elsewhere: Sri Lanka.

Habits and Habitats: The flight is very swift, prefers dry jungle where the host plants grow.

**57. *Papilio demoleus demoleus* (Linnaeus)
The Lime Butterfly**

1758. *Papilio demoleus* Linnaeus. *Syst. Nat.*, (ed.10) : 464

1939. *Papilio demoleus demoleus*: Talbot, *Fauna of British India*, Butterflies, 1: 187.

Material examined: DWLS, Pindra bera, 22.viii.2007 (3 exs.).

Diagnostic characters: Fore wings with the base below cell and basal half of latter so irrorated with yellow scales as to form more or less complete transverse dotted lines. Two outwardly oblique yellow spots in the cell and a curved spot at its apex. A discal transverse series of creamy-yellow spots irregular in arrangement and size, extends from area 1a to 8, interrupted in areas 5, and the spot in area 7 double. This is followed by a sinuous post-discal series of spots and a marginal series of smaller spots. Hind wing with the base, and an edging that decreases in width along the inner margin, irrorated with yellow scales. At the tonal angle an oval ochraceous-red spot emarginated on its inner side in the female and in both sexes surmounted by a blue lunule. In area 7 between the discal and post-discal spot is a large ocellus-like spot of the ground colour, more or less irrorated with blue scales. *Wingspan*: 78–95 mm.

Status: Very common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh, Palamu and Ranchi), Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Goa, Himachal Pradesh, Madhya Pradesh, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal and remaining parts of India. *Elsewhere:* Australia, Bangladesh, Burma, Malaysia, Myanmar, Indonesia, Iran, South China, Taiwan.

Habits and Habitats: One of the commonest plains butterflies, visiting flowers during and after the monsoons. It flies up to considerable height in hills of forests.

58. *Papilio polymnestor polymnestor* Cramer The Blue Mormon

1775. *Papilio polymnestor* Cramer, *Pap. Exot.*, 1 : 83, pl. 53. Fig. A, B.

1939. *Papilio polymnestor polymnestor*. Talbot, *Fauna of British India*, Butterflies, 1: 126.

1987. *Papilio polymnestor polymnestor*. Gupta and Shukla, *Rec. Zool. Surv. India*, *Occ. Pap. No. 106*: 3-4.

Material Examined: DWLS, Pindra bera, 22.viii.2007 (4 exs.).

Diagnostic characters: Head, antennae, thorax and abdomen blackish brown. Fore wing with a pale blue discal band which is obsolescent anteriorly. Hind wing, with the distal area pale blue enclosing a row of black discal patches and a similar row of submarginal spots, some of the latter united with the black distal margin. Underside fore wing with an elongate spot of dark red at base of cell. Hind wing with five irregular small patches of red at base. *Wingspan:* 120–150 mm.

Status: Less common.

Distribution: India: Jharkhand (East Singhbhum), Assam, Chhattisgarh, Goa, Himachal Pradesh, Madhya Pradesh, Sikkim, Tamil Nadu, West Bengal and Peninsular India. *Elsewhere:* Sri Lanka.

59. *Papilio polytes* Linnaeus The Common Mormon

1758. *Papilio polytes* Linnaeus, *Syst. Nat. ed. 10*: 460

1939. *Papilio polytes*. Talbot, *Fauna of British India*, Butterflies, 1: 126.

Material examined: DWLS, Pindra bera, 22.viii.2007 (1 ex.); 23.viii.2007 (2 exs.); 27.ix.2008 (1 ex.).

Diagnostic characters: Adult male with fore wing black, outer margin with a series of white spots which are narrower at the edge of the wing. Hind wing black, with a transverse discal series of elongate white spots from inner margin margin to area 7, at the tornal angle an obscure spot, of a deeper black than the ground-colour, surmounted by a lunule of blue scales. *Wingspan:* 90–100 mm.

Status: There are three forms of females in polytes, form *romulus* Cr., form *stichius* Hub. and form *cyrus* F. The form *romulus* is a rare, having white band on upper fore wing and hind wing with all the discal, submarginal and marginal markings with red. Morrison and Godfrey (1948) were also mentioned that it is distinctly rare in South Bihar. Form *stichius* is common in occurrence. The

form *romulus* Cramer rarely observed and the form *stichius* Hubner is frequently observed at this sanctuary.

Distribution : India : Jharkhand (Dhanbad, East Singhbhum, Hazaribagh), Andaman & Nicobar, Assam, Arunachal Pradesh, Bihar, Chhattisgarh, Delhi, Goa, Himachal Pradesh, Kerala, Lakshadweep, Madhya Pradesh, Orissa, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal and also, East to North West Himalayas. *Elsewhere*: Borneo, China, Hong Kong, Japan, Indonesia, Laos, Kampuchea, Malay Peninsula, Myanmar, Nepal, Sri Lanka, Taiwan, Thailand and Vietnam.

60. *Pachliopta aristolochiae* (Fabricius)

The Common Rose

1775. *Papilio aristolochiae* Fabricius, *Syst. Ent.* : 443.

1932. *Tros aristolochiae*: Evans, *Identification of Indian Butterflies*: 44.

1939. *Polydorus aristolochiae*: Talbot, *Fauna Brit. India*, Butterflies, 1: 86.

1961. *Pachliopta aristolochiae*: Munroe, *Can. Ent. Suppl.* 17: 46.

2007. *Pachliopta aristolochiae*: Chandra *et. al.*, A checklist of butterflies of Madhya Pradesh and Chhattisgarh. *Zoos' Print Journal*, 22(8): 2791.

Material examined: DWLS, Bighilighaty, 05.v.2010 (1 ex.).

Diagnostic characters: Fore wing of adult male and female black from the base to beyond the point of origin of vein 2, the stripes placed between vein 2 and the inner margin rarely shortened. Hind wing with white discal spots but no cell spots. Underside with the discal spot in area 1 usually red, and the latter proximally reduced and therefore remote from the cell. *Wingspan*: 80–110 mm.

Status: Fairly common.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere*: Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

Family PIERIDAE

Subfamily COLIADINAE

Tribe COLIADINI

61. *Catopsilia crocale crocale* (Cramer)

The Common Emigrant

1775. *Papilio crocale* Cramer, *Pap. Exot.*, 1 : 87.

1919. *Catopsilia crocale crocale*: Talbot, *Fauna of British India*, Butterflies, 1: 492 – 493.

Material examined: DWLS, Pindra bera, 22.viii.2007 (4 exs.).

Diagnostic characters: Adult male with ground-colour chalky-white, with either proximal yellow areas or entirely suffused with yellow. Fore wing with costa narrowly black to the base, outer margin

with narrow black border, wider at the apex and narrowing posteriorly to about vein 2 or sometimes to the tornus. Hind wing unmarked, rarely with marginal black vein-dots. *Wingspan*: 75–80 mm.

Status: Very common.

Distribution: India: Jharkhand (East Singhbhum, Ranchi), Andaman Islands, Bihar and West Bengal. *Elsewhere*: Australia, Burma, Borneo, China (south), Java, Phillippines, Sri Lanka, Sumatra and Taiwan.

Habits and Habitats: The flight of the butterfly is powerful and rapid with a series of upward and downward movements.

62. *Catopsilia florella gnoma* (Fabricius) The African Emigrant

1775. *Papilio gnoma* Fabricius, *Syst. Ent.*, : 828

1939. *Catopsilia florella gnoma*: Talbot, *Fauna of British India*, Butterflies, 1: 500-501

Material examined: DWLS, Pindra bera, 15.xii.2007 (2 exs.).

Diagnostic characters: Adult male with upperside white and reddish-brown markings. Fore wing with slight apical costal edging and marginal vein-spots reaching 3 or 2, a prominent black discocellular spot, these marking variable in size and some times quite absent. Hind wing usually with a marginal yellowish-pink line. Underside as in *pyranthe* (Linnaeus), but with more prominent and silvery discocellular spots. *Wingspans*: 58–65 mm.

Status: Common

Distribution : India : Jharkhand (East Singhbhum), Andaman & Nicobar Islands, Delhi, Goa, Himachal Pradesh, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh, West Bengal and N.W.Himalayas. *Elsewhere*: Myanmar, Pakistan and Sri-Lanka.

Habits and Habitats: Abundant during the month of November-December, fly somewhat less in a jerkier manner.

63. *Catopsilia pomona* (Fabricius) The Lemon Emigrant

1775. *Papilio pomona* Fabricius, *Syst. Ent.*, : 479

1939. *Catopsilia pomona*: Talbot, *Fauna of British India*, Butterflies, 1: 493.

Material examined: DWLS, Tisco, 22.viii.2007 (4 exs.).

Diagnostic characters: Adult male is closely resembles to *crocale* (Cramer). The costal margin of upper fore wing only black at the apex and outer marginal narrow border macular. Ground colour of both wings white and the proximal areas yellow. Underside greenish-white, both wings with a discocellular silvery spot ringed with reddish-brown. *Wingspan*: 65–80 mm.

Status: Common.

Distribution : India : Jharkhand (East Singhbhum), Andaman & Nicobar Islands, Assam, Bihar, Chhattisgarh, Delhi, Goa, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh, West Bengal and N. W. Himalayas. *Elsewhere:* Afghanistan, Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri-Lanka.

**64. *Catopsilia pyranthe pyranthe* (Linnaeus)
The Mottled Emigrant**

1758. *Papilio pyranthe* Linnaeus, *Syst. Nat.*, (ed. 10)1: 469.

1939. *Catopsilia pyranthe pyranthe*, Talbot, *Fauna of British India*, Butterflies, 1: 497 - 499.

Material examined: DWLS, Pindra bera, 22.viii.2007 (4 exs.).

Diagnostic characters: A chalky-white, slightly tinged with green. Fore wing with a discocellular black spot, costa edged with black and outer marginal black border, wide at the apex and narrowing slightly to the tornus, its inner edge slightly produced on the veins. Hind wing with marginal black vein-dots or with a continuous narrow border. Underside, greenish, with reddish-brown striae and small discocellular spots. *Wingspan:* 70–75 mm.

Status: Common.

Distribution : India : Jharkhand (East Singhbhum), Andaman, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Madhya Pradesh, Tamil Nadu, Uttar Pradesh, West Bengal and N.W. Himalayas. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri-Lanka, extending to Hainan, Taiwan, South China, South to East Borneo, Java, Sulawesi and Phillipines.

**65. *Eurema blanda silhetana* (Wallace)
The Three Spot Grass Yellow**

1867. *Terias silhetana* Wallace, *Trans. Ent. Soc. Lond.*, 4: 324.

1939. *Eurema blanda silhetana*: Talbot, *Fauna Brit. India*, Butterflies, 1: 523-525.

Material examined: DWLS, Pindra bera, 29.ix.2008 (1 ex.).

Diagnostic characters: Similar to *hecabe* but in female the black terminal area of the fore wing narrower than in the typical form and the terminal black border of both wings much broader. On the upper side the ground colour is rich citron-yellow and on the underside paler. *Wingspan:* 40–45 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum, Dhanbad), Andaman Island, Arunachal Pradesh, Assam, Bihar, Sikkim, West Bengal and Peninsular India. *Elsewhere:* Myanmar, Sri Lanka.

**66. *Eurema brigitta rubella* (Wallace)
The small Grass Yellow**

1867. *Terias rubella* Wallace, *Trans. Ent. Soc. Long.*, 3(4): 323

1932. *Terias libythea*: Evans, *Identification of Indian Butterflies*: 77

1939. *Eurema brigitta rubella*: Talbot, *Fauna of British India, Butterflies*, 1: 515.

Material examined: DWLS, Tisco, 25.viii.2007 (2 exs.).

Diagnostic characters: Gamboge-yellow. Fore wing with apical third and outer border black, the inner edge of this area more or less regularly incurved from costa to inner margin, and slightly toothed on vein 1a to 3, basal area dusted with black. Hind wing with a black outer border that is broader anteriorly, basal area dusted with black. Underside ground-colour, fore wing with costa narrowly edged with pink, two well-marked discocellular spots and some obscure subapical black spots. Hind wing with a spot at the base. *Wingspan*: 30–40 mm.

Status: Not common.

Distribution : India : Jharkhand (East Singhbhum, Hazaribagh), Bihar, Chhattisgarh, Goa, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Uttar Pradesh, West Bengal and Peninsular India extending up to lower elevation of Himalayas. *Elsewhere*: Sri Lanka and Myanmar.

Habits and Habitats: They are weak flier; generally flutter among stems of grasses and low bushes, frequently settling on the stems of grass and on flowers close to the ground. They are more active during sunny hours.

67. *Eurema hecabe contubernalis* (Moore)

1886. *Terias contubernalis* Moore, *Journ. Linn. Soc. Lond.zool.*, 21: 46.

1939. *Eurema hecabe contubernalis*: Talbot, *Fauna of British India, Butterflies*, 1: 527-530.

Material examined: DWLS, Bada baandh, 23.viii.2007 (2 exs.); Tisco, 25.viii.2007 (1 ex.); Maculakocha, 26.viii.2007 (2 exs.).

Diagnostic characters: Upperside yellow, variable in tint from sulphur to rich lemon-yellow, fore wing with a deep black outer border, continued narrowly along costal margin to base. Hind wing with an outer narrow black border which is attenuated anteriorly and posteriorly. Underside ground colour usually paler than that of the upperside. *Wingspan*: 35–45 mm.

Status: Very common

Distribution: India: Jharkhand (East Singhbhum), Assam, Gujarat and West Bengal. *Elsewhere*: Myanmar, Malaya Peninsula and Singapore.

**68. *Eurema hecabe fimbriata* (Wallace)
The Common Grass Yellow**

1867. *Teria fimbriata* Wallace, *Trans. ent. Soc. Lond.*, 4(3): 323.

1932. *Eurema hecabe fimbriata*: Corbet & Penlebury, *Bull. Raffles Mus. Sing.*, 7: 160, pl.5.

Material examined: DWLS, Tisco, 22.viii.2008 (1 ex.).

Diagnostic characters: Male and female: Upperside of fore wing with very narrow black border, somewhat dentate. Hind wing with marginal dots. *Wingspan:* 40-50 mm.

Status: Very common.

Distribution: India: Jharkhand (East Singhbhum), Goa, Himachal Pradesh, North-West Himalayas, Punjab and Uttarakhand. *Elsewhere:* Pakistan.

69. *Eurema hecabe simulata* Moore

1881. *Terias simulata* Moore, *Lep. Ceyl.* 1: 119.

1939. *Eurema hecabe simulata*: Talbot, *Fauna Brit. India*, Butterflies, 1: 530-531.

2007. *Eurema hecabe simulata*: Singh & Koshta, *Fauna of Madhya Pradesh (including Chhattisgarh)*, *State Fauna Series*, 15 (Part-1): 313. *Zool Surv. India*.

Material examined: DWLS, Mangheela baandh, 29.ix.2008 (2 exs.).

Diagnostic characters: A smaller race, with the ground-colour dark yellow than in the nominotypical race. The underside of fore wing with a prominent brown subapical patch from costa. Hind wing marking with more or less reddish-brown. *Wingspan:* 40-50 mm.

Status: Common.

Distribution: India: Jharkhand (Dhanbad, East Singhbhum), Andaman & Nicobar Islands, Bihar, Chhattisgarh, Delhi, Himachal Pradesh, Lakshadweep, Karnataka, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* Myanmar, Pakistan, Sri Lanka.

70. *Eurema laeta laeta* (Boisduval) Spotless Grass Yellow

1836. *Terias laeta* Boisduval, *Spec. Gen. Lep.*, 1: 674.

1939. *Eurema laeta laeta*: Talbot, *Fauna. Brit. India*, Butterflies, 1: 517-520.

1990. *Eurema laeta laeta*: Ghosh, Mondal & Chaudhary, *Rec. Zool. Surv. India*, 86(1): 22.

Material examined: DWLS, Mangeela baandh, 19.ix.2008 (1 ex.).

Diagnostic characters: Adult bright yellow. Forewing with outer black border broad in the apical area. Hindwing with a marginal narrow black line or band. Underside pale yellow. Forewing with a larger, apical reddish brown patch and 3 small black spots in the cell. *Wingspan:* 30-45 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh), Bihar, Chhattisgarh, Delhi, Goa, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Sri Lanka.

71. *Eurema sari sodalis* (Moore)
The Chocolate Grass Yellow

1886. *Eurema sodalis* Moore, *Journ. Linn. Soc. Zool.*, 21: 45.

1829. *Eurema sari*: Fruhstorfer, *Cat. Lep. Mus. E.I.C.* : 136.

1939. *Eurema sari sodalis*: Talbot, *Fauna. Brit. India*, Butterflies, 1: 538-539.

Material examined: DWLS, Tisco, 22.viii.2007 (1 ex.).

Diagnostic characters: Male bright yellow, marginal border of wings more intensely black with broader apical area; the inner area between veins 2 and 4, is directed towards the distal margin at a point just above the tornus. Underside paler; fore wing with single cell spot and a large quadrate spot covering the apical area. Hind wing marked as in *hecabe*, but the cell-spot is obsolete. Female, resembles the male, but hind wing border broader and more diffuse. *Wingspan*: 40-45 mm

Status: Rare.

Distribution: India: Jharkhand (East Singhbhum), Arunachal Pradesh and Sikkim. *Elsewhere*: Myanmar, Malay Peninsula, Sumatra and North Borneo.

Habits and Habitats: Flies close to the ground. Frequently visit flowers and damp patches. It is only subspecies in India and it is a rare one.

Subfamily PIERINAE

Tribe PIERINI

72. *Anapheis aurota aurota* (Fabricius)
The Pioneer

1793. *Papilio aurota* Fabricius, *Ent. Syst.*, 3(1): 197.

1939. *Anapheis aurota aurota*: Talbot, *Fauna Brit. India*, Butterflies, 1: 380-382.

Material Examined: DWLS, Bighilghaty, 22.viii.2007 (2 exs.); 19.iii.2009 (1 ex.).

Diagnostic characters: Upperside of male pure white with black apex in the forewing and black outer margins in both wings, black area with white spots, elongated in the forewing and rounded in the hindwing. Female similar to male but with thicker and broader veins, apex and outer margins. A characteristic hockey stick like spot in the middle of forewing. Underside of male have spots in the apex, yellowish in the forewing and yellow with black veins in Hindwing. *Wingspan*: 40-45 mm

Status: Common.

Distribution: India: Jharkhand (East Singhbhum), Andaman & Nicobar Islands, Bihar, Chhattisgarh, Delhi, Goa, Karnataka, Madhya Pradesh, Tamil Nadu and West Bengal. *Elsewhere*: Bangladesh, Myanmar, Nepal, Pakista and Sri Lanka.

**73. *Cepora nerissa phryne* (Fabricius)
The Common Gull**

1775. *Papilio phryne* Fabricius, *Syst. Ent.*, : 471.

1932. *Hupbina nerisa phryne*. Evans, *Identification of Indian Butterflies*: 72.

1939. *Cepora nerissa phryne*: Talbot, *Fauna of British India*, Butterflies, 1: 362.

Material examined: DWLS, Tisco, 22.viii.2007 (2 exs.).

Diagnostic characters: A white butterfly with costa, veins, apex and termen black, and spots of the ground colour in the terminal border. On the underside the costa abd apex tinged with yellow on the forewing, the hindwing being entirely suffused with yellow. Adults are very variable.
Wingspan: 55–65 mm.

Status: Common

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh), Bihar, Chhattisgarh, Hiamachal Pradesh, Goa, Madhya Pradesh, Peninsular India to North West states and West Bengal. *Elsewhere*: Myanmar, Nepal and Sri Lanka.

Habits and Habitats: It is generally prefers open and scrub areas, frequently settling on the flowers, very easy to catch.

**74. *Delias eucharis* (Drury)
The Common Jezebel**

1773. *Papilio eucharis* Drury, *Illustr. Nat. Hist.*, 2 : pl. x. figs. 5, 6.

1939. *Delias eucharis*, Talbot, *Fauna of British India*, Butterflies, 1: 352-356.

Material examined: DWLS, Tisco, 22.viii.2007 (3 exs.).

Diagnostic characters: Upperside of male and female white, the veins broadly black; the hindwing with large submarginal spots pink due to the bright red colouration of the underside. Underside, forewing similar but with the apex tinged with yellow. Hindwing bright yellow with vermilion-red submarginal spots narrowly edged with white. *Wingspans*: 75 - 85 mm.

Status: Very common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh), Assam, Bihar, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Sikkim, Tamil Nadu, Uttar Pradesh, West Bengal and N.W. Himalayas. *Elsewhere*: Myanmar, Malaya Peninsula and Singapore.

Habits and Habitats: Very common butterfly can be seen flying slowly on high among leaves and flowers during sunny hours everywhere.

75. *Delias hyparete ethire* (Doherty, 1886)

1886. *Delias hyparete ethire* Doherty, *Journ. As. Soc. Beng.* LV: 262

1939. *Delias hyparete ethire*. Talbot, *Fauna of British India*, Butterflies, 1: 357.

Material examined: DWLS, Tisco, 22.viii.2007 (1 ex.).

Diagnostic characters: Similar to *D. eucharis* but with the black markings more diffuse. In the hindwing the black venation and terminal black border as also the submarginal vermilion-red spots of the underside show through by transparency. The ground colour of the underside of the hindwing a much deeper yellow than in *D. eucharis*. The submarginal red spots increase in size from apex to tornus. *Wingspans:* 80 mm.

Status: Fairly common.

Distribution: India: Jharkhand (East Singhbhum, Hazaribagh), Assam, Sikkim, West Bengal and the Himalayas.

Habits and Habitats: As *Delias eucharis* (Drury).

Remark: Talbot (1939) reported this species is rare, more frequent in the Madras Presidency, but Taylor (1888) reported that it is very common at Khurda in Orissa.

76. *Leptosia nina nina* (Fabricius)

The Psyche

1781. *Papilio xiphia* Fabricius, *Spec. Ins.*, 2: 43.

1932. *Leptosia nina nina*: Evans, *Identification of Indian Butterflies*: 65.

Material examined: DWLS, Tisco, 22.viii.2007 (3 exs.).

Diagnostic characters: Upperside white. Forewing with black apex and a large black, pear shaped discal spot. Underside hindwing with fine greenish or brownish green streak. *Wingspan:* 40–45 mm.

Status: Common.

Distribution: India: Jharkhand (Dhandad, East Singhbhum, Hazaribagh), Andaman Islands, Bihar, Chhattisgarh, Goa, Madhya Pradesh, Peninsular India to Mussooree Hills and West Bengal. *Elsewhere:* Bangladesh, Bhutan, Myanmar, Nepal and Pakistan.

Habits and Habitats: Swift active flier, from March to November, observed in open area of forests.

