

Handbook on **Butterflies** of Himachal Pradesh

G.S. Arora
H.S. Mehta
and
V.K. Walia



ZOOLOGICAL SURVEY OF INDIA

Handbook on
BUTTERFLIES
OF HIMACHAL PRADESH

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FOREWORD

The Zoological Survey of India, Kolkata is a prime institute of taxonomic research in India, with sixteen Regional Centres spread throughout Indian States. The High Altitude Regional Centre, Solan, Himachal Pradesh, is one of the Regional Centre, dedicated to scientific research particularly on High Altitude Fauna.

A research project was assigned to the High Altitude Regional Centre, Solan, Himachal Pradesh by Himachal Pradesh State Council for Science, Technology & Environment, Shimla on “Glimpses of the Fauna of Himachal Pradesh” and “Butterflies of Himachal Pradesh”, was a part of that.

The study involved field survey work of various areas of Himachal Pradesh in different seasons and the collections already present at the High Altitude Regional Centre, Solan.

As a result of this team work, a “Handbook on Butterflies of Himachal Pradesh” comprising of 107 species under nine families has been published. This handbook will be a useful tool for identification of butterflies to the research scholars, scientists and amateurs who are interested in butterflies of Himachal Pradesh. I congratulate the scientists involved in this Project *viz.*, Dr. G.S. Arora , Dr. H.S. Mehta and Dr. V.K. Walia.

5th October, 2009
Place : Kolkata

Dr. Ramakrishna
Director
Zoological Survey of India

PREFACE

The fast changing ecological conditions mainly due to population pressure, deforestation, coming up of nurseries and orchards and the resultant development led to an idea to study this beautiful group of insects, the butterflies. Past records show that about 350 species of butterflies have been enumerated during first half of the last century when the "Shimla Hills" comprised of a much larger area under undivided Punjab, which now, though zoogeographically remains the same, politically falls under different states of Punjab, Haryana and Himachal Pradesh.

The High Altitude Zoology Field Station of Zoological Survey of India at Solan and H.P. Council for Science, Technology & Environment, Shimla considered it worthwhile to bring out semi-technical publications on the "Glimpses of the Fauna of Himachal Pradesh" under the faunal diversity studies of the state. The present book "Handbook on Butterflies of Himachal Pradesh" is a part of the above venture. For these studies, the collection of butterflies made in Zoological Survey of India, Solan for the last over three decades was utilized. The localities from where the collections were poorly represented, were surveyed afresh.

All efforts have been made to collect as many species as possible from nearly all the districts of Himachal Pradesh. This book, however, describes 107 species including three new records to the area. Low diversity of butterflies in the region may be due to changed ecological conditions and less representation of small sized and unattractive butterflies which might have escaped the attention of the collectors.

We wish to express our deep sense of gratitude to Dr. Ramakrishna, Director, Zoological Survey of India Kolkata for providing necessary laboratory facilities, Dr. J.R.B. Alfred, the then Director, Zoological Survey of India, Kolkata and Dr. C. Radhakrishnan, Additional Director, Zoological Survey of

India, Calicut for critically going through the manuscript. The authors express their gratitude to Dr. R.K. Sood, Member Secretary and Dr. Virender Kumar Ex Senior Scientist, State Council for Science, Technology & Environment, Shimla for extending the financial support for this project. Thanks are also due to Dr. V.K. Sehgal, Head, Dr. V.V. Ramamurthy, Dr. S.L. Gupta and Dr. Rajesh Kumar, Department of Entomology, IARI, New Delhi for facilities to identify and photographs of some of the butterflies. We are also thankful to Shri Rati Ram Verma, Publication Production Officer, Zoological Survey of India, Kolkata and his team for the help in publishing the book in time and Dr. J.M. Julka, formerly Officer-in-Charge for various suggestions. Thanks are due to Dr. Avtar Kaur, Scientist-C and other members of the staff at High Altitude Regional Centre, ZSI, Solan for their cooperation. Our thanks are also due to Shri Suneet Mehta, for help in bringing out this document. Last but not the least, it is our pleasant duty to thank Shri Mahender Singh Thakur and Shri Murari Lal Thakur (Research Fellows, Shivalik Project) High Altitude Regional Centre, ZSI, Solan for their untiring help in preparation of this document. One of the authors (V.K. Walia) is thankful to the Chairperson, Department of Zoology, Panjab University, Chandigarh for the necessary permission to be coauthor of this book.

G.S. Arora
H.S. Mehta
V.K. Walia

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INTRODUCTION

The term 'butterfly' is derived from the butter-yellow colour of the male of Common Brimstone of the family Pieridae. Butterflies have always been a subject of interest and these are, perhaps after the ants, the best known species of insects. These are most easily recognizable of all other insects and are second in number in their universal popularity after birds. Because of their charming colour patterns and most interesting phenomena of mimicry and migration, these evoke curiosity and fondness among all the people in the planet, particularly among children, naturalists and scientists.

The butterflies are cosmopolitan in distribution and occur in every suitable environment, from plains to deserts, forests and valleys of hills to mountains. Butterflies are holometabolic endopterygote, often wings provided with tails, a characteristic venation and clothed by overlapping scales. The mouth parts are modified into coiled proboscis; the antennae are knobbed or clubbed at the anterior end. Butterfly larvae feed on the leaves of their host plants or diverse plants and some are predaceous on Coccidae (scale insects), Aphididae and Membracidae. Some Lycaenid-larvae live in nests of ants and often devour ant-larvae. They are good pollinators and help in cross pollination of flowers and other plants. The adults visit flowers for nectar, while some of the male species congregate on damp or moist places near streams. Some of the species are attracted in large numbers by rotting or over ripe fruit, animal dung and bird-droppings, etc. While majority of butterflies are found in sheltered and shaded areas, several others occur in open ground, among bushes or fly over tree tops.

The butterflies reach the adult-stage after passing through a series of stages, viz., eggs, larvae (growing stage); chrysalis (the resting stage), and finally the imago, or the sexually mature stage. Thus, the life history shows a complete

metamorphosis from larval to adult stage, and the period is variable in different species.

Butterflies can be differentiated from the moths and some other nocturnal insects by their diurnal activity, sitting posture, with their wings spread out, half open or erect over the back. The distinction between the thorax and abdomen is more pronounced in the butterflies. Besides, the antennae are either clubbed or hooked in butterflies unlike in moths where these are simple, filiform, branched or fringed.

Classification

The order Lepidoptera (scaly-winged) were used to be divided mainly into two suborders, viz., *Heterocera* or Moths and *Rhopalocera* or Butterflies. All the butterflies were, therefore, treated under a single superfamily Papilionoidea. However, because of the antennae being hooked and arising wide apart (Vs. clubbed and arising close together in *Rhopalocera*); all the veins in fore-wing arising from base or cell and none forked or coincident beyond (Vs. one or more in forewing forked or coincident beyond); and the hind tibiae generally with a medial as well as terminal pair of spurs (Vs. only a terminal pair of spurs in *Rhopalocera*), the Hesperiiids or Skippers were separated out as superfamily Hesperioidea under the suborder Grypocera.

While the suborder *Rhopalocera* includes nine families, viz., Papilionidae, Pieridae, Danaidae, Satyridae, Nymphalidae, Amathusiidae, Acraeidae, Erycinidae and Lycaenidae, the Hesperioidea includes only Hesperiididae. All but Amathusiidae, which does not occur in this part, are dealt with here.

The colouration and patterns on the wings are very useful in identifying various species of butterflies and, thus, are of great utility in proper classification. Various characters like shape of wings, their margin and the markings have been used. The Fig. A of wings, showing different areas will help readers to understand text in a more meaningful way.

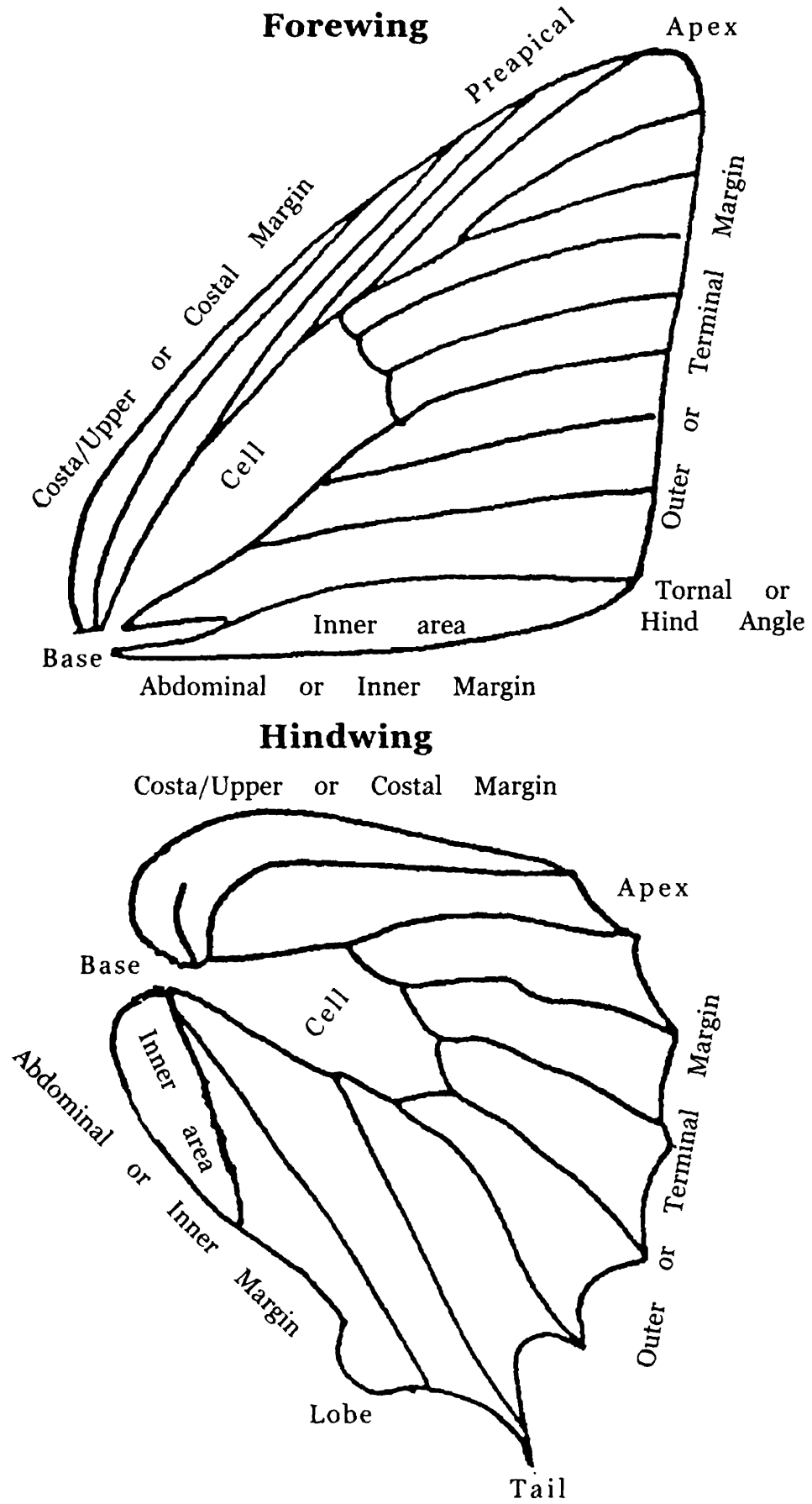


Fig. A. Showing the different parts of wings

Previous work on Himachal Pradesh Butterflies

There were many workers who made the collection of butterflies from Himalayas; Carlovon Hugel (1844-1848); Hardwick's collections were described by Doubleday and Gray (1846) and Redtenbacker (1848). Besides, collections were also made by Lt. Colonel A.M. Lang from N.W. Himalayas and Mr. A.G. Young from Kullu, which were included by Major G.F.L. Marshall and L. de Niceville in *The Butterflies of India, Burma and Ceylon* (vols. 1 to 3 : 1882-1890), and Rev. J.H. Hocking from Kangra district and were published by Moore, F. (1882).

Subsequently, these were included in publications by Evans (1932), and Talbot (1939, 1947). De Rhe-Philipe (1931) was probably the first to publish a comprehensive list of 246 butterflies of Shimla Hills and later Wynter-Blyth (1940-1946) listed as many as 294 species of butterflies from Shimla Hills. These were also included by the latter in a book *Butterflies of the Indian Region* (1957). Mani (1986) described 377 species of butterflies except Hesperidae from Himalayas.

In the present work, an attempt has been made to include the butterflies of Himachal Pradesh ranging from Lower Shiwalik to Trans-Himalayan ranges between 500 m - 5000 m from twelve districts, representing various ecological biotopes like nurseries, forests, orchards, lakes and other humid and cold desert areas. The collections at HAZFS, ZSI, Solan made by various survey parties of this station during 32 years, have been identified on the basis of various characters. The present work deals with 107 species representing nine families *viz.*, Papilionidae (14 species), Pieridae (19 spp), Danaidae (8 spp), Satyridae (18 spp), Nymphalidae (27 spp), Acraeidae (1 sp), Erycinidae (3 spp), Lycaenidae (8 spp) and Hesperidae (9 spp).

PHYSIOGRAPHY

Topography

Himachal Pradesh (HP) is situated from 30°22' to 33°12' N latitude and 75°45' to 79°04' E longitude in the western

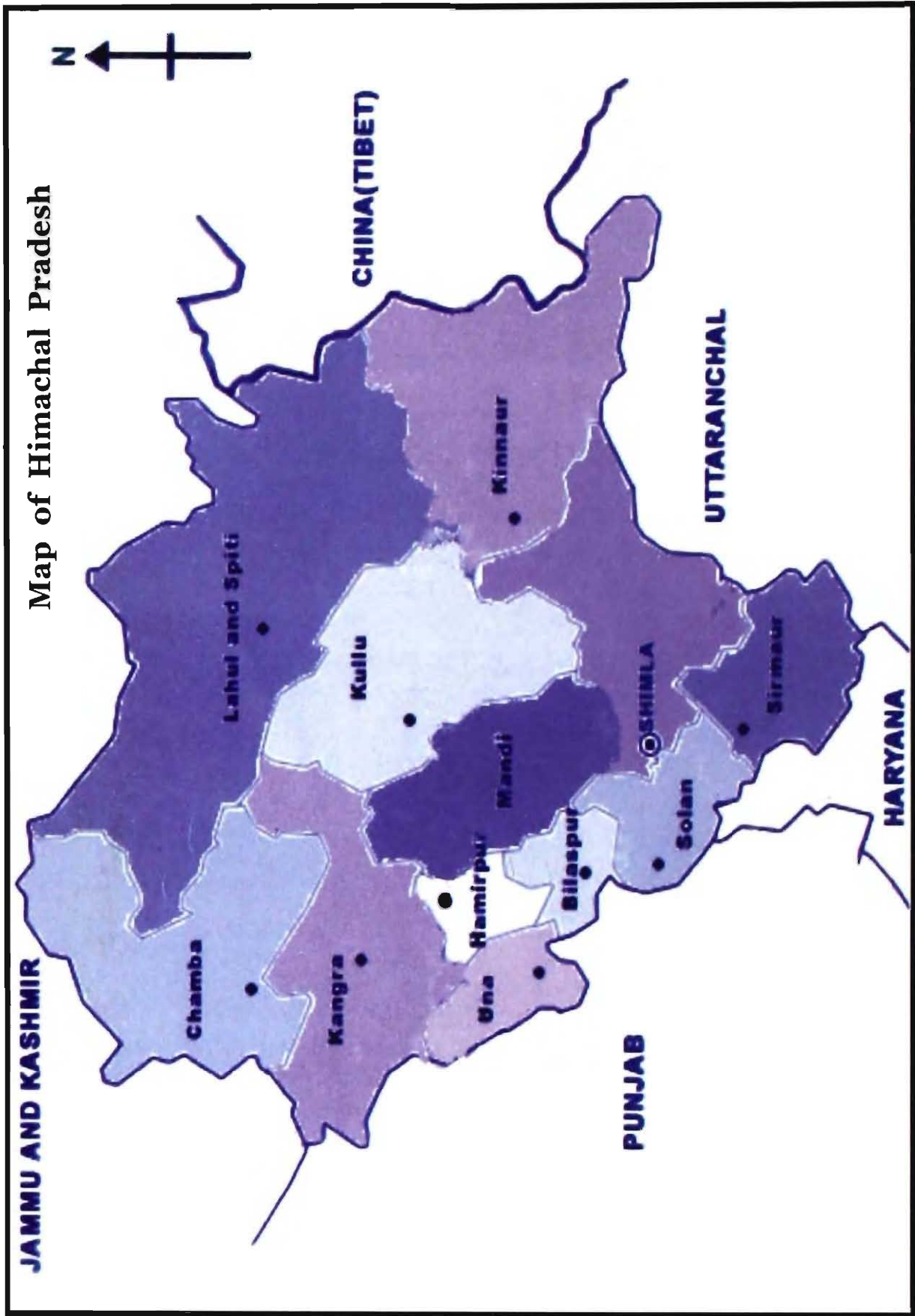
sector of the massive Himalayan mountain system. The boundaries of the state extend from the plains of Haryana and Punjab to the snowy ranges adjoining Jammu and Kashmir, Uttaranchal and Tibet. The most of the region of the state are mountainous and rugged. The elevation varies from 350 metres in foot hills to 6975 metres in high hills. The state has been divided into four physiographic regions :

- 1) Shiwalik or Outer Himalayas (450-1500 m)
- 2) Lower or Lesser Himalayas (1500-3500 m)
- 3) Higher or Greater Himalayas (3500-4500 m)
- 4) Trans-Himalaya (Above 4500 m)

The state has been drained by number of river systems and their tributaries. There are five major river systems viz., Ravi, Chenab, Beas, Sutlej and Yamuna. In the state, there are several natural fresh-water lakes, man-made reservoirs and dams. They serve as a habitat for birds and aquatic fauna. The lakes are distributed among different climate zones and some of them are: Nako, Chandartal and Surajtal in sub-alpine and alpine zones of Lahoul & Spiti district at an altitude of 3000-5000 m, while Khajjiar in Chamba, Kumarah and Rewalsar in temperate zones of district Mandi, at an altitude of 1500-3000 m; and Renuka in sub-tropical zone of district Sirmour at an altitude of 1500m. Pong dam, which has been made on river Beas, Govind Sagar and Pandoh on Sutlej, have been declared as Wetland because these are biologically most productive.

Climate

There are four seasons in a year i.e. Winter (December to February), Dry Summer (March to June), Monsoon (July to September) and Post-Monsoon (October to November). The climate of the state ranges from the scorching heat in the foot hills to the Trans-Himalayan region. Average rainfall ranges from 1000 mm to 2500 mm and temperature varies from +30° C to -30°C, depending upon the localities as well as seasons.



Vegetation

The total land area under forest cover is 21.8% and there are 29 wildlife sanctuaries and two national parks i.e. Great Himalayan National Park in district Kullu and Pin Valley National Park in Lahoul & Spiti. The vegetation of the state varies with the altitude or the physiographic regions.

In the outer Himalayas, the vegetation is a composition of *Shorea robusta* with *Acacia* sp. (Tropical Forest); *Albizia* sp. and *Dalbergia*, *Sisso* and moist deciduous *Bauhinia* sp., *Bombax* sp., *Ficus* sp., mixed with shrubs and grasslands of sub-tropical forests.

In the lesser Himalayas, the forests are of temperate and sub-tropical types and have an association of *Pinus roxburghii* with Cheer, *Carissa* grass in sub-tropical zone while temperate forests constitute different types of forests such as Oak forest (*Quercus leucotricophoria*, *Cedrus deodara*, *Q. himalayan*, *Pinus wallichiana*, *Abies pindrow*, *Rhododendron* sp. and *Betula* sp.)

The Higher or Greater Himalayas consist of snow-clad peaks, glaciers and deep river valleys. It has sub-alpine type of forests comprising of deodar, oak, fir, mixed coniferous and mixed broad-leave forests.

Trans-Himalayas having a dry alpine type of forest consist of scrub of Juniper. The region of Spiti, which is at higher altitude plateau of cold desert, comes under this forest.

BUTTERFLIES

PAPILIONIDAE

Commonly known as the "Swallowtails", the family, however, includes both tailed as well as tail-less species and are available from foot-hills to higher altitudes. The Papilionids include some very beautiful, brilliantly coloured species, where predominant colour is either black or dark-brown in majority of species. Some species are also fond of settling on damp ground either in company of other Papilionids or the Pierids. Several species love visiting flowers or basking in sun-shine and fly leisurely over flowers, in bushes etc. But when disturbed their flight becomes very fast, erratic and the species, generally, retreat into the forested areas.

The expanse varies from as small as 40 mm, as the Apollos, which are predominantly whitish, occurring between 5000' and 19000', to about 190 mm., as in the "Birdwings" which range from foot-hills to about 3500' in western Himalayas.

While some caterpillars feed on strong smelling plants, some pungent and evil tasting and include economically important trees like citrus, lemon, orange, bael, curry plants, others feed on cinnamon, camphor, carrot and aristolochiae species, and are of great economic importance.

The Himachal Pradesh butterflies have been placed in two subfamilies viz. Papilioninae and Parnassiinae, with the following genera, of which only the genus *Parnassius* Latreille is being dealt with here under the latter subfamily and the remaining other genera are being treated under subfamily Papilioninae.

Talbot (1939) has recorded 22 species, spread over 10 districts of Himachal Pradesh, viz., Bilaspur, Chamba, Kangra, Kinnaur, Kullu, Lahoul & Spiti, Mandi, Shimla, Sirmour and Solan. Presently fourteen species have been dealt with from above mentioned districts, besides from Una and Hamirpur. These have been illustrated here, with diagnostic features, which will help those interested in Himachal butterflies to identify these in field also.

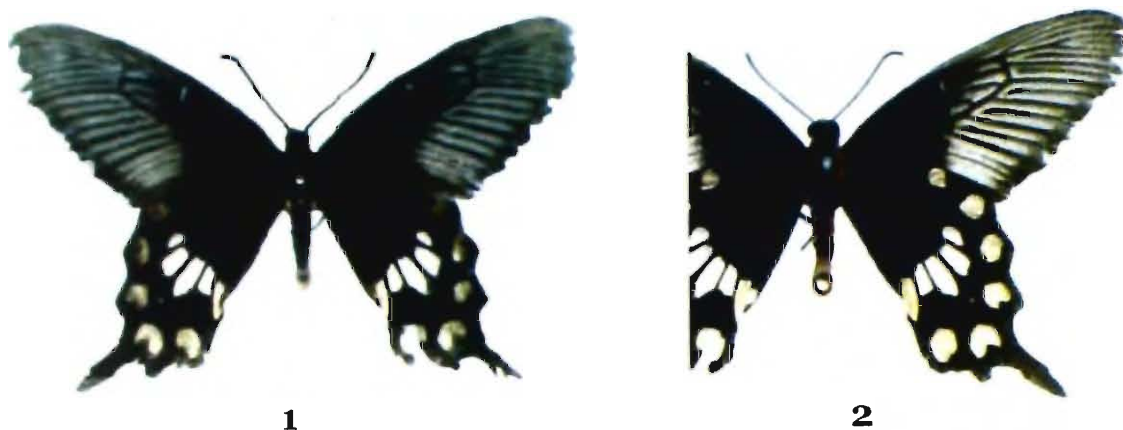
1. THE COMMON ROSE

Pachliopta aristolochiae (Fabr.)

(Figs. 1 UP, 2 UN)

1775. *Papilio aristolochiae* Fabr., *Syst. Ent.*, : 443.**Wing expanse** : 80-110 mm.

Diagnosis : Male and female predominantly black above; front of head, collar crimson; abdomen crimson laterally and at the tip. Hindwings with several elongate white spots and a row before outer margin of red-lunules; tail black, spatulated. Scent wool absent in male.



Remarks : The species is a very good model for mimicking by *Papilio polytes romulus* Cramer form *stichius*. The species is very fond of visiting flowers.

Distribution : Kumar & Juneja (1977) reported its occurrence from Paonta, district Sirmour (H.P.) for the first time and is reported to occur between June and September. Moore (1882) recorded this from Kangra also.

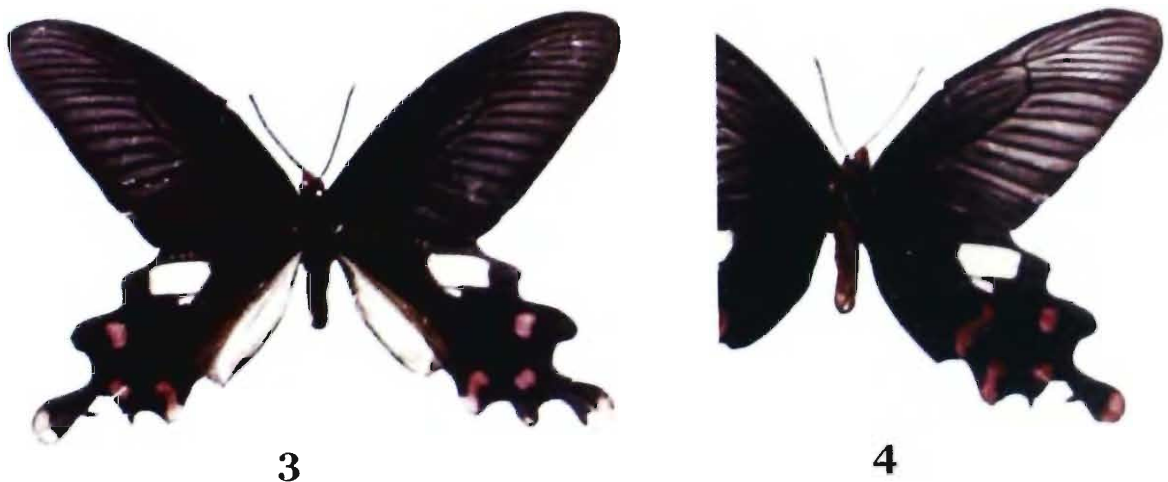
Elsewhere : Common throughout India, the species was reported to occur upto about 3000' in N.W. Himalayas.

2. THE COMMON WINDMILL

Atrophaneura philoxenus philoxenus (Gray)

(Figs. 3 UP, 4 UN)

1831. *Papilio philoxenus* Gray, *Animal Kingdom*, 15 : 32.**Wing expanse** : 110-140 mm.



Diagnosis : Male velvety black above, dull coloured beneath. Head with the palpi, thorax and abdomen crimson beneath, the latter with a line of black spots along each side; head and thorax crimson anteriorly, rest of it black. Hindwings with a large quadrate white patch; a series before outer margin of three red spots; tail spatulate, with a double red spot. Scent wool in male well developed.

Remarks : The species is very fond of visiting flowers and is mimicked by a moth, *Epicopia polydorus*. Moore (1882) recorded this species on pitcher plant in Kangra.

Distribution : It is recorded in Himachal Pradesh in the districts of Chamba, Kangra, Mandi and Shimla, between March and September, from an altitude of 3500' to 9500'

Elsewhere : Common throughout its range of distribution from Kashmir to Nepal.

3. THE GREAT WINDMILL

Atrophaneura dasarada ravana (Moore)

(Figs. 5 UP, 6 UN)

1857. *Papilio ravana* Moore, *Cat. Lep. Mus.*, E.I.C., 1 : 96.

Wing expanse : 100-130 mm.

Diagnosis : Male and female predominantly brownish-black to black. Head crimson; thorax and abdomen black, crimson on sides. Forewings with the streaks velvety black. Hindwings with a series before outer margin of markings tinged with crimson; those in lower areas lunular, but elongate around middle areas and rectangular and minute.



5



6

above; tail broad, spot at the tip crimson at each side. Underside with an additional pale crimson spot near the base in lower areas in hindwings.

Remarks : The species is not rare in status.

Distribution : From Himachal Pradesh it has been recorded from, Kangra, Kullu and Shimla districts, between March and September, from an altitude of 3500' to 9500'

Elsewhere : The species is distributed from Kashmir to Kumaon.

