

**Handbook on Common  
BUTTERFLIES  
of Uttarakhand**

**PARMOD KUMAR**



**Zoological Survey of India  
2008**

*Handbook on Common*  
**BUTTERFLIES**  
**of Uttarakhand**

**PARMOD KUMAR**

*Zoological Survey of India, Northern Regional Station,  
218 Kaulagarh Road, Dehra Dun 248 195*

*Edited by the Director, Zoological Survey of India, Kolkata*



सत्यमेव जयते

**Zoological Survey of India**  
**Kolkata**

## CITATION

Parmod Kumar. 2008. *Handbook on Common Butterflies of Uttarakhand* : 1-136.  
(Published by the Director, *Zool. Surv. India*, Kolkata)

Published : August, 2008

ISBN 978-81-8171-198-4

© *Govt. of India*, 2008

### ALL RIGHTS RESERVED

- No part of this publication may be reproduced stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the publisher.
- This book is sold subject to the condition that it shall not, by way of trade, be lent, resold, hired out or otherwise disposed of without the publisher's consent, in an form of binding or cover other than that in which, it is published.
- The correct price of this publication is the price printed on this page. Any revised price indicated by a rubber stamp or by a sticker or by any other means is incorrect and should be unacceptable.

### PRICE

**Indian Rs. 750.00**  
**Foreign : \$ 40; £ 30**

Published at the Publication Division by the Director Zoological Survey of India, 234/4, AJC Bose Road, 2nd MSO Building, 13th floor, Nizam Palace, Kolkata 700020 and printed at M/s Shiva Offset Press, Dehra Dun 248 001.

## FOREWORD

The Lepidoptera (Butterflies) is an important group of insects whose members are economically important for mankind from the time immemorial. They play a key role in nature as an important component of the food chain of birds, spiders and other predatory insects. They also act as pollinators. The old relationship between the human and butterflies is today going through a period of great stress as humans by their activities are directly or indirectly threatening the existence of butterflies. The presence of butterflies depend upon the variety of factors including the climate, suitable food, appropriate adult nectar sources of other food, suitable areas for flight and courtship and in some instances, the presence of certain symbiotic species, notably ants.

The actual number of known butterflies from Uttarakhand is 323 but the present pictorial handbook contains a descriptive and illustrated account of 110 species of common and fascinating butterflies belonging to nine families of the suborder Rhopalocera, order Lepidoptera that are most common in Uttarakhand. The handbook contains the scientific names of each butterfly, followed by the common name, general ecology, diagnostic characters, wingspan and distribution in the State *vis-à-vis* in India.

The Handbook on “Common Butterflies of Uttarakhand” is an effort by the Scientist of the Zoological Survey of India to provide pictorial descriptions of the beautiful insects that attract the naturalists’ and the common people.

It is expected that this volume will assist scientific workers in identification of these important group of insects.

Dated : 5<sup>st</sup> August, 2008

**Dr. Ramakrishna**  
*Director*  
Zoological Survey of India  
Kolkata - 700 053

# CONTENTS

INTRODUCTION .....	1
CLASSIFICATION .....	3
HISTORICAL RESUME .....	3
PHYSIOGRAPHY .....	5
TOPOGRAPHY .....	5
VEGETATION .....	6
1. Family PAPIOLINIDAE .....	9-22
2. Family PIERIDAE .....	23-44
3. Family DANAIDAE .....	45-52
4. Family ACRAEIDAE .....	53-55
5. Family SATYRIDAE .....	56-76
6. Family ERYCINIDAE .....	77-80
7. Family NYMPHALIDAE .....	81-108
8. Family LYCAENIDAE .....	109-117
9. Family HESPERIIDAE .....	118-121
REFERENCES .....	122
TABLE .....	125
INDEX .....	133-136

## PREFACE

The present document attempts to describe and illustrate common butterflies of Uttarakhand, occurring in the range from 1,000 feet to 12,500 asl, in the thirteen districts of the State, representing various ecological butterfly biotopes ranging from forests to orchards, nurseries to wetlands, dumping ground to garbages, urination to faecal matters and humid areas.

The descriptions are based on the collections made by survey parties of the Northern Regional Station, Dehra Dun, since its inception in the year 1960, as also collected by author during the last decade. The Handbook deals with 110 species representing nine families *viz.*, Papilionidae, Pieridae, Danaidae, Satyridae, Nymphalidae, Acraeidae, Erycinidae, Lycaenidae and Hesperidae.

The handbook has been prepared keeping in mind its worthiness for the amateurs, naturalists and students as an aid in field identification of the butterflies that fascinates the onlooker.

The colouration and patterns on the wings are very useful characters in identifying butterflies and their classification. Characters like shape of wings, their margin and markings are important morphological characters of taxonomic value. The figure of wings, showing different areas on them would help readers to understand the text in a more meaningful way.

It is expected that the present attempt of the author would cater to the needs of the next generation in understanding Butterflies.

**Parmod Kumar**  
*Zoological Survey of India,*  
*Northern Regional Station,*  
*Dehra Dun - 248 195*

## ACKNOWLEDGEMENTS

The author is thankful to Dr. Ramakrishna, Director, Zoological Survey of India, for his kind permission to undertake the study, to Dr. Arun Kumar, former Additional Director and Shri P.T. Bhutia, Scientist-E and Officer-in-Charge, Northern Regional Station, Zoological Survey of India, Dehra Dun for providing necessary facilities and encouragement throughout the preparation of the document. I would not let the opportunity to go without expressing my sincere thanks to Dr. G.S. Arora, an eminent Lepidopterist and former Joint Director and Officer-in-Charge of the Station, for his guidance, help and literature provided, without which the work would not have been completed. It is my pleasure to place on record my sincere thanks to my senior colleagues namely, Dr. H.S. Mehta, Dr. P.C. Tak and Shri J.P. Sati for rendering manifold help, to Dr. S.K. Gupta for critically going through the manuscript and providing useful and constructive suggestions.

My sincere thanks are also due to Scientific, Technical and Administrative Staff of Northern Regional Station, for extending help during the completion of work and also thanks to Shri M. Vijay, Senior Research Fellow for assistance in computer inputs.

Thanks are also due to Shri Rakesh Kumar, Photographer, Northern Regional Station, ZSI, Dehra Dun for photographing the beautiful digital images of butterflies that have been included in the document.

Last, but not the least, my grateful thanks are due to Dr. Vinod Khanna for guidance.

My sincere thanks are also to all of my family members who encouraged and supported me during the writing of this handbook and for sparing the time, which was rightfully their's.

## INTRODUCTION

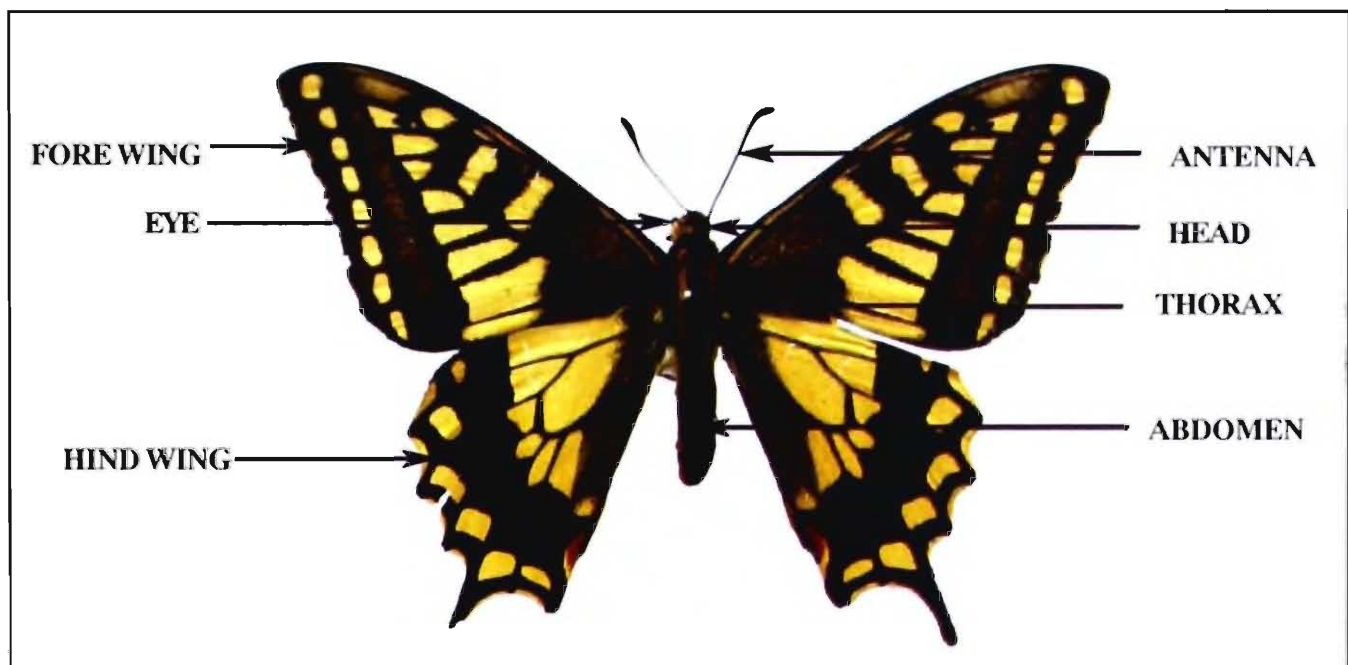
Butterflies play a key role in nature. They are important component in the food chain of birds, spiders and others predatory insects. They also act as pollinators. The old relationship between the man and butterflies is today going through a period of great stress as humans by their activities are directly or indirectly threatening the existence of butterflies. The presence of butterflies depends upon the a variety of factors including the climate, suitable food, appropriate adult nectar sources, suitable areas for flight and courtship and in some instances, the presence of certain symbiotic species, notably ants.