77. *Valeria valeria hippia* (Fabricius)

The Common Wanderer

1787. *Papilio hippia* Fabricius, *Mantissa Ins.*, 2: 55.

1939. *Valeria valeria hippia*: Talbot, *Fauna of British India*, Butterflies, 1: 486.

Material examined: DWLS, Maculakocha, 22.viii.2007 (3 exs.).

Diagnostic characters: Upperside of male pale blue or bluish white, All veins with black bands. Forewing with broad black costa, narrow apex having sub-apical blue spots and outer margin

having three submarginal blue spots. Hindwing with white costa. Underside paler with blackish veins and bands. In female, upperside black with pale blue-tinted white markings. Forewing cell with two streaks followed by a row of elongate discal white streaks and submarginal white spots. Hindwing with broad white basal streaks. Underside with dull white with pale black markings as above. *Wingspan*: 65–80 mm.

Status: Common.

Distribution: India: Jharkhand (East Singhbhum, Dhanbad), Chhattisgarh, Karnataka, Goa, Himachal Pradesh, Madhya Pradesh, Maharashtra, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere*: Bangladesh, Bhutan, Myanmar, Nepal, Pakistan and Thailand.

Habits and Habitats: The common wanderer is a swift flier, and observed to visit frequently on *Lantana* flowers from March to November.

PART - B (MOTHS)

Suborder HETEROCERA

Division DITRYZIA

Section TINEINA

Subsection TENEINA

Superfamily HYBLAEOIDEA

Family HYBLAEIDAE

78. *Hyblaea puera* (Cramer, 1777)

Superfamily PYRALOIDEA

Family CRAMBIDAE

Subfamily SPILOMELINAE

79. *Pygospila tyres* (Cramer, 1779)

80. *Terastia meticulosalis* Guenee, 1854

Family PYRALIDAE

Subfamily PYRAUSTINAE

81. *Botyodes asialis* Guenee, 1854

82. *Caprinia conchylalis* Guenee, 1854

83. *Glypodes stolalis* Guenee, 1854

84. *Lepyrododes neptis* (Cramer, 1779)

85. *Maruca testulalis* (Geyer, 1832)

Subsection SESIINA

SuperFamily ZYGAENOIDEA

Family ZYGAENIDAE

Subfamily CHALCOSIINAE

86. *Gynaotocera papilionaria* Guerin-Meneville, 1831

Section COSSINA

Subsection BOMBYCINA

Superfamily URANIOIDEA

Family URANIIDAE

Subfamily MICRONIINAE

87. *Micronia aculeata* Guenee, 1857

Superfamily GEOMETROIDEA

Family GEOMETRIDAE

Subfamily GEOMETRINAE

88. *Agathia lycaenaria* (Kollar, 1844)89. *Chlorissa distinctaria* (Walker, 1866)90. *Pingasa ruginaria* (Guenee, 1857)91. *Pingasa chlora* (Stoll, 1782)92. *Thalassodes quadraria* Guenee, 1857

Subfamily ENNOMINAE

93. *Buzura suppressaria* (Guenee, 1862)94. *Ophthalmitis herbidaria* Guenee, 185895. *Semiothisa fasciata* (Fabricius, 1775)96. *Zamarada translucida* Moore, 1887

Subfamily STERRHINAE

97. *Problepsis deliaria* (Guenee, 1858)

Subfamily DESMOBATHRINAE

98. *Eumelea ludovicata* Guenee, 1858

Superfamily DREPANOIDEA

Family DREPANIDAE

Subfamily CYCLIDINAE

99. *Cyclidia substigmata* Hubner, 1825

Superfamily BOMBYCOIDEA

Series: BOMBYCIFORMES

Family BOMBYCIDAE

100. *Triuncina huttoni* (Westwood, 1847)

Family LASIOCAMPIDAE

Subfamily LASIOCAMPINAE

101. *Gastropacha pardale nandina* Moore, 1859

102. *Trabala vishnou* (Lefebvre, 1827)
 Series SATURNIIFORMES
 Family BRAHMAEIDAE
103. *Brabmidia hearseyi* White, 1862
 Family SATURNIIDAE
 Subfamily SATURNIINAE
104. *Actias selene* Hubner, 1806
105. *Antheraea paphia* (Linnaeus, 1758)
 Superfamily SPHINGOIDEA
 Family SPHINGIDAE
 Subfamily SPHINGINAE
 Tribe ACHERONTIINI
106. *Acherontia lachesis* Fabricius, 1798
107. *Acherontia styx styx* Westwood, 1844
108. *Agrius convolvuli convolvuli* (Linnaeus, 1758)
 Tribe SPHINGINI
109. *Meganoton nyctiphanes* Walker, 1856
110. *Psilogramma menephron menephron* Cramer, 1780
 Subfamily MACROGLOSSINAE
 Tribe MACROGLOSSINI
111. *Acosmeryx anceus subdentata* Rothschild & Jordan 1903
112. *Deilephila hypothous hypothous* Cramer, 1780
113. *Hippotion boerhaviae* Fabricius, 1775
114. *Macroglossum belis* Linnaeus, 1776)
115. *Theretra alecto alecto* (Linnaeus, 1758)
116. *Theretra clotho clotho* (Drury, 1773)
117. *Theretra nessus* (Drury, 1773)
118. *Theretra oldenlandiae oldenlandiae* (Fabricius, 1775)
119. *Pergesa acteus* (Cramer, 1779)
 Subfamily SMERINTHINAE
 Tribe SMERINTHINI
120. *Polyptychus dentatus* (Cramer, 1777)
 Tribe AMBULYCINI
121. *Ambulyx subocellata* Felder, 1874

122. *Ambulyx substrigilis aglaia* Jordan, 1923

Tribe SPHINGULINI

123. *Dolbina inexacta* Walker, 1856

Superfamily NOCTUOIDEA

Family ARCTIIDAE

Subfamily ARCTIINAE

124. *Amsacta sara* (Swinhoei, 1889)

125. *Amerila astreus* (Drury, 1773)

126. *Cretonotos gangis* (Moore, 1763)

127. *Cretonotos transiens* (Walker, 1855)

128. *Estigmene biguttata* (Walker, 1855)

129. *Estigmene vittata* (Moore 1879)

130. *Pericallia ricini* (Fabricius, 1775)

Subfamily LITHOSIINAE

131. *Chionaema amabilis* (Moore, 1877)

132. *Chionaema bianca* (Walker, 1856)

133. *Macrobrochis gigas* (Walker, 1854)

134. *Miltochrista cuneonotata* (Walker, 1855)

Subfamily SYTOMINAE

135. *Amata cyssea* Cramer, (1782)

136. *Amata passalis* Fabricius, 1856

137. *Syntomoides imaon* Cramer, 1856

Family NOCTUIDAE

Subfamily CATOCALINAE

138. *Acanthodelta janata* (Linnaeus, 1758)

139. *Anisoneura hypocyanea*, Guenee, 1775

140. *Anua coronata* (Fabricius, 1775)

141. *Anua cuprea* (Moore, 1867)

142. *Anua trapezium* (Guenee, 1852)

143. *Anua triphaenoides* (Walker, 1858)

144. *Artena dotata* (Fabricius 1794)

145. *Chalciope mygdon* (Cramer, 1777)

146. *Anomis fulvida* (Guenee, 1852)

147. *Ercheia cyllaria* (Cramer, 1782)

148. *Erebus glaucopis* (Walker, 1857)
149. *Erebus hieroglyphica* (Drury, 1773)
150. *Eupatula macrops* (Linnaeus, 1768)
151. *Grammodes geometrica* (Fabricius, 1775)
152. *Ischyja manlia* Cramer, 1776
153. *Ophiusa fulvotaenia* Guenee, 1852
154. *Ophiusa tirrhaca* Cramer, 1777
155. *Parallelia onelia* (Guenee, 1852)
156. *Pindara illibata* (Fabricius, 1775)
157. *Remigia archesia* (Cramer, 1780)
158. *Remigia frugalis* (Fabricius, 1775)
159. *Remigia undata* (Fabricius, 1775)
160. *Spirama retorta* (Clerck, 1764)
161. *Thyas honesta* (Hubner, 1806)
162. *Trigonodes hyppasia* (Cramer, 1779)

Subfamily CALPINAE

163. *Aedia acronyctoides* (Guenee, 1852)
164. *Calesia dasyptera* Kollar, 1844
165. *Daddala plana* (Moore, 1882)
166. *Dysgonia algira* (Linnaeus, 1766)
167. *Egnasia ephyrodalis* Walker, 1858
168. *Episparis varialis* (Walker, 1858)
169. *Fodian stola* (Guenee, 1852)
170. *Hamodes aurantiaca* Guenee, 1852
171. *Hypocala deflorata* Fabricius, 1794
172. *Nagia linteola* (Guenee, 1852)
173. *Othreis fullonica* (Linnaeus, 1767)
174. *Plecoptera reflexa* Guenee 1852
175. *Ramadasa pavo* Walker, 1856
176. *Sphingomorpha chlorea* (Cramer, 1777)
177. *Tephriopsis divulsa* (Walker, 1865)

Subfamily HELIOTHINAE

178. *Helicoverpa armigera* (Hubner, 1827)

Subfamily NOCTUINAE

179. *Agrotis ipsilon* (Hufnagel, 1776)

180. *Neurois atrovirens* (Walker, 1865)

Subfamily PLUSIINAE

181. *Chrysodeixis eriosoma* (Doubleday, 1843)

182. *Thysanoplusia orichalcea* (Fabricius, 1775)

Subfamily STICTOPTERINAE

183. *Odontodes aleuca* Guenee, 1852

Subfamily AGANAINAE

184. *Asota caricae* (Fabricius, 1775)

185. *Asota ficus* (Fabricius, 1775)

186. *Asota plana* (Walker, 1854)

187. *Neochera inops* (Walker, 1854)

Subfamily HADENINAE

188. *Callopietria maillardi* (Moore, 1882)

189. *Spodoptera litura* (Fabricius, 1775)

190. *Spodoptera mauritia* (Boisduval, 1833)

Subfamily ACRONICTINAE

191. *Craniophora fasciata* Moore, 1884

Subfamily AGARISTINAE

192. *Aegocera bimacula* Walker, 1854

193. *Episteme adulatorix* Kollar, 1844

194. *Mimeusemia basalis* Walker, 1854

195. *Sarbanissa albifascia* Walker

Family LYMANTRIIDAE

196. *Adullia icilia* (Stoll, 1790)

197. *Nygmia bipunctapex* (Hampson, 1891)

198. *Dasychira grotei* Moore, 1859

Family NOTODONTIDAE

199. *Neocerura liturata* (Walker, 1855)

200. *Neostauropus alternus* (Walker, 1855)

Subfamily PHALERINAE

201. *Phalera raya* Moore, 1859

Family EUPTEROTIDAE

202. *Eupterote fabia* f. *discordans* Butler, 1881

203. *Ganisa plana* Walker, 1855

Family LIMACODIDAE

204. *Birhamoides junctura* (Walker, 1865)205. *Cheromettia laleana* (Moore, 1859)

Superfamily COSSOIDEA

Family COSSIDAE

Subfamily ZEUZERINAE

206. *Xyleutes persona* (Le Guillou, 1841)

Family NOLIDAE

Subfamily BLENINAE

207. *Blenina donans* Walker, 1859208. *Eligma narcissus* (Cramer, 1775)

Subfamily WESTERMANNIINAE

209. *Westermannia triangularis* Moore, 1877**TAXONOMIC ACCOUNTS (MOTHS)**

The Taxonomic accounts of 132 species, 112 genera under 20 families of moths are listed in annexure – II have been described as hereunder.

Superfamily HYBLAEOIDEA

Family HYBLAEIDAE

78. *Hyblaea puera* Cramer, 17771777. *Noctua puera* Cramer, *Pap. Exot.*, : 103.1894. *Hyblaea puera*: Hampson, *Fauna Brit. India*, Moth, 2: 371-372.*Material examined*: DWLS, Pindrabera, 08.viii.2008 (2 exs.).

Diagnostic characters: Head and thorax greyish red-brown; abdomen black-brown with orange segmented bands. Fore wing greyish red-brown irrorated with a few dark specks. Hind wing black brown, with curved orange band with scarlet edges from upper angle of cell to near anal angle. Underside of the fore wing black with orange fascia to cell and far beyond it. Hind wing pale brownish with dark specks; orange towards anal angle with two large black spots. *Wingspan*: 32-40 mm.

Distribution: India: Jharkhand (East Singhbhum), Madhya Pradesh and Maharashtra. *Elsewhere*: Australia, China, Indonesia, Myanmar and Sri Lanka.

Superfamily PYRALIDOIDEA

Family CRAMBIDAE

Subfamily SPILOMELINAE

79. *Pygospila tyres* (Cramer)1779. *Phalaena (Pyralis) tyres* Cramer, *Pap. Exot.*, 3: 263.1896. *Pygospila tyres*: Hampson, *Fauna Brit. India*, Moths, 4: 361.

1997. *Pygospila tyres*: Bhattacharya, *Fauna of West Bengal, State Fauna Series, 3 (Part-7)*: 386.

Material examined: DWLS, Pindrabera, 22.viii.2007 (6 exs.); 08.viii.2008 (1 ex.).

Diagnostic characters: Adult with black shot with purple; abdomen with paired dorsal and lateral series of white spots. Fore wing with two oblique whitish subbasal lines; an antemedial series of three white spots, the two below the cell nacreous hyaline; a speck in the cell; a nacreous spot in end of cell and larger spot below the end; a bidentate spot beyond the cell and another towards apex. Hine wing with nacreous streaks in and below the cell; the cilia white towards anal angle.
Wingspan: 42 – 46 mm.

Distribution: India: Jharkhand (East Singhbhum, Ranchi), Bihar, Himachal Pradesh, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uattar Pradesh and West Bengal. *Elsewhere*: Indonesia, Myanmar, Pakistan and Sri Lanka.

80. *Terastia meticulosalis* Guenee

1854. *Terastia meticulosalis* Guenee, *Delt & Pyr.*: 212.

1896. *Terastia meticulosalis*: Hampson, *Fauna. Brit. India, Moths, 4*: 381.

Material examined: DWLS, Pindrabera, 27.ix.2008 (3 exs.).

Diagnostic characters: Adult moth pale fawn-colour; fore wing with the basal area slightly suffused with rufous; a pale oblique antemedial bar from the costa with a dark spot on its outer side, and bounded by an inwardly oblique hyaline band from costa to vein 1. A prominent oblique rufous medial band with a semihyaline patch beyond it. Hind wing hyaline; the costal lobe fuscous; the apical area suffused with ochreous and rufous; post medial and submarginal curved lines obsolete from vein 3 to inner margin. *Wingspan*: 40 mm.

Distribution: India: Jharkhand (East Singhbhum) and Car Nicobar. *Elsewhere*: Haiti

Remark: A New record for the state

Family PYRALIDAE

Subfamily PYRAUSTINAE

81. *Botyodes asialis* Guenee

1854. *Botyodes asialis* Guenee, *Delt. et Pyr.*: 321.

1896. *Botyodes asialis*: Hampson, *Fauna. Brit. India, Moths, 4*: 325.

Material examined: DWLS, Pindrabera, 22.viii.2007 (3 exs.); Maculakocha, 26.viii.2007 (4 exs.); Pindrabera, 08.viii.2008 (5 exs.); Maculakocha, 13.viii.2008 (2 exs.).

Diagnostic characters: An orange yellow moth; male with the anal tuft black. Fore wing with fulvous speck below median nervure bear base; an oblique maculate fulvous antemedial line; a speck in cell and discocellular ocellus; an interrupted sinuous postmedial line inwardly oblique from veins 5 to 2; a highly sinuous submarginal line with the area beyond it fulvous except at apex. Hind

wing with discocellular ocellus; a postmedial sinuous line highly bent outwards between veins 5 and 3. The marginal area fulvous with a grey tinge, narrowing to anal angle and with its inner edge sinuous; both wings with the cilia fuscous, grey at tips. *Wingspan*: 45–50 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Uttar Pradesh and West Bengal. *Elsewhere*: Indonesia, Myanmar, Pakistan and Sri Lanka.

82. *Caprinia conchylalis* Guenee

1854. *Caprinia conchylalis* Guenee, Delt. *et Pyr.*: 303.

1896. *Caprinia conchylalis*: Hampson, *Fauna. Brit. India*, Moths, 4: 295.

Material examined: DWLS, Pindrabera, 22.viii.2007 (8 exs.); Maculakocha, 26.viii.2007 (2 exs.) Pindrabera, 08.viii.2008 (5 exs.); Maculakocha, 13.viii.2008 (3 exs.).

Diagnostic characters: Pure white; head black brown, the palpi with a metallic tinge; collar, fore and mid legs tinged with cupreous brown; anal tuft of male black. Fore wing with broad costal cupreous-brown band; both wings with series of silvery striae close to the margin, which is silvery white. *Wingspan*: 35–45 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam, Maharashtra, Sikkim and Tamil Nadu. *Elsewhere*: Myanmar and Sri Lanka.

83. *Glyphodes stolalis* Guenee

1854. *Glyphodes stolalis* Guenee, Delt. *et Pyr.*: 293

1896. *Glyphodes stolalis*, Hampson, *Fauna. Brit. India*, Moths, 4: 354.

Material examined: DWLS, Pindrabera, 24.ix.2008 (1 ex.).

Diagnostic characters: Head, thorax, and abdomen whitish with brown stripes; palpi banded with brown; abdomen fulvous at extremity, the anal tuft black. Fore wing hyaline white with the marking occupying the greater part of the wing. Hind wing pearly hyaline white; the marginal area fuscous and brown, broad at costa, narrowing to anal angle, with a white line near its inner edge followed by a black band; the cilia white except at the apex. *Wingspan*: 40 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam and Sikkim. *Elsewhere*: Australia, Indonesia, Fiji, Nepal and Sri Lanka.

84. *Lepyrodes neptis* (Cramer)

1779. *Phalaena (Noctua) neptis* Cramer, *Pap. Exot.*, 3, pl. 264

1896. *Lepyrodes neptis*: Hampson, *Fauna. Brit. India*, Moths, 4: 368.

2007. *Lepyrodes neptis*: Chandra & Nema, *Fauna of Madhya Pradesh (including Cbbattigarh) State Fauna Series*, 15(Part-I): 372.

Material examined: DWLS, Pindrabera, 27.ix.08 (1 ex.).

Diagnostic characters: Adult is pale yellowish brown or fuscous; palpi white below; abdomen banded with white; Fore wing with two black-edged white subbasal bands not reaching the costa; a spot in cell; a wedge shaped mark on inner margin; a discocellular white band forming with a patch below the cell, a Y- shaped band, with its outer arm shortest; two large black-edged white crescentic post-medial marks. Hind wing with the basal area white, its outer edge angled at vein 5 and with a black-edged yellow-brown discocellular mark; the outer area yellow-brown, with a black-edged wedge-shaped submarginal mark from below costa to vein 2, another further from the margin and with its outer edge indented from vein 5 to anal angle. *Wingspan:* 32 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Madhya Pradesh and Uttat Pradesh. *Elsewhere:* Australia, Malayan subregion, Myanmar and Sri Lanka.

85. *Maruca testulalis* (Geyer)

1832. *Crochiphora testulalis* Geyer, *Hubn. Sammal, Exot. Schemett.*, 4(4): 12.

1896. *Maruca testulalis*: Hampson, *Fauna. Brit. India, Moths*, 4: 393.

2007. *Maruca testulalis*: Chandra & Nema, *Fauna of Madhya Pradesh (including Chhattisgarh) State Fauna Series*, 15(Part-I): 372.

Material examined: DWLS, Pindrabera, 20.viii.2007 (2 exs.).

Diagnostic characters: Head, thorax, and abdomen fuscous brown; palpi white below; fore wing fuscous brown; the costa tinged with fulvous; indistinct subbasal and antemedial line across the cell and white spots below the cell. Hind wing semihyaline white; the basal costal area fuscous and a spot at upper angle of cell; two indistinct sinuous postmedial lines; a marginal fulvous brown and fuscous band from costa to vein 1c, its inner edge very irregular. *Wingspan:* 26–30 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Madhya Pradesh and West Bengal. *Elsewhere:* Australian and Oriental regions, Neotropical and Ethiopian regions and Japan.

Superfamily ZYGAENOIDEA

Family ZYGAENIDAE

Subfamily CHALCOSIINAE

86. *Gynautocera papilionaria* Guerin-Meneville

1831. *Gynautocera papilionaria* Guerin-Meneville, *Mag. Zool.*: 12.

1892. *Gynautocera papilionaria*: Hampson, *Fauna Brit. India, Moths*, 1: 279.

1997. *Gynautocera papilionaria*: Bhattacharya, *Fauna of West Bengal, Zool. Surv. India, State Fauna Series, Part-7*: 233.

Material examined: DWLS, Kongadhasa, 08.xii.2008 (1 ex.).

Diagnostic characters: Antennae metallic dark blue. The head, thorax, and abdomen black; vertex of head crimson; pectus and segmental bands on abdomen below and end of abdomen crimson. Wings are black. The apex of the fore wing is more produced; the hind wing is round, shot with

blue and a large white patch with its edges and veins crossing it metallic blue. The base of the wings crimson ventrally. *Wingspan*: 90 mm (M).

Distribution: India: Jharkhand (East Singhbhum), Assam, Himalayas, Jammu & Kashmir, Meghalaya, Nagaland, Uttar Pradesh and West Bengal. *Elsewhere*: Bangladesh, Myanmar, China and Vietnam.

Remark: A new record for the state

Superfamily URANIODEA
Family URANIIDAE
Subfamily MICRONIINAE
87. *Micronia aculeata* Guenee

1857. *Micronia aculeata* Guen'ee, *Hist. nat. Ins. Spec. gen. Lep.*, 10: 26.

1895. *Micronia aculeata*: Hampson, *Fauna Brit. India*, Moths, 3: 117.

1991. *Micronia aculeata*: Mandal & Ghosh, *Rec. Zool. Surv., India*, 88(3 & 4): 321.

2007. *Micronia aculeata*: Chandra & Nema, *Fauna of Madhya Pradesh (including Madhya Pradesh) State fauna Series*, 15: 385.

Material examined: DWLS, Pindra bera, 28.ix.2008 (1 ex.).

Diagnostic characters: Adult is white; head, thorax, and abdomen white, with a fuscous tinge. Wings white, closely striated with fuscous with somewhat ill-defined antemedial, medial and postmedial fuscous oblique bands; a fine marginal line and black spot at base of tail of hind wing. Underside white or fuscous. *Wingspan*: 43 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Andamans and Nicobar islands, Assam, Himachal Pradesh, Madhya Pradesh, Maharashtra, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal. *Elsewhere*: Bhutan, China, Indonesia, Myanmar and Sri Lanka.

