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OCCASIONAL PAPER NO. 106

Records of the Zoological Survey of India

**BUTTER FLIES FROM BASTAR DISTRICT
(MADHYA PRADESH, INDIA)**

**I. J. Gupta
J. P. N. Shukla**

Zoological Survey of India

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I. J. GUPTA & J. P. N. SHUKLA
Zoological Survey of India, Calcutta.



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INTRODUCTION

The present study deals with butterfly fauna of the hitherto largely unexplored area of the Bastar District. About 1,000 specimens have been collected by various survey parties during the period 1978-1980. Identification of the material has revealed 60 species.

Bastar District is situated between 80°-15' to 82°-15' East longitudes and 17°-46' to 20°-34' North latitudes. It is bounded by Maharashtra in the west, Andhra Pradesh in the south and Orissa in the east. Jagadapur is its Administrative Centre.

The District has an area of 390,60 sq. kms., which is greater than the area of state like Kerala. It is inhabited by rich fauna. More than one-third of its area is occupied by thick forests. It has a hilly tract with its altitude ranging from 49 to 1276 metres.

Climatically, there are three seasons—the winter lasts from November to February, the summer is very hot with occasional showers from March to May and then it becomes mild towards the middle of June. The monsoon starts from middle of June and ends in October. The average annual rainfall is 1,521 mm. The temperature may reach 19°C in the coldest month of December and 31°C in the hottest month of May.

The butterflies have been earlier reported from other parts of Madhya Pradesh by Forsayeth (1884), Swinhoe (1886), Betham (1890, 1891), Witt (1909) and Singh (1977a). Of the 17 species reported by Singh (1977b) from the area under consideration, eight have been referred here under their valid genera.

Presently, 60 species and subspecies belonging to 38 genera under nine families have been dealt together with their geographical distribution. Measurement of fore wing length has been given in mm. Remarks on species and subspecies include their common name, colour variations and nomenclatural changes, if any. The consolidated information on the known host plants of these butterflies has also been provided (*vide* Lefroy, 1909 ; Roonwal, 1954 ; Bhasin and Roonwal, 1954, 1958 ; Wynter-Blyth, 1957 and Mathur and Singh, 1959-1961).

For keys to genera and species in different families reported from the area under study, mainly works followed are of Evans (1932), Corbet and Pendlebury (1956) for Nymphalidae and Riodinidae ; Talbot (1939, 1947) for Papilionidae, Pieridae, Satyridae and Danaidae and Cantlie (1962) for Lycaenidae.

Terminology used with reference to interspaces of the wing veins :

In fore wing, space between anal margin—1A+2A, 1A+2A-Cu1b, Cu1b-Cu1a, Cu1a-M₃, M₃-M₂, M₂-M₁, M₁-R₅, R₅-R₄, R₄-R₃, R₃-R₂, R₂-R₁ and R₁-Sc has been referred to as interspace 1a, 1b, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11 respectively. Similarly, in hind wing, space between anal margin-3A, 3A-1A+2A, 1A+2A-Cu1b, Cu1b-Cu1a, Cu1a-M₃, M₃-M₂, M₂-M₁, M₁-Rs, Rs-Sc+R₁ has been referred to as interspace 1a, 1b, 1c, 2, 3, 4, 5, 6, and 7 respectively.

SYSTEMATIC ACCOUNT

Family PAPILIONIDAE

Fore wing with vein M₁ arising from the middle discocellular, veins M₂ and M₃ from lower discocellular, Cu1a from a little beyond and Cu1b from middle of median vein ; hind wing in male with a specialised anal fold ; fore tibia with a ventral epiphysis and hind tibia with a pair of mesial spurs.

The family is represented by a single genus i. e. *Papilio* Linnaeus in the material collected from Bastar District.

I. Genus **Papilio** Linnaeus

1758. *Papilio* Linnaeus. *Syst. Nat.* (ed. 10), 1 : 458.

Type species : *Papilio machaon* Linnaeus, 1758.

Diagnostic characters : Fore wing with vein R₁ arising out of apical half of vein Sc, R₄ present. Hind wing with short and much broader than long precostal cell, often tailed but not attenuating posteriorly.

Distribution : World wide.

Remarks : The butterflies of this genus are popularly known as 'The Black-Bodied Swallowtails' Talbot (1939) recorded 31 species from India. At present two species, viz., *P. demoleus* Linnaeus and *P. polymnestor* Cramer are dealt with.

Key to species of the genus Papilio Linnaeus

Upperside of fore wing and hind wing with yellow markings, a tornal red spot present on hind wing	...	<i>demoleus</i> Linnaeus
Upperside of fore wing and hind wing with pale blue markings, a tornal red spot absent on hind wing	...	<i>polymnestor</i> Cramer

1. ***Papilio demoleus demoleus* Linnaeus**
(Plate I, nos. 1-2)

1758. *Papilio demoleus* Linnaeus, *Syst. Nat.* (ed. 10), 1 : 464.

1939. *Papilio demoleus demoleus*, Talbot, *The Fauna of British India (Butterflies)*, 1 : 189.

1977b. *Priniceps demodeocus* (sic), Singh, *Newsl. zool. Surv. India*, 3(5) : 323.

Material examined : Jagadapur, Kachauri village, 1 ex., 11.xii.1978 (coll. M. S. Shishodia, I. J. Gupta & party) ; Kukrigarh, 1 ex., 20.x.1979, Dharampur, 1 ex., 30.x.1979 (coll. S. Ahmed & party) ; Bhairamgarh, 1 ex., 21.xii.1978, Bailadila, 1 ex., 23.xii.1978 (coll. M. S. Shishodia, I. J. Gupta & party) ; Tumnar, 1 ex., 27.xii.1980 (coll. M. S. Shishodia, & party). Gidam, 1 ex., 4.xi.1979, 1 ex., 5.xi.1979, 7 exs., 7.xi.1979 (Coll. S. Ahmed & party) ; Kondagaon, 1 ex., 26.xii.1978, Kanker, Mankeshri, 1 ex., 1.i.1979 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing length.*—39-41 mm.

Distribution : Persia ; India ; North Burma to China (Taiwan) and Sri Lanka.

Remarks : The butterfly is commonly called 'The Lime Butterfly.' Upperside of hind wing, in male, has a tornal red spot without bluish scales ; yellow spots present or absent in interspace 3 and 4 or one of these spots present in interspace 3 or 4. This nominate subspecies was previously recorded from Konta.

Host plants : *Aegle marmelos* Correa (Bael), *Chloroxylon swietenia* DC. (East Indian Satin-wood), *Citrus aurantium* Linn. (Orange), *C. hystrix* DC., *C. maxima* (Burm.) Merrill (Chakotra), *C. medica* Linn. (Nimbu), *Feronia elephantum* Correa, *Glycosmis pentaphylla* Correa, *Murraya koenigi* Spr., *Zanthoxylum rhetsa* DC. and *Ziziphus mauritiana* Lamk. (Ber).

2. ***Papilio polymnestor polymnestor* Cramer**

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

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

Material examined : Konta, Saberi beds, 2 exs., 15.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing length.* 66-74 mm.

Distribution : Peninsular India including West Bengal, Sikkim and Assam.

Remarks : The butterfly commonly called 'The Blue Mormon' is a new record from Bastar District. Upperside of hind wing, in male,

has a discal series of elongate and broader black spots, followed by a submarginal series of almost rounded and small black spots. In the female, the upperside of hind wing bears a discal series of rounded and smaller black spots being followed by a series of elongate and broader black spots. On the underside of hind wing the black spots of submarginal series do not merge with the marginal black spots (*Vs.* the submarginal spots merged completely with the marginal spots, forming a comparatively broad marginal black band *vide* Talbot, 1939).

Host plants : *Atlantia* spp., *Citrus maxima* (Burm.) Merrill (Chakotra), *Glycosmis pentaphylla* Correa und *Paramygnya* sp.

Family PIERIDYAE

Antennae approximate at base. Fore wing with vein R_1 forked ; hind wing with the veins 3A and 1A+2A present. Fore legs fully developed in both sexes.

The family is represented, in Baster District, by 12 species distributed over seven genera.

Key to subfamilies of the family PIERIDAE

Palpi always hairy. Hind wing with well developed precostal vein curved distally ...	Pierinae
Palpi usually not hairy. Hind wing with precostal vein absent or very short and directed basally ...	Coliadinae

Subfamily PIERINAE

Palpi with their first and second segments furnished with hair or bristles. Fore wing with 10 to 12 veins ; hind wing with a well developed precostal vein, the latter directed distad.

Key to genera of the subfamily PIERINAE

1. Fore wing with veins R_4 and R_5 coincident	2
Fore wing with veins R_4 and R_5 separate ...	<i>Valeria</i> Horsfield	
2. Fore wing with vein R_2 from the cell	3
Fore wing with vein R_2 absent ...	<i>Delias</i> Huebner	
3. Fore wing with vein R_3 arising from R_{4+5} further from the apex, the stalk shorter	4
Fore wing with vein R_3 arising from R_{4+5} very close to the apex, the stalk long ...	<i>Pieris</i> Schrank	
4. Male with one or two hair pencils on the abdomen ...	<i>Appias</i> Huebner	
Male without hair pencils on the abdomen ...	<i>Cepora</i> Billberg	

II. Genus **Valeria** Horsfield

1829. *Valeria* Horsfield, *Cat. Lep. Ins. Mus. East India Coy.* (2) : 139.

Type species : *Papilio valeria* Cramer, 1776.

Diagnostic characters : Fore wing with veins R_4 and R_5 separate, M_1 from upper angle of cell.

Distribution : China (Hainan) ; India ; Burma ; Sri Lanka ; South and East to Papua Region.

Remarks : The butterflies of this genus are commonly known as 'The Wanderers' Of the three species known to occur in India, *V. valeria* Cramer is dealt with here.

3. **Valeria valeria hippia** (Fabricius)
(Plate I, nos. 3-4)

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

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

Material examined : Jagadapur, Donga Ghat, 1 ex., 12.xii.1978, Konta, Saberi beds, 4 exs., 15.xii.1978, Kanker, Mankeshri, 1 ex., 1.i. 1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length*. 38-40 mm.

Distribution : India, Burma and Thailand.

Remarks : The butterfly popularly known as 'The Common Wanderer' is a new record from Bastar District. Upperside of fore wing has dark brown border sending streaks, one of these streaks joins lower angle of discocellular which in turn joins another streak along the median vein. Upperside of hind wing is with ground colour light yellowish and inwardly dentate, dark brown border filled with yellowish green colour.

Host plants : *Capparis heyneana* Wall and *C. zeylanica* Linn.

III. Genus **Delias** Huebner

1819. *Delias* Huebner, *Verz. bekannt. Schmett.* (6) : 91.

Type-species : *Papilio egialea* Cramer, 1777.

Diagnostic characters : Fore wing with veins R_4 and R_5 coincident and R_2 absent.

Distribution : China (Tibet) ; Central and South China (Taiwan, Hainan) ; India ; Burma ; Papua (New Guinea) and Australia including Solomons.

Remarks : The butterflies of this genus are popularly called 'The Jezebels'. Of the eight species known to occur in India, two, viz., *D. eucharis* (Drury) and *D. hyparete* (Linnaeus) are dealt with here.

Key to species of the genus Delias Huebner

Underside of hind wing with red marginal markings inwardly margined with black ...	<i>eucharis</i> (Drury)
Underside of hind wing with red marginal markings not inwardly margined with black	<i>hyparete</i> (Linnaeus)

4. ***Delias eucharis*** (Drury)
(Plate I, nos. 5-6)

1773. *Papilio eucharis* Drury, *Ill. exot. Ent.* 2 : 16, pl. 10, figs. 5, 6, ♂.

1939. *Delias eucharis*, Talbot, *The Fauna of British India (Butterflies)*, 1 : 352.

1977b. *Piccarda eucharis*, Singh, *Newsl. zool. Surv. India*, 3(5) : 323.

Material examined : Jagadapur, Kachauri village, 1 ex., 11.xii.1978, Donga Ghat, 1 ex., 12.xii.1978, Bodhghat, 1 ex., 13.xii.1978, Gidam, 1 ex., 22.xii.1978 ; Bailadila, 5 exs., 23.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Tumnar, 1 ex., 27.xii.1980 (*Coll. M. S. Shishodia & party*). *Fore wing length*. 36-39.5 mm.

Distribution : Lower slopes of the Himalayas, Peninsular India and Sri Lanka.

Remarks : The butterfly is commonly known as 'The Common Jezebel'. Upperside of fore wing has an apical line of variable length ; white and squarish tornal spot may or may not be separated by a black submarginal line. In female, veins in wings are heavily blackened, a black submarginal line is present between veins Culb and M_1 or between Culb and M_1 . This species was earlier known from Donga Ghat in Jagadapur.

Host plants : *Dalbergia sissoo* Roxb., *Ficus glomerata* Roxb. (Gula), *Loranthus elasticus* Descr., *L. longiflorus* Descr., *L. scurrula* Linn. and *Mangifera indica* Linn. (Mango).

5. ***Delias hyparete ethire*** Doherty
(Plate I, nos. 7-8)

1886. *Delias ethire* Doherty, *J. Asiat. Soc. Beng.* 55(2) : 262, ♂, ♀

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

Material examined : Jagadapur, Bodhghat, 1 ex., 13.xii.1978, Konta, Saberi beds, 1 ex., 15.xii.1978 ; on way to Galapali, 1 ex.,

13.xii.1978, Gidam, Haram village, 1 ex., 22.xii.1978, Bailadila, 1 ex., 23.xii.1978. (Coll. M. S. Shishodia, I. J. Gupta & party). Fore wing length.—33-38 mm.

Distribution : Peninsular India including West Bengal and Orissa (Khurdha).

Remarks : This butterfly commonly known as 'The Painted Jezbel' is a new record from Bastar District. Males are yellowish white whereas females are darker in colouration.

IV. Genus *Pieris* Schrank

1801. *Pieris* Schrank, *Fauna boic.* 2(1) : 152, 161.

Type species : *Papilio brassicae* Linnaeus, 1758.

Diagnostic characters : Fore wing with vein R_3 arising from $R_4 + 5$ very close to the apex, the stalk long.

Distribution : India ; Burma to Malaya Peninsula ; Palaearctic and Nearctic Regions.

Remarks : The butterflies of this genus are commonly known as 'The Whites'. Of the nine species occurring in India *Pieris canidia indica* Evans is dealt with here.

6. *Pieris canidia indica* Evans

1926. *Pieris canidia indica* Evans, *J. Bombay nat. Hist. Soc.*, 31 : 712.

Material examined : Kondagaon, Paramveda, 1 ex., 26.xii.1978 Coll.) M. S. Shishodia, I. J. Gupta & party). Fore wing length.—22 mm.

Disiribution : Pakistan (North Baluchistan and Chitral) ; India and Burma.

Remarks : The butterfly commonly called 'The Indian Cabbage White' is a new record from Bastar District.

V. Genus *Appias* Huebner

1819. *Appias* Huebner, *Verz. bekannt. Schmett.* (6) : 91.

Type species : *Papilio zelmira* Stoll, 1780.

Diagnostic characters : Fore wing with vein R_3 arising from $R_4 + 5$ further from the apex, the stalk shorter. Male with one or two hair pencils on the abdomen.

Distribution : Ethiopian ; West, South and East China and Indo-Australian region.

Remarks : The butterflies of this genus are popularly called 'The Puffins and Albatrosses'. Of the eight species recorded from India, *A. lycinda latifasciata* Moore is given here.

7. ***Appias lycinda latifasciata* Moore**
(Plate II, nos. 9-10)

1881. *Appias latifasciata* Moore, *Trans. ent. Soc. Lond.* (3) : 312 ; ♂, ♀

1939. *Appias lycinda latifasciata*, Talbot, *The Fauna of British India (Butterflies)*, 1 : 398.

Material examined : Konta, Saberi beds, 1 ex., 15.xii.1978. *Fore wing length*.—30 mm.

Distribution : India (Uttar Pradesh, Southern peninsula including Orissa, Sikkim, Assam).

Remarks : The butterfly commonly known as 'The Chocolate Albatross' is a new record from Bastar District. Upperside of fore wing has one of the irregular spots of submarginal row being shifted inwards in interspace 3 ; similarly one of the streaks of discal series is shifted in the interspace 3.

Host plants : *Capparis roxburghii* DC. and *Crataeva roxburghii* R. Br.

VI. Genus ***Cepora* Billberg**

1820. *Cepora* Billberg, *Enum. Ins. Mus. Billb.*, : 76.

Type species : *Papilio coronis* Cramer, 1775.

Diagnostic characters : This genus is distinguished from *Appias* by the absence of hair pencils on the abdomen of male.

Distribution : South China (Hainan, Taiwan) ; India ; Burma ; Sri Lanka and Australia.

Remarks : The butterflies of this genus are commonly known as 'The Gulls'. Two species, viz. *C. nerissa* (Fabricius) and *C. nadina* (Lucas) are known to occur in India of which the former is dealt with here.

8. ***Cepora nerissa phryne* (Fabricius)**
(Plate II, nos 11-12)

1775. *Papilio phryne* Fabricius, *Syst. Ent.* : 473.

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

Material examined : Jagadapur, Donga Ghat, 1 ex., 12.xii.1978,

Konta, Saberi beds, 3 exs., 15. xii. 1978, Kanker, Mankeshri, 1 ex., 1.i. 1979. (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length*.—23-27 mm.

Distribution : India and Nepal.

Remarks : The butterfly popularly known as 'The Common Gull' is a new locality record from Baster District. The intensity and extension of black colour markings vary from specimen to specimen. A black spot is present in interspace 1b in fore wing but absent in one of the specimens collected from Konta. In one specimen tornal area of the hind wing is broadly yellow orange and the rest of the area being of ground colour.

Host plants : *Capparis decidua* Edgew, *C. heyneana* Wall., *C. sepiaria* Linn. and *C. zeylanica* Linn.

Subfamily COLIADINAE

Palpi usually not hairy. Hind wing with precostal vein greatly reduced or absent.

Key to genera of the subfamily COLIADINAE

Hind wing with precestral vein short and directed basally	...	<i>Catopsilia</i> Huebner
Hind wing with precostal vein absent or obsolete	...	<i>Eurema</i> Huebner

VII. Genus *Catopsilia* Huebner

1819. *Catopsilia* Huebner, *Verz. bekannt. Schmett.* 7 : 98.

Type species : *Papilio crocale* Cramer, 1775.

Diagnostic characters : Fore wing with apical margin rounded ; hind wing with precostal vein short, thick and directed basad, male with oval sex-patch at base of vein R_3 on upperside.

Distribution : Africa and Indo-Australian regions.

Remarks : The butterflies of this genus are commonly known as 'The Emigrants'. Wheeler (1943) synonymised *C. pomona* (Fabricius) to *C. crocale* (Cramer) thereby reducing number of four species (Talbot, 1939) to three occurring in India, which are dealt with here.

Key to species of the genus Catopsilia Huebner

- | | | |
|--|-----|-----------------------------|
| 1. Underside of fore wing and hind wing not marked with any transverse reddish brown strigae | ... | <i>crocale</i> (Cramer) |
| Underside of fore wing and hind wing marked with transverse reddish brown strigae | ... | 2 |
| 2. Underside of fore wing below apex with marginal dark border continuous and often broad | ... | <i>pyranthe</i> (Linnaeus) |
| Underside of fore wing below apex with a macular marginal dark border always narrow, sometimes brown | ... | <i>florella</i> (Fabricius) |

9. **Catopsilia crocale crocale** (Cramer)
(Plate II, nos. 13-14)

1775. *Papilio crocale* Cramer, *Syst. Ent.* : 87, pl. 55, figs. C, D (♀).

1939. *Catopsilia crocale crocale*, Talbot, *The Fauna of British India (Butterflies)*, 1 : 492.

Material examined : Jagadapur, Dharampura, 1 ex., 10. xii. 1978, Bailadila, 2 exs., 23. xii. 1978 (Coll. M. S. Shishodia, I. J. Gupta & party) ; Kanker, 2 exs., 10. x. 1980 (Coll. S. Ahmed & party). *Fore wing length* – 28-36 mm.

Distribution : South China ; India ; Burma ; Sri Lanka ; the Philippines, Kalimantan, Sumatra and Java.

Remarks : The butterfly popularly known as 'The Lemon Emigrant' is a new record from Baster District. Upperside of fore wing has costal margin narrowly one-third black apically but broadly at apex. Underside of fore wing yellowish white (vs. greenish white *vide* Talbot, 1939) and with a postdiscal brown line being a faint remnant in the middle.

Host plants : *Bauhinia racemosa* Lamk., *Butea frondosa* Roxb. (Flame of the forest), *Cassia auriculata* Linn. (Tarwar), *Cassia fistula* Linn. (Amaltas, Girimalah), *C. grandis* Linn. f., *C. javanica* Linn., *C. nodosa* Ham., *C. occidentalis* Linn. *C. siamea* Lamk., *C. tora* Linn. (Chakunda, Panevar) and *Diospyros discolor* Willd.

10. **Catopsilia pyranthe pyranthe** (Linnaeus)
(Plate II, nos. 15-16)

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

1939. *Catopsilia pyranthe pyranthe*, Talbot, *The Fauna of British India (Butterflies)*, 1 : 497.

Material examined : Jagadalpur, Dharampura, 2 exs., 10.xii.1978, Kachauri village, 1 ex., 11.xii.1978, Konta, 6 exs., 15.xii.1978, Bhairamgarh, 1 ex., 21.xii.1978, Bailadila, 1 ex., 23.xii.1978, Keskal, 1 ex., 29.xii.1978 (*Coll. M.S. Shishodia, I. J. Gupta & party*); Kanker, 4 exs., 20.x.1980, Jagadalpur, 1 ex., 29.x.1980, 3 kms. N. E. to Jagadalpur, 1 ex., 31.x.1980, Chitrakut, 1 ex., 4.xi.1980, Dantewara, 5 exs., 6.xi.1980; Gidam, 2 exs., 7.xi.1980 (*Coll. S. Ahmed & party*); Golapali, 1 ex., 20.xii.1980 (*Coll. M. S. Shishodia & party*). *Fore wing length*.—22-26 mm.

Distribution : South China (Hainan, Taiwan); India; Burma; Sri Lanka; South and East to Kalimantan; Java; Sulawesi and the Philippines.

Remarks : The butterfly popularly known as 'The Mottled Emigrant' is a new record from Bastar District. Black edging of costa and marginal border on upperside of fore wing vary greatly. Upperside of hind wing has a very narrow brown fringe but has no marginal black dot. Underside of both wings is yellow and marked with brown strigae but fore wing below middle of cell is white; discocellular spot is brownish in both wings, it may also be absent either in one or both wings. Underside of hind wing is without any black spot on either side of the discocellular spot (*vs.* spot on either side of discocellular *vide* Talbot, 1939). Post discal series of brownish spots is indistinct.