4. THE TAWNY MIME

Chilasa agestor govindra (Moore)

(Figs. 7 UP, 8 UN)

1864. *Papilio govindra* Moore, *Ent. Mon. Mag.*, 1 : 101.

Wing expanse : 83-100 mm.



7



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Diagnosis : Male with the ground colour predominantly black or very dark brown. Head, thorax and abdomen variegated with bluish-grey spots; abdomen with lateral transverse bars. Forewings with the bluish-grey markings which are either elongated broad stripes or rectangular patches, one of which being obsolescent, and inwardly directed; a complete series before outer margin of smaller spots. Hindwings with a complete series of bluish-grey spots beyond the middle; chestnut-red colour confined only to hind angle, the remaining area being mostly dark-brown. Female with the hindwings nearly ochreous.

Remarks : The species is an excellent mimic of a danaid butterfly, The Chestnut Tiger, *Parantica sita sita* (Kollar).

Distribution : The species is recorded only from Kangra and Shimla, in Himachal Pradesh, between March-May from 5000' to 8000'

Elsewhere : It is reported to be a very local papilionid in its range from Kashmir to Kumaon.

5. THE COMMON MIME

Chilasa clytia clytia (Linn.)

(Figs. 9 UP, 10 UN form *dissimilis*; 11 UP, 12 UN form *clytia*)
1758. *Papilio clytia* Linn., *Syst. Nat.*, 10th ed. : 479.

Wing expanse : 90-100 mm.

Diagnosis : Male and female rich dark-brown, with cream-coloured markings above. Forewings with a series of



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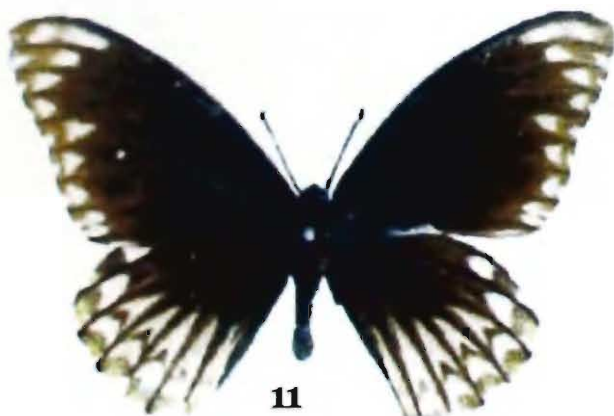
spots and patches. Hindwings with a medial series of elongated streaks, marginal crescents and terminal yellow or white spots between veins. Underside hindwings with the terminal spots large.

The species exhibits considerable variations in northern India. Chiefly two forms are available : Form *dissimilis* : Ground colour predominantly black, with creamy white stripes, patches and spots. Upperside forewings with four streaks, joined at base in the cell; two streaks below cell with two spots beyond, which are more or less conjoined; streak in lower area much broader, with an outwardly emarginate spot beyond; reduced to spots above; markings before outer margin as in *clytia*. Hindwings with the cell whitish; series of white elongated streaks in middle areas; series of markings before margin and at the terminal margin as in *clytia*.

Form *clytia* : Upperside rich dark-brown to velvety black. Forewings with cream coloured outwardly truncate or emarginate spots before outer margin, those in the middle shifted inwards; marginal spots white and smaller. Hindwings with a medial series of inwardly conical and outwardly emarginate triangular streaks; a series of white lunules before outer margin.

Undersides markings as on above, with the terminal series conspicuously large and yellow.

Remarks : Both the forms are excellent examples of mimicry. While form *clytia* mimics the Common Crow, *Euploea core* (Cramer), the form *dissimilis* mimics The Blue



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Tiger, *Tirumala limniace* (Cramer), both being danaid species.

Distribution : It is recorded from Kangra, Shimla and Sirmour districts in Himachal Pradesh during March to September, between an altitude of about 2500 ' and 7500.

Elsewhere : The subspecies is not very common in its range of distribution, rather it is rare in Shimla and at higher altitude.

6. THE SPANGLE

Papilio protenor protenor Cramer

(Figs. 13 UP, 14 UN)

1775. *Papilio protenor* Cramer, *Pap. Exot.*, 1 : 77.

Wing expanse : 100-130 mm.

Diagnosis : Male and female alike, tail-less; predominantly velvety indigo-blue-black, duller on forewing than on hindwing in males, paler in females. Hindwings in males, with a broad pale-yellowish white stripe below upper margin; hind angle with black centered red spot. Underside forewing dull black; streaks grey and broader than on upperside. Hindwing ground colour as on upperside; hind angle patch red, large and irregular; lunules present before outer margin; the cell irrorated with bluish scales.



13



14

Remarks : The species is not rare in status, fond of settling in the company of its own species on damp patches and comes readily to flowers.

Distribution : It is recorded from Kangra, Mandi, Shimla and Sirmour districts in Himachal Pradesh during March to July, rarely upto August, between altitude of 3000' and 8500' The species is not reported to occur after rains.

Elsewhere : The species is not uncommon within its range of distribution from Kashmir to Kumaon, rather rare west of Mussoorie.

7. THE COMMON PEACOCK

Papilio polyctor polyctor Boisduval

(Figs. 15 UP, 16 UN)

1836. *Papilio polyctor* Boisduval, *Spec. Gen. Lep.*, 1 : 205.

Wing expanse : 90-100 mm.



Diagnosis : Male and female alike; tailed. Male with scent stripes on forewings. Predominantly black, thickly irrorated with golden-green scales. Forewings with the band before outer margin invariably diffused and obsolescent anteriorly, the band being broader in females and wet season form. Hindwings with the golden-green irroration sparse, becoming bluish anteriorly; medial patch bright blue, broad anteriorly, with uneven outer margin and continued posteriorly into small quadrate diffused spots of brilliant-golden-green colour; hind angle with 3 or 4 claret-red lunules before outer margin. Underside chocolate brown to blackish brown. Hindwings without the characteristic medial patch; claret-red lunules prominent before outer margin.

Remarks : It is common in status and males are fond of settling on wet sand of river banks.

Distribution : It is recorded from Kangra, Kullu, Mandi, Shimla, Sirmour and Solan districts in Himachal Pradesh between March and October from 3000' to 7500'

Elsewhere : The species is common from Chitral to Kumaon.

8. THE COMMON MORMON

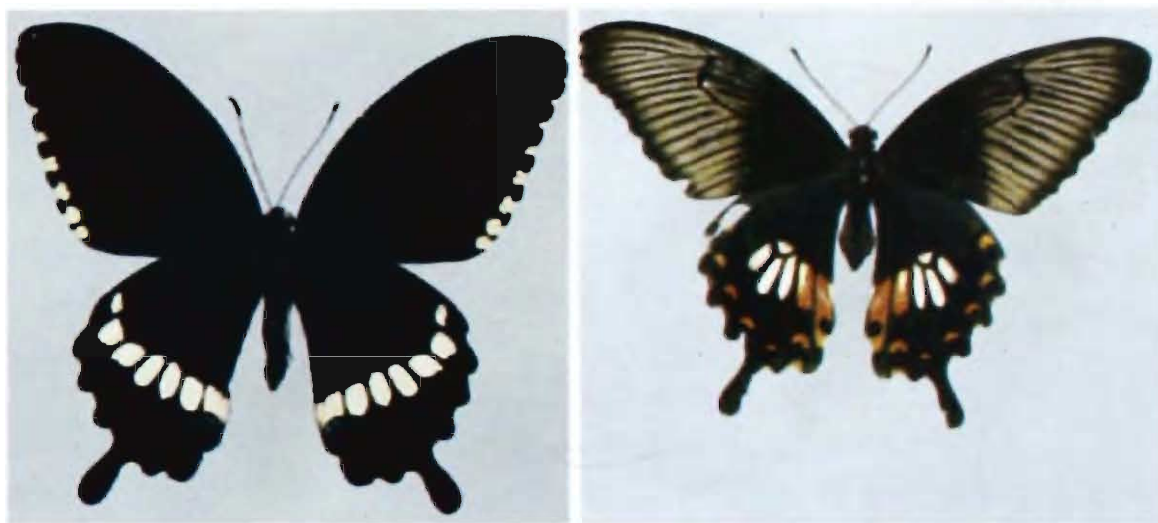
Papilio polytes romulus Cramer

(Fig. 17 male UP, 18 female UP; form *stichius*)

1775. *Papilio romulus* Cramer, *Pap. Exot.*, 1 : 67.

Wing expanse : 80-100 mm.

Diagnosis : Male and female tailed. Female polymorphic i.e, as many as three major female forms have been recorded in this species, viz. *cyrus*, *stichius* and *romulus*.



17

18

form *cyrus* : Male and female alike. Predominantly black. Forewing upperside with a terminal series of white spots, which decrease in size towards apex. Hindwing upperside with a well developed medial band of whitish elongated spots; hind angle with an obscure spot; red marginal crescents may be present or absent. Underside dull coloured; streaks in between veins prominent in forewings; lunules before outer margin ochreous or red in female and more prominent in

hindwings. Head and thorax anteriorly above and head, thorax and abdomen below spotted with white; the latter also with white lateral lines.

form *stichius* : Mimics the Common Rose, *Pachliopta aristolochiae* (Fabr.). Forewing upperside brownish black, darker at base and along outer margin; streaks in between veins dark and extend into the cell. Hindwing upperside with two to six elongated white medial spots; hind angle spot black; series of spots before outer margin paler. Underside colouration and markings as on upperside; markings before and at the outer margin more conspicuous.

form *romulus* : Mimics the Crimson Rose, *Pachliopta hector* (Linn.). Forewing upperside, unlike *cyrus* and *stichius*, crossed by interrupted broad white bands obliquely from middle of cell to hind angle; and just beyond apex of cell, with the edges ill-defined. Hindwings with the markings red in medial, before outer margin and at the outer edge.

Remarks : Citrus is reported to be one of the major hosts on which the females lay their eggs and is quite a common site where their collection can be made. Talbot (1939) and Wynter-Blyth (1957) reported that the species does not visit damp places unless the weather is very dry. However, while surveying Rajaji National Park (Uttaranchal), several examples of this species were observed by the 1st author on a ground damped with urine and faecal matter as well as on wet ground, in the company of Emigrants and the Grass Yellows, both Pierid species.

Distribution : This is being reported from Hamirpur, Kangra, Mandi, Shimla, Sirmour, Solan and Una districts in Himachal Pradesh during May to October upto an altitude of about 8500'

Elsewhere : The species is very common during the whole year throughout peninsular India, but uncommon to rare at higher altitude.

9. THE LIME BUTTERFLY

Papilio demoleus demoleus Linn.

(Figs. 19 UP, 20 UN)

1758. *Papilio demoleus* Linnaeus, *Syst. Nat.*, 10th ed. : 464.**Wing expanse** : 68-100 mm.

19



20

Diagnosis : Male and female alike, tail-less. Predominantly black. Head, thorax and abdomen dusky black above, the latter with lateral longitudinal lines. Upperside: Forewings black; basal half of the cell and below it irrorated with yellow scales, forming more or less complete transverse dotted lines; yellow band broken into large irregular spots and patches on fore wings but continued onto the hind wing in to a broad irregular unbroken yellow band; both wings with rows of smaller yellow spots before outer margin. Underside with the markings paler and larger. Forewings with the basal half of cell and below it marked with creamy-yellow streaks, which coalesce at the base. Hindwings at base, creamy-yellow margined with black; a large eye like ring spot below upper margin; markings at the end of cell, in the medial and beyond middle ochreous margined with blue.

Remarks : The species is very common in nature, particularly at places where lime, citrus and bael is cultivated.

Distribution : It has been recorded from Bilaspur, Kangra, Mandi, Shimla, Sirmour and Solan districts in Himachal Pradesh during April to December, upto an altitude of 7000'

Elsewhere : It is common throughout India, Myanmar and Sri Lanka.

10. THE COMMON YELLOW SWALLOWTAIL

Papilio machaon asiatica Menetries

1855. *Papilio machaon* var. *asiatica* Menetries, *Enum. Corp. Anim. Mus. Petr.*, 1 : 70.

Wing expanse : 75-90 mm.



Diagnosis : Male and female tailed. Head, thorax and abdomen cream-coloured above; the latter with a black line above, narrow in male and broader in female, and ill-defined black lines on sides. Upperside forewing with the ground colour black; cell with a broad medial bar and a narrow bar at its end; medial area from above inner margin to below the upper margin yellowish, with the veins crossing it black; the yellow area decreasing towards upper margin; the marginal area black, with a series of small crescentic yellow spots at the outer margin. Hindwing basal half yellowish, with the veins crossing it black; the outer half black, with series of diffused blue spots and a marginal series of cream-yellow large crescentic spots; hind angle spot yellowish-red. Underside paler; veins prominently black, area sprinkled with more black irroration, area before outer margin in forewing without well marked spots but broadly yellowish, diffused and reach upto the margin; similarly crescentic markings on the area before outer margin in hindwing diffused, broad and reach upto the margin.

Remarks : *Papilio machaon asiatica* Menetries is close to *machaon punjabensis* Eimer. The *punjabensis* Eimer (Figs. 21 UP, 22 UN) is smaller in size, with the forewings narrow, cell bars and bands narrow and tail slightly longer.

Distribution : This subspecies has been recorded from Kinnaur, Sirmour and Shimla districts in Himachal Pradesh, where *asiatica* occurs along with the var. *ladakensis* from much higher altitudes, upto about 17000' in Lahoul & Spiti district of Himachal Pradesh.

Elsewhere : It ranges from Punjab to Kumaon, Sikkim and Assam.

11. THE SPOT SWORDTAIL

Pathysa nomius nomius (Esper)

(Figs. 23 UP, 24 UN)

1785-98. *Papilio nomius* Esper, *Die Aus. Schmett.*, : 210.

Wing expanse : 70-90 mm.

Diagnosis : Male and female tailed : whitish above. Head, thorax and abdomen creamy white; the latter with a broad, medial longitudinal stripe and lateral black stripes. Upperside : Forewings with five dark bands, of which 1st and 2nd reach the inner margin; the 3rd extends a little below the cell area; 4th and 5th end at lower margin of the cell; the distal one-third of wing black upto the outer margin, with a series of small spots of the creamy white colour before outer margin, of which the anterior ones rounded and the remaining semi-lunate.



Hindwings with the ground colour whitish; a streak along inner margin, black bands near the base and the middle area, which are joined near the hind angle; the marginal area black, traversed by whitish lunules; tail black, edged and tipped with white. Underside whitish. Markings brownish nearly as on upperside. Hindwing with the middle band irregular, broken and bordered by a series of red-spots, outwardly edged with black; lunules before the outer margin broadly edged on outer-side with black.

Remarks : The subspecies is common in status and is very fond of settling in large numbers on damp ground during the hot weather.

Distribution : From Shimla district, this has been reported in April-May, upto about 6000'

Elsewhere : The subspecies ranges from peninsular India to south Bihar, Madhya Pradesh to Uttar Pradesh, Himachal Pradesh and eastwards to Sikkim, Assam and Myanmar. Also Sri Lanka.

12. THE GLASSY BLUEBOTTLE

Graphium cloanthus cloanthus (Westwood)

(Figs. 25 UP, 26 UN)

1841. *Papilio cloanthus* Westwood, *Arc. Entom.*, : 42.

Wing expanse : 85-95 mm.

Diagnosis : Male and female tailed. Head, thorax and abdomen dark brownish-black; thorax with lateral dark-grey



25



26

pubescence; underside of palpi, thorax and abdomen paler. Upperside : Forewings with the entire area pale green from below the cell through posterior half of cell to apex; cell with two black transverse bars, one across the middle and another at end of cell, and other two narrow bars closer to apex, through pale-green area, connected anteriorly to the black upper margin on one side and passing onto the other side to outer black area. Hindwing : Pale-green patch passing uninterrupted from inner margin of forewing onto basal part of hindwing in a triangular shape, leaving inner and outer margins black; the outer margin with large pale-green spots.

Remarks : It is common in status, reported to settle on damp ground and is attracted by flowers.

Distribution : It is recorded from Kangra, Shimla and Sirmour districts in Himachal Pradesh from March to November upto an altitude of about 9500'

Elsewhere : The subspecies ranges from Kashmir to Myanmar.

13. THE COMMON BLUE BOTTLE

Graphium sarpedon luctatus (Fruhstorfer)

(Figs. 27 UP, 28 UN)

1907. *Papilio luctatus* Fruhstorfer, *Ent. Zeit.*, **20**(30) : 183.

Wing expanse : 80-90 mm.

Diagnosis : Male and female brownish black, with dark grey-hairs; tail extremely short, like a small protuberance



27



28

from hindwing. Forewings with a green or bluish-green broad band from inner margin, narrowing anteriorly and ending into a small spot just before the tip. Hindwing with the band continued from below the inner margin of forewing to basal part of hindwing, narrowing posteriorly and ending above hind angle; upper part of band whitish; scent fold on the inner margin greyish, with long stiff white hairs in male. Underside colour paler in both wings; traces of spots before outer margin on forewing. Hindwing with a red transverse bar from upper margin to cell but separate from band; red medial spots five, of which the anterior ones encircle the tip of cell; series of lunules as on upperside but paler.

Remarks : Very often it settles on damp ground in the company of other papilionid and pierid species.

Distribution : The species is recorded from Kangra, Mandi, Shimla and Sirmour districts in Himachal Pradesh from March to October upto an altitude of about 9000'

Elsewhere : The species is extremely common from Kashmir to Myanmar.

14. THE COMMON BLUE APOLLO

Paranassius hardwickei hardwickei Gray

(Figs. 29 UP, 30 UN)

1831. *Parnassius hardwickei* Gray, Zool. Misc., 1 : 32.

Wing expanse : 50-65 mm.

Diagnosis : Male tail-less, creamy white. Upperside : Forewings at base dusted with black scales; cell with black bars across the middle and the tip; another bar beyond the



29



30

cell and superposed by crimson spots; medial series of irregularly curved dusky-black spots; margin dusky black; lower area below the cell with a black-edged crimson spot. Hindwing dusky-black; a crimson coloured spot at middle and below upper margin; a series of blue spots ringed with black and centered with white, before outer margin. Underside with white scaling replaced by scale-like hair on both wings. Hindwing spots crimson, ringed by black and centered with white.

Female also tail-less; dusky black irroration more extensive on upperside; the underside paler, markings large and prominent; all the red spots centered with white.

Remarks : It is common in status, flies close to the ground in the sunshine and frequently settles on flowers to feed.

Distribution : The species has been recorded from Kullu, Lahoul & Spiti and Shimla districts of Himachal Pradesh almost throughout the year and extends upto 17000' in Lahoul & Spiti district.

Elsewhere : The species ranges from Chitral to Kumaon.

PIERIDAE

Commonly known as “Whites” or “Yellows” due to the predominant white or yellow colouration, as in *Leptosia*, *Appias*, *Pieris*, *Catopsilia*, *Eurema*, etc., other colours like orange, crimson, shade of salmon pink to blackish are also not uncommon.

The Pierids vary in expanse from as little as 25 mm, as the Little Orange Tip to about 96-100 amongst the Jezebels. Some are greatly affected by the seasons, which create dry-season forms in winter-months and wet-season forms in rainy months. Quite a number of Pierid species congregate in large numbers on a damp ground and often accompanied by members of the same family or of Papilionids.

The flights are usually very slow, sluggish and often close to ground, but the fast-flying species are also not uncommon.

Several species are quite common throughout peninsular India, extending to lower elevation, in Himachal Pradesh, others occur upto 15000' in Himalayas.

Several Pierids are also of economic importance, their caterpillars feeding on cruciferous plants, *Cassia*, *Indigofera*, etc.

The Himachal Pradesh butterflies have been placed in two sub-families, viz. Pierinae and Coliadinae. Talbot (1939) recorded 32 species from Himachal Pradesh, of which as many as 19 species have been included here. The species like *Leptosia nina* (Fabr.) and *Pareronia valeria* (Lesson) which are quite common in their range of distribution, are being recorded from Himachal Pradesh for the first time.

The Pierid butterflies are represented from all the districts of Himachal Pradesh.

Subfamily PIERINAE

15. THE PSYCHE

Leptosia nina nina (Fabricius)

(Fig. 31 UP)

1793. *Papilio nina* Fabricius, *Ent. Syst.*, 3(i) : 194.**Wing expanse** : 30-50 m.

Diagnosis : Male and female : Upperside : Whitish. Head brownish; the antennae dark brown, spotted with white; thorax and abdomen whitish. Forewings with the upper margin spotted, obscurely with black; tip and the outer margin, upto about middle area, black, the border broadest at the apex; a very large black spot beyond middle. Hindwings white. Underside: Forewings without the black apex and outer black margin, medial spot as on upperside; upper margin, outer margin upto about middle area and nearly whole of hindwing surface irrorated with transverse, very slender greenish lines and minute dots; lines on hindwings coalesce into obscure bands.



31

Remarks : The species is very weak flier and nearly always flies closer to the ground in the undergrowth and is quite conspicuous. But once it settles on the plants, it becomes nearly invisible due to the wings strigae.

Distribution : Presently, this species has been recorded at low elevations in Kangra district of Himachal Pradesh, during September, for the first time.

Elsewhere : Talbot (1939) and Wynter Blyth (1957) have recorded this species from whole of peninsular India, without any positive record from Himachal Pradesh. The species is also quite common in the adjoining Shiwalik hills of Punjab.

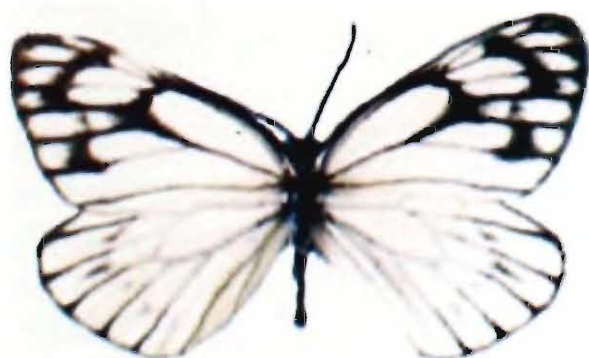
16. THE HIMALAYAN BLACKVEIN

Metaporia leucodice soracta (Moore)

(Figs. 32 UP, 33 UN)

1857. *Aporia soracta* Moore, *Cat. Lep. Mus. E.I.C.*, 1 : 83.**Wing expanse** : 50-70 mm.

Diagnosis : Male and female white. Head with the antennae black; head, thorax and abdomen white above, generally strongly suffused with black; whitish beneath. Upperside : Forewings : Veins black; a thin black margin from base along upper and outer margin to about a little above lower area; outer edge of the cell heavily marked with black; band beyond the cell black, faint and interrupted. Hindwings unmarked; veins black. Underside : Forewings white; tip and the upper marginal edge yellowish; markings black, as on upperside but narrow. Hindwings pale yellow; veins prominently black.



32



33

Remarks : It is a common in status, attracted by Horse-chestnut blossoms on which it has been seen feeding.

Distribution : In Himachal Pradesh, it has been recorded from the districts of Chamba, Kangra and Shimla from 4000' to 10000' during May-June.

Elsewhere : The species is distributed from Kashmir to Uttaranchal, particularly common at Mussoorie.

17. THE GREAT BLACKVEIN
Metaporia agathon (Gray)

1831. *Pieris agathon* Gray, *Zool. Misc.*, I : 23.

Wing expanse : 80-90 mm.

Diagnosis : Male and female upperside black, with white or dusky stripes in medial area and before the outer margin, which are sometimes joined; hindwing cell whitish.

Remarks : It is common in status.

Distribution : There are two subspecies occurring in Himachal Pradesh and have been collected from the districts of Chamba, Kangra, Shimla and Una during May-June.

Elsewhere : The species ranges from Nepal to Assam and Garhwal (Uttaranchal) above 5000' and are included here as under.

17a. *Metaporia agathon phryxe* (Boisduval)
(Figs. 34 UP, 35 UN)

1836. *Pieris phryxe* Boisduval, *Spec. Gen. Lep.*, 1 : 446.

Wing expanse : 80-90 mm.

Diagnosis : Male and female predominantly with broader white stripes. Forewings : Veins black, expanding beyond middle area and at outer margin to form narrow outer black border; black markings more prominent in female; bar at the end of cell well-marked. Hindwings : Veins broadly black, expanding at vein ends at the outer margin. Underside : Markings and colouration as on upperside.

Remarks : Not rare in status.



34



35

17b. *Metaporia agathon caphusa* Moore
(Figs. 36 male UP, 37 male UN, 38 female UP)

1872. *Metaporia caphusa* Moore, *Proc. zool. Soc. Lond.*, : 564.

Wing expanse : 80-90 mm.

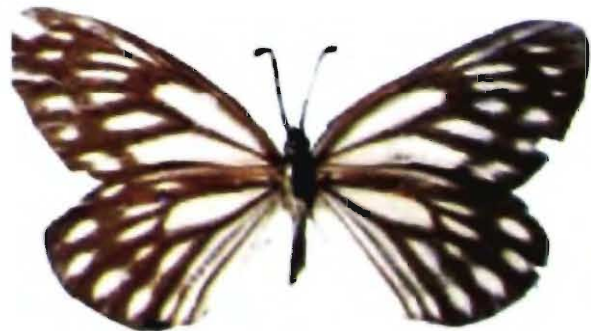


36



37

Diagnosis : Male and female with the ground colour black and more developed than in *phryxe*. Forewing with the cell, the inner area below cell upto about basal two-thirds whitish, connected with the distal ones by the black dusting; the anterior stripes short and narrow and not continuous with those in distal area. Hindwing with the area below upper margin and the cell whitish; the stripes in inner area long and narrow, divided longitudinally by black throughout from base to about outer margin; the 1st stripe nearly continuous or slightly dusted with black; those in above areas separate and narrow. Underside paler; markings as on upperside; subapical spots yellowish.



38

Remarks : Not rare in status.

Distribution : As given above.

18. THE HILL JEZEBEL

Delias belladonna horsfieldi (Gray)

(Figs. 39 UP, 40 UN)

1831. *Pieris horsfieldi* Gray, *Zool. Misc.*, 1 : 32.**Wing expanse** : 70-96 mm.

Diagnosis : Male and female with the ground colour black; both wings with variable white to creamy-yellow spots and invariably dusted with dark scales. Upperside : Forewings : A white spot at the end of cell and a series of white spots in the medial area and before outer margin. Hindwings : A large yellow spot at the base; a yellow patch at the hind angle and whitish inner area; series of white spots beyond middle area and before outer margin. Underside : Forewings : Cell stripe wide and whitish; series of spots as on upperside but well marked. Hindwings : Basal spot below the upper margin, spot at the end of the cell and in the inner area along with the patch on hind angle entirely yellow; a series of spots beyond middle whitish; the series of spots before outer margin yellowish, small and rounded but elongated in an area below upper margin.

Remarks : It is common in status.

Distribution : It has been recorded presently from Kullu, Shimla, Sirmour and Solan districts in Himachal Pradesh.

Elsewhere : The subspecies is fairly common from Kullu (HP) to Kumaon (Uttaranchal) between 2000' and 10000' from April to October.

19. THE COMMON JEZEBEL

Delias eucharis (Drury)

(Figs. 41 male UP, 42 female UP, 43 UN)

1773. *Papilio eucharis* Drury, *Ill. Nat. Hist.*, 2 : Pl. x, figs. 5, 6.**Wing expanse** : 66-85 mm.**Diagnosis** : Male : Upperside : White. Forewings whitish;

all the veins blackened, the black expanding at outer margin,



41



42



43

at veins ends; black line before outer margin broader and anteriorly placed midway between the outer margin and cell-end, then curved inwards and reaching the lower area, thus separating the two series of white spots, of which the lowest one is large, rounded and nearly coalescing with the whitish area above inner margin; the first three spots narrow and triangular followed by three narrow and elongate spots; prepical spot narrow and linear. Hindwings whitish. Veins blackened particularly before outer marginal line and the outer margin, and the black expanding at vein ends at the margin, enclosing large, pointed whitish spots. Underside : Forewings whitish; veins heavily blackened; line before outer margin and spots as on upperside, except the line is darker and slightly longer.