Superfamily GEOMETROIDEA
Family GEOMETRIDAE
Subfamily GEOMETRINAE
88. *Agathia lycaenaria* (Kollar)

1844. *Geometra lycaenaria* Kollar, *Hugel's Kaschmir*, 4:486.

1895. *Agathia lycaenaria*: Hampson, *Fauna Brit. India*, Moths, 3: 485-486.

2008. *Agathia lycaenaria*: Peter Smetacek, *Bionotes*, 10(1): 9.

Material examined: DWLS, Pindra bera, 22.viii.2007 (2 exs.).

Diagnostic characters: The adult moth is emerald-green. Head, frons, thorax, and abdomen with pale brown-speckled markings. Fore wing with costa pale, speckled with brown; a grey-brown patch at base; sinuous medial and submarginal lines expanding into patches below costa at middle and

inner margin; outer margin with brown line and spot at apex and above middle. Hind wing with sinuous submarginal brown line with grey line on it, and conjoined at middle to a large brown patch on outer area, with a white spot on a pink patch at the tail. Underside white, with the patches on the lines pink. *Wingspan*: 35–44 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Himachal Pradesh, Kashmir, Maharashtra, Sikkim and Uttar Pradesh. *Elsewhere*: Bangladesh, China, Indonesia and Sri Lanka.

89. *Chlorissa distinctaria* (Walker)

1866. *Thalassodes distinctaria* Walker, *List Lep. Ins. B.M.*, 35: 1607.

1895. *Hemithea distinctaria*: Hampson, *Fauna Brit. India*, Moths, 3: 491-492.

1997. *Hemithea distinctaria*: Mondal & Ghosh, *State Fauna Series, Fauna of West Bengal, Zool. Surv. India*, Part-7: 514.

Material examined: DWLS, Pindraber, 22.viii.2007 (3 exs.).

Diagnostic characters: The adult male is grey-green; frons dark olive. Fore wing with traces of dark specks on costa; an indistinct pale sinuous antemedial line; both wings with traces of cell-specks and prominent white nearly straight postmedial line; Underside white. *Wingspan*: 35 – 40 mm.

Distribution: India: Jharkhand (East Singhbhum), Sikkim and West Bengal. *Elsewhere*: Bhutan and Tibet.

90. *Pingasa ruginaria* (Guenee)

1857. *Pingasa ruginaria* Guenee, *Spec. Gen.* 9: 278.

1895. *Pseudoterpna ruginaria*: Hampson, *Fauna Brit. India*, Moths, 3: 472-473.

Material examined: DWLS, Pindraber, 22.viii.2007 (5 exs.); 08.viii.2008 (3 exs.); 27.ix.2008 (2 exs.).

Diagnostic characters: Adult moth white, slightly irrorated with fuscous, and tinged with olive green or grey; frons with a black band. Fore wing with crenulate antemedial line; a sinuous postmedial line excurved from veins 4 to 2, the area beyond it suffused with brown, and olive. Hind wing similar, but without the antemedial waved line Underside white; the basal half of wings suffused with yellow; the outer area black, with patches of white on the outer margin; fore wing with a black band on discocellulars. *Wingspan*: 40–46 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere*: Indonesia and West Africa.

91. *Pingasa chlora* (Cramer)

1782. *Pingasa chlora* Cramer, *Pap. Exot.*, iv: 233.

1895. *Pseudoterpna chlora*: Hampson, *Fauna Brit. India*, Moths, 3: 473.

Material examined: DWLS, Pindraber, 27.ix.2008 (1 ex.).

Diagnostic characters: It differs from *P. ruginaria* in being whiter, the outer area not suffused, or very slightly suffused. The postmedial line regularly crenulated. Underside without or with hardly a trace of yellow at the base of wings; the outer black band narrower. *Wingspan:* 40–46 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere:* Indonesia and West Africa.

92. *Thalassodes quadraria* Guen.

1857. *Thalassodes quadraria* Guenee *Hist nat. Ins. Noct.*, 1: 360

1895. *Thalassodes quadraria:* Hampson, *Fauna Brit. India*, Moths, 3: 507.

2004. *Thalassodes quadraria:* Mandal & Ghosh, *Insecta: Lepidoptera: Moths, State Fauna Series 10, Fauna of Manipur (Part-2):* 536.

Material examined: DWLS, Pindrabera, 22.viii.2007 (3 exs.); 08.viii.02008 (3 exs.); 27.ix.2008 (1 ex.).

Diagnostic characters: The adult moth blue green; frons and palpi red; vertex of head white; wings semihyaline, with the costa fulvous; ante- and postmedial indistinct pale straight oblique lines. Hind wing with indistinct postmedial line, produced to a point and angled at vein 3. Both wings with the cilia ochreous at tips or wholly ochreous. Underside whitish. *Wingspan:* 32–38 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere:* Australian region, Malayan sub region, Myanmar and Sri Lanka.

Subfamily ENNOMINAE

93. *Buzura suppressaria* (Guenee)

1862. *Buzura suppressaria* Guenee, *Spec. Gen.*, 9: 20.

1895. *Biston suppressaria:* Hampson, *Fauna Brit. India*, Moths, 3: 247

Material examined: DWLS, Pindrabera, 27.ix.2008 (1 ex.).

Diagnostic characters: Adult grey with black; the head ochreous; thorax and abdomen with yellow bars. Fore wing with waved yellow antemedial band; both wings with irregularly sinuous indistinct yellow medial line, excurved beyond cell of fore wing; a marginal series of yellow spots. *Wingspan:* 75 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam, Sikkim and West Bengal. *Elsewhere:* Japan and Sri Lanka.

94. *Ophthalmitis herbidaria* (Guenee)

1858. *Ophthalmitis herbidaria* Guenee, *Phal.*1: 283.

1895. *Ophthalmodes herbidaria:* Hampson, *Fauna Brit. India*, Moths, 3: 255.

Material examined: DWLS, Pindrabera, 08.viii.2008 (5 exs.); 27.ix.2008 (4 exs.); 28.ix.2008 (4 exs.).

Diagnostic characters: Adult grass-green, grey green or yellowish green, irrorated with black; abdomen with paired black dorsal specks. Fore wing with wavy antemedial and dentate medial, postmedial and submarginal black lines. Hind wing with annulus at end of cell; dentate subbasal, medial, and submarginal lines; both wings with marginal series of black specks. Underside, with large spot at end of cell of each wing. *Wingspan:* 40–47 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam, East and N. W. Himalayas. *Elsewhere:* Sri Lanka.

95. *Semiothisa fasciata* (Fabricius)

1775. *Semiothisa fasciata* Fabricius, *Syst. Ent.*:629.

1895. *Macaria fasciata*: Hampson, *Fauna Brit. India*, Moths, 3: 202-203.

2007. *Macaria fasciata*, Chandra & Nema, *Fauna of Madhya Pradesh (including Madhya Pradesh) State fauna Series*, 15: 383

Material examined: DWLS, Pindraber, 22. viii.2007 (4 exs.); 08.viii.2008 (3 exs.); 27.ix.2008 (1 ex.).

Diagnostic characters: Adult slaty grey; palpi, antennae, and abdomen (except on dorsum) orange. Fore wing with indistinct curved and wavy antemedial line; a broad white medial band not reaching costa, with a line beyond it bent outwards below the costa and nearly met by a fuscous orange –speckled blotch from the costa; cilia white fuscous below apex. Hind wing with broad medial white band enclosing a speck at end of cell, and dark line on its outer edge, beyond which are two orange blotches irrorated with black, the lower, and often the upper, with a black patch at centre. Underside with the base of wings orange. *Wingspan:* 58–42 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Andamans and Madhya Pradesh. *Elsewhere:* Myanmar and Sri Lanka.

96. *Zamarada translucida* Moore

1887. *Zamarada translucida* Moore, *Lep. Ceyl.* 3: 432.

1895. *Zamarada translucida*: Hampson, *Fauna Brit. India*, Moths, 3: 198-199.

1991. *Zamarada translucida*: Mandal & Ghosh, *Rec. Zool. Surv., India*, 88 (3 & 4): 322.

Material examined: DWLS, Pindraber, 22.viii.2007 (2 exs.).

Diagnostic characters: Head ochreous; thorax and abdomen purplish grey, irrorated with fuscous; wings yellow hyaline, with a few dark striae; a small basal patch and broad marginal band purplish grey, irrorated with fuscous, deeply indented between veins 2 and 4 of each wings. *Wingspan:* 35 mm.

Distribution: India: Jharkhand (East Singhbhum), Meghalaya, Nagaland, Orissa, Tamil Nadu and Tripura. *Elsewhere:* Indonesia, Malaysia (western), and Sri Lanka.

Subfamily STERRHINAE

97. *Problepsis deliaria* (Guenee)

1858. *Argyris deliaria* Guenee, *Spec. Gen. Lep.* 10: 13.

1895. *Problepsis deliaria*: Hampson, *Fauna Brit. India*, Moths, 3: 462.

Material examined: DWLS, Pindrabera, 28.ix.2008 (2 exs.).

Diagnostic characters: Adult nearly pure white; sides of palpi and vertex of head black; abdomen tinged with fuscous. Fore wing with the costa fuscous; a large ocellus at end of cell, with a ring of raised silver scales on it. Hind wing with an elongate oval fuscous mark on discocellulars and below cell, with a ring of silver scales on it. Both wings with waved and curved fuscous postmedial band, with a prominent maculate band beyond it. *Wingspan*: 41 mm (M).

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere*: Myanmar and Sri Lanka.

Subfamily DESMOBATHRINAE

98. *Eumelea ludovicata* Guenee

1858. *Eumelea ludovicata* Guenee, *Spec. Gen. Lep.* 9: 393.

1895. *Eumelea rosalia f. ludovicata*: Hampson, *Fauna Brit. India*, Moths, 3: 321.

1991. *Eumelea rosalia f. ludovicata*, Mandal & Ghosh, *Rec. Zool. Surv., India*, 88 (3 & 4): 323.

Material examined: DWLS, Pindrabera, 23.viii.2008 (1 ex.).

Diagnostic characters: Adult bright orange-yellow, thickly irrorated with crimson. Fore wing with indistinct more diffused antemedial, medial and submarginal crimson bands. Hind wing with the medial and submarginal bands. Underside with crimson bands more prominent. *Wingspan*: 50–55 mm.

Distribution: India: Jharkhand (East Singhbhum), Andaman and Nicobar Islands, Assam, Sikkim, Tamil Nadu and Tripura. *Elsewhere*: Australian region, Bangladesh, Bhutan, China, Indonesia, Myanmar, Philippines and Sri Lanka.

SuperFamily DREPANOIDEA

Family DREPANIDAE

Subfamily CYCLIDINAE

99. *Cyclidia substigmara* (Hubner)

1825. *Euchera substigmara* Hubner, *Zutr. Exot. Schmett.*, 3: 29.

1892. *Euchera substigmara*: Hampson, *Fauna Brit. India*, Moths, 1: 327-328.

Material examined: DWLS, Pindrabera, 29.ix.2008 (1 ex.).

Diagnostic characters: Head black; thorax white; abdomen brownish white. Fore wing pale grey; traces of two antemedial, one medial and two postmedial pale waved lines; an oblique line from the apex

crossing the postmedial lines to centre of inner margin, beyond which the area white. Two pale brown blotches above inner margin near outer angle; a wavy submarginal line formed of dark specks with two black specks inside it at outer angle. Hind wing white; a large round black spot at end of cell; submarginal wavy line of black specks. *Wingspan*: 78 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam, Himachal Pradesh and Sikkim. *Elsewhere*: China (north), Myanmar and Nepal.

Superfamily BOMBYCOIDEA

Series BOMBYCIFORMES

Family BOMBYCIDAE

100. *Triuncina buttoni* (Westwood)

1847. *Triuncina buttoni* Westwood, *Cab. Or. Ent.*: 26.

1892. *Theophila buttoni*: Hampson, *Fauna Brit. India*, Moths, 1: 37-38.

Material examined: DWLS, Pindraber, 21.viii.2007 (1 ex.); 27.ix.2008 (1 ex.).

Diagnostic characters: The head, thorax, and abdomen grey brown. The outer margins of both wings more or less crenulate. Fore wing grey-brown, obliquely curved antemedial and medial indistinct dark lines; a dark line beyond the discocellulars; an erect postmedial line; one or two curved submarginal lines; a large chocolate apical patch. Hind wing darker; inner margin chequered brown and white; a slightly curved submarginal line. Underside of hind wing with postmedial and submarginal lines. *Wingspan*: 40 mm. (M); 50 mm (F).

Distribution: India: Jharkhand (East Singhbhum), Assam, N. W. Himalayas and Sikkim.

Family LASIOCAMPIDAE

Subfamily LASIOCAMPINAE

101. *Gastropacha pardale nandina* (Moore)

1859. *Estigena nandina* Moore, *Cat. Lep. Ins. East-India House Bd. 2*: 427.

1892. *Estigena pardalis*: Hampson, *Fauna Brit. India*, Moths, 1: 424-425.

Material examined: DWLS, Pindraber, 27.ix.2008 (1 ex.); 07.xii.2008 (2 ex.).

Diagnostic characters: Head and thorax red-brown with a dark strip on the vertex; palpi blackish; abdomen paler; fore wing red-brown, or pale ochreous-brown, suffused with fuscous and crossed by four indistinct wavy dark lines. A black speck at end of cell. Hind wing ochreous or red-brown; the inner area paler; three indistinct wavy lines, which are obsolete on inner half; a large ochreous patch may be present below the costa. *Wingspan*: 40–45 mm. (M), 70 mm (F)

Distribution: Throughout India including Jharkhand (East Singhbhum), Andamans and Nagaland. *Elsewhere*: Indonesia and Sri Lanka.

102. *Trabala vishnou* Lefebvre

1827. *Gastropacha vishnou* Lefebvre, *Zool. Journ.* Bd. 3: 207.

1892. *Trabala vishnu*: Hampson, *Fauna Brit. India*, Moths, 1: 421-422.

Material examined: DWLS, Pindrabera, 27.ix.2008 (2 exs.).

Diagnostic characters: Adult male pale apple-green; antennae ochreous brown; the disk of fore wing and inner margin of hind wing whitish; fore wing has a faint pale antemedial line curved below costa; a dark spec at end of cell; a paler straight oblique postmedial line which become medial on the hind wing.; both wings with a series of small submarginal dark spots. *Wingspan*: 48–60 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Andamans and West Bengal. *Elsewhere*: Bangladesh, Bhutan, China, Myanmar, Sri Lanka and Sundaland.

Series SATURNIIFORMES

Family BRAHMAEIDAE

103. *Brahmidia hearseyi* White

1862. *Brahmaea hearseyi* White, *Proc. Ent. Soc. Lond.* (3)1: 26.

1892. *Brahmaea hearseyi*: Hampson, *Fauna Brit. India*, Moths, 1: 31.

Material examined: DWLS, Pindrabera, 27.ix.2008 (1 ex.).

Diagnostic characters: The adult moth differs from *Brahmaea wallichi* in the abdominal markings of the upperside being narrow black and white bands; the ground colour of both wings paler; the subapical white lunules are joined into waved white lines, one or two of those nearest the base having black lines inside them. Hind wing with pale streaks between the veins from inner margin to vein 6. *Wingspan*: 125 mm (M).

Distribution: India: Jharkhand (East Singhbhum), Sikkim and Uttaranchal. *Elsewhere*: China, Japan, Myanmar and Philippines.

Family SATURNIIDAE

Subfamily SATURNIINAE

104. *Actias seleke* Hubner

1806. *Actias selene* Hubner, *Samml. Exot. Schmett.* 1: 3.

1892. *Actias selene*: Hampson, *Fauna Brit. India*, Moths, 1: 13.

Material examined: DWLS, Pindrabera; 22.viii.2007 (1 ex.); 27.ix.2008 (1 ex.); Maculakocha, 10.xii.2008 (1 ex.).

Diagnostic characters: Head, thorax, and abdomen white; palpi pink, prothorax with a dark pink band; legs pink. Fore wing very pale green, white at base; a dark pink costal fascia, darkest along subcostal

nervure; an outwardly oblique pale yellow antemedial line; two inwardly oblique slightly curved submarginal lines; a pale yellow marginal band; a dark red-brown lunule at end of cell, with a grey line on it. Hind wing similar to fore wing; the central portion of the tail pinkish. *Wingspan*: 133 -145 mm. (F)

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere*: China, Myanmar and Sri Lanka.

105. *Antheraea paphia* (Linnaeus)

1758. *Bombyx paphia* Linnaeus, *Syst. Nat.*, 1: 496, No. 4 (ed. 10)

1894. *Antheraea paphia*: Hampson, *Fauna Brit. India*, Moths, 1: 18-19.

Material examined: DWLS, Pindraber, 27.ix.2008 (1 ex.).

Diagnostic characters: The adult male differs from *Antheraea roylei* in the colour being reddish or yellowish; the costal brown and grey fascia of fore wing reaching the apex; the hyaline and ocellated spots much larger, the inner lunule and postmedial line bright pink; the submarginal line of hind wing much nearer the margin; no marginal yellow line. *Wingspan*: 150 mm (M).

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere*: China and Sri Lanka

Superfamily SPHINGOIDEA

Family SPHINGIDAE

Subfamily SPHINGINAE

Tribe ACHERONTIINI

106. *Acherontia lachesis* (Fabricius)

1798. *Sphinx lachesis* Fabricius, *Syst. Ent. Suppl.*, : 434.

1937. *Acherontia lachesis*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 55.

Material Examined: DWLS, Pindra bera, 05.viii.2008 (2 exs.); 06.viii.2008 (2 exs.); 07.viii.2008 (2 exs.).

Diagnostic characters: Head and thorax blackish, powdered with white, yellow and blue-grey scales. The skull mark on the dorsum of the thorax more conspicuous. Fore wing blackish, powdered with white, yellow and bluish grey scales. Hind wing upper side with the basal third marked with black. Abdomen black with a broad, interrupted, grey-blue dorsal stripe and small yellow side patches on the four proximal segments. Underside of both wings yellow. *Wingspan*: 102-132 mm.

Distribution: India: Jharkhand (East Singhbhum), Andaman Islands, Madhya Pradesh, Orissa and West Bengal and almost throughout the rest of the mainland except the North-West Himalaya. *Elsewhere*: Bangladesh, Bhutan, China, Java up to Southern Mōluccas in the farther east, Malaysia, Myanmar, Pakistan and Sri Lanka.

107. *Acherontia styx styx* (Westwood)

1844. *Sphinx* (*Acherontia*) *styx* Westwood, *Cab. Orient. Ent.*, : 88, t. 42. f. 3.

1937. *Acherontia styx styx*, Bell & Scott, *Fauna Brit. India*, Moths, 5: 58.

Material Examined: DWLS, Pindra bera, 05.viii.2008 (2 exs.); 06.viii.2008 (2 exs.); 07.viii.2008 (1 ex.).

Diagnostic characters: distinguished from *Acherontia lachesis* by the basal third of hind wing upper side being immaculate instead of marked with black. Skull-mark on thorax is less conspicuous. Fore wing with tawny-russet streaks. Antennae much more slender and longer in both sexes. Abdomen bears yellow side-patches well extensive. Fore tibiae with few spines. *Wingspan*: 90–130 mm.

Distribution: India: Jharkhand (East Singhbhum), Bihar, Madhya Pradesh, Orissa, West Bengal, and throughout the rest of the mainland. *Elsewhere*: Bangladesh, Bhutan, Myanmar, Pakistan and Sri Lanka.

108. *Agrius convolvuli convolvuli* (Linnaeus)

1758. *Sphinx convolvuli* Linnaeus, *Syst. Nat.*, ed. 10 : 490.

1937. *Herse convolvuli convolvuli*, Bell & Scott, *Fauna Brit. India*, Moths, 5: 61.

Material examined: DWLS, Pindra bera, 5.viii.2008 (2 exs.).

Diagnostic characters: Adult male female: upperside grey; abdomen with a narrow brown dorsal stripe, a broad grey stripe on each side of it, and with narrow white and broader pink and black side patches. Fore wing with many narrow whitish lunulate bands, obsolescent on some specimens. Hind wing pale grey with broad subbasal, two median and post median fuscous transverse bands. Underside similar. *Wingspan*: 80-120 mm.

Distribution: India: Jharkhand (East Singhbhum), Orissa, Manipur, West Bengal, and throughout the rest of the mainland. *Elsewhere*: Eastern hemisphere except the higher latitudes, Europe and rarely in England, Siberia.

Tribe SPHINGINI

109. *Meganoton nyctiphanes* (Walker)

1856. *Macrosila nyctiphanes* Walker, *List Specimens lepid. Insects Colln Br. Mus.*, 8: 209.

1937. *Meganoton nyctiphanes*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 73.

Material Examined: DWLS, Pindrabera, 06.viii.2008 (1 ex.); 27.ix.2008 (3 exs.); 2 exs., 04.xii.2008 (2 exs.).

Diagnostic characters: Adult male and female: Upperside dark brown. Thorax with black streaks at sides nearly meeting on the dorsal line; head, thorax, and abdomen white below; abdomen with white segmental streaks at sides. Fore wing variegated with various shades of brown and grey scales

and crossed by numerous waved dark lines, of which about six are median and submarginal; a pale small spot in end of cell; black streaks from the cell under R^1 and M^1 not reaching outer margin, which is undulate. Hind wing dark brown with a series of pale spots across the disc, cilia brown and whitish. *Wingspan*: 105-125 mm.

Distribution: India: Jharkhand (East Singhbhum), Andaman Islands, East Himalaya and Southern peninsula. *Elsewhere*: Malaya, Myanmar and Sri Lanka.

110. *Psilogamma menepbron menepbron* (Cramer)

1780. *Sphinx menepbron* Cramer, *Pap. Exot.*, 3 : 164.

1937. *Psilogamma menepbron menepbron*: Bell & Scott, *Fauna Brit. India, Moths*, 5: 77.

Material examined: DWLS, Pindra bera, 05.viii.2008 (1 ex.); 06.viii.2008 (1 ex.).

Diagnostic characters: Head, thorax and abdomen and fore wing grey; dark brown bands along sides of palpi and thorax meeting on metathorax, where there are blue and yellow scales; abdomen with a blackish dorsal stripe and brown subdorsal segmental patches. Fore wing with dark oblique lines from costa; hind wing brown, with a black patch at anal angle. Rainy season specimens are usually dark. *Wingspan*: 82-138 mm.

Distribution: India: Jharkhand (East Singhbhum), Orissa, Madhya Pradesh, West Bengal and rest of the mainland. *Elsewhere*: China and eastwards to the Solomon Islands.