Host plants : *Cassia auriculata* Linn. (Amaltas, Girimalah), *C. nodosa* Ham., *C. occidentalis* Linn., *C. tora* Linn. (Chakund, Panevar) and *Sesbania aegyptica* Pers.

11. *Cotopsilia florella gnoma* (Fabricius)

(Plate III, nos. 17-18)

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

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

Material examined : Kondagaon, Paramveda, 1 ex., 28.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*); Kanker, 1 ex., 20.x.1980, Kakapul, 2 kms. West of Jagadalpur, 3 exs., 1.xi.1980 (*Coll. S. Ahmed & Party*). *Fore wing length*.—28-30 mm.

Distribution : India; Burma and Sri Lanka.

Remarks : The butterfly popularly called 'The African Emigrant' is a new record from Bastar District. The upperside of wings is pale

greenish and without any reddish brown marking (*Vs.* white with reddish brown markings); hind wing lacks pink marginal line.

Host plants : *Cassia auriculata* Linn. (Tarwar), *C. occidentalis* Linn. and *C. tora* Linn. (Chakunda, Panevar).

VIII Genus **Eurema** Huebner

1819. *Eurema* Huebner, *Verz. bekannt. Schmett.* (6) : 96.

Type species : *Papilio delia* Cramer, 1780.

Diagnostic characters : This genus differs from *Catopsilia* by the precostal vein in hind wing being absent or obsolete.

Distribution : Africa south of Sahara; China; Japan; Indo-Australian region; South America and in parts of North America.

Remarks : The butterflies of this genus are commonly called 'The Grass Yellows'. There are 10 species known to occur in India of which three are dealt with here.

Key to species of the genus **Eurema** Huebner

- | | | |
|--|-----|--------------------------|
| 1. Upperside of fore wing with black border not continued along vein Culb. Underside of fore wing and hind wing without discocellular ring spots | ... | 2 |
| Upperside of fore wing with black border often continued along vein Culb. Underside of fore wing and hind wing with large discocellular ring spots | ... | <i>hecabe</i> (Linnaeus) |
| 2. Male without a sex brand. Underside of fore wing with two small black discocellular spots | ... | <i>brigitta</i> (Cramer) |
| Male with a sex brand. Underside of fore wing with a single small discocellular spot | ... | <i>laeta</i> (Boisduval) |

12. **Eurema hecabe simulata** (Moore)

(Plate III, nos. 19-20)

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

1939. *Eurema hecabe simulata*, Talbot, *The Fauna of British India (Butterflies)*, 1 : 530-531.

1977b. *Terias hecabe*, Singh, *Newsl. zool. Surv. India*, 3(5) : 323.

Material examined : Jagadapur, Dharampura, 3 exs., 10.xii.1978, Kachauri village, 12 exs., 11.xii.1978, Donga Ghat, 7 exs., 12.xii.1978,

Bodh Ghat, 3 exs., 13.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party); Chitrakut, 2 exs., 14.x.1980, 5 exs., 2.xi.1980, Kutumswar, 2 exs., 14.x.1980, Kukrigarh, 4 exs., 29.x.1980 (Coll. S. Ahmed & party); Konta, Saberi beds, 5 exs., 15.xii.1978, on way to Golapali, 5 exs., 16.xii.1978, Bhairamgarh, 2 exs., 21.xii.1978, East to Gidam, 5 exs., 20.xii.1978; Gidam, Haram village, 3 exs., 22.xii.1978, North to Gidam, 1 ex., 24.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party). Dantewara, 5 exs., 6.xi.1980, Gidam, 1 ex., 7.xi.1980 (Coll. S. Ahmed & party); Bailadila, 4 exs., 23.xii.1978, Kondagaon, East Hills, 3 exs., 26.xii.1978, Kondagaon, 1 ex., 28.xii.1978, Paramveda, 3 exs., 28.xii.1978, Narainpur, 1 ex., 25.xii.1978, 1 ex., 26.xii.1978, Benur, 1 ex., 27.xii.1978, Farasgaon, 3 exs., 29.xii.1978, Kanker, Mankeshri, 8 exs., 1.i.1979, Kanker, 3 exs., 2.i.1979, 1 ex., 4.i.1979, Pandripani, 2 exs., 2.i.1979, Dumurpara, 3 exs., 3.i.1979 (Coll. M. S. Shishodia, I. J. Gupta & party); Kanker, Mankeshri, 1 ex., 22.x.1980, 5 kms. East of Narainpur, 2 exs., 24.x.1980 (Coll. S. Ahmed & party). *Fore wing length*.—16-21 mm.

Distribution : India and Sri Lanka.

Remarks : The butterfly is commonly known as 'The Common Grass Yellow.' This subspecies was previously reported from Jagadapur. Specimens are pale yellow to deep yellow. Upperside of fore wing has a blackish, narrow border varying in width, sometimes very thin and almost attenuated anteriorly and posteriorly. Underside of fore wing is with or without a subapical prominent and elongate brown spot, the latter extending downwards from the costa but never reaches the anal margin; this spot (when present) is irregular and varies in width.

Host plants : *Acacia* sp., *Albizzia procera* Benth. (Safed Siris), *Albizzia* sp., *Caesalpinia* sp., *Cassia fistula* Linn. (Amaltas, Girimalah), *C. mimosoides* Linn., *C. tora* Linn. (Chakunda, Panevar), *Pithecellobium dulce* Benth., *Sesbania aculeata* Pers. (Jainta), *E. aegyptiaca* Pers. and *Wagatea spicata* Dalz.

13. *Eurema brigitta rubella* (Wallace)

(Plate III, nos. 21-22)

1867. *Terias rubella* Wallace, *Trans. ent. Soc. Lond.* (3) 4 : 323.

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

Material examined : Konta, Saberi beds, 1 ex., 15.xii.1978, Bhairamgarh, 1 ex., 21.xii.1978, Gidam, 1 ex., 20.xii.1978, 1 ex., 24.xii.1978,

Kanker, 1 ex., 1.i.1979, 1 ex., 3.i.1979, 5 exs., 4.i.1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*); Chitrakut, 40 kms. North West of Jagadapur, 1 ex., 2.xi.1980 (*Coll. S. Ahmed & party*). *Fore wing length*.—17-19 mm.

Distribution : South China ; India ; Burma and Sri Lanka.

Remarks : The butterfly commonly known as 'The Small Grass Yellow' is a new record from Bastar District. Upperside of fore wing has a black apical border varying in width towards the hind margin ; marginal border in hind wing is fairly broad but in two specimens it is reduced to linear spots at the endings of the veins.

Host plants : *Cassia koenigii* W. and *Homoia* sp.

14. *Eurema laeta laeta* (Boisduval)

(Plate III, nos. 23-24)

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

1939. *Eurema laeta laeta*, Talbot, *The Fauna of British India (Butterflies)*, 1 : 517.

Material examined : Jagadapur, Donga Ghat, 1 ex., 12.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Jagadapur, Kukrigarh, 1 ex., 29.x.1980 (*Coll. S. Ahmed & party*). Bhairamgarh, 1 ex., 21. xii. 1978, Keskhal, 2 exs., 29.xii.1978 ; Kanker, Mankeshri, 1 ex., 1.i.1979, Kanker, 1 ex., 3.i.1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Narainpur, ex., 20.x.1980, Dantewara, 1 ex., 6.xi.1980 (*Coll. S. Ahmed & party*). *Fore wing length*.—18-20 mm.

Distribution : India (Western Himalayas to Peninsular belts) and Sri Lanka.

Remarks : The butterfly popularly called 'The Small Grass Yellow' is a new record from Bastar District. Upperside of hind wing has the apical black spot variable in size ; marginal border is black and reduced to minute specks at veins.

Family **Danaidae**

Antennae approximate at base. Fore wing with the cell closed, vein R_1 stalked, 3A stalked with 1A+2A ; hind wing with the cell closed, a precostal vein present.

This family is represented by four species belonging to two genera in the collection of butterflies from Bastar District.

Key to genera of the family Danaidae

Claws furnished with paronychia and pulvilli ...	<i>Euploea</i> Fabricius
Claws without paronychia and pulvilli ...	<i>Danaus</i> Kluk

IX Genus **Euploea** Fabricius

1807. *Euploea* Fabricius, *Mag. f. Insektenk.* (Illiger), 6 : 280.

Type species : *Papilio corus* Fabricius, 1793.

Diagnostic characters : Wing pattern not conspicuously black and white. Hind wing with vein M_1 nearer R_5 , vein M_2 equidistant between R_1 and M_3 .

Distribution : Ethiopian (Mauritius, Seychelles) and Indo-Austro-Malayan Regions.

Remarks : The butterflies of this genus are popularly called 'The Crows'. Of the 15 species known to occur in India, *Euploea core* (Cramer) is dealt with here.

15. **Euploea core core** (Cramer)

1780. *Papilio core* Cramer, *Pap. exot.* 3 : pl. 266, figs. E, F, ♂.

1947. *Euploea core core*, Talbot, *The Fauna of British India (Butterflies)*, 2 : 66-67.

1977b. *Crastia core*, Singh, *Newsl. zool. Surv. India*, 3(5) : 324.

Material examined : Konta, Saberi beds, 2 exs., 15.xii.1978, Gidam, 1 ex. 22.xii.1978, Bailadila, 2 exs., 23.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Narainpur, 3 exs., 27 x. 1979, Jagadapur, Kukrigarh, 3 exs., 29.x.1979, Atagura, 4 exs., 31.x.1979, Kakapul, 1 ex., 1.xi.1979, Gidam, 1 ex., 7.x.1979 (*Coll. S. Ahmed & party*). *Fore wing length* : 40-45 mm.

Distribution : India (Uttar Pradesh, Karnataka, Madras, Orissa) and Burma.

Remarks : The butterfly is commonly called 'The Common Indian Crow.' On upperside of fore wing, last white spot of submarginal series is absent at costa, white spots in interspaces 4 and 5 vary in size but these spots are comparatively smaller than those of the submarginal series ; in hind wing spots of submarginal series are elongate below vein M_3 (*Vs.* below vein M_2 *vide* Talbot, 1947). This nominate subspecies was earlier recorded from Jagadapur and Konta.

Host plants : *Anodendron paniculatum* A. DC., *Cryptolepis elegans* Wall. (Pauciflora), *Cryptostegia grandiflora* R. Br., *Ficus benghalensi*

Linn. (Banyan), *F. glomerata* Roxb. (Country fig, Goolar), *F. indica* Linn., *F. racemosa* Linn. (Goolar), *F. religiosa* Linn. (Pipal), *Holarrhena antidysenterica* Wall. (Kura, Dudhi), *Holigarna arnottiana* Hook. f., *Ichnocarpus frutescens* R. Br. (Kala Dudhi), *Nerium odorum* Soland and *N. oleander* Linn.

X. Genus *Danaus* Kluk

1802. *Danaus* Kluk, *Zwierz. Hist. nat. pocz. gospod.*, 4 : 84.

Type species : *Papilio plexippus* Linnaeus, 1758.

Diagnostic characters : Hind with a brand in male. Claws without paronychial and pulvilli.

Distribution : Africa ; Indo-Australia ; South America and North America.

Remarks : The butterflies of this genus are popularly known as 'The Glossy Tigers'. Of the 17 species occurring in India, three are dealt with here.

Key to species of the genus Danaus Kluk

- | | | |
|--|-----|------------------------------|
| 1. Hind wing with middle discocellular vein sharply angulate above middle and marked by a conspicuous black spot ; veins not marked with black | ... | <i>chrysippus</i> (Linnaeus) |
| Hind wing with middle discocellular vein slightly bent above the middle, not marked with a black spot ; veins marked with black | ... | 2 |
| 2. Hind wing scent-patch small, oval, raised, forming a sort of flap in area 1c well developed on both sides of wing | ... | <i>genutia</i> (Cramer) |
| Hind wing scent-patch in a deep pocket and the same on underside, being produced to a rounded flap extending over vein Cu1b | ... | <i>limniace</i> (Cramer) |

16. *Danaus chrysippus chrysippus* (Linnaeus)

(Plate IV, nos. 25-26)

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

1947. *Danaus chrysippus chrysippus*, Talbot, *The Fauna of British India (Butterflies)*, 2 : 19-23.

1977b. *Panlymnas chrysippus*, Singh, *Newsl. zool. Surv. India*, 3(5) : 324.

Material examined : Jagadapur, Donga Ghat, 1 ex., 12.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party), Chitrakut, 1 ex., 2.xi.1979

(*Coll. S. Ahmed & party*) ; Konta, Saberi beds, 3 exs., 15.xii.1978, on way to Golapali, 1 ex., 20.xii.1980 (*Coll. M. S. Shishodia & party*) ; Bhairamgarh, 1 ex., 21.xii.1978, Bailadila, 5 exs., 23.xii.1978, (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Kanker, Bhanderpur, 8 exs., 18.x. 1979 (*Coll. S. Ahmed & party*). *Fore wing length* : 32-39 mm.

Distribution : India ; Burma and Sri Lanka.

Remarks : The butterfly is popularly known as 'The Plain Tiger'. This nominate subspecies was previously known from Dongaghat and Konta. The nominate subspecies exhibits sexual dimorphism in the presence of three black spots on discocellulars in female and an additional large black spot below vein Culb in the fore wing of male. The upperside and underside of fore wing has a complete or incomplete series of submarginal white spots, two or three white apical spots, and a white spot of variable size in interspace 3.

Host plants : *Asclepias curassavica* Linn., *Calotropis gigantea* Linn. R. Br. Ait. (Safed Ak) and *C. procera* (Ait.) R. Br. (Madar, Ak).

17. *Danaus genutia* (Cramer)

1779. *Papilio genutia* Cramer, *Pap. exot.*, 3 : 23, pl. 203.

1882. *Danais genutia*, Distant, *Rhopalocera Malayana* : 18-19.

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

1960. *Danaus genutia*, Editors, *J. Bombay nat. Hist. Soc.*, 57(1) ; 230-231.

1977b. *Salatura genutia*, Singh, *Newsl. zool. Surv. India*, 3(5) : 324.

1981. *Danaus genutia*, Varshney et. al., *Rec. zool. Surv. India Occ. Paper.*, No. 31 : 13.

Material examined : Narainpur, 1 ex., 27. xii. 1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 41 mm.

Distribution : Indo-Malayan Region ; Sulawesi and Key Islands.

Remarks : The butterfly is popularly known as 'The Common Tiger'. This species was previously known from Dongaghat village in Jagadapur. Upperside of fore wing has a large white spot of subapical band in interspace 3 separated from a small and white submarginal spot.

Host plants : *Ceropegia intermedia* W., *Cynanchum dalhousie* W., *Raphistemma pulchellum* Wall. and *Stephanotis floribunda* Brong.

18. *Danaus limniace leopardus* Butler

(Plate IV, nos. 27-28)

1866. *Danais leopardus* Butler, *Proc. zool. Soc. Lond.* : 52.

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

1977b. *Tirumala limniace*, Singh, *Newsl. zool. Surv. India*, 3(5) : 324.

Material examined : Bailadila, 1 ex., 23. xii. 1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 45 mm.

Distribution : South China (Hainan, Taiwan, Tonkin) ; Pakistan (Chitral) to India (Uttar Pradesh, Orissa, West Bengal, Sikkim, Assam and Nicobar Islands) ; Burma ; Sri Lanka and Thailand.

Remarks : The butterfly is commonly called 'The Blue Tiger'. This subspecies was previously recorded from Dongaghat village in Jagadapur. Upperside of fore wing has an upper stripe short and broad and a lower stripe elongate and narrow in interspace 1b. Both stripes are joined in the middle but free at extremities. Upperside of hind wing has a black streak on the white spot without any fork.

Host plants : *Calotropis* sp., *Dregea volubilis* Benth., *Hoya* sp. and *Marsdenia tenacissima* W. & A. (Muruabel).

Family ACRAEIDAE

Wings thinly scaled and spotted ; fore wing with the cell closed, without any vein swollen at base, vein 3A free ; hind wing with the cell closed. Fore legs non functional in both the sexes.

Only single genus *Acraea* Fabricius occurs in India.

XI. Genus *Acraea* Fabricius

1807. *Acraea* Fabricius, *Mag. f. Insektenk* (Illiger), 6 : 284.

Type species : *Papilio horta* Linnaeus, 1764.

Diagnostic characters : Wings elongate, more or less transparent ; fore wing with vein R_1 before the end of cell, veins R_2 to R_5 stalked, M_1 from upper angle of cell or near it and widely separated from M_2 . Mid-and hind legs unequal in male.

Distribution : Ethiopion and Indo-Australian Regions.

Remarks : The butterflies of this genus are popularly called 'The Costers'. Of the two species occurring in India *A. violae* (Fabricius) is dealt with here.

19. *Acraea violae* (Fabricius) (Plate IV, nos. 29-30)

1775. *Papilio violae* Fabricius, *Syst. Ent.* : 460.

1947. *Acraea violae*, Talbot, *The Fauna of British India (Butterflies)*, 2 : 466-469.

Material examined : Jagadapur, Donga Ghat, 2 exs., 12. xii. 1978,

Konta, Saberi beds, 5 exs., 15.xii.1978, 1 ex., 16.xii.1978, on way to Golapali, 3 exs., 16. xii. 1978, Gidam, 1 ex., 20. xii. 1978, North to Gidam, 1 ex., 24. xii. 1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Gidam, 1 ex., 7. xi. 1979 (*Coll. S. Ahmed & party*) ; Kutumswar, 1 ex., 7.xii.1978 (*Coll. M. S. Shishodia & party*). *Fore wing length* : 23-28 mm.

Distribution : Peninsular India and Indogangetic plains up to the lower hills of Himalaya and Sri Lanka.

Remarks : The butterfly is commonly known as 'The Tawny Coster'. This species was earlier known from Konta and Dongaghat village in Jagadapur, Upperside of fore wing has a black spot in interspace 2 in some specimens, a basal black spot in the cell and in interspace 1b may or may not be present. In hind wing marginal border is black with yellowish white spots in intervenal spaces (*Vs.* spots of ground colour *vide* Bingham, 1905 ; Talbot, 1947). Underside of both wings has prominent black spots ; hind wing marginal border being black and inlined by narrow yellow white ; large and yellowish white spots are present on black marginal band.

Host plants : *Hibiscus cannabinus* Linn. (Gogu or Mesta) and *Passiflora foetida* (Linn.)

Family SATYRIDAE

Both wings with the cell closed, cross veins present ; fore wing with one or more veins swollen at base, vein R_1 stalked, $1A+2A$ free ; hind wing with a precostal vein. Fore legs imperfect in both sexes.

The family Satyridae in Bastar District is represented by seven species belonging to five genera.

Key to genera of the family SATYRIDAE

- | | | |
|--|-----|-------------------------------|
| 1. Eyes hairy | ... | <i>Mycalesis</i> Huebner |
| Eyes glabrous | ... | 2 |
| 2. Hind wing with a precostal cell | ... | <i>Elymnias</i> Huebner |
| Hind wing without a precostal cell | ... | 3 |
| 3. Fore wing without swollen veins | ... | <i>Melanitis</i> Fabricius |
| Fore wing with a swollen median vein | ... | 4 |
| 4. Fore wing with anterior margin of cell not longer than the lower margin | ... | <i>Ypthima</i> Huebner |
| Fore wing with anterior margin of cell strongly acute and the margin markedly longer than the lower margin | ... | <i>Orsotrioena</i> Wallengren |

XII Genus *Mycalesis* Huebner

1818. *Mycalesis* Huebner, *Zutr. z. Samml. exot. Schm.ett.*, 1 : 17.

Type species : *Papilio francisca* Stoll, 1780.

Diagnostic characters : Fore wing with the lower discocellular between veins M_2 and M_3 strongly curved towards the base ; hind wing with vein Cula variable, arising a little before or from the lower angle of cell, sometimes stalked with vein M_3 ,

Remarks : The butterflies of this genus are popularly called 'The Bushbrowns'. The underside of wings of dry season forms resemble dry leaves. Of the 27 species of this genus occurring in India, two are dealt with here.

Key to species of the genus Mycalesis Huebner

Fore wing brand small, short and not elongate	...	<i>perseus</i> (Fabricious)
Fore wing brand elongate	...	<i>visala</i> Moore

20. *Mycalesis perseus tabitha* (Fabricius)

(Plate IV, nos. 31-32)

1793. *Papilio tabitha* Fabricius, *Ent. Syst.* 3(1) : 243.

1947. *Mycalesis perseus tabitha*, Talbot, *The Fauna of British India (Butterflies)*, 2 : 131-132.

Material examined : Jagadapur, Kachauri village, 1 ex., 11.xii.1978, Donga Ghat, 13 exs., 12.xii.1978, Bodh Ghat, 1 ex., 13.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Kakapul, 1 ex., 1.xi.1979 (*Coll. S. Ahmed & party*) ; East to Gidam, 1 ex., 20.xii.1978, 2 exs., 22.xii.1978, Gidam (Haram village), 8 exs., 22.xii.1978, North to Gidam, 2 exs., 24.xii.1978, Kondagaon (East Hills), 2 exs., 26.xii.1978, Benur, 2 exs., 27.xii.1978, Kondagaon, Paramveda, 1 ex., 28.xii.1978, Keskhal, 1 ex., 29.xii.1978, Kanker, 2 exs., 2.i.1979, Dumarpada, 1 ex., 3.i.1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Kutumswar, 1 ex., 17.xii.1980 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 18-25 mm.

Distribution : Peninsular and Central India and Sri Lanka.

Remarks : The butterfly commonly known as 'The Common Bushbrown' is a new record from Bastar District. Upperside of wings in both sexes exhibits variation in the size of the ocellus consisting of a black spot with a minute central white spot. In females, there are two minute ocelli of variable size in interspaces 2 and 3. The white

central spot in some specimens being obsolete. In males, the ocelli in hind wing are like those in female but one or both the ocelli are obsolete in some specimens. Underside of hind wing in both sexes has submarginal black ocelli, of variable size, centred with white.

Host plants : Grasses.

21. *Mycalesis visala visala* Moore (Plate V, nos. 33-34)

1857. *Mycalesis visala* Moore, *Cat. lep. Mus. Ins. East India Coy*, 1 : 230.

1947. *Mycalesis visala visala*, Talbot, *The Fauna of British India (Butterflies)*, 2 : 140-143.