Hindwings uniformly yellowish from base to a little before outer margin black beyond which the marginal spots large, pointed and brick red; veins blackened prominently from base to the black line before outer margin but faintly marked in the area beyond the line and expanding at vein ends.

Female with all the veins heavily blackened; line before outer margin prominently black. All other colouration and markings as in male.

Remarks : The species is common in status, the males will frequently be found on flowers or occasionally drinking from wet patches.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Mandi, Shimla, Sirmour and Solan districts.

Elsewhere : The species occurs throughout plains of India, except in arid zone, extending to about 7000' in Himalayas.

20. THE COMMON GULL

Cepora nerissa phryne (Fabr.)

(Fig. 44UP, 45UN)

1775. *Papilio phryne* Fabricius, *Syst. Ent.*, : Pl. II, fig. 7.

Wing expanse : 40-65 mm.

Diagnosis : Male: Upperside : Forewings : White; upper margin dusted with black upto about basal half; outer margin black, the border becoming wider anteriorly, enclosing white



44



45

spots in its upper area; a black spot in the middle, separated from outer margin by a white spot. Hindwings: White; outer margin narrowly marked with black, often reduced to spots at vein-ends. Underside: Forewing as on upperside. Hindwings pale or dark yellow, with very variable outer marginal spots, which may be completely absent.

Female as in male, but cell heavily bordered with blackish-brown, leaving a white median streak; veins darkened. Hindwing with prominent white spots before outer margin, within the blackish-brown marginal border; upper margin of cell blackened; the other veins less darkened than in the forewing.

There is marked seasonal variation. The wet-season forms are heavily marked, particularly the upper and lower margin of the cell and along the middle area in forewing; the margin black, with white spot on it. Underside without black on the border and apical area; three black spots in lower middle and upper areas. Hindwings pale, with the veins heavily outlined with green; band before outer margin dusky black and interrupted in the middle area.

Remarks : The subspecies is common in status. These are found almost everywhere in the warmer parts and settling on flowers.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Shimla, Sirmour and Solan districts, between June and September.

Elsewhere : The species is found throughout India and ascends to about 8500' in Himalayas.

21. THE PIONEER

Anaphaeis aurota aurota (Fabr.)

(Figs. 46 male UP; 47 female UP, 48 female UN)

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

Wing expanse : 40-55 mm.

Diagnosis : Male and female white. Head with the antennae black, sparsely dotted with white; head, thorax and abdomen white above, thorax often bluish-grey.



46



47



48

There is marked seasonal variation with the diagnostic features as under.

Wet-season form : Male :
 Upperside : White to creamy. Forewings with the upper marginal areas from base to about middle dusky-black; the cell-end with a well marked black bar; apical area black enclosing six white spots, of which the anterior four are elongated, the inner edge being obliquely straight to about middle, then excurved and ending at the vein below. Hindwings white; marginal border black, bearing four white spots. Underside with the markings as on upperside but with the spots large and clearly defined; colouration variable, white to rich chrome yellow.

Female generally resembles the male except that the white spots in the area before the apex become obsolete, though the area is well marked, darkened and reaching to below the lower angle; cell bar joined to upper marginal black. Hindwing with the outer marginal border well marked, with smaller white spots.

Dry-season form : Male and female generally similar to that of wet-season form except that the black apical border narrow, the white spots clearly defined, broader and larger. Hindwings with the white spots before outer margin larger and almost merge with the white ground colour on innerside but represented only by expanded blackened vein-ends.

Underside whitish to yellowish, particularly on hindwings.

Remarks : The subspecies is common in status, especially in dry regions and males are found on damp places.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Kangra and Shimla districts between April and July.

Elsewhere : The species is quite common throughout India except Assam and Myanmar and ascends to about 8500' in Himalayas.

22. THE INDIAN CABBAGE WHITE

Pieris canidia indica Evans

(Figs. 49 UP, 50 UN)

1926. *Pieris canidia indica* Evans, *J. Bombay nat. Hist. Soc.*, **31** : 312.

Wing expanse : 45-60 mm.

Diagnosis : Male and female white. Upperside : Forewings : Apex and the outer margin black, the inner edge of which is dentate; an obscure black spot in male and well developed in female, in the inner area, a prominent black spot around middle area. Hindwings : upper marginal area with a black spot; terminal black spots at vein-ends, better developed in female. Underside : Forewings without black apical area and marginal band; the black spot in the middle and inner area large and prominent; upper margin dusted with some black scales. Hindwings strongly dusted with black scales nearly



49



50

throughout, heavily below the upper margin, leaving a yellowish area with a long stripe from base through cell and to outer margin.

Remarks : The subspecies is common in status and does not show much seasonal variation.

Distribution : From Himachal Pradesh, this has been recorded from Bilaspur, Chamba, Hamirpur, Kangra, Shimla, Sirmour, Solan and Una districts and ascends upto an altitude of about 12500' in Himalayas.

Elsewhere : The species is very common throughout its range from Baluchistan and Chitral to Myanmar and is widely distributed in India throughout the year.

23. THE LARGE CABBAGE WHITE

Pieris brassicae nepalensis Doubleday

(Figs. 51 male UP; 52 female UP)

1846. *Pieris brassicae* var. *nepalensis* Doubleday, *Gen. Diur. Lep.*, 1 : 9.

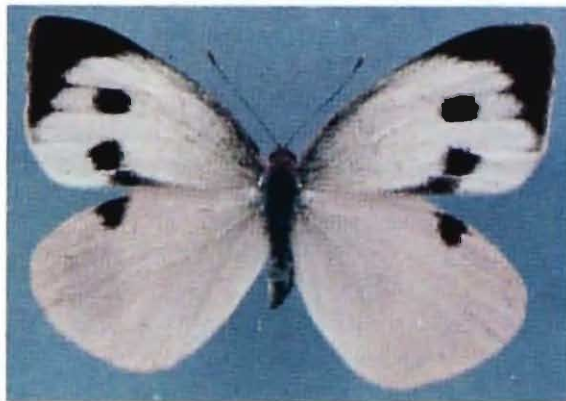
Wing expanse : 65-75 mm.

Diagnosis : Head with the antennae black, the club tipped with white; Head, thorax and abdomen with some white hairs; underside whitish.

Male : Upperside : Forewings : White to creamy-white; base and along upper marginal area, for some distance, dusted with black scaling; tip and outer margin black, the inner edge of which evenly curved. Hindwing, white to creamy yellow; uniformly dusted with black scales,



51



52

particularly at base and along inner area; a large black spot on upper marginal area before apex. Underside : Forewings white, dusted with black scales at base and along costa; apex light ochreous brown; a large black spot each in lower and middle area. Hindwings whitish to ochreous-brown, dusted with black.

Female : Generally similar to male but the dusting more heavy; apical and marginal border broader; forewings with an additional black spot in outer half of lower and middle area. Hindwings with the upper marginal spot larger. Underside apical and marginal border ochreous-yellow.

Remarks : The species is mainly a hilly one but migrates to lower elevations and areas adjoining Himalayas during extreme cold weather but returns back to higher elevations when the weather in plains starts warming up. It is available throughout the year as an important pest of cruciferous plants.

The species closely resembles the preceding one viz. *P. canidia indica* Evans, but can easily be separated by the apical border in forewing being smooth and evenly curved on inner edge unlike being dentate in *indica*.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Hamirpur, Kangra, Kinnaur, Kullu, Shimla, Sirmour, Solan and Una districts.

Elsewhere : The species is very common throughout its range from Baluchistan and Chitral to Assam and to plains adjoining Himalayas. Therefore, the species ranges from plains, at lower elevations, to about 12000' in Himalayas.

24. THE WHITE ORANGE TIP

Ixias marianne (Cramer)

(Figs. female 53 UP, 54 UN)

1779. *Papilio marianne* Cramer, *Pap. Exot.*, 3 : 41.

Wing expanse : 50-55 mm.

Diagnosis : Head with the antennae reddish-brown; head and thorax anteriorly with reddish brown hair, the latter with white hair above; abdomen black. Underside whitish.



53



54

The species shows considerable seasonal and sexual variation, with diagnostic features as under.

Wet- season form : Both wings dusted with black at base.
Male : Upperside : Chalky-white. Forewings : Apical half black, enclosing a large orange patch extending from upper margin and narrowing posteriorly. Hindwings : Chalky-white; a broad terminal black border. Female resembles male except that the orange patch is narrower, truncated posteriorly and bears black spots. Underside wings rich sulphur yellow. Forewings with the orange patch showing through; medial transverse series of reddish-brown spots centered with white, more or less conspicuous; a spot at the end of cell larger in forewings, smaller in hindwings.

Dry-season form : Terminal border black and narrow in bothwings.

Remarks : It is not rare in status, males fly close to the ground and settle on flowers or bushes and occasionally settle to drink on wet ground.

Distribution : From Himachal Pradesh it has been recorded from Bilaspur, Kangra, Shimla and Sirmour districts from July to October.

Elsewhere : The species is very common throughout peninsular India, extending to lower elevations, including Shiwalik hills in Punjab and Chandigarh, and ascending to about 6500' in Himalayas.

25. THE YELLOW ORANGE TIP

Ixias pyrene kausala Moore

(Figs. 55 male UP, 56 female UP)

1877. *Ixias kausala* Moore, *Ann. Mag. nat. Hist.*, (4) 20 : 49.**Wing expanse** : 50-70 mm.

Diagnosis : Male : Upperside : Yellowish. Forewings dusted at base with black; the upper margin and more than outer half black, enclosing a large orange band, from upper marginal border, narrowing posteriorly. Hindwings yellowish, terminal border black, broader anteriorly but narrowed posteriorly. Underside : Bothwings pale yellowish, irrorated with dark brown; spot at the end of cell and a series before outer margin of blackish-brown spots.



55



56

Female : Wings yellowish, or white. In latter case the band on forewings is also whitish and not orange; the basal half of both wings dusted with black; upper margin and more than outer half of forewing black enclosing a white band. Hindwings with the terminal black border.

Remarks : The species shows seasonal variation also, the dry-season- forms with the borders being narrow.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kinnaur, Shimla, Sirmour and Solan districts from July to October.

Elsewhere : The species alongwith *I. marianne* have been observed to fly together among thorny bushes of

Shiwalik hills in Punjab and Chandigarh and around. The species ranges from Baluchistan and Chitral to Kumaon and throughout lower elevations ascending to about 8000' in Himalayas.

26. THE COMMON WANDERER

Pareronia valeria anais (Lesson)

1837. *Papilio anais* Lesson, In : Bougainville, *Jour. de la Navigation aut. du Globe Fregate de la Thetis et de la Corvette, l'Esperance.*

Wing expanse : 65-80 mm.

Diagnosis : Head with the antennae black; head, thorax and abdomen dark; thorax clothed with long bluish hair; palpi, thorax and abdomen pale silvery bluish-white beneath.

Male : Upperside : Forewing : Upper marginal area, apex and outer margin very broadly black, the marginal black border narrowing posteriorly towards the lower angle and bears a series of bluish-white spots before outer margin. Hindwings : Outer margin broadly black; the remaining whole area from base, including upper margin whitish to pale bluish-white; all the veins blackened, with the anterior ones broadly edged with black. Underside : Forewings : Pale-blue; outer margin obscurely dark; more or less broadly edged with black which widen at the margin; apex and the outer margin suffused with a somewhat obscure pearly-white lustre. Hindwings marked and coloured as on upperside.

Female : Upperside : Forewings : Black with bluish-white markings; cell with two parallel streaks, of which the anterior one from base is longer and narrow, whereas the posterior one, in apical half of cell, is shorter and narrow but exceeds beyond the anterior one; stripe below the cell angulate anteriorly and divided longitudinally; series of stripes beyond middle of irregular length; series of spots before outer margin smaller, one of which is shifted inside. Hindwings : Black; upper and inner margin whitish; cell with two streaks joined at base; series beyond middle and before outer margin nearly as on forewing but regular. Underside as on upperside but

with the ground colour dusky and diffused; apical area of forewing dusted with white.

Remarks : It is common in status, preferring regions where the rainfall is not very heavy.

Distribution : From Himachal Pradesh the species has been collected for the first time during September-November, from the districts of Sirmour and Solan, upto an altitude of about 2000'

Elsewhere : The species is common throughout India. Rhe Philipe (1931) is of the opinion that he has no record of the species west of Mussoorie but thinks there is no reason why this should not occur in the similar country westwards along the foot-hills into the Kalka area, and what Rhe Philipe thought about 70 years ago has been proved right and the species has now been collected from these areas for the first time.

Subfamily COLIADINAE

27. THE COMMON EMIGRANT

Catopsilia crocale (Cramer)

(Figs. 57 UP)

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

Wing expanse : 55-80 mm.

Diagnosis : Head with the antennae red or black. Male :
 Upperside : Forewings chalky white; partly or entirely yellowish to sulphur yellow; upper margin narrowly black to apex, or only black at the apex; outer margin black, narrowing posteriorly rarely reaching the hind angle, or the marginal border spotted. Hindwings unmarked; Terminal margin narrowly black, sometimes reduced to black vein-dots. Underside yellowish, yellowish-white or greenish white; without any markings, or both wings with a black spot at the end of cell, or a silvery spot ringed with reddish-brown;



area beyond middle unmarked or with irregular reddish-brown line. Hindwings unmarked or with a spot at the end of cell, a spot in middle area and a series of smaller reddish-brown spots beyond middle; terminal brown line indistinct or reduced to vein-dots.

Female : Upperside : Forewings greenish-white to sulphur yellow; upper margin black; spot at the end of cell black, separate or connected to upper margin, forming a transverse bar; outer margin black; broader at apex, narrowing posteriorly sometimes reaching the hind angle, or the border spotted; an anterior series of indistinct blackish-brown spots beyond middle. Hindwings outer margin nearly dentate on inner edge or reduced to vein-dots. Underside : Forewings with the ground colouration greenish-white or yellowish, deep yellow or ochreous brown; markings nearly as on upperside but the apical and marginal areas reddish-brown. Hindwings often with reddish purple blotches or ringed with reddish brown.

Remarks : The males often settle in a large numbers on damp ground.

Distribution : From Himachal Pradesh, this has been recorded from Bilaspur, Kangra, Kullu, Mandi, Shimla, Sirmour and Solan districts during July to October.

Elsewhere : The species is greatly variable and very common throughout India and extends upto about 8000' in Himalayas.

28. THE MOTTLED EMIGRANT

Catopsilia pyranthe (Linn.)

(Fig. 58 UP)

1758. *Papilio pyranthe* Linn. *Syst. Nat.*, 10th ed. : 469.

Wing expanse : 50-70 mm.

Diagnosis : Head with the antennae reddish; head and thorax anteriorly brown, thorax clothed posteriorly with long white hairs; abdomen white. Underside whitish. Male : Upperside : Forewings chalky-white, tinged in some

specimens with green; upper marginal edge black; without or with a black spot at the end of cell; outer marginal border wider anteriorly, narrowing posteriorly, sometimes reduced to blackish or reddish-brown vein-dots. Hindwings unmarked or with the outer marginal black dots or with the outer marginal blackish or yellowish narrow line. Underside greenish, or greenish white, with reddish-brown fine lines and a small spot at the end of cell. Hindwings sometimes with prominent and silvery spots at the end of cell.



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Female : Upperside greenish-white to greenish yellow; spot at the end of cell prominent; band beyond middle sometimes well marked and coalescing with the outer margin. Hindwings with or without marginal dots. Underside : As in male, with the spot at the end of cell on forewing better developed, with an outer red ring that encircles the silvery spot. Hindwings with one or more similar spots at the end of cell; reddish brown finer lines well developed.

Remarks : The species is also, like *Catopsilia crocale* (Cramer), quite variable and the two species resemble each other considerably, except that the strigae on underside wings in *C. pyranthe* (Linn.) are quite well developed and easily differentiate the latter from *crocale*.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Hamirpur, Kangra, Kullu, Shimla and Sirmour districts, from June to October, and ascends to 6500' in Himalayas.

Elsewhere : This species is very common throughout India and both the species are found to occur together in nature.

29. THE COMMON BRIMSTONE

Gonepteryx rhamni nepalensis Doubleday

(Figs. 59 male UP; 60 female UP)

1847. *Gonepteryx nepalensis* Doubleday, *Gen. Diur. Lep.*, 1 : 71.**Wing expanse** : 60-70 mm.

59



60

Diagnosis : Head with the antennae, palpi and thorax reddish-brown above; thorax with dull yellowish grey hairs; abdomen black above, yellow laterally. Underside yellowish white.

Male : Upperside : Forewings: Rich yellow; apex sharply angled; marginal dots distinct, reddish-brown and forming a continuous line; spot at the end of cell deep orange and larger. Hindwings coloured as forewings; spot at the end of cell also larger and deep orange; marginal dots as on forewings. Underside yellowish green.

Female : Pale creamy white above, greenish white below; all other characters as in male.

Remarks : It is common in status, flies fairly strongly and visits flowers.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Mandi, Shimla, Sirmour and Solan districts during March to December.

Elsewhere : The species is distributed from Chitral to N. Myanmar and occurs from 2000' to 10500' in N.W. Himalayas.

30. THE SMALL GRASS YELLOW
Eurema brigitta rubella (Wallace)
 (Fig. 61 UP)

1867. *Terias rubella* Wallace, *Trans. ent. Soc. Lond.*, : 323.

Wing expanse : 30-40 mm.

Diagnosis : Head with the antennae, thorax and abdomen dusky black; thorax with some yellow hairs; underside pale-yellow.

Male : Upperside : Forewings bright-yellow; basal area dusted with black; anterior one third and the outer margin with broad black border, reaching the inner margin, the inner edge of which is evenly curved.

Hindwings also bright yellow; the black border broader anteriorly, narrowing posteriorly to inner margin; basal area dusted with black scales. Underside : Forewings upper margin narrowly edged with pink; only two well marked spots at the end of cell and some apical black dots. Hindwings with a black



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spot at base; three transversely placed spots and an elongate loop-like spot at the end of cell; black spots above and below the end of cell and the black band beyond middle area diffused.

Female : As the male except that the black borders are broader.

Remarks : The species shows seasonal variation when the marginal band of the hindwings is reduced to linear spots posteriorly in dry-season forms.

The males have no sex brands on hindwing upperside and forewings underside as in the following other two species.

Distribution : From Himachal Pradesh, it has been recorded from Hamirpur, Kangra, Shimla, Sirmour and Solan districts from March to October.

Elsewhere : The species is very common throughout India, ascending to about 12500' in N.W. Himalayas.

31. THE SPOTLESS GRASS YELLOW

Eurema laeta laeta (Boisduval)

(Fig. 62 UP)

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

Wing expanse : 30-40 mm.

Diagnosis : Head with the antennae, thorax and abdomen dusky black; underside of antennae with a line of white dots; thorax and abdomen whitish.

Male : Upperside : Wet season-form : Forewings : Bright-yellow; basal two-thirds dusted with black, apex evenly curved; apical third black, extending along upper margin to base in a gradually narrowing line and posteriorly into a black border upto a little above the hind angle; the inner edge of black border oblique and wavy from middle of upper margin, then vertically downwards upto the lower vein, ending obliquely above the hind angle. Hindwings bright yellow; outer margin black, narrow and evenly curved. Underside both wings pale yellow; evenly but sparsely dusted with black scales; forewings with a small linear black spot at the end of cell. Hindwings with a black dot in upper area and two diffused bands beyond the middle area.



Female : Generally as the male except that both the wings densely dusted with black scales and the black borders broader; forewing border, abruptly

narrowed to a mere line upto a little above hind angle. Hindwings border broader anteriorly but rapidly narrowing posteriorly to a line.

Dry-season-form : Both sexes with the apex much pointed, with the outer margin sharply cut and straight to above hind angle; outer black border stopping abruptly above the inner margin. Hindwings : Outer black border reduced to only subapical patch and a series of black terminal dots; which may be completely absent. Underside pale yellow; forewing apical area and the basal half of upper margin dusted with pinkish and brownish scales; other marks brown to ferruginous brown.

The males have specialised scent scales, on upperside hindwing and underside forewing, and is thus differentiated from *Eurema brigitta rubella* (Wallace).

Remarks : It is very common in status.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Mandi, Shimla, Sirmour and Solan districts during May and December.

Elsewhere : The species is very common throughout peninsular India, ascending to about 7000' in N.W. Himalayas.

32. THE COMMON GRASS YELLOW

Eurema hecabe fimbriata (Wallace)

(Fig. 63 UP)

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



63

Wing expanse : 40-50 mm.

Diagnosis : Head with the antennae yellowish, the club black; head, thorax and abdomen yellowish, shaded with fuscous; underside yellowish white.

Male : Upperside : Wet-season-form : Both wings dark yellow. Forewings with the tip broadly black, narrowing along upper margin into a line upto base, and posteriorly upto the hind angle and extending along the inner area; the inner edge of black border excavated slightly or deeply in the middle. Hindwings: Outer black border narrow, or reduced to a thin black line. Underside usually paler than that of upperside; forewings with a prominent reddish brown patch; two small spots or dots in basal half of cell and a reniform spot or ring at the end of cell; a sex brand on both sides of the lower margin of the cell. Hindwings with a slightly curved series of three spots near the base; spot or ring at the end of cell irregular and narrow; a series of highly irregular curved streaks beyond the middle. Both wings with minute reddish brown upper and outer marginal terminal specks at vein ends.

The species is extremely variable and some or all of these spots/specks may be completely absent on underside.

Dry-season-form : Male and female nearly similar to wet season form in colouration, except that the black borders, on both wings, are narrower; the inner edge of black border nearly evenly curved from before apical area on upper marginal edge to inner margin. Underside markings reddish-brown and prominent.

Remarks : The species is very common in status.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Hamirpur, Kangra, Mandi, Shimla, Sirmour and Solan districts from August to October, and ascends to about 7000' in N.W. Himalayas. At low elevations, it is, however, available throughout the year.

Elsewhere : The species is very common in peninsular India, Punjab, extending from Chitral to Kumaon.

33. THE DARK CLOUDED YELLOW

Colias electo fieldi Menetries

(Figs 64 male UP, 65 female UP)

1855. *Colias fieldi* Menetries, *Enum. Corp. Anim. Mus. Petr.*, 1 : 79.

Wing expanse : 45-65 mm.

Diagnosis : Head with the antennae and thorax anteriorly salmon pink, the club darkening to brown; thorax and abdomen dusky greenish-black. Underside yellow.

Male : Upperside : Forewings deep orange-yellow; base dusted with greenish-black scales; spot at the end of cell large and black; apical area broadly black; unspotted, continued posteriorly as an outer broad black margin, the inner edge of which is irregular. Hindwings deep orange; heavily dusted with black scales at base and posterior part of wing; inner margin pale yellow; outer margin broadly black, narrowing gradually to the hind angle, the inner edge of which is irregular; a spot at the end of cell paler in colour. Underside paler; basal area, the outer broader of forewing and the whole of hindwings pale dull green; spot at the end of cell large, as on upperside, but with silvery white center; series of black spots before outer margin obscure and curved anteriorly inwards, but prominent and increasing in size posteriorly. Hindwings : Spot at the end of cell double, with silvery white center and encircled with salmon pink; series of pinkish spots beyond the middle nearly obsolete.

Female : Ground colour as in male. The black outer margin wider, with the inner edge more irregular and diffused and bears yellowish spots, four of which are anteriorly placed obliquely in upper area; the spot in lower area largest and the one inner area smallest and obsolescent; black or greenish black dusting more extensive, particularly on hindwings.



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65

Hindwings with the spot at the end of cell large; a series of yellowish spots before outer margin. Underside nearly as in male.

Remarks : It is common in status. It migrate to the plains in the winter.

Distribution : From Himachal Pradesh, this has been recorded from Chamba, Kangra, Mandi, Shimla and Una districts, almost throughout the year.

Elsewhere : The species is very common, occurring from Baluchistan to Punjab and ascending to about 5000' in N.W. Himalayas, extending to Sikkim and Myanmar.

DANAIDAE

Commonly known as “Tigers”, “Crows” and “Nymphs”, the latter group of butterflies are not known to occur in Western Himalayas, including Himachal Pradesh, J & K, etc.

The Danaids are generally of moderate to large size, tough and of very slow and sluggish flight. Being tough, the species need a prolonged pressure at thorax while killing them. Often these feign death and fly away immediately as soon as the pressure is released at thorax.

The butterflies possess an unpleasant smell and exude acrid juices, which give them protection from their natural enemies like birds and lizards. In fact the Danaids have assumed the status of “Models” for protective mimicry and several species of different families like Papilionidae, Pieridae, Satyridae and Nymphalidae, have mimicked them and gain protection. Many of the ‘Crow’ species, in *Euploea*, resemble each other besides being models for species of other families.

Several species have the habit of congregating, on a single plant, sometimes in thousands. These have also been observed to congregate on *Crotalaria* plants during flowering season, for nectar-feeding, which seem to intoxicate these butterflies when these can very easily be handpicked.

None of the Danaids exhibits seasonal variation, and all the Indian species have been placed in a single subfamily Danainae, with the following genera : *Idea* Fabricius; *Danaus* Kluk; and *Euploea* Fabricius. Of these, the genus *Idea* is not reported to occur in W. Himalayas. The other two genera, viz. *Danaus* Kluk and *Euploea* Fabricius, are represented by eight species from N.W. Himalayas, including Himachal Pradesh, and all these have been included here.

34. THE PLAIN TIGER

Danaus chrysippus chrysippus (Linn.)

(Fig. 66 male UP, 67 female UP)

1758. *Papilio chrysippus* Linn. *Syst. Nat.*, 10th ed. : 471.**Wing expanse** : 70-80 mm.**Diagnosis** : Head with the antennae black; head and thorax spotted with white; abdomen ochreous above, whitish beneath.

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Male and female : Upperside : Forewings tawny, darkening towards upper margin; the apical half black which is extending along upper margin to the base and inner margin to the hind angle; a subapical band of four white spots from upper margin; smaller white spots also at the cell-end, on upper margin, before outer margin and at the outer edge; veins not blackened.

Hindwings : Ground colour paler; outer margin narrowly black, with an incomplete series of white spots; three black spots at the end of cell, the males with an additional black scent-patch. Underside paler; forewing apical area and the hindwing ochreous.

Remarks : It is an excellent "Model" for mimicry by Nymphalid female, Danaid Eggfly, *Hypolimnas misippus* (Linn.)

Distribution : From Himachal Pradesh, the species has been recorded from Hamirpur, Kangra, Kullu, Mandi, Shimla, Sirmour and Solan districts, throughout the year in plains but between April and August in hilly area.

Elsewhere : The species is very common throughout, mainly, in the open country and gardens visiting flowers, and ascends to about 9000' in Himalayas.

35. THE COMMON TIGER
Danaus genutia (Cramer)
 (Figs. 68 UP, 69 UN)

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

Wing expanse : 75-95 mm.

Diagnosis : Head with the antennae black. Head and thorax black, with white spots; abdomen tawny above, whitish beneath; scent pouch well developed on both sides of hindwing in male.



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Male and female : Upperside : Forewings tawny, with the veins crossing it blackened; apical half black which is extending along upper margin to base and inner margin to hind angle; a band of white elongated spots before outer margin; smaller white spots also present at the cell-end, before the outer margin and at the terminal edge. Hindwings paler, with veins broadly bordered with black; outer margin narrowly black, bearing two more or less complete series of white spots. Underside : Forewings with the apical area dusky brown. Hindwings paler; the white spots distinct.

Remarks : The species is found in highly forested area and scrubs and abundant in the area with heavy rainfall. When occurring in drier region, the tawny part of the hindwing tend to become paler or whitish.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Mandi, Shimla, Sirmour and Solan districts during April to September.

Elsewhere : The species is fairly common throughout India. In Himalayas, it ascends to about 8000'

36. THE BLUE TIGER

Tirumala limniace leopardus (Butler)

(Fig. 70 UP)

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

Wing expanse : 90-100 mm.