Subfamily MACROGLOSSINAE

Tribe MACROGLOSSINI

111. *Acosmeryx anceus subdentata* Rothschild & Jordan.

1903. *Acosmeryx anceus subdentata* Rothschild & Jordan, *Revision of Sphingidae*. 528.

1937. *Acosmeryx anceus subdentata*: Bell & Scott, *Fauna Brit. India, Moths*, 5: 294.

Material examined: DWLS, Pindra bera, 24.ix.2008 (1 ex.).

Diagnostic characters: The smallest species of the genus, and markings different from those of all the other species. Fore wing distinctly angulate at R^3 , often with traces of teeth. Upper side tawny cinnamon to chestnut-brown; an oblique distal band diffuse posteriorly. Hind wing fuscous. *Wingspan*: 70-88 mm.

Distribution: India: Jharkhand (East Singhbhum), Sikkim, West Bengal, and Southern Peninsula. *Elsewhere*: Bangladesh, Bhutan and Malay.

112. *Deilephila hypothous hypothous* (Cramer)

1780. *Sphinx hypothous* Cramer, *Pap. Exot.*, 3 : 165.

1937. *Deilephila hypothous hypothous*: Bell & Scott, *Fauna Brit. India, Moths*, 5: 271.

Material examined: DWLS, Pindra bera, 05.viii.2008 (2 exs.); 06.viii.2008 (2 exs.); 07.viii.2008 (1 ex.).

Diagnostic characters: Head and collar of thorax being uniformly dark purplish-brown; thorax and two segments of a abdomen dark olive-green with a white fringe to the first segment. Fore wing with a white spot at apex on upper side and at end of cell on underside. *Wingspan:* 110–124 mm.

Distribution: India: Jharkhand (East Singhbhum), Andaman Islands, Assam, Meghalaya, Sikkim, Southern Peninsula, and West Bengal. *Elsewhere:* Bhutan, China, Malaya, Myanmar and Sri Lanka.

113. *Hippotion boerhaviae* (Fabricius)

1775. *Sphinx boerhaviae* Fabricius, *Syst. Ent.*, : 542.

1937. *Hippotion boerhaviae*. Bell & Scott, *Fauna Brit. India*, Moths, 5: 424.

Material examined: DWLS, Pindra bera, 05.viii.2008 (2 exs.); 06.viii.2008 (2 exs.); 07.viii.2008 (2 exs.); 27.ix.2009 (3 exs.).

Diagnostic characters: Hind wing red, base not black; a clayish subanal patch. *Wingspan:* 57–60 mm.

Distribution: India: Jharkhand (East Singhbhum), Andhra Pradesh, Gujarat, Madhya Pradesh, Maharashtra, Orissa, Sikkim, Southern Peninsula, West Himalaya and West Bengal. *Elsewhere:* Bhutan, China (south), Malaya, Pakistan, Philippines and Sri Lanka.

114. *Macroglossum belis* (Linnaeus)

1776. *Sphinx belis* Linnaeus, *Syst. Nat.* ed. 10: 493.

1937. *Macroglossum belis*. Bell & Scott, *Fauna Brit. India*, Moths, 5: 365.

Material Examined: DWLS, Pindrabera, 27.ix.2008 (3exs.); Maculakocha, 02.x.2008 (2exs.).

Diagnostic characters: Adult moth drab-grey colour; abdomen with three cadmium-yellow side-patches, separated from each other; fore wing with two antemedian lines, interspace filled up, but the band not prominent; first and second discal line evenly curved costad in front, the second heavier than the first; dark subapical patches not prominent. Hind wing with cadmium-yellow median band, basal abd distal border blackish-brown, the border somewhat shaded off along the yellow band. *Wingspan:* 50–60 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam, Gujarat, Madhya Pradesh, Maharashtra, Sikkim, Southern peninsula, Uttar Pradesh, Uttarakhand and West Bengal. *Elsewhere:* Bangladesh, Bhutan, China, Japan, Pakistan and Sri Lanka.

115. *Theretra alecto alecto* (Linnaeus)

1758. *Sphinx alecto* Linnaeus, *Syst. Nat.* ed. 10: 492.

1937. *Theretra alecto alecto*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 440.

Material examined: DWLS, Pindrabera, 22.viii.2007 (3exs.); 27.ix.2008 (7exs.).

Diagnostic characters: Head and thorax dark brown, abdomen pale brown; antennae and side of head and thorax whitish; abdomen with a black side batch on first segment and three dorsal lines. Fore wing pale brown with a dark speck at end of cell. Hind wing pink, black at base, anal angle flesh colour. Under side flush colour. *Wingspan:* 85 mm.

Distribution: India: Jharkhand (East Singhbhum), Madhya Pradesh, South India, Western and Eastern Himalaya and West Bengal. *Elsewhere:* Afghanistan, Bhutan, Indonesia, Malaysia, Myanmar, Northward to Formosa and eastward to the key Islands, Pakistan, Sulawesi and Taiwan.

116. *Theretra clotho clotho* (Drury)

1773. *Sphinx clotho* Drury, *Illustr. Ins.*, 2: 48.

1937. *Theretra clotho clotho*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 434.

Material examined: DWLS, Pindra bera, 05.viii.2008 (3exs.); 06.viii.2008 (1 ex.); 07.viii.2008 (2exs.).

Diagnostic characters: Head and thorax greenish brown, with a white lateral stripe from pulpus to end of thorax. Fore wing brown with an apical line joining a discal line with which it forms a single dark line from apex to inner margin. Abdomen brown with a black side patch at base. Hind wing black, shading to brown at apex. Underside ochreous. *Wingspan:* 80–100 mm.

Distribution: India: Jharkhand (East Singhbhum), Andaman Island, Orissa, West Bengal, and almost throughout the mainland except North-West Himalaya. *Elsewhere:* Bhutan, China, Malaya, Myanmar, Philippines and Sri Lanka.

117. *Theretra nessus* (Drury)

1773. *Sphinx nessus* Drury, *Illustr. Exot. Ins.*, 2 : 46.

1937. *Theretra nessus*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 434.

Material examined: DWLS, Maculakocha, 27.ix.2008 (4 exs.); 28.ix.2008 (1 ex.) ; 4 exs., 30.ix.2008 (4 exs.); 01.x.2008 (2 exs.) ; Pindra bera, 07.xii.2008 (2 exs.).

Diagnostic characters: A very large; head and thorax olive green, thorax suffused with ferruginous; a deep orange dorso-lateral streak; abdomen with a broad, shining golden stripe. Costa of fore wing green up to SC¹, the green spreading over front half of the base of wing. Hind wing base black, shading to dusky brown at apex. Underside suffused with reddish ochreous. *Wingspan:* 90–132 mm.

Distribution: India: Jharkhand (East Singhbhum), Madhya Pradesh, South India, West and East Himalaya and West Bengal. *Elsewhere:* Australia, Bangladesh, Bhutan, Hong Kong, Japan, Malay, Myanmar, Pakistan, Papuaasia and Sri Lanka.

118. *Theretra oldenlandiae oldenlandiae* (Fabricius)

1775. *Sphinx oldenlandiae* Fabricius, *Syst. Ent.*, : 542.

1937. *Theretra oldenlandiae oldenlandiae*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 448.

Material examined: DWLS, Pindra bera, 05.viii.2008 (2 exs.); 06.viii.2008 (1ex.); 07.viii.2008 (2 exs.).

Diagnostic characters: Head and thorax brown; a pale lateral stripe from palpus to end of thorax. Fore wing greyish-brown. Hind wing dusky with a pale submarginal band not reaching apex. Abdomen with double white dorsal lines. *Wingspan:* 54–70 mm.

Distribution: India: Jharkhand (East Singhbhum), Madhya Pradesh, South India, West and East Himalaya and West Bengal. *Elsewhere:* Bhutan, Japan, Myanmar, Pakistan, Papua and Sri Lanka.

119. *Pergesa acteus* (Cramer)

1779. *Sphinx acteus* Cramer, *Pap. Exot.*, 3 : 93.

1937. *Rhyncholaba acteus*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 462.

Material examined: DWLS, Pindra bera, 22.viii.2007 (1ex.); 27.ix.2008 (1ex.).

Diagnostic characters: Head, thorax and abdomen purplish grey; vertex of head and a dorso-lateral stripe on thorax and abdomen green. Fore wing purplish grey; a green oblique central area from apex to inner margin. Hind wing fuscous with an anal patch and submarginal band ochreous. *Wingspan:* 64–70 mm.

Distribution: Indian: Jharkhand (East Singhbhum), West Bengal, East and West Himalayas, and almost throughout the Peninsula. *Elsewhere:* Bhutan, China (south), Myanmar to Moluccas and Sri Lanka.

Subfamily SMERINTHINAE

Tribe SMERINTHINI

120. *Polyptychus dentatus* (Cramer)

1777. *Sphinx dentatus* Cramer, *Pap. Exot.*, 2 : 42.

1937. *Polyptychus dentatus*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 169.

Material examined: DWLS, Pindra bera, 27.ix.2008 (1 ex.).

Diagnostic characters Whitish-cinereous. The post-discal and discal lines of fore wing parallel, straight, the former not curved distal beyond R_2 ; the dented line between them distinct. *Wingspan:* 110 mm

Distribution: India: Jharkhand (East Singhbhum), Madhya Pradesh, Maharashtra, Uttar Pradesh, West Bengal, Eastern and Northwest Himalayas, Southern peninsula. *Elsewhere:* China, Pakistan and Sri Lanka.

Tribe AMBULYCINI

121. *Ambulyx subocellata* Felder, 1874

1874. *Ambulyx subocellata* Felder, *Reise Ost. Fregatte Novara*, Lep. t. 76.

1937. *Oxyambulyx subocellata*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 136.

Material examined: DWLS, Pindra bera, 22.viii.2007 (3 exs.); 27.ix.2008 (3 exs.).

Diagnostic characters: The adult moth easily distinguished from all others of the genus by the thinness of the thoracic stripe over the tegula and by the series of subbasal spots on fore wing upper side. Body reddish brown, thoracic stripe very thin. The fore wing with a series of four subbasal spots, green edged with white. Hind wing yellow pale or reddish brown. *Wingspan:* 90–110 mm

Distribution: India: Jharkhand (East Singhbhum), Adaman Islands and Southern peninsula. *Elsewhere:* China (south), Malaya and Sri Lanka.

122. *Ambulyx substrigilis aglaia* Jordan

1923. *Oxyambulyx substrigilis aglaia* Jordan, *Novit. Zool.*, 26(1): 190-192.

1937. *Oxyambulyx substrigilis aglaia*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 128.

Material examined: DWLS, Pindra bera, 27.ix.2008 (5 exs.).

Diagnostic characters: The moth is easily distinguished by the large black or tawny basal patch of hind wing upper side. Dorsal line of abdomen distinct. *Wingspan:* 105–120mm.

Distribution: India: Jharkhand (East Singhbhum) and Southern part of India.

Tribe SPHINGULINI

123. *Dolbina inexacta* Walker

1856. *Dolbina inexacta* Walker, *List Spec. Lepid. Insects Colln Br. Mus.* 8: 208.

1937. *Dolbina inexacta*: Bell & Scott, *Fauna Brit. India*, Moths, 5: 95.

Material examined: DWLS, Pindra bera, 24.ix.2008 (2 exs.); 25.ix.2008 (3 exs.); 26.ix.2008 (2 exs.).

Diagnostic characters: Head and thorax dark brown grizzled with white; thorax with some white marks at sides and round vertex; abdomen golden-brown above brown at sides, a black streak on the dorsum of each segment. Fore wing variegated with grey, dark brown and golden-brown. Hind wing brown. Underside of abdomen with large black and white mesial patches. *Wingspan:* 68–75 mm.

Distribution: India: Jharkhand (East Singhbhum), East and West Himalayas and South India. *Elsewhere:* China.

Superfamily NOCTUOIDEA

Family ARCTIIDAE

Subfamily ARCTIINAE

124. *Amsacta sara* (Swinhoe)

1889. *Aloa sara* Swinhoe, *Proc. Zool. Soc. London*: 404.

1876. *Aloa moorei*, Butler, *Cat. Ent.* ii: 23.

1894. *Cretonotus moorei*, Hampson, *Fauna Brit. India*, Moths, 2: 27.

Material examined: DWLS, Pindra bera, 05.xii.2007 (1ex.).

Diagnostic characters: Head white, with a crimson line behind it; antennae black with the basal joint scarlet; thorax white; abdomen scarlet above, with a series of black dorsal spots, white below, with two series of black lateral spots; wings white; fore wing with a scarlet fascia along the costa; a black speck at each angle of cell; hind wing with a black spot at end of cell and submarginal series of four. The form *sara* has black spots prominent and a pair on the tegulae. *Wingspan:* 45 mm.

Distribution: India: Jharkhand (East Singhbhum), Maharashtra and Uttar Pradesh. *Elsewhere:* Pakistan.

125. *Amerila astreus* (Drury)

1773. *Sphinx astreus* Drury, *I11. Exot. Ent.*, 2: 50.

1894. *Pelochyta astrea*: Hampson, *Fauna Brit. India, Moths*, 2: 38.

Material examined: DWLS, Pindra bera, 21.viii.2007 (2exs.); 08.viii.2008 (2exs.); 27.ix.2009 (2exs.).

Diagnostic characters: Head and thorax whitish fuscous; the head with two black spots; collar with two pairs of spots; fore wing hyaline, with two black spots at the base; the margins, apical area, and a band on discocellulars pale fuscous. Hind wing hyaline, with a marginal fuscous band antennae red-brown with the basal joint crimson. Legs crimson, with the outer side of the femora and tibiae whitish fuscous. *Wingspan:* 55–65 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Uttar Pradesh. *Elsewhere:* China (west), Myanmar, New Guinea, New Pomeria, Philippines, and Sri Lanka.

126. *Cretonotos gangis* (Linnaeus)

1763. *Phalena gangis* Linnaeus, *Amoen. Acad.*, 6: 410

1894. *Cretonotus interruptus*: Hampson, *Fauna Brit. India, Moths*, 2: 26-27.

Material examined: DWLS, Pindra bera, 08.xii.2008 (2 exs.).

Diagnostic characters: Head, thorax, and fore wing pale pinkish ochreous; palpi and legs smoky black, the femora yellow; a broad dorsal band on thorax; abdomen crimson above, with dorsal and lateral series of black spots. Fore wing with a black fascia below median nervure; Hind wing pale or dark fuscous. The variety *continuatus* has additional black streaks on the fore wing below the costa, in cell, above inner margin, and in the marginal interspaces. *Wingspan:* 42 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere:* Myanmar and Sri Lanka.

127. *Cretonotos transiens* (Walker)

1855. *Spilosoma transiens* Walker, *List Lep. Het. Br. Mus.*, 3: 675.

1894. *Phissama transiens*: Hampson, *Fauna Brit. India, Moths*, 2: 29 - 30.

1901. *Cretonotus transiens*: Hampson, *Cat. Lep. Phal. Brit. Mus.*, 3: 334.

Material examined: DWLS, Pindraber, 21.viii.2007 (5 exs.); 22.viii.2007 (8 exs.); 23.viii.2007 (2 exs.); 08.viii.2008 (4 exs.).

Diagnostic characters: Head and thorax dirty white; palpi and femora orange; abdomen orange above, white below with dorsal, lateral, and ventral series of black spots. Fore wing very pale fuscous; the costa and base of inner margin whitish; black spots in and just beyond each angle of cell. Hind wing pale fuscous. *Wingspan:* 50–60. mm.

Distribution: India: Jharkhand (East Singhbhum), Assam, Arunachal Pradesh, Himachal Pradesh, Karnataka, Manipur, Meghalaya, Punjab, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal. *Elsewhere:* Bangladesh, Bhutan, China, Indonesia, Myanmar and Philippines.

128. *Estigmene biguttata* (Walker)

1855. *Aloa biguttata* Walker, *List. Lep. Het. B. M.*, 3: 707.

1894. *Alphaea biguttata*: Hampson, *Fauna Brit. India*, Moths, 2: 23.

Material examined: DWLS, Pindraber, 27.ix.2008 (2 exs.).

Diagnostic characters: Head and thorax black; vertex of head with a white band; tegulae white, with a black spot; abdomen crimson above, black below, with a series of short dorsal black bands; femora crimson. Fore wing black; a white fascia being broader and elbowed at vein 2. Hind wing with the cilia black. *Wingspan:* 40–46.

Distribution: India: Jharkhand (East Singhbhum, Paresnath), Karnataka, Sikkim and Tamil Nadu. *Elsewhere:* Sri Lanka.

129. *Estigmene vittata* (Moore)

1879. *Rajendra vittata* Moore, *Proc. Zool. Soc.*:396.

1894. *Alphaea vittata*: Hampson, *Fauna Brit. India*, Moths, 2: 23.

1919. *Estigmene vittata*: Strand, *Lep. Catalogus, Pars.22*.p: 258.

Material examined: DWLS, Pindraber, 21.viii.2007 (2 exs.); 27.ix.2008 (2 exs.).

Diagnostic characters: Head and thorax black; vertex of head with a white band; tegulae white, with a black spot; abdomen crimson above, black below, with a series of short dorsal black bands; femora crimson. Fore wing black; a white fascia from the base to the apex describing an almost even curve. Hind wing crimson, with a black spot at end of cell and submarginal series of four spots, the two towards apex sometime obsolete; cilia white. *Wingspan:* 35 mm.

Distribution: India: Jharkhand (East Singhbhum), Kerala, Tamil Nadu and West Bengal. *Elsewhere:* Myanmar.

130. *Pericallia ricini* (Fabricius)

1775. *Bombyx ricini* Fabricius, *Syst. Ent.* : 553.

1894. *Arctia ricini*: Hampson, *Fauna Brit. India*, Moths, 2: 17 – 18.

1997. *Olepa ricini*: Ghosh & Chaudhury, *Fauna of West Bengal, Zool. Surv. India, Part-7*: 257.

Material examined: DWLS, Pindrabera, 21.viii.2007 (2 exs.).

Diagnostic characters: Head and thorax dark grey brown; collar fringed with crimson and with a pair of pale-ringed black spots; tegulae with two pairs and vertex of thorax with one similar spot. Abdomen crimson, with a series of short dorsal black bands and lateral spots. Fore wing fuscous brown, with numerous pale-ringed spots in interspaces. Hind wing crimson, with antemedial, medial, post medial and marginal bands and more or less conjoined blotches. *Wingspan*: 64–67 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere*: Sri Lanka.

Subfamily LITHOSIINAE

131. *Chionaema amabilis* (Moore)

1877. *Bizone amabilis* Moore, *Proc. Zool. Soc. London*: 597.

1894. *Cyana amabilis*: Hampson, *Fauna Brit. India, Moths*, 2: 57.

Material examined: DWLS, Maculakocha, 25.ix.2008 (3 exs.).

Diagnostic characters: The adult similar to *cyana peregrina* but differ in having the antemedial band of fore wing excurved below the costa; the postmedial band incurved and somewhat irregular. *Wingspan*: 30–32 mm.

Distribution: India: Jharkhand (East Singhbhum) and Andaman and Nicobars.

132. *Chionaema bianca* (Walker)

1856. *Bizone bianca* Walker, *List Lep. Ins. Brit. Mus.*, 7: 1684.

1894. *Cyana bianca*: Hampson, *Fauna Brit. India, Moths*, 2: 58.

Material examined: DWLS, Pindra bera, 27.ix.2008 (2 exs.); 1 ex., 07.xii.2008 (1 ex.).

Diagnostic characters: Head and thorax white; palpi crimson. Fore wing white, the scarlet bands being broader; the black edges to the ante and postmedial bands broad and prominent; the black spots large and prominent. Hind wing deeper crimson. *Wingspan*: 35–38 mm.

Distribution: India: Jharkhand (East Singhbhum), Andamans and Sikkim. *Elsewhere*: Myanmar.

133. *Macrobrochis gigas* (Walker)

1854. *Lithosia gigas* Walker, *Cat. Lep. Het. Brit. Mus.*, 2: 494.

1894. *Macrobrochis gigas*: Hampson, *Fauna Brit. India, Moths*, 2: 65-66.

Material examined: DWLS, Pindrabera, 29.ix.2008 (1 ex.).

Diagnostic characters: Head and collar orange; thorax black above with metallic green tinge, orange below; the tegulae striped with orange; abdomen greenish black, the extremity and ventral surface orange; a series of lateral white marks; fore wing black with a green tinge; a small white spot at the base, with a larger one beyond it; a spot in end of cell and another below it. Hind wing with the basal half white, the outer half black. *Wingspan:* 80 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam and Sikkim. *Elsewhere:* Bhutan.

134. *Miltochrista cuneonotata* (Walker)

1855. *Ammatho cuneonotata* Walker, *List. Lep. Insect. Brit. Mus.* 3.: 759.

1894. *Miltochrista cuneonotata*: Hampson, *Fauna Brit. India, Moths*, 2: 117.

Material examined: DWLS, Pindrabera, 27.ix.2008 (2 exs.).

Diagnostic characters: Head, thorax, and abdomen ochreous, generally suffused with crimson. Wings ochreous or suffused with crimson. Fore wing with some basal spots and subbasal fuscous streaks, the veins of the outer area prominently streaked with crimson; a curved and angulated postmedial line; costa and cilia fuscous. *Wingspan:* 40 mm

Distribution: India: Jharkhand (East Singhbhum), Arunachal Pradesh, Meghalaya, Nagaland, Sikkim and West Bengal. *Elsewhere:* Indonesia, Malaya, Philippines, Singapore and Sri Lanka.

Subfamily SYNTOMINAE

135. *Amata cyssea* (Cramer)

1782. *Sphinx cysseus* Cramer, *Pap. Exot.*, 4.: 124.

1894. *Syntomis cyssea*: Hampson, *Fauna Brit. India, Moths*, 1: 213.

1933. *Amata cyssea*: Seitz, *Macrolep. World*, 10: 68.

Material examined: DWLS, Pindrabera, 27.ix.2008 (3 exs.).

Diagnostic characters: Collar yellow; the spots of both wings usually smaller than in *Syntomis bicincta* and often yellowish and with an extra spot between the two medial ones of fore wing. In some specimens there is a small patch of white cilia near the apex of fore wing. *Wingspan:* 30–35 mm.

Distribution: India: Jharkhand (East Singhbhum), Andhra Pradesh, Jammu & Kashmir, Himachal Pradesh, Madhya Pradesh, Maharashtra, Nagaland, Sikkim, Tripura and West Bengal. *Elsewhere:* Nepal, Pakistan, Palearctic region and Sri Lanka.

136. *Syntomis passalis* Fabricius

1856. *Syntomis passalis* Fabricius, *Sp. Ins.* ii.: 159.