The butterflies reach adulthood through a series of stages, viz., egg; larvae; chrysalis, and finally the imago or the sexually mature stage. Thus, the life history of a butterfly shows a complete metamorphosis from larval stage to adult stage, and this period is variable in different species. Human activities are disturbing and destroying the delicate balance that sustains these factors, leading to the decrease in butterfly populations as well as their diversity.

Some of the threats faced by the butterflies today are habitat destruction, use of pesticides, illegal collection of butterflies and their trading.

Like birds, some butterflies also migrate but the butterfly migration often takes the form of persistent flight in one direction over long distances.

Many species of butterflies show mimicry. They may camouflage themselves with leaf like patterns and shapes, like the leaf butterflies, of the genus *Kallima*.



ADULT BUTTERFLY

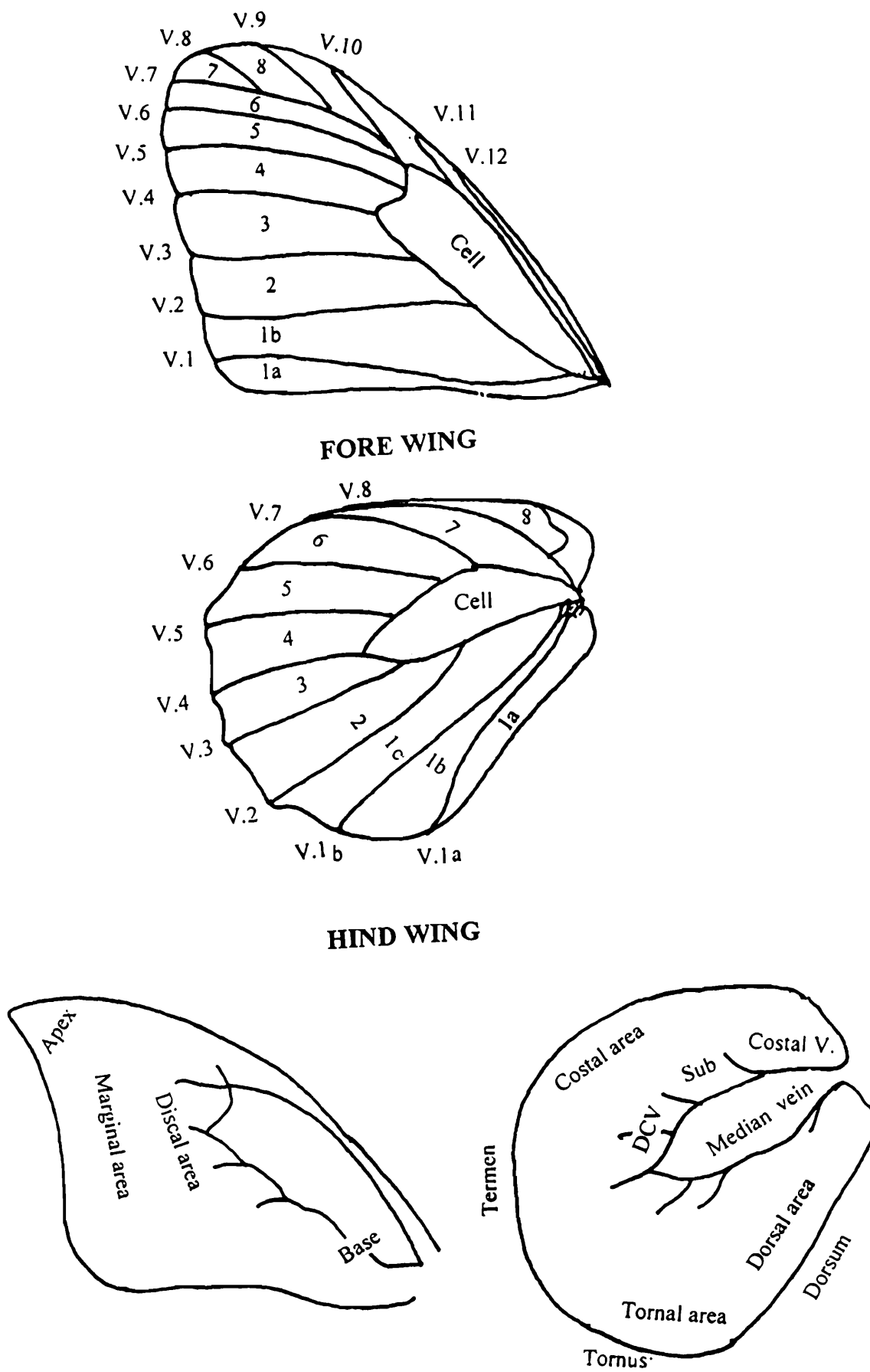


Fig. 1. Type of venation and name of the parts of wings.

The actual number of known butterflies from Uttarakhand is 323 but the present pictorial handbook contains a descriptive and illustrated account of 110 species of butterflies that are most common in Uttarakhand.

The scientific names of each butterfly is followed by the common name, general ecology, diagnostic characters, size of wingspan (in mm) and their distribution.

The terminology used in the text and figure of wings of butterflies (Fig. 1) are as follows :

UP-Upper side/dorsal side, V-Vein, DCV-Disco-cellular vein

UN-Underside/ventral side, M-Male, F-Female, WS-Wingspan.

## CLASSIFICATION

Butterflies are insects belonging to the order Lepidoptera. The order is divided into two suborders, Heterocera and Rhopalocera. The Heterocera constitutes the Moths while Rhopalocera constitute the Butterflies. Some authorities distinguish a third division, the Grypocera, which comprises the family Hesperidae (the Skippers).

The suborder Rhopalocera includes nine families *i.e.* Papilionidae, Pieridae, Danaidae, Satyridae, Nymphalidae, Amathusiidae, Acraeidae, Erycinidae and Lycaenidae under a single super-family Papilionoidea and Hesperioidea that includes only one family, the Hesperidae. The family Amathusiidae does not occur in the Uttarakhand.

## HISTORICAL RESUME

The butterflies of the Indian Region, including those from western Himalayas, were named and described by Linnaeus and Fabricius for the first time during the eighteenth century. Doherty (1886) published a list of butterflies, exclusively from Kumaon, for the first time, followed by Hannyngton (1910-11) who published an account of 373 butterflies.

Mackinon and de Niceville (1897-98) published a list of 323 butterflies from Mussoorie and neighbouring region from the western Himalayas followed by Ollenbach (1930-31) who collected, identified and published a list of 143 butterflies from Mussoorie.

The other important works referable to the study of Garhwal Himalayas are by Stempffer (1952); Bernardi (1952) and Lesse (1952).

Wynter-Blyth (1957) recorded as many as 415 species from western Himalayas out of which 323, species were listed from Uttarakhand. Subsequently Arora and Mandal (1977) recorded 45 species from Garhwal; Mandal and Chaudhary (1977) recorded 10 species from Valley of flowers, Chaturvedi (1981) and Mandal (1984) recorded 17 species from Garhwal Himalayas and adjoining slopes of Tons valley forest. Arora (1994) recorded 68 species from