Diagnosis : Head with the antennae black; head and thorax blackish, with white spots and streaks; abdomen dusky black above, ochreous beneath.

Male and female : Upperside : Forewings black; with bluish-white semi-hyaline spots and streaks; cell with a single, narrow streak at base and a large indented spot beyond it; two streaks below the cell, often coalescing and with a spot beyond it; other spots decreasing progressively in size i.e. the latter the smaller. Hindwings black; with bluish-white semi-hyaline spots and streaks; streaks in the cell broad and forked; in areas below the cell and beyond it the streaks single and narrow, double and forked or loop like; in other areas progressively decreasing in size, i.e. the latter the smaller. Underside : Forewing dusky black at basal two-thirds, and olive brown apically. Hindwings olive-brown; male with sex pouch.



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Remarks : It is very common in status, an inhabitant of hedgerows and lightly wooded country.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Kangra, Shimla, Sirmour and Solan districts from May to September.

Elsewhere : The species occurs throughout plains and hilly areas except in desert regions and ascends to about 4000-5000' in Himalayas.

37. THE DARKBLUE TIGER

Tirumala hamata septentrionis (Butler)

(Figs. 71 UP, 72 UN)

1874. *Danais septentrionis* Butler, *Ent. mon. Mag.*, **11** : 163.**Wing expanse** : 80-105 mm.

Diagnosis : Male and female : Upperside : Black. Both wings with bluish-white semi-hyaline spots and streaks. Forewings cell with a narrow streak; area below the cell with two separate streaks, of which the upper one is oval shaped. Hindwings with the cell streaks, along upper and lower margin, joined at base but separate distally. Underside paler than that of upperside. Male with a pendulous pouch on hindwing underside.



Remarks : It is very common in South India and fairly common in the Himalayas.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kullu, Shimla, Sirmour and Solan districts from March to December.

Elsewhere : The species is very common in hilly areas and ascends upto an altitude of about 8000' in Himalayas, from Kullu to Assam and Myanmar. Also Sri Lanka.

38. THE GLASSY TIGER

Parantica aglea melanoides Moore

(Fig. 73 UP)

1883. *Parantica melanoides* Moore, *Proc. zool. Soc. Lond.*, : 247.**Wing expanse** : 70-85 mm.

Diagnosis : Male and female : Upperside : Forewings deep dusky brown to black, with bluish-white semi-hyaline spots and streaks, streaks in cell and below it long and broad, joined at base, most of spots progressively decreasing in size i.e. the latter the smaller, except two streaks beyond the middle below the upper margin which are longer; the marginal series of spots much smaller and placed in pairs between veins. Hindwing streaks long and broad; the cell with two broad streaks which are joined at base; streaks in inner area and below the cell long and narrow; other spots larger beyond middle but decreasing towards margin; male with two scent patches, one of them being larger. Underside paler; markings often diffused and blurred.



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Remarks : It is fairly common in status, particularly in hilly areas where the rainfall is heavy.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kullu, Mandi, Shimla, Sirmour and Solan districts during April to August.

Elsewhere : The species is fairly common from Kashmir to Sikkim, Assam and Myanmar, ascending to about 8900' in Himalayas.

39. THE CHESTNUT TIGER

Parantica sita sita (Kollar)

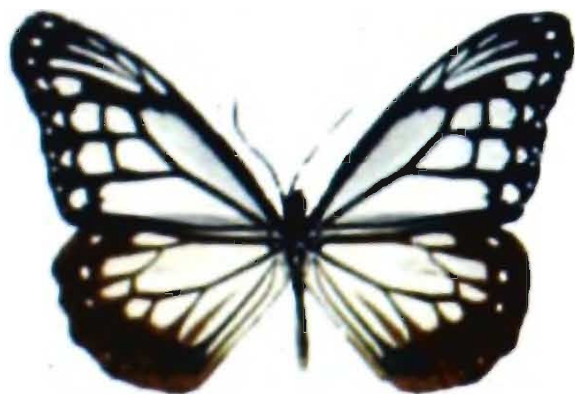
(Fig. 74 UP)

1844. *Danais sita* Kollar, In Hugel's, *Kaschmir und das Reich der Siek*, 4 : 424.

Wing expanse : 85-105 mm.

Diagnosis : Male and female : Antennae black. Head and thorax spotted with white; abdomen brown to bright ochreous above, pale below. Upperside : Forewings black or dusky black; with bluish-white semi-hyaline spots and streaks; whole of cell and 3/4th of the area below it filled with

broad bluish-white semi-hyaline streak; spots in the middle large and quadrate; three narrow streaks beyond cell; a row of rounded spots before outer margin, decreasing anteriorly; and an incomplete terminal series of smaller spots. Hindwings chestnut-red, with semi-hyaline spots and streaks; cell completely filled with broad stripe; those in area below



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and beyond cell not reaching the chestnut outer margin; male with two scent patches, one of them being larger. Underside markings similar to those on upperside but clearer and complete; forewing with the apical area also chestnut-brown.

Remarks : It is not rare in status, flight is slow and it visits flowers very readily. It is an excellent model for mimicry by Tawny Mime, *Chilasa agestor*, The Great-Zebra, *Paranticopsis xenocles* and the Circe, *Hestina nama*.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Mandi, Shimla and Solan districts between April and October.

Elsewhere : The species is common from Kashmir to Sikkim, Assam, Bhutan and Myanmar and ascends to about 8000' in Himalayas.

40. THE COMMON INDIAN CROW

Euploea core core (Cramer)

(Fig. 75 UP)

1780. *Papilio core* Cramer, *Pap. Exot.*, 3 : 133.

Wing expanse : 85-95 mm.

Diagnosis : Male and female : Upperside : Both wings dark brown, with a row of white spots before outer margin and at the margin, of which some of the anterior ones may be absent sometimes. Forewings : Male with a single sex brand; a series

of white spots before outer margin curved inwards towards upper margin; and the terminal series of spots smaller and not reaching the apex. Hindwings with the a series of spots before outer margin larger, those from below middle to inner margin elongate; terminal series of white spots smaller. Underside similar to that of upperside, but with a cell spots, upper marginal and medial spots nearly always present.



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Remarks : The species is an excellent "Model" for mimicry by the Papilionid *Chilasa clytia clytia* form *clytia* and a Nymphalid female of *Hypolimnna bolina*.

Distribution : In Himachal Pradesh, it has been recorded from Kangra, Mandi, Shimla, Sirmour and Solan districts between May and December.

Elsewhere : The species is common throughout India and ascends to about 5000' in Himalayas.

41. THE STRIPED BLUE CROW

Euploea mulciber mulciber (Cramer)

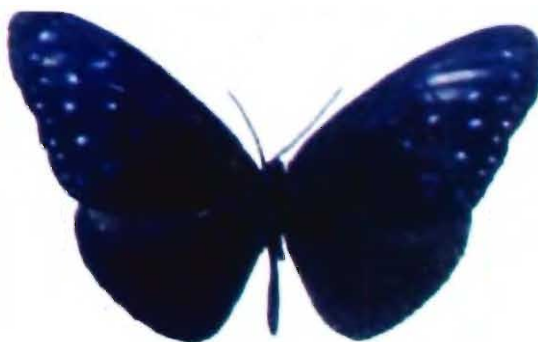
(Fig. 76 UP)

1777. *Papilio mulciber* Cramer, *Pap. Exot.*, 2 : 45.

Wing expanse : 90-100 mm.

Diagnosis : Head, antennae, thorax and abdomen dark velvety brown; abdomen glossed with greenish-blue above. Underside head and thorax spotted and abdomen transversely banded with white.

Male : Upperside : Forewings dark brown, with brilliant blue gloss and



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marked with violescent white spots, of which one is in cell-end, five or six beyond the cell; a curved series of larger spots before outer margin and a terminal incomplete series of smaller spots. Hindwings : Unmarked except for a light brown scent-patch.

Female : Upperside paler; spots whitish and larger; a streak in the cell and in the area below it. Hindwings with the streak in cell and beyond linear; a series of white spots before the terminal margin elongate. Underside markings as on upperside but distinct and broad.

Remarks : The species is an excellent "Model" for mimicry by a Satyrid Palmfly, *Elymnias malelas* and the Papilionid The Great Mime *Chilasa paradoxa*.

Distribution : From Himachal Pradesh, it has been recorded from Kullu and Shimla districts in August.

Elsewhere : The species is reported to be common (Talbot, 1947) from Shimla to Myanmar, but Wynter-Blyth (1957) states that it is common in N.E. India and Myanmar but very rare elsewhere from Kullu, and ascends to 7000' in Himalayas.

SATYRIDAE

Commonly known as "Browns" due to predominant light or dark brown colouration, the blackish or brilliantly coloured species are also met with. With exception of some species like Satyrs, which are generally fast fliers, majority of Satyrids are weak fliers, with slow, jerky or bouncing movements, flying rather close to ground littered with dead fallen leaves, or among jungle herbs & shrubs, over the meadows and open grassy slopes of the hills. Most of the species do not visit flowers and, generally, prefer shaded areas and often, some, are seen on cloudy day, or at dusk time, like Evening Brown, which are attracted to light. Very often the species are observed to settle on roads and stones or on dry and dead fallen leaves.

The seasonal variation is well marked in several genera, where the markings tend to change to leaf like and the ocelli, otherwise well developed and distinct in wet seasons forms, are small or reduced to mere specks. Bushbrowns, Rings and Evening Browns are some of the species where the dry-season forms are quite different from those of wet season forms. In fact no two examples in dry season form of the Evening Brown resemble each other.

The species mainly feed on grasses. As many as fortysix species have been recorded from nine districts of Himachal Pradesh (except Bilaspur, Hamirpur and Una) and the present text includes 18 species and have been arranged following Talbot (1947).

42. THE COMMON BUSHBROWN

Mycalesis perseus blasius (Fabr.)

(Figs. 77 UP, 78 UN)

1798. *Papilio blasius* Fabricius, *Ent. Syst. Suppl.*, : 426.

Wing expanse : 38-55 mm.

Diagnosis : Antennae brown above, greyish-white beneath, anteriorly more or less ochreous; the club tipped with ochreous; head, thorax and abdomen brown above, paler beneath.



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Male and female : Upperside : Both wings pale to dark brown; lines before the outer margin and at the terminal edge closer to each other and paler. Forewings with a white-centered yellow-ringed black eye spot in lower area, rarely with a small spot above it. Hindwings usually pale to dark brown, without spot. Underside both wings with the ground colour as on upperside and crossed by a narrow medial white or bluish-white line, with the inner one edged with dark brown; lines before outer margin and at the margin paler and more distinct than on upperside. Forewings with a curved series of four eye spots, those in middle may be much reduced, and the whole group enclosed by a pale line; eye spots reduced in dry season form to mere dots. Hindwings with seven eye spots enclosed by a pale line, as on forewings, and obscure or reduced in dry season form.

The species has a single sex brand on underside forewings and upperside hindwings.

Remarks : The subspecies is very common in status, particularly in wetter and wooded areas and is attracted to sugar solution. The males occasionally settle on damp ground.

Distribution : From Himachal Pradesh, it has been recorded from Chamba and Kangra during February to October.

Elsewhere : The subspecies ranges from Kangra (HP) to Myanmar and ascends to about 3000' in Himalayas.

43. THE DARK-BRAND BUSHBROWN

Mycalesis mineus mineus (Linn.)

(Figs. 79 UP, 80 UN)

1767. *Papilio mineus* Linnaeus, *Syst. Nat.*, 1(2) : 768.**Wing expanse** : 45-50 mm.**Diagnosis** : Antennae brown, the club with black and ochreous marks. Head, thorax and abdomen brown.

79



80

Male and female : Upperside both wings brown, with the slender paler lines before outer margin and marginal areas. Forewings with a white-centered yellow-ringed black eye spot in lower area and a smaller one in the middle. Hindwings unmarked, generally with one or two obscure eye spots. Underside deep brown; both wings with dusky white bands, well marked with black on inner edge and diffused black on outer edge. Forewings with the eye spots as on upperside; hindwings with 5-7 eye spots before outer margin, of which the posterior four spots are in straight line.

Dry season form upperside paler than that of wet season form. Underside speckled finely with brown; eye spots nearly obsolete, indicated only by minute white dots.

Remarks : The species is very common in status, especially at low elevations.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kullu, Shimla and Sirmour districts during April to November.

Elsewhere : *M. mineus mineus* (Linn.) is generally common from Kullu (HP) to Myanmar and ascends to about 6000' in Himalayas.

44. THE BARRED WOODBROWN

Zophoessa maitrya maitrya (de N)

(Figs. 81 UP, 82 UN)

1880. *Lethe maitrya* de Niceville, *J. Asiat. Soc. Beng.*, 49(2) : 245.**Wing expanse** : 45-55 mm.

81



82

Diagnosis : Male and female : Upperside : Forewings shining dark brown; an ochreous outwardly curved band beyond the middle from upper margin, distinct at upper margin but becoming obsolete posteriorly and showing through from underside; dark brown eye spots showing through from underside as black spots. Underside : Forewings with a cross bar across cell and a well developed ochreous medial band; spot before apex whitish, below which are minute white dots on a pale ochreous area. Hindwings crossed by purplish lines from base towards outer margin; area before outer margin pale yellowish brown, with a row of six eye spots, of which the anterior four are joined to each other, 5th separate and the 6th paired.

Remarks : The species is not rare in its range.

Distribution : From Himachal Pradesh, it has been recorded from Kullu and Shimla districts between July and October.

Elsewhere : The subspecies ranges from Kullu (HP) to Bhutan and ascends to about 11000' in Himalayas.

45. THE SMALL SILVERFORK

Zophoessa jalaurida jalaurida deN

(Figs. 83 UP, 84 UN)

1880. *Zophoessa jalaurida* de Niceville, *J. Asiat. Soc. Beng.*, **49**(2)
: 245.

Wing expanse : 50-55 mm.



83



84

Diagnosis : Male and female :
Upperside both wings deep brown with a silky gloss, sometimes with reddish-coppery sheen. Forewings with an ochreous white broad bar across the cell, edged on both sides by black; an ochreous-white medial band beyond the cell from upper marginal edge to inner margin, diffused on outer edge with black; an ochreous-white bar from upper marginal edge in the area before outer margin, with three spots below it; margin dark.

Hindwings with an indistinct bar across the cell and a deep brown band beyond the cell; a paler band before outer margin with rounded eye spots; margin darker, with ochreous line. Underside forewings paler and without any sheen or gloss; bands or spots as on upperside but more distinct and yellowish; hindwings slightly greenish-brown at base and inner margin; irregular thin streaks at base and middle of cell, continuing below it, followed by silvery or whitish broad band from upper margin, edged with black on outside; a band of six blue-pupilled yellow-ringed black eye spots before outer margin, narrowly circled with brown and grey, of which the one in the lower area is the largest.

Remarks : The species is not rare in its range.

Distribution : From Himachal Pradesh, it has been recorded from Kullu and Shimla districts between June and September.

Elsewhere : The subspecies ranges from Kullu (HP) to Kumaon and Sikkim and ascends to 11000' in N.W. Himalayas.

46. THE BANDED TREEBROWN

Lethe confusa confusa Aurivillius

(Figs. 85 UP, 86 UN)

1898. *Lethe confusa* Aurivillius, *Ent. Tijdschr.*, 18 : 142.**Wing expanse** : 50-55 mm.

85

86

Diagnosis : Antennae dull brown, tipped with ochreous; head, thorax and abdomen dull brown above.

Male and female : Upperside both wings uniformly chocolate brown. Forewings with an oblique broad white medial band from upper marginal edge to hind angle, and with oblique white spots before apex. Hindwings with the outer margin dentate around middle; eye spots on the underside showing through. Underside forewings paler; medial band as on upperside; oblique white patch before apex as on upperside, with vertical row of three yellowish ringed black centered eye spots, of which the posterior one is the smallest. Hindwings with ochreous white narrow line across middle of cell, from upper marginal edge to inner margin, and an outwardly curved line at end of cell to inner margin; a series of six white centered yellow ringed black eye spots before outer margin, of which the anterior one is the largest and the one in lower area bi-pupilled; all the eye spots edged on inner side by whitish line and a diffused dark line on outside.

Dry-season form : Underside eye spots reduced; forewing with the upper marginal bar heavy; lines and markings tending to be ochreous.

Remarks : The subspecies is very common in status, particularly at low elevations.

Distribution : From Himachal Pradesh, it has been recorded from Kangra and Shimla districts from March-October.

Elsewhere : The species is common in its range from Murree to Assam and ascends to about 7000' in Himalayas.

47. THE COMMON FORESTER

Lethe insane insane (Kollar)

(Figs. 87 UP, 88 UN)

1844. *Satyrus insana* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4(2) : 448.

Wing expanse : 55-60 mm.

Diagnosis : Antennae brown, annulated with white; head, thorax and abdomen brown.



87



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Male : Upperside : Forewings greyish to dark brown; with bands on underside showing through and two minute ochreous spots before apex. Hindwings coloured as the forewings; a curved series of four rounded black spots beyond middle, of which the one at the apex may sometimes be elongated; lines before outer margin and at the margin slender and black. Underside : Forewings : Basal half darker; the cell with two short dark bands; a medial paler bar; band before apex short and narrow, with three white centered obscure eye spots. Hindwings with the lines narrow; a curved series before outer margin of minute white centered six eye spots, of which the anterior one is the largest, with inner ochreous and outer pale rings.

Female differs from male by the oblique white broad band beyond the middle, reaching hind angle in forewing; spots before apex whitish. Underside whitish band edged on inner side by irregularly shaded and outside by dark brown triangular shaded areas; outer marginal area with three eye spots as on forewings. Hindwings as in male.

Remarks : The species is rare in nature and slow in flight.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra and Shimla districts from June to October.

Elsewhere : The species ranges from Chamba (HP) to Assam and ascends to 9500' in Himalayas.

48. THE STRAIGHT-BANDED TREEBROWN

Lethe verma verma (Kollar)

(Figs. 89 UP, 90 UN)

1848. *Satyrus verma* Kollar, In Hugel's : *Kaschmir und Das Reich der Siek*, 4(2) : 447.

Wing expanse : 55-60 mm.

Diagnosis : Antennae brown, tipped with ochreous; head, thorax and abdomen brown.

Male and female : Upperside both wings with two narrow, pale lines before outer margin, separated by a black line. Forewings brown; oblique medial broad white band from middle of upper margin. Hindwings brown; generally unspotted but the eye spots on underside sometimes showing through as white centered black eye spots. Underside both



89



90

wings light brown. Forewings with white band as on above; area before apex paler, with two white centered ochreous-ringed black eye spots. Hindwings with a regular lilac-grey lines across middle of cell, from upper margin to inner margin; another from upper margin, bordering eye spots below the upper margin, first excurved, then incurved, and running to hind angle; the series of six white-centered black eye spots before outer margin, of which 1st bi-pupilled, 2nd and 3rd larger and the one in area below the upper margin largest, each with an ochreous, brown and silvery rings.

Remarks : The subspecies is common in status and is fond of settling on tree bark.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra and Shimla districts from May to September.

Elsewhere : The species ranges from Kashmir to Kumaon and ascends to about 9500' in Himalayas.

49. THE COMMON WALL

Lasiommata schakra schakra (Kollar)

(Figs. 91 UP, 92 UN)

1848. *Satyrus schakra* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4(2) : 446.

Wing expanse : 45-60 mm.

Diagnosis : Male : Upperside : Both wings silky, dark smoky brown. Forewings with a band of four tawny spots in distal area, the anterior one being the largest, bearing a white centered black eye spot; a line before outer margin dark brown. Hindwings with a row of six white-centered orange-



91



92

ringed black eye spots, but this number may be reduced to only three eye spots. Underside pale greyish white. Forewings with two obscure lines crossing the cell; medial area paler than that of upperside, edged outwardly by dark lines; an oblique irregular orange brown line beyond the middle, not reaching the hind angle; a large white centered black eye spot on pale ochreous band before outer margin, as on upperside. Hindwing paler; two orange brown lines crossing the cell, the latter of the two reaching upto inner margin; medial and the lines beyond middle irregular and curved; area beyond middle pale ochreous, bearing six white centered, pale ochreous ringed black eye spots, as on upperside.

Female resembles the male but with an additional band bordering eye spot outwardly and a streak inwardly, reaching upto hind angle in forewings.

Remarks : The species is quite variable in nature and is common in status. Generally flies closer to ground and settles on sunny areas.

Distribution : From Himachal Pradesh, it is recorded from Chamba, Kangra, Kullu, Shimla and Sirmour districts almost throughout the year.

Elsewhere : It occurs from Baluchistan and Chitral to Kumaon and is common from 4000' to 11000' in Himalayas.

50. THE SMALL TAWNY WALL

Rhaphicera moorei moorei Butler

(Figs. 93 UP, 94 UN)

1867. *Rhaphicera moorei* Butler, *Ann. Mag. nat. Hist.*, (3) 14 : 164.



93



94

Wing expanse : 55-60 mm.

Diagnosis : Male and female : Upperside : Both wings ochreous yellow, with the basal area and inner margin of hindwings dusky brown. Forewings with oblique extensive dusky markings across base, middle and end of cell; markings beyond the middle broad and extensive, obliquely from the upper margin to about middle of the wing, twice angled and ending at the inner margin; a large round spot in lower area; outer and inner margin dusky brown. Hindwings with a row of spots in medial and outer areas. Underside paler, dull ochreous and less brilliant. Hindwings with a pale broad stripe from base through cell to distal area; with two dark lines in the cell, and six white-centered black eye spots in medial and outer areas.

Remarks : The subspecies is considered very local and is not rare in status, and prefers forested areas.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kullu and Shimla districts between May and September.

Elsewhere : The species ranges from Shimla to Sikkim and occurs between 6000' and 14500' in Himalayas.

51. THE TIGERBROWN

Orinoma damaris Gray

(Figs. 95 UP, 96 UN)

1846. *Orinoma damaris* Gray, *Lep. Ins.*, Nepal : 14.

Wing expanse : 75-80 mm.

Diagnosis : Antennae black; head dark-grey above; thorax dark-grey above, in front with orange hairs; abdomen dark-grey above, whitish beneath, with fine black lines.



Male and female : Upperside dusky black. Forewings with the cell ochreous-red at basal half, with two black spots placed obliquely on the anterior and posterior margins; the distal half black, with a pale diffused centre in anterior half and with a broad greenish white streak in posterior half; with greenish white streaks, interrupted by lines beyond middle and before outer margin; the former from upper margin to about middle, twice angled and reaching inner margin at the hind angle; two series of quadrate greenish-white spots before outer margin, of which the inner one is shorter than outer which reaches the hind angle. Hindwings dusky black, with streaks and spots; cell filled with broad greenish-white transversely divided streak; with a series in the middle, beyond middle and before outer margin of greenish-white streaks and spots, the outer row of spots indistinct. Underside paler, with the markings distinct.

Remarks : The species is locally common but otherwise rare in its range from H.P. (Kangra) to Karen Hills. It is a very good mimic of the Glassy Tiger (Danaiidae), *Parantica aglea*.

Distribution : From Himachal Pradesh, it has been recorded from Kangra district only.

Elsewhere : It ranges from H.P. to Assam and Myanmar.

52. THE NARROW BANDED SATYR
Aulocera brahminus (Blanchard)
 (Figs. 97 UP, 98 UN)

1844. *Satyrus brahminus* Blanchard, *Voy Dans. l' Inde*, 4 : Ins. 22.

Wing expanse : 55-68 mm.

Diagnosis : Antennae, head, thorax and abdomen dark brown.



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98

Male and female : Upperside both wings blackish-brown, with a bronzy sheen and rounded, with the outer margin convex. Forewings with a band of narrow white spots beyond the middle from inner area to about beginning of the eye spot and in line, the spots in the middle well separated and outwardly conical, the band interrupted anteriorly by a large black spot, enclosed by a white spot each on outer, upper and innerside, the latter continued obliquely onto the upper margin, more prominently in female, through short white dashes. Hindwing band also narrow, slightly excurved and not reaching the inner margin. Underside both wings paler, markings as on upperside, but spots well separated and broader, conical outwardly in forewings; irrorated with minute white specks and fine markings, less prominent at basal, medial and inner areas on forewings. Hindwings darker at lower basal half; with a somewhat irregularly curved black band.

Remarks : The species is rare in its status.

Distribution : From Himachal Pradesh, it is recorded from Kinnaur, Kullu, Lahoul & Spiti and Shimla districts from July- August.

Elsewhere : It ranges from Kashmir to Nepal and ascends to about 13500' in Himalayas.

53. THE GREAT SATYR

Aulocera padma padma (Kollar)

(Figs. 99 UP, 100 UN)

1848. *Satyrus padma* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4(2) : 445.



Wing expanse : 70-98 mm.

Diagnosis : Male and female : Upperside dark-brown to black, without any bronzy sheen. Forewing outer margin straight; with a band of white broad spots from inner margin to about middle, the anterior three spots well separated and conical outwardly; the one below the eye spot distad and not in line; the band interrupted by an obscure black spot, enclosed by white spot on outer and upperside in male; inner side spot only in female and continued onto the upper margin by white dashes. Hindwings with the band broader, generally reaching the inner margin, or forming a short elongated spot; the veins crossing the band black. Underside silky brown; the bands sharply defined on inner edge, diffused on outer edge; forewing with the eye spot below apex pupilled; spots larger and conical. Hindwings with the basal area darker; the distal area with greyish-white delicate and fine lines, tinged with purplish; band beyond middle black and broad, bearing irregular triangular small white blotches.

Remarks : The subspecies is common in its status, preferring open places.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kullu and Shimla districts between April and October.

Elsewhere : It ranges from Kashmir to Assam and ascends to about 10000' in Himalayas.

54. THE COMMON SATYR

Aulocera swaha swaha (Kollar)

(Figs. 101 UP, 102 UN)

1844. *Satyrus swaha* Kollar, In : Hugel's : *Kaschmir und das Reich der Siek*, 4(2) : 444.

Wing expanse : 60-70 mm.

Diagnosis : Male and female : Upperside deep brown, with bronzy sheen. Both wings with the medial band of whitish larger spots, of these those in middle area are conical outwardly; eye spot before the apex enclosed by a white spot each on upper and inner side, the latter not reaching the



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upper edge. Hindwings much paler; the medial band broader, narrowing posteriorly but not reaching the inner margin; band not excurved outwardly. Underside much paler; with greyish-white fine lines on forewings; white spots from inner area oblong and broad, the inner white spot reaching upper marginal edge; eye spot before apex white pupilled. Hindwings with the basal area tinged with greenish; distal area with a band of greenish-white fine lines; band beyond the middle with diffused black; marginal black lines obscure in both wings.

Remarks : The subspecies is common in status.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kinnaur, Kullu, Lahoul & Spiti, Shimla, Sirmour and Solan districts between July and October.

Elsewhere : Chitral to Sikkim and ascends to about 10000' in Himalayas.

55. THE STRIATED SATYR

Aulocera saraswati (Kollar)

(Figs. 103 UP, 104 UN)

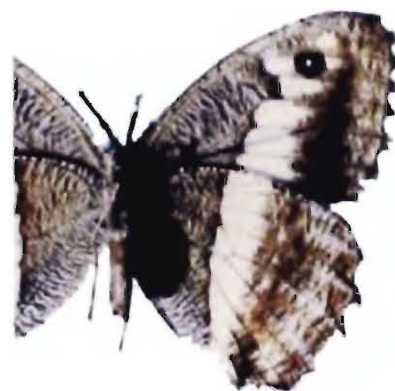
1844. *Satyrus saraswati* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4(2) : 445.

Wing expanse : 60-75 mm.

Diagnosis : Male and female : Upperside deep brown, with bronzy sheen. Forewings with the upper margin arched and the outer margin rounded; medial band of white larger spots from inner margin to middle; eye spot below the apex



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large and rounded, enclosed by outer, upper and inner white spots, the last larger in female than in male. Hindwings with the band of very broad white spots and reaching upto inner margin. Underside much paler, tinged with greyish-white to pale ochreous; striation dark brown throughout; white fasciae defined by dark brown line on inner edge and pale ochreous on the outer edge, suffused with brown and merging into dark band before outer margin, that on forewing dark and broad; marginal area greyish along veins and pale ochreous in interspaces, irrorated with brown striae. irrorated with brown striae.