1894. *Syntomis passalis*: Hampson, *Fauna Brit. India, Moths*, 1: 219.

Material examined: DWLS, Pindrabera, 27.ix.2008 (3 exs.).

Diagnostic characters: Some traces of orange-red on vertex of thorax; bands of abdomen orange-red and rather narrow. Wings black with purple. Fore wing with some orange-red at base and along inner margin; the hyaline spot small, one subbasal, two medial, one subapical, and two submarginal. Hind wing with one small submarginal spot. *Wingspan:* 40 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere:* Sri Lanka.

137. *Syntomoides imaon* Cramer

1856. *Syntomoides imaon* Cramer, *Pap. Exot.* 3: 94.

1894. *Syntomoides imaon*: Hampson, *Fauna Brit. India*, Moths, 1: 210.

Material examined: DWLS, Pindrabera, 22.viii.2007 (3 exs.); Maculakocha, 27.viii.2007 (2 exs.).

Diagnostic characters: Frons and collar yellow; metathorax with a yellow streak; abdomen with the first yellow band sometimes obsolescent. Fore wing with the hyaline patches large, one filling the cell, another nearly the whole interno-median interspace, one at junction of vein 2 and 3, two subapical and two submarginal. Hind wing with a subbasal hyaline patch extending hardly, or not at all, beyond the cell. Tips of antennae and proximal joints of tarsi white. The spots of the fore wing vary considerably in size. *Wingspan:* 28–34 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Meghalaya and Sikkim. *Elsewhere:* Indonesia, Myanmar and Sri Lanka.

Family NOCTUIDAE

Subfamily CATOCALINAE

138. *Acanthodelta janata* (Linnaeus)

1758. *Geometra janata* Linnaeus, *Syst. Nat.*, 10 : 527.

1985. *Achaea janata*: Kobes, *Heterocera Sumatrana*, Band, 4: 39.

Material examined: DWLS, Pindrabera, 05.viii.2008 (3 exs.); 27.ix.2008 (1 ex.).

Diagnostic characters: The adult moth is medium to larger in size. The fore wings are brownish-grey and hind wing grey with bright black and three white spots along the margin and an inner unbroken white band. *Wingspan:* 55–60 mm.

Distribution: India: Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere:* Africa, Australia, China, Europe, Japan, Mauritius, Myanmar, New Zealand, Sri Lanka, Taiwan and Thailand.

139. *Anisoneura hypocyanea* Guenee

1775. *Anisoneura hypocyanea* Guenee, *Noct.*, 3 : 162

1894. *Anisoneura hypocyanea*: Hampson, *Fauna Brit. India*, Moth, 2: 456.

Material examined: DWLS, Pindrabera, 05.viii.2008 (3 exs.); 06.viii.2008 (1 ex.); 07.viii.2008 (1 ex.); 08.viii.2008 (1 ex.); Maculakocha, 15.viii.2008 (1 ex.); 16.viii.2008 (1 ex.).

Diagnostic characters: Adult male red brown, suffused with fuscous; the head and collar black; two black bars on thorax. Fore wing with a short irregularly dentate subbasal line; a very irregularly dentate antemedial line, oblique and prominent below cell; a dark patch in end of cell; patches of yellow and black scales beyond and below end of cell; a highly crenulate postmedial oblique line; an indistinct crenulate submarginal line. Hind wing with two indistinct antemedial line; a crenulate medial black line; a nearly straight postmedial line, with an indistinct line beyond it. Underside of fore wing with crenulate postmedial line; hind wing suffused with purple and with some white on the veins. *Wingspan:* 110–120 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam, N. W. Himalayas and Sikkim. *Elsewhere:* Japan.

140. *Anua coronata* (Fabricius)

1775. *Anua coronata* Fabricius, *Syst. Ent.* : 596.

1894. *Ophiusa coronata*: Hampson, *Fauna Brit. India*, Moths, 2: 502-503.

1993. *Ophiusa coronata*: Gujrati *et al.*, *J. Insect science*, 2: 264-266.

Material examined: DWLS, Pindraber, 05.viii.2008 (3 exs.); 06.viii.2008 (4 exs.); 07.viii.2008 (5 exs.); 08.viii.2008 (4 exs.).

Diagnostic characters: Head and thorax pale reddish brown; abdomen orange, the segments fringed with black. Fore wing irrorated with dark specks; a short subbasal dark line; an outwardly oblique, slightly sinuous, antemedial line; the orbicular small, round, and grey; the reniform large and chocolate, ringed with grey or broken up into grey or chocolate grey ringed spots; a slightly inwardly oblique postmedial line; a paler submarginal line slightly bent below the costa. Hind wing orange, with broad medial and submarginal fuscous black bands not reaching inner margin, the latter widest towards costa. Underside orange; the costal and outer areas of both wings dark-speckled, and with slight reddish suffusion; a black patch near outer angle of fore wing. *Wingspan:* 78–95 mm

Distribution: Throughout India including Jharkhand (East Singhbhum), Andaman & Nicobar Islands and Madhya Pradesh. *Elsewhere:* Australia, Indonesia, Myanmar and Sri Lanka.

141. *Anua cuprea* (Moore)

1867. *Anua cuprea* Moore, *Proc. Zool. Soc.*: 74.

1894. *Ophiusa cuprea*: Hampson, *Fauna Brit. India*, Moths, 2: 497.

Material examined: DWLS, Pindraber, 27.ix.2008 (2 exs.).

Diagnostic characters: Head, thorax, and fore wing fuscous or brownish grey and the latter with indistinct short waved subbasal line; the orbicular a speck, reniform with rufous edge; the submarginal line angled below costa. The abdomen and hind wing brownish fuscous, the latter with the basal area palest; the cilia pale in colour. *Wingspan:* 58 mm.

Distribution: India: Jharkhand (East Singhbhum), Bengal, Central India, Northwest and Eastern Himalayas. *Elsewhere:* Taiwan.

142. *Anua trapezium* (Guenee)

1852. *Anua trapezium* Guenee, *Noct.* 3: 231.

1894. *Ophiusa trapezium*: Hampson, *Fauna Brit. India*, Moths, 2: 504.

Material examined: DWLS, Pindra bera, 27.ix.2008 (1 ex.).

Diagnostic characters: Head, thorax, and fore wing fuscous or brownish grey. Fore wing with indistinct short waved subbasal line; an inwardly oblique, slightly sinuous, rufous antemedial line; the orbicular a speck; reniform with rufous edge; the postmedial line inwardly oblique and slightly curved; Abdomen and hind wing brownish fuscous, the latter with the basal area palest; the cilia pale. *Wingspan*: 66 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Assam, Kerala and Tamil Nadu. *Elsewhere*: Sri Lanka

143. *Anua triphaenoides* (Walker)

1858. *Anua triphaenoides* Walker, *Cat. Lep. Het. B.M.*, 14: 1358.

1888. *Minucia triphaenoides*: Cotes & Swinhoe, *Cat. Moths of India*: 400

1894. *Ophiusa triphaenoides*: Hampson, *Fauna Brit. India*, Moths, 2: 505.

Material examined: DWLS, Pindrabera, 27.ix.2008 (1 ex.).

Diagnostic characters: Head and thorax grey; abdomen fuscous. Fore wing violaceous grey irrorated with dark scales; the costa ochreous; an antemedial, outwardly-oblique, slightly curved, pale and rufous line; the orbicular a black speck'. *Wingspan*: 60 mm.

Distribution: India: Jharkhand (East Singhbhum, Ranchi), Assam, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Sikkim, Uttar Pradesh and West Bengal. *Elsewhere*: Hong Kong, Myanmar (south) and Taiwan of Oriental and also Palaearctic Regions.

144. *Artena dotata* (Fabricius)

1794. *Artena dotata* Fabricius, *Ent. Syst.* III, 2: 55.

1894. *Ophiusa dotata*: Hampson, *Fauna Brit. India*, Moths, 2: 496-497.

Material examined: DWLS, Pindrabera, 20.viii.2007 (3 exs.); 05.viii.2008 (3 exs.); 06.viii.2008 (4 exs.); 07.viii.2008 (5 exs.); 08.viii.2008 (4 exs.).

Diagnostic characters: The adults are bronze-brown. Fore wing with antemedial and postmedial line very oblique, the former not waved; the reniform broken up into two spots; a prominent marginal grey band with a waved line on it. Hind wing with prominent medial incomplete white band; the margin and cilia whitish. *Wingspan*: 45 - 48 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh and Manipur. *Elsewhere*: Indonesia, Japan and Taiwan.

145. *Chalciope mygdon* (Cramer)

1777. *Chalciope mygdon* Cramer, *Pap. Exot.*, 2 : 94.

1894. *Grammodes mygdon*: Hampson, *Fauna Brit. India*, Moths, 2: 531.

Material examined: DWLS, Pindrabera, 05.viii.2008 (3 exs.).

Diagnostic characters: The adult is brownish, and head, thorax dark red-brown; abdomen grayish fuscous. Fore wing purplish grey; the costa ochreous; a large red-brown patch occupying the whole wing except the costal and outer areas and crossed by an oblique ochreous band, its costal and outer edges bordered by reddish ochreous, their angle almost joined by a red-brown streak from the apex. Hind wing fuscous and the cilia grey below apex. The basal areas of both wings on underside pale. *Wingspan*: 34–38 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere*: Indonesia, Myanmar and Sri Lanka.

146. *Anomis fulvida* (Guenee)

1852. *Anomis fulvida* Guen. *Noct.* 2: 397.

1894. *Cosmophila fulvida*: Hampson, *Fauna British India*, Moths, 2: 409-410.

Material examined: DWLS, Pindraperera, 05.viii. 2008 (2 exs.); 25.ix. 2008 (2 exs.).

Diagnostic characters: The head and thorax of adult moths bright or dark ferruginous red-brown and abdomen reddish fuscous. Fore wing bright or dark ferruginous or yellowish red-brown; a short subbasal line; an antemedial line oblique from costa to below cell then waved to inner margin; the orbicular a white speck; the reniform indistinct and often reduced to two spots or to one white or dark spot at lower angle of cell. Hind wing vinous red to dark brown. *Wingspan*: 45–50 mm

Distribution: India: Jharkhand (East Singhbhum), Madhya Pradesh. *Elsewhere*: Australia, China, Fiji, Indonesia, Japan, Myanmar, Solomons and Sri Lanka.

147. *Ercheia cyllaria* (Cramer)

1782. *Phalaena (Noctua) cyllaria* Cramer, *Pap. Exot.*, 3: 100, pl. 251.

1894. *Ercheia cyllaria*: Hampson, *Fauna Brit. India*, Moths, 2: 451.

Material examined: DWLS, Pindraperera, 05.xii.2007 (4 exs.); 25.ix.2008 (7 exs.); 26.ix.2008 (4 exs.).

Diagnostic characters: The head, thorax, and fore wing of adult male pale reddish brown; the collar and patagia often streaked with black. Fore wing suffused with fuscous and streaked with black. The white spots on hind wing disconnected. Abdomen is fuscous black. *Wingspan*: 50–60 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Meghalaya. *Elsewhere*: Indonesia, Myanmar and Sri Lanka.

148. *Erebus glaucopis* (Walker)

1857. *Erebus glaucopis* Walker, *Cat.* 14: 1306.

1894. *Nyctipao glaucopis*: Hampson, *Fauna Brit. India*, Moths, 2: 461-462.

Material examined: DWLS, Pindraber, 27.ix.2008 (2 exs.); 28.ix.2008 (3 exs.).

Diagnostic characters: The adult moth is purplish fuscous; moderately larger in size; fore wing with two whorl-shaped stigma in fore wing as in *E. hieroglyphica*. Under side of the wing with curved series of white spots, which show slightly on upperside, the two at costa of hind wing being prominent. *Wingspan*: 90–100 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere*: Oriental regions

149. *Erebus hieroglyphica* (Drury)

1773. *Erebus hieroglyphica* Drury, I 11. *Exot. Ins.*, 2: 3

1894. *Nyctipao hieroglyphica*: Hampson, *Fauna Brit. India*, Moths, 2: 459-460.

Material examined: DWLS, Pindraber, 27.ix.2008 (1 ex.).

Diagnostic characters: The adult female moth is brown, with black striae. Fore wing with the oblique bar white. Both wings with traces of postmedial band of whitish marks and white spot on fore wing above vein 3. *Wingspan*: 100 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum.) and Madhya Pradesh.

Elsewhere: Indonesia, Malacca, Myanmar, Phillipines and Sri Lanka.

150. *Eupatula macrops* (Linnaeus)

1768. *Eupatula macrops* Linnaeus, *Syst. Nat.*, xii, 3: 225.

1894. *Nyctipao macrops*: Hampson, *Fauna Brit. India*, Moths, 2: 459.

Material examined: DWLS, Pinder bera, 05.viii.2008 (1 ex.); 06.viii.2008 (2 exs.); 07.viii.2008 (2 exs.).

Diagnostic characters: The adult moth is larger in size and fuscous brown, with a slight purplish tinge. Fore wing with subbasal and waved antemedial and medial black lines. A very large fulvous ocellus beyond end cell, with black outline and black comma-shaped pupil with blue streaks and specks on it. Hind wing with medial black line excurved round the cell. Underside irregular postmedial series of white spots and regular submarginal series of lunules to each wing. *Wingspan*: 130–135 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum.) and Madhya Pradesh.

Elsewhere: Africa, Indonesia, Madagascar, Myanmar and Sri Lanka.

151. *Grammodes geometrica* (Fabricius)

1775. *Noctua geometrica* Fabricius, *Syst. Ent.* : 599.

1991. *Grammodes geometrica*: Mandal & Maulik, *Fauna of Orissa, Zool. Surv. India*, Part-3: 219.

Material examined: DWLS, Pindra bera, 27.ix.2008 (2 exs.).

Diagnostic characters: A grey-brown moth. Fore wing with a large black patch occupying the whole area except the basal, costal, and outer areas, its outer edge waved and joined by an oblique streak from apex. The ante and postmedial lines recurved below costa, with whitish bands outside them on the black patch. Hind wing fuscous, with medial pale band. The cilia white at apex and anal angle. *Wingspan:* 26–45 mm.

Distribution: India : Jharkhand (East Singhbhum), Assam, Andaman & Nicobar Islands, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* Bangladesh, Indonesia, Myanmar (south), Taiwan and Sri Lanka.

152. *Ischyja manlia* Cramer

1776. *Ischyja manlia* Cramer, *Pap. Exot.*, : 92

1894. *Ischyja manlia*: Hampson, *Fauna Brit. India*, Moths, 2 : 537-538.

Material examined: DWLS, Pindra bera, 05.viii.2008 (1 ex.); 06.viii.2008 (2 exs.); 25.ix.2008 (2 exs.); 26.ix.2008 (2 exs.).

Diagnostic characters: The head and thorax red-brown; abdomen fuscous or red brown. Fore wing pale or dark red brown or olive-brown, irrorated with dark specks; traces of ante and medial waved lines; a straight oblique postmedial line; the orbicular and reniform grey or ochreous, or in the form of deep black quadrate spots with white edges. Hind wing very dark red-brown; the area near anal angle grayish, with dark striae; a broad, irregularly angled, purplish-blue medial band from the costa to vein 2. *Wingspan:* 85–95 mm.

Distribution: India: Jharkhand (East Singhbhum), Madhya Pradesh and rest of the mainland. *Elsewhere:* Indonesia, Myanmar and Sri Lanka.

153. *Ophiusa fulvotaenia* Guenee

1852. *Ophiusa fulvotaenia* Guenee, *Noct.*, 3: 272.

1894. *Ophiusa fulvotaenia*: Hampson, *Fauna Brit. India*, Moths, 2: 504.

Material examined: DWLS, Pindra bera, 29.ix.2008 (1 ex.); 06.viii.2008 (4 exs.).

Diagnostic characters: Differs from in being red-brown. Fore wing with the medial band suffused with purple. The *O. crameri* postmedial line of fore wing is dark throughout, and with indistinct dentate line beyond it. Hind wing with a medial orange band and wide towards the costa. *Wingspan:* 70 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Assam and Tripura. *Elsewhere:* Bangladesh, China, Indonesia, Japan, Myanmar, Western Malaysia and Sri Lanka.

154. *Ophiusa tirrhaca* Cramer

1777. *Ophiusa tirrhaca* Cramer *Pap. Exot.* ii, pl. 172, fig. E.

1894. *Ophiusa tirrhaca*: Hampson, *Fauna Brit. India*, Moths, 2: 503-504.

Material examined: DWLS, Pindra bera, 20.viii.2007 (1 ex.).

Diagnostic characters: A greenish-yellow moth, abdomen orange, fore wing greenish yellow, with slightly darker striae, the orbicular a dark speck, reniform brown; an irregularly dented submarginal line with two black subapical lunules on it; a crenulate marginal line. Hind wing orange with broad submarginal black band not reaching costa or inner margin. *Wingspan:* 70 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere:* Sri Lanka, Philippines of Oriental and also Ethiopia-Malagassic and Palaearctic Regions.

155. *Parallelia onelia* (Guenee)

1852. *Parallelia onelia* Guenee, *Noct.* 3: 256.

1894. *Ophiusa onelia*: Hampson, *Fauna Brit. India*, Moths, 2: 502.

Material examined: DWLS, Pindrabera, 27.ix.2008 (1 ex.); 28.ix.08 (1 ex.).

Diagnostic characters: The adult moth is dark brown with a purplish tinge; the head and collar region usually fulvous. Fore wing suffused with brown; a grey apical patch with white edges, and a sinuous dark line from it to the inner margin. Hind wing with traces of medial and submarginal pale lines near inner margin. The outer margin is grey. *Wingspan:* 44–46 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere:* China, Myanmar and Sri Lanka.

156. *Pindara illibata* (Fabricius)

1775. *Pindara illibata* Fabricius, *Syst. Ent.*, : 592.

1894. *Ophiusa illibata*: Hampson, *Fauna Brit. India*, Moths, 2: 495.

1991. *Parallelia illibata*: Mandal & Maulik, *Fauna of Orissa, Zool. Surv. India*, Part-3 :218.

Material examined: DWLS, Pindra bera, 05.viii.2008 (2 exs.); 06.viii.2008 (2 exs.); 07.viii.2008 (4 exs.); 25.ix.2009 (1 ex.).

Diagnostic characters: The adult moth pale rufous. Fore wing with short subbasal and oblique antemedial dark lines on pale reddish bands; the reniform large with a dark line in it. A large semi-circular patch with white edges at apex. Hind wing and abdomen fuscous brown; the margin grey except at apex. *Wingspan:* 65-70 mm

Distribution: India: Jharkhand (East Singhbhum), Assam, Madhya Pradesh, Orissa, Sikkim and West Bengal. *Elsewhere:* Bangladesh, Hong Kong of oriental, Palaearctic regions, Southern Myanmar, Sri Lanka and Western Malaysia.

157. *Remigia archesia* (Cramer)

1780. *Phalaena (Noctua) archesia* Cramer, *Pap. Exot.*, 3 : 273.

1888. *Cauninda archesia*: Cotes & Swinhoe, *Cat. Moths of India*: 417.

1894. *Remigia archesia*: Hampson, *Fauna Brit. India*, Moths, 2: 526.

Material examined: DWLS, Pindra bera, 22.ii.2008 (1 ex.); 06.viii.2008 (2 exs.); 26.ix.2009 (2 exs.).

Diagnostic characters: The adult male moth is pale red-brown. The fore wing with a short subbasal redbrown line; an oblique antemedial pale or ochreous line, with diffused red-brown band on its outer edge; reniform large and indistinct; a red-brown diffused postmedial band; an indistinct pale submarginal line, with a series of black specks on it. Hind wing ochreous fuscous, with narrow fuscous medial band and diffused marginal band; abdomen pale fuscous; the anal tuft ochreous; legs rufous. *Wingspan:* 50 mm.

Distribution: India: Jharkhand (East Singhbhum, Ranchi), Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Sikkim and West Bengal. *Elsewhere:* China, Indonesia, Pakistan and South Africa.

158. *Remigia frugalis* (Fabricius)

1775. *Noctua frugalis* Fabricius, *Syst.Ent.* 6 : 601.

1894. *Remigia frugalis*: Hampson, *Fauna Brit. India*, Moths, 2: 527.

1991. *Mocis frugalis*: Mandal & Maulik, *Fauna of Orissa, Zool. Surv. India, Part-3* :220.

Material examined: DWLS, Pindra bera, 06.viii.2008 (3 exs.).

Diagnostic characters: The adult moth is grey-brown. Fore wing with a diffused dark mark above the centre of vein 1; an oblique pale inwardly postmedial line, red brown outwardly; a submarginal series of black specks. Hind wing with postmedial and suffused submarginal lines. *Wingspan:* 36–50 mm.

Distribution: India: Jharkhand (East Singhbhum), Andaman and Nicobar Islands, Himachal Pradesh, Karnataka, Maharashtra, Meghalaya, Orissa, Punjab, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal. *Elsewhere* : Bangladesh, Pakistan, Southern Myanmar, Sri Lanka, Western Malaysia, Taiwan of Oriental and also Australo-Papuan, Ethiopio-Malagassic, Palaeartic and Hawaiian Regions.

159. *Remigia undata* (Fabricius)

1775. *Noctua undata* Fabricius, *Syst. Ent.*, : 600.

1913b. *Mocis undata*: Hampson, *Cat. Lep. Phal. Brit. Mus.*, 13: 91.

1991. *Mocis undata*: Mandal & Maulik, *Fauna of Orissa, Zool. Surv. India, Part-3*: 220.

Material examined: DWLS, Pindra bera, 05.viii.2008 (1 ex.); 06.viii.2008 (1 ex.).

Diagnostic characters: *Wingspan:* 50–55 mm.

Distribution: India: Jharkhand (East Singhbhum), Andaman and Nicobar islands, Assam, Bihar, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Manipur, Punjab, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal. *Elsewhere* : Bangladesh, Ethiopio-Malagassic, Hainan of oriental, Malaysia, Myanmar, Philippines, Palaeartic Regions, Sundaland, Sri Lanka, and Taiwan.

160. *Spirama retorta* (Clerck)

1764. *Phalaena retorta* Clerck, *Icones Ins. Rariorum*, 2: pl. 54.

1764. *Noctua retorta*: Linn., *Mus. Lud. Ulr.*: 376.

1894. *Spirama retorta*: Hampson, *Fauna Brit. India*, Moths, 2: 553-554.

Material examined: DWLS, Pindra bera, 07.viii.2008 (1 ex.); 27.ix.2009 (1 ex.).