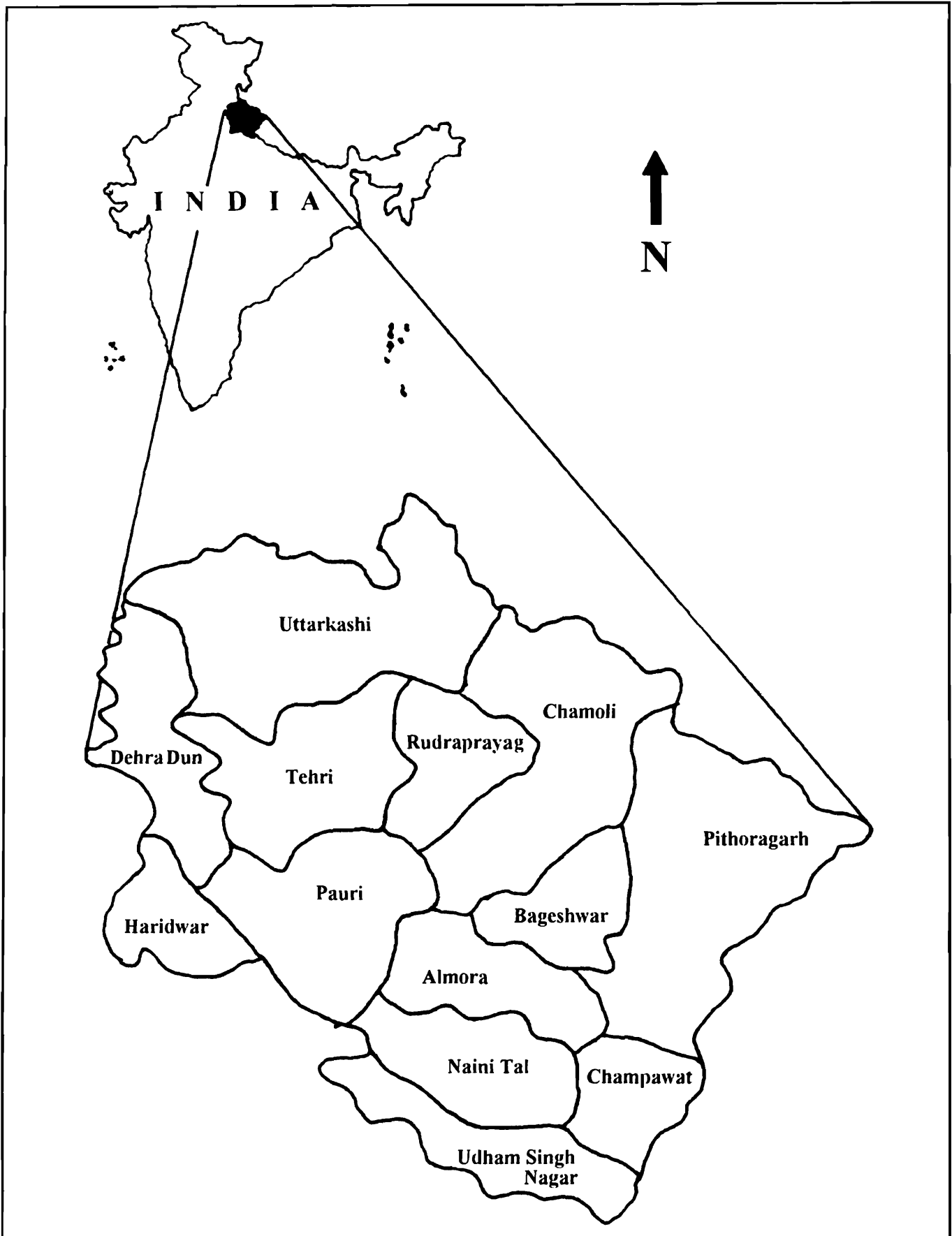


Fig. 2. Map showing districts of Uttarakhand

Rajaji National Park; Singh (1994) recorded 148 species from New forest campus, Dehra Dun; Arora, Ghosh and Chaudhary (1995) recorded 223 species from western Himalayas. Arora (1997) identified 80 species of butterflies collected from Nanda Devi Biosphere. Singh and Bhandari (2003) recorded 183 species from lower western Himalayan forests of Doon Valley; Kumar and Kumar (1998) identified 21 species from Panchchuli (Dist. Pithoragarh); Kumar and Gupta (2004) recorded 48 species from Govind Pashu Vihar, Uttarkashi district.

Combining the lists as above, the present inventory of valid species of butterflies belonging to nine families is somewhere nearly 323 species, of which the present work is restricted to 110 species the most common ones.

## PHYSIOGRAPHY

### Location and area

Uttarakhand lies between 28° 44' and 31° 28' N latitude and 77° 35' and 81° 01' E longitude. It was carved out from the state of Uttar Pradesh by separating the hill region with a geographical area of 53,483 sq km constituting 1.63% of country land area, (Forest Survey of India, 1999). The State has 13 districts, namely Chamoli, Dehra Dun, Haridwar, Pauri, Rudra Prayag, Tehri and Uttarkashi in the Garhwal Division; and Almora, Bageshwar, Champawat, Nainital, Pithoragarh and Udham Singh Nagar in the Kumaon division. (Fig. 2).

### Boundary

Three districts of the state viz. Uttarkashi, Chamoli and Pithoragarh share an international boundary in the North with Tibet (China) while in the East, Pithoragarh, Champawat and Udham Singh Nagar share a boundary with Nepal.

Uttarkashi and Dehra Dun share its boundary with Himachal Pradesh in the Northwest while in the South, Dehra Dun, Haridwar and a part of Nainital and Udham Singh Nagar join the boundaries of Uttar Pradesh

### Drainage

Ganges, Yamuna, Ramganga and Sharada are the four major rivers that originate from the Uttarakhand Himalayas.

## TOPOGRAPHY

Uttarakhand has been broadly divided into four topographical regions :

1. Plains of Haridwar, Udham Singh Nagar, Dehra Dun district Bhabar and Terai area of Dehra Dun, Garhwal and Nainital.

2. Middle Himalayan region.
3. Higher Himalayas.
4. Trans Himalayas.

## VEGETATION

The altitude of the state varies from 300 m to 3,500 m and above. Seven out of 16 forest types existing in India can be found in Uttarakhand (based on Champion and Seth, 1968). These are :

1. **Moist Alpine scrub** : At tree line around an altitude of 3,500 m. The major species are *Betula utilis* and *Rhododendron campanulatum*.
2. **Sub-alpine forests** : At altitudes of 2,900 m to 3,500 m above sea level in the middle and upper Himalayas. The forests are characterized by patches of *Abies-Betula* interspersed with shrubby growth and grassy patches or alpine grasslands called *bugyals*
3. **Himalayan Dry temperate forests** : In the inner dry Trans Himalayan valleys of the state. Major species occurring in this forest are *Cedrus deodara*, *Pinus wallichiana* and *Juniperus* species.
4. **Himalayan Moist temperate forests** : Between 1600-2900 m altitude in the Himalayas, characterized mainly by coniferous species such as *Cedrus deodar*, *Picea smithiana*, *Abies pindrow*, *Quercus* spp, and *Betula* spp.
5. **Sub-tropical pine forests** : In lower regions of the Himalayas with pines as the dominant species.
6. **Tropical Dry deciduous forests** : In the dry southern faces of Shiwaliks and adjoining plains. These forests are open and mixed with major species as *Shorea robusta*, *Anogeissus latifolia*, *Terminalia tomentosa* etc.
7. **Littoral and Swamp forests** : Occurs at a few locations in the valleys in the foothills and are characterized by the presence of moisture loving species such as *Syzygium cumini*, *Ficus glomerata*, *Pterospermum acerifolium* and *Diospyros embrioptyris*. The undergrowth is characterized by the presence of cane *Calamus tenuis*.

The State of Uttarakhand is bestowed with varied vegetation types ranging from tropical deciduous to alpine vegetation. In the lower altitude region up to 800 m, moist tropical and dry deciduous forest of Sal, teak or mixed/pure forest of *syzygium*, *Aegle*, *Haldina*, *Acacia* and *Terminalia* are found. At places, scrub forests having evergreen species are also found.

**FEEDING**



**MUD PUDDLING**



**BASKING**

## 1. Family PAPILIONIDAE

### Swallowtails

The species of the family Papilionidae consists of the largest and most beautiful of the Indian Butterflies and commonly known as Swallow-tails. The Birdwings have a *Wingspan* upto 250 mm. The members of this family are predominantly black or black-brown, except Apollos, (*Parnassius*), which are white, spotted with red, blackened or blue spots and are found in high altitudes in the Himalayas. The tail-less form are also abundant.

They are active, fast fliers and if disturbed immediately retract to the forest areas. Some of the species of this family are fond of visiting and feeding on flowers and some settle on damp ground, either alone or in congregation. Papilionid butterflies love basking in the sun.

They are mainly found in the forest and hilly regions but some of them are common in the plains. They are characterized by their forewings being fully developed; the hind wings with the pre-costal spur present, vein 1 b absent; claws are generally simple.

They are distributed up to 18,000 feet in Himalayan reaches. The caterpillars of most of the species feed on pungent and evil tasting food plants including citrus, orange, lime, bel etc.

The average life span of an adult Swallow-tail butterfly may be as long as 4 months, but generally up to 20-30 days. The eggs are spherical, smooth and white, green and blotched. The larvae have fleshy spines, but are never hairy. They have a pair of structure called "osmeterium", a forked scent gland. This gland produces powerful chemicals, which help in repelling predators.

Some of the common species are Common Mormon (*Papilio polytes*), Lime Butterfly (*Papilio demoleus*), Common Peacock (*Papilio polyctor*) and Yellow Swallow-tails (*Papilio machaon*).

1. *Pachliopta aristolochiae* (Fabricius)

## The Common Rose

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

1939. *Pachliopta aristolochiae* (Fabricius) : Talbot, *Fauna of British India (Butterflies)*, 1 : 86, figs. 15-16.

**General Ecology** : The Common Rose is a red-bodied Swallowtail butterfly of lower elevations and is very common in the plains. It is common during the rainy season. Male emits a strong and slightly pungent odour. It is migratory and roosts in large numbers together with the Crimson Rose. The flight is slow and deliberate. Male forms of *Papilio polytes romulus* Cramer form *stichius* is an excellent mimic of this butterfly. It is a common visitor of garden flowers of Lantana, Cosmos, and Zinnia etc. and visits wet soil. It can be seen basking near treetops with its wings spread out.