Remarks : The subspecies is rare in status and prefers open grassy areas.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Kullu and Shimla districts.

Elsewhere : The species ranges from Chitral to Sikkim and ascends to about 10000' in Himalayas.

56. THE PALLID ARGUS

Callerebia scanda scanda (Kollar)

(Figs. 105 UP, 106 UN)

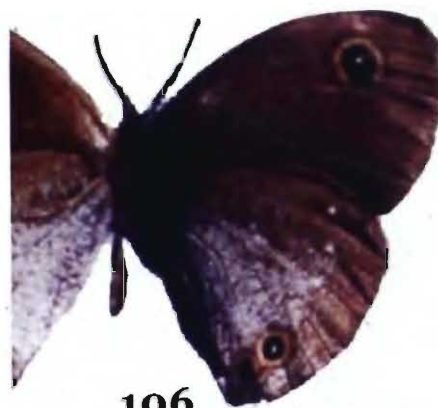
1844. *Erebia scanda* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4(2) : 452.

Wing expanse : 50-60 mm.

Diagnosis : Male and female : Antennae, head, thorax and abdomen dark brown. Upperside dark velvety brown. Forewing dark velvety brown, becoming paler distally over apex and outer margin; with dark brown, pale fulvous ringed,



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subapical, oval white-pupilled eye spot. Hindwings with a white-pupilled pale fulvous ringed eye spot at hind angle. Underside forewings paler, uniformly brown, with the eye spot as on above but prominent and with a dark brown band before outer margin. Hindwings paler, irrorated with bluish-white over posterior two-thirds; two white-pupilled pale-fulvous ringed, dark brown eye spots, the anterior one of the two being the largest, with four white dots above the latter.

Remarks : The subspecies is very abundant and common in nature.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kinnaur, Shimla, Sirmour and Solan districts between July-September.

Elsewhere : The species ranges from Kashmir to Kumaon and Sikkim and ascends to about 8000' in Himalayas.

57. THE BROWN ARGUS

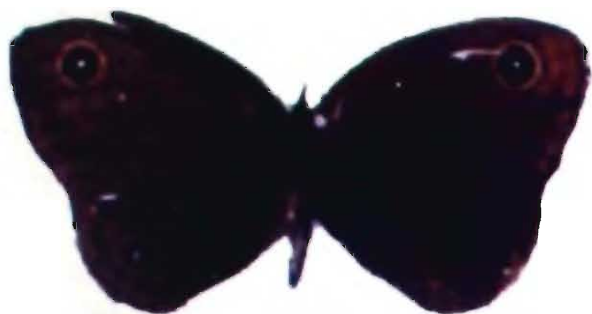
Dallacha hyagriva (Moore)

(Figs. 107 UP, 108 UN)

1857. *Ypthima hyagriva* Moore, *Cat. Lep. E.I.C.*, 1 : 326.

Wing expanse : 42-46 mm.

Diagnosis : Antennae, head, thorax and abdomen dark brown. Male and female : Upperside rich dark brown. Forewings with a white bi-pupilled, yellow-ringed black eye spot, sometimes one of the two pupils may be minute and obscure or completely absent; band before outer margin dark. Hindwings with dark band before outer margin, less defined than on forewings; with a white pupilled, yellow-



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ringed black eye spot, but smaller than on forewings. Underside ochreous brown, with dark striation, bands before outer margin better developed than on upperside; with four white-pupilled yellow-ringed black eye spots.

Remarks : The species is abundantly common in nature, particularly at the end of rainy season.

Distribution : From Himachal Pradesh, it has been recorded from Kullu and Shimla districts between August and September.

Elsewhere : It ranges from Kashmir to Kumaon and ascends to about 8000' in Himalayas.

58. THE HIMALAYAN FIVERING

Ypthima sakra nikaia Moore

(Figs. 109 UP, 110 UN)

1874. *Ypthima nikaia* Moore, *Proc. zool. soc. Lond.*, : 567.

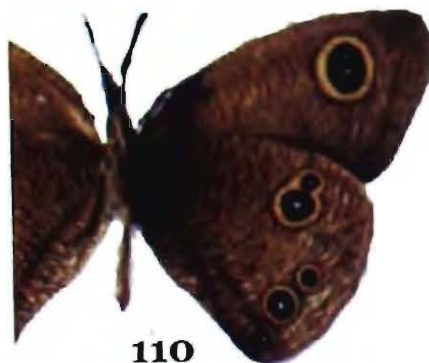
Wing expanse : 45-55 mm.

Diagnosis : Antennae, head, thorax and abdomen umber brown above, paler beneath.

Male and female : Upperside both wings umber brown, margins darker. Forewing with bluish-white bi-pupilled,



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yellow-ringed dark brown eye spot, with outer dark brown ring. Hindwings with bluish-white pupilled eye spots, of which one before apical area and two to, rarely, four before outer margin always prominent and distinct than others which may become obscure or completely absent. Underside paler; both wing margins darker; striated with dark brown fine lines. Forewings with an eye spot before apex larger and distinct than on upperside. Hindwings with a row of bluish-white yellow ringed eye spots in area before outer margin and two in area before apex, with the upper one smaller and both joined together by a yellow ring in between and both shifted inwards; of the eye spots in posterior portion, the one in lower area being largest and not in line with those above and below it, the latter bi-pupilled.

Remarks : The subspecies is common in status.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra and Shimla districts between April and October.

Elsewhere : The species is common from Murree to Kumaon and ascends to about 11000' in Himalayas.

59. THE COMMON EVENING BROWN

Melanitis leda ismene (Cramer)

(Figs. WSF 111 UP, 112 UN; DSF 113 UP, 114 UN)

1775. *Papilio ismene* Cramer, *Pap. Exot.*, 1 : 60.

Wing expanse : 60-80 mm.

Diagnosis : Antennae, head, thorax and abdomen in both forms brown to greyish-brown; antennae ringed with white, the tip ochreous.



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The species is one of the best examples showing seasonal changes in the shape of both wings, colour variations, particularly on underside, and the markings, especially the eye spots. In dry season forms these vary so much that it is difficult to generalise the description. It will be appropriate to say that no two examples of extreme dry-season resemble each other in underside wing-markings. The following description, however, will cover the colouration and patterns commonly observed in this species.



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Dry-season form : Upperside rich brown to brown. Forewing apex more or less sharply angled; outer margin produced into a tooth below apex, the margin below it straight or wavy; a large black eye spot before apex, with two white dots on it, bordered by ochreous lunules inwardly, extended below and above to the upper margin. Hindwings brown; the margin toothed, more acutely around middle of the margin; without eye spot in the lower area but with a row of white spots before outer margin. Underside greatly variable, with various shades of grey-black, yellow, ochreous-brown and ochreous red; eye spots completely obscure on both wings, but when present represented only by white specks or dots. In extreme dry season forms blotches, bands, lines and striae and an endless variety of patterns are seen, resembling closely to those on dead and dry leaves on which these often settle.

Wet-season form : Upperside brown to dark brown. Forewings with the apex normal and the outer margin angulate or straight; with two black spots before apex, each with a white spot on it, bordered with ochreous inwardly;

upper margin paler. Hindwings with a prominent white centered fulvous ringed eye spot in hind angle area; some other eye spots and an apical eye spot showing through from below. Underside paler, densely irrorated with dark brown fine lines; all the black eye spots on both wings white pupilled, yellow ringed; with a row of four eye spots on forewings, one of which being the largest; with a row of six eye spots on hindwing, one of which in area before apex being the largest and four below it gradually increasing to a large eye spot and the last one in inner area is bi-pupilled.

Remarks : The species is the most common amongst Satyrids and is particularly very active during dusk time, getting attracted to light, almost throughout the year at lower elevations.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Shimla and Solan districts, between June and November.

Elsewhere : It is found throughout India, except extreme N.W. regions. Also Sri Lanka and Myanmar.

NYMPHALIDAE

The Nymphalid species are difficult to generalise for the purpose of visual identification, as the pattern varies considerably. Nevertheless, these butterflies are nearly always brightly coloured, often brilliantly. Although the predominant colour is tawny to yellowish, greenish or dark brown, all other shades are no exception. The wings also show a great variety of pattern formed by bands, spots, patches, stripes, blotches, etc., which present a characteristic pattern in the species.

The sexes may be similar or different and the seasonal variation is well exhibited only in certain species like Pansies, Oakleafs, etc. While Pansies, the Himalayan Jestors and the Black Fritillary are amongst the smaller species, being about 35-45 mm in wing expanse, the Great Duchess, the Great Eggfly, Oakleaf, etc. are amongst the larger species, reaching upto an expanse of about 120 mm.

While several species visit flowers, loving sunshine and basking, other settle on dung, or attracted to over-ripe fruit, toddy, sap, sugar solution, etc. Only a few species are reported to visit damp ground or in the vicinity of water stream.

Some members of the family display an excellent form of mimicry, particularly the Danaid Eggfly, Circe and the Courtesan, which perfectly mimic danaid genera, whereas the Sergeant Emperor mimics the Hill Sergeant of the same family. The Oakleafs are beautiful and brilliantly coloured only on upperside, but very dull and completely differently coloured & marked on underside, often imitating inanimate objects like dead and dry leaf to its perfection, displaying veins etc. These species when settled are difficult to locate as the underside colouration harmonise with the surroundings.

The flight is, generally, very fast but the manner of flight varies in different genera, being jerky, or of erratic manner, or simply sail along in an easy graceful manner.

As many as 55 species have been recorded from all the districts of Himachal Pradesh. The present text includes twenty seven species from twelve districts.

60. THE WESTERN COURTIER

Sephisia dichroa (Kollar)

(Figs. 115 UP, 116 UN)

1848. *Limenitis dichroa* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4(2) : 429.

Wing expanse : 60-75 mm.

Diagnosis : Male and female: Upperside : Both wings dark brown above. Forewings with broken, irregular tawny bands, crossed by black veins, one from about middle of cell to the inner margin and another from end of cell to hind angle towards outer margin; series of spots before apex and outer margin tawny in male and whitish in female. Hindwings upto about basal two-thirds, through the cell and below upper margin and inner area, tawny, crossed by black veins; the terminal one-third dark brown, with a series of tawny spots before terminal margin incurved, along the margin, towards upper marginal area. Underside paler; markings as on upperside but paler; marginal series of lunules more conspicuous on hindwings.



115



116

Remarks : The species is not rare in nature, rather local particularly during and after monsoon, after settling on damp ground.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Kullu and Shimla districts during May to September.

Elsewhere : The species is distributed from Chitral to Kumaon and ascends to about 8000' in the Himalayas.

61. THE SIREN

Diagora persimilis (Westwood)

(Fig. 117 UP)

1850. *Diadema persimilis* Westwood, *Gen. Diur. Lep.*, 2 : 281.**Wing expanse** : 65-75 mm.

Diagnosis : Male : Upperside : Indigo-blue. Forewings with the markings pale-greenish; cell with a streak in the basal half and a large oblique spot at its end; three spots just beyond it; an elongated bifurcated streak in the inner area, broken at its end, leaving two detached spots nearer outer margin; a large spot below the cell; a series of spots beyond middle, of which the anterior three are elongated; a few spots in area before outer margin and a marginal series of small spots often reduced to dots, or absent. Hindwings with the veins and the area from outer margin to marginal edge indigo-blue, the remaining area from base whitish to pale-greenish; with a large diffused black spot on upper margin. Underside much paler, with the markings as on upperside.



117

Female : Markings as in male, but the spots and streaks broader and larger and often tend to coalesce.

Remarks : The species is rare in nature. It mimics Danaid, the Glassy Tiger, viz. *Parantica aglea* (Stoll).

Distribution : From Himachal Pradesh, it had, hitherto, been recorded only from Shimla district but presently it is being recorded during May from Kangra, Shimla and Solan districts.

Elsewhere : H.P. to Assam, Sikkim and Orissa and ascends to about 7000' in Himalayas.

62. THE POPINJAY

Stibochiona nicea (Gray)

(Fig. 118 UP)

1846. *Adolias nicea* Gray, *Lep. Ins., Nepal* : 13.**Wing expanse** : 60-80 mm.

Diagnosis : Male : Upperside : Velvety blue. Forewing cell with indistinct blue marks at its end; a row of a few spots beyond middle area and an incomplete row of spots before outer margin; marginal row of spots larger and bounded inwardly by blue.

Hindwings with the marginal row of spots bordered inwardly with blue and outwardly with white. Underside purplish-black; forewing markings as above but prominent; hindwings with the marginal row of white lunulate spots; a row of dots before outer margin white and minute.



118

Female : Upperside dark greenish; markings prominent. Underside : Forewing spots reaching upto posterior margin; hindwings marginal spots larger and, as on upperside forewings, with a row of bluish-white spots beyond the middle and white spots before outer margin.

Remarks : The species is rare to not rare in status. The flight is rapid but settles frequently.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kullu and Shimla districts between April and September.

Elsewhere : The species occurs from Himachal Pradesh to Sikkim, Assam, Meghalaya, Naga Hills, Bangladesh and Myanmar and ascends to about 7000' in Himalayas.

63. THE COMMODORE

Auzakia danava (Moore)

(Fig. 119 UP)

1857. *Limenitis danava* Moore, *Cat. Lep. Mus. E.I.C.*, 1 : 180.**Wing expanse** : 80-85 mm.

Diagnosis : Male : Upperside : Forewings dark olive brown in the basal half and pale olive brown in the distal half; cell with some indistinct markings; transverse medial band and a wavy line before outer margin.

Hindwings dark olive brown in the basal one-third, the rest being pale olive brown, crossed by a transverse band as in forewing; hind angle area dark green. Underside pale ochreous - purple. Forewings at the apex and the bands purplish; lunules brown; termen brownish-yellow. Hindwing cell with whitish marks; bands in inner area and before outer margin broad and purplish-grey; the latter with small whitish spots.



119

Female dark brownish-green above at the base; middle of both wings whitish, crossed by broad greenish-brown bands; outer margin broadly pale greenish brown, with green patch at the hind angle. Underside paler.

Remarks : The species is generally rare. Both sexes settle on damp ground.

Distribution : From Himachal Pradesh, it has been recorded from Shimla district only during April and May and again from August to October.

Elsewhere : The species occurs from Himachal Pradesh to Assam and Myanmar and ascends to about 8000' in Himalayas.

64. THE HIMALAYAN SERGEANT

Athyma opalina (Kollar)

(Figs. 120 UP, 121 UN)

1848. *Limenitis opalina* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4 (2) : 427.

Wing expanse : 55-70 mm.



120



121

Diagnosis : Body black above, with an iridescent bluish-white band at the base of abdomen, whitish beneath. Male : Upperside : Forewings brownish black, with creamy white markings; cell with a twice divided streak and a triangular (pointed outwardly) spot beyond; an anterior series of three spots beyond the middle before apex, of which the lower one is the smallest; a posterior series of four spots from middle obliquely to inner margin, of which the anterior two are well separated; two wavy and pale lines before outer margin, of which the inner one is prominent at apex and inner angle. Hindwings brownish black, with creamy white markings; medial white band continued from that on forewings, from upper margin to inner margin, crossed by black veins; a series before outer margin of white lunules from before apex to inner margin near hind angle. Underside forewing ferruginous; markings as on upperside; hindwings suffused with purplish; a curved streak from base to upper margin; medial band as on above but broad and widening at upper margin; a series of spots before outer margin larger; marginal line broader and purplish; inner area greenish-blue.

Female mainly as the male, but the ground colour on both sides paler and the markings considerably larger.

Remarks : The species is quite common in N.W. Himalayas but less common eastwards. It also settles on damp ground.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Kinnaur, Shimla, Sirmour and Solan districts during March to October.

Elsewhere : The species occurs from Kashmir to Kumaon, and ascends to about 10000' in Himalayas.

65. THE HIMALAYAN SAILER

Neptis mahendra Moore

(Figs. 122 UP, 123 UN)

1872. *Neptis mahendra* Moore, *Proc. zool. Soc. Lond.*, : 560.

Wing expanse : 55-60 mm.

Diagnosis : Male and female : Upperside dark brown to black; markings whitish. Forewing cell with a single narrow streak, with a large conical spot beyond it; an anterior series of white upper marginal streak and large spots; a posterior series of white spots obliquely from beyond middle to inner area; a series of smaller white spots before outer margin, obscure in middle. Hindwings with a medial band of broad white spots, widening at the upper margin; a series of spots before outer margin from below apex to near hind angle. Underside deep brownish ferruginous; a series of white spots and markings as on upperside but larger and prominent.



122



123

Remarks : The species is common in status.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Kullu, Shimla, Sirmour and Solan districts from April to June.

Elsewhere : The species occurs from Chitral to Kumaon and ascends to 8000' in Himalayas and does not visit damp places unlike its closely resembling species *N. hylas astola*.

66. THE COMMON SAILER

Neptis hylas astola Moore

(Figs. 124 UP, 125 UN)

1872. *Neptis astola* Moore, *Proc. zool. Soc. Lond.*, : 560.

Wing expanse : 50-60 mm.

Diagnosis : Male and female : Upperside black, with white markings; bands and spots broader in dry season form, and narrow bands and smaller spots in wet season form. Underside ochreous in dry season form and chocolate in wet season form; dark edging to white bands and spots more prominent.

Forewing cell streak narrow, with a large conical spot beyond; markings similar to those in *N. mahendra* except that the medial band in hindwings does not widen to upper margin.

Remarks : The subspecies is common in status.



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125

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Kinnaur, Kullu, Shimla, Sirmour and Solan districts from March to October, and has been found to visit damp places.

Elsewhere : It ranges from Kashmir to Karen Hills and ascends to about 6000' in Himalayas.

67. THE COMMON MAP BUTTERFLY

Cyrestis thyodamas Boisduval

(Figs. 126 UP, 127 UN)

1836. *Cyrestis thyodamas* Boisduval, *Reg. Anim. Ins.*, 2 : Pl. cxxxiii, fig. 4.

Wing expanse : 50-60 mm.

Diagnosis : Male and female : Upperside whitish in male, pale-yellowish in female; both wings semi-transparent, crossed by fine vertical "Map" like meridian lines; hind angle of forewings and apex of hindwings truncated as if cut off; apical and terminal markings smoky to dark brown; hind angle yellowish in forewings and rich ochreous in hindwings, the latter with a rich ochreous lobe and a black tipped tail; markings at forewings extend onto hindwings as a band, joined around middle by another band obliquely from apex, continued through the hind angle and along inner margin to base and nearly basal half of upper margin of forewings. Underside paler, marked as above, but the markings distinct.

Remarks : The species is not rare in status and is often found near stream or wet places and settles on damp ground.



126



127

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Mandi, Shimla, Sirmour and Una districts from May to October.

Elsewhere : The subspecies, *C. thyodamas ganescha* Kollar is a hill species in northern India, ranging from Kashmir to Kumaon, and ascends to about 8000' in Himalayas.

68. THE GREAT EGGFLY

Hypolimnas bolina (Linn.)

(Figs 128 male UP, 129 male UN; 130 female UP, 131 UN)

1758. *Papilio bolina* Linn. *Syst. Nat.*, 10th ed. : 479.

Wing expanse : 70-110 mm.

Diagnosis : Male : Upperside : Dark indigo blue or black. Forewings with an elongated bluish-white iridescent patch in wet season form, becoming large and broader in dry season form; two or three bluish-white spots before apex; a series before outer margin of a few white dots, which may become completely obscure. Hindwings with a large medial pale-bluish iridescent patch in wet season form; this becoming larger, nearly rounded in dry season form. Underside deep purplish brown; the medial bluish-white patch commencing from the upper margin; a series before outer margin of pale-bluish spots prominent and larger in posterior area, followed by pale-bluish white terminal area near hind angle. Hindwings with a small pale bluish spot below the upper margin followed by a paler medial fascia ending at the inner margin; area before outer margin pale-greyish, with some-dots.



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129

Female dark purplish-brown. Forewings with a row of 1 dots before outer margin, of which those in inner areas are prominently large; marginal row of linear spots, prominent only in the lower area. Hindwings with the row of dots before outer margin merging with the terminal larger spots in posterior area; a black line passing through terminal whitish spots from apical to inner margin. Underside paler; marking as above, but paler.

Remarks : The female of the species is a good mimic of the Danaid, The Common Indian Crow, *Euploea core*. The species is very common as well as one of the most beautiful Indian Nymphalids, particularly in moist regions and warmer valleys in submontane tracts.



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131

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Mandi, Shimla and Sirmour districts, upto September.

Elsewhere : The species occurs throughout India. It ascends normally to about 7000' in Himalayas. Also Myanmar and Sri Lanka.

69. THE DANAID EGGFLY

Hypolimnys misippus (Linn.)

(Figs 132 male UP, 133 UN; 134 female UP, 135 UN)

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

Wing expanse : 70-85 mm.

Diagnosis : Male : Upperside : Dark indigo blue to black, Both wings with the patch surrounded by iridescent purplish



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133

white or blue. Forewings with a medial white patch and white spots before apex; Female : Upperside : Forewings tawny, with black margin from base widening across apex of cell and curving and terminating at anal angle; the black apical half contains a few white dots below upper margin, an oblique band of white spots, from below upper margin to about middle area and smaller white spots before apex. Hindwings tawny; a large black spot below the mid-upper margin; marginal area black, containing smaller indistinct paler dots. Underside paler, but with the apical area, upto oblique white band, ochreous. Hindwings paler; a large black spot, as on upperside, with an additional black spot at end of lower angle of cell; black marginal area with wavy black lines.

Remarks : The species is common throughout India, particularly in the regions of moderate rainfall and during monsoon months. The female is one of the best examples of protective mimicry, resembling The Plain Tiger, *Danaus chrysippus*, in habits and appearance.



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Distribution : From Himachal Pradesh, it has been recorded from Kangra and Shimla districts only during August-October.

Elsewhere : It ascends normally to 4500' but stragglers have been found to fly as high as at 7500' in Himalayas. Also Myanmar and Sri Lanka.

70. THE ORANGE OAKLEAF

Kallima inachus (Boisduval)

(Figs. 136 UP, 137 UN)

1836. *Papilio inachus* Boisduval, *Reg. Anim. Ins.*, 2 : pl. cxxxix, fig. 3.

Wing expanse : 85-110 mm.



136



137

Diagnosis : Male and female : Body robust. Upperside : Forewings large and subtriangular; upper margin rounded, nearly emarginated near base; apex more or less acute and produced, more so in dry-season form; outer margin concave below the apex; ground colour dark violet blue to deep steel blue; basal area irrorated with grey-blue scales; a broad orange or yellowish-orange band obliquely from upper margin to the area before outer margin, with the veins crossing it deeper than the band-colour; apex blackish, with a small bluish-white elongated translucent spot in preapical area; another rounded transparent small area just outside the orange band, in inner area. Hindwings subtriangular; upper margin arched at base; outer margin rounded; hind

angle produced into acute tail, more prominently in dry season form; ground colouration as on forewings but with blue irroration. Underside quite different from that of upperside, devoid of all shades of bright colouration, characteristic of upperside, but rather dull and like dead & dry leaf, with various shades of brown and characteristic features of a leaf, like mid-rib, with veins branching off from mid-rib and often marked with spots.

Remarks : This is an excellent example of protective resemblance by mimicry to dead and dry leaves. The species thus, once settled, completely harmonises with the surroundings and is difficult to locate.

The species is very fond of settling on sap exuding from tree, over-ripe fruits, toddy and alcohol, so that the species, which is otherwise a very fast flier and difficult to catch, can easily be caught.

Distribution : From Himachal Pradesh it has been recorded from Kangra, Mandi, Shimla and Sirmour districts during April to June, and again after rains upto October, upto an altitude of 8000' in Himalayas.

Elsewhere : The subspecies *Kallima inachus huegelii* (Kollar), occurs from Kashmir to Kumaon.

71. THE YELLOW PANSY

Junonia hierta (Fabr.)

(Figs. male 138 UP; 139 female UP)

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

Wing expanse : 45-60 mm.



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139

Diagnosis : Male : Upperside : Black. Forewings with a large medial ochreous patch extending from base to beyond cell, then narrowed and bent downwards; preapical area with two pale-ochreous streaks. Hindwings black, the black extending along upper margin, outer margin and to the inner margin, with a large sub-basal blue spot; the remaining area from beyond end of cell to black area before outer margin and upto inner angle area ochreous. Underside markings as above but pale ochreous.

Female : Upperside : Forewings dark ochreous brown; medial patch pale ochreous, shortened basally and with black lines; black eye spots present from middle to the lower area. Hindwings with eye spots.

Remarks : The species is very common especially in dry and arid regions at low elevations and plains but less common above 4000'. The species prefers the hottest and sunniest places, particularly fond of dry river-beds; uncultivated ground and roads, where the species has been seen to fly just above the ground.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kullu, Mandi, Shimla, Sirmour and Solan districts between March and October.

Elsewhere : It may ascend to about 9000' in Himalayas, as stragglers. Also Myanmar and Sri Lanka.

72. THE BLUE PANSY

Junonia orithya (Linn.)

(Fig. 140 UP)

1764. *Papilio orithya* Linn., *Mus. Utr.*, : 278.

Wing expanse : 40-60 mm.

Diagnosis : Male : Upperside : Forewings with the basal two-thirds dark brown to blue-black; an oblique white band beyond the middle, followed by ochreous white marks on pale-brown apex;



two orange-ringed eye spots. Hindwings shining blue, with a black angular patch curving across the cell towards inner angle and merging with the inner margin; two eye spots near outer margin in middle area; the margin with two lines. Underside dull ochreous; forewings with transverse black-edged white bands across the cell and a medial white band; eye spots less distinct.

Female as the male but larger, with the eye spots more prominent and with the basal half of hindwings being entirely black.

Remarks : Both sexes are very variable in colouration and markings. The species, like that of *J. hierta*, occurs everywhere in dry and arid regions and preferring hottest and sunniest places.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Hamirpur, Kangra, Kinnaur, Shimla, Sirmour and Solan districts during March to October.

Elsewhere : The species *J. orithya* is distributed in W. and N.W. Himalayas and ascends to 9000', but in plains, the species is available throughout the year.

73. THE LEMON PANSY

Junonia lemonias (Linn.)

(Fig. 141 UP)

1758. *Papilio lemonias* Linn., *Syst. Nat.*, 10th ed : 473.

Wing expanse : 45-60 mm.

Diagnosis : Male and Female : Upperside : Forewings pale brownish ochreous; cell crossed by black line near base and pale ochreous bars & spots beyond middle and at end of cell; medial and a series before outer margin, of pale-ochreous



spots extending onto the inner angle and encircling the outer blue-centered orange-ringed eye spot in lower area; the eye spot in upper area indistinct. Hindwings pale brownish-ochreous with two blue centered orange-ringed eye spots, of which the one in upper area prominent; a pale ochreous line running in between two marginal lines. Underside variable in different seasons. Both wings with the outer margin normal in wet season but the forewing produced near upper angle and falcate and the hindwings toothed around middle in dry season forms; the ground colour ochreous brown, with a row of black dots on hindwings in wet season form and ochreous or coppery-red suffusing, with eye spots reduced in dry season form.

Remarks : It is common in status, visiting flowers in garden and regions of heavy rainfall.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Hamirpur, Kangra, Sirmour and Solan districts during April and October.

Elsewhere : The subspecies, *J. lemonias persicaria* (Fruh.) is distributed from Kashmir to Kumaon and ascends to about 8000' in Himalayas.

74. THE PEACOCK PANSY

Junonia almana (Linn)

(Fig. 142 UP)

1758. *Papilio almana* Linn., *Syst. Nat.*, 10th ed. : 472.

Wing expanse : 60-65 mm.