Material examined : Jagadapur, Donga Ghat, 1 ex., 12. xii. 1978 (Coll. M. S. Shishodia, I. J. Gupta & party) ; Kukrigarh, 1 ex., 29.x.1979 (Coll. S. Ahmed & party) ; Konta, 1 ex., 16. xii. 1978, East of Gidam, 4 exs., 20.xii.1978, 2 kms. North of Gidam, 4 exs., 24.xii.1978, Gidam (Haram village), 11 exs., 22.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party) ; Gidam, 2 exs., 5.xii.1979, 1 ex., 7.xii.1979 (Coll. S. Ahmed & party) ; Bailadila, 1 ex., 27.xii.1978, Bhairamgarh, 6 exs., 21.xii.1978, Benur, 1 ex., 27.xii.1978, Kondagaon, Paramveda, 1 ex., 28.xii.1978, Keskhal, 1 ex., 29.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party) ; Narainpur, Behribara, 1 ex., 26.x.1979 (Coll. S. Ahmed & party) ; Kanker, Pandripani, 1 ex., 2.i.1979, Dumarpada, 1 ex., 3.i.1979 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing length* : 19-24 mm.

Distribution : India (Uttar Pradesh to Assam, Madhya Pradesh) and Burma.

Remarks : The butterfly popularly called 'The long Brand Bushbrown' is a new record from Bastar District. Upperside of fore wing has an ocellus of variable size in interspace 2 and a small ocellus in interspace 5 is almost obsolete. Upperside of hind wing has one or two minute ocelli of variable size in interspaces 2 and 3. The submarginal ocelli on underside of hind wing are reduced to black spots, usually each with a central white speck.

Host plants : Grasses

XIII Genus *Elymnias* Huebner

1818. *Elymnias* Huebner, *Zutr. z. Samml. exot. Schmett.*, 1 : 12.

Type species : *Elymnias jynx* Huebner, 1818.

Diagnostic characters : Antennal club long and gradual ; eyes smooth. Hind wing with a pre-discoidal cell and toothed at vein M₃.

Distribution : South China (Hainan, Taiwan, Tonkin) ; India ; Burma ; Indo-Australian Region to the Papua and North Australia.

Remarks : The butterflies of this genus are commonly called 'The Palmflies'. Of the ten species known to occur in India, *E. hypermnestra* (Linnaeus) is dealt with here.

22. *Elymnias hypermnestra undularis* (Drury)

1773. *Papilio undularis* Drury, *Ill. exot. Ins.* 2 : pl. 10, fig. 1, 2, ♂.

1947. *Elymnias hypermnestra undularis*, Talbot, *The Fauna of British India (Butterflies)*, 2 : 386.

Material examined : Konta, Saberi beds, 1 ex., 15.xii.1978, 1 ex., 16.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 31-33 mm.

Distribution : West Bengal, Dehra Dun (India) to North Burma.

Remarks : The butterfly popularly known as 'The Common Palmfly' is a new record from Bastar District. In upperside of fore wing submarginal bluish white spots form a curved band, the spots increasing in size towards costa. Upperside of hind wing has a chesnut marginal border about one-fourth of the width of wing, bearing four prominent or faint white spots. Underside of fore wing bears a small, white costal spot inner to an additional triangular bluish patch. Hind wing on its underside has a white dot in interspace 6 (*Vs.* a white dot in interspace 7 *vide* Talbot, 1947).

Host plants : Palms.

XIV Genus *Melanitis* Fabricius

1807. *Melanitis* Fabricius, *Mag. f. Insektenk* (Illiger), 6 : 282.

Type species : *Papilio leda* Linnaeus, 1758.

Diagnostic characters : The wings of characteristic shape, female with more falcate wings than the male ; hind wing with veins Cu_{1a} and M_3 separated at origin.

Distribution : Africa ; India and Sri Lanka through Malaya region to Australia.

Remarks : The butterflies of this genus are commonly called 'The Evening Browns'. Three species are known to occur in India of which two are dealt with here.

Key to species of the genus Melanitis Fabricius

- In wet season form the underside of wings with large prominent ocelli. In dry season form the fore wing falcate and upperside with sharply defined ochraceous bar bordering a black white centred spot on inner side ... *leda* (Linnaeus)
- In wet season form the underside of wings with small ocelli or spots. In dry season form the upperside of fore wing with ochraceous markings more extended and less defined ... *zitenius* (Herbst)

23. *Melanitis leda ismene* (Cramer)
(Plate V, nos. 35-36)

1775. *Papilio ismene* Cramer, *Pap. exot.*, 1 : 26, figs. A, B.
1908a. *Melanitis leda ismene*, Fruhstorfer, *Ent. z.*, 22 : 86.
1947. *Melanitis leda ismene*, Talbot, *The Fauna of British India (Butterflies)*, 2 : 366-369.

Material examined : Konta, Saberi beds, 1 ex., 15.xii.1978, on way to Golapali, 1 ex., 16.xii.1978, 2 kms. north of Gidam, 1 ex., 24.xii.1978, Gidam, Haram village, 7 exs., 22.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; 2 kms. E. of Gidam, 2 exs., no further data, (*Coll. S. Ahmed & party*). Bhairamgarh, 3 exs., 21.xii.1978, Kondagaon, East Hills, 4 exs., 26.xii.1978, Benur, 2 exs., 27.xii.1978, Mankeshri, 1 ex., 1.i.1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*). Kanker, Gobindpur, 2 exs., 21.x.1979, North-East of Narayanpur, 1 ex., 27.x.1979, Jagadalpur, Kukrigarh, 1 ex., 29.x.1979, Dharampura, 1 ex., 30.x.1979 ; (*Coll. S. Ahmed & party*). *Fore wing length* : 30-38 mm.

Distribution : Japan ; South China (Taiwan) ; India ; Burma ; Sri Lanka ; Malaya ; Sumatra and Borneo.

Remarks : The butterfly is popularly known as 'The Common Evening Brown'. This subspecies was previously recorded from Jagadalpur. In dry season form the upperside of wings show ocelli of variable size. In dry season form upperside of hind wing has one to four posterior submarginal white spots (*Vs.* three or four minute submarginal spots *vide* Talbot, 1947).

Host plants : Grasses. Varshney (1978) referred this subspecies as a pest of *Oryza sativa* Linn. (Paddy).

24. *Melanitis zitenius zitenius* (Herbst)
(Plate V, nos. 37-38)

1796. *Papilio zitenius* Herbst, *Nat. Syst. Schmett.* 8 : 5, pl. 182, figs. 1, 2.
1947. *Melanitis zitenius zitenius*, Talbot, *The Fauua of British India (Butterflies)*, 2 : 37-74.

Material examined : East to Gidam, 1 ex., 20.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party) ; 2 kms. east of Gidam, 1 ex., 4.xi.1979, 3 kms. North of Gidam, 1 ex., 5.xi.1979 (Coll. S. Ahmed & party).
Fore wing length : 39-40 mm.

Distribution : India (Kumaon) to Burma (Karen Hills).

Remarks : The butterfly commonly known as 'The Great Evening Brown' is a new record from Bastar District. Upperside of fore wing has obscure small white spots on the larger submarginal black spots. There is a minute white spot in interspace 4 on upperside of hind wing.

Host plants : Bamboos.

XV Genus *Ypthima* Huebner

1818. *Ypthima* Huebner, *Zutr. z. Samml. exot. Schmett.*, 1 : 17.

Type species : *Ypthima huebneri* Kirby, 1871.

Diagnostic characters : Outer margin of both wings evenly rounded ; underside of wings striated, with a submarginal series of yellow ringed black ocelli. Hind wing with veins Cu_{1a} and M_1 separated at their origin.

Distribution : Africa and throughout the Indo-Australian regions.

Remarks : The butterflies of this genus are known as the 'Rings'. There are 20 species known to occur in India of which only *Y. ceylonica huebneri* Kirby is dealt with here.

25. *Ypthima ceylonica huebneri* Kirby (Plate V, nos. 39-40)

1871. *Ypthima huebneri* Kirby, *Cat. diurn. Lep.* : 95.

1947. *Ypthima ceylonica huebneri*, Talbot, *The Fauna of British India (Butterflies)*, 2 : 329-330.

Material examined : East to Gidam, 1 ex., 20.xii. 1978, Gidam, Haram village, 1 ex., 22.xii.1978, North to Gidam, 4 exs., 24.xii.1978, Bailadila, 1 ex., 23.xii. 1978, Benur, 1 ex., 27.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing length* : 16-17 mm.

Distribution : Indian peninsula and Assam ; Burma and Malaya.

Remarks : The butterfly commonly known as 'The Common Four Ring' is a new record from Bastar District. Upperside and underside of hind wing bear equal or unequal ocelli, in the latter case it is the only ocellus of interspace 2 which is larger in size. Underside of hind

wing has a ternal ocellus bipupilled, with two equal or unequal ocelli (upper ocellus being larger and the lower one smaller).

Host plants : Grasses.

XVI Genus *Orsotrioena* Wallengren

1858. *Orsotrioena* Wallengren, *Ofvers. Vetensk. Akad. Forh. Stockh.*, 15 : 79.

Type species : *Papilio hesione* Cramer, 1775.

Diagnostic characters : Eyes smooth. Fore wings broadly triangular with vein Sc swollen at base.

Distribution : Indo-Australian Region.

Remarks : The butterflies of this genus are called 'The Niggers'. Only *O. medus medus* (Fabricius) occurs in India and is dealt with here.

26. *Orsotrioena medus medus* (Fabricius)

(Plate VI, nos. 41-42)

1775. *Papilio medus* Fabricius, *Syst. Ent.* : 488.

1947. *Orsotrioena medus medus*, Talbot, *The Fauna of British India (Butterflies)*, 2 : 349-350.

Material examined : Jagadapur, Saragi Paul Forest, 1 ex., 13.xii.1978, East to Gidam, 1 ex., 20.xii.1978, 1 ex., 22.xii.1978, Gidam, Haram village, 16 exs., 22.xii.1978, North to Gidam, 3 exs., 24.xii.1978, Bhairamgarh, 9 exs., 21.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; North to Gidam 1 ex., 5.xi.1979, 5 kms. North East of Dantewara, 2 exs., 6.xi.1979 (*Coll. S. Ahmed & party*). *Fore wing length* : 21-25 mm.

Distribution : South China (Hainan), Vietnam (Tonkin) ; Nepal ; India ; Burma ; Papua and Australia.

Remarks : The species popularly known as 'The Nigger' constitutes a new locality record from Bastar District. Ocelli on underside of fore wing and hind wing, in male, are prominent in some specimens but obsolete in others.

Host plants : Grasses.

Family NYMPHALIDAE

Antennae approximate at base ; palpi long, broad and rounded in front. Fore wing with vein R_1 stalked ; hind wing with cell usually open, precostal vein present. Fore legs imperfect in both sexes.

This family is represented, in Bastar District, by 17 species distributed over eight genera.

Key to genera of the family Nymphalidae

- | | |
|---|---------------------------------------|
| 1. Cell of both fore and hind wings closed ... | 2 |
| Cell of both wings open or cell of fore wing open and that of hind wing closed ... | 5 |
| 2. Eyes hairy ... | <i>Cynthia</i> Fabricius |
| Eyes smooth ... | 3 |
| 3. Fore wing with the vein Sc swollen at base ... | <i>Ergolis</i> Boisduval |
| Fore wing with the vein Sc not swollen at base... | 4 |
| 4. Fore wing with veins Cu_{1a} and M_s arising from before and from lower angle of the cell, respectively ... | <i>Hypolimnas</i> Huebner |
| Fore wing with the veins Cu_{1a} and M_s arising from lower angle of cell ... | <i>Phalanta</i> Horsfield |
| 5. Cell of fore wing closed and that of hind wing open ... | <i>Pantoporia</i> Huebner |
| Cell of fore wing and hind wing open ... | 6 |
| 6. Hind wing with the vein R_s at base closer to vein M_1 than to Sc ... | ^u
<i>Precis</i> Huebner |
| Hind wing with the vein R_s at base as close to vein Sc as to vein M_1 or closer ... | 7 |
| 7. Fore wing with the vein R_s from beyond middle of vein R_s ... | <i>Neptis</i> Huebner |
| Fore wing with the vein R_s from well before middle of R_s or if from middle of R_s then vein R_1 anastomosed with Sc ... | <i>Euthalia</i> Huebner |

XVII Genus *Cynthia* Fabricius

1807. *Cynthia* Fabricius, *Mag. f. Insektenk* (Illiger), 6 : 281.

Type species : *Papilio cardui* Linnaeus, 1758.

Diagnostic characters :—(From Key characters *vide* Field, 1971) “Mid and hind tarsi with paronychia simple, consisting of a single slender lobe, sometimes with a slight basal projection ; both surfaces of fore wing with middle of cell Cu_2 (= Cu_{1b}) occupied by a large light coloured spot, greatly contrasting with fuscous colour on either side of this spot ; upper surface of hind wing with a contrasting light-coloured spot adjacent to end of cell, which may be part of a light coloured band crossing wing near middle, fore wing underneath with area opposite end of cell and between there and subapical light coloured bar dark

brown or black and divided by white or yellowish-white lines ; under surface of hind wing with very distinct ocular spots contrasting greatly with surrounding area.”

Distribution : Cosmopolitan.

Remarks : Field (1971) resurrected the genus *Cynthia* Fabricius and removed it from *Vanessa* Fabricius. This genus in India is represented by a single and nearly cosmopolitan species i. e. *Cynthia cardui* (Linnaeus).

27. *Cynthia cardui* (Linnaeus)

(Plate VI, nos. 43-44)

1758. *Papilio cardui* Linnaeus, *Syst. Nat.* (ed. 10), 1 : 475.
 1932. *Vanessa cardui*, Evans, *The Identification of Indian Butterflies* : 177.
 1971. *Cynthia cardui*, Field, *Smithsonian Contributions to Zoology*, 84 : 37.
 1977. *Cynthia cardui*, Varshney, *Newsl. zool. Surv. India*, 3(1) : 13-14.

Material examined : Jagadalpur, Kachauri village, 1 ex., 11.xii.1978, Kondagaon, Paramveda, 1 ex., 30.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 27-28 mm.

Distribution : World wide.

Remarks : The butterfly commonly known as ‘The Painted Lady’ is a new locality record from Bastar District. The species has developed migratory habit. For a long time it was known under genus *Vanessa* as *V. cardui* (Linnaeus) but with the resurrection of genus *Cynthia* by Field (1971) it is treated as *Cynthia cardui* (Linnaeus). Upperside of fore wing is with or without a black spot above a bluish black quadrate spot of variable size lying in interspace 1b and on the cell.

Host plants : *Debregeasia hypoleuca* Wedd. (Sinar, Searu), *Girardinia heterophylla* Decne and *Zornia diphylla* Pers.

Genus *Ergolis* Boisduval

1836. *Ergolis* Boisduval, (Roret’s Suite a Buffon) *Hist. nat. Ins. Consid. gen.* 1
Lepid. : pl. 4.

Type species : *Papilio aridne* Linnaeus, 1763.

Diagnostic characters : Fore wing with cell closed, vein Sc swollen at base ; cell in hind wing closed.

Distribution : Ethiopion and Oriental Regions.

Remarks : The butterflies of this genus are popularly called ‘The Costers’ Of the two species occurring in India *E. merione* (Cramer) is dealt with here.

28. *Ergolis merione* (Cramer)1777. *Papilio merione* Cramer, *Pap. exot.* 2 : 76, pl. 144, figs. G, H.1932. *Ergolis merione*, Evans, *The Identification of Indian Butterflies* : 191.

Material examined : Jagadapur, Donga Ghat, 3 exs., 12. xii. 1978 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing length* : 22 mm.

Distribution : India (North-Western Himalayas) ; Burma and Sri Lanka.

Remarks : The butterfly commonly known as 'The Common Coster' is a new record from Bastar District.

Host plants : *Ricinus communis* Linn. (Castor Oil Plant), *Tragia cannabina* Linn. and *T. involucrata* Linn.

XIX Genus *Hypolimnas* Huebner1819. *Hypolimnas* Huebner, *Verz. bekannt. Schmett.* 3 : 45,

Type species : *Papilio pipleis* Linnaeus, 1758.

Diagnostic characters : Eyes smooth. Cell closed in both wings ; fore wing with the costa not serrated, vein Sc not swollen at base ; hind wing without predorsoidal cell, veins Cula and M₃ stalked and from the lower angle of cell.

Distribution : Indo-Malayan Region.

Remarks : The butterflies of this genus are commonly called 'The Eggflies'. Two species known to occur in India are dealt with here.

Key to species of the genus Hypolimnas Huebner

Underside of hind wing with a prominent middle black costal spot in interspace 7 ...	<i>misippus</i> (Linnaeus)
Underside of hind wing without any prominent middle black costal spot in interspace 7	<i>bolina</i> (Linnaeus)

29. *Hypolimnas misippus* (Linnaeus)

(Plate VI, nos. 45-46)

1764. *Papilio misippus* Linnaeus, *Mus. Ulr.* : 264, ♀1932. *Hypolimnas misippus*, Evans, *The Identification of Indian Butterflies* : 173.

Material examined : Konta, 1 ex., 15.xii.1978, on way to Golapali, 1 ex., 16.xii.1978, Bailadila, 1 ex., 23.xii.1978 (coll. M. S. Shishodia, I. J. Gupta & party) ; 5 kms. East of Narainpur ; Garbengal, 1 ex., 24.x. 1979 (coll. S. Ahmed & party). *Fore wing length*. 34-35 mm.

Distribution : India ; Burma and Sri Lanka.

Remarks : The butterfly is commonly known as 'The Danaid Eggfly'. This species was previously known from Konta. Underside of fore wing bears a discal series of small white spots in interspace, 1b, 2, 4 and 5 whereas in another specimen these spots are faint or obscure.

Host plants : *Abutilon* sp., *Hibiscus* sp., *Portulaca grandiflora* Hook. and *P. oleracea* Linn. (Pur slane).

30. **Hypolimnas bolina** (Linnaeus)
(Plate VI, nos. 47-48)

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

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

Material examined : Narainpur, Mahka, 2 exs., 26.x.1979 (Coll. S. Ahmed & party). *Fore wing length* : 46-48 mm.

Distribution : Baluchistan ; India ; Burma and Sri Lanka.

Remarks : The butterfly commonly called 'The Great Eggfly' is a new record from Bastar District. Upperside of fore wing bears series of submarginal and marginal prominent white spots in one specimen where as these spots are faint in another specimen. Upperside of hind wing has a marginal series of white lunulate spots, and each lunule in one specimen is broken into two in each interspace, white spots of submarginal series are basally conjoined in one specimen.

Host plants : *ElasioSTEMMA cuneatum* W. *Fleurya interrupta* Gaud. and *Portulaca oleracea* Linn. (Pur slane).

XX. Genus **Phalanta** Horsfield

1829. *Phalanta* Horsfield, *Descr. Cat. lep. Ins. Mus. East India Coy* (2) : pl. 7.

Type species : *Papilio phalantha* Drury, 1773.

Diagnostic characters : Cell slenderly closed in both wings ; fore wing with vein R_2 arising from R_5 , vein R_3 ending on costa, R_4 ending almost at apex.

Distribution : Tropical Africa and Indo-Australian Region.

Remarks : The butterflies of this genus are commonly called 'The Orange Browns'. There are two species occurring in India of which *P. phalantha* (Drury) is dealt with here.

31. *Phalanta phalantha phalantha* (Drury)

(Plate VII, nos. 49-50)

1770. *Papilio phalantha* Drury, *Exot. Inst.* 1 : 41, pl. 21, figs. 1, 2.1932. *Atella phalantha*, Evans, *The Identification of Indian Butterflies* : 187.1980. *Phalanta phalantha phalantha*, Varshney et al., *Rec. zool. Surv. India, Occ. Paper No. 31* : 18-19.

Material examined : Jagadapur, Saragi Paul Forest, 1 ex., 3. xii. 1978, Bhairamgarh, 1 ex., 21. xii. 1978, Gidam, Haram village, 2 exs., 22. xii. 1978, Baidadila, 1 ex., 23. xii. 1978, Kanker, Mankeshri, 1 ex., 1. i. 1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Dantewara, Aura, 1 ex., 6. xi. 1979 (*Coll. S. Ahmed & party*) ; Sukuma, 1 ex., 19. xii. 1980 (*Coll. M. S. Shishodia & party*). Fore wing length : 22-26 mm.

Distribution : Baluchistan ; India (including Central Nicobars) ; Burma and Sri Lanka.

Remarks : The butterfly is commonly known as 'The Common Leopard'. This nominate subspecies was earlier recorded from Konta. Upperside of fore wing bears three black sinuous lines incompletely crossing the cell and forth one is represented by two black spots ; a basal series of black spots in interspace 4 being not basal i.e. not in line with other spots) is angulated towards costa. Upperside of hind wing has two rows of obscure blackish spots, first row consisting of two spots and second row with well defined anterior spots (*Vs.* 3 or 4 rows of obscure black spots better defined anteriorly *vide* Bingham, 1907).

Host plants : *Aberia gardeneri* Clos (Ketambilla), *Flacourtia montana* Garh., *F. ramontchi* L' Her., *Salix pentandra* Wall. and *S. tetrasperma* Roxb.

XXI. Genus *Pantoporia* Huebner1819. *Pantoporia* Huebner, *Verz. bekannt. Schmett.* (3) : 44.

Type species : *Papilio hordonia* Stoll, 1790.

Diagnostic characters : Fore wing with vein R_2 arising from the upper angle of cell, vein Cu_{1a} and M_3 arising (Cu_{1a} may also arise slightly before) from the lower angle of cell.

Distribution : Indo-Malayan region.

Remarks : The butterflies of this genus are popularly known as 'The Sergeants' Of the 14 species occurring in India only *Pantoporia perius* (Linnaeus) is dealt with.

32. **Pantoporia perius** (Linnaeus)

(Plate VII, nos. 51-52)

1758. *Papilio perius* Linnaeus, *Syst. Nat.* (ed. 10) : 471.1932. *Pantoporia perius*, Evans, *The Identification of Indian Butterflies* : 164.

Material examined : Jagadapur, Bodh Ghat, 2 exs., 13. xii. 1978, Saragi Paul Forest, 1 ex., 13. xii. 1978 ; Konta, Saberi beds, 1 ex., 15. xii. 1978, Benur, 1 ex., 27. xii. 1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 36-39 mm.

Distribution : In Himalayas from Simla eastwards, hills of North East and peninsular India and Burma.

Remarks : The butterfly commonly known as 'The Common Sergeant' is a new record from Bastar District. Upperside of hind wing has a well defined line of lunules (*Vs.* lunules obscure, *vide* Bingham, 1905).

Host plants : *Glochidion arboreum* W., *G. lanceolarium* Dalz., *G. velutinum* W. and *Terminalia myriocarpa* H. & M. Arg.