Diagnostic characters: Adult male is dark brown. The head and collar dark chestnut-brown; thorax paler with dark bands. Wings fuscous brown. Abdomen crimson with triangular black dorsal patches. Fore wing with the costal and outer areas more or less suffused with purplish and sometime with olive tinge; a large 'inverted-comma' mark beyond end of cell, with ochreous and black edges and some white on inner edge. Hind wing with indistinct antemedial, medial and traces of two post medial and submarginal line. Underside suffused with dull red and having two medial and one postmedial to each wing. *Wingspan*: 62–73 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere*: China, Indonesia, Japan, Myanmar and Sri Lanka.

161. *Thyas honesta* (Hubner)

1806. *Thyas honesta* Hubner, *Samml. Exot. Schmett.*, 2. Index : 4.

1888. *Thyas honesta*: Cotes & Swinhoe, *Cat. Moths of India*: 398.

1894. *Ophiusa honesta*: Hampson, *Fauna Brit. India*, Moths, 2: 504.

Material examined: DWLS, Pindra bera, 06.viii.2008 (2 exs.); 07.viii.2008 (2 exs.); 08.viii.2008 (1 ex.).

Diagnostic characters: A reddish chestnut coloured moth, especially head and thorax. Fore wing reddish chestnut, slightly irrorated with dark scales; traces of a sinuous antemedial line with three white specks on it; reniform grey, the lower part more or less filled with black. Hind wing and abdomen crimson, the latter with black submarginal medial patch. *Wingspan*: 95–105 mm

Distribution: Throughout India including Jharkhand (East Singhbhum), Andamans, Chhattisgarh and Madhya Pradesh. *Elsewhere*: Myanmar, Philippines and Sri Lanka.

162. *Trigonodes hyppasia* (Cramer)

1779. *Noctua hyppasia* Cramer, *Pap. Exot.*, 3 : 250.

1894. *Trigonodes hyppasia*: Hampson, *Fauna Brit. India*, Moths, 2: 527.

Material examined: DWLS, Pindra bera, 06.viii.2008 (3 exs.).

Diagnostic characters: The adult moth is fuscous or dark grey brown. Fore wing with a large black white-edged triangular patch below the cell from near base to towards outer angle; a similar smaller patch beyond the cell on the vein 5. Hind wing with indistinct medial line and the outer area suffused with fuscous. *Wingspan*: 40 mm.

Distribution: India: Jharkhand (East Singhbhum), Andaman and Nicobar Islands, Assam, Himachal Pradesh, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Punjab, Tamil Nadu, Tripura, Uttaranchal, Uttar Pradesh and West Bengal. *Elsewhere:* Africa, Australia, China, Indonesia, Madagascar, Mauritius, Myanmar, Pakistan and Sri Lanka.

Subfamily CALPINAE

163. *Aedia acronyctoides* (Guenee)

1852. *Anophia acronyctoides* Guenee, *Noct.*3: 47.

1888. *Anophia olivescens*, Guen. *Noct.* 3: 48.

1894. *Catephia acronyctoides*: Hampson, *Fauna Brit. India*, Moths, 2: 482-483.

Material examined: Pindra bera, 23.viii.2007 (5 exs.).

Diagnostic characters: Fuscous; the thorax and fore wing suffused with white. The reniform and a patch above it more or less white. Hind wing pure white; the inner margin suffused with fuscous; the outer half of wing black, with white patches at the apex and anal angle. Underside of fore wing with the basal two third white, with spot at the end of cell. *Wingspan:* 37–40.

Distribution: Throughout India including Jharkhand (East Singhbhum, Ranchi), Andaman Islands, Haryana, Madhya Pradesh and Maharashtra. *Elsewhere:* Australia, Myanmar, Indonesia, Sri Lanka and W. and S. Africa.

164. *Calesia dasyptera* (Kollar)

1844. *Erebus dasyptera* Kollar, *Hugel's Kaschmir*, 4 : 476.

1894. *Calesia dasyptera*: Hampson, *Fauna Brit. India*, Moths, 2: 580-581.

Material examined: DWLS, Pindra bera, 05.viii.2008 (2 exs.).

Diagnostic characters: The adult male moth is greyish red-brown; the head, collar and abdomen crimson; coxae of fore legs and tibiae of fore and middle legs crimson. The female moth with a white spot at end of cell of fore wing. *Wingspan:* 45 mm.

Distribution: India: Jharkhand (East Singhbhum). *Elsewhere:* China, Myanmar and Sri Lanka.

165. *Daddala plana* (Moore)

1882. *Sypna plana* Moore, *Lep. Atk.* : 167. Pl.v. f. 24

1894. *Sypna replicata*: Hampson, *Fauna Brit. India*, Moths, 2: 450-451.

Material examined: DWLS, Pindra bera, 08.viii.2008 (2 exs.).

Diagnostic characters: Dark red brown, suffused with fuscous. Fore wing with antemedial black band with wavy edges. Both wings with marginal series of black lunules. The apex of the hind wing is ochreous. Underside ochreous, irrorated with black. *Wingspan:* 50 mm.

Distribution: India: Jharkhand (East Singhbhum), Meghalaya, Punjab and Sikkim.

166. *Dysgonia algira* (Linnaeus)

1766. *Dysgonia algira* Linnaeus, *Syst. Nat.*, (ed.12): 836.

1894. *Ophiusa algira*: Hampson, *Fauna Brit. India*, Moths, 2: 500.

Material examined: DWLS, Pindra bera, 04.xii.2007 (1 ex.); 05.viii.2008 (2 exs.).

Diagnostic characters: The adult moth is dark brown. The antemedial line of fore wing erect which differ from *D. arcuata*, and having a broad, white, slightly suffused band beyond it, which varies in width.. Hind wing with a white medial band and the outer margin grey at centre. *Wingspan*: 45–48 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere*: Africa, China, Europe, Japan, Mauritius, Myanmar and Sri Lanka.

167. *Egnasia ephyrodalis* Walker

1858. *Egnasia ephyrodalis* Walker, *Cat. Lep. Het. Brit. Mus.*, 16 : 217.

1926. *Egnasia ephyrodalis*: Hampson, *Descr. New genn. Spp. Lep. Phal. NoCBrit. Mus.* : 575.

1991. *Egnasia ephyrodalis*: Mandal & Maulik, *Fauna of Orissa, Zool. Surv. India*, Part-3: 15.

Material examined: DWLS, Pindra bera, 21.viii.2007 (4 exs.).

Diagnostic characters: Adult male moth yellow brown. Fore wing with indistinctsinuous antemedial line; a hyaline spot in cell; an irregular hyaline spot on discocellulars composed of conjoined spots; an indistinct post medial line excurved beyond cell and with crenulate line beyond it. Hind wing with a hyaline lunulate mark on rufous patch at end of cell; a nearly straight medial line and crenulate postmedial line. Underside suffused with grey. *Wingspan*: 32–35 mm

Distribution: India: Jharkhand (East Singhbhum), Assam, Bihar, Meghalaya, Nagaland, Orissa and Tamil Nadu. *Elsewhere*: Bangladesh, Myanmar (south) and Sri Lanka.

168. *Episparis varialis* (Walker)

1858. *Episparis varialis* Walker, *Cat. Lep. Het. Brit. Mus.*, 16: 7.

1895. *Hypena varialis*: Hampson, *Fauna Brit. India*, Moths, 3: 86.

Material examined: DWLS, Pindra bera, 05.viii.2008 (6 exs.); 25.ix.2008 (4 exs.); 26.ix.2008 (1 ex.).

Diagnostic characters: The adult male moth is pale dull brown; fore wing with subbasal and antemedial white lines; a yellow patch at lower angle of cell and an irregular white spots on discocellulars; a sinuous postmedial line arising from a white spot on costa. Hind wing with dark mark on discocellulars. A highly angled postmedial line beyond the cell. Underside is white. *Wingspan*: 45–50 mm.

Distribution: India: Jharkhand (East Singhbhum) Andaman, Madhya Pradesh, Peninsular India and Tamil Nadu. *Elsewhere*: Sri Lanka

169. *Fodina stola* Guenee, 1852

1852. *Fodina stola* Guenee, Noc. iii: 295.

1894. *Fodina stola*: Hampson *Fauna Brit. India*, Moths, 2: 530.

Material examined: DWLS, Pindra bera, 27.ix.2008 (2 exs.).

Diagnostic characters: The adult head is and thorax bright red-brown; collar and metathorax panded with white; abdomen orange. Fore wing with the basal part of costa purplish; a large irregular red-brown patch on basal half of wing, with ochreous edges and running out to an angle on vein 2; the area between it and the large red-brown patch occupying the apical area, and extending nearly to outer angle, ochreous; an ochreous marginal line; the cilia grey. Hind wing orange with the apical area fuscous black. Underside orange with dark medial line patch to fore wing and apical patches to both wings. *Wingspan*: 36-46 mm

Distribution: India: Jharkhand (East Singhbhum), N. W. Himalays, Uttar Pradesh, Sikkim and West Bengal. *Elsewhere*: Myanmar and Sri Lanka.

170. *Hamodes aurantiaca* Guenee

1852. *Hamodes aurantiaca* Guenée, *Noct.* 3: 203.

1894. *Hamodes aurantiaca*: Hampson, *Fauna Brit. India*, Moths, 2: 547-548.

Material examined: DWLS, Pindra bera, 27.ix.2008 (2 exs.).

Diagnostic characters: The adult is canary-yellow. Fore wing irrorated with fuscous; two fuscous on the costa; a straight rufous line from apex of fore wing to inner margin of hind wing; traces of dark spots on the margin of both wings. Underside orange, with the lines rufous, prominent, and maculate. *Wingspan*: 60-66 mm

Distribution: India: Jharkhand (East Singhbhum), Andamans, Assam and Sikkim. *Elsewhere*: Myanmar.

171. *Hypocala deflorata* Fabricius

1794. *Hypocala deflorata* Fabricius, *Syst. Ent.* 3 : 127.

1894. *Hypocala deflorata*: Hampson, *Fauna Brit. India*, Moths, 2: 453-544.

Material examined: DWLS, Pindra bera, 06.viii.2008 (2 exs.); 27.ix.2008 (2 exs.); 29.ix.08 (2 exs.).

Diagnostic characters: The adult moth differ from the *H. subsatura* in the head, thorax, and fore wing being paler in colour. Hind wing with the orange area larger; the marginal black area reduced and the two orange conjoined. Underside with the black on fore wings reduced to two bars and that of hind wings also reduced. *Wingspan*: 47-50 mm.

Distribution: India: Jharkhand (East Singhbhum), Karnataka, N.W. Himalayas, Orissa, Sikkim and Tamil Nadu. *Elsewhere*: Ethiopian region and Oriental of Sri Lanka.

172. *Nagia linteola* (Guenee)

1852. *Nagia linteola* Guenee, *Noct. iii*: p.44

1894. *Catephia linteola*: Hampson, *Fauna Brit. India*, Moths, 2: 482.

Material examined: DWLS, Pindra bera, 07.viii.2008 (1 ex.).

Diagnostic characters: The adult male head and thorax black and dark brown with a purplish gloss; abdomen black; fore wing red brown suffused with black; a small black spot or ring-spot in cell and indistinct reniform spot with ring-spot below it. Hind wing black with, with a medial broad white band not reaching inner margin; the apex white and some submarginal white spots more or less developed towards anal angle. *Wingspan*: 56–66 mm

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere*: Australia, Indonesia, Myanmar, S. Africa, and Sri Lanka.

173. *Othreis fullonica* (Linnaeus)

1767. *Othreis fullonica* Linnaeus, *Syst. Nat.*, (ed.12): 812.

1888. *Othreis fullonica*: Cotes and Swinhoe, *Cat. Moths of India*: 377.

1894. *Ophiderus fullonica*: Hampson, *Fauna Brit. India*, Moths, 2: 560-561.

Material examined: DWLS, Pindra bera, 07.viii.2008 (1 ex.); 14.xii.2008 (1 ex.).

Diagnostic characters: Male: Head and thorax red-brown suffused with plum-colour; abdomen orange. Fore wing red-brown, usually with a green tinge and irrorated with dark specks; an antemedial line generally dark and indistinct, but sometimes pale and prominent; the reniform indistinct; a curved post medial line met by an oblique streak from apex. Hind wing orange, with a large black lunule beyond lower angle of cell. Underside of fore wing with the postmedial band orange. *Wingspan*: 85–100 mm

Distribution: India: Jharkhand (East Singhbhum), Himachal Pradesh, Madhya Pradesh, Maharashtra Manipur, Meghalaya and Sikkim. *Elsewhere*: Africa, Australia and Pakistan.

174. *Plecoptera reflexa* (Guenee)

1852. *Plecoptera reflexa* Guenee, *Noct.*, 2: 430.

1888. *Poaphila reflexa*: Cotes & Swinhoe, *Cat. Moths of India*: 353.

1894. *Plecoptera reflexa*: Hampson, *Fauna Brit. India*, Moths, 2: 519.

2007. *Plecoptera reflexa* Chandra and Nema, *Fauna of Madhya Pradesh (Including Chhattisgarh)*, *State Fauna series*, 15: 404.

Material examined: DWLS, Pindra bera, 05.xii.2007 (2 exs.).

Diagnostic characters: The adult is grey-brown. The head and collar region bright fulvous. Fore wing with obliquely waved antemedial line; a large reniform spot, often with black centre above it; a

marginal series of minute black specks; Hind wing fuscous brown. Underside greyish white. *Wingspan*: 30 mm.

Distribution: India: Jharkhand (East Singhbhum), Andhra Pradesh, Himachal Pradesh, Madhya Pradesh, Maharashtra and Punjab. *Elsewhere*: Pakistan.

175. *Ramadasa pavo* Walker

1856. *Ramadasa pavo* Walker, *Cat.* 9: 147.

1894. *Ramadasa pavo*: Hampson, *Fauna Brit. India*, Moths, 2: 358.

Material examined: DWLS, Pindra bera, 06.viii.2008 (3 exs.); 27.ix.2008 (1 ex.).

Diagnostic characters: Head and thorax clothed with grey brown-mottled scales; the abdomen orange. Fore wing with the basal area grey, mottled with brown; the costa orange, with five blue-black spots; an oblique medial black line with venous suffusion on its outer edge; the reniform large and incomplete, outer and inner outlined by black and violet; a series of black and white submarginal specks. Hind wing orange. *Wing expanse*: 45–50 mm.

Distribution: India: Jharkhand (East Singhbhum) Andamans and Sikkim. *Elsewhere*: Sri Lanka.

176. *Sphingomorpha chlorea* (Cramer)

1777. *Phalaena (Noctua) chlorea* Cramer, *Pap. Exot.*, 2: 104.

1894. *Sphingomorpha chlorea*: Hampson, *Fauna Brit. India*, Moth, 2: 490-491.

Material examined: DWLS, Pindra bera, 27.ix.2008 (1 ex.).

Diagnostic characters: (Male): Head ochreous white; thorax dark brown above with a broad ochreous-white stripe on vertex; abdomen dark brown with a series of dorsal ochreous white spots. Fore wing red brown with dark striae; a pale patch at base of inner margin. Hind wing fuscous brown; an ochreous patch with black striae on it at centre of outer margin. Underside pale, with fuscous submarginal band towards inner margin of both wings. *Wingspan*: 70 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere*: Africa, Myanmar and Sri Lanka.

177. *Tephriopsis divulsa* (Walker)

1865. *Athyria divulsa* Walker, *Cat.* 33: 966.

1894. *Baniana divulsa*: Hampson, *Fauna Brit. India*, Moths, 2: 515.

Material examined: DWLS, Pindra bera, 08.viii.2008 (2 exs.).

Diagnostic characters: A fuscous brown moth, with head and collar banded with black. Fore wing with a black speck at base; an antemedial black line expanding into a large irregular black patch with pale edges below the cell. Hind wing dark fuscous. *Wingspan* 35–40 mm.

Distribution: India: Jharkhand (East Singhbhum), Kerala and Maharashtra. *Elsewhere*: Bangladesh and Sri Lanka.

Subfamily HELIOTHINAE

178. *Helicoverpa armigera* (Hubner)

1827. *Noctua armigera* Hubner, *Samml. Eur. Schmett., Noct.* : 370.

1965. *Helicoverpa armigera*: Hardwick, *Mem. Ent. Soc. Can.*, 40: 9.

1894. *Heliothis armigera*: Hampson, *Fauna Brit. India, Moths*, 2: 174-175.

Material examined: DWLS, Pindra bera, 08.viii.2008 (2 exs.).

Diagnostic characters: The adult male moth is ochreous with pale brown, olive or red brown. Fore wing with indistinct double waved antemedial lines; a dark speck representing reniform; an indistinct curved medial line; waved postmedial and submarginal lines; a marginal series of dark specks. Hind wing whitish fuscous; a broader outer usually with a pale submarginal central patch. Underside of the fore wing with the orbicular and reniform stigmata conspicuously black. The apices of both wings and outer area of fore wing pinkish. *Wingspan*: 31–41 mm.

Distribution: India: Jharkhand (East Singhbhum), Madhya Pradesh. *Elsewhere*: Universally distributed.

Subfamily NOCTUINAE

179. *Agrotis ipsilon* (Hufnagel)

1776. *Phalaena ypsilon* Hufnagel, *Bul Mg.* 3: 416.

1971. *Agrotis ypsilon*: Kapur and Arora, *Rec. Zool. Surv. India*, 65 (1-4): 112, pl.I, figs. Id, 2e-g, 8a-d.

Material examined: DWLS, Pindra bera, 11.xi. 2007 (4 exs.).

Diagnostic characters: A whitish brown or fuscous moth. Fore wing more suffused with brown, and with a black streak beyond the reniform; the submarginal line dentate with two black streaks on it below the apex. Hind wing more or less suffused with fuscous brown. *Wingspan*: 35–36 mm.

Distribution: India: Jharkhand (East Singhbhum) Bihar, Himachal Pradesh, Jammu & Kashmir, Orissa, Punjab, Uttat Pradesh and West Bengal. *Elsewhere*: Pakistan and Sri Lanka in the Indian subregion, Tibet, China in the Chinese subregion and Java in the Malayan subregion of the Oriental and also Austro-Papuan, Ethiopian, Palaeartic, Hawaiian, Nearctic and Neotropical regions.

180. *Neurois atrovirens* (Walker)

1865. *Diphthera atrovirens* Walker, *Cat. lep. Het. Brit. Mus.*, 32: 614.

1903. *Neurois atrovirens*: Hampson, *Cat. Lep. Phal. Brit. Mus.*, 4: 611.

Material examined: DWLS, Pindra bera, 27.ix.2008 (4 exs.).

Diagnostic characters: Head and thorx greenish brown; abdomen fuscous brown; fore wing green suffused with brown especially on medial area; the orbicular and reniform green and subquadrate; claviform black. Hind wing brownish fuscous. Underside suffused with grey; a cell spot and post medial line. *Wingspan*: 40–44 mm.

Distribution: India: Jharkhand (East Singhbhum), Manipur, Sikkim and West Bengal. *Elsewhere:* Myanmar and Sri Lanka.

Subfamily PLUSIINAE

181. *Chrysodeixis eriosoma* (Doubleday)

1843. *Plusia eriosoma* Doubleday, *Dieffenbach's New Zealand*, 2: 285.

1894. *Plusia eriosoma*: Hampson, *Fauna Brit. India*, Moths, 2: 569-570.

Material examined: DWLS, Pindra bera, 27.ix.2008 (2 exs.).

Diagnostic characters: The adult moth of the head, thorax, and fore wing having a reddish tinge; abdomen with the lateral and anal tuft often black in the male. Fore wing with much more gliding on the basal, medial and outer areas; the antemedial line more oblique, the postmedial line more oblique and sinuous; the 'Y' mark large, prominent and golden, the arms often filled in with golden and occasionally joined to the tail. *Wingspan:* 42 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere:* Australia, China, Japan, Malaysia and North and South America.

182. *Thysanoplusia orichalcea* (Fabricius)

1775. *Noctua orichalcea* Fabricius, *Syst. Ent.*, : 607.

1894. *Plusia orichalcea*: Hampson, *Fauna Brit. India*, Moths, 2: 573-574.

Material examined: DWLS, Pindra bera, 27.ix.2008 (1 ex.).

Diagnostic characters: The head, collar, and vertex of thorax reddish orange; fore wing pale red-brown; the submarginal line is irregularly lunulate: the orbicular and reniform with fine white outlines: the whole of the outer area except the inner margin, occupied by a brassy golden which extends towards the base below median nervure. Hind wing pale at base, the outer area fuscous. *Wingspan:* 44 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum). *Elsewhere:* China, Japan, Mauritius, Myanmar, S. Africa and Sri Lanka..

Subfamily STICTOPTERINAE

183. *Odontodes aleuca* Guen, 1852

1852. *Odontodes aleuca* Guenee, *Noct.* 3: 51.

1888. *Odontodes bolinoides*: Cotes & Swinhoe, *Cat. Moths of India*; 361.

1894. *Odontodes aleuca*: Hampson, *Fauna Brit. India*, Moths, 2: 400.

Material examined: DWLS, Pindra bera, 27.ix.2008 (1 ex.).

Diagnostic characters: The adult moth is dar red-brown. Fore wing with short subbasal line; double waved antemedial and waved and curved medially; adouble dentate post-medial lines excurved

beyond cell. Hind wing fuscous brown, the basal area more or less hyaline, the outer area darkest. Underside with the basal area of both wings pale, with the veins and cell spot dark brown. *Wingspan*: 40 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere*: Myanmar.

Subfamily AGANAINAE

184. *Asota caricae* (Fabricius)

1777. *Phalena alcipbron* Cramer, *Pap. Exot.* 2: 58.

1792. *Noctua caricae*: Fabricius, *Syst. Ent.*, **iii**. 2: 27.

1892. *Hypsa alcipbron*: Hampson, *Fauna Brit. India*, Moths, 1: 502-503.

Material examined: DWLS, Pindra bera, 21.viii.2007 (5 exs.); 08.viii.2008 (2 exs.); 28.ix.2008 (3 exs.).

Diagnostic characters: Head, thorax, and abdomen marked as in *Hypsa monycha*; fore wing brownish fuscous; a basal orange patch with two subbasal black spots and a series of three on its outer edge. Hind wing orange-yellow; a black spot at end of cell. *Wingspan*: 60 - 65 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum), Madhya Pradesh and West Bengal. *Elsewhere*: Indonesia, Myanmar, New Ireland, New Guinea and Sri Lanka.

185. *Asota ficus* (Fabricius)

1775. *Noctua ficus* Fabricius, *Syst. Ent.*, : 595.

1892. *Hypsa ficus*: Hampson, *Fauna Brit. India*, Moths, 1: 504.

Material Examined: DWLS, Pindra pera, 18.iii.2009 (1 ex.).