Under side Male

**Diagnostic Characters** : Antennae, thorax and abdomen above black; head and the whole of thorax and abdomen beneath vermilion-red.

**Male and female** : Tailed. Upper side : Wings black. Forewing area paler with black-fold stripes and well marked pale vein-stripes. Hindwing with a discal row of elongate white spots from 2 to 5 and a row of sub-marginal red lunules; tail black. Under side : Discal spot in the anal area 1 usually red. In male, scent wool absent. Female similar, but wings broader than in male.

**Wingspan** : 80-110 mm.

**Distribution** : This species is common throughout in India and recorded upto 3,000 feet in North-west Himalayas. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Recorded from Dehra Dun, Haridwar, Pauri, Tehri and Pithoragarh districts and common in the State.

2. *Chilasa clytia clytia* (Linnaeus)

## The Common Mime

1758. *Papilio clytia* Linnaeus, *Syst. Nat.*, (10<sup>th</sup> ed.) : 479.

1939. *Chilasa clytia clytia* (Linnaeus) : Talbot, *Fauna of British India (Butterflies)* 1 : 116, figs. 28-29.

**General Ecology** : This butterfly is found in hilly regions usually at low elevations. They congregate in large numbers on sandy banks of streams. It is plentiful in the pre-monsoon and monsoon season. It feeds mainly from flowers of shrubs and small trees. It basks with its wings spread flat or closed.

Upper side form *clytia*Under side form *clytia*

This tailless swallowtail has two forms in northern India : *clytia* and *dissimilis*, both the forms are available in the state. The *clytia* mimics the Common Crow, *Euploea core* Cramer and *dissimilis* mimics, The Blue Tiger, *Tirumala limniace* (Cramer).

**Diagnostics Characters :** Form *clytia* : *Male and female* : Upper side : Wings rich dark brown with cream-coloured markings. Forewing with sub-marginal white spots outwardly truncate or emarginated; the spot in area 4 shifted inwards out of lines; those in areas 6, 7, and 8 oblique to the costa, the lowest and the upper two spots elongate; a series of smaller marginal white spots, two in area 1, one above the other, and two in area 8; a single sub-apical spot between the marginal and sub-marginal series. Hindwing with a discal series of long arrow-shaped streaks in area 1 to 5, a sub-marginal series of white crescents in broadly divided across the middle by a bar of the ground colour. Underside : Pale to rich dark brown. Forewing markings as above. Hindwing with a series of large yellow terminal spots.

*Wingspan* : 90-100 mm.

Upper side Male form *dissimilis*

*Form dissimilis* : *Male and female* : Upper side : Wings black. Forewing with four creamy streaks, joined at the base, a long streak in area 1 b, two streaks in area 1 with two spots, streaks in area 2 much broader with an outwardly emarginated spot beyond; in area 3 a spot at the base and one beyond, in area 4 a single similar spot, in area 5 and 6 elongate streaks, and in 8 and 9 much smaller elongate spots; sub-marginal and marginal markings as in form *clytia*. Underside: Markings as upper side. Hindwing with large yellow marginal spots.

*Wingspan* : 90-100 mm.

**Distribution** : The subspecies is not very common in its range of distribution. Occasionally up to 7,500 feet in the Himalayas, usually 3,000 feet in the southern India and 5,000 feet in Sri Lanka. Uttarakhand : Both the forms are recorded from Dehra Dun, Haridwar, Pauri, Nainital and Tehri districts.

### 3. *Papilio polytes romulus* Cramer The Common Mormon

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

1939. *Papilio polytes romulus* Cramer: Talbot *Fauna of British India (Butterflies)* 1 : 178.

**General Ecology** It is a most Common Swallowtail butterfly, occurring near human habitations, especially in the gardens and fields cultivated with orange and lime plants. It occurs everywhere in open woods, gardens at low elevations and flies close to the ground and never rises above 3 mts. The Common Mormon visits wet patches of soil also ground dampened with urine. Due to its large size and long proboscis, it can feed from flowers with long corolla tubes. Both sexes bask in the sun with their wings spread flat against the substratum. The female has three different forms, viz. *cyrus*, *stichius* and *romulus*. The forms *stichius* and *romulus* mimic the Common Rose and Crimson Rose, respectively. Both have black bodies.



Upper side Male form *romulus*

Upper side Female *romulus* form *stichius*

**Diagnostic Characters** : Head, thorax and abdomen black with white spots. *Male and female* : Upper side: Wings black. Forewing with marginal series of white or pale yellow spots, decreasing in size towards the apex. Hindwing: Upper side with complete discal band of elongate white spots, more prominent in female, ending in red lunules in the tornal region and sub-marginal series of crimson lunules in female. Under side Dull coloured. The males are smaller in size.

**Wingspan** : Male 75-94 mm., Female : 88-94 mm.

**Distribution** : The sub-species is very common throughout Peninsular India to Assam, but uncommon at higher altitude. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Recorded from Almora, Bageshwar, Chamoli, Champawat, Dehra Dun, Haridwar, Pauri, Rudra Prayag, Nainital, Tehri, Pithoragarh, Uttarkashi and Udham Singh Nagar districts.

4. *Papilio protenor protenor* (Cramer)**The Spangle**

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

1909a. *Papilio protenor protenor* (Cramer) : Jordan, In Seitz, *Macrolep. Fauna Indo-Austral.*, 9 : 75-76.

*General Ecology* : It is a tail-less black-bodied butterfly. It is fond of damp patches, particularly in the company of its own species. Visits flowers and gardens. It flies in a leisurely manner; when disturbed; it displays remarkable powers of flight, making off both rapidly and erratically.



Upper side Male

Under side Male

*Diagnostic Characters* : Antennae black; head, thorax and abdomen brownish-black. *Male and female* : Both tail-less. Upper side : Wings black with blue scaling on hindwing. Male has white costal streak of specialized scales and tornal black-centered red spot. Female hindwing with additional black-centered red spot in area 2; sub-marginal lunules in area 2, 6 and 7; cell irrorated with bluish scales. No white costal stripe. Under side : The basal red stripe does not reach the base of the hindwing.

*Wingspan* : 100-140 mm.

*Distribution* : The subspecies is not uncommon within its range of distribution from Kashmir to Kumaon, rather rare west of Mussoorie. The Spangle flies in the North-West Himalayas upto an altitude of 8,500 feet. Also occurs in Nepal. Uttarakhand : Almora, Bageshwar, Chamoli, Dehra Dun, Haridwar, Pauri, Rudra Prayag, Pithoragarh, Tehri and Uttarkashi districts.

### 5. *Papilio polyctor polyctor* (Boisduval)

#### The Common Peacock

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

1895. *Papilio polyctor polyctor* (Boisduval) : Rothschild, A revision of the Papilios of the Eastern Hemisphere. *Nov. Zool.*, 2 : 381.

*General Ecology* : This beautiful butterfly flies throughout the Himalayas and is common in warm valleys. Dry season form may be seen settling in large numbers on damp patches of mud and the bank of streams, and wet season form within gardens. It visits the flowers of Lantana, Jasmine etc., and generally hovers for a long time over flowers.

*Diagnostic Characters* : Antennae, head, thorax and abdomen brownish-black; the head, thorax and abdomen above thinly irrorated with green scales above.

*Male and female* : Similar. Upper side : Wings dark black and tailed. Male with woolly scent stripes on forewing. Forewing with diffuse golden green irroration, becoming bluish anteriorly. Hindwing with less dense golden-green irroration, turning to blue on the anterior portions of the wing; a broad bright blue upper discal patch, broad between areas 4 and 7, and has its outer edge uneven, occupying the base of area 4 and the outer portions of areas 5,6, and 7; posteriorly this patch is continued in areas 1 to 3 by much smaller diffuse quadrate spots of brilliant golden-green scales; tornus with three or four clarets-red sub-marginal crescents. Underside : Chocolate brown, somewhat thinly irrorated with yellowish scales, which are, however, absent from a more or less triangular patch in the middle of the forewing posteriorly. Hindwing without discal patch; sub-marginal series of claret-red crescents, each crescent transversed inwardly by a line of purplish blue, followed by velvety black spots and broad white marginal crescents.



Upper side Male

*Wingspan* : 90-130 mm.

*Distribution* : The subspecies is common from Chitral (Pakistan) to Kumaon from low elevation to about 7,500 feet. Uttarakhand : Dehra Dun, Haridwar, Pauri, Nainital, Pithoragarh, Udham Singh Nagar, Champawat, Tehri and Uttarkashi districts.

**6. *Papilio demoleus demoleus* Linnaeus**  
**The Lime Butterfly**

1758. *Papilio demoleus* Linnaeus, *Syst. Nat.*, (10<sup>th</sup> ed.) : 464.

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

*General Ecology* : It is also known as the Lemon Butterfly or Lime Swallowtail. The most common butterfly occurring throughout the country. Visits garden flowers and flowers of all *Citrus*, Radish and Curry leaf plants during and after monsoons. It has a very quick & straight flight. It is an open plain species but also found in smaller numbers in forested country. They aggregate in hundreds and mud puddle with closed wings. As it grows old, the yellow markings on the wings frequently turn to deep orange.