XXII Genus **Precis** Hübner1819. *Precis* Hübner, *Verz. bekannt. Schmett.* (3) : 33.*Type species* : *Papilio octavia* Cramer, 1777.

Diagnostic characters : Antennal club short, broad, flat and concave below.

Distribution : Throughout the World except Europe.

Remarks : The butterflies of this genus are popularly known as 'The Pansies'. All the six species occurring in India are dealt with.

Key to species of the genus Precis Hübner

- | | |
|---|---------------------------|
| 1. Upperside of fore wing without prominent ocelli, pale to dark brown, with darker brown bands ... | <i>iphita</i> (Cramer) |
| Upperside of fore wing with a black spot or variegated ocellus in interspace 2, general colour varies ... | 2 |
| 2. Upperside of hind wing with a black spot in interspace 2 ... | <i>hierta</i> (Fabricius) |
| Upperside of hind wing with a variegated ocellus in interspace 2 ... | 3 |
| 3. Upperside of fore wing and hind wing each with two nearly equal variegated ocelli in interspaces 2 and 5 ... | 4 |

- Upperside of fore wing and hind wing with ocelli in interspaces 2 and 5 larger than ocelli in interspaces 5 and 2, respectively ... 5
4. Upperside of wings with their general colour bright shining blue which in hind wing extends nearly to base along costa ... *orithya* (Linnaeus)
- Upperside of wings with their general colour grey and marked with dark brown lines ... *atlites* (Linnaeus)
5. Upperside of wings dark brown, with a number of lemon yellow spots on fore wing ... *lemonias* (Linnaeus)
- Upperside of wings tawny, with a number of short black bars in and beyond the cell of fore wing ... *almana* (Linnaeus)

33. *Precis iphita pluviatilis* Fruhstorfer

(Plate VII, nos. 53-54)

1900. *Precis pluviatilis* Fruhstorfer, *Berl. ent. Z. Berlin*, 45 : 22.

1932. *Precis iphita pluviatilis*, Evans, *The identification of Indian Butterflies* : 177.

Material examined : Jagadapur, Kachauri village, 2 exs., 11. xii. 1978 ; Donga Ghat, 2 exs., 12. xii. 1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Kakapul, 1 ex., 1. xii. 1979 (*Coll. M. S. Shishodia & party*) ; Sukuma, 1 ex., 19. xii. 1980 (*Coll. M. S. Shishodia & party*) ; East to Gidam, 4 exs., 20. xii. 1978, Gidam, Haram village, 1 ex., 22. xii. 1978 ; Bailadila, 4 exs., 23. xii. 1978 ; Bhairamgarh, 4 exs., 21. xii. 1978 ; Kondagaon, East Hill, 1 ex., 26. xii. 1978, Benur, 1 ex., 27. xii. 1978 ; Kanker, Mankeshari, 1 ex. (damaged), 1. i. 1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 26-29 mm.

Distribution : India (Madhya Pradesh, South India and Maldives) and Sri Lanka.

Remarks : The butterfly commonly known as 'The Chocolate Pansy' is a new record from Bastar District. Upperside of fore wing has a faint ocellus in interspace 2 and in hind wing ocelli are in interspace 2 and 5 (*Vs.* a postdiscal series of ocelli in fore wing and hind wing *vide* Bingham, 1905). Underside of fore wing has faint ocelli in interspaces 2,5,6 and a minute and faint ocellus in interspace 3 (*Vs.* a postdiscal series of ocelli in both the wings *vide* Bingham *loc. cit.*).

Host plants : *Asteracantha longifolia* Nees, *Justicia micrantha* Heyne ex Wall. and *Strobilanthes callosus* Nees.

34. ***Precis hierta hierta*** (Fabricius)

1798. *Papilio hierta* Fabricius, *Ent. Syst. Suppl.* : 424.

1905. *Junonia hierta*, Bingham, *The Fauna of British India (Butterflies)*, 1 : 360-361.

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

Material examined : Jagadapur, 1 ex., 29.x.1979 (Coll. S. Ahmed & party). *Fore wing length*.—23 mm.

Distribution : Baluchistan ; India (except north-east India and Andamans) and Sri Lanka.

Remarks : The butterfly popularly known as 'The Yellow Pansy' is a new record from Bastar District. Upperside of fore wing has a black triangular projection downwards from costa beyond discocellulars (*Vs.* at discocellulars *vide* Bingham, 1905).

Host plants : *Asteracantha longifolia* Nees, *Barleria alata* S. Moore and *B. rubra* Ham.

35. ***Precis orithya swinhoi*** (Butler)

(Plate VII, nos. 55-56)

1885. *Junonia orithya swinhoi* Butler, *Ann. Mag. nat. Hist. London*, (5) 16 : 309.

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

Material examined : Jagadapur, Kachauri village, 1 ex., 11.xii.1978, Donga Ghat, 1 ex., 12.xii.1978, Saragi Paul Forest, 1 ex., 13.xii.1978 ; Konta, on way to Golapali, 2 exs., 16.xii.1978 ; Bhairamgarh, 2 exs., 21.xii.1978 ; Bailadila, 1 ex., 23.xii.1978 ; Gidam, Farasgaon, 2 exs., 24. xii. 1978 ; Kondagaon, Paramveda, 1 ex., 28. xii. 1978, Kanker, Mankeshri, 3 exs., 1.i.1979 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing length* : 20-23 mm.

Distribution : Baluchistan ; India (Madhya Pradesh, South India) and Sri Lanka.

Remarks : The butterfly is popularly called 'The Blue Pansy'. The subspecies *P. orithya swinhoi* (Butler) is a new record from Bastar District. *Male* : Upperside of fore wing has not a well defined black ocellus in interspace 2 and an orange minute ocellus with black centred spot is present in interspace 5 ; hind wing is with the basal area partly black and partly blue, reddish orange ocellus in interspace 2 is enveloped by a black ring but enclosing a black round spot with a blue transverse line on it, in interspace 5 the ocellus is a completely black round spot without any white centred spot. Underside of hind wing is dusky brown but without well defined lines. *Female* : Upperside of

fore wing has a minute or not well defined ocellus in interspace 5, ocellus in interspace 2 is larger than that in interspace 5 but in hind wing the case being reverse.

Host plants : *Justicia micrantha* Heyne ex Wall., *J. procumbens* Linn. and *Lepidagathis prostrata* Dalz.

36. *Precis atlites* (Linnaeus)

(Plate II, nos. 57-58)

1763. *Papilio atlites* Linnaeus, *Centur. Ins.* : 24.

1905. *Junonia atlites*, Bingham, *The Fauna of British India (Butterflies)*, 1 : 359-360.

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

Material examined : East to Gidam, 1 ex., 20.xii.1978, Haram village, 1 ex., 22.xii.1978, 2 kms. north to Gidam, 1 ex., 24.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*), Gidam, 1 ex., 5.xii.1979 (*Coll. S. Ahmed & party*) ; Bhairamgarh, 2 exs., 21.xii.1978, 2 kms. north to Gidam, 1 ex., 24.xii.1978 ; Kondagaon, Paramveda, 2 exs., 28.xii.1978 ; Kanker, Mankeshri, 1 ex., 1.i.1979, Kanker, 1 ex., 3.i.1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 27-29 mm.

Distribution : India ; Burma and Sri Lanka.

Remarks : This butterfly commonly called 'The Grey Pansy' is a new record from Baster District. Upperside of wings bear ocelli of variable size. Upperside of hind wing has a minute ocellus in interspace 3 and it is devoid of a black central spot.

Host plants : *Asteracantha longifolia* Nees and *Barleria* sp.

37. *Precis lemonias vaisya* Fruhstorfer

(Plate VIII, nos. 59-60)

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

1932. *Precis lemonias vaisya*, Evans, *The Identification of Indian Butterflies* : 176.

Material examined : Jagadapur, Kachauri village, 2 exs., 11.xii.1978, Donga Ghat, 2 exs., 12.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Kakapul, 1 ex., 1.xii.1979 (*Coll. S. Ahmed & party*) ; East to Gidam, 4 exs., 30.xii.1978, Haram village, 1 ex., 22.xii.1978, Bailadila, 4 exs., 23.xii.1978, Bhairamgarh, 4 exs., 21.xii.1978, Kondagaon, East Hills, 1 ex., 26.xii.1978, Benur, 1 ex., 27.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; East of Kanker, 1 ex., 20.x.1979, Chingrigarh, 1 ex., 1.xi.1979, (*Coll. S. Ahmed & party*) ; Sukuma, 1 ex., 19.xii.1980 (*Coll. M. S. Shishodia & party*). *Fore wing length* : 23-26 mm.

Distribution : India (Madhya Pradesh, South India) and Sri Lanka.

Remarks : The butterfly is commonly known as 'The Lemon Pansy'. The subspecies was previously recorded from Jagadapur. Upperside of fore wing has whitish to ochraceous spots, ocellus is slightly of variable size with more orange colouration around bluish black centred pupil. Upperside of hind wing is also with an ocellus of variable size enclosing one or more smaller black pupils placed anteriorly. Upperside of wings bears a series of black centred ocelli in one specimen and the remaining specimens have much reduced ocelli.

Host plants : *Asteracantha longifolia* Nees, *Nelsonia campestris* Br., *Sida rhombifolia* Linn. and *Strobilanthes* sp.

38. *Precis almana almana* (Linnaeus)

(Plate VIII, nos. 61-62)

1758. *Papilio almana* Linnaeus, *Syst. Nat.* (ed. 10) 1 : 472.

1905. *Junonia almana*, Bingham, *The Fauna of British India (Butterflies)*, 1 : 361-362.

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

Material examined : Bhairamgarh, 1 ex., 21.xii.1978, Gidam, Haram village, 1 ex., 22.xii.1978, Kanker, Mankeshri, 1 ex., 1.i.1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length*. 30-32 mm.

Distribution : India (excluding Car Nicobar) ; Sri Lanka and Burma.

Remarks : The butterfly popularly known as 'The Peacock Pansy' is a new record from Bastar District. Underside of wings is dull coloured and bears oblique, brownish subbasal and discal lines.

Host plants : *Asteracantha longifolia* Nees and *Osbeckia* sp. Varshney (1978) referred that this species destroys the rice fields on a large scale.

XXIII Genus *Neptis* Fabricius

1807. *Neptis* Fabricius, *Mag. f. Insektenk* (Illiger) 6 : 282.

Type species : *Papilio aceris* Esper, 1783.

Diagnostic characters : Cell in both wings open or if closed in fore wing then the lower discocellular vein ends at origin of vein Cu_{1a} ; fore wing with vein R_3 arising from beyond the middle of R_5 .

Distribution : Africa ; Japan ; China ; India ; Malayan subregion and Australia.

Remarks : The butterflies of this genus are popularly known as 'The Sailor and Lascars'. Of the 30 species occurring in India, two are dealt with.

Key to species of the genus Neptis Fabricius

Fore wing with vein R_2 arising from the cell ...	<i>hylas</i> (Linnaeus)
Fore wing with vein R_2 arising from vein R_s ...	<i>hordonia</i> (Stoll)

39. *Neptis hylas astola* Moore

(Plate VIII, nos. 63-64)

1872. *Neptis astola* Moore, *Proc. zool. Soc. Lond.* : 560.1932. *Neptis hylas astola*, Evans, *The Identification of Indian Butterflies* : 166.1977b. *Athyma leucothoe*, Singh, *Newsl. zool. Surv. India*, 3(5) : 325.

Material examined : Jagadapur, Donga Ghat, 1 ex., 12.xii.1978 ; Saragi Paul Forest, 1 ex., 13.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Kukrigarh, 1 ex., 29.x.1979 (*Coll. S. Ahmed & party*) ; Konta, Saberi beds, 1 ex., 15.xii.1978, 1 ex., 16.xii.1978, on way to Golapali, 2 exs., 16.xii.1978, East to Gidam, 8 exs., 20.xii.1978 ; Bhairamgarh, 3 exs. 20.xii.1978, 4 exs., 21.xii.1978, Gidam, Haram village, 16 ex., 22.xii.1978, 2 kms. North of Gidam, 7 exs., 24.xii.1978, Gidam, 1 ex., 24.xii.1978, Bailadila, 1 ex., 23.xii.1978, Benur, 3 exs., 27.xii.1978 ; Kondagaon, Paramveda, 3 exs., 28.xii.1978, Keskal, 2 exs., 29.xii.1978, Bandapara, 1 ex., 30.xii.1978, Kanker, 1 ex., 3.i.1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 19-26 mm.

Distribution : India (Kashmir) to Burma (Karens).

Remarks : The butterfly is popularly known as 'The Common Sailor'. This subspecies was previously recorded from Jagadapur. Upperside of fore wing has a discal series of variable spots in interspaces 1 a, 1 b, 2 and 3 ; white spots of submarginal series are faint or obsolete, and in some specimens white discocellular streak is indented or notched subapically. On upperside of hind wing width of white subbasal band varies as it runs down from costal margin to anal margin. Underside of wings is usually bright yellow to yellow brown ; in fore wing submarginal series of white spots is followed by a broken white line ; in hind wing whitish subbasal band may be broadly or narrowly bounded on each side by a black line.

Host plants : *Bombax malabaricum* DC. (Silk Cotton, Simul), *Canavalia ensiformis* DC., *Corchorus* sp. (Til), *Cylista* sp., *Dalbergia sissoo* Roxb., *Flemingia* sp., *Grewia* sp., *Helictres* sp., *Mappia foetida* Miers., *Mucuna* sp., *Spatholobus roxburghii* Benth., *Triumfelta* sp. and *Vigna catjang* Endl. (Cow pea).

40. **Neptis hordonia hordonia** (Stoll)

(Plate IX, nos. 65-66)

1791. *Papilio hordonia* Stoll, In Cramer's *Pap. exot. Suppl.*, : pl. 33, figs. 4, 4 D.

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

Material examined : Konta, Saberi beds, 2 exs., 15.xii.1978, 1 ex., 16.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 20-23 mm.

Distribution : India (Uttar Pradesh, Dehra Dun, South India and Andaman Islands) to Burma.

Remarks : The butterfly commonly known as 'The Common Lascar' is a new record from Bastar District. Upperside of fore wing has an orange yellow submarginal line (*Vs.* postmedial line white grey *vide* Bingham, 1905).

Host plants : *Acacia pennata* Willd. and *Albizia odoratissima* Benth.

XXIV. Genus **Euthalia** Huebner

1890. *Euthalia* Huebner, *Verz. bekant. Schmett.* (3) : 41.

Type-species : *Papilio egialea* Cramer, 1777.

Diagnostic characters : Differs from genus *Neptis* Huebner in vein R_3 arising well before middle of R_5 or if from the middle of R_5 then vein R_1 anastomosing with Sc.

Distribution : Palaearctic China ; India ; Sri Lanka and Papua.

Remarks : The butterflies of this genus are popularly called 'The Barons'. Of the 24 species known to occur in India, three are dealt with here.

Key to species of the genus Euthalia Huebner

- | | | |
|---|-----|-------------------------|
| 1. Underside of hind wing with two spots in the cell which may be reddish and no markings in interspaces 5, 6 and 7 | ... | <i>nais</i> (Forster) |
| Underside of hind wing with two basal spectacle marks in the cell, outer one extending to base of interspace 5, markings in interspaces 6 and 7 usually present | ... | 2 |
| 2. Fore wing with vein R_3 arising from middle of vein R_5 | ... | <i>lepidea</i> (Butler) |
| Fore wing with vein R_3 arising from basal half of vein R_5 | ... | <i>garuda</i> (Moore) |

41. **Euthalia nais** (Forster)

(Plate IX, nos. 67-68)

1771. *Papilio nais* Forster, *Nov. Spec. Ins. Cent.*, 1 : 73.1932. *Euthalia nais*, Evans, *The Identification of Indian Butterflies*, : 157.1977b. *Symphaedra alcandra*, Singh, *Newsl. zool. Surv. India*, 3(5) : 325.

Material examined : Konta, on way to Golapali, 1 ex., 16.xii.1978, Bhairamgarh, 3 exs., 21.xii.1978, Gidam, 1 ex., 22.xii.1978, North of Gidam, 2 exs., 24.xii.1978, Bailadila, 2 exs., 23.xii.1978, Narayanpur, 1 ex., 27.xii.1978 ; Benur, 1 ex., 27.xii.1978, Kondagaon, Paramveda, 1 ex., 28.xii.1978, Keska, 1 ex., 29.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Naraingarh, Chingrigarh, 1 ex., 25.x.1979, Jagadapur, Atagura, 2 exs., 31.x.1979, Gidam, 2 exs., 4.xii.1979, 1 ex., 7.xi.1979 (*Coll. S. Ahmed & party*) ; Sonpur, 1 ex., 1.i.1981 (*Coll. M. S. Shishodia & party*). *Fore wing length* : 26-30 mm.

Distribution : India (Uttar Pradesh to Sikkim, Madhya Pradesh, Gujarat and South India) and Sri Lanka.

Remarks : The butterfly commonly called 'The Baronet' was previously recorded from Jagadapur. Upperside of fore wing has a outer discal line thick, irregular, straight from vein Cu_{1b} to M_1 and angulated inwardly to costa ; a separated black spot below vein Cu_{1b} is present. A black band beyond the cell is oblique and joins the discal line. A large black spot at base of vein Cu_{1a} does not extend to base of vein Cu_{1b} . In hind wing there is a discal series of small black spots (*Vs.* a discal line *vide* Bingham, 1905).

Host plants : *Diospyros melanoxylon* Roxb. and *Shorea robusta* Gaertn. f. (Sal).

42. **Euthalia lepidea lepidea** (Butler)

(Plate IX, nos. 69-73)

1868. *Adolias lepidea* Butler, *Ann. Mag. nat. Hist. London*, (4)1 : 71.1932. *Euthalia lepidea lepidea*, Evans, *The Identification of Indian Butterflies* : 150.

Material examined : East to Gidam, 1 ex., 20.xii.1978, Bhairamgarh, 2 exs., 21.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 30-34 mm.

Distribution : India (Uttar Pradesh : Kumaon to Assam, Orissa, and South India) and Burma.

Remarks : The butterfly commonly known as 'The Gray Coun' is a new record from Bastar District. Underside of forewing has a discal

line of variable length running down from costa to a little above the anal margin whereas in two specimens it is obsolete towards extremities.

Host plants : *Butea frondosa* Roxb. (Flame of the forest), *Careya arborea* Roxb. (Kimbi) and *Melastoma malabathricum* Linn.

43. ***Euthalia garuda anagama*** Fruhstorfer
(Plate IX, nos. 71-72)

1913. *Euthalia anagama* Fruhstorfer, In Seitz : *The Macrolepidoptera of the World*, 9 : 667.

1932. *Euthalia garuda anagama*, Evans, *The Identification of Indian Butterflies* : 154.

Material examined : Jagadapur, Kachauri village, 1 ex., 11.xii.1978, Donga Ghat, 1 ex., 12.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party) ; Jagadapur, Kakapul, 3 exs., 1.xi.1979 (Coll. S. Ahmed & party) ; Kanker, Dumurpara, 1 ex., 3.i.1979 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing length* : 29-35 mm.

Distribution : India (Himachal Pradesh : Kangra to Uttar Pradesh : Kumaon, and Maharashtra to Orissa).

Remarks : The butterfly popularly known as 'The Baron' is a new record from Bastar District. Upperside of fore wing has a submarginal band of black spots which are absent in two specimens.

Host plants : *Anacardium occidentale* Linnaeus (Cashew-nut), *Bryonia* spp., *Mangifera indica* Linnaeus (Mango), *Morus* sp., *Streblus asper* Lour. and *Trophis asper* Retz.

Family RIODINIDAE

Fore legs imperfect and brush like in the male but completely developed in the female.

The family is represented by a single species i.e. *Abisara echerius* Stoll in the collection of butterflies made from Bastar District.

XXV Genus ***Abisara*** Felder & Felder

1860. *Abisara* Felder & Felder, *Wien. ent. Monats.* 4 : 397.

Type species : *Abisara kausambi* Felder & Felder, 1860.

Diagnostic characters : Eyes hairy. Hind wing with tornus not produced or lobed, but termen angulate or produced at apex of vein Cu_{1a}.

Distribution : Ethiopian and Indo-Malayan Regions.

Remarks : The butterflies of this genus are commonly known as 'The Judies'. Of the six species known to occur in India, *A. echerius* Stoll is dealt with.

44. *Abisara echerius suffusa* Moore
(Plate X, nos. 73-74)

1882. *Abisara suffusa* Moore, *Proc. zool. Soc. Lond.* : 244.

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

Material examined : Bhairamgarh, 4 exs., 21.xii.1978, East to Kondagaon, 2 exs., 26.xii.1978, Narayanpur, 2 exs., 27.xii.1978, Paramveda, 3 exs., 28.xii.1978, Farasgaon, 1 ex., 29.xii.1978, Bandapara, 6 exs., 30.xii.1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 20-24.

Distribution : India (Karnataka : Kanara to Western Himalayas).

Remarks : The butterfly commonly known as 'The Plum Judy' is a new record from Bastar District. Upperside and underside of hind wing bear black spots of variable size at the apices of interspaces 4, 5 and 6 (*Vs.* black spots in interspaces 5 and 6 *vide* Bingham, 1905 and Wynter-Blyth, 1957).

Host plants : *Embelia robusta* Roxb. and *Ardisia* sp.

Family LYCAENIDAE

Species predominantly blue in colour. Upperside of wings usually suffused and may be spotted or banded with a variety of colours. Hind wing often with filamentous tails present, precostal vein absent ; fore legs functional in both sexes, fore tarsus in female with two claws and in male only with a single claw.

This family, in Bastar District, is represented by 15 species distributed over 12 genera.

Key to genera of the family LYCAENIDAE

- | | |
|--|---|
| 1. Vein R_5 in fore wing arising from end cell ... | 3 |
| Vein R_5 in fore wing arising from end cell or beyond end cell ... | 2 |
| 2. Hind wing with a long tail at vein Culb. Fore wing with veins M_1 and R_5 close at origin ... | |

Loxura Horsfield

Hind wing with approximately equal tails at ends of veins Culb and 1A+2A. Fore wing with veins M ₁ and R ₅ widely separate at origin ...	<i>Tajuria</i> Moore	
3. Underside with dark markings at extreme bases of wings ...		4
Underside without dark markings at extreme bases of wings ...		6
4. Eyes smooth ...		5
Eyes hairy ...	<i>Syntarucus</i> Butler	
5. Vein R ₁ in fore wing ends well before end cell ...	<i>Castalius</i> Huebner	
Vein R ₁ in fore wing ends opposite end cell...	<i>Tarucus</i> Huebner	
6. Eyes smooth or slightly hairy ...		6
Eyes densely hairy ...		10
7. Tailless ...		8
Tailed ...	<i>Euchrysops</i> Butler	
8. Eyes smooth. Underside of hind wing with postdiscal spots in interspaces 5-7 in line ...		9
Eyes slightly hairy. Underside of hind wing with a post-discal spot in interspace 6 moved in and not in line with spots in interspaces 5 and 7 ...	<i>Zizina</i> Chapman	
9. Underside of fore wing with a spot in cell ...	<i>Zizeeria</i> Chapman	
Underside of fore wing without a spot in cell	<i>Zizula</i> Chapman	
10. Fore wing with veins Sc and R ₁ free but connected by a short spur ...	<i>Jamides</i> Moore	
Fore wing with veins Sc and R ₁ free and not connected by a bar ...		11
11. Underside of wings marked with catenulated bands and some spots ...	<i>Catochrysops</i> Boisduval	
Underside of wings marked with white lines ..	<i>Lampides</i> Huebner	

XXVI. Genus *Loxura* Horsfield

1829. *Loxura* Horsfield, *Descr. Cat. Lep. Ins. Mus. East. India Coy.* (2) : 119.