Diagnostic characters: Head, thorax, and abdomen marked as in *Hypsa monycha*; the base of tegulae yellow with a black spot; dorsal spot of abdomen often almost obsolete. Fore wing with a yellow basal patch which extends along costa and in cell to two thirds length of cell with an orange spot outlined with black on costa. Hind wing bright orange yellow; a black spot at end of cell and a sumarginal irregular series of black spots. *Wingspan*: 58–64 mm.

Distribution: India: Throughout India including Jharkhand (East Singhbhum). *Elsewhere*: Sri Lanka.

186. *Asota plana* (Walker)

1881. *Hypsa lacteata* Butler, *Illustr. Lep. Het.* 5: 43.

1892. *Hypsa complana*: Hampson, *Fauna Brit. India*, Moths, 1: 500-501.

Material examined: DWLS, Pindra bera, 22.iii.2009 (1 ex.).

Diagnostic characters: The adul moth differ from *Hypsa clavata* in the fore wing having a large white patch filling the lower half of the cell; a large white spot at the upper angle of cell. Hind wing with the marginal band narrow; an extra spot towards anal angle. *Wingspan*: 70 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam, Orissa, Sikkim and Tamil Nadu. *Elsewhere:* China, Myanmar, Singapore and Sri Lanka.

187. *Neochera inops* (Walker)

1854. *Hypsa inops* Walker, *List. Lep. Het. B.M.* 2: 457.

1892. *Hypsa inops*: Hampson, *Fauna Brit. India*, Moths, 1: 503.

Material examined: DWLS, Pindra bera, 22.iii.2009 (1 ex.).

Diagnostic characters: Head, thorax, and abdomen orange yellow and the latter with a series of dorsal black spots, some of which are often obsolete; tegulae and metathorax each with a black spot. Fore wing pale fuscous; a basal yellow patch spotted with black. Hind wing with an apical black band; cilia of both wings tipped with white. *Wingspan:* 60 mm.

Distribution: India: Jharkhand (East Singhbhum), Nagaland and Sikkim. *Elsewhere:* Myanmar and Philippines.

Subfamily HADENINAE

188. *Callopietria maillardi* (Moore)

1882. *Callopietria maillardi* Moore, *Lep. Atk.*,: 144.

1894. *Callopietria recurvata*: Hampson, *Fauna Brit. India*, Moths, 2: 257.

1988-89. *Callopietria maillardi*: Holloway, *The Moths of Borneo. The Malayan Nature Journal*, 42(2&3): 166.

Material examined: DWLS, Pindrabera, 07.viii.2008 (1 ex.).

Diagnostic characters: The head and thorax clothed with dark ferruginous and white hair; abdomen paler, with dorsal tufts ferruginous; fore wing more varied with reddish; the veins and lines reddish; the antemedial line more angulated and medial crenulated black line. Underside of hind wing with more crenulated post medial line. *Wingspan:* 32 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Madhya Pradesh. *Elsewhere:* Indonesia, Myanmar and Sri Lanka.

189. *Spodoptera litura* (Fabricius)

1775. *Noctua litura* Fabricius, *Syst. Ent.*, : 601.

1979. *Prodenia litura*: Veda *et al.*, *Bulletin of Entomology*, 20(1-2): 162.

1991. *Prodenia litura*: Mandal & Maulik, *Fauna of Orissa, Zool.Surv. India, Part-3*: 212.

2007. *Prodenia litura*: Chandra and Nema, *Fauna of Madhya Pradesh (Including Chhattisgarh), State Fauna series*, 15: 405.

Material examined: DWLS, Pindrabera, 11.xi. 2007 (4 exs.).

Diagnostic characters: The adult moth pale ochreous, much suffused with dark brown. Fore wing with some ochreous streaks at base; an angled and obliquesubbasal line; a waved and curved antemedial line; the orbicular oblique, with fuscous centre and black edges; the reniform an oblique 'arrow-head mark. Hind wing opalescent and semihyaline white, with dark marginal line. Wingspan: 35 – 40 mm

Distribution: India: Jharkhand (East Singhbhum), Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Sikkim, Tripura, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* Australo-Papuan, Ethiopian, Indonesia, Nepal, Singapore, South Myanmar, Sri Lanka, Taiwan of oriental and also Palaearctic and Hawaiian Regions.

190. *Spodoptera mauritia* (Boisduval)

1833. *Hadena mauritia* Boisduval, *Fauna Ent. Madag. Lep.*: 92 pl. 13, fig.9.

1894. *Spodoptera mauritia*: Hampson, *Fauna of British India, Moths*, 2: 248-249.

1991. *Spodoptera mauritia*: Mandal & Maulik, *Fauna of Orissa, Zool.Surv. India*, Part-3: 212-213.

Material examined: DWLS, Pindra bera, 11.xi. 2007 (4 exs.).

Diagnostic characters: The adult male moth is dark grey brown with a rusty tinge. Fore wing with small orbicular and ochreous, the reniform blackish; the submarginal line whitish and irregularly waved; a whitish patch between the orbicular and reniform and a dark patch on a central marginal are. Hind wing opalescent and semihyaline white, with dark marginal line. *Wingspan:* 40 mm

Distribution: India: Jharkhand (East Singhbhum), Andaman and Nicobar Island, Himachal Pradesh, Madhya Pradesh, Maharashtra, Orissa, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* Australo-Papuan, Ethiopio-Malagassic, Hawaiian Regions, Indonesia, Pakistan, Philippines of oriental, Southern Myanmar and Sri Lanka and Western Malaysia.

Subfamily ACRONICTINAE

191. *Craniophora fasciata* (Moore)

1884. *Hyboma fasciata* Moore, *Lep. Ceyl.* 3: 5.

1894. *Acronycta fasciata*: Hampson, *Fauna Brit. India, Moth*, 2: 243.

Material examined: Pindra bera, 27.ix.2008 (1 ex.).

Diagnostic characters: The head and thorax grey, suffused with fuscous. Fore wing grey, suffused with fuscous, especially on basal inner area beyond the middle; the orbicular and reniform large, the the reniform with a white ring inside the black margin. Hind wing whitish fuscous in male, and darker in female. Underside with a cell spot and postmedial lines. *Wingspan:* 37 mm.

Distribution: India: Jharkhand (East Singhbhum) and Himachal Pradesh. *Elsewhere:* Myanmar and Sri Lanka.

Subfamily AGARISTINAE

192. *Aegocera bimacula* Walker

1854. *Aegocera bimacula* Walker, *List. Het. B. M.* 1: 53.

1894. *Aegocera bimacula*: Hampson, *Fauna Brit. India*, Moth, 2: 158.

Material examined: Pindrabera, 08.viii.2008 (3 exs.).

Diagnostic characters: Palpi and head black; Collar and tetegulae marked with white; abdomen yellow; fore wing not much irrorated with grey scales; a yellowish-white streak expanding from base broken into three part with varying size and shape as in the case of Ceylon and South Indian form these spots are generally disconnected; a postmedial band from the costa to vein 3. Hind wing with a spot at each angle of cell. *Wingspan*: 50-6 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam, Bengal and Plains of India. *Elsewhere*: Myanmar.

193. *Episteme adulatrix* Kollar

1844. *Eusemia adulatrix* Kollar, *Hugel's Kaschmir*, 4 (2): 464.

1894. *Eusemia adulatrix*: Hampson, *Fauna Brit. India*, Moths, 2: 152.

Material examined: DWLS, Pindrabera, 22.viii.2007 (2 exs.); 8.viii.2008 (2exs.).

Diagnostic characters: Adult moth is similar to *Eusemia nigripennis* but the submarginal series of white spots on both wings larger; the spots near anal angle of hind wing small; abdomen banded with orange and black. The basal, medial and postmedial blue spots of the fore wing very variable in size. *Wingspan*: 70-80 mm.

Distribution: Throughout India including Jharkhand (East Singhbhum) and Sikkim. *Elsewhere*: Myanmar.

194. *Mimeusemia basalis* (Walker)

1854. *Eusemia basalis* Walker, *List. Het. B.M.* 1: 53.

1892. *Mimeusemia basalis*: Hampson, *Fauna Brit. India*, Moths, 2: 159.

Material examined: DWLS, Pindrabera, 22.viii.2007 (1 ex.).

Diagnostic characters: The head and thorax black; abdomen black, the terminal segments ringed with orange. Fore wing black with chestnut tinge, and crossed by four indistinct lines of metallic-blue scales; a large subbasal yellow spot. Hind wing with a subbasal orange patch on the inner margin; a yellow spot at the end of cell. *Wingspan*: 70-80 mm.

Distribution: India: Jharkhand (East Singhbhum), Assam and Bengal.

195. *Sarbanissa albifascia* Walker

1865. *Catocala albifascia* Walker, *Cat.* 33: 933

1894. *Zalissa albifascia*: Hampson, *Fauna Brit. India*, Moths, 2: 157.

Material examined: DWLS, Pindra bera, 29.ix.2008 (2 exs.).

Diagnostic character: Male: The head and thorax dark chestnut-brown, abdomen golden yellow with series of dorsal black spots. In fore wing the orbicular and reniform spots being indistinct and not outlined with white, the patch beyond cell large and some time pure white. Hind wing with the black band broadest at the apex. Underside with the base of fore wing yellow; white patches at apices of both wings. *Wingspan:* 58 mm.

Distribution: India: Jharkhand (East Singhbhum) Andamans, Karnataka, Plains of India, and Sikkim.

Elsewhere: China (north) and Myanmar.

Superfamily NOCTUOIDEA

Family LYMANTRIIDAE

196. *Nygmia icilia* (Stoll) *

1790. *Nygmia icilia* Stoll, *Pap. Exot. Suppl.*5: 158.

1892. *Euproctis icilia*, Hampson, *Fauna Brit. India*, Moths, 1: 479.

Material examined: Pindra bera, 22.viii.2007; 27.ix.2008 (1 ex.).

Diagnostic characters: Adult (Male and female): Head, thorax, and abdomen fulvous. Fore wing bright orange-yellow, the whole base being purplish brown, and often conjoined to the broad postmedial band below the cell. Hind wing paler. *Wingspan:* 44 mm (M); 55 mm (F)

Distribution: India: Jharkhand (East Singhbhum), N.W. Himalayas, South India and Tamil Nadu.

Elsewhere: Sri Lanka.

197. *Arna bipunctapex* Hampson

1891. *Somena bipunctapex* Hampson, *Ill. Het. Br. Mus.* 8: 57.

1894. *Euproctis bipunctapex*: Hampson, *Fauna Brit. India*, Moths, 1: 484.

Material examined: DWLS, Pindra bera, 22.viii.2008 (2 exs.).

Diagnostic characters: Head, thorax, and abdomen of the adult female is red-brown and the anal tuft brownish yellow. Fore wing red-brown, irrorated with dark scales. Hind wing brown, with a broad, marginal, yellow band. *Wingspan:* 26-42 mm (F).

Distribution: India: Jharkhand (East Singhbhum), Himachal Pradesh and Tamil Nadu. *Elsewhere:* China and Myanmar.

198. *Dasychira grotei* Moore

1859. *Dasychira grotei* Moore, *Cat. Lep. Mus. E. I. C.* 2: 338.

1892. *Dasychira horsfieldi*: Hampson, *Fauna Brit. India*, Moths, 1: 448.

1997. *Dasychira horsfieldi*: Mandal & Maulik, *Fauna of West Bengal, Zool. Surv. India*, Part-7: 654.

Material examined: DWLS, Pindra bera, 27.ix.2008 (1 ex.).

Diagnostic characters: Adult male whitish grey. The head and thorax whitish grey, the branches of antennae red brown, abdomen orange with red brown with anal tuft grey, legs spotted with black. Fore wing grayish white, irrorated with dark scales slightly suffused with brown. A dendate subbasal black line, two medial lines, the inner nearly straight. Hind wing pale, the inner area orange. Underside with prominent cell-spots to both wings. *Wingspan:* 46 mm (M).

Distribution: India: Throughout India including Jharkhand (East Singhbhum), Tamil Nadu and West Bengal. *Elsewhere:* Australia, Indonesia, Myanmar, Sri Lanka and Western Malaysia

Family NOTODONTIDAE

199. *Neocerura liturata* (Walker)

1855. *Cerura liturata* Walker, *List. Lep. Het. Br. Mus.* v: 988.

1892. *Cerura liturata*: Hampson, *Fauna Brit. India*, Moths, 1: 185-186.

Material examined: DWLS, Pindrabera, 27.ix.2008 (1 ex.).

Diagnostic characters: (Male): The head, thorax, and abdomen fulvous in colour. The fore wing is fulvous with a dark speck at the end of the cell; a small black patch with white scales on it at apex. Hind wing pale yellow with small black marginal streak at apex and anal angle. *Wingspan:* 50 mm (M).

Distribution: India: Jharkhand (East Singhbhum), Assam, Madhya Pradesh, Maharashtra, Sikkim and Tamil Nadu. *Elsewhere:* China, Indonesia and Sri Lanka.

200. *Neostauropus alternus* (Walker)

1855. *Stauropus alternus* Walker, *List. Lep. Het.Br. Mus.*, 5: 1020.

1892. *Stauropus alternus*: Hampson, *Fauna Brit. India*, Moths, 1: 149-150.

Material examined: DWLS, Pindra bera, 22.viii.2007 (2 exs.); 23.viii.2007 (2 exs.).

Diagnostic characters: (Male): The head and thorax brownish grey, and abdomen grey brown with the dorsal tufts on first six segments.. Fore wing bronish grey with a submarginalseries of red-brown spots with pale lunules inside them. Hind wing white with the costal and inner areas brown. Underside brown. *Wingspan:* 55–68 mm (F).

Distribution: India: Jharkhand (East Singhbhum), Maharashtra and Orissa. *Elsewhere:* Myanmar and Sri Lanka.

Subfamily PHALERINAE

201. *Phalera raya* Moore

1859. *Phalera raya* Moore, *Cat. Lep. Mus. E. J. C.*, 2: 433.

1892. *Phalera raya*: Hampson, *Fauna Brit. India*, Moths, 1: 134.

Material examined: DWLS, Pindra bera, 27.ix.2008 (1 ex.).

Diagnostic characters: The adult moth differs from *Phalera procera* in the frons being buff. The fore wing heavily suffused with silvery grey on basal and inner areas and the apical region paler.

Wingspan: 70 mm (M)

Distribution: India: Jharkhand (East Singhbhum), Himachal Pradesh, Madhya Pradesh, Maharashtra, Nagaland, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* China and Sri Lanka.

Family EUPTEROTIDAE

202. *Eupterote fabia* f. *discordans* Butler

1881. *Eupterote fabia* f. *discordans* Butler, *Ill. Lep. Het.Br. Mus.*, 5: 66.

1892. *Eupterote fabia* f. *discordans*: Hampson, *Fauna Brit. India*, Moths, 1: 56-57.

Material examined: DWLS, Pindrabera, 29.ix.2008 (2 exs.).

Diagnostic characters: (Male): This is a form of *Eupterote fabia*. The head, thorax, abdomen, and base and outer margin of fore wing yellow; whilst the whole medial area is suffused with umber-brown.

Wingspan: 90 mm.

Distribution: India: Jharkhand (East Singhbhum), Sikkim, South India and West Bengal. *Elsewhere:* Sri Lanka.

203. *Ganisa plana* Walker

1855. *Ganisa plana* Walker, *List Lep. Ins. Brit. Mus.* 5: 1191.

1892. *Ganisa postica*: Hampson, *Fauna Brit. India*, Moths, 1: 49 - 50.

2007. *Ganisa plana*: Chandra & Nema, *Fauna of Madhya Pradesh (including Madhya Pradesh) State Fauna Series*, 15: 379.

Material examined: DWLS, Pindrabera, 20.viii.2007 (2 exs.).

Diagnostic characters: Head dark brown; the thorax, abdomen, and fore wing purplish grey-brown. Fore wing with indistinct antemedial oblique line; a black and grey speck at end of cell; a double oblique, nearly straightline from apex to inner margin beyond middle. Hind wing sometimes with black speck at end of cell; the postmedial line oblique and slightly waved, generally, with a series of dark specks beyond it. Underside with the specks at end of cell and waved lines more distinct.

Wingspan: 60–65 mm.

Distribution: India: Jharkhand (East Singhbhum), Himachal Pradesh, Madhya Pradesh Nagaland and Sikkim. *Elsewhere:* Pakistan and Sri Lanka.

Family LIMACODIDAE

204. *Birhamoides junctura* (Walker)

1865. *Hyblaea junctura* Walker, *List. Lep. Ins. Br. Mus.* 33.: 857.

1892. *Birhamia junctura*: Hampson, *Fauna Brit. India*, Moths, 1: 384.

Material examined: DWLS, Pindrabera, 27.ix.2008 (1 ex.).

Diagnostic characters: (Male): The head, thorax, and abdomen bright red brown. The fore wing red brown with basal area darkest, and bounded by an oblique dark medial line and outer area with two indistinct waved lines. Hind wing paler. *Wingspan:* 38 mm (M).

Distribution: India: Jharkhand (East Singhbhum) and Uttar Pradesh. *Elsewhere:* Indonesia and Myanmar.

205. *Cheromettia laleana* (Moore)

1859. *Parasa laleana* Moore, *Ann. Mag. Nat. Hist.* (4)20: 417.

1892. *Belippa laleana*: Hampson, *Fauna Brit. India*, Moths, 1: 399.

Material examined: DWLS, Pindrabera, 27.ix.2008 (2 exs.); 05.xii.2008 (2 exs.).

Diagnostic characters: (Male): The head, thorax, and abdomen fulvous in colour. The fore wing is fulvous with a dark speck at the end of the cell; a small black patch with white scales on it at apex. Hind wing pale yellow with small black marginal streak at apex and anal angle. *Wingspan:* 30–33 mm.

Distribution: India: Jharkhand (East Singhbhum) and Sikkim. *Elsewhere:* Myanmar and Sri Lanka.

Superfamily COSSOIDEA

Family COSSIDAE

Subfamily ZEUZERINAE

206. *Xyleutes persona* (Le Guillou)

1841. *Cossus persona* Le Guillou, *Revue. Zool.*, 4: 257.

1892. *Duomitus leuconotus*: Hampson, *Fauna Brit. India*, Moths, 1: 308.

1986. *Xyleutes persona*: Holloway, *The Malayan Nature Journal*, 40 (1&2): 35.

Material examined: DWLS, Pindrabera, 27.ix.2008 (1 ex.).

Diagnostic characters: (Male): The head and abdomen black, the thorax covered with erect white scales. Fore wing blackish; the inner marginal area with irregular conjoined white patches; a black streak beyond the cell. Hind wing blackish with black reticulations; a white patch on outer margins towards anal angle. *Wingspan:* 105 mm (M)

Distribution: India: Jharkhand (East Singhbhum), Himachal Pradesh, Madhya Pradesh, Manipur, Sikkim and West Bengal. *Elsewhere:* Bangladesh, China and Sri Lanka.

Family NOLIDAE

Subfamily BLENINAE

207. *Blenina donans* Walker

1859. *Blenina donans* Walker, *Cat.* 3: 1215.

1894. *Blenina donans*: Hampson, *Fauna Brit. India*, Moths, 2: 377.

Material examined: DWLS, Pindrabera, 27.ix.2008 (2 exs.).

Diagnostic characters: Male: Head and thorax grey, suffused with fuscous; abdomen orange fulvous. Fore wing grey with slightly suffused fuscous; indistinct wavy subbasal, medial and postmedial, and irregular submarginal dark lines. Hind wing orange with marginal fuscous-black border, widest at apex. *Wingpan:* 41–44 mm

Distribution: India: Jharkhand (East Singhbhum), Andamans and Tamil Nadu. *Elsewhere:* New Guinea and Sri Lanka.

Subfamily ELIGMINAE

208. *Eligma narcissus* (Cramer)

1775. *Bombyx narcissus* Cramer, *Pap. Exot.*, 1. pl. 73.

1894. *Eligma narcissus*: Hampson, *Fauna Brit. India*, Moths, 2: 43 - 44.

Material examined: DWLS, Pindrabera, 05.xii.2007 (1 ex.).

Diagnostic characters: Adult male: Head and thorax grey-brown, spotted with black. Abdomen bright yellow, with dorsal and lateral series of black spots. Fore legs grey-brown; costal area with an olive tinge; an irregular and diffused curved white fascia from base to apex of fore wing. Some basal and subbasal black spots. Hind wing bright yellow; the apical area black, suffused or streaked with dark blue. *Wingspan:* 68 mm.

Distribution: India: Jharkhand (East Singhbhum) and South India. *Elsewhere:* China, Indonesia and Sri Lanka.

Subfamily WESTERMANNIINAE

209. *Westermannia triangularis* Moore

1877. *Westermannia triangularis* Moore, *Proc. Zool. Soc.*: 605.

1894. *Westermannia triangularis*: Hampson, *Fauna Brit. India*, Moths, 2: 359.

Material examined: DWLS, Pindrabera, 06.viii.2008 (2 exs.); 28.ix.2008 (2 exs.).

Diagnostic characters: Head and thorax white; abdomen fuscous; fore wing white, with a medial fuscous band from median nervure to inner margin, with a diffused fuscous streak from it to base along median nervure; the outer area coppery brown, with the margin blue grey. Hind wing whitish, fuscous towards outer margin. *Wing expanse:* 36–40 mm.

Distribution: India: Jharkhand (East Singhbhum), Andamans and Assam.

SUMMARY

The present study dealt with the insect fauna of Dalma Wildlife Sanctuary, Jharkhand with special reference to Order Lepidoptera (Insecta) was undertaken during 2007-2009 and documented 209 species of Lepidoptera belonging to 77 species/subspecies, 51 genera under 5 families of butterflies and 132 species, 112 genera under 20 families of moths were recorded which would be helpful for the researchers, planners, policy makers and conservationist for the insect biodiversity conservation and management of this sanctuary.