Diagnosis : Male and female : Upperside : Forewings light tawny; upper marginal edge dark brown to black which is continued onto the outer margin; the latter normal in wet season forms but produced and angulated at



outer margin in dry season forms; cell with transverse black or dark brown lines at base and dark markings from upper marginal edge, across middle and end of cell to its lower margin, and one in area beyond the middle from upper marginal edge; a large rounded white-centered bluish eye spot ringed with orange and black in lower area. Hindwings tawny only beyond middle, with a large bipupilled oval eye spot, ringed with orange and black in middle; another small eye spot in lower area; outer margin rounded and normal in wet season form but lobed at anal angle in dry season form. Underside colouration and markings quite variable in different seasons, with several intermediate forms between extreme wet-season and dry-season forms; ground colour generally pale-brown, with the markings dark in wet season forms but paler and resemble a dry leaf and without eye spots on both wings in dry season form; a pale dark line running from anal angle of hindwing across bothwings.

Remarks : The species is very common in status and shows extreme seasonal variations, particularly in the shape of wings and marking on the upper as well as underside. The extreme dry-season form is remarkable leaf-like and, like Evening Brown, resembles dead and dry leaf.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Kangra, Shimla, Sirmour and Solan districts between March and September.

Elsewhere : Throughout plains of India becoming less common in hilly areas but occasionally ascending to about 7500' in Himalayas. Also Myanmar and Sri Lanka.

75. THE GREY PANSY

Junonia atlites (Linn.)

(Fig. 143 UP)

1763. *Papilio atlites* Linn., *Cent. Ins.*, : 24.

Wing expanse : 55-65 mm.

Diagnosis : Male : Upperside : Grey. Forewings with two transverse waved lines across middle and two at end of cell; waved fuscous lines beyond end of the cell, before outer

margin and the marginal areas, between which the colour is paler and marked with six ocellated spots, of which the 1st, 2nd and 5th from upper margin are brighter and larger; an irregular white spot placed at the beginning of ocellated series; outer margin fuscous. Hindwings grey; cell with transverse black lines across middle and other lines and eye spots as on forewing, except that only five eye spots are present, as the one in lower area is reduced to a mere dot, which sometimes is completely obscure. Underside paler: Forewing cell crossed by faint lines across middle; those at end of cell and beyond continued onto hindwings; eye spots more distinct; marginal and lines before outer margin indistinct.



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Female larger and darker; eye spots larger and more prominent on both sides and the lines also more distinct.

Remarks : The species is very common in region of heavy rainfall and moisture, but never in dry region, and occurs around paddy fields.

Distribution : From Himachal Pradesh, it has been recorded from low elevations in Kangra, Sirmour and Solan districts, during October-November.

Elsewhere : Throughout wetter regions of peninsular India. Also Myanmar and Sri Lanka.

76. THE CHOCOLATE PANSY

Junonia iphita (Cramer)

(Figs. 144 UP, 145 UN)

1779. *Papilio iphita* Cramer, *Pap. Exot.*, 3 : Pl. ccix. figs. CD.

Wing expanse : 55-80 mm.

Diagnosis : Male and female : Upperside : Forewings pale to dark brown, with the apical half paler, with white spots before apex; dark-brown obscure markings in the middle and



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at end of the cell; bands obscure beyond cell; lines before outer margin wavy and dark. Hindwings pale to dark brown, with basal half of inner margin whitish; apical half paler, with the the markings beyond middle continuing from those on forewing; four to five eye spots present; line before outer margin as on forewing. Underside paler; both wings crossed by markings as on upperside but the one from upper margin near apex to inner angle of hindwing more prominent, the inner side of which is darker, with pale whitish marking from inner angle to about middle area; eye spots obscure on both wings.

There is considerable seasonal variation. In dry-season form, the apex of forewing is produced and angulated and the hindwings lobed at inner angle, with the underside paler and leaf-like.

Remarks : The species is common in status and is fond of settling on damp ground

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Mandi, Shimla, Sirmour and Solan districts from March to October and ascends to about 9000' in Himalayas.

Elsewhere : The species occurs from Kashmir to Kumaon, but does not occur in dry and arid region.

77. THE PAINTED LADY

Cynthia cardui (Linn.)

(Fig. 146 UP)

1758. *Papilio cardui* Linn., *Syst. Nat.*, 10th ed. : 475.**Wing expanse** : 55-70 mm.

Diagnosis : Male and female : Upperside both wings purplish red at bases. Forewings dark brown, with pale-ochreous spots at subbasal area; an irregular angular band from middle of cell to inner angle; a series beyond the cell of only three spots from upper marginal edge, followed by an outwardly curved row of four spots and preapical spots; margin dark brown. Hindwings dark brown, with the area from beyond the cell to outer margin ochreous brown; a row of larger five dark brown to black spots with slightly paler centre, a row of lunular spots before outer margin and a marginal row of larger spots. Underside markings as above but with some additional spots on forewing cell. Hindwings with deeper shade of ochreous and brown; an oval spot across middle of cell and the row of medial spots, as on upperside, but better developed into prominent eye spots, two of the spots being larger with blue centers and black outer ring.



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Remarks : The species is nearly common throughout India and is widely distributed, probably due to a wide variety of host (food) plants and its migratory habit.

Distribution : In Himachal Pradesh, it has been recorded from Kangra, Kinnaur, Shimla, Solan and Una districts.

Elsewhere : In India it ascends to about 5000' in Himalayas. Being cosmopolitan it is widely distributed from higher hills to sea level. Also Myanmar and Sri Lanka.

78. THE INDIAN RED ADMIRAL

Vanessa indica (Herbst)

(Figs. 147 UP, 148 UN)

1794. *Papilio atlanta indica* Herbst, *Nat. Schmett.*, 7 : 171.**Wing expanse** : 55-65 mm.

Diagnosis : Male and Female : Upperside : Forewings golden brown at base and two-thirds of inner margin, followed by an oblique red band from upper edge, through cell and terminating at inner margin before inner angle; apical half black, with a series of white quadrate spots before apex and an outer apical series of white dots. Hindwings golden brown nearly throughout upto red marginal area, the latter with a row of small black spots. Underside paler; forewing apex pale-ochreous. Hindwings brown, irrorated with white, grey dark brown to black; marginal area pale ochreous.



147



148

Remarks : Like the Painted Lady, it is common but inhabits only the forested area and open country, visiting flowers in garden. It is often seen to get attracted to rotten fruit.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Mandi, Shimla and Solan districts upto October.

Elsewhere : The species, *Vanessa indica indica* (Herbst) ranges from Kashmir to N. Myanmar and ascends to about 9000' in N.W. Himalayas.

79. THE ADMIRAL

Kaniska canace (Linn.)

(Figs. 149 UP, 150 UN)

1767. *Papilio canace* Linn., *Syst. Nat.* 12th ed., 1 (2) : 779.

Wing expanse : 60-75 mm.



149



150

Diagnosis : Male : Upperside : Forewings deep indigo-blue; medial band pale blue from around middle or above, with a few dots at the anterior end and widening posteriorly at inner margin; a blue spot at end of cell placed obliquely to the medial band and a small spot in a area before apex; outer margin deeply incurved particularly in dry season, with the apex cut off, produced and angulated below. Hindwings deep indigo blue; with pale blue band beyond the end of cell area, with a series of black small spots, in space in-between veins; inner margin lighter; outer margin lobed around middle. Underside dark and striated, with various shades of grey, black, green, ochreous, pale-violet or ferruginous; bands broader and prominent, with the edges irregular; spots on bands ochreous on forewing and black on hindwings, but reduced to obscure eye spots on hindwings.

Females resemble males but larger, with the markings prominent and the marginal lines usually obsolete.

Remarks : The species inhabits wooded country in hilly regions in the vicinity of water, and visits streams, river-beds,

roads, paths, etc. and even settles on damp ground, over ripe fruit, sugar- sap, etc.

Distribution : From Himachal Pradesh, it has been recorded from Shimla and Solan districts between August and October.

Elsewhere : The subspecies *V. canace himalaya* Evans occurs in N.W. Himalayas, ranging from Chitral to Kumaon, and ascends to about 9000' in Himalayas.

80. THE INDIAN TORTOISESHELL

Aglais cashmiriensis (Kollar)

(Figs. 151 UP, 152 UN)

1848. *Vanessa cashmiriensis* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4 (2) : 442.

Wing expanse : 52-65 mm.



151



152

Diagnosis : Male and female : Upperside : Forewings chestnut-red; broad black bars across middle of cell to before apex alternating with ochreous bars; a large black patch in inner area followed by an ochreous patch and a black spot, and another smaller black spot above it; marginal border black, with two paler lines at the outer edge; apex cut off at the tip and produced and angulated below it. Hindwings with a broad chestnut red medial band; bases blackish; inner margin paler in basal half; outer margin black, bearing prominent bluish lunules, followed by two paler lines; margin toothed. Underside both wings dark dusky brown at bases, paler beyond, and striated with black.

Remarks : It shows seasonal variation, the wet season form being brighter than those of dry season darker broods. Found almost throughout the year, even with snow on the ground.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Shimla, Sirmour and Solan districts.

Elsewhere : The subspecies *A. cashmiriensis aesis* Fruhstorfer is common in its range from Shimla to Sikkim. It is available upto an altitude of 15000' in Himalayas.

81. THE INDIAN FRITILLARY

Argyreus hyperbius (Johanssen)

(Figs. 153 male UP, 154 female UP, 155 UN)

1764. *Papilio hyperbius* Johanssen, *Amoen. Acad.*, 6 : 408.

Wing expanse : 65-85 mm.

Diagnosis : Male : Upperside : Forewings orange yellow, with wavy lines in the cell and series of spots from across



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middle to before terminal area, those closer to basal area larger. Hindwings paler; a narrow mark across middle of cell, a row before outer margin and a marginal row of small rounded spots; marginal border black



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with dentate and blue lines. Underside forewings reddish basally and pale ochreous and greenish apically, the latter with white centered spots before apex and at terminal area. Hindwings greenish ochreous-brown, crossed by zigzag lines; silver-stripes irregular, more or less broken into separate spots; silver markings on inner area edged with black; outer margin paler.

Female brownish ochreous basally, with the spots as in male; apical area bluish-black, with a broad oblique whitish band and a few whitish dots before apex and terminal area. Hindwings as in male. Underside forewings as on upperside but with the apical area pale-ochreous and the apex greenish; hindwings as in male.

Remarks : The subspecies *A. hyperbius hyperbius* (Johanssen) is a common species, in its range and is one of the best examples of sexual dimorphism, the female of which mimics The Plain Tiger, *Danaus chrysippus*.

Distribution : From Himachal Pradesh, it has been recorded from Hamirpur, Shimla and Solan districts between June and October.

Elsewhere : It ranges from Chitral to N. Myanmar and ascends to about 9000' in Himalayas, from April to October.

82. THE LARGE SILVERSTRIPE

Childrena childreni (Gray)

(Figs. 156 UP, 157 UN)

1831. *Argynnis childreni* Gray, *Zool. Misc.*, 1 : 33.



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Wing expanse : 75-100 mm.

Diagnosis : Male : Upperside : Forewings reddish ochreous, with wavy black lines in basal cell area; area before apex pale ochreous; black spots in middle and end of cell, the former not touching the lower margin of the cell and followed by series of blackish spots upto terminal margin. Hindwings as the forewings; inner margin tinged with blue; with a streak at end of cell and series of black spots in medial, before outer margin and the marginal area; margin dentate. Underside forewings paler; area before apex pale ochreous and the apex pale greenish. Hindwings rich ochreous greenish, crossed by numerous silvery lines and bands, edged with black on one or both sides; those in basal half not reaching beyond anterior half of the wing; the broad silvery band beyond the end of cell from upper marginal edge to the inner angle, where it is joined by silvery narrow lines, from where these silvery lines extend slightly to inner margin; outer margin dentate. Female darker.

Remarks : The species is common in status flies very rapidly, often settling on ground or flowers.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Kullu, Shimla and Solan districts between May and October.

Elsewhere : The subspecies *C. childreni sakontala* (Kollar) with the range from Chitral to Kumaon, is amongst the most beautiful Indian Fritillaries, occurring only above 5000', ascending to about 10000' in Himalayas.

83. THE COMMON SILVERSTRIPE

Fabriciana kamala (Moore)

(Figs. 158 UP, 159 UN)

1857. *Argynnis kamala* Moore, *Cat. Lep. Mus. E.I.C.*, 1 : 56.

Wing expanse : 65-75 mm.

Diagnosis : Male : Upperside : Forewings pale orange yellow; base and the inner area dusky; veins darker; cell with black wavy streaks; an irregular medial series of black spots, joined to each other anteriorly, followed by a row of black



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spots before outer margin and the terminal margin; apex with lighter spots. Hindwings paler at inner margin; with rows of black spots in medial and areas before outer margin and marginl edge. Underside paler. Forewing with the markings as above but without marginal row of spots; apex greenish, with a few whitish spots. Hindwings metallic green; with yellow to dark green silver bands, all edged with black on one or the other side, of these the 4th in medial area broadest, running from upper marginal edge to a little above inner angle; the marginal thin silver line with black on inner side, reaching upto inner angle; some yellow suffusion between medial and the marginal silver lines, and an indistinct row of red spots.

Females resemble males but deeper in colour and the markings darker.

Remarks : The species is common and it closely resembles the Large Silver-Stripe and, like that species, is very beautiful and flies in open country close to forest edges.

Distribution : From Himachal Pradesh. It has been recorded only from Shimla district between May and October.

Elsewhere : The species ranges from Chitral to Kumaon from above 6000' and ascends to about 10000' in Himalayas.

84. THE QUEEN OF SPAIN FRITILLARY

Issoria lathonia (Linn.)

(Figs. 160 UP, 161 UN)

1761. *Papilio lathonia* Linn., *Fauna Suec.*, : 282.

Wing expanse : 50-60 mm.



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Diagnosis : Male : Upperside : Both wings pale reddish brown, irrorated with darker scales at base, upper and inner margin; with row of blackish brown spots; forewing cell with transverse elongated spots, followed by twice angled medial series of rounded spots; a series of spots beyond the cell and before outer margin, of which the anterior ones are smaller. Hindwings with a series of spots, as on forewings, in distal half. Underside forewings paler; series of spots as on upperside except that the spots before apex smaller and pupilled with silvery centre, those in area before outer margin silvery and extending to the edge. Hindwings paler; with several silvery patches and spots, edged with black on one or the other sides; series beyond the end of cell of rounded reddish spots with silvery centers, followed by a marginal row of large subtriangular silver spots; margin darker.

Females resemble males but with the bases irrorated with greenish scales.

Remarks : The species is common. It is also one of the prettiest Indian Fritillaries and quite distinguishable easily because of silvery patches on hindwing underside.

Distribution : From Himachal Pradesh, it has been recorded in Shimla, Sirmour and Solan districts, throughout the year at low elevations.

Elsewhere : The subspecies *I. lathonia issoea* Doubleday ranges from Chitral to N. Myanmar, occurring from about 5000' to 15000' in Himalayas.

85. THE COMMON LEOPARD
Phalanta phalantha (Drury)
 (Fig. 162 UP)

1770. *Papilio phalantha* Drury, Ill. Ex. Ins., 1 : pl. xxi fig, 1, 2.

Wing expanse : 50-60 mm.

Diagnosis : Male and female bright ochreous. Upperside : Forewing cell with wavy black markings; rows of black spots in spaces in between veins below and beyond the cell; a series of black spots before margin from apex to above inner angle, conjoined at each vein end and extending along veins to outer marginal black line; the spot in the lower area, rounded and largest, shifted and not in line; inner marginal area without any mark or spot. Hindwings with rows of small black separated marks from upper margin, of which the anterior ones beyond the end of cell are large and prominent; a line of black marks before outer margin, wavy from apex to inner angle. Underside similar to that of upperside but paler.



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Remarks : The species is common throughout the year in plains but only in certain seasons in Himalayas upto an altitude of about 7500'. It is attracted to flowers, especially lantana and thistles on which it often settles and also on damp ground.

Distribution : From Himachal Pradesh it has been recorded from Bilaspur, Chamba, Kangra, Shimla, Sirmour, Solan and Una districts during June-July, upto an altitude of about 9000'.

Elsewhere : It is quite common in its range in N.W. Himalayas, from Kashmir to Kumaon. Also hills of southern India and Sri Lanka.

86. THE COMMON CASTOR
Ariadne merione (Cramer)
(Figs. 163 UP, 164 UN)

1777. *Papilio merione* Cramer, *Pap. Exot.*, 2 : Pl cxiv.

Wing expanse : 45-60 mm.



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Diagnosis : Male and female : Upperside : Both wings yellowish olive-brown; with paired, wavy lines across the wing from base to outer margin, those at the medial and before outer margin with pale ochreous suffusion in between waved lines; margin darker. Undersides duller, with the waved lines darker; forewings with a small whitish dot before apex, on underside as well as on upperside; distal third of the wings greyish and without bands or waved lines.

Remarks : It is common particularly in region where its food plant, castor, is grown. Hence upto low elevation, where the food plant is available, the species is observed to fly leisurely in abundance.

Distribution : From Himachal Pradesh, it has been recorded from lower elevations in Kangra, Shimla and Sirmour districts from July to August.

Elsewhere : The subspecies *A. merione tapestrina* Moore is quite common in its range in N.W. Himalayas, from Kashmir to Kumaon but not in arid North and NW regions.

ACRAEIDAE

Predominantly yellow or tawny in colour, the Acraeids are represented only by two species, of which one the Yellow Coster, is available from foot hills to about 8000'

The flight of the Coster is rather slow, closer to the ground and often settles on flowers, exposed places on leaves, or twigs. Like Danaiids, the acraeids are also well protected, and when caught, the species exude a sort of protective, oily evil-tasting/smelling fluid which is obnoxious to birds/predators.

87. THE YELLOW COSTER

Acraea issoria anomala Kollar

(Fig. 165 UP)

1848. *Acraea anomala* Kollar, In : Hugel's : *Kaschmir und das Reich. der Siek*, 4(2) : 425.

Wing expanse : 45-65 mm.

Diagnosis : Antennae, head, thorax and abdomen black; thorax with a little ochreous yellow hairs anteriorly; underside black but marked with pale ochreous spots.

Male and female fulvous to ochraceous. Forewings with the veins, along upper margin broadly black and along outer margin narrowly black from apex, the black decreasing in width towards inner angle and traversed by a series before margin of smaller spots of ground colour; the mark at the end of cell curved and broadly black. Hindwings with the ground colouration as of forewings; outer areas with marginal wavy black line, line before outer margin wavy. Underside forewings yellow, becoming paler towards apex; without black along upper and outer margin, but the lines paler; the mark at the end of cell showing through; veins darker.



Hindwings paler and dull but the veins darker; line before outer margin lunulate, edged with black on inner as well as outside; marginal line paler.

Remarks : The species shows considerable variation particularly in ground colouration and markings, which may become deeper and broader and may be with some additional marks, dots, etc.

Distribution : From Himachal Pradesh it has been recorded from Kangra, Kullu, Shimla, Sirmour and Solan districts between May and September.

Elsewhere : The species ranges from Kullu to Kumaon between 3000' and 5000' , rarely upto 10000' and is very common.

ERYCINIDAE

Commonly known as “Beaks” “Punches” and the “Judies” the predominant colour is brown, with bands or spots on wings. Nearly all the species are fond of shaded wooded areas, hilly forests in the vicinity of streams, except the Judies, which normally inhabit denser jungle and are very sluggish during day but active only around evening when the species come out into the open.

The most obvious and characteristic feature in *Libythea*, one of the genera in this family, is the enormous prolongation of the palpi in front of the head, giving the species an appearance of a beak at the head, thus commonly known as the “Beaks”

Six species are known to occur in H.P., of which three are included here.

88. THE CLUB BEAK

Libythea myrrha Godart

(Fig. 166 UP)

1819. *Libythea myrrha* Godart, *Enc. Meth.*, 9 : 171.

Wing expanse : 45-55 mm.

Diagnosis : Body robust, thickly covered with soft, dark coloured woolly hair. Head small, strongly tufted in front; palpi extremely long, porrect, about one-third or more, the length of whole body, thickly clothed with hair of moderate length, the inner edges uniting together which give palpi an appearance of ‘conical beak’; antennae straight, gradually thickening from base to tip, about half or less than the length of forewings. Abdomen short and slender.

Both wings paler to deep brown and almost black, with tawny markings. Forewings : Upper margin moderately



arched; apex cut off at the tip, with the margin produced into a strong tooth at and falcate below it; cell with a tawny streak in lower half, extending below and beyond the cell; the streak outwardly rounded and widest in middle; two whitish spots obliquely placed before apex divided by vein, or sometimes completely separated. Hindwings with a broad medial band, wide and diffused at the abdominal margin but elsewhere well defined and not reaching the upper margin; outer margin wavy. Underside much paler; forewing cell streak wider and the apex irrorated with purplish.

Remarks : The species is common in its range, particularly around streams and settles on damp ground.

Distribution : From Himachal Pradesh it has been recorded from Kangra, Kullu, Shimla and Sirmour districts between April and October.

Elsewhere : The species is common from Kullu to Assam and Myanmar and extends to about 5000' in Himalayas.

89. THE COMMON BEAK

Libythea lepita Moore

(Figs. 167 UP, 168 UN)

1857. *Libythea lepita* Moore, *Cat. Lep. Mus. E.I.C.*, 1 : 240, 519.

Wing expanse : 45-50 mm.

Diagnosis : The species in general habits, appearance and ground colour resembles *L. myrrah* Godart. However, it differs from the latter species by the forewing cell-streak being narrow, separate or connected to a large spot beyond the cell by a short neck; the spots before apex also separate,



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the anterior one near upper margin shorter than the lower one. Hindwing with the medial band short and narrow, and not reaching upper as well as the abdominal margin.

Remarks : The species is common to very common in status except in southern India and Sri Lanka where it is rare. The species is available around stream in forests and settling in large numbers on damp ground.

Distribution : From Himachal Pradesh it has been recorded from Shimla district only from March to October and ascends to about 9000' in Himalayas.

Elsewhere : The species ranges from Kashmir to Assam and southern India, besides in Sri Lanka and N. Myanmar.

90. THE COMMON PUNCH

Dodona durga (Kollar)

(Fig. 169 UP)

1848. *Melitea durga* Kollar, in Hugel's : *Kaschmir und das Reich der Siek*, 4(2) : 441.

Wing expanse : 30-40 mm.

Diagnosis : Male : Upperside : Both wings fuscous with numerous bars and spots. Forewings with yellowish short streaks across the middle, at the end and beyond the cell, the latter largest of the streaks; yellowish spots present in between veins, below and beyond the cell, and before outer margin; marginal row of small five linear spots from below apex to inner angle. Hindwings with the marks at the end of cell with ochreous lines; an irregular medial series of spots, and a series of linear spots before outer margin and at the margin, which coalesce at anal lobe. Underside both wing dark ochreous. Forewings with the base and inner margin fuscous; base of cell enclosing a small black



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spot; other markings as on above. Hindwings more or less with the markings ochreous.

Female larger, wings broader with the outer margin of forewing more convex; apex less produced, and the markings as in male.

Remarks : It is very common in status. The males are fond of settling on flowers and damp ground.

Distribution : From Himachal Pradesh it has been recorded from Chamba and Shimla districts between April and October.

Elsewhere : The species ranges from Kashmir to Kumaon and ascends to about 8000' in Himalayas.

LYCAENIDAE

Commonly known as the "BLUES", because of the predominant blue colouration, all other shades, however, are no exception and even metallic blue or green, or shot with purple are also observed. While some of the Lycaenids are devoid of any marks on upperside, others are suffused, striped, spotted, banded or mottled with a variety of patterns and colours.

Several species have tails, which may be thread-like, or long and fluffy or very often lobed, and when the wings are brought together on a position of rest, these tails are rubbed together with oscillating movements, which strikingly resemble the head of an insect or other butterfly with antennae. Thus, these tails on the hindwings delude their larger enemies like birds and lizards. As a result, when attacked the butterflies escape the damage on the actual head and antennae.

Another interesting fact of the Lycaenid butterflies, like Blue Pierrots, Oak Blues, Acacia Blues, Silverlines, Pie Blues, etc, is their association with ants at their immature stages. While ants carry their caterpillars to their nests and protect them from enemies, the caterpillars in return, on gentle stroking, produce sweet juices on which the ants feed. Thus, a part of their life cycle, or sometimes the whole of it, is passed in nests particularly when the adults emerge, mate and the females lay eggs there itself.

Although a majority of caterpillars feed on various food-plants, a few are either carnivorous or even cannibalistic.

The "Blues" are in general, fond of open meadows, grassland, trees or shrubs, especially along paths and clearings in jungles. Several species have cryptic or strikingly different colours and markings on the underside, unlike that on upperside, enabling them to disappear into the surrounding when settled. Very often the sexes are differently coloured, or the species show seasonal variation.

As many as 82 species are known to occur in nine districts of Himachal Pradesh i.e. Chamba, Kangra, Kinnaur, Kullu, Lahoul & Spiti, Mandi, Shimla, Sirmour and Solan. The present text includes eight species from H.P.

The "Blues" are among the smallest of the butterflies, the expanse ranging from as little as 15 mm in the Grass Jewel to about 60 mm in the Oak Blues.

91. THE COMMON PIERROT

Castalius rosimon (Fabr.)

(Fig. 170 UP, 171 UN)

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

Wing expanse : 24-32 mm.



Diagnosis : Head thorax and abdomen black above, white beneath, the latter banded laterally; the antennae with white rings.

Male : Upperside : Both wings white, with a greyish-blue base, irrorated with brilliant silvery scales ; borders blackish, broad. Forewings with square or oblong broad dark spots at the end and beyond the cell, those in latter area irregularly placed. Hind wings with spots as on forewings but narrow and not irregularly placed. Underside: Both wings whitish, with spots and streaks prominent. **Female** larger; both wings with the marginal border broader, markings prominent.

There is marked seasonal variation, particularly those occurring in monsoon are much darker and heavily marked.

Remarks : The species is very common in nature particularly in the regions of light as well as heavy rainfall. The flight is very weak and closer to the ground. The males congregate on damp ground.

Distribution : From Himachal Pradesh it has been recorded from Shimla and Solan districts and ascends to about 7000' in Himalayas.

Elsewhere : The species is common throughout India, Myanmar and Sri Lanka.

92. THE GRASS JEWELL

Freyeria putli (Kollar)

(Fig. 172 UN)

1848. *Lycaena putli* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4(2) : 422.

Wing expanse : 15-22 mm.

Diagnosis : Head, thorax and abdomen dark brown above, paler beneath : antennae with white rings.

Male : Upperside : Both wings violet brown. Hindwings with indistinct marginal black spots, which may sometimes be large and prominent.

Underside both wings cinereous brown. Forewings with a white bordered brown spot at the end of cell and a series of similar spots before outer margin. Hindwings with a white bordered black spot at the upper margin, four spots across subbasal area and one near base of inner margin; spot at the end of cell also white bordered but brownish; marginal 3 to 6 spots black, conical and prominent, each bordered by ochreous-yellow and speckled with metallic scales and above by a white lunular line.



Female : Forewings upperside as in male; hindwings with the marginal spots often prominently bordered with ochreous or orange. Underside markings on both wings more distinct.

Remarks : It is probably the smallest among butterflies in expanse.

Distribution : From Himachal Pradesh, it has been recorded from Kangra district only.

Elsewhere : The species is very common at low elevation, throughout India, Myanmar and Sri Lanka.

93. THE PALE GRASS BLUE

Pseudozizeeria maha (Kollar)

(Fig. 173 UP, 174 UN)

1848. *Lycaena maha* Kollar, In Hugel's : *Kaschmir und das Reich der Siek*, 4 (2) : 422.



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Wing expanse : 20-30 mm.

Diagnosis : Head, thorax and abdomen bluish above, paler beneath; antennae with white rings.

Male : Upperside both wings pale greenish-blue; border narrow and fuscous. Underside spots encircled with white. Forewings with a black spot in cell as well as a bar at end of cell; a series of black spots beyond the cell and before outer margin. Hindwings with three spots across the subbasal area; a curved series of black spots before outer margin; a broad outer border with some small black spots.