Type species : *Papilio atymnus* Stoll, 1780.

Diagnostic characters : Antennae gradual and cylindrical. Eyes smooth. Fore wing with vein R₅ reaching costa, R₅ and M₁ close at origin ; hind wing always lobed and with a tail at vein Cu₁b.

Distribution : India ; Sri Lanka to Malaysia ; Sumbawa and the Philippines.

Remarks : The butterflies of this genus are popularly called 'The

Yamflies'. Only a single species i.e. *Loxura atymnus* Stoll known to occur in India is dealt with here.

45. *Loxuaa atymnus continentalis* Fruhstorfer

1911. *Loxura atymnus continentalis* Fruh., *Berl. Ent. Z.*, Berlin, 56 : 221.

1962. *Loxura atymnus continentalis*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 111.

Material examined : Keskul, 1 ex., 29.xii.1978 (Coll. M.S. Shishodia, I. J. Gupta & party). *Fore wing length* : 19mm.

Distribution : India (Mussoorie to Assam, Madhya Pradesh) and Burma.

Remarks : The butterfly commonly known as 'The Yamfly', is a new record from Bastar District.

Host plants : *Dioscorea pentaphylla* Wall. and *Smilax* sp.

XXVII Genus *Tajuria* Moore

1881. *Tajuria* Moore, *Lep. Ceylon*, 1(3) : 108.

Type species : *Hesperia longinus* Fabricius, 1798.

Diagnostic characters : Fore wing with veins R_5 and M_1 separate at origin, male without tuft on underside. Upperside of hind wing without any brand, and veins not dusky.

Distribution : Palaearctic and Oriental Regions.

Remarks : The butterflies of this genus are popularly called 'The Royals'. 13 spp. of this genus are known to occur in India of which *Tajuria jehana* Moore is dealt with here.

46. *Tajuria jehana* Moore

1883. *Tajuria jehana* Moore, *Proc. zool. Soc. Lond.* : 529.

1962. *Tajuria jehana*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies (1932)* : 123.

Material examined : Benur, 1 ex., 27.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing length* : 18mm.

Distribution : India (Uttar Pradesh, Maharashtra ; South India to West Bengal, Madhya Pradesh) and Sri Lanka.

Remarks : The butterfly commonly known as 'The Plains Royal Blue' is a new record from Bastar District.

XXVIII Genus *Syntarucus* Butler

1901. *Syntarucus* Butler, *Proc. zool. Soc. Lond.* (4) : 929.

Type species : *Papilo telicanus* Lang, 1789.

Diagnostic characters : Fore wing with vein R_5 before end cell, vein R_1 and R_2 free. Underside of wings with dark markings from their extreme bases.

Distribution : Pakistan ; India ; Nepal ; Burma and Sri Lanka.

Remarks : The butterflies of this genus are popularly called 'The Zebras'. Only a single species i.e. *S. plinius* (Fabricius) known to occur in India is dealt with.

47. *Syntarucus plinius* (Fabricius)

(Plate X, nos. 75-76)

1793. *Hesperia plinius* Fabricius, *Ent. Syst.* 3 : 284.

1907. *Tarucus plinius*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 420-421.

1962. *Syntarucus plinius*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 34.

Material examined : Bailadila, 1ex., 23.xii.1978 (*Coll. M.S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 13mm.

Distribution : Pakistan ; India ; Nepal ; Burma and Sri Lanka.

Remarks : The butterfly commonly called 'The Zebra Blue' is a new record from Bastar District.

Host plants ; *Albizia lebbek* (Linn.) Benth. (Kokko), *Indigofera* spp. and *Sesbania aculeata* Pers.

XXIX Genus *Castalius* Huebner

1819. *Castalius* Huebner, *Verz. bekannt. Schmett.* (5) : 70.

Type species : *Papilio rosimon* Fabricius, 1775.

Diagnostic characters : Upperside of wings usually white or with a broad white discal band. Undersider of wings white with very characteristic markings. In fore wing vein R_1 ends well before end cell.

Distribution : Ethiopian and Indo-Malayan Regions.

Remarks : The butterflies of this genus are commonly called 'The Pierrots'. Five species are known to occur in India of which two are dealt with here.

Key to species of the genus Castalius Huebner

Upperside of wings with ground colour white ; fore wing with narrow costal and broader marginal endings, on inner side of which towards apex some quadrate black spots present ; bases of wings shot with iridescent light blue	...	<i>rosimon</i> (Fabricius)
Upperside of wings with ground colour black ; fore wing with a very broad oblique transverse white band extending from the middle of dorsal margin almost to vein M ₁ , with a short outward extension above vein Cu _{1a}	...	<i>caleta</i> (Hewitson)

48. *Castalius rosimon rosimon* (Fabricius)

(Plate X, Nos. 77-78)

1775. *Papilio rosimon* Fabricius, *Syst. Ent.* : 523.
 1907. *Castalius rosimon*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 424-425.
 1962. *Castalius rosimon rosimon*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 31.

Material examined : Jagadapur, Kachauri village, 1ex., 11.xii.1978, Donga Ghat, 1ex., 12.xii.1978, Saragi Paul Forest, 1ex., 13.xii.1978 ; Konta, Saberi beds, 4exs., 15.xii.1978 ; East to Gidam, 2exs., 20.xii.1978, 3exs., 22.xii.1978. Gidam (Haram village), 1ex., 22.xii.1978, 2 kms. North of Gidam, 4exs., 24.xii.1978, Bhairamgarh, 7exs. 21.xii.1978, (*Coll. M. S. Shishodia, I. J. Gupta & party*), Gidam, 1ex., 7.xi.1979 (*Coll. S. Ahmed & parry*) ; Kondagaon, East Hills, 2exs. 26.xii.1978, Narayanpur, 2exs., 27.xii.1978, Benur, 1ex., 27.xii.1978, Paramveda, 1ex., 28.xii.1978, Keskhal, 2exs., 29.xii.1978, Kanker, Mankeshri, 1ex., 1.i.1979, Pandripani, 2exs., 2.i.1979, Dumarpara, 1ex., 3.i.1979 (*Coll. M. S. Shishodia I. J. Gupta & party*). *Fore wing length* : 11-14 mm.

Distribution : Pakistan ; India ; Burma and Sri Lanka.

Remarks : The butterfly popularly known as 'The Common Pierrot' is a new record from Bastar District. Upperside of fore wing has a small spot (of post discal series) of variable size in interspace 1b which may sometimes be absent. Quadrate and dark brown spots of post discal series are joined to the dark brownish marginal border in some specimens whereas in others these are the extensions of dark brownish streaks along the veins which join the spots (Vs. these spots not joined with marginal border *vide* Bingham, 1907). Underside of wings bears

dark brownish spots of variable size, in fore wing the post discal series of rectangular spots is followed by a series of small rounded spots in interspaces. The Marginal border is narrow and dark brown.

Host plants : *Ziziphus mauritiana* Lamk. (Ber) and *Z. rugosa* Lamk.

49. *Castalius caleta decidia* (Hewitson)

1876. *Lycaena decidia* Hewitson, *Exot. Butl.*, 5 : pl. 1, fig. 4.

1907. *Castalius decidia*, Bingham, *The Fauna of British India (Butterflies)* 2 : 429. fig. 92 a.

1962. *Castalius caleta decidia*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies* 1932 : 31.

Material examined : Konta, Saberi beds, 1ex., 15.xii.1978 (*Coll. M. S. Shishodia, I, J. Gupta & party*). *Fore wing length* : 13 mm.

Distribution : India (Uttar Pradesh, Karnataka, Kerala, Tamil Nadu, West Bengal, Sikkim and Assam) ; Nepal ; Burma and Sri Lanka.

Remarks : The butterfly commonly called 'The Angled Pierrot' is a new record from Bastar District. Underside of fore wing has a basal black streak not joined below to a semicircular broad band that reaches costa, a quadrate black marginal spot in interspace 3 is joined above and below to the narrow black marginal border, another discal irregular black spot between the anal margin and vein Cu_{1a} is separated from the marginal border. Underside of hind wing is without a black spot in interspace 4.

XXX. Genus *Tarucus* Moore

1881. *Tarucus* Moore, *Lep. Ceylon*, 1(3) ; 81.

Type species : *Hesperia theophrastus* Fabricius, 1793.

Diagnostic characters : Upperside of wings blue and without large white areas. Underside of each wing with a prominent dark streak from base. In fore wing vein R_1 ends opposite end cell.

Distribution : Southern Europe ; North Africa ; Arabia ; West Africa ; China ; India ; Burma and Sri Lanka.

Remarks : The butterflies of this genus are popularly known as 'The Blue Pierrots' Of the seven species known to occur in India, *Tarucus oallinara* Butler is dealt with here.

50. **Tarucus callinara** Butler

1886. *Tarucus callinara* Butler, *Ann. Mag. nat. Hist. Lond.*, (5) 18 : 185.
 1907. *Tarucus theophrastus*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 417.
 1962. *Tarucus callinara*, Cantlie, *The Lycaenidhe portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies*, 1932 : 33.

Material examined : Gidam (Haram village), 1ex., 22.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing length* : 13 mm.

Distribution : Pakistan (Peshawar) to India and North Burma.

Remarks : The butterfly commonly called 'The Spotted Pierrot' is a new record from Bastar District.

XXXI Genus **Euchrysops** Butler

1900. *Euchrysops* Butler, *Entomologist*, 33 : 1.

Type species : *Hesperia cnejus* Fabricius, 1798.

Diagnostic characters : Eyes smooth. Fore wing with the veins Sc and R₁ free, R₅ arising before end cell ; hind wing tailed and tornus angled. Underside of wings with catenulated discal spots on grey ground ; no markings at extreme bases ; hind wing with a spot at tornus crowned with metallic and orange.

Distribution : Tropical Africa ; Sri Lanka and India through the Archipelago to the South Seas.

Remarks : The butterflies of this genus are commonly known as 'The Plains Cupids'. Three species are known to occur in India of which two are dealt with here.

Key to species of the genus **Euchrysops** Butler

- Upperside of hind wing with equal or nearly equal submarginal spots in interspaces 1 c and 2. Underside of hind wing with discal band tornally broken into separated spots, the last spot near the anal margin in interspace 1 b far removed from the next spot in interspace 1 c ... *cnejus* (Fabricius)
- Upperside of hind wing with markedly unequal submarginal spots in interspaces 1 c and 2. Underside of hind wing with discal band at tornus more united, the spot in interspace 1 b being conjoined or approximate to the spot in interspace 1 c ... *pandava* (Horsfield)

51. *Euchrysops cnejus* (Fabricius)

(Plate X, nos. 79-80)

1798. *Hesperia cnejus* Fabricius, *Ent. Syst. Suppl.* : 430.1907. *Catachrysops cnejus*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 415.1962. *Euchrysops cnejus*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 65.

Material examined : Jagadapur, Kachauri village, 1 ex., 11.xii.1978, Donga Ghat, 1 ex., 12.xii.1978, Konta, 1 ex., 15.xii.1978, Bhairamgarh, 1 ex., 21.xii.1978, Gidam (Haram village), 2 exs., 22.xii.1978 ; Kanker, Mankeshari, 4 exs., 1.i.1979, Pandripani, 1 ex., 3.i.1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*) ; Gudiras, 2 exs., 22.xii.1980 (*Coll. M. S. Shishodia & party*). *Fore wing length* : 13-15 mm.

Distribution : West China to Himalayas and plains of India ; Nepal ; Burma ; Sri Lanka ; Malaysia and Australia.

Remarks : The butterfly commonly known as 'The Gram Blue' is a new record from Bastar District.

Host plants : *Acacia* sp., *Butea frondosa* Roxb. (Flame of the forest), *Cylista scariosa* Roxb., *Ougeinia dalbergioides* Benth., *Phaseolus trilobus* Ait., *Vigna catjang* Endi. Singh (1982) has recorded *E. cnejus* (Fab.) as a new pest on *Citrus medica* Linn. var. *acida* Hook. (Kagzi Nimbu).

52. *Euchrysops pandava* (Horsfield)1829. *Lycaena pandava* Horsfield, *Cat. lep. Ins. Mus. East India Coy* : 84.1907. *Catachrysops pandava*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 413.1962. *Euchrysops pandava*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 66.

Material examined : Kondagaon, 1 ex., 28.xii.1978, Keskhal, 1 ex., 29.xii.1978 (*Coll. M. S. Shiseodia, I. J. Gupta & party*). *Fore wing length* : 13 mm.

Distribution : India ; Burma and Sri Lanka.

Remarks : The butterfly popularly called 'The Plains Cupid' is a new record from Bastar District. Upperside of hind wing is with the ground colour metallic blue and a series of marginal black spots is followed by a greyish white line. Underside of hind wing has the impressions of marginal black spots of upperside visible and darker in the interspace 2.

Host plants : *Acacia* sp., *Bauhinia retusa* Roxb. (Semla), *B. variegata*

Linn. (Kachnar), *Bauhinia* sp., *Cycas circinalis* Linn., *C. revoluta* Thunb., *C. rumphii* Miq., *Macrozamia spiralis* Miq. and *Ougeinia dalbergioides* Benth.

XXXII. Genus *Zizina* Chapman

1910. *Zizina* Chapman, *Trans. ent. Soc. Lond* : 482.

Type species : *Polyommatus labradus* Godart, 1824.

Diagnostic characters : Upperside of wings, in male, dark blue usually with broad borders but in female, brown with more or less blue suffusion. Underside of fore wing without costal spots or any spot in cell, in hind wing discal spot in interspace 6 shifted in and not in line with spots in interspaces 5 and 7.

Distribution : West Pakistan ; India ; Nepal ; Burma and South East Asia.

Remarks : The butterflies of this genus are commonly known as 'The Lesser Grass Blues'. The genus in India, is represented by a single species i.e. *Zizina otis* (Fabricius).

53. *Zizina otis indica* (Murray)

(Plate X, nos. 81-82)

1874. *Lycaena indica* Murray, *Trans. ent. Soc. Lond.* (4) : 525, pl. 10, figs. 2, 3, ♂ ♀

1907. *Zizera otis*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 360.

1962. *Zizina otis indica*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Buterflies*, 1932 : 63.

Material examined : Jagadapur, 1ex., 11.xii.1978, Dharampur, 1ex., 10.xii.1978, Donga Ghat, 1ex., 12.xii.1978, Konta, Saberi beds, 3exs., 15.xii.1978, on way to Golapali, 10 exs., 16. xii. 1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*), Golapali, 1ex., 20.xii.1980 (*Coll. M. S. Shishodia & party*). East to Gidam, 8 exs., 20.xii.1978, 1ex., 24.xii.1978, Haram vlllage, 1 ex., 22.xii.1978, Bhairamgarh, 3exs., 21.xii.1978, Bailadila, 2exs., 23.xii.1978, Narayanpur, 3exs., 27.xii.1978 ; Kanker, Pandripani, 9 exs., 2.i.1979, Dumarpara, 7exs., 3.i.1979 ; Telkabod, 1 ex., 4.i.1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 8-10 mm.

Remarks : The butterfly commonly called 'The Lesser Grass Blue' is a new record from Bastar District. Upperside of both wings bears marginal borders of variable size ; and in hind wing costal fascia is dark brown or black upto base and marginal border narrow. Underside of

fore wing has a black bar on the discocellulars lined on inner and outside by white. The discal series of 7 black spots is prominent, and a minute black spot is present in interspace 8. In hind wing, in addition to discal series of 7-8 spots there are two spots present above the middle spots (*Vs.* 9 and 3 spots, respectively, *vide* Bingham, 1907).

Host plants : *Alysicarpus vaginalis* DC. (Gram), *Sesbania aculeata* Pers. and *Zornia diphylla* Pers.

XXXIII. Genus *Zizeeria* Chapman

1910. *Zizeeria* Chapman, *Trans. ent. Soc. Lond.* : 480, 482.

Type species : *Polyommatus karsandra* Moore, 1865.

Diagnostic characters : Differs from *Zizina* in having smooth eyes and underside of hind wing with postdiscal spot in interepace 6 in line with spots in interspace 5 and 7

Distribution : Pakistan ; India ; Nepal and Burma.

Remarks : The butterflies of this genus are commonly called 'The Grass Blues'. Two species known to occur in India are dealt with here.

Key to species of the genus Zizeeria Chapman

- | | | |
|--|-----|------------------------|
| Species large. Upperside of male pale blue, border broad. Female dark brown with some basal blue suffusion. Underside of fore wing often with a small spot at base of vein 1 b | ... | <i>maha</i> (Kollar) |
| Species small. Upperside of male dark blue with broad borders. Female normally plain brown but may have basal blue suffusion. Underside grey with well defined small black spots | ... | <i>knysna</i> (Trimen) |

54. *Zizeeria maha maha* (Kollar)

1848. *Lycaena maha* Kollar, in Huegel's *Kashmir*, 4 : 422.

1907. *Zizera maha*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 355.

1962. *Zizeeria maha maha*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies*, 1932 : 64.

Material examined : Bailadila, 3exs., 23.xii.1978 (Coll. M. S. Shishodia, I. J. Gupta & party). *Fore wing iength* : 10-11 mm.

Distribution : India and Burma.

Remarks : The butterfly popularly known as 'The Pale Grass Blue'

is a new record from Bastar District. Underside of hind wing has faint black spots reduced in size but encircled with white.

Host plants : *Nelsonia* sp., *Oxalis corniculata* Linn., *Strobilanthes* sp. and *Tephrosia panciflora* Wall.

55. **Zizeeria knysna karsandra** (Moore)
(Plate XI, nos. 83-84)

1865. *Polyommatus karsandra* Moore, *Proc. zool. Soc. Lond.* : 505, no. 106, pl. 31, fig. 7 ♀
1907. *Zizera lysimon*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 357.
1962. *Zizeera knysna karsandra*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 64.

Material examined : On way to Golapali, 1 ex., 16. xii. 1978, Bhairamgarh, 1 ex., 21. xii. 1978, Narayanpur, 2 exs., 27. xii. 1978, Kanker, Telkabod, 1 ex., 4. i. 1979 (*Coll. M. S. Shlshodia, I. J. Gupta & party*).
Fore wing length : 8-9 mm.

Distribution : Pakistan ; India ; Burma and Sri Lanka.

Remarks : The butterfly commonly called 'The Dark Grass Blue' is a new record from Bastar district. Underside of wings is paler.

Host plants : *Amaranthus viridis* Linn. and *Zornia diphylla* Pers.

XXXIV. Genus **Zizula** Chapman

1910. *Zizula* Chapman, *Trans. ent. Soc. Lond.* : 483.

Type species : *Lycaena gaika* Trimen, 1862.

Diagnostic characters : Differs from *Zizeeria* and *Zizina* in having veins R_1 and Sc anastomosed to costa in fore wing.

Distribution : Pakistan ; India ; Burma and Sri Lanka.

Remarks : The genus includes small sized butterflies known as 'The Tiny Grass Blues' The genus is represented in India by a single species i. e. *Zizula hylax* (Fabricius) and is dealt with,

56. **Zizula hylax** (Fabricius)
(Plate XI, nos. 85-86)

1775. *Papilio hylax* Fabricius, *Syst. Ent.* : 526.
1907. *Zizera gaika*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 359.
1962. *Zizula hylax*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 65.

Material examined : Jagadapur, Donga Ghat, 1 ex., 12. xii. 1978 ;

Konta, Saberi beds, 2 exs., 15.xii.1978 ; Narayanpur, 1 ex., 27.xii.1978 ; Benur, 1 ex., 27.xii.1978 ; Kanker, Pandripani, 2 exs., 2.i. 1979 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 8-9 mm.

Distribution : India ; Burma and Sri Lanka.

Remarks : The butterfly commonly called 'The Tiny Grass Blue' is the smallest of all the diurnal lepidoptera. This species is a new record from Bastar District. Underside of fore wing has a discal black lunulate spot in interspace 5 and that in interspace 3 being triangular.

Host plants : *Lantana* sp., *Nelsonia campestris* Br., *Strobilanthes* sp. and Vetches.

XXXV. Genus **Jamides** Huebner

1819. *Jamides* Huebner, *Vers. bekannt. Schmett.* (5) : 71.

Type species : *Papillio bochus* Stoll, 1782.

Diagnostic characters ; Veins R_1 and Sc in fore wing extended close together, sometimes touching but not anastomosed, an oblique short bar present between veins R_1 and Sc near base. Hind wing with one tail.

Distribution : Indo-Malayan Region.

Remarks : The butterflies of this genus are popularly called 'The Ceruleans'. Of the six known species from India, *Jamides celeno* (Cramer) is dealt with.

57. **Jamides celeno aelianus** (Fabricius)

1793. *Hesperia aelianus* Fabricius, *Ent. Syst.* 3(1) : 280, no. 79.

1869. *Lampides aelianus*, Butler, *Cat. Fabr. Lep.* : 166, no. 16.

1907. *Lampides celeno*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 404.

1962. *Jamides celeno aelianus*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 71.

Material examined : Jagadapur, Donga Ghat, 1 ex., 12. xii. 1978 ; Bhairamgarh, 1 ex., 21. xii. 1978, Kondagaon, Bandapara, 1 ex., 30.xii. 1978 (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 13-15 mm.

Distribution : Pakistan ; India and Burma.

Remarks : The butterfly commonly known as 'The Common Cerulean' is a new record from Bastar District. Upperside of fore wing has outer margin narrow, dark brown with boundries diffused but broadens towards apex ; in hind wing marginal line is dark brown. Underside of fore wing bears fourth white fascia (ending on vein Cula)

broad, its outer boundry being diffused but inner side well defined ; third white fascia in the interspace 2 is broader ; in hind wing third white fascia extends from vein Sc to Rs then interrupted but again starts from the point of origin of veins Rs and M_1 and finally reaches the hind margin.