*Diagnostic Characters* : Antennae dark reddish-brown; head, thorax and abdomen dusky black. Palpi, thorax and abdomen beneath cream yellow.

*Male and female* : Upper side : Forewing black with yellow spots. Hindwing without a tail and with a brick-red oval spot anteriorly bordered with blue lunules at the inner margin; a bluish spot near the costal margin. Yellow wavy markings at the base of both wings. Marginal and terminal row of yellow spots on both the wings. Under side : Forewing almost black with 7 yellow streaks at the base and a few orange spots. Hindwing with blue bordered, orange spots in the middle.



Upper side Male

*Wingspan* : 80-100 mm.

*Distribution* : The Subspecies is very common throughout India, ascending to about 7,000 feet in Himalayas. Uttarakhand: Almora Bageshwar, Chamoli, Dehra Dun, Haridwar, Rudra Prayag, Pithoragarh, Champawat, Nainital, Pauri, Tehri, Uttarkashi and Udham Singh Nagar districts.

7. *Papilio machaon punjabensis* Eimer  
The Common Yellow Swallowtail

1895. *Papilio machaon punjabensis* Eimer, *Arb. Ver. Bei Schmelt.*, 2 : 104.

1939. *Papilio machaon punjabensis* Eimer : Talbot, *Fauna of British India (Butterflies)*, 1 : 196.

*General Ecology* : It is a tailed, black and yellow butterfly. A fast flier but frequently interrupted by visits to low growing flowers over which it rests. It is fond of hill tops and visits garden flowers. It inhabits the open, grassy, flower-covered meadows of the hills.

*Diagnostic Characters* : Antennae black; head, thorax and abdomen with creamy colour with black lines. Abdomen beneath with narrow lateral ill-defined black lining.

*Male and female* : Upper side Forewing with the ground colour black, dusted with yellow-scales, rest of cell yellow with a black bar and another bar at its end. Discal area yellow with black veins. Marginal area black with a complete series of regular small



Upper side Male

yellow spots near the termen. Hindwing basal half creamy yellow with black veins, outer half black with a series of diffused blue spots and marginal series of creamy-yellow large crescent spots. Blue-topped red spot at tornus. Under side : Pale-cream colour. Forewing with two transverse short bands across the cell. Hindwing veins prominently black. *P. machaon punjabensis* Eimer is close to *Papilio machaon asiatica* Menetries that occurs from Chitral (Pakistan) to Kashmir and Tibet.

*Wingspan* : 75-90 mm.

*Distribution* : The subspecies is common from Punjab to Kumaon and ascends to about 16,000 feet in Himalayas. At low elevation it flies from March to September. Uttarakhand Almora, Bageshwar, Champawat, Dehra Dun, Haridwar, Nainital, Pithoragarh, Rudra Prayag, Tehri and Uttarkashi districts.

### 8. *Papilio paris paris* Linnaeus

#### The Paris Peacock

1758. *Papilio paris* Linnaeus, *Syst Nat.* (10<sup>th</sup> ed.) : 459.

1939. *Papilio paris paris* Linnaeus : Talbot, *Fauna of British India (Butterflies)* 1 : 150.

*General Ecology* : This beautiful and large Butterfly is very common in the wooded regions of evergreen forests. It is abundant during the southwest monsoon months. Both sexes visit damp patches, sometimes settling with their wings held flat against the substratum. It visits flowers of Lantana and *Citrus* spp.

*Diagnostic Characters* : Antennae, head, thorax, and abdomen black, sprinkled with green scales above.

*Male and female* : Upper side : Forewing black covered with green scales with a narrow, short green discal band, at times absent. Hindwing has a large metallic blue patch at the inner edge, large and sharply defined, evenly curved, crimson tornal spot and three sub-marginal green crescent-shaped spots above the tail. Under side : Dark brown. The forewing has a broad grey band and hindwing with a complete series of marginal bright crimson spots extending upto the tornal ocellus, with a large upper discal blue patch and a faint red crescent-shaped spot near the costa.



Upper side Male

*Wingspan* : 90-140 mm.

*Distribution* : The subspecies ranges from Kumaon eastwards to Orissa, and is common from 5,000 to 7,000 feet in Himalayas. Also occurs in Myanmar. Uttarakhand : Dehra Dun, Haridwar, Nainital and Uttarkashi districts.

### 9. *Graphium cloanthus cloanthus* (Westwood)

#### The Glassy Blue Bottle

1841. *Papilio cloanthus* Westwood, *Arc. Entom.*, 1 : 42.

1939. *Graphium cloanthus cloanthus* (Westwood) : Talbot, *Fauna of British India (Butterflies)* 1 : 229.

*General Ecology* : The Glassy Blue Bottle occurs in the hilly areas. It visits damp patches, where males can be seen congregating. It has a rapid flight and is fond of circling

round trees, especially those on hill tops. It is attracted to flowers of *Buddleia* and Horse chest-nut.

*Diagnostic Characters* Antennae, head, thorax, and abdomen dark brownish-black, thorax with lateral dark grey pubescence, underside of palpi, thorax and abdomen touched with dingy-white, the abdomen with three lateral whitish stripes.

*Male and female* : Both sexes have long tail. Upper side Forewing with the entire area from below the cell through posterior half of cell to apex, transparent pale green; cell with two black transverse bars; vein 4,5,7 and 8 blackened broadly. Hindwing with four or five pale green sub-marginal transparent spots on termen. Under side : Hindwing with a series of black centred red spots from the end of the cell to anal angle. Male hindwing with the fold grey on the inside and fringed with a brush of long white hairs.



Upper side Male

*Wingspan* : 85-95 mm.

*Distribution* : The subspecies is common at low elevation upto 4,500 feet, but also recorded as high as 9,000 feet in the Shimla hills. It ranges from Kashmir to Assam. Also occurs in Myanmar. Uttarakhand : Dehra Dun, Haridwar, Pauri, Nainital, Tehri Rudra Prayag, Chamoli, Almora, Pithoragarh, and Bageshwar districts.

#### 10. *Graphium eurous* (Leech)

##### The Sixbar Swordtail

1899. *Papilio eurous* Leech, *Descr. New Indian Lep. Coll. Atkinson*, 3 : 283.

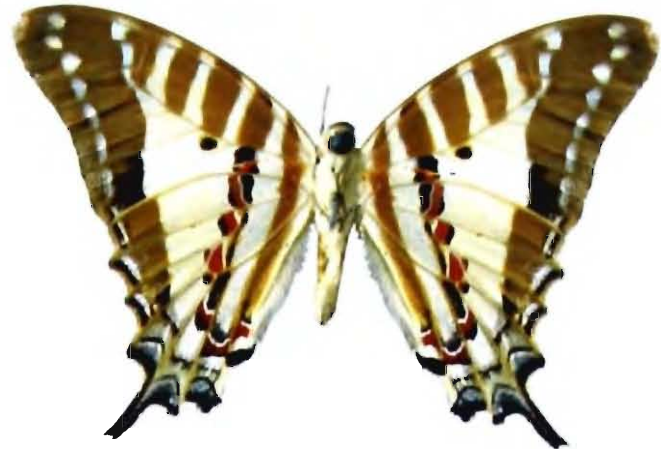
1983. *Graphium eurous* (Leech) : Hancock, *Smithersia*, 2 : 48.

*General Ecology* : This is an extremely local butterfly. These butterflies are found in open places in forested areas between 3000 feet to 8000 feet. Males fly high around some selected tree, often a number of them together, settling high up now and then, though occasionally sweeping down low enough to be taken in the net. The females are not so lively and fly close to the ground and often settle while searching for host plant on which they lay their eggs.

*Diagnostic Characters* *Male and female* : Upper side : Whitish above, head, thorax and abdomen creamy white. Forewing semi-transparent with ten black bars or bands of which



Upper side - Male



Under side - Male

the first, second and third marginal bands more or less reach the dorsum. Hindwing with black tornal patch dusted with greyish blue and a double yellow spot in 1 and 2 above the area. Under side : Hindwing with marginal black bands, a complete row of central pale yellow spots of which tornal ones are yellow. Male with no scent wool in dorsal fold.

*Wingspan* : 60-70 mm.

*Distribution* : The species is distributed from Kashmir to Sikkim and North-east India. Also occurs in Nepal, Bhutan and Myanmar. Uttarakhand : Nainital and Uttarkashi districts.

### 11. *Graphium nomius nomius* (Esper)

#### The Spot Swordtail

1785. *Papilio nomius* Esper, *Die. Aus. Schmett.*, : 210, pl. 52, fig. 3.

1932. *Pathysa nomius nomius* (Esper) : Evans, *Identification of Indian Butterflies*, *J. Bombay nat. Hist. Soc.*, 29 : 238, pl. 5, fig. A., 1932a. p. 54.