Female dark brown to fuscous above, with blue scaling. Underside with the markings distinct.

Remarks : The species is very common in range. The species shows marked seasonal variation, with those occurring in monsoon season are with prominent markings.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Shimla, Sirmour and Solan districts.

Elsewhere : The species occurs throughout India, particularly in hilly regions.

94. THE GRAM BLUE

Euchrysops cnejus (Fabr.)

(Fig. 175 UN)

1798. *Hesperia cnejus* Fabricius, *Ent. Syst. Suppl.*, : 430.

Wing expanse : 25-33 mm.



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Diagnosis : Head with the antennae branched with white; thorax bluish above; abdomen brownish, covered with delicate white hair. Underside whitish, covered with white, woolly delicate hairs.

Male : Upperside both wings violet blue, with the basal and medial area overlaid with blue scales; outer borders dark but narrow. Hindwings with a delicate tail; with two black anal spots, crowned with orange above but lined on side and below with white. Underside both wings with a series of linked spots, outlined by white. Forewings with a dark bar at the end

of cell. Hindwings with three black spots across the wings in upper, medial and inner area; a large black spot in upper area; large well separated black rounded spots outlined with brilliant silvery scales, covered with orange above. Female brownish; borders brownish. Underside markings more distinct but otherwise as in male.

Remarks : The species is very common in its range and is generally fond of settling on flowers and damp ground.

Distribution : From Himachal Pradesh it has been recorded from Chamba, Kangra, Shimla and Solan districts.

Elsewhere : The species is found throughout India, Myanmar and Sri Lanka and ascends to about 8000' in Himalayas.

95. THE PLAINS CUPID

Euchrysops pandava (Horsfield)

(Fig. 176 UN)

1829. *Lycaena pandava* Horsfield, *Cat. Lep. E.I.C.* : 84.



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Wing expanse : 25-35 mm.

Diagnosis : Head with the antennae brownish, with the tip and rings white; thorax and abdomen dark brownish above, greyish beneath.

Male : Upperside : Both wings lavender-blue with the veins often darker; outer borders dark and broader. Hindwings with

the upper margin fuscous; often with a row of small marginal spots, between which and narrow black margin is a slightly undulating white line; tails blackish with the tip whitish. Underside : Both wings pale greyish brown; forewings with the greyish white linear markings between which the colour is darker: two at end of cell; two beyond the cell, the latter from below upper margin and ending at the inner margin; markings before outer margin broad and the marginal markings narrow. Hindwings with the subbasal spots and other markings as on forewings, those before outer margin and at the marginal area coalescing posteriorly, enclosing a series of dark marginal spots; two spots at the inner area, with orange scaling above, of which the upper one is the largest.

Female with the underside both wings yellowish-grey, irrorated with brown. Hindwings with the inner area spots prominent as in male.

There is marked seasonal variation. Dry-season form : Male : Upperside both wings violet blue. Forewings with the outer margin narrowly black. Hindwings with a marginal series of dusky oval spots, the third from anal angle being the largest, black and rounded; tail dusky, with white tip. Underside both wings greyish. Forewings with a white bordered brownish spot at the end of cell; a curved series of joined spots and a marginal lunulated series of spots. Hindwings with four subbasal dusky spots, surrounded by white, band brownish, of separated spots or conjoined into a wider band. Female with both wings shining iridescent violet-blue. Forewing apex widely and the outer margin narrowly black. Hindwings with the upper margin dusky.

Remarks : The species does not visit flowers but is very fond of settling on damp ground, particularly the males. The larvae are always attended by ants. The species shows considerable variation in markings and the spots may be reduced or absent, particularly in dry season form.

Distribution : From Himachal Pradesh it has been reported from Kangra and Shimla districts and ascends to about 6500' in Himalayas.

Elsewhere : It occurs throughout India, Myanmar and Sri Lanka.

96. THE FORGET - ME - NOT
Catochrysops strabo (Fabr.)

(Fig. 177 UN)

1793. *Hesperia strabo* Fabricius, *Ent. Syst.*, 3(1) : 287.

Wing expanse : 25-30 mm.

Diagnosis Head, thorax and abdomen violet blue above, paler beneath; antennae with white rings.



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Male : Upperside : Both wings pale violet blue, irrorated with dusky grey scales; marginal black line thin. Hindwings with an ocellated spot of deep blue colour, surrounded anteriorly with a pale black lunules; tail delicate and black, the tip white. Underside both wings pale whitish-grey; marked with paired undulated band of brilliant white. Forewings with a bar at end of cell; band beyond the cell broken into two parts, the lower part inflected inwards; border thin or narrow. Hindwings with two black spots in upper marginal area; with markings at the end and beyond the cell; inner area with four ocellated spots, of which the last one is the largest, nearly rounded, of deep black colour and with orange above, the remaining narrow and small or sometimes obscure.

Female : Upperside both wings with broader brown border; the blue being brighter than in male, irrorated with silver gloss in forewing and basal area in hindwings; with a series of marginal ocellated spots on underside, which are

increasing in intensity of black towards anal angle where the spot is large, black and surrounded anteriorly by a rufous crescent; a series of lunular white marks along inner border of marginal eye spots.

Remarks : The species is very common and does not settle on damp patches unlike *E. cnejus* and *E. pandava* and is a fast flier.

Distribution : From Himachal Pradesh, it has been recorded from Kangra and Shimla districts.

Elsewhere : The species occurs throughout India, Myanmar and Sri Lanka, ascending to about 10000' in Himalayas.

97. THE COMMON SILVERLINE

Spindasis vulcanus (Fabr.)

(Fig. 178 UP, 179 UN)

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

Wing expanse : 26-34 mm.

Diagnosis : Head, thorax and abdomen fuscous brown above, whitish beneath; antennae with white rings and the tip fuscous.

Male and Female : Upperside : Both wings fuscous brown to dark brown, with fuscous bands, glossed with brilliant deep blue in male. Hindwings dark fuscous brown, with a fulvous patch in anal area, marked with two black eye spots, the inner bordering on a silver lunule. Underside both wings paler, but



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with darker, silvery-centered broad black-edged red bands, sometimes reduced to mere silver streaks in dry-season forms. Forewings with six such bands, of which the 3rd from base appears to be bifid anteriorly and 4th halved; outer complete. Hindwings with six bands, of which 2nd and 3rd from base suddenly inflected in anal area; 4th joined posteriorly with 5th, the last marginal band interrupted; anal area patch fulvous, bearing two black eye spots.

Remarks : The species is very common throughout India, except the dry arid regions of desert and Assam.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Shimla and Solan districts.

Elsewhere : The species occurs in India, Sri Lanka and Tavoy and ascends to about 8000' in Himalayas.

98. THE SLATE FLASH

Rapala manea schistacea (Moore)

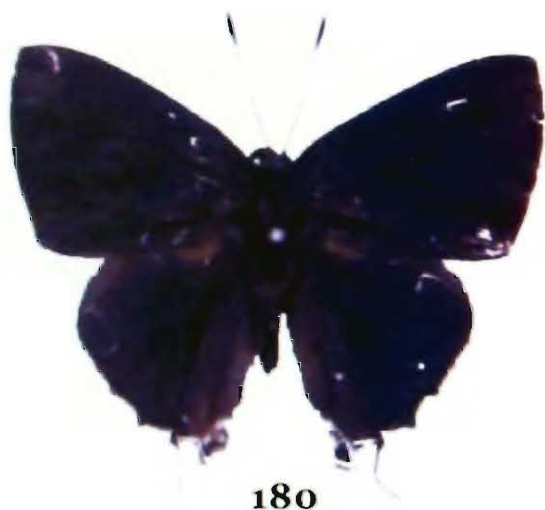
(Figs. 180 UP, 181 UN)

1879. *Deudorix schistacea* Moore, *Proc. zool. Soc. Lond.*, : 140.

Wing expanse : 30-33 mm.

Diagnosis : Head, thorax and abdomen slaty blue above, paler beneath; antennae with white rings.

Male : Upperside both wings dark slaty blue, shot with brilliant blue in lower medial area of forewings and medial area of hindwings. Hindwings with the inner margin pale



fuscous; anal lobe black, bearing inwardly a patch of dull ochreous scales, with a patch of long white hair above the lobe. Underside both wings buff grey, crossed by a narrow medial band of two white lunular lines filled in with dark brown and a cell streak; markings before outer margin indistinct. Hindwing with black anal spots, one bordered above with white and another bordered with ochreous, the area in between irrorated with greenish metallic scales and a narrow band above the lobe. Female : Upperside both wings purplish blue; borders purplish brown.

Remarks : The species is common and is fond of visiting flowers and damp patches.

Distribution : From Himachal Pradesh, it has been recorded from Shimla district only.

Elsewhere : It occurs throughout India, Myanmar and Sri Lanka, and ascends to lower outer ranges of Himalayas.

HESPERIIDAE

Commonly known as “SKIPPERS”, the butterflies are smaller in size, nearly always dark brown to black, spotted or banded with white or yellow, the markings often semi-transparent, but other colours like yellow/orange and metallic green are also met-with.

Morphologically, all the legs are perfect (unlike non-functional in several butterflies); antennae are placed wide apart (unlike placed together at bases in other butterflies) and their tips which are thickly clubbed, tapering to a point, or with curved hook (unlike knobbed in other butterflies). Besides, the head is wider and the eyes large and prominent.

Being strong and robust, the skippers are generally very fast fliers (with some exceptions) and fond of basking in sunshine. Several species visit damp ground, flowers, cowdung, or even birds' droppings.

Nearly 300 species are known to occur in Indian region, of which only 63 are recorded from western Himalayas. But only 30 have been recorded from Himachal Pradesh. The present account deals with nine species, mainly from Chamba, Kangra, Kinnaur, Kullu, Shimla, Sirmour and Solan districts.

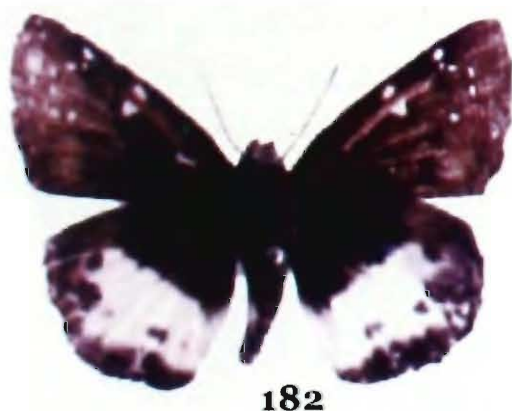
99. THE SPOTTED SNOW FLAT

Tagiades menaka (Moore)

(Figs. 182 UP, 183 UN)

1865. *Pterygospidea menaka* Moore, *Proc. zool. Soc. Lond.*, : 778.

Wing expanse : 43-55 mm.



182



183

Diagnosis : Head, thorax and anterior part of abdomen dark brown to black above, paler beneath, the posterior part of abdomen greyish-white above and beneath.

Male and female : Forewings with a semi-transparent spot at end of cell and a smaller one above it in upper marginal area; a series of smaller spots beyond the cell. Hindwings dark brown to black at base and along the area below upper margin, with some black small spots on it; outer two-thirds with pure white patch; margin black. Underside both wings paler; the marking as on upperside except for some additional black spots on medial patch on hindwings.

Remarks : The species is not rare in nature, visiting flowers and often settling on birds' droppings.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra and Shimla districts, ascending to about 6500' in Himalayas.

Elsewhere: The species ranges from Kashmir to Assam and Myanmar.

100. THE FULVOUS PIED FLAT

Coladenia dan (Fabr.)

(Fig. 184 UN)

1787. *Hesperia dan* Fabr., *Mant. Ins.*, 2 : 88.

Wing expanse : 40-46 mm.

Diagnosis : Male and female upperside dark golden brown. Forewing with large spots in cell and below it; spots semi-transparent, white in female, yellow in male, those in area above, below and beyond the cell smaller.

Hindwing with the spots dark and different. Underside forewing spots prominent and well defined; hindwing markings as on upperside.

Remarks : The species is common throughout damper



hilly, jungle regions, coming out more often into open area to bask in sunshine.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kullu and Solan districts.

Elsewhere : It occurs from Kullu to Assam and Southern India and Myanmar. It ascends to about 7000' in Himalayas.

101. THE GOLDEN ANGLE

Caprona ransonnetti (Felder)

(Fig. 185 UP)

1868. *Pterygaspidea ransonnetti* Felder, *Verh. zool. bot. Ges. Wien.*, : 284.

Wing expanse : 35-45 mm.

Diagnosis : Male and female : Upperside : Forewings dark brown with central and marginal yellow-brown areas in wet-season form, but much paler in dry-season form, with all the yellow-brown markings much more extensive; small semi-transparent white spots also present.



Hindwings dark brown, with the central yellow-brown area divided by dark veins.

Remarks : The species is mainly confined to jungle areas, visiting flowers and damp patches, or often settling on the top of leaves and enjoying sun-shine.

Distribution : From Himachal Pradesh, there seems to be, hitherto, no definite record of the species. Since this has

been recorded from Kalka (Haryana), (vide Wynter Blyth, 1957), which is a border town to district Solan, Himachal Pradesh, it is presumed that the species should definitely be occurring in this district of the state.

Elsewhere : The species occurs in peninsular India to Madhya Pradesh, Haryana (Kalka) and Assam, Myanmar and Sri Lanka.

102. THE COMMON SMALL FLAT

Sarangesa dasahara (Moore)

(Fig. 186 UP)

1865. *Nisoniades dasahara* Moore, *Proc. zool. Soc. Lond.*, : 787.

Wing expanse : 30-35 mm.

Diagnosis : Head, thorax and abdomen dark brown to blackish above, paler beneath; antennae with white rings.



186

Male and female upperside dark brown to blackish. Forewings : Upperside : Spots minute, sometimes obsolete.

Hindwing spots diffused. Underside greyish brown, with large diffused spots.

Remarks : The species is very common in nature at lower elevations and visits flowers.

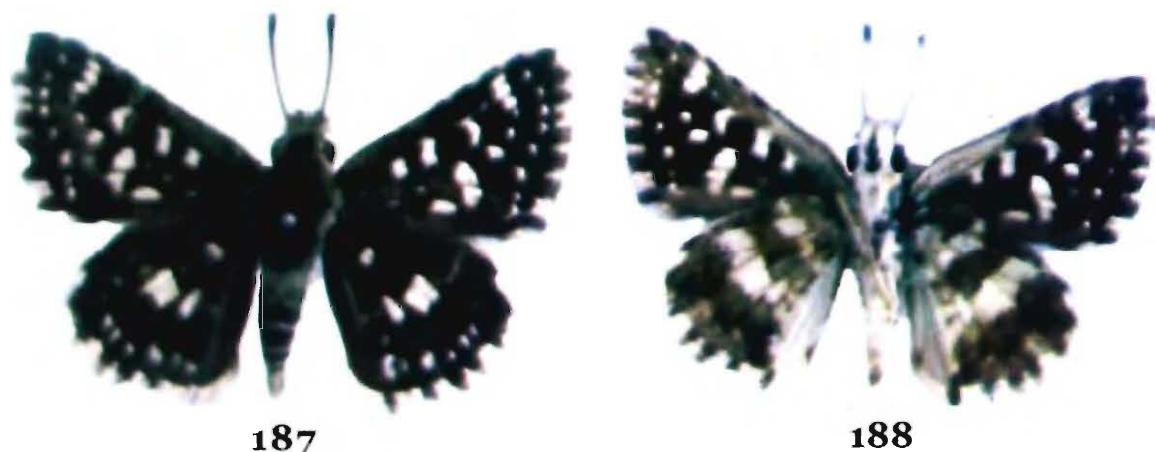
Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra and Shimla districts.

Elsewhere : It occurs from Himachal Pradesh to Assam, southern India to Maharashtra, Madhya Pradesh and Uttar Pradesh. Also Myanmar and Sri Lanka.

103. THE INDIAN SKIPPER

Spialia galba (Fabr)

(Fig 187 UP, 188 UN)

1793. *Hesperia galba* Fabricius, *Ent. Syst.*, 3 : 352.**Wing expanse** : 24-27 mm.**Diagnosis** : Head, thorax and abdomen olive brown above, whitish beneath. Abdomen with white bands on each joint. Antennae dark above, paler beneath.

Male and female upperside olive brown, paler beneath. Forewings with a narrow black band before middle; semi-transparent white spots in the cell; a curved series of white semi-transparent spots beyond the cell, of which those below the cell are large; those in upper area before apex joined and elongated; in inner area narrow and elongated; series before outer margin of small white spots; marginal series of spots, larger and merging with fringe. Hindwings with a spot in middle of cell; series of white spots beyond end of cell, of which the upper ones are elongated and conjoined; an incomplete series of spots before outer margin, not touching upper as well as the inner margin; marginal spots large and merged with the fringe, running from before apex to anal angle. Underside forewings paler; markings as on upperside; upper marginal area from base to nearly before apex much paler, with some brown streaks on margin. Hindwings with the spots diffused and forming two bands, one across subbasal area and another in medial area, the latter broader and merging into the paler inner margin from base to anal angle.

Remarks : The species is common in its range, fond of sun-shine and flies closer to the ground and settles on flowers.

Distribution : From Himachal Pradesh, it has been recorded from Kangra and Solan districts only.

Elsewhere : The species is common throughout India, N. Maynmar and Sri Lanka and ascends to about 5000' in Himalayas.

104. THE INDIAN PALM BOB

Suastus gremius (Fabr.)

(Figs. 189UP, 190UN)

1793. *Hesperia gremius* Fabr., *Ent. Syst. Suppl.*, : 433.

Wing expanse : 32-42 mm.

Diagnosis : Head, thorax and abdomen greyish to dark brown above, paler beneath.



189



190

Male and female : Upperside : Forewings with semi-transparent cell spots and a medial series of spots, of which the one on inner area is long and narrow; in lower area large and quadrate, and smaller above; no spots in upper middle area. Hindwings unmarked. Underside forewings paler, with the spots distinct; hindwings paler, overlaid with greyish scales, bearing a variable number of sharply defined black spots.

Remarks : The species is very common throughout India where its food plant, Palm, is grown and is a fast flier. It often settles on damp ground and birds' droppings or leaves or simply basks in sunshine which the species loves.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra and Shimla districts.

Elsewhere : It occurs throughout India, Myanmar and Sri Lanka.

105. THE SMALL BRANDED SWIFT

Pelopidas mathias (Fabr.)

(Figs. 191UP, 192UN)

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

Wing expanse : 32-38 mm.

Diagnosis : Head, thorax and abdomen dark brown above, paler beneath. Antennae about half the length of upper margin, reaching cell spots.



191



192

Male and female : Upperside both wings dark brown. Forewing with two prominent elongated cell spots; male with a sex brand and without any spot below the cell; female without sex brand and with a spot in inner area and a smaller spot above it; both sexes with a medial series of semi-transparent white spots. Hindwings usually unspotted or with smaller spots beyond the middle. Underside nearly as on upperside or with small spots on hindwings.

Remarks : The species is very common in its range at low elevations and is fond of settling on flowers or the ground for basking in sunshine.

Distribution : From Himachal Pradesh it has been recorded from Kangra and Solan districts.

Elsewhere : It occurs throughout India, Myanmar and Sri Lanka.

106. THE RICE SWIFT

Borbo cinnara (Moore)

(Figs. 193 UP, 194 UN)

1866. *Hesperia cinnara* Moore, *Proc. zool. Soc. Lond.*, : 361.**Wing expanse** : 30-36 mm.

193



194

Diagnosis : Head, thorax and abdomen dark brown above, paler beneath; antennae very short, less than half of upper margin.

Male and female : Upperside : Forewings dark brown; spots in inner area prominent; cell without or with two smaller white spots; spot in the lower area is the largest and placed equidistant with the two spots above it. Hindwings without or with small white dots. Underside as on upperside; hindwing spots prominent than on upperside.

Remarks : The species is very common in the nature and visits flowers.

Distribution : From Himachal Pradesh, it has been recorded from Chamba and Shimla districts.

Elsewhere : It occurs throughout India, Myanmar and Sri Lanka and may ascend to about 4000' in Himalayas.

107. THE GRASS DEMON

Udaspes folus (Cramer)

(Figs. 195 UP, 196 UN)

1779. *Papilio folus* Cramer, *Pap. Exot.*, 1 : pl, 74, Fig. F.

Wing expanse : 40-48 mm.

Diagnosis : Head, thorax and abdomen dark brown to black above, paler beneath.

Male and female : Upperside : Forewings with large semi-transparent spots; with a spot across cell and an irregularly placed medial spots from lower area to about upper margin, of which the first two are the largest and joined; 3rd separate; 4th-5th are joined and quadrate; 6th to 8th joined and elongated; and the last small and rounded. Hindwings with a large white medial patch. Underside paler; forewings more or less marked as on upper side; hindwings with the medial patch extending anteriorly to basal area through the cell and onto the inner area and irrorated with greyish scales. A small black spot on the darker upper marginal area.



195



196

Remarks : The species is quite common in open areas of jungle as well as in plains and more abundant in neighbourhood of water where it settles on stones. The species also visits flowers. It has been reported to be a pest on ginger and turmeric.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Shimla and Solan districts.

Elsewhere : It occurs throughout India, Myanmar and Sri Lanka. It ascends to about 5000' in Himalayas.

REFERENCES

- Bingham, C.T. 1905. *The Fauna of British India including Ceylon and Burma* (Butterflies), **1** : xviii+537 pp. (Taylor & Francis Ltd. London; 1907, **2** : viii+480 pp. (Taylor & Francis, London).
- Cantlie, K. 1962. The Lycaenidae Portion (except the Arhopala Group) of Brigadier Evans 'The Identification of Indian Butterflies', 1932 : vi+156+12, 5 pls. (Bombay Natural History Society, Bombay).
- Corbet, A.S. and Pendlebury, H.M. 1956. *The Butterflies of the Malay Peninsula*, x+537 pp (Oliver & Boyd, Edinburgh, London).
- D'Abrera, B. 1982-1985. *Butterflies of the Oriental Region*, **3** vols (Hill House, Melbourne).
- Evans, W.H. 1932. *The Identification of Indian Butterflies* (2nd ed.), 454 pp., 32 pls. (Bombay Natural History Society, Bombay).
- Evans, W.H. 1949. *A Catalogue of the Hesperiidæ from Europe, Asia and Australia in the British Museum*, xix+502 pp., 53 pts. (Trustees of B.M., London).
- Hemming, F. 1967. The Generic Names of the Butterflies and their type species (Lepidoptera : Rhopalocera). *Bull. Br. Mus. nat. Hist. (Ent.) Suppl.*, **9** : 509pp. (Trustee of the British Museum).
- Heppner, J.B. and Inoue, H. 1992. *Lepidoptera of Taiwan*, **1** (2) : xlix+276 pp. (Scientific Publishers, Gainesville for Association for Tropical Lepidoptera, Gainesville).
- Horsfield, T. and Moore, F. 1858-60. *A catalogue of the lepidopterous insects in the Museum of the Hon. East India Company*, 2 Volumes, London.
- Hugel, C.P. von. 1848. *Kaschmir und das Reich der Siek. Stuttgart.*, vols. 4.

- Kumar, Arun and Juneja, D.P. 1977. Some distributional records of butterflies (Lepidoptera : Rhopalocera) from Himachal Pradesh (Western Himalayas). *Newsl. zool. Surv. India*, **3**(6) : 410-415.
- Mani, M.S. and Singh, S. 1962. Entomological surveys of Himalayas. xxvi. *J. Bombay nat. Hist. Soc.*, **59**(1) : 77-99.
- Mani, M.S. 1986. *Butterflies of Himalaya*, (Oxford & IBH Publishing Company, New Delhi).
- Marshall, G.F.L. and de Niceville, L. 1883. *The Butterflies of India, Burma and Ceylon*, **1** : 1-321, 17 pls.; 1886, **2** : 1-332, pls. 18-24; 1890, **3** : 1-503, pls. 25-29. (Taylor & Francis, London).
- Moore, F. 1865. On the lepidopterous insects of Bengal. *Proc. zool. Soc. Lond.*, : 755-822.
- Moore, F. 1880. *Lepidoptera of Ceylon*, **1** : 1-190, 1-71 pts.; 1881, **2** : 1-162 pls., 72-143.
- Moore, F. 1882. List of the Lepidoptera collected by the Rev. J.H. Hocking chiefly in the Kangra district, N.W Himalayas with description of new genera and species. I. *Proc. zool. Soc. Lond.*, : 234-263, pl. xi-xii.
- Moore, F. 1890-1907. *Lepidoptera Indica*, Part-I : 1-317; II : 1-274; III : 1-254; IV : 1-260; V : 1-241 ;VI : 10240.
- Peile, H.D. 1937. *A Guide to Collecting Butterflies of India*. xiii+312 pp., 24 pls. (John Bale Sons & Danielsson Ltd., London).
- Philippe de Rhe G.W.V 1931. The butterflies of the Shimla Hills. *J. Bombay nat. Hist. Soc.*, **35** : 172-184, 415-429, 629-634.
- Shields, O. 1984. Oriental Lycaenidae, Riodinidae and Hesperidae from the Central Nepal Himalayas. *J. Bombay nat. Hist. Soc.*, **81**(3) : 546-550.
- Smith, C. 1989. *Butterflies of Nepal*, 352 pp. (Tecpress Service L.P. Bangkok).

- Talbot, G. 1939. *The Fauna of British India, Butterflies, 1* : XXIX+600 pp., 3 pls. (Taylor & Francis Ltd., London).
- Talbot, G. 1947. *The Fauna of British India, Butterflies, 2* : XV+506 pp., 2 pls. (Taylor & Francis Ltd., London).
- Varshney, R.K. 1993. *Index Rhopalocera Indica* III. Genera of butterflies from India and neighbouring countries (Lepidoptera : (A) Papilionidae, Pieridae and Danaidae). *Oriental Insect*, **27** : 347-372
- Varshney, R.K. 1994. *Index Rhopalocera Indica* III. Genera of butterflies from India and neighbouring countries (Lepidoptera : (B) Satyridae, Nymphalidae, Libythidae and Riodinidae). *Oriental Insect*, **28** : 151-198.
- Varshney, R.K. 1997. *Index Rhopalocera Indica* III. Genera of butterflies from India and neighbouring countries (Lepidoptera : (C) Lycaenidae). *Oriental Insect*, **31** : 83-138.
- Wallace, A.R. and Moore, F. 1866. *List of lepidopterous insects collected at Tokow, Formosa* by Mr. Robert Swinhoe. *Proc. zool. Soc. Lond.*, : 355-365.
- Wynter-Blyth, M.A. 1940-1946. A list of the butterflies of the Shimla hills. *J. Bombay nat. Hist. Soc.*, **41** : 716-741; 1945, **45** : 256-257; 1946, **46** : 735-736.
- Wynter-Blyth, M.A. 1957. *Butterflies of the Indian Region*, XX+523 pp., 1-72 plates (Bombay Natural History Society, Bombay).