Host plants : *Pongamia pinnata* (Linn.) Pierre and *Saraca indica* Linn.

XXXVI Genus *Catochrysops* Boisduval

1832. *Catochrysops* Boisduval, In d'Urville, *Voy. "Astrolabe"*, *Ent.* 1 (Lep) : 87.

Type species : *Hesperio strabo* Fabricius, 1793.

Diagnostic characters : Eyes densely hairy. Fore wing with veins R_1 and Sc free, M_1 and R_5 separated at base ; underside of wings marked with catenulated bands and some spots.

Distribution : Indo-and Austro-Malayan Regions.

Remarks : The butterflies of this genus are commonly called 'The Forget-Me-Nots'. Of the two species known from India, *Catochrysops strabo* (Fabricius) is dealt with.

58. *Catochrysops strabo strabo* (Fabricius)

1793. *Hesperia strabo* Fabricius, *Ent. Syst.* 3 : 287.

1907. *Catochrysops strabo*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 411.

1962. *Catochrysops strabo strabo*, Cantlie, *The Lyeaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 67.

Material examined : Jagadapur, Dongha Ghat, 1 ex., 12.xii.1978 ; Konta, Saberi beds, 1 ex., 15.xii.1978 ; Bailadila, 1 ex., 23.xii.1978, (*Coll. M. S. Shishodia, I. J. Gupta & party*). *Fore wing length* : 15 mm.

Distribution : India ; Burma and Sri Lanka.

Remarks : This butterfly popularly known as 'The Forget-Me-Not' is a new record from Baster District. Underside of fore wing has a small, round and black spot in the interspace 9 (*Vs.* in area 10 *vide* Bingham, 1907) ; hind wing bears an elongate and quadrate spot in the cell just above the median vein ; discal band of black spots does not extend beyond vein Rs.

Host plants : *Acacia* sp., *Butea frondosa* Roxb. (Flame of the forest), *Cylista scariosa* Roxb., *Ougeinia dalbergioides* Benth., and *Schleichera oleosa* (Lour.) Oken and *S. trijuga* Willd.

XXXVII Genus **Lampides** Huebner

1819. *Lampides* Huebner, *Verz. bekannt. Schmett.*, (5) : 70.

Type species : *Papilio boeticus* Linnaeus, 1767.

Diagnostic characters : Eyes densely hairy. Fore wing with vein R_5 before end cell, R_1 and Sc free, hind wing with a long tail only at vein Cu_1b . Underside of hind wing marked with white lines but no dark markings at extreme bases, a tornal spot present.

Distribution ; Indo-Malayan Region.

Remarks : The butterflies of this genus are popularly called 'The Peablues'. *Lampides boeticus* (Linnaeus) is the only species known to occur in India and is dealt with here.

59. **Lampides boeticus** (Linnaeus)

(Plate XI, nos. 89-90)

1767. *Papilio boeticus* Linnaeus, *Syst. Nat.* (ed. 12) (1) : 789.

1907. *Polyommatus boeticus*, Bingham, *The Fauna of British India (Butterflies)*, 2 : 432-433.

1962. *Lampides boeticus*, Cantlie, *The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' The Identification of Indian Butterflies 1932* : 69.

Material examined : Jagadapur, Kachauri village, 1 ex., 11.xii.1978 ; East to Gidam, 1 ex., 20.xii.1978 ; Bailadila, 5 exs., 23.xii.1978 ; Kanker 1 ex., 2.i.1979 (Coll. M.S. Shishodia, I.J. Gupta & party). Fore wing length : 14-16mm.

Distribution : India ; Nepal ; Burma and Sri Lanka.

Remarks : The butterfly commonly called 'The Peablue' is a new record from Bastar District. Underside of fore wing and hind wing is greyish brown with markings variable in width.

Host plants : *Butea frondosa* Roxb. (Flame of the forest), *Cajanus cajan* (Lamk.) Mill. (Red Gram, Pigeon pea, Congo pea), *Crotalaria incana* Linn., *C. juncea* Linn. (Hemp, Sunn, Sann), *C. saltiana* Andr., *C. striata* DC. (Sen, San), *Dolichos lablab* Linn. *Melilotus* sp. and *Pisum sativum* Linn. (Pea).

Family HESPERIIDAE

Antennae wide apart at base and usually with a hooked club. Fore wing with all the veins arising from the cell.

The family is represented by a single species i.e. *Spialia galba* (Fabricius) in the collection of butterflies made from Baster District.

XXXVIII Genus **Spialia** Swinhoe

1912. *Spialia* Swinhoe, In Moore's *Lep. ind.*, 10(113) : 99.

Type species : *Hesperia galba* Fabricius, 1793.

Diagnostic characters : Antennal club straight. Upperside of fore wing with a middle spot placed before the origin of vein Cu_{1a} , and another centrally placed spot in the interspace 2 being between the spot in interspace 3 and the cell spot or nearer the former.

Distribution : North Africa and South Africa to India.

Remarks : The butterflies of this genus are commonly known as 'The Skippers'. There are two species known to occur in India of which *Spialia galba* (Fabricius) is dealt with.

60. **Spialia galba** (Fabricius)

(Plate XI, nos. 91-92)

1793. *Hesperia galba* Fabricius, *Ent. Syst.*, 3(1) : 352.

1932. *Syrichthes galba*, Evans, *The Identification of Indian Butterflies* : 347.

1949. *Spialia galba*, Evans, *A Catalogue of the HesperIIDae from Europe, Asia and Australia in the British Museum* : 175.

Material examined : Kankar, Pandripani, 2 exs., 2.i.1979 (Coll. M. S. Shishodia, I. J. Gupta & Party). *Fore wing length* : 9-10 mm.

Distribution : Saudi Arabia through south Baluchistan ; India to North Burma and Sri Lanka.

Remarks : The butterfly popularly known as 'The Skipper' is a new record from Bastar District. The upperside of fore wings and hind wings exhibits whitish spots of variable size.

Host plants : *Sida rhombifolia* Linn., *Waltheria indica* Linn. and *Hibiscus* sp.

SUMMARY

Sixty species and subspecies of butterflies from Bastar District (Madhya Pradesh, India) representing 38 genera and nine families have been dealt with. Of these, 45 are new locality records. Keys to sub-families, genera and species have been provided. Common name, fore wing length, geographical distribution, colour variations and nomenclatural changes, if any, have been given for each species and subspecies. Known host plants have also been incorporated.

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APPENDIX I

LIST OF SPECIES OF BUTTERFLIES FROM BASTAR DISTRICT

I Family PAPILIONIDAE

1. *Papilio demoleus demoleus* Linnaeus
2. *P. polymnestor polymnestor* Cramer
- *3. *P. polytes* Linnaeus

II Family PIERIDAE

4. *Appias lycinda latifasciata* Moore
5. *Catopsilia florella gnoma* (Fabricius)
6. *C. crocale crocale* (Cramer)
7. *C. pyranthe pyranthe* (Linnaeus)
8. *Cepora nerissa phryne* (Fabricius)
9. *Delias eucharis* (Drury)
10. *D. hyparete ethire* Doherty
11. *Eurema brigitta rubella* (Wallace)
12. *E. hecabe simulata* (Moore)
13. *E. laeta laeta* (Boisduval)
14. *Pieris canidia indica* Evans
15. *Valeria valeria hippia* (Fabricius)

III Family DANAIDAE

16. *Danaus chrysippus chrysippus* (Linnaeus)
17. *Danaus genutia* (Cramer)
18. *D. limniace leopardus* Butler
19. *Euploea core core* (Cramer)

IV Family ACRAEIDAE

20. *Acraea violae* (Fabricius)

V Family SATYRIDAE

21. *Elymnias hypermnestra undularis* (Drury)
22. *Melanitis leda ismene* (Cramer)
23. *M. zitenius zitenius* (Herbst)
24. *Mycalesis perseus tabitha* (Fabricius)
25. *M. visala visala* Moore
26. *Ypthima ceylonica huebneri* Kirby
27. *Orsotrioena medus medus* (Fabricius)

VI Family NYMPHALIDAE

28. *Cynthia cardui* (Linnaeus)
29. *Ergolis merione* (Cramer)
30. *Euthalia garuda anagama* Fruhstorfer

31. *E. lepidea lepidea* (Butler)
32. *E. nais* (Forster)
33. *Hypolimnas bolina* (Linnaeus)
34. *H. misippus* (Linnaeus)
- *35. *Moduza procris* (Cramer)
36. *Neptis hordonia hordonia* (Stoll)
37. *Neptis hylas astola* Moore
38. *Pantoporia perius* (Linnaeus)
39. *Phalanta phalantha phalantha* (Drury)
40. *Precis almana almana* (Linnaeus)
41. *P. atlites* (Linnaeus)
42. *P. hierta hierta* (Fabricius)
43. *P. iphita pluviatilis* Fruhstorfer
44. *P. lemonias vaisya* Fruhstorfer
45. *P. orithya swinhoei* (Butler)

VII Family RIODINIDAE

46. *Abisara echerius suffusa* Moore

VIII Family LYCAENIDAE

47. *Castalius caleta decidia* (Hewitson)
48. *C. rosimon rosimon* (Fabricius)
49. *Catochrysops strabo strabo* (Fabricius)
50. *Euchrysops cnejus* (Fabricius)
51. *E. pandava* (Horsfield)
52. *Jamides celeno aelianus* (Fabricius)
53. *Lampides boeticus* (Linnaeus)
54. *Loxura atymnus continentalis* Fruhstorfer
55. *Syntarucus plinius* (Fabricius)
56. *Tajuria jehana* Moore
57. *Tarucus callinara* Butler
58. *Zizeeria maha maha* (Kollar)
59. *Z. knysna karsandra* (Moore)
60. *Zizina otis india* (Murray)
61. *Zizula hylax* (Fabricius)

Family HESPERIIDAE

62. *Spialia galba* (Fabricius)

APPENDIX—II

LIST OF SPECIES OF HOST-PLANTS OF BUTTERFLIES

- I. Family CAPPARACEAE
 1. *Capparis decidua* Edgew.
 2. *C. heyneana* Wall.
 3. *C. roxburghii* D.C.
 4. *C. sepiaria* Linn.
 5. *C. zeylanica* Linn.
 6. *Crataeva roxburghii* R. Br.
- II. Family BIXACEAE
 7. *Aberia gardeneri* Clos
- III. Family FLACOURTIACEAE
 8. *Flacourtia montana* Grah.
 9. *F. romantchi* L' Her.
- IV. Family Portulacaceae
 10. *Portulaca grandiflora* Hook.
 11. *P. oleracea* Linn.
- V Family CLUSIACEAE
 12. *Garcinia xanthochymus* Hook. f.
- VI. Family DIPTEROCARPACEAE
 13. *Shorea robusta* Gartin. f.
- VII. Family MALVACEAE
 14. *Abutilon* sp.
 15. *Bombax malabaricum* DC.
 16. *Hibiscus cannabinus* Linn.
 17. *Hibiscus* sp.
 18. *Sida rhombifolia* Linn.
- VIII. Family STERCULIACEAE
 19. *Helicteres* sp.
 20. *Waltheria indica* Linn.
- IX. Family TILIACEAE
 21. *Corchorus* sp.
 22. *Grewia asiatica* Linn.
 23. *Triumfelta* sp.
- X. Family OXALIDACEAE
 24. *Oxalis corniculata* Linn.

- XI. Family RUTACEAE
25. *Aegle marmelos* Correa
 26. *Atalantia* sp.
 27. *Citrus aurantium* Linn.
 28. *C. hystrix* DC.
 29. *C. maxima* (Burm.) Merrill
 30. *C. medica* Linn.
 31. *C. medica* Linn., var. *acida* Hook.
 32. *Feronia elephantum* Correa
 33. *Glycosmis pentaphylla* Correa
 34. *Murraya koenigii* Spr.
 35. *Paramignya monophylla* W.
 36. *Zanthoxylum rhetsa* DC.
- XII. Family MELIACEAE
37. *Chloroxylon swietenia* DC.
- XIII. Family ICACINACEAE
38. *Mappia foetida* Miers.
- XIV. Family RHAMNACEAE
39. *Ziziphus mauritiana* Lamk.
 40. *Z. oenoplia* Mill.
 41. *Z. rugosa* Lam.
 42. *Z. xylopyra* Willd.
- XV. Family SAPINDACEAE
43. *Schleichera oleosa* (Lour.) Oken
 44. *S. trijuga* Willd.
- XVI. Family ANACARDIACEAE
45. *Anacardium occidentale* Linn.
 46. *Holigarna arnottiana* Hook. f.
 47. *Mangifera indica* Linn.
- XVII. Family LEGUMINOSAE
48. *Abrus precatorius* Linn.
 49. *Acacia pennata* Willd.
 50. *Acacia* sp.
 51. *Albizzia lebbek* (Linn.)
 52. *A. odoratissima* Benth.
 53. *A. procera* Benth.
 54. *Albizzia* sp.
 55. *Alysicarpus vaginalis* DC
 56. *Bauhinia racemosa* Lamk.

57. *B. retusa* Roxb.
58. *B. variegata* Linn.
59. *Bauhinia* sp.
60. *Butea frondosa* Roxb.
61. *Caesalpinia* sp.
62. *Cajanus cajan* (Lamk.) Mills
63. *Canavalia ensiformis* DC
64. *Cassia auriculata* Linn.
65. *C. fistula* Linn.
66. *C. grandis* Linn. F.
67. *C. javanica* Linn.
68. *C. koenigii* W.
69. *C. mimosoides* Linn.
70. *C. nodosa* Ham.
71. *C. occidentalis* Linn.
72. *C. siamea* Lamk.
73. *C. tora* Linn.
74. *Cassia* sp.
75. *Crotalaria incana* Linn.
76. *C. juncea* Linn.
77. *C. pallida* Ait.
78. *Cylista scariosa* Roxb.
79. *Flemingia* sp.
80. *Indigofera* sp.
81. *Melilotus* sp.
82. *Mucuna* sp.
83. *Ougeinia dalbergioides* Benth.
84. *Phaseolus trilobus* Ait.
85. *Pisum sativum* Linn.
86. *Pithecellobium dulce* Benth.
87. *Pongamia pinnata* (Linn.) Pierre
88. *Rhynchosia cyanosperma* Benth. ex Baker
89. *Saraca indica* Linn.
90. *Sesbania aculeata* Pers.
91. *S. aegyptiaca* Pers.
92. *S. grandiflora* Pers.
93. *Spatholobus roxburghii* Benth.
94. *Tephrosia pauciflora* Wall.
95. Vetches
96. *Vigna catjang* Endl.

- 97. *Wagatea spicata* Dalz.
 - 98. *Xylia xylocarpa* Taub.
 - 99. *Zornia diphylla* Pers.
- XVIII. Family COMBRETACEAE
- 100. *Terminalia myriocarpa* H. & M. Arg.
 - 101. *T. tomentosa* W. & A.
- XIX. Family LECYTHIDACEAE
- 102. *Careya arborea* Roxb.
- XX. Family MELASTOMATACEAE
- 103. *Melastoma malabathricum* Linn.
 - 104. *Osbeckia* sp.
- XXI. Family PASSIFLORACEAE
- 105. *Passiflora foetida* Linn.
- XXII. Family CUCURBITACEAE
- 106. *Bryonia* sp.
- XXIII. Family MYRSINACEAE
- 107. *Ardisia humilis* Vahl.
 - 108. *Embelia robusta* Roxb.
- XXIV. Family EBENACEAE
- 109. *Diospyros discolor* Willd.
 - 110. *D. melanoxylon* Roxb.
- XXV. Family APOCYNACEAE
- 111. *Anodendron paniculatum* A. DC.
 - 112. *Holarrhena antidysenterica* Wall.
 - 113. *Ichnocarpus frutescens* R. Br.
 - 114. *Nerium odorum* Soland
 - 115. *N. oleander* Linn.
 - 116. *Nerium* sp.
- XXVI. Family ASCLEPIADACEAE
- 117. *Asclepias curassavica* Linn.
 - 118. *Calotropis gigantea* Linn. R. Br. ex Ait.
 - 119. *C. procera* (Ait.) R. Br.
 - 120. *Ceropegia intermedia* W.
 - 121. *Cryptolepis elegans* Wall.
 - 122. *Cryptostegia grandiflora* R. Br.
 - 123. *Cynanchum dalhousiae* W.
 - 124. *Dregea volubilis* Benth.
 - 125. *Hoya* sp.

- 126. *Marsdenia tenacissima* W. & A.
- 127. *Raphistemma pulchellum* Wall.
- 128. *Stephanotis floribunda* Brong.

XXVII. Family ACANTHACEAE

- 129. *Asteracantha longifolia* Nees
- 130. *Barleria alata* S. Moore
- 131. *B. rubra* Ham.
- 132. *Justicia micrantha* Heyne ex Wall.
- 133. *J. procumbens* Linn.
- 134. *Lepidagathis prostrata* Dalz.
- 135. *Nelsonia campestris* Br.
- 136. *Strobilanthes callosus* Nees
- 137. *Strobilanthes* sp.

XXVIII. Family VERBENACEAE

- 138. *Dalbergia sissoo* Roxb.
- 139. *Dolichos lablab* Linn.
- 140. *Lantana* sp.

XXIX. Family AMARANTHACEAE

- 141. *Amaranthus viridis* Linn.

XXX. Family LORANTHACEAE

- 142. *Loranthus elasticus* Descr.
- 143. *L. longiflorus* Descr.
- 144. *L. scurrula* Linn.
- 145. *Loranthus* sp.

XXXI. Family EUPHORBIACEAE

- 146. *Glochidion arboreum* W.
- 147. *G. lanceolarium* Dalz.
- 148. *G. velutinum* W.
- 149. *Homonoia* sp.
- 150. *Ricinus communis* Linn.
- 151. *Tragia cannabina* Linn.
- 152. *T. involucrata* Linn.

XXXII. Family URTICACEAE

- 153. *Debregeasia hypoleuca* Wedd.
- 154. *Fleurya interrupta* Gaud.
- 155. *Girardinia heterophylla* Decne.
- 156. *Morus* sp.
- 157. *Streblus asper* Lour.
- 157a. *Elatostemma cuneatum* Wight.

XXXIII. Family MORACEAE

- 158. *Ficus bengalensis* Linn.
- 159. *F. glomerata* Roxb.
- 160. *F. indica* Linn.
- 161. *F. racemosa* Linn.
- 162. *F. religiosa* Linn.

XXXIV. Family SALICACEAE

- 163. *Salix pentandra* Wall.
- 164. *S. tetrasperma* Roxb.

XXXV. Family CYCADACEAE

- 165. *Cycas circinalis* Linn.
- 166. *C. revoluta* Thunb.
- 167. *C. rumphii* Miq.
- 168. *Macrozamia spiralis* Miq.

XXXVI. Family DIOSCOREACEAE

- 169. *Dioscorea pentaphylla* Wall.

XXXVII. Family LILIACEAE

- 170. *Smilax* sp.

XXXVIII. Family ARECACEAE

- 171. Palm trees.

XXXIX. Family POACEAE

- 172. Bamboos
- 173. Grasses
- 174. *Oryza sativa* Linn.