*General Ecology* : The Spot Swordtail is most common in dry summer months in deciduous forests. It occurs more commonly along streambeds or moist places in the forest where the vegetation is green. It is very fond of settling in large numbers on damp roads and wet mud during the hot weather. It is also seen feeding at flowers. The flight is usually low, straight and fast.

*Diagnostic Characters* : Head, thorax and abdomen creamy-white with black stripes.



Upper side - Male

*Male and female* . Upper side : Whitish above. Forewing with five dark bands and with a broad dark marg in bearing a row of white rounded spots. Hindwing with broad outer band containing white crescents and a patch of grey suffusion at the tornus. Underside : Whitish markings brownish nearly as on upper side. Hindwing with central red spots. Males with cottony scent wool in dorsal fold. Tail long and black.

*Wingspan* : 70-90 mm.

*Distribution* : The subspecies is common in its range of distribution in peninsular India to South Bihar, Madhya Pradesh to Uttar Pradesh, Himachal Pradesh and eastwards to Sikkim and Assam. Also occurs in Myanmar. Uttarakhand : Dehra Dun, Haridwar, Nainital and Tehri districts.

## 12. *Graphium sarpedon* (Linnaeus)

### The Common Blue Bottle

1907. *Papilio sarpedon* Linnaeus, *Sys. Nat. ed.*, 10 : 461.

1983. *Graphium sarpedon* (Linnaeus) : Hancock, *Smithersia*, 2 : 46.

*General Ecology* : The Common Blue Bottle is the strongest flier of this group, settling seldom and only momentarily and often difficult to catch. It feeds on nectar and visit flowers hurriedly. The males often congregate in large numbers for mud-puddling. It occurs in the evergreen and semi-evergreen forests. It is found mainly at low elevations.

*Diagnostic Characters : Male and female* : Upper side : Wings brownish-black with a short tail. Forewing with pale blue or greenish blue discal band running from inner margin, narrowing anteriorly towards apex and ending in a small spot just before the apex. Hindwing with the band scaled with white, continue from below the inner margin of forewing to basal part of hindwing, narrowing posteriorly and with sub-marginal semi-crescents shaped blue spots; costal part of band whitish; scent fold on the inner margin greyish. Underside : Brownish-black with band more bluish than the upper side. Forewing with slight indications of sub-marginal spots before the tornus. Hindwing with a red spot at the base and the disc with five red spots.

*Wingspan* : 80-90 mm.

*Distribution* : The subspecies is common from Kashmir to Sri Lanka and commonest at low elevations, but in South Indian hills and Himalayas, it has been recorded upto 9,000 feet. Uttarakhand : Dehra Dun, Haridwar and Tehri districts.



Upper side Male

13. *Parnassius hardwickei hardwickei* Gray

## Common Blue Apollo

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

1932. *Parnassius hardwickei hardwickei* (Gray) : Evans, *Identification of Indian Butterflies*, *J. Bombay nat. Hist. Soc.*, 29 : 59.

*General Ecology* : The Common Blue Apollos are high altitude butterflies and rarely found below 7,500 feet. These butterflies are hardy and tough. They are strong fliers and fly close to the ground in the sunshine. They are found usually in open alpine country or low growing shrubs and junipers. They visit flowers of *Asters*, *Senecio*, and *Taraxacum* spp. When the weather is cloudy or cold, and towards evening, they become very sluggish. The female is seen much less often than the male.



Upper side Male

Under side Male

*Diagnostic Characters* : Antennae black, with only a few white specks; head with brownish-yellow pubescence; thorax and abdomen densely covered with long white hairs, more or less narrowly, also clothes, the inner margin of hindwings. *Male* : Upper side : Wings creamy white. Fore wing with base and costal area densely irrorated with black scales; a broad, short, velvety black bar across middle of cell, another at its apex and a third beyond the apex, the last mentioned bearing a spot of crimson; a crimson-centered black spot in middle of area 1; curved prominent post-basal series of dusky black spots. Hindwing with base and inner margin broadly dusky black; a crimson-centered black spot near base of area 5, and another at middle of area 7, followed by a curved marginal series of blue spots ringed with black and centred with white. Under side : Similar as upper side with a glossy appearance. Forewing with markings visible from the upper side. Hindwing with a broad basal band above the tornal angle; all the crimson spots encircled by black rings and following centred with white spots in area 2 and 7 and the basal and median spots in area 7. *Female* : Upper side : Similar to male, forewing with the dusky black irroration more extensive. The crimson spots larger, with additional spots in area 6 of forewing and a pre-tornal spot on the hindwing. Under side: Similar to male but all the red spots much larger and centered with white.

*Wingspan* : 50-65 mm.

*Distribution* : The species ranges from Chitral (Pakistan) to Kumaon, and found between 7,500 feet to 13,000 feet. Uttarakhand : Almora, Chamoli, Nainital and Pithoragarh districts.

14. *Graphium agamemnon* (Linnaeus)  
The Tailed Jay

1758. *Papilio agamemnon* Linnaeus, *Syst. Nat.*, (10<sup>th</sup> ed.) : 462.

1939. *Graphium agamemnon* (Linnaeus) Talbot, *Fauna of British India (Butterflies)* 1 : 229.

**General Ecology** : This is an extremely restless black butterfly with yellow-green spots. It starts its activity in the morning and ends late in the afternoon. It vibrates its wings constantly while feeding. It regularly visits garden flowers such as *Lantana*, red flowers, *Ixora*, *Mussaenda* etc. It is not fond of visiting wet soil.

**Diagnostic Characters** : Antennae, head, thorax and abdomen black; thorax above and abdomen on sides streaked with greenish grey; the thorax touched with pink beneath.

**Male and female** : Upper side Wings blackish-brown with yellow-green spots. Forewing with a spot at extreme base of costa, a transverse short bar near base of cell, and seven spots beyond , two spots beyond apex of cell; a spot at base of areas 1a and 1, followed by two oblique short macular bands; a discal series of spots decreasing in size towards the costa, and a post-discal series of smaller spots that begins with two in area 1, the spots in area 7. Hindwing with a basal stripe, ending in a point in area 1, a discal stripe interrupted at lower edge of cell and not reaching beyond the middle of area 2; two post-discal series of spots; these markings are white in area 7. Hindwing with tail, which is longer in the female than in the male. Underside : Paler, the green spots partly covered with white or brownish scales, both wings clouded with violet grey. Hind wing between costa and cell has a black crescent, which is basically margined with red between vein 8 and cell. Male with scent wool in the dorsal fold.



Upper side Male

**Wingspan** : 85-100 mm.

**Distribution** The species is common from Kumaon to Assam. Also occurs in Myanmar. Uttarakhand : Dehra Dun Haridwar, Pauri and Pithoragarh districts.

## 2. Family PIERIDAE

### White and Yellows

The members of family Pieridae are small to medium sized. They have a predominance of white and yellow colour, hence they are called '**Whites and Yellows**'. This family is among the smaller families of butterflies. 109 species are recorded in India.

The family is divided into two sub-families; the Whites belong to Pierinae and the Yellows, to Coliadinae.

These are sun loving butterflies especially males and sometimes found in large congregations on river or stream beds or damp patches during the hot weather, where they are seen sucking moisture and salts. Females are mostly solitary, preferring shady habitats.

The flight is usually slow, sluggish and close to the ground. They visit various types of flowers and some species bask with their wings fully open and others partly open.

They are characterized by the presence of fully developed fore legs in both the sexes, the inner margin of hind wing is channeled to receive the abdomen. Vein 1 b is present.

The seasonal and sexual variations are quite common and well marked in some species (*Eurema*, *Catopsilia* etc.).

They are distributed throughout the peninsular India and occur up to 15,000 feet in Himalayas. The caterpillars are cylindrical, green or brown with stripes and pubescence. They feed on plants of Brassicaceae, Fabaceae, and Cappraridaceae.

Some common species of this family are *Leptosia nina* (Fabricius), *Valeria valeria* (Fabricius), *Delias eucharis* (Drury), *Pieris brassicae* Doubleday etc.

### Subfamily PIERINAE

#### 15. *Leptosia nina nina* (Fabricius)

#### The Psyche

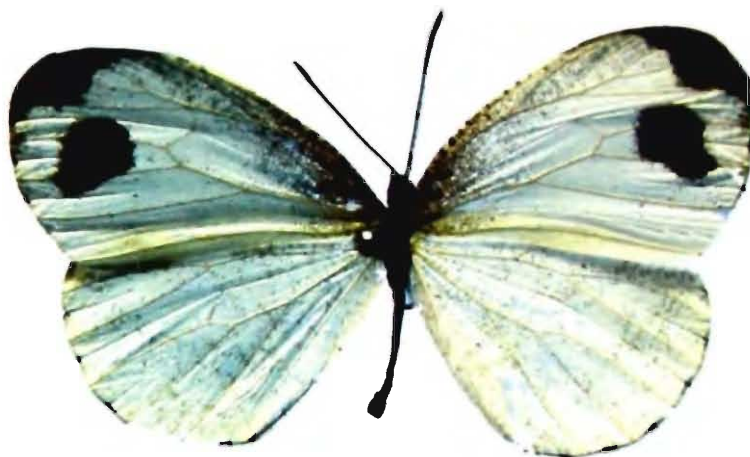
1793. *Papilio nina* Fabricius, *Ent. Syst.*, 3(1) : 314.