**Index to Tables showing distribution of Butterflies
in Himachal Pradesh**

Sl. No.	Name of the District
1.	Bilaspur
2.	Chamba
3.	Hamirpur
4.	Kangra
5.	Kinnaur
6.	Kullu
7.	Lahoul & Spiti
8.	Mandi
9.	Shimla
10.	Sirmour
11.	Solan
12.	Una

Table showing the district-wise distribution of Butterflies in Himachal Pradesh (*Marked have been collected)

	1	2	3	4	5	6	7	8	9	10	11	12
I. PAPILIONIDAE												
<i>Pachliopta aristolochiae</i> (Fabr.)*	-	-	-	+	-	-	-	-	-	+	-	-
<i>Atrophaneura philoxenus</i> (Gray)*	-	+	-	+	-	-	-	+	+	-	-	-
<i>A. dasarada ravana</i> (Moore)*	-	-	-	+	-	+	-	-	+	-	-	-
<i>Chilasa agestor govindra</i> (Moore)*	-	-	-	+	-	-	-	-	+	-	-	-
<i>C. clytia clytia</i> (Linn.)*	-	-	-	+	-	-	-	-	+	+	-	-
<i>Papilio protenor protenor</i> Cramer*	-	-	-	+	-	-	-	+	+	+	-	-
<i>P. polyctor polyctor</i> Boisduval*	-	-	-	+	-	+	-	+	+	+	+	-
<i>P. arcturus arius</i> Rothschild	+	-	-	-	-	-	-	-	-	+	-	-
<i>P. polytes romulus</i> Cramer*	-	-	+	+	-	-	-	+	+	+	+	+
<i>P. demoleus demoleus</i> Linn.*	+	-	-	+	-	-	-	+	+	+	+	-
<i>P. machaon asiatica</i> Mene.*	+	-	-	+	-	-	-	+	+	+	+	-
(a) <i>P. machaon ladakensis</i> Moore	-	-	-	-	-	-	+	-	-	-	-	-
(b) <i>P. machaon punjabensis</i> Eimer*	-	-	-	-	+	-	-	-	+	+	-	-
<i>Pathysa nomius nomius</i> (Esper)*	-	-	-	-	-	-	-	-	+	-	-	-
<i>Graphium cloanthus</i> (Westwood)*	-	-	-	+	-	-	-	-	+	+	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>G. sarpedon luctatus</i> (Fruhstorfer)*	-	-	-	+	-	-	-	+	+	+	-	-
<i>Pazala eurous cashmirensis</i> (Rothschild)	-	-	-	-	-	-	-	-	+	-	-	-
<i>Parnassius jacquemontii</i> Boisduval	-	-	-	-	-	+	-	-	-	-	-	-
<i>P. epaphus cachemiriensis</i> Oberthur	-	-	-	-	-	-	-	-	-	-	-	-
<i>P. hardwickei hardwickei</i> Gray*	-	-	-	-	-	+	+	-	+	-	-	-
<i>P. stoliczkanus stoliczkanus</i> C & R Felder	-	-	-	-	-	+	+	-	-	-	-	-
<i>P. delphius ladakensis</i> Avinoff	-	-	-	-	-	-	+	-	-	-	-	-
<i>P. delphius mamaievi</i> O. Bang-Haas	-	-	-	-	-	-	+	-	-	-	-	-
<i>P. delphius rupshuana</i> Avinoff	-	-	-	-	-	-	+	-	-	-	-	-
<i>P. simo simoides</i> O. Bang-Haas	-	-	-	-	+	-	-	-	-	-	-	-
<i>P. charltonius</i> Gray	-	-	-	-	+	-	-	-	-	-	-	-
II. PIERIDAE												
<i>Leptosia nina</i> (Fabr.)*	-	-	-	+	-	-	-	-	-	-	-	-
<i>Baltia butleri butleri</i> (Moore)	-	-	-	-	+	-	+	-	-	-	-	-
<i>Metaporia leucodice soracta</i> (Moore)*	-	+	-	+	-	-	-	-	+	-	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>M. agathon phryxe</i> (Boisduval)*	-	+	-	+	-	-	-	-	+	-	-	+
<i>M. a. caphusa</i> (Moore)*	-	+	-	+	-	-	-	-	+	-	-	+
<i>Aporia nabellica</i> (Boisduval)	-	+	-	+	+	-	-	-	+	-	-	-
<i>Delias sanaca sanaca</i> (Moore)	-	-	-	+	-	+	-	-	+	-	-	-
<i>D. belladonna horsfieldi</i> (Gray)*	-	-	-	-	-	+	-	-	+	+	+	-
<i>D. eucharis</i> (Drury)*	-	-	-	+	-	-	-	+	+	+	+	-
<i>Cepora nerissa phryne</i> (Fabr.)*	-	-	-	+	-	-	-	-	+	+	+	-
<i>Anaphaeis aurota aurota</i> (Fabr.)*	+	-	-	+	-	-	-	-	+	-	-	-
<i>Appias lalage</i> Doubleday	-	-	-	-	-	-	-	-	+	-	-	-
<i>A. libythea</i> Fabr.	-	-	-	-	-	-	-	-	+	-	-	-
<i>Synchloe callidice kalora</i> (Moore)	-	-	-	-	+	-	+	-	-	-	-	-
<i>Pieris napi ajaka</i> Moore	+	-	-	-	+	-	-	-	+	-	-	-
<i>P. canidia indica</i> Evans*	+	+	+	+	-	-	-	-	+	+	+	+
<i>P. brassicae nepalensis</i> Doubleday*	+	-	+	+	+	+	-	-	+	+	+	+
<i>Pontia daplidice moorei</i> (Rober)	+	-	-	-	-	-	+	-	-	+	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>Ixias marianne</i> (Cramer)*	+	-	-	+	-	-	-	-	+	+	-	-
<i>I. pyrene kausala</i> Moore*	-	-	-	+	+	-	-	-	+	+	+	-
<i>Colotis etrida etrida</i> (Boisduval)	-	-	-	-	-	-	-	-	+	-	-	-
<i>Pareronia valeria anais</i> (Lesson)*	-	-	-	-	-	-	-	-	-	+	+	-
<i>Catopsilia crocale</i> (Cramer)*	+	-	-	+	-	+	-	+	+	+	+	-
<i>C. pyranthe</i> (Linn.)*	+	-	+	+	-	+	-	-	+	+	-	-
<i>Gonepteryx rhamni nepalensis</i> Doubleday*	-	-	-	+	-	-	-	+	+	+	+	-
<i>G. mahaguru</i> Gistel	-	+	-	-	-	-	-	-	+	-	-	-
<i>Eurema brigitta rubella</i> (Wallace)*	-	-	+	+	-	-	-	-	+	+	+	-
<i>E. laeta laeta</i> (Boisduval)*	-	-	-	+	-	-	-	+	+	+	+	-
<i>E. hecabe fimbriata</i> (Wallace)*	-	+	+	+	-	-	-	+	+	+	+	-
<i>Colias electo fieldi</i> Menetries*	-	+	-	+	-	-	-	+	+	-	-	+
<i>C. erate erate</i> (Esper)	+	+	-	+	+	+	+	+	+	+	+	-
<i>C. ladakensis</i> C & R Felder	-	-	-	+	+	-	-	-	-	-	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>C. eogene eogene</i> (C & R Felder)	-	-	-	-	-	-	+	-	-	-	-	-
III. DANAIDAE												
<i>Danaus chrysippus</i> (L.)*	-	-	+	+	-	+	-	+	+	+	+	-
<i>D. genutia</i> (Cramer)*	-	-	-	+	-	-	-	+	+	+	+	-
<i>Tirumala limniace leopardus</i> (Butler)*	+	-	-	+	-	-	-	-	+	+	+	-
<i>T hamata septentrionis</i> (Butler)*	-	-	-	+	-	+	-	-	+	+	+	-
<i>Parantica aglea melanoides</i> Moore*	-	-	-	+	-	+	-	+	+	+	+	-
<i>P. sita sita</i> (Kollar)*	-	+	-	+	-	-	-	+	+	-	+	-
<i>Euploea core core</i> (Cramer)*	-	-	-	+	-	-	-	+	+	+	+	-
<i>E. mulciber mulciber</i> (Cramer)*	-	-	-	-	-	-	+	-	+	-	-	-
IV. SATYRIDAE												
<i>Mycalesis francisca sanatana</i> Moore	-	-	-	-	-	+	-	-	-	-	-	-
<i>M. perseus blasius</i> (Fabr.)*	-	+	-	+	-	-	-	-	-	-	-	-
<i>M. mineus mineus</i> (Linn.)*	-	-	-	+	-	+	-	-	+	+	-	-
<i>M. lepcha lepcha</i> (Moore)	-	-	-	-	-	+	-	-	+	-	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>Maniola pulchella</i> (C &R Felder)	-	-	-	-	-	-	+	-	-	-	-	-
<i>M. pulchra pulchra</i> (C &R Felder)	-	-	-	-	+	+	+	-	-	-	-	-
<i>M. davendra davendra</i> (Moore)	-	-	-	-	+	-	+	-	-	-	-	-
<i>M. lupinus cheena</i> Moore	-	-	-	-	-	+	-	-	-	-	-	-
<i>Hipparchia parisatis shiva</i> (Lecerf)	-	-	-	+	-	-	-	-	+	+	-	-
<i>H. huebneri huebneri</i> (C &R Felder)	-	+	-	+	-	+	-	-	-	-	-	-
<i>Aulocera brahminus brahminus</i> (Blanchard)*	-	-	-	-	+	+	+	-	+	-	-	-
<i>A. padma padma</i> (Kollar)*	-	-	-	+	-	+	-	-	+	-	-	-
<i>A. swaha swaha</i> (Kollar)*	-	-	-	+	+	+	+	-	+	+	+	-
<i>A. saraswati</i> (Kollar)*	-	+	-	+	-	+	-	-	+	-	-	-
<i>Callerebia kalinda kalinda</i> Moore	-	-	-	-	+	-	-	-	+	-	-	-
<i>C. shallada shallada</i> deN.	-	-	-	+	-	+	+	-	+	-	-	-
<i>C. nirmala nirmala</i> (Moore)	-	+	-	+	-	-	-	-	+	-	-	-
<i>C. scanda scanda</i> (Kollar)*	-	-	-	+	+	-	-	-	+	+	+	-
<i>C. hybrida</i> Butler	-	-	-	+	-	-	-	-	+	-	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>C. annada caeca</i> (Watkin)	-	-	-	+	-	-	-	-	+	-	-	-
<i>Dallacha hyagriva</i> (Moore)*	-	-	-	-	-	+	-	-	+	-	-	-
<i>Ypthima nareda nareda</i> (Kollar)	-	-	-	+	-	+	-	-	+	+	-	-
<i>Y. asterope mahratta</i> Moore	-	+	-	-	-	-	-	-	-	-	-	-
<i>Y. ceylonica kasmira</i> Moore	-	+	-	-	-	-	-	-	-	-	-	-
<i>Y. lisandra avanta</i> Moore	-	-	-	+	-	+	-	-	-	-	-	-
<i>Y. indecora</i> Moore	-	-	-	+	-	-	-	-	-	-	-	-
<i>Y. baldus baldus</i> (Fabr.)	-	+	-	+	-	-	-	-	-	-	-	-
<i>Y. sakra nikaea</i> Moore*	-	+	-	+	-	-	-	-	+	-	-	-
<i>Melanitis leda ismene</i> (Cramer)*	-	-	-	+	-	-	-	-	+	-	+	-
<i>M. phedima galkissa</i> Fruhstorfer	-	-	-	+	-	-	-	+	+	-	-	-
<i>M. zitenius zitenius</i> Herbst	-	-	-	-	-	-	-	-	+	-	-	-
V. NYMPHALIDAE												
<i>Charaxes fabius</i> (Fabr.)	-	+	-	-	-	-	-	+	+	-	-	-
<i>Polyura athamas</i> Drury	-	+	-	+	-	+	-	+	+	+	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>P. dolon</i> (Westwood)	-	-	-	-	-	+	-	-	+	-	-	-
<i>Dilipa morgiana</i> (Westwood)	-	-	-	+	-	-	-	-	+	-	-	-
<i>Apatura ambica</i> Kollar	-	-	-	-	-	-	-	-	+	-	-	-
<i>Sephisia dichroa</i> (Kollar)*	-	+	-	+	-	+	-	-	+	-	-	-
<i>Diagora persimilis</i> (Westwood)*	-	-	-	+	-	-	-	-	+	-	+	-
<i>D. nicevillei</i> Moore	-	+	-	-	-	-	-	-	-	-	-	-
<i>Hestina nama</i> (Doubleday)	-	-	-	-	-	-	-	-	+	-	-	-
<i>Calinaga buddha</i> Moore	-	-	-	-	-	+	-	-	-	-	-	-
<i>Dicharragia nesimachus</i> Boisduval	-	-	-	-	-	+	-	-	+	-	-	-
<i>Stibochiona nicea</i> (Gray)*	-	-	-	+	-	+	-	-	+	-	-	-
<i>Euthalia garuda</i> (Moore)	-	-	-	+	-	-	-	-	+	-	-	-
<i>E. lubentina</i> (Cramer)	-	-	-	+	-	-	-	-	+	-	-	-
<i>Bassarona patala</i> (Kollar)	-	-	-	+	-	-	-	-	+	-	-	-
<i>Auzakia danava</i> (Moore)*	-	-	-	-	-	-	-	-	+	-	-	-
<i>Limenitis trivena</i> Moore	-	+	-	+	-	+	+	-	+	-	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>Athyma selenophora</i> (Kollar)	-	-	-	-	-	-	-	-	+	-	-	-
<i>A. opalina</i> (Kollar)*	-	+	-	+	+	-	-	-	+	+	+	-
<i>A. perius</i> (Linn.)	-	-	-	-	-	-	-	+	+	-	-	-
<i>Neptis mahendra</i> Moore*	-	+	-	+	-	+	-	-	+	+	+	-
<i>N. hylas astola</i> Moore*	-	+	-	+	+	+	-	-	+	+	+	-
<i>N. yerburyi</i> Butler	-	-	-	-	-	-	-	-	+	-	+	-
<i>N. sankara</i> Kollar	-	-	-	-	-	-	-	-	+	-	-	-
<i>N. ananta</i> Moore	-	+	-	-	-	+	-	-	+	-	+	-
<i>N. narayana</i> Moore	-	-	-	-	-	+	-	-	+	-	-	-
<i>Cyrestis thyodamas</i> Boisd.*	-	-	-	+	-	-	-	+	+	+	-	+
<i>Pseudergolis wedah</i> (Kollar)	-	-	-	+	-	+	-	-	+	-	-	-
<i>Hypolimnas bolina</i> (Linn.)*	-	+	-	+	-	-	-	+	+	+	-	-
<i>H. misippus</i> (Linn.)*	-	-	-	+	-	-	-	-	+	-	-	-
<i>Kallima inachus</i> (Boisduval)*	-	-	-	+	-	-	-	+	+	+	-	-
<i>Junonia. hierta</i> (Fabr.)*	-	-	-	+	-	+	-	+	+	+	+	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>J. orithya</i> (Linn.)*	+	-	+	+	+	-	-	-	+	+	+	-
<i>J. lemonias persicaria</i> (Fruhstorfer)*	-	+	+	+	-	-	-	-	-	+	+	-
<i>J. almana</i> (Linn.)*	+	-	-	+	-	-	-	-	+	+	+	-
<i>J. atlites</i> (Linn.)*	-	-	-	+	-	-	-	-	-	+	+	-
<i>J. iphita siccata</i> (Stichel)*	-	+	-	+	-	-	-	+	+	+	+	-
<i>Cynthia cardui</i> (Linn.)*	-	-	-	+	+	-	-	-	+	-	+	+
<i>Vanessa indica</i> (Herbst)*	-	+	-	+	-	-	-	+	+	-	+	+
<i>V.egea cognata</i> Moore	-	-	-	-	+	+	-	-	+	-	-	-
<i>Kaniska canace</i> (Linn.)*	-	-	-	-	-	-	-	-	+	-	+	-
<i>Aglais cashmiriensis</i> Kollar*	-	+	-	+	-	-	-	-	+	+	+	-
<i>A. urticae</i> (Linn.)	-	-	-	-	+	-	-	-	-	-	-	-
<i>A. ladakensis</i> Moore	-	-	-	-	+	-	-	-	-	-	-	-
<i>Nymphalis xanthomelas</i> (Denis & Schiffer.)	-	-	-	+	-	-	-	-	+	-	-	-
<i>Symbrenthia hippoclus</i> (Cramer)	-	-	-	+	-	+	-	-	+	+	+	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>S. niphanda</i> Moore	-	-	-	+	-	-	-	-	-	-	-	-
<i>Spottea hypselis</i> (Godart)	-	-	-	-	-	-	-	-	+	-	-	-
<i>Argyreus hyperbius</i> (Johan.)*	-	-	+	-	-	-	-	-	+	-	+	-
<i>Childrena childreni</i> Gray*	-	+	-	+	-	+	-	-	+	-	+	-
<i>Fabriciana kamala</i> (Moore)*	-	-	-	-	-	-	-	-	+	-	-	-
<i>Issoria lathonia</i> (Linn.)*	-	-	-	-	-	-	-	-	+	+	+	-
<i>Melitaea arcesia</i> Bremer	-	-	-	-	-	+	-	-	+	-	-	-
<i>Phalanta phalantha</i> (Drury)*	+	+	-	+	-	-	-	-	+	+	+	+
<i>Ariadne merione</i> (Cramer)*	-	-	-	+	-	-	-	-	+	+	-	-
VI. ACRAEIDAE												
<i>Acraea issoria anomala</i> Collar*	-	-	-	+	-	+	-	-	+	+	+	-
<i>Acraea violae</i> (Fabr.)	-	-	-	-	-	-	-	-	+	-	-	-
VII. ERYCINIDAE												
<i>Libythea myrrha</i> Godart*	-	-	-	+	-	+	-	-	+	+	-	-
<i>L. lepita</i> Moore*	-	-	-	-	-	-	-	-	+	-	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>Dodona dipoea</i> Hewitson	-	-	-	+	-	-	-	-	+	-	+	-
<i>D. durga</i> (Kollar)*	-	+	-	-	-	-	-	-	+	-	-	-
<i>D. eugenes</i> Bates	-	-	-	+	-	-	-	-	+	-	-	-
<i>Abisara echerius</i> (Stoll.)	-	+	-	-	-	-	-	-	-	-	-	-
VIII. LYCAENIDAE												
<i>Castalius rosimon</i> (Fabr.)*	-	-	-	+	-	-	-	-	+	-	+	-
<i>Tarucus venosus</i> Moore	-	-	-	+	-	+	-	-	+	-	-	-
<i>T callinara</i> Butler	-	-	-	-	-	-	-	-	+	-	-	-
<i>T ateratus</i> (now <i>nara</i> Kollar DSF)	-	-	-	+	-	+	-	-	+	-	-	-
<i>T. extricatus</i> (now <i>nara</i> WSF)	-	-	-	+	-	-	-	-	-	-	+	-
<i>T balcanica nigra</i> Beth.- Baker	-	-	-	-	-	-	-	-	+	-	-	-
<i>Leptotes plinius</i> (Fabr.)	-	-	-	+	-	-	-	-	-	-	-	-
<i>Everes hugelii</i> race <i>indica</i> Gistel	-	-	-	-	-	-	-	-	+	-	-	-
<i>E. argiages diporides</i> Chapman	-	-	-	-	-	-	-	-	+	-	-	-
<i>E. hugelii dipora</i> (Moore)	-	-	-	-	-	-	-	-	+	-	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>E. lecturnus syntala</i> Cantlie	-	-	-	-	-	-	-	-	+	-	-	-
<i>Acytolepis puspa gisca</i> Fruhstorfer	-	-	-	-	+	-	-	-	-	+	-	-
<i>Oreolyce vardhana</i> Moore	-	-	-	+	-	-	-	-	+	-	-	-
<i>Udara albocoerulea</i> Moore	-	-	-	+	-	-	-	-	+	-	+	-
<i>U. cardia dilecta</i> Moore	-	-	-	-	-	-	-	-	+	-	-	-
<i>Celastrina huegelli</i> (Moore)	-	+	-	-	-	-	-	-	+	-	+	-
<i>C. ladonidas gigas</i> Hemming	-	-	-	-	-	-	-	-	+	-	-	-
<i>C. argiolus jyntheana</i> deN.	-	-	-	-	-	-	-	-	+	-	-	-
<i>Philotes vicrama</i> Moore	-	-	-	-	+	-	-	-	-	-	-	-
<i>Aricia agestis narira</i> (Moore)	-	-	-	-	-	-	-	-	+	-	-	-
<i>Albulina galathea</i> (Blanch.)	-	-	-	-	-	-	-	-	+	-	-	-
<i>Glaucopsyche aeruginosa</i> Staud.	-	-	-	-	-	-	-	-	-	-	-	-
<i>Polyommatus eros</i> Schmett	-	-	-	-	+	+	+	+	-	-	-	-
<i>Chilades laius</i> (Cramer)	-	-	-	-	-	-	-	-	-	+	+	-
<i>Freyeria trochilus</i> Freyer	-	-	-	-	-	-	-	-	+	-	+	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>Freyeria putli</i> (Kollar)*	-	-	-	+	-	-	-	-	-	-	-	-
<i>Pseudozizeeria maha</i> (Kollar)*	-	+	-	+	-	-	-	-	+	+	+	-
<i>Zizeeria karsandra</i> Moore	-	-	-	-	-	-	-	-	-	-	+	-
<i>Zizula gaika</i> Trimen	-	-	-	+	-	-	-	-	+	-	+	-
<i>Zizula otis</i> (Fabr.)	-	-	-	+	-	-	-	-	+	-	+	-
<i>Euchrysops cnejus</i> (Fabr.)*	-	+	-	+	-	-	-	-	+	-	+	-
<i>E. pandava</i> (Horsfield)*	-	-	-	+	-	-	-	-	+	-	-	-
<i>Catochrysops strabo</i> (Fabr.)*	-	-	-	+	-	-	-	-	+	-	-	-
<i>Lampides boeticus</i> (Linn.)	-	-	-	-	-	-	-	-	+	-	-	-
<i>Jamides bochus</i> Stoll	-	-	-	-	-	-	-	-	+	-	-	-
<i>Prosotis nora</i> Felder	-	-	-	-	-	-	-	-	+	-	-	-
<i>Lycaena pavana</i> (Kollar)	-	+	-	+	-	-	-	-	+	-	-	-
<i>L. phlaeas</i> (Linn.)	-	-	-	+	-	-	-	-	+	-	-	-
<i>L. kasyapa</i> (Moore)	-	-	-	+	+	+	+	-	+	-	-	-
<i>Heliophorus sena</i> Kollar	-	+	-	+	-	-	-	-	+	-	+	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>H. bakeri</i> Evans	-	+	-	-	-	-	-	-	-	-	-	-
<i>H. oda</i> Hewitson	-	+	-	+	-	-	-	-	+	-	-	-
<i>H. androcles</i> Hewitson	-	-	-	-	-	-	-	-	+	-	-	-
<i>Strymon sassanides</i> Kollar	-	-	-	-	-	-	+	-	+	-	-	-
<i>Euaspa milionia</i> (Hewitson)	-	-	-	+	-	-	-	-	+	-	-	-
<i>E. ziha</i> (Hewitson)	-	-	-	-	-	-	-	-	+	-	-	-
<i>Esakiozephyris icana</i> (Moore)	-	-	-	-	-	+	-	-	+	-	-	-
<i>E. bieti</i> Oberthur	-	-	-	-	-	+	-	-	+	-	-	-
<i>Chrysozephyrus ataxus</i> (Doub.)	-	-	-	+	-	-	-	-	+	-	-	-
<i>C. birupa</i> Moore	-	-	-	+	-	-	-	-	+	-	-	-
<i>C. syla</i> (Kollar)	-	-	-	+	-	-	-	-	+	-	-	-
<i>Chaetoprocta odata</i> Hewitson	-	-	-	+	-	-	-	-	+	-	-	-
<i>Curetis acuta dentate</i> Moore	-	-	-	+	-	+	-	+	+	-	+	-
<i>Thecla ziha</i> deN.	-	-	-	-	-	-	-	-	+	-	-	-
<i>Iraota timoleon</i> (Stoll.)	-	+	-	+	-	-	-	-	+	-	+	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>Panchala ganesa</i> (Moore)	-	+	-	+	-	-	-	-	+	-	-	-
<i>P. alemon</i> deN.	-	-	-	-	-	-	-	-	+	-	-	-
<i>Narathura centaurus</i> (Fabr.)												
<i>N. rama</i> (Kollar)	-	-	-	+	-	-	-	-	+	-	-	-
<i>N. dodonea</i> (Moore)	-	-	-	+	-	-	-	-	+	-	-	-
<i>Surendra vivarana</i> Horsfield	-	-	-	-	-	-	-	-	-	-	+	-
<i>Spindasis lilacinus</i> (Moore)	-	-	-	-	-	-	-	-	-	-	+	-
<i>S. vulcanus</i> (Fabr.)*	-	-	-	+	-	-	-	-	+	-	+	-
<i>S. elima</i> (Moore)	-	-	-	+	-	-	-	-	+	-	+	-
<i>S. nipalicus</i> Moore	-	-	-	-	-	+	-	-	+	-	+	-
<i>S. ictis</i> Hewitson	-	-	-	-	-	-	-	+	-	-	-	-
<i>Pratapa ictis</i> (Hewitson)	-	-	-	-	-	-	-	+	-	-	-	-
<i>Creon eleobis</i> (Godart)	-	-	-	-	-	-	-	-	+	-	+	-
<i>Tajuria diaeus</i> (Hewitson)	-	-	-	-	-	-	-	-	+	-	-	-
<i>T. cippus</i> (Fabr.)	-	-	-	-	-	-	-	-	+	-	+	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>Horaga onyx</i> (Moore)	-	-	-	+	-	+	-	-	+	-	-	-
<i>H. viola</i> Moore	-	-	-	+	-	-	-	-	-	-	-	-
<i>Virachola isocrates</i> (Fabr.)	-	-	-	+	-	-	-	-	-	+	-	-
<i>V. perse</i> (Hewitson)	-	-	-	+	-	-	-	-	-	-	+	-
<i>Rapala veruna grisea</i> Moore	-	-	-	+	-	-	-	-	-	-	-	-
<i>R. manea schistacea</i> (Moore)*	-	-	-	-	-	-	-	-	+	-	-	-
<i>R. nissa</i> Kollar	-	-	-	+	-	-	-	+	-	-	-	-
<i>R. selira</i> Moore	-	-	-	+	-	-	-	+	-	-	-	-
<i>R. extensa</i> Evans	-	-	-	-	-	-	+	-	-	-	-	-
<i>R. iarbis sorya</i> (Kollar)	-	-	-	-	-	-	-	-	-	-	+	-
<i>Sinthusia chandrana</i> (Moore)	-	-	-	+	-	-	-	-	-	-	-	-
<i>S. nasaka</i> (Horsfield)	-	-	-	+	-	-	-	-	-	-	-	-
IX. HESPERIIDAE												
<i>Celaenorrhinus leucocera</i> (Kollar)	-	-	-	+	-	-	-	-	+	-	-	-
<i>Tagiades litigiosa</i> Moore	-	-	-	-	-	-	-	-	+	-	-	-

Table contd.

	1	2	3	4	5	6	7	8	9	10	11	12
<i>T. menaka</i> (Moore) *	-	+	-	+	-	-	-	-	+	-	-	-
<i>Coladenia dan</i> (Fabr.)*	-	+	-	-	-	+	-	-	-	-	+	-
<i>Sarangesa purendra</i> (Moore)	-	-	-	+	-	-	-	-	-	-	-	-
<i>S. dasahara</i> (Moore)*	-	+	-	+	-	-	-	-	+	-	-	-
<i>Odontoptilum angulata</i> (Felder)	-	-	-	+	-	-	-	-	+	-	+	-
<i>Spialia galba</i> (Fabr.)*	-	-	-	+	-	-	-	-	-	-	+	-
<i>Ismene aedipodea aegina</i> Plotz	-	-	-	+	-	-	-	-	-	-	+	-
<i>Bibasis jaina</i> Moore	-	-	-	-	-	-	-	-	-	-	+	-
<i>B. sena</i> (Moore)	-	-	-	-	-	-	-	-	+	-	-	-
<i>Choaspes benjaminii</i> (Guerin)	-	-	-	+	-	+	-	-	+	-	+	-
<i>Badamia exclamationis</i> (Fabr.)	-	-	-	+	-	-	-	-	-	-	-	-
<i>Suastus gremius</i> (Fabr.)*	-	+	-	+	-	-	-	-	+	-	-	-
<i>Hesperia alpina</i>	-	-	-	-	+	-	-	-	-	-	-	-
<i>Taractrocera danna</i> (Moore)	-	-	-	-	-	-	-	-	+	-	+	-

Notes