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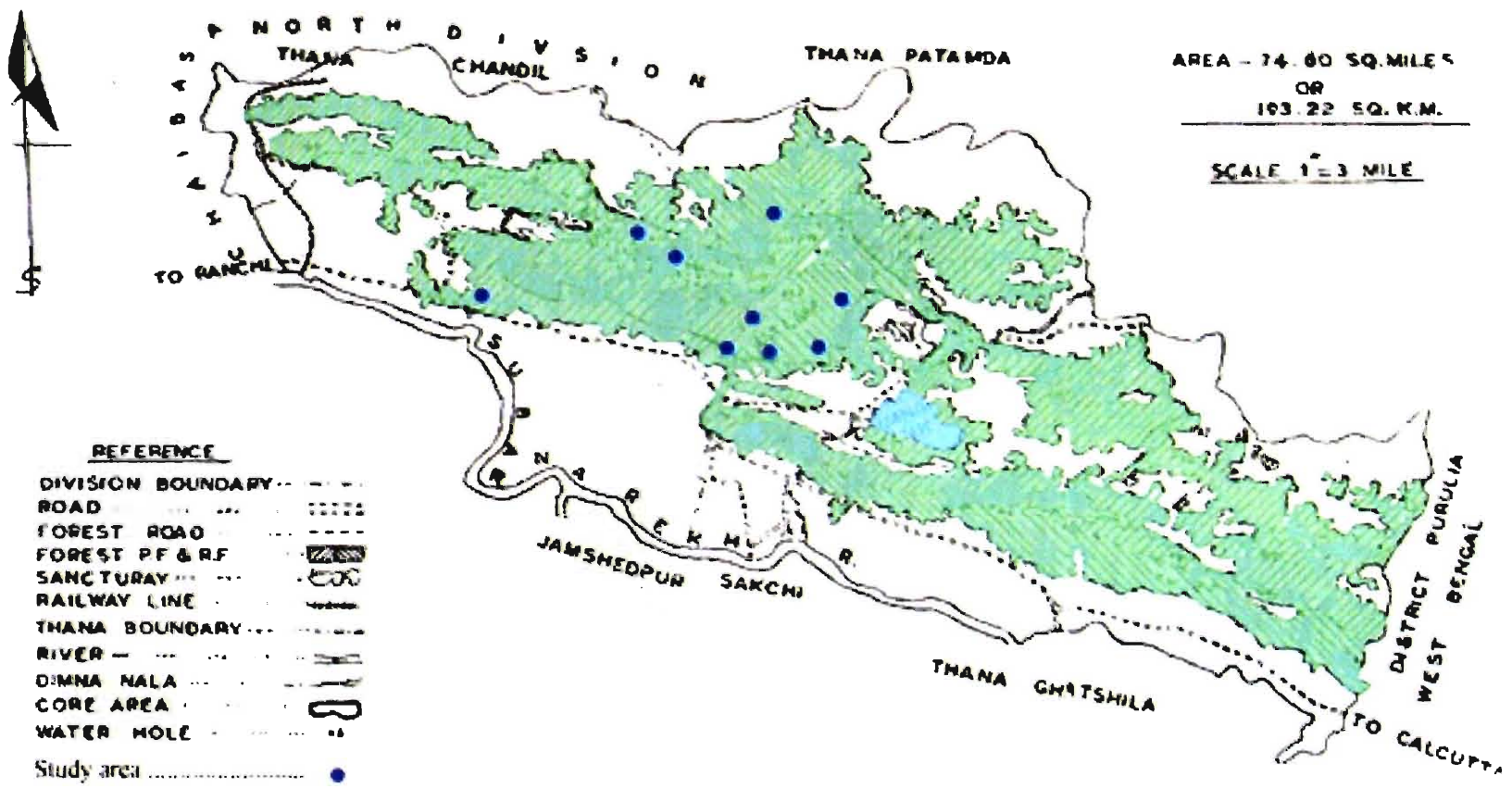
REFERENCES

- Beccaloni, G., Scoble, M., Robinson, G. & Pitkin, B. (2005) *The global Lepidoptera names index*. Natural History Museum, London. Available from <http://www.nhm.ac.uk/research-curation/projects/lepindex/index.html>.
- Bell, T.R.D. and Scott, F.B. 1937. *Fauna of British India including Ceylon and Burma, Moths*, 5 : 1-539.
- Champion, H.G and Seth, S.K. (1968). *General Silviculture of India*, Manager of Publications, Delhi.
- Chandra, K., Sharma, R.M., Ajit Singh and Singh, R.K. 2007. A Checklist of Butterflies of Madhya Pradesh and Chhattisgarh states. *Zoos' Print Journal*, 22(8): 2790-2798.
- De Niceville, L. 1886. *The Butterflies of India, Burmah and Ceylon*. Vol. 2. Reprinted by A.J. Reprints Agency, New Delhi : 332 pp.

- Evans, W.H. 1932. *The Identification of Indian Butterflies*. 2nd ed. Bombay Natural History Society, Bombay: 454 pp
- Ghosh, S.K. and Chaudhury, M. 1997. Insecta: Lepidoptera : Hesperidae. *Zool. Surv. India, Fauna of West Bengal, State Fauna Series*, 3(Part-7): 275-318.
- Ghosh, S.K. and Chaudhury, M. 1997. Insecta: Lepidoptera: Pieridae. *Zool. Surv. India, Fauna of West Bengal, State Fauna Series*, 3(Part-7): 705-728.
- Gupta, I.J. 1997. Insecta: Lepidoptera: Amathusiidae: Acraeidae: Nymphalidae: Riodinidae. *Zool. Surv. India, Fauna of West Bengal, State Fauna Series*, 3(Part-7): 533-612.
- Gupta, and Shukla, J.P.N. 1987. Butterflies from Bastar district (Madhya Pradesh) *Rec. zool. Surv. India, Occ. Pap. No. 106* : 74 pp.
- Ghosh, S. K. 2003. Insecta: Lepidoptera: Heterocera: Geometridae, *Fauna of Sikkim, State Fauna Series*, 9(Part-4): 217-342.
- Hampson, G.F. 1892. *The Fauna of British India, Moths*, 1: 1-527.
- Hampson, G.F. 1894. *The Fauna of British India, Moths*, 2: 1-528.
- Hampson, G.F. 1895. *The Fauna of British India, Moths*, 3: 1-546.
- Hampson, G.F. 1896. *The Fauna of British India, Moths*, 4: 1-594.
- Holloway, J.D. 1989. The Moths of Borneo, *The Malayan Nature Journal*, 40 (1&2): 166.
- Jamal Ara, 1960. A cursory ecological survey of the flora and fauna of the Hazaribagh National Park (Bihar). *J. Bombay nat. Hist. Soc.*, 57(2): 326-338.
- Jamal Ara, 1966. Hazaribagh National Park (Bihar) re-visited. *J. Bombay nat. Hist. Soc.*, 63(1): 123-138.
- Mandal, D.K. and Maulik, D.R. 1991. Insecta : Lepidoptera : Rhopalocera : Nymphalidae : Danainae. *Zool. Surv. India, Fauna of Orissa, State Fauna Series*, 1(Part-3): 235-238.
- Marshall, G.F.L and De Niceville, L. 1882. *The Butterflies of India, Burmah and Ceylon*. Vol. 1. Reprinted by A.J. Reprints Agency, New Delhi : 327 pp.
- Morrison-Godfrey, P.W. 1948. Butterflies of South Bihar. *J. Bombay nat. Hist. Soc.*, 47(4): 644-651.
- Nahar, S.C. and G. Sharma. 2007. Fauna of Singhbhum and Giridih Districts with special reference to Dalma Sanctuary. ZSI, H.Q. Kolkata (in press).
- Nandi, D.N. 1993. Insecta : Lepidoptera : Satyridae. *Zool. Surv. India, Fauna of Orissa, State Fauna Series*, 1(Part-4): 181-184.

- Pollard, E. 1977. A method of assessing changes in the abundance of butterflies. *Biological Conservation*, 12: 115-134.
- Rodgers, W.A. and Panwar, H.S. 1988. 'Planning Wildlife protected Area Network in India'. Wildlife Institute of India, Dehra Dun, Uttarkhand.
- Richard, O.W and Davies, R.G. 1977. Textbook of Entomology (10th edition), II: 1143-1145.
- Sharma, R.M. and Borkar, M.R. 2008. Insecta : Lepidoptera : Rhopalocera and Grypocera *Zool Surv. India, Fauna of Goa, State Fauna Series*, 16 : 199-210.
- Singh, R.K. and Koshta, M. K. 1977. On a collection of butterflies (Lepidoptera : Rhopalocera) from Kanha National Park, Madhya Pradesh, India. *Rec. zool. Surv. India*, 96(1-4): 15-23.
- Singh, R. K. 1977(a). Report on a collection of butterflies (Lepidoptera : Rhopalocera) from Shivpuri National Park, Madhya Pradesh. *Newsl. zool. Surv. India*, 3(1): 23-24.
- Singh, R.K. 1977(b). Report on a collection of butterflies (Insecta) from Bastar District, Madhya Pradesh, India. *Newsl. zool. Surv. India*, 3(5): 323-326.
- Singh, R.K. 1995. Fauna of Kanha Tiger Reserve, Insecta : Lepidoptera : Zoological Survey of India, *Fauna of Conservation Areas*, 7 : 15-17.
- Singh, R.K. and Koshta, M.L. 2007. Insecta : Lepidoptera : Rhopalocera (Butterflies). *Zool. Surv. India, Fauna of Madhya Pradesh (including Chhattisgarh), State Fauna Series*, 15 (Part-1): 301-345.
- Talbot, G. 1939. *The fauna of British India, including Ceylon and Burma*, (Butterflies), Second ed., 1 : 600 pp., Taylor and Francis Ltd., London.
- Talbot, G. 1947. *The fauna of British India, including Ceylon and Burma*, (Butterflies), Second ed., 2 : 506 pp., Taylor and Francis Ltd., London.
- Varshney, R.K., Nandi, B. and Nahar, S. C. 1981. Butterflies from Hazaribagh National Park (South Bihar) Lepidoptera : Rhopalocera. *Rec. zool. Surv. India, Occ. Pap.*, 31 : 1-38.]
- Varshney, R.K. 1983. Index Rhopalocera Indica. Part II, Common names of butterflies from India and neighbouring Countries. *Rec. zool. Surv. India, Occ. Pap.*, 47 : 1-49.
- Varshney, R.K. 1993. Index Rhopalocera Indica. Part III, Genera of Butterflies from India and neighbouring Countries (Lepidoptera: (A) Papilionidae, Pieridae and Danaidae). *Oriental Ins.*, 27: 347-372.
- Varshney, R.K. 1994. Index Rhopalocera Indica. Part III, Genera of Butterflies from India and neighbouring Countries (Lepidoptera: (B) Satyridae, Libythidae and Riodinidae). *Oriental Ins.*, 28:

- Varshney, R.K. 2003. Modern classification of Insecta above family level. *Bionotes*, 5 (3&4) & 6(1, 2&3): 61-62 & 85-87; 9-11; 43-44; 67-69.
- Varshney, R.K. 2006. An estimate of the numbers of butterfly species in the Indian Region. *Bionotes*, 8(3): 61-63.
- Verma, S.K. 2009. Species composition and seasonal variation of butterflies in Dalma Wildlife Sanctuary, Jharkhand, India. *Journal of Threatened Taxa*, 1(5): 295-297.
- Wynter-Blyth, M.A. 1957. *Butterflies of the Indian Region*: 523pp. 72pls. (Published by Bombay Natural History Society, Bombay).



Map showing the study areas of Dalma Wildlife Sanctuary, Jharkhand

BUTTERFLIES

PLATE-I

Family - HEPERIIDAE



Caprona ransonnetti ransonnetti (Felder)



Celaenorrhinus leucocera leucocera (Kollar)



Udaspes folus (Cramer)

Family - LYCAENIDAE



Tajuria cippus (Fabricius)



Spindasis vulcanus vulcanus (Fabricius)

PLATE-II

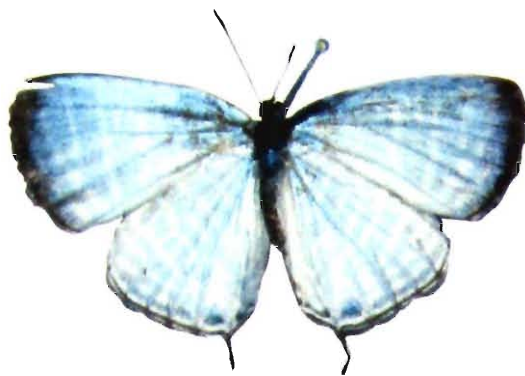
Family - LYCAENIDAE



Amblypodia anita dina (Fruhstorfer)



Arhopala amantes amantes (Hewitson)



Jamides celeno (Cramer)

Family - NYMPHALIDAE



Ypthima inica Hewitson



Tellervo limniace leopardus (Butler)

PLATE-III
Family - NYMPHALIDAE



Abisara echerius suffusa Moore



Acraea violae (Fabricius)



Danaus chrysippus chrysippus (Linnaeus)



Danaus genutia (Cramer)



Ariadne ariadne indica (Moore)



Charaxes polyxena imna Butler

PLATE-IV

Family - NYMPHALIDAE



Curetis dentata dentata Moore



Cyrestis t. thyodamas Boisduval



Euploea core core (Cramer)



Euthalia lubentina indica Fruhstorfer



Hypolimnas bolina (Linnaeus) - Female



Hypolimnas bolina (Linnaeus) - Male

PLATE-V
Family - NYMPHALIDAE



Junonia almana almana (Linnaeus)



Junonia atlites (Linnaeus)



Junonia lemonias vaisya (Fruhstorfer)



Limenitis procris procris (Cramer)



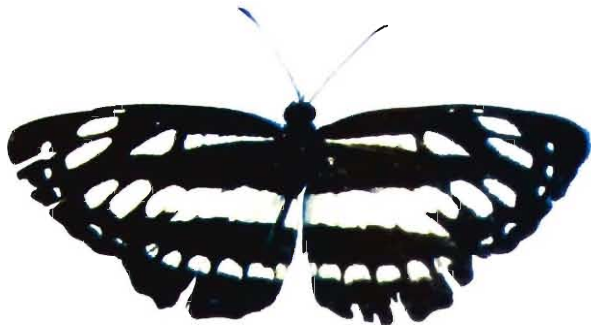
Melanitis leda ismene (Cramer)



Mycalesis mineus polydecta (Cramer)

PLATE-VI

Family - NYMPHALIDAE



Neptis hylas astola Moore



Parathyma nefte inara (Doubleday) Male



Parathyma nefte inara (Doubleday) Female



Parathyma perius perius (Linnaeus)



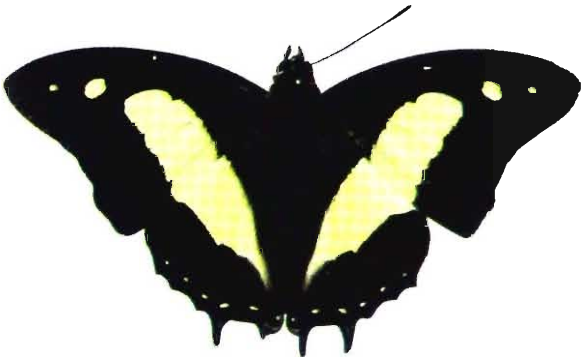
Parathyma ranga (Moore)



Phalanta phalantha phalantha (Drury)

PLATE-VII

Family - NYMPHALIDAE



Polyura arja (C. & R. Felder)



Symphaedra nais Forster

Family - PAPILIONIDAE



Papilio polytes f. *romulus* Linnaeus



Papilio polytes f. *stichius* Linnaeus



Chilasa clytia (Linnaeus)



Graphium doson eleius (Fruhstorfer)

PLATE-VIII

Family - PAPILIONIDAE



Graphium antiphates pompilius (Fabricius)



Graphium nomius (Esper)



Papilio crino (Fabricius)



Papilio demoleus demoleus Linnaeus

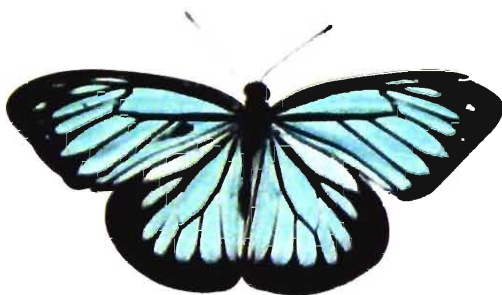


Papilio polymnestor polymnestor Cramer



Papilio polytes Linnaeus - Male

Family - PIERIDAE

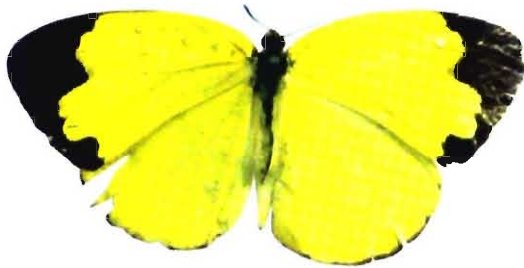


Valeria valeria hippia (Fabricius) Male



Valeria valeria hippia (Fabricius) - Female

PLATE-IX
Family - PIERIDAE



Eurema blanda silhetana (Wallace)



Eurema hecabe contubernalis (Moore) WSF Female



Anaphaeis aurota aurota (Fabricius)



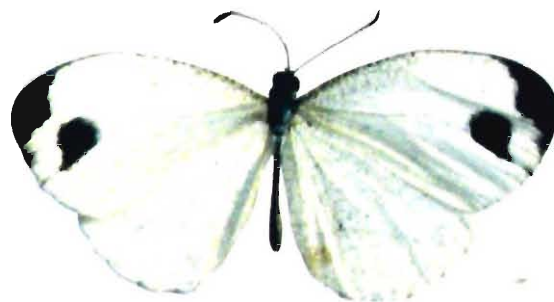
Catopsilia pomona (Fabricius) - Female



Catopsilia pomona (Fabricius) - Male



Cepora nerissa phryne (Fabricius)



Laptosia nina nina (Fabricius)

MOTHS

Plate - X

Family - HYBLAEIDAE



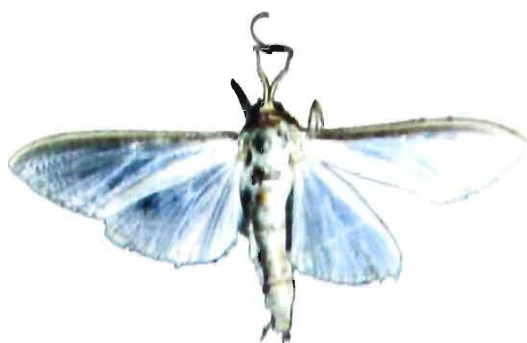
Hyblaea puera Cramer

Family - PYRALIDAE



Botyodes asialis Guenee

Family - PYRALIDAE



Caprinia conchylalis Guenee



Pygospilla tyres (Cramer)

Family - ZYGAENIDAE



Gynautocera papillonaria Guerin - Meneville

Family - GEOMETRIDAE



Pingasa ruginaria (Guenee)

PLATE - XI
Family - GEOMETRIDAE



Buzura suppressaria (Guenee)



Semiothisa fasciata Fabricius



Agathia lycaenaria (Kollar)



Eumelea ludovicata Guenee

PLATE-XII

Family - GEOMETRIDAE



Problepsis deliaria (Guenee)



Zamarada translucida (Moore)

Family - DREPANIDAE



Cyclidia substigmatica Hubner

Family - BOMBYCIDAE



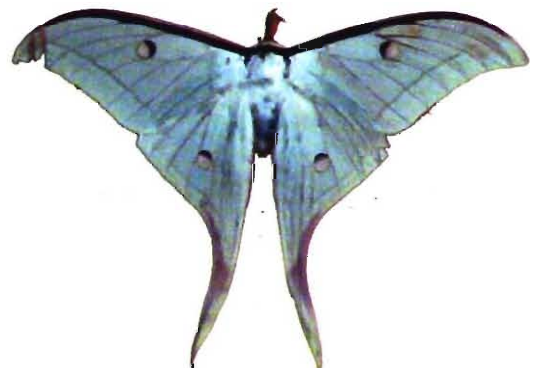
Triuncina huttoni Westwood

Family - BRAHMAEIDAE



Barahmidia hearseyi White

Family - SATURNIIDAE



Actias selene Hubner

PLATE-XIII

Family - SATURNIIDAE



Antheraea paphia (Linnaeus)

Family - SPHINGIDAE



Acherontia lachesis (Fabricius)

Family - SPHINGIDAE



Acherontia styx styx (Westwood)



Ambulyx substrigilis aglaia Jordan



Deilephila h. hypothous Cramer



Dolbina inexacta (Walker) - Female

PLATE-XIV

Family - SPHINGIDAE



Macroglossum belis Linnaeus



Meganoton nyctiphanes Walker



Psilogamma menephron menephron (Cramer)



Pergesa acteus (Cramer)



Theretra clotho clotho (Drury)



Theretra nessus (Drury)

PLATE-XV

Family - ARCTIIDAE



Macrobrochis gigas Walker



Estigmene biguttata Walker



Pericallia ricini (Fabricius)



Amata cyssea Cramer



Creatonotus gangis (Moore)

PLATE-XVI

Family - ARCTIIDAE



Amerila astreus (Drury)

Family - NOCTUIDAE



Spodoptera litura (Fabricius)



Aegocera bimacula (Walker)



Anisoneura hypocyanea Guenee



Arta dotata (Fabricius)

PLATE-XVII
Family - NOCTUIDAE



Asota caricae (Fabricius)



Asota ficus (Fabricius)



Asota plana (Walker)



Chalciope mygdon (Cramer)



Chrysodeixis eriosoma (Doubleclay)

PLATE-XVIII

Family - NOCTUIDAE



Craniophora fasciata (Moore)



Dysgonia algira Linnaeus



Anua triphaenoides (Walker)



Erchiea cyllaria (Cramer)



Erebus caprimulgus Walker

PLATE-XIX
Family - NOCTUIDAE



Eupatima macrops (Linnæus)



Fodina stola Guenee



Grammodes geometrica Fabricius



Helicoverpa armigera (Hubner)



Hypocala deflorata Fabricius)



Ischyja manlia Cramer

PLATE-XX

Family - NOCTUIDAE



Mimeusemia basalis Walker



Nagia linteola (Guenee)



Pindara illibata (Fabricius)



Ramadasa pavo (Walker)



Remigia frugalis (Fabricius)



Remigia undata (Fabricius)

PLATE-XXI

Family - NOCTUIDAE



Sarbanissa albifascia (Walker)



Sphingomorpha chlorea (Cramer)



Spirama retorta (Clerck)



Thyas honesta (Hubner)



Thyvanoplusia orichalcea (Fabricius)



Trigonodes hyppasia (Cramer)



Ophiusa tirrhaca Cramer



Episteme adulatrix Kollar

PLATE-XXII

Family - NOCTUIDAE



Anomis fulvida (Guenee)



Anua coronata (Fabricius)



Neochera inops Walker



Acanthodelta janata (Linnaeus)

Family - NOTODONTIDAE



Neocerura liturata (Walker)



Neostauropus alternus (Walker)

Family - EUPTEROTIDAE



Eupterote fabia f. *discordans* Butler

PLATE-XXIII

Family - LIMACODIDAE



Birthamoides junctura (Walker)



Cheromettia laleana (Moore)

Family - COSSIDAE



Xyleutes persona Le Guillou

Family - NOLIDAE



Eligma narcissus (Cramer)

Family - LASIOCAMPIDAE



Trabala vishnou (Lefebvre) - Female



Trabala vishnou (Lefebvre) - Male