1939. *Leptosia nina nina* (Fabricius) : Talbot, *Fauna of British India (Butterflies)* 1 : 305.

*General Ecology* : This is a little, white butterfly with black marking on the wing tips. The under side of the wings is faintly marked with green. It can be identified from any distance because of its typical flight. It is a very weak flier and flies near the ground in the under growth and bushes. When it settles, it sinks the forewings back into the hindwings.

*Diagnostic Characters* : Head brownish; antennae dark brown, spotted with white; thorax and abdomen whitish.

*Male and female* : Similar. Upper side : Wings white, the bases very slightly powdered with minute black scales. Forewing: Costa speckled obscurely with black apex and outer margin up to vein 3, black border wider at the apex; a very large, pear-shaped black post-discal spot. Hindwing: Uniformly white. Under side : White. Forewing without black apex and outer black margin; discal black spot as on upper side. Hindwing with very slender greenish striae and minute dots; striae on hindwing coalesce into obscure bands.



Upper side - Male

*Wingspan* : 30-50 mm.

*Distribution* : This subspecies is widely distributed in India, ranging from peninsular India to 6,500 feet in Himalayas. Also occurs in Sri Lanka and Myanmar. Evans (1932) has recorded this species from Mussoorie; Talbot (1939) and Wynter-Blyth (1957) have recorded this species from whole of Peninsular India. Uttarakhand : Almora, Dehra Dun, Haridwar, Pauri, Rudra Prayag, Bageshwar, Pithoragarh, Tehri and Uttarkashi districts.

16. *Metaporia agathon* (Gray)**The Great Blackvein**

1831. *Pieris agathon* Gray, *zool. Misc.*, 1 : 23.

*General Ecology* : The Great Blackvein has a heavy floating flight and prefers open and wooded country. They are very fond of Horse-chestnut blossoms.

*Diagnostic Characters* : Antennae, head, thorax and abdomen black; abdomen beneath white.

*Male and female* : Upper side : Both the sexes are black with white or dusky discal and sub-marginal stripes on wings, cell of the hindwing white. Under side : Similar, the hindwing at the base of costa bright yellow.

*Distribution* : The species ranges from Kashmir eastwards through North-West and western Himalayas. Wynter Blyth (1940) states that both the subspecies are common up to Garhwal above 5,000 feet.

Following two subspecies are found in Uttarakhand.

16a. *Metporia agathon phryxe* (Boisduval)

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

1910. *Aporia agathon phryxe* (Boisduval) : Fruhstorfer, In : Seitz. *Macrolep. Fauna of Indo-Austr.*, 9 : 139.

*Diagnostic Characters* : *Male and female* : Upper side : The white areas predominate, with discal area white; the dark black background forms stripes. Forewing with a heavy black disco-cellular bar. Hindwing veins broadly black and disco-cellular bar well marked in female. Under side : Markings and colouration as upper side. Hindwing with the white stripes more constricted at the middle.



Upper side Male

*Wingspan* : 80-90 mm.

*Distribution* : Kashmir to Garhwal; not rare. Uttarakhand : Haridwar, Rudra Prayag, Chamoli, Pithoragarh and Uttarkashi districts.

16b. *Metaporia agathon caphusa* (Moore)

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

*Diagnostic Characters : Male and female* With ground colour black and darker than in *phryxe* (Boisduval). Upper side : Forewing heavily dusted with black. Both wings with the cell whitish. Under side Paler, markings as on upper side; sub apical spots yellowish.



Under side Female



Upper side Female

*Wingspan* : 80-90 mm.

*Distribution* : Mussoorie to Kumaon. Uttarakhand : Dehra Dun, Haridwar, Tehri, Rudra Prayag, Champawat, Almora, Pithoragarh and Bageshwar districts.

17. *Metaporia leucodice soracta* (Moore)

**The Himalayan Blackvein**

1857. *Aporia soracta* Moore, In: Horsfield and Moore's *Cat. Mus. E.I.C.*, 1 : 83.

1907. *Metaporia leucodice* (moore) : Rober, In Seitz, *Macrolep. Fauna Palaearctica*, 1 : 41.



Upper side Male

*General Ecology* : This common butterfly found between 4,000 to 10,000 feet in May and early June. With the occurrence of first rain, it starts disappearing. This species is greatly attracted by Horse-chestnut blossom on which it may be seen feeding in great numbers.

*Diagnostic Characters* : Antennae black; head, thorax and abdomen are white.

*Male and female* : Upper side : Wings milky white. Forewing with black veins. Forewing with a post-discal black band, which is usually obsolete in area 3; a heavy disco-cellular bar; a thin marginal black line from base of costa to base of inner margin, more or less interrupted at area 3. Hindwing veins black and unmarked. Under side : Forewing white; apex and costal edge pale yellowish with black markings as on upper side but narrower. Hindwing pale yellow, the pre-costal area chrome yellow but the vein heavily marked.

*Wingspan* : 50-70 mm.

*Distribution* : This subspecies is distributed from Kashmir through Himachal Pradesh to Uttarakhand. Common at Mussoorie in May and June. Uttarakhand : Dehra Dun, Haridwar, Nainital, Bageshwar and Uttarkashi districts.

### 18. *Delias eucharis* (Drury)

#### The Common Jezebel

1773. *Papilio eucharis* Drury, *Illustr. nat. Hist.*, 2 : pl. 10, figs. 5, 6.

1881. *Delias eucharis* (Drury) : Moore, *Lep. Ceylon*, 1 : 140, Pl. 54, fig. 1, 1a.

*General Ecology* : A very beautiful butterfly, seen commonly around gardens and forest edges. It is very fond of visiting flowers of *Lantana camara*, *Anacardium occidentale*, *Tridax procumbens*, mango inflorescence and wild flowers. Females are known to fly higher than the males in search of food plants to lay their eggs. Males frequently are found on flowers or occasionally drinking from wet patches.

*Diagnostic Characters* : Head round and somewhat flat, black with a white line; antennae white, black tipped and abdomen coloured a greasy, greenish yellow-brown.

*Male and female* : Upper side : Forewing whitish, the entire veins blackened. Under side : Bright yellow with black veins and a marginal series of orange red spots, which are roughly pentagonal in shape. Female more heavily marked.



Under side Female

*Wingspan* : 66-85 mm.

*Distribution* : It is the only widely distributed species of *Delias* in India, found everywhere up to 7,000 feet in Himalayas and hills of Assam. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Dehra Dun, Haridwar, Almora, Bageshwar, Champawat, Nainital, Pauri, Tehri and Uttarkashi districts.

19. *Delias belladonna horsfieldi* (Gray)

## The Hill Jezebel

1831. *Pieris horsfieldi* Gray, *Zool. Misc.*, 1 : 32

1925. *Delias belladonna horsfieldi* (Gray) : Jordan "On *Delias belladonna* Horsfieldi and allied species" *Nov. Zool.* 32 : 285.

**General Ecology** It is a fairly large, striking butterfly and very common in the lower valleys from June to November. It is found in open areas, around fields, forest edges and disturbed human habitations. They are fond of visiting damp patches and flowers of *Lantana*, *Buddleia*, Horse Chestnut, and *Aesculus indicum*. It is easily identified by the extensive black, red and yellow markings. Its flight is slow and lazy and can be rapid and irregular on disturbance. Males fly close to the ground.



Upper side Male

Under side Female

**Diagnostic Characters : Male and female** : Ground colour of wings black with white to pale cream coloured spots. Upper side : Forewing with cell spot at the end white; post-discal and sub-marginal series of white spots. Hindwing with a large basal yellow spot; a tornal yellow patch and white inner area, post discal and sub-marginal series of white spots.

Under side : Forewing : Markings larger and more sharply defined than upperside, the cell stripes on both wings prominent. Forewing with a bar across the discal end of the cell. Hindwing : Basal spot in area 7, cell end spot and inner area along with the tornal patch entirely yellow; post-discal series of spots, from above tornal patch to area 6, whitish. sub-marginal series of spots, yellowish, small and rounded from beyond tornal patch to area 4, and elongated in area 5 and 6.

**Wingspan** : 70-96 mm.

**Distribution** : The subspecies is fairly common. Its ranges from Himalayas to Kulu (Himachal Pradesh) eastwards and common at 2,000 to 10,000 feet in Himalayas. Uttarakhand : Dehra Dun, Haridwar, Pauri, Tehri, Chamoli, Nainital, Almora, Pithoragarh, Bageshwar, Champawat and Udham Singh Nagar districts.

20. *Anaphaeis aurota aurota* (Fabricius)**The Pioneer**

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

1932. *Anaphaeis aurota* (Fabricius) : Hemming "The Butterflies of Transjorden" *Trans. Ent. Soc. Lond.*, 80(2) : 283.

*General Ecology* : This species is quite common, a strong flier and fond of sunshine. Both sexes visit flowers, males found on damp patches.

*Diagnostic Characters* : Antennae black, sparsely dotted with white; head, thorax and abdomen white above. Sometimes thorax bluish-grey.