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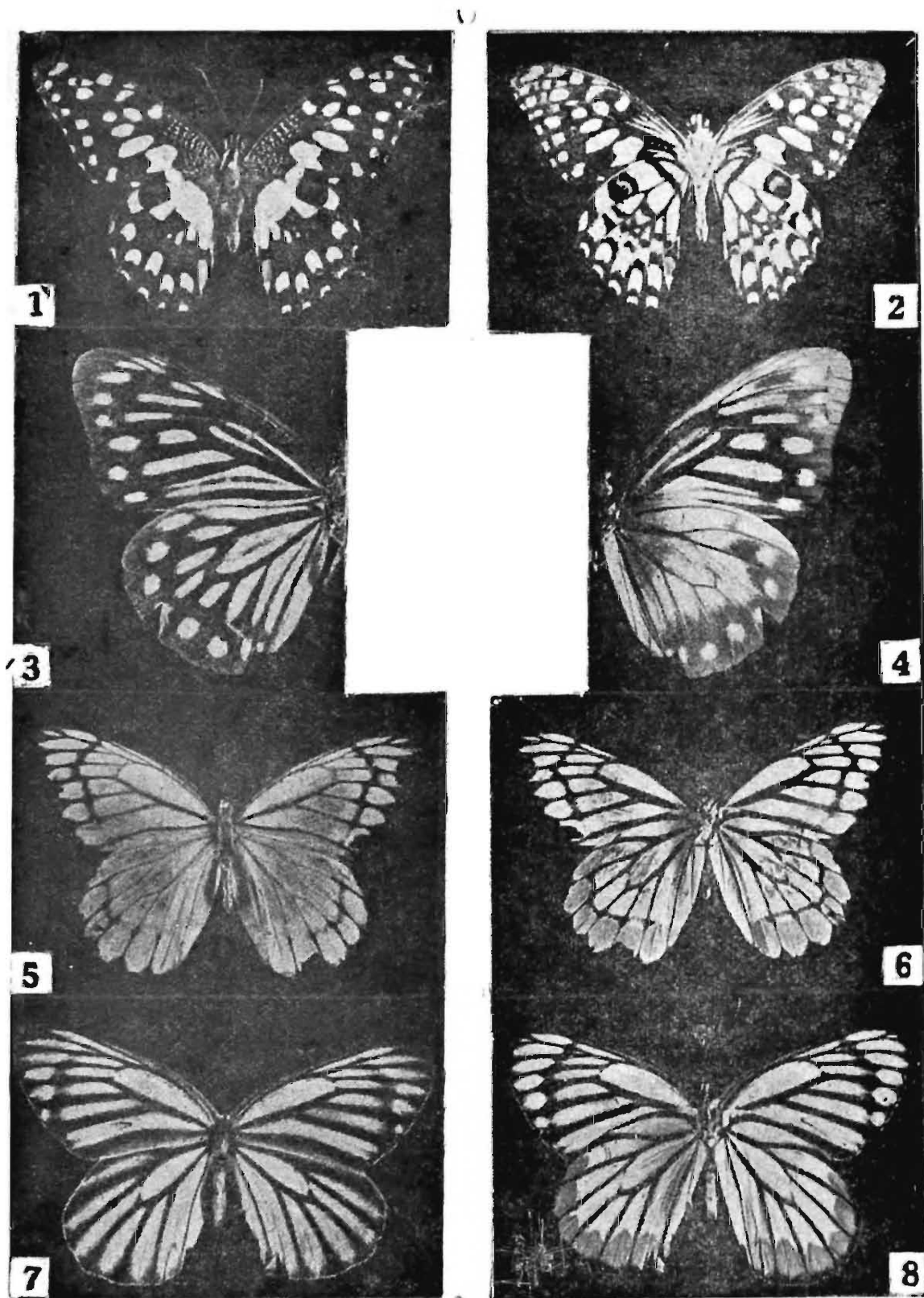
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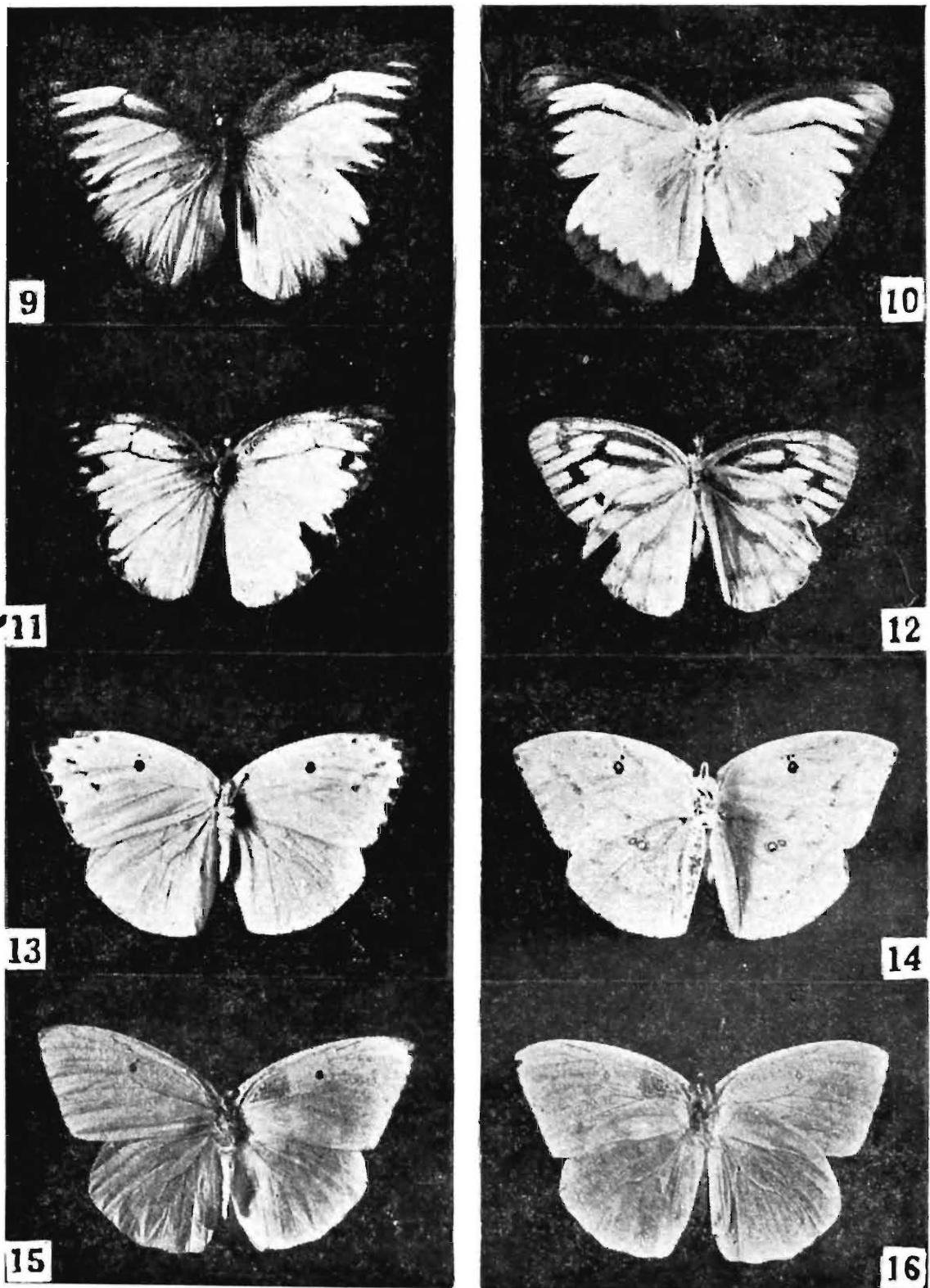
PLATES

PLATE I



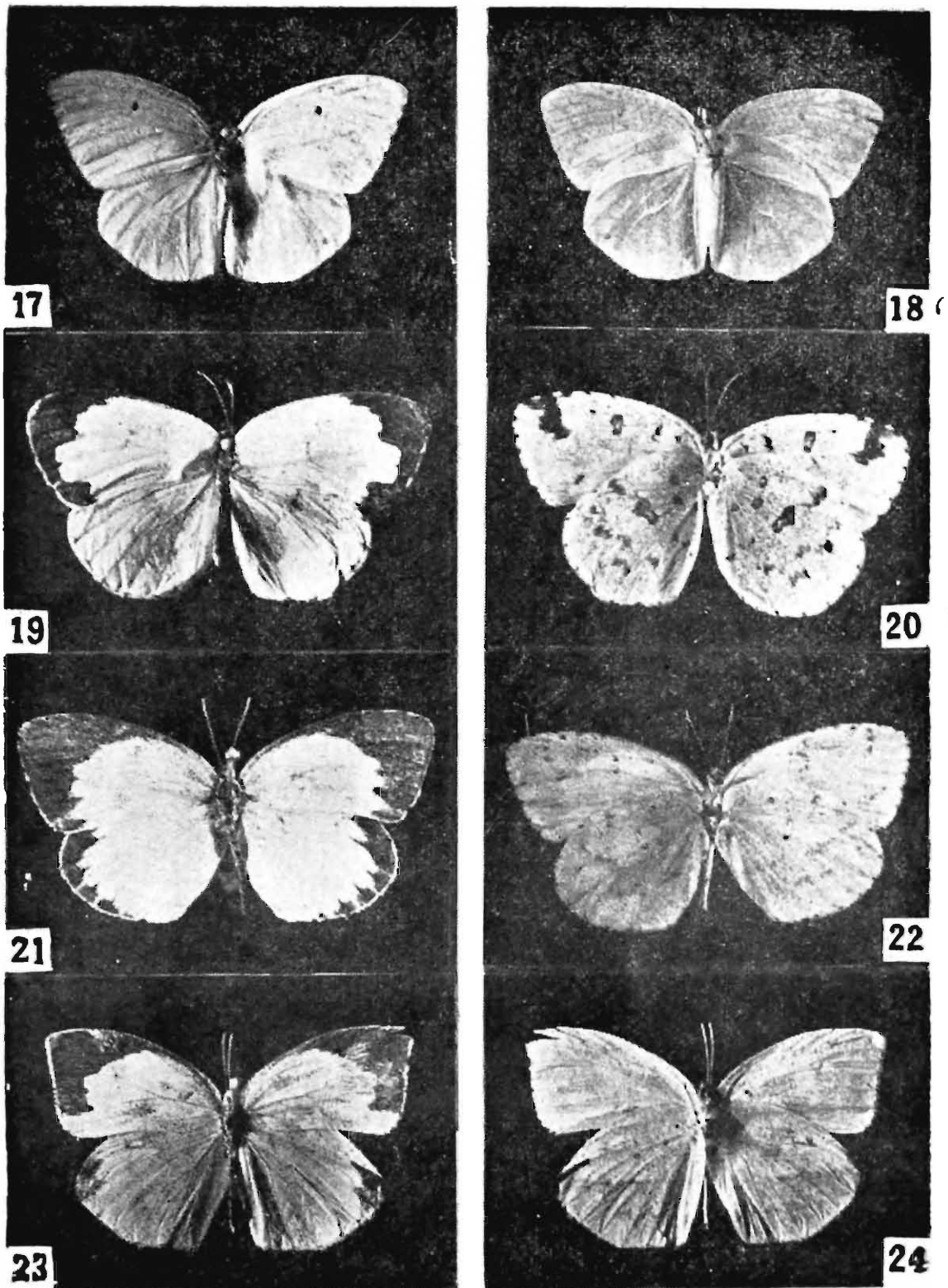
1-Upperside, 2-Underside of *Papilio demoleus demoleus* Linnaeus
3-Upperside, 4-Underside of *Valeria valeria hippia* (Fabricius)
5-Upperside, 6-Underside of *Delias eucharis* (Drury)
7-Upperside, 8-Underside of *D. hyparete ethire* Doherty

PLATE II



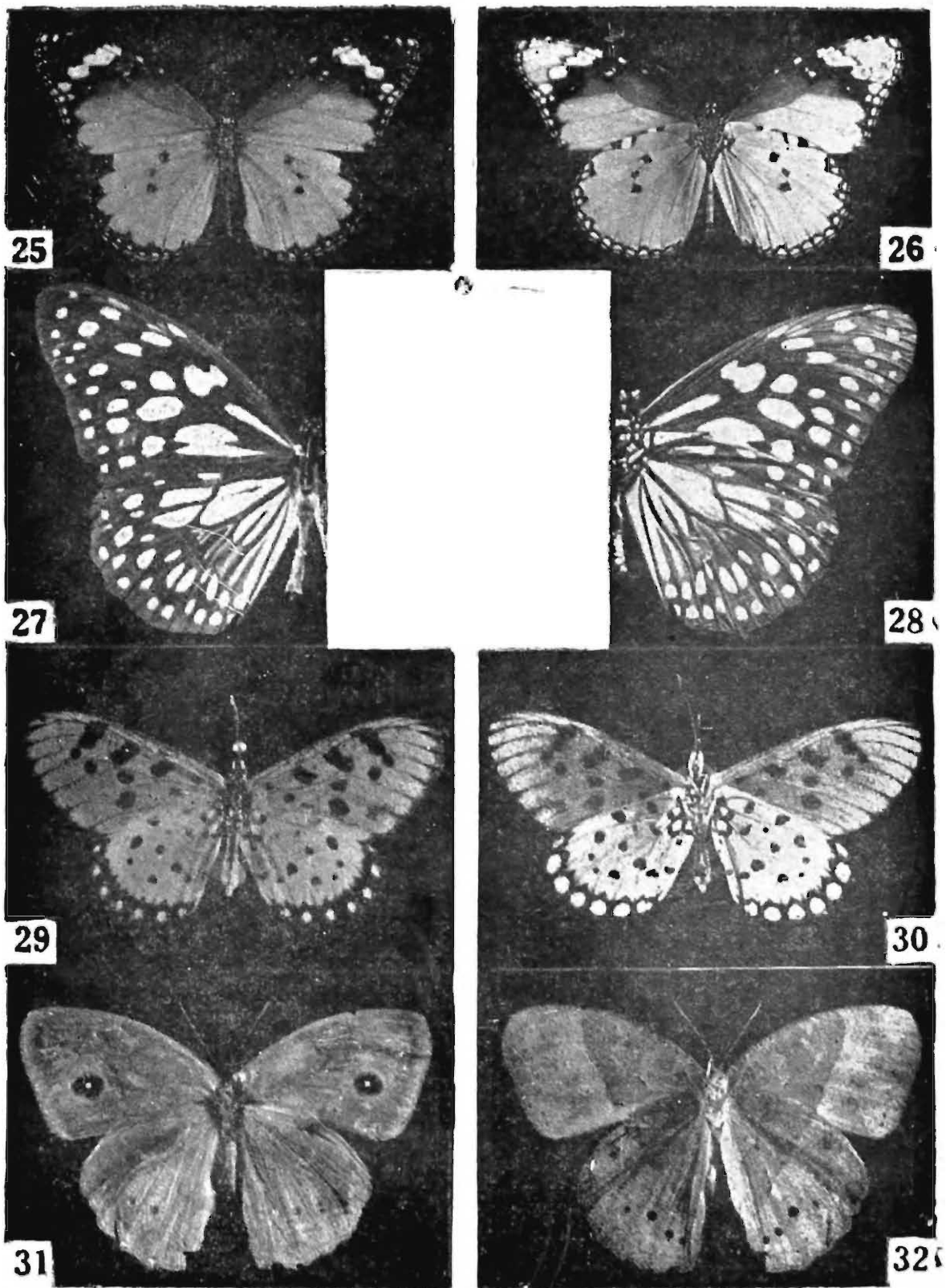
9-Upperside, 10-Underside of *Appias lycinda latifasciata* Moore
11-Upperside, 12-Underside of *Cepora nerissa phryne* (Fabricius)
13-Upperside, 14-Underside of *Catopsilia crocale crocale* (Cramer)
15-Upperside, 16-Underside of *C. pyranthe pyranthe* (Linnaeus)

PLATE III



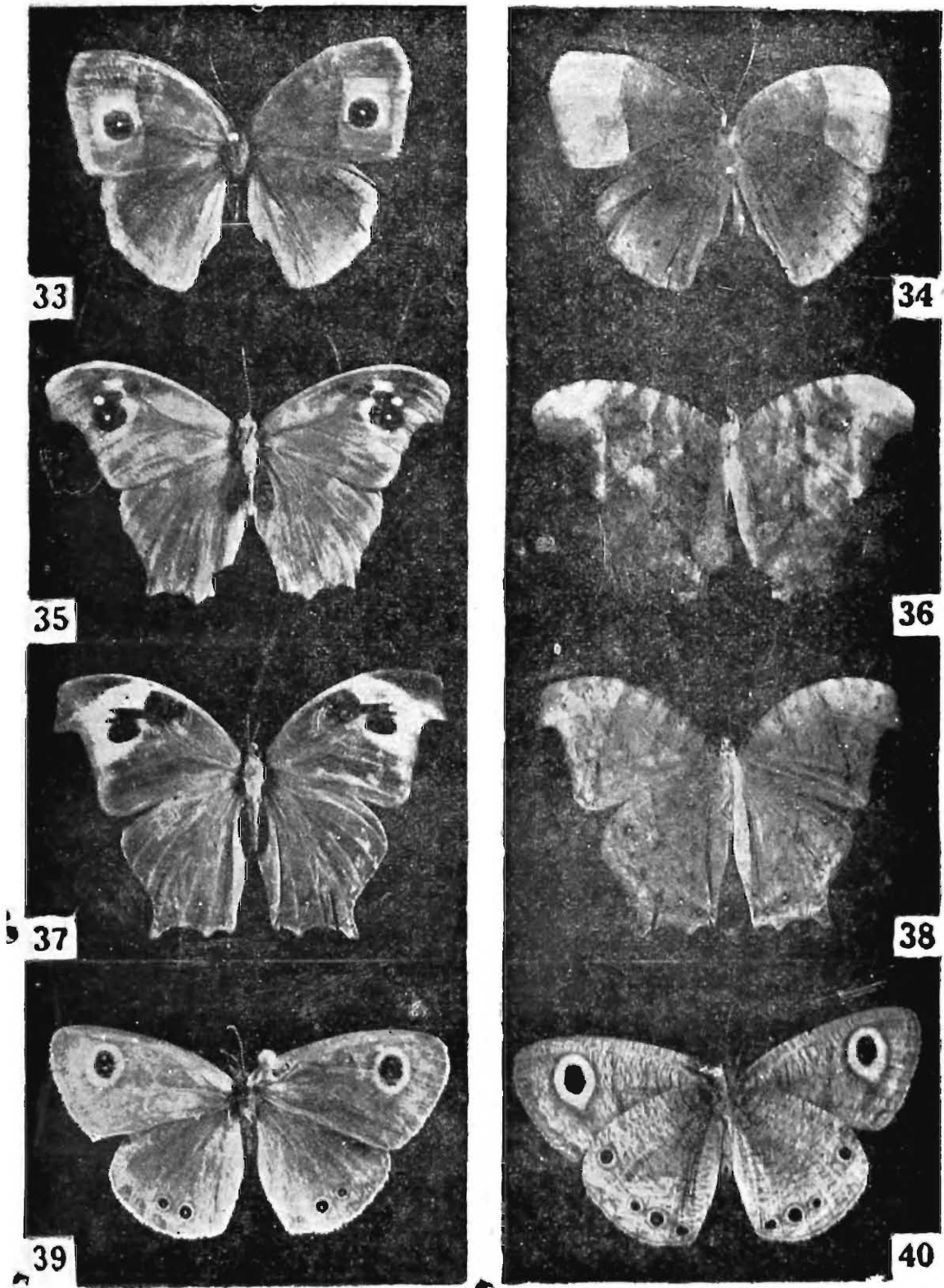
17-Upperside, 18-Underside of *C. florella gnoma* (Fabricius)
19-Upperside, 20-Underside of *Eurema hecabe simulata* (Moore)
21-Upperside, 22-Underside of *E. brigitta rubella* (Wallace)
23-Upperside, 24-Underside of *E. laeta laeta* (Boisduval)

PLATE IV



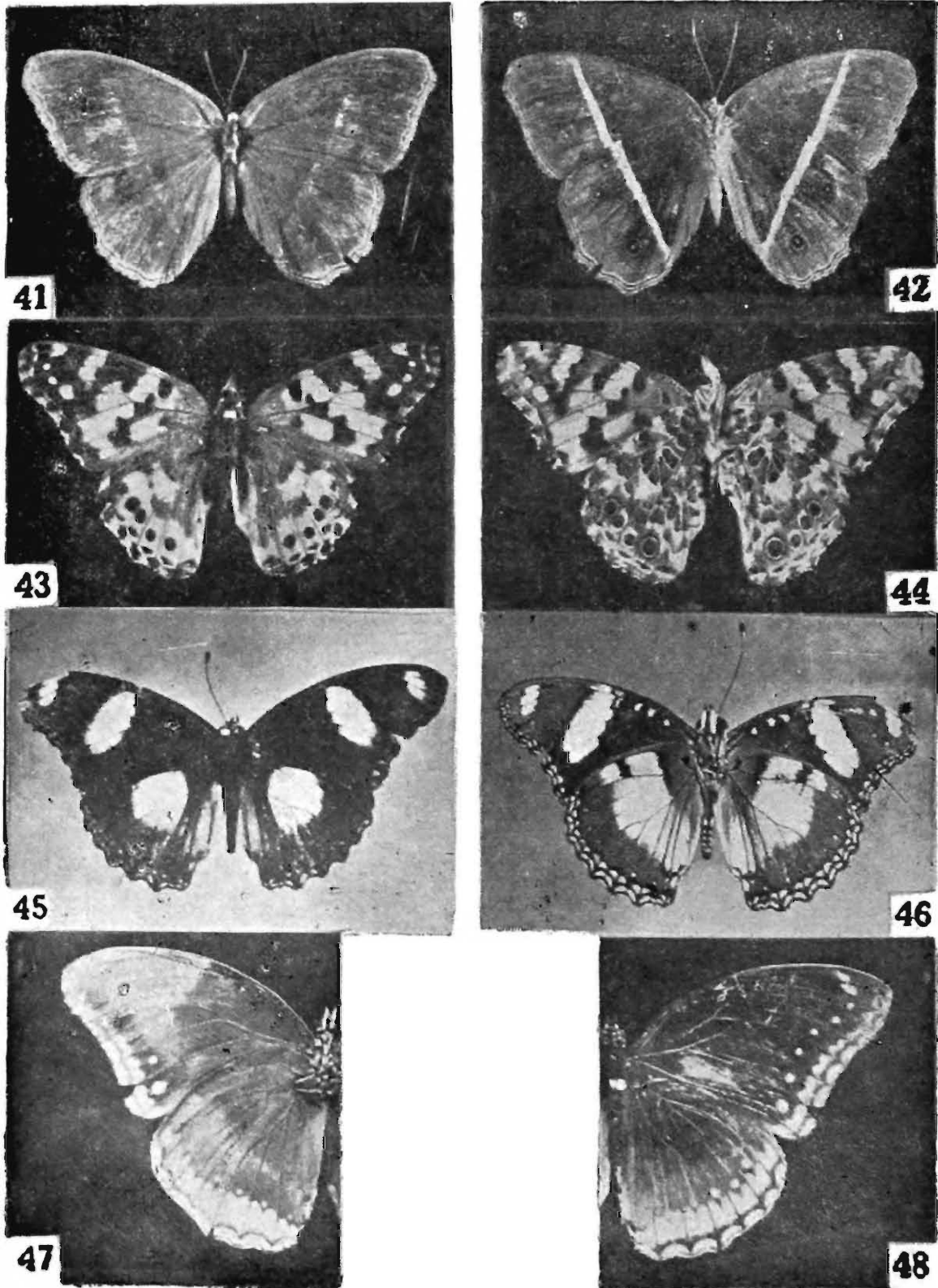
25-Upperside, 26-Underside of *Danaus chrysippus chrysippus* (Linnaeus)
27-Upperside 28-Underside of *D. limniace leopardus* Butler
29-Upperside, 30-Underside of *Acraea violae* (Fabricius)
31-U₁ perside, 32-Underside of *Mycalesis perseus tabitha* (Fabricius)

PLATE V



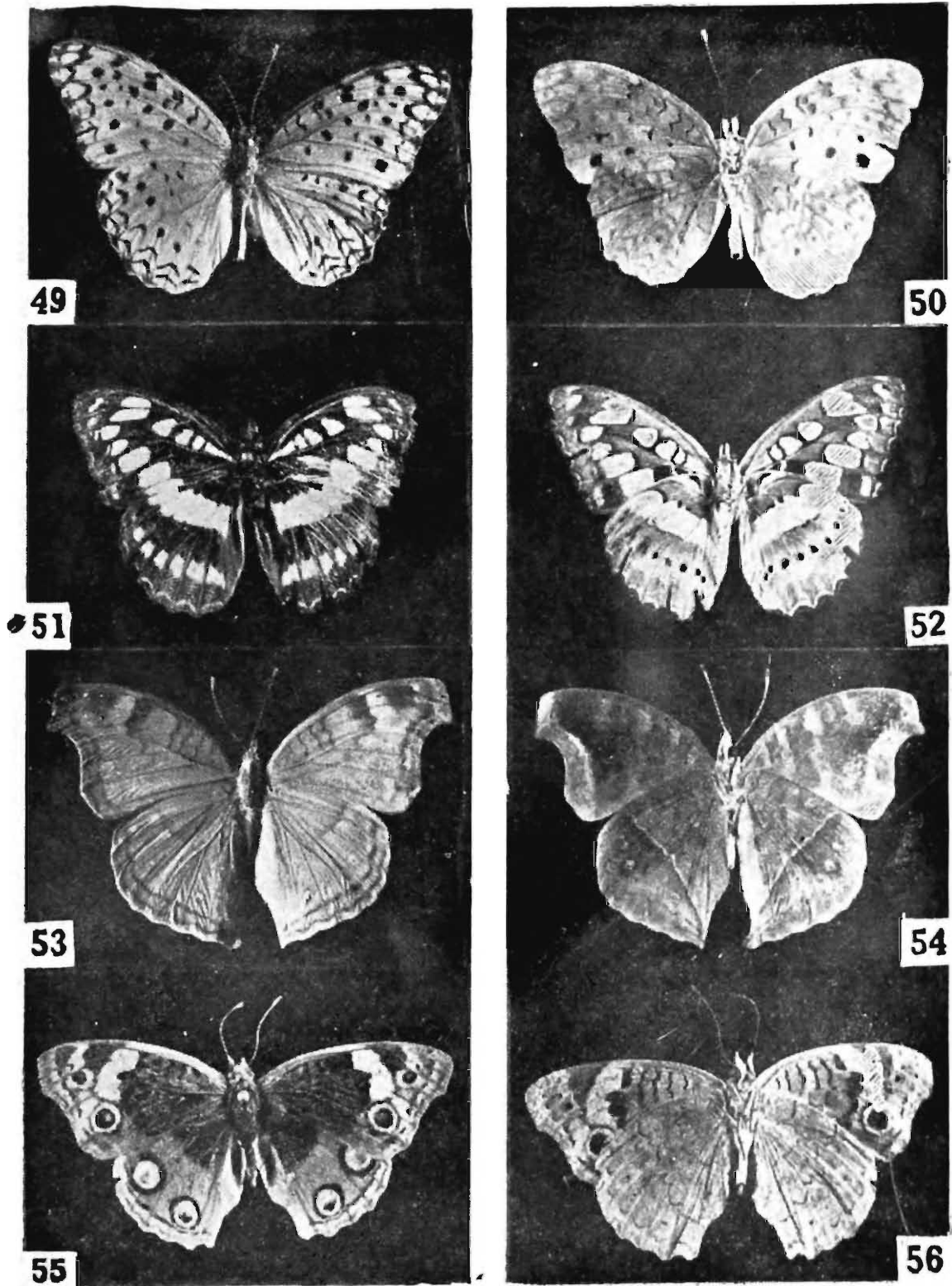
33-Upperside, 34-Underside of *M. visala visala* Moore
35-Upperside, 36-Underside of *Melanitis leda ismene* (Cramer)
37-Upperside, 38-Underside of *M. zitenius zitenius* (Herbst)
39-Upperside, 40-Underside of *Ypthima ceylonica huebneri* Kirby

PLATE VI



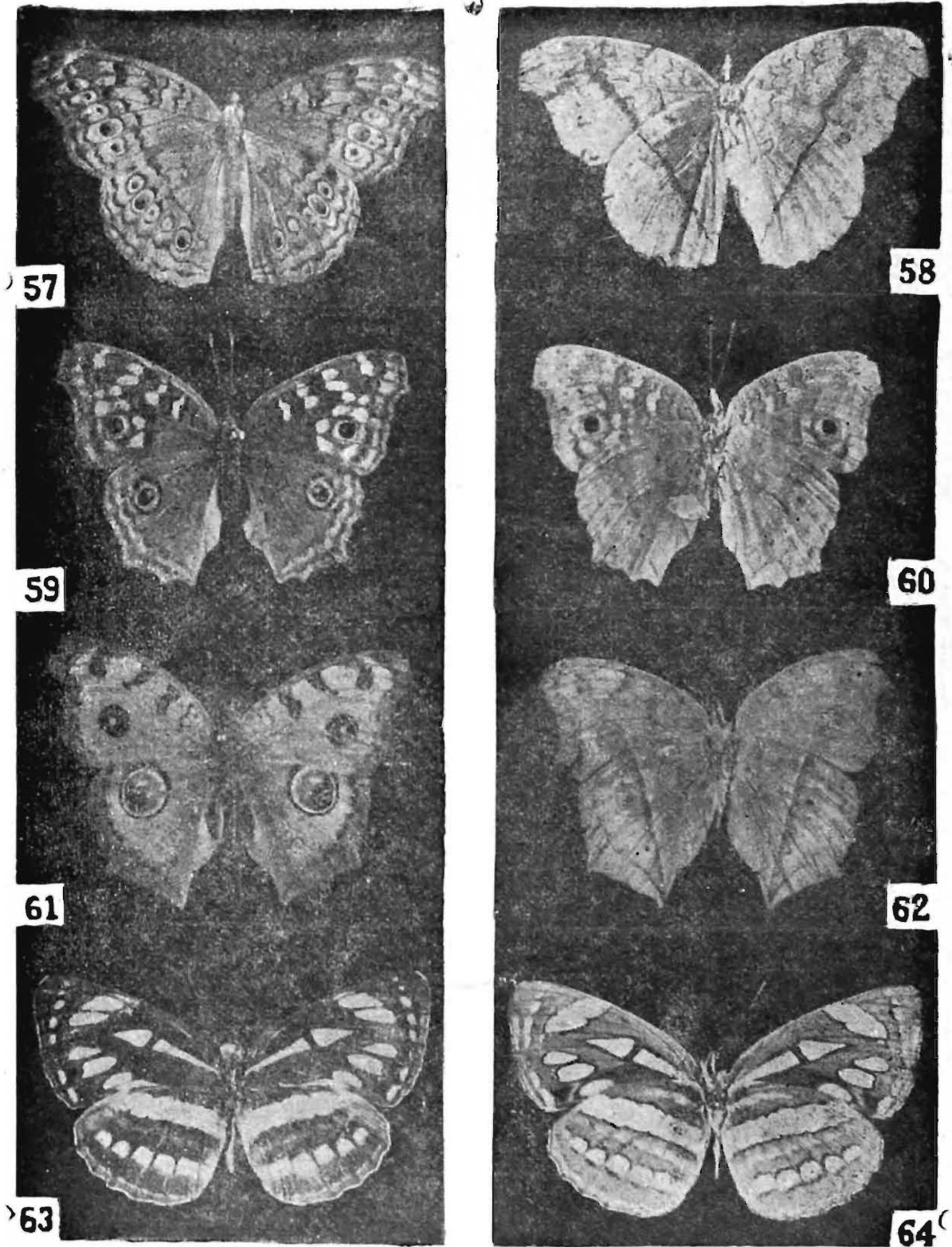
41-Upperside, 42-Underside of *Orsotrioena medus medus* (Fabricius)
43-Upperside, 44-Underside of *Cynthia cardui* (Linnaeus)
45-Upperside, 46-Underside of *Hypolimnas misippus* (Linnaeus)
47-Upperside, 48-Underside of *H. bolina* (Linnaeus)

PLATE VII



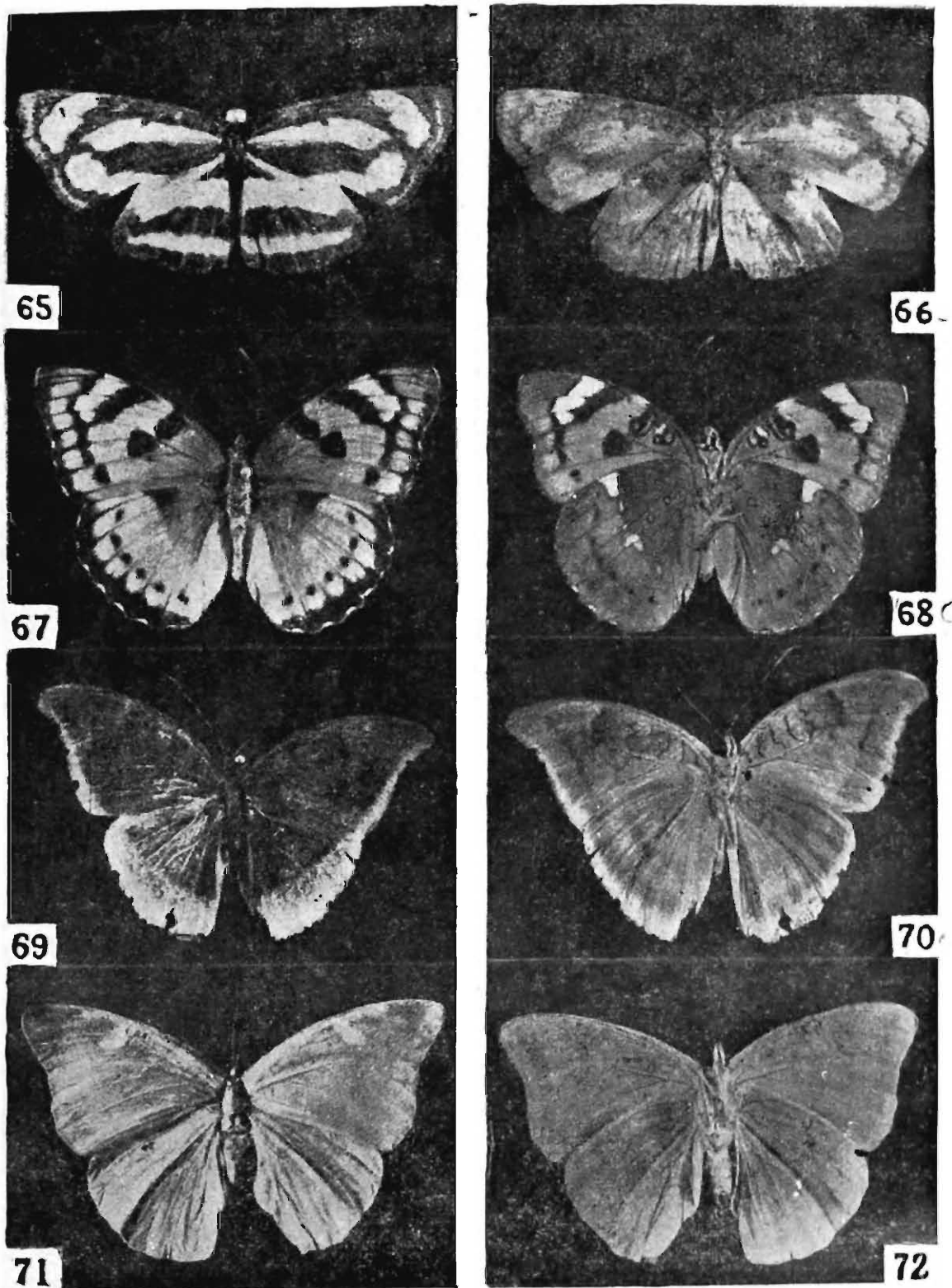
49-Upperside, 50-Underside of *Phalanta phalantha phalantha* (Drury)
51-Upperside, 52-Underside of *Pantoporia perius* (Linnaeus)
53-Upperside, 54-Underside of *Precis iphita pluviatilis* Fruhstorfer
55-Upperside, 56-Underside of *P. orithya swinhoei* (Butler)

PLATE VIII



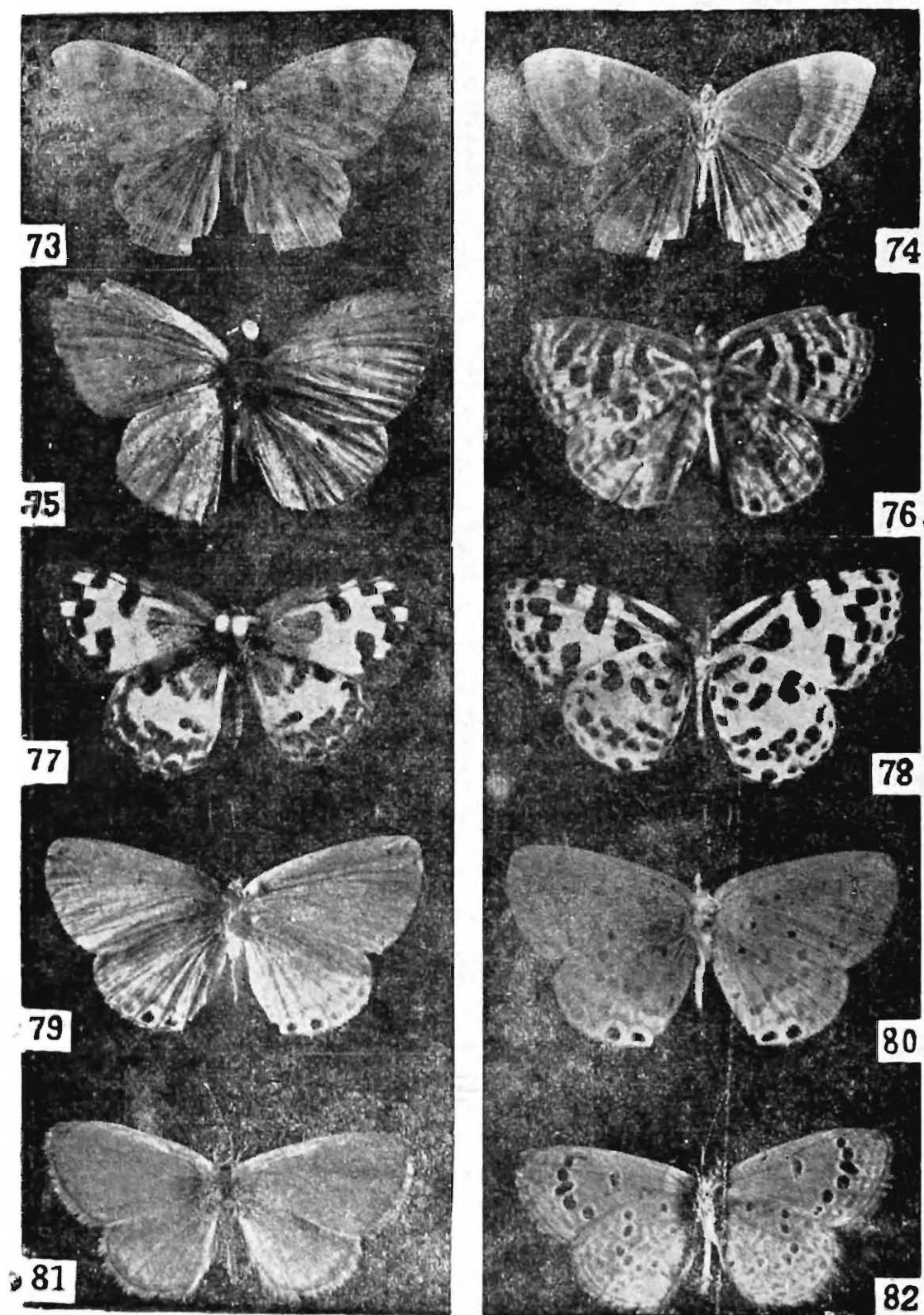
57-Upperside, 58-Underside of *P. atlites* (Linnaeus)
59-Upperside, 60-Underside of *P. lemonias vaisya* Fruhstorfer
61-Upperside, 62-Underside of *P. almana almana* (Linnaeus)
63-Upperside, 64-Underside of *Neptis hylas astola* Moore

PLATE IX



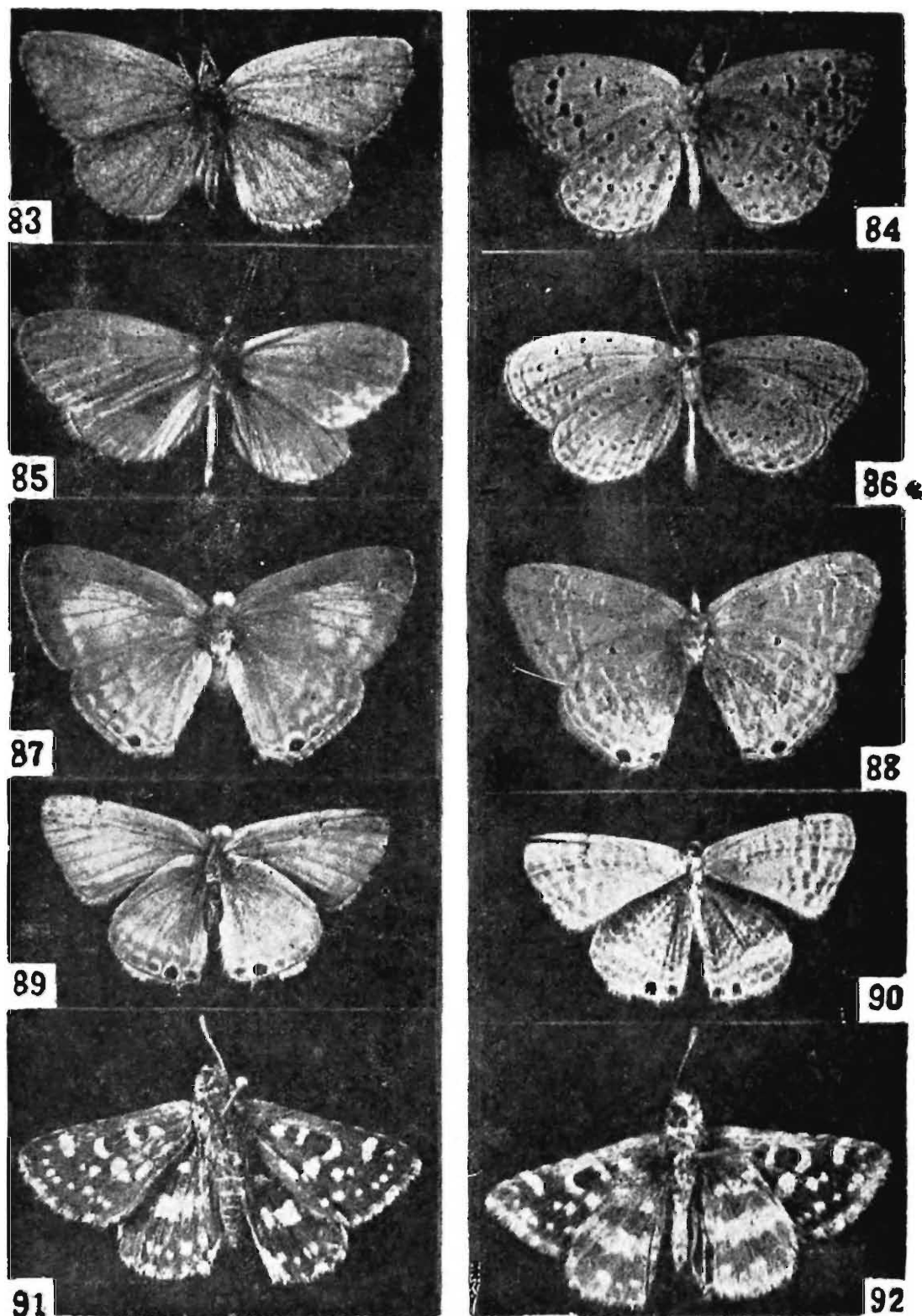
65-Upperside, 66-Underside of *N. hordonia hordonia* (Stoll)
67-Upperside, 68-Underside of *Euthalia nais* (Forster)
69-Upperside, 70-Underside of *E. lepidea lepidea* (Butler)
71-Upperside, 72-Underside of *E. garuda anagama* Fruhstorfer

PLATE X



73-Upperside, 74-Undersider of *Abisara echerius suffusa* Moore
75-Upperside, 76-Underside of *Syntarucus plinius* (Fabricius)
77-Upperside, 80-Underside of *Castalius rosimon rosimon* (Fabricius)
79-Upperside, 80-Underside of *Euchrysops enejus* (Fabricius)
81-Upperside, 82-Underside of *Zizina otis ndica* (Murray)

PLATE XI



- 83 Upperside, 84-Underside of *Zizeeria knysna karsandra* (Moore)
85-Upperside, 86-Underside of *Zizula hylax* (Fabricius)
87-Upperside, 88-Underside of *Catochrysops strabo strabo* (Fabricius)
89-Upperside, 90-Underside of *Lampides boeticus* (Linnaeus)
91-Upperside, 92-Underside of *Spialia galba* (Fabricius)

ERRATA

Page	Line	Printed	Read	Delete	Insert
4	T 10	<i>Glycosmis pentaphylla</i> Correa und <i>Paramygnya</i> sp.	<i>Garcinia xanthochymus</i> Hook. f., <i>Glycosmis pentaphylla</i> Correa and <i>Paramignya monophylla</i> W.		
	T 11	PIERIDYE	PIERIDAE		
8	T 9	Fore	(Coll. M. S. Shishodia, I. J. Gupta & party). Fore		
10	B 5	<i>Cotopsilia</i>	<i>Catopsilia</i>		
11	B 13	and <i>Sesbania aegyptica</i> Pers.	<i>Sesbania aegyptiaca</i> Pers. and <i>S. grandiflora</i> Pers.		
	B 12	<i>Cotopsilia</i>	<i>Catopsilia</i>		
13	B 8	<i>E. aegyptiaca</i> Pers. and	<i>S. aegyptiaca</i> Pers., <i>S. grandiflora</i> Pers. and		
14	T 11	<i>Homoina</i>	<i>Homonoia</i>		
19	T 5	7.xii.1978	17.xii.1980		
20	B 8	<i>M. S. Shishodia, I. J. Gupta & party</i>	<i>M. S. Shishodia & party</i>		
29	B 12	<i>Elastostemma</i>	<i>Elatostemma</i>		
35	T 16	<i>Precis almana</i>	<i>Precis almana almana</i>		
38	B 12	Roxb.,	Roxb., <i>Grewia asiatica</i> Linn.		
	B 10	69-73	69-70		
39	B 13, 14	<i>Streblus asper</i> Lour. and <i>Trophis asper</i> Retz.	and <i>Streblus asper</i> Lour.		

Page	Line	Printed	Read	Delete	Insert
40	T 20	<i>Embelia robusta</i> Roxb. and <i>Ardisia</i> sp.	<i>Ardisia humilis</i> Vahl., <i>Embelia</i> <i>robusta</i> Roxb. and <i>Rhynchosia cya-</i> <i>nosperma</i> Benth. ex Baker.		
42	T 3 B 1	<i>Loxuaa</i> —	<i>Loxura</i> —	—	<i>Host plant :</i> <i>Terminalia</i> <i>tomentosa</i> W. & A.
45	After T 22	—	—	—	<i>Host plant :</i> <i>Zizyphus oeno-</i> <i>pia</i> Mill.
	B	<i>Oallinara</i>	<i>Callinara</i>		
47	T 19	Endl.	Endl.		
48	T 2,3	and <i>Ougeinia dal-</i> <i>bergioides</i> Benth.	, <i>Ougeinia dalber-</i> <i>gioides</i> Benth. and <i>Xylia xylocarpa</i> Taub.		
52	B 6	<i>Pongamia pinnata</i> (Linn.)	<i>Abrus precatorius</i> Linn., <i>Pongamia</i> <i>pinnata</i> (Linn.)		
53	B 7, 8	<i>C. saltiana</i> Andr., <i>C. striata</i> D. C.	<i>C. pallida</i> Ait.		
60	B 4	<i>Zizina otis india</i> (Murray)	<i>Zizina otis indica</i> (Murray)		
62	B 18	42. <i>Z. xylopyra</i> Willd.	—	42. <i>Z. xylo-</i> <i>pyra</i> Willd.	

T = From Top
B = From Bottom