Upper side Male

Under side Male

*Male and female* : Upper side : Wings white. Forewing with costal area to base of vein 11 dusky-black; a prominent curved jet-black disco-cellular bar; a broad black apical area, narrowing to vein 2. Hindwing with a marginal black border from vein 2 to 6, bearing four round white spots in areas 2 to 5. Under side : Forewing similar to the upper side, the markings more clearly defined and the apical spots larger. Hindwing yellowish-white, all the veins very broadly bordered with black; areas 1,2,6, and 7 with black cross bars; marginal black border with white spots as on upper side. Female : Resembles the male, but the black markings broader, white apical spots of forewing often partly obsolete on upper side. Upper side of hindwing varying from white (Dry season form) to yellow (Wet season form), with black veins.

*Wingspan* : 40-55 mm.

*Distribution* : This species is common throughout India, except Assam, and ascends to about 8,500 feet in Himalayas. Uttarakhand : Dehra Dun, Haridwar, Bageshwar, Champawat, Pauri, Pithoragarh, Tehri, Uttarkashi, Nainital Almora and Udham Singh Nagar districts.

21. *Ceporia nerissa phryne* (Fabricius)**The Common Gull**

1775. *Papilio phryne* Fabricius, *Syst. Ent.* : 473, pl. 2, fig. 7.

1907. *Ceporia nerissa phryne* (Fabricius) : Bingham, *Fauna of British India (Butterflies)*, 2 : 185.

**General Ecology** : It is a very active butterfly. It flies among the bushes, grass and dry deciduous forests of the plains and the low lying hills of India. It spends much time on flowers in search of nectar. In summer, the males gather in large numbers on patches of wet soil. It is most common between the pre-monsoon and post-monsoon months, the numbers get decreased gradually towards the end of monsoon as well as in the dry season.



Upper side Male



Upper side Female

**Diagnostic Characters** : **Male** : Upper side : Wings white. Forewing with apical black area bearing prominent white spots in the middle of area 2. Hindwing with outer marginal black border dentate on the inner edge. Underside : yellowish-white. **Female** : Upper side : Wings in male, with extensive blackish-brown markings. Forewing with a sub-marginal black spot in area 1 b. Hindwing with sub-marginal white spots within the blackish-brown marginal border; upper margin of cell blackened, the outer vein less darkened than on the forewing. Under side : Forewing as on upper side. Hindwing much paler. In Dry season form, the black markings are reduced in both the sexes. Wet season forms are heavily marked.



Under side Female

**Wingspan** : 40-65 mm.

**Distribution** : The subspecies is common throughout the plains of India, ascending to 8,500 feet in the Himalayas. Also occurs in Myanmar. Uttarakhand : Dehra Dun, Haridwar, Tehri, Almora, Nainital, Tehri and Uttarkashi districts.

22. *Pieris canidia indica* Evans

## The Common Cabbage White

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

1939. *Pieris canidia indica* Evans, Talbot, *Fauna of British India (Butterflies)* 2 : 425-426.

**General Ecology** : This is a predominantly white butterfly, very common at the edges of cultivated fields, grasslands, on roads, tea estates and vicinity and visits flowers of various species.

**Diagnostic Characters** : *Male and female* : Upper side : Wings white. The apex of forewing on the upper side is black with a few terminal black spots, a prominent black spot in area 3, and one in 1b more or less distinct. Hindwing with black marginal spots and a costal spot. A large black spot present in the outer half of the forewing. Under side : Forewing without marginal black; spots in areas 3 and 1b large. Hindwing with dirty white and greenish scales. The dry season forms are more dusted with such scales. The females have an additional discal black spot on the upper side of the forewing.



Upper side Male

**Wingspan** : 45-60 mm.

**Distribution** : This subspecies ranges from North Baluchistan and Chitral (Pakistan) eastwards to Myanmar and is widely distributed in India and does not show much seasonal variation. It flies from 2,500 to 12,500 feet in Himalayas. Uttarakhand : Dehra Dun, Haridwar, Tehri, Nainital, Pauri, Pithoragarh, Rudra Prayag, Chamoli, Almora, Bageshwar, Champawat, Udham Singh Nagar and Uttarkashi districts.

23. *Pieris brassicae nepalensis* Doubleday

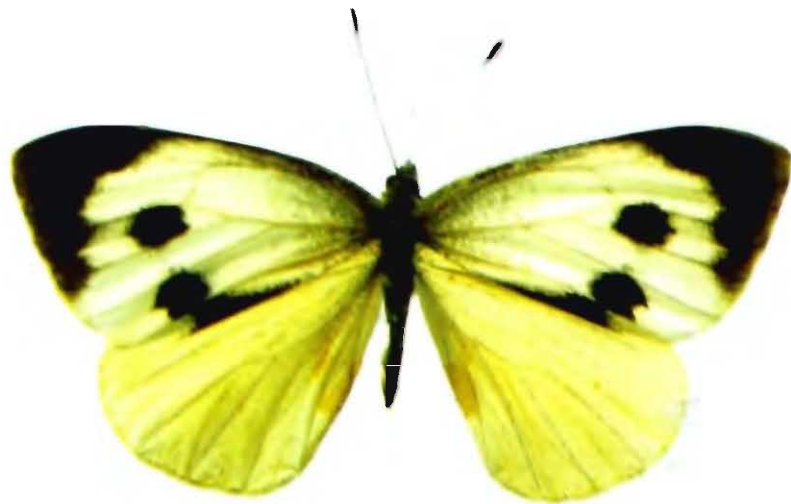
## The Large Cabbage White

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

1939. *Pieris brassicae nepalensis* Doubleday: Talbot, *Fauna of British India (Butterflies)* 1 : 427-428.

**General Ecology** : It is the commonest of butterflies. It is very abundant in the Himalayas. This sub-species is mainly a hilly one but migrates to lower elevations and areas adjoining Himalayas during extreme cold weather, but reappear in higher elevations when the weather in plains starts warming up, and is available throughout the year. The flight of this subspecies is stronger than that of others of the genus.

*Diagnostic Characters* : Antennae black, the club tipped with white; head, thorax and abdomen black, with some white hairs; underside whitish.



Upper side Male



Upper side Female

*Male* : Upper side : Wings creamy-white. Forewing dusted with black at the base and along costa for a short distance, apex and outer margin above vein two more or less broadly black, the inner edge of this area with a regular curve. Hindwing creamy-white, uniform, dusted with black at the base, a large black sub-apical costal spot, and sometimes indications of black marginal scaling anteriorly. Under side : Forewing white, slightly dusted with black scales at the base of cell and along costa; apex light ochraceous-brown; a large black spot in outer half of area 1, and another quadrate black spot at the base of area 3. Hindwing light ochraceous-brown, sely dusted with black. Resembles the male. It can be easily recognized by the presence of two black spots and a black streak on the forewing. Under side: Hindwing pale ochraceous-yellowish with black scaling, black discal spots on forewing much larger.

*Wingspan* : 65-75 mm.

*Distribution* : This sub-species ranges from Baluchistan and Chitral (Pakistan) eastwards to Assam. It is very common in Himalayas and plains adjoining Himalayas, ascending to about 12,000 feet in Himalayas. Uttarakhand : Recorded from Dehra Dun, Haridwar, Pauri, Tehri, Rudra Prayag, Chamoli, Nainital, Pithoragarh and Uttarkashi districts.

24. *Pontia daplidice moorei* (Rober)**The Bath White**

1904. *Pontia daplidice* Moore, *Lep. Indica*, 4 : 137, pl. 521, fig. 1, 1a, 1b.

1907. *Leucochloe daplidice moorei* Rober, *In* : Seitz. *Macrolep Fauna Palaearctica*, 1 : 49.

*General Ecology* : The Bath White is primarily a butterfly of the higher hills, but may be found in the plains and is common in the valleys of western Himalayas. It is sun-loving and visits flowers of various species. It flies close to the ground and rests with the wings closed.

*Diagnostic Characters* : Antennae dusky black; head, thorax, and abdomen fuscous-black; under side of head, thorax, and abdomen white.



Upper side Male

Under side Male

*Male* Upper side : Forewing white with basal half of costa dusted with black; a large and quadrate black spot at the apex of the cell; apical and marginal area above vein 3 broadly black with a series of white spots continued as fine lines to the outer margin. Hindwing uniform, the markings of under side showing faintly through; base of both wings black. Under side : Forewing white, markings as on upper side, but the apical area dusted with green, the sub-marginal spot obscure; a black spot in the outer half of area 1b. Hindwing green with three curved series of white spots in area 1 to 6; inner margin white; a round white spot in middle of the cell, and other spot above it in area 7.

*Female* : Upper side : Forewing white with basal area dusted with black; a quadrate black spot in the outer half of area 1b, with sometimes a short ill-defined black lines below it; apical and marginal black broader than in the male, the sub-marginal spots blurred and obscure. Hindwing with a large costal black spot before the apex, a broad, black, sub-marginal, inwardly curved band and marginal series of black spots connected by thin markings to the sub-marginal band. Under side : Same as in the male but markings broader.

*Wingspan* : Male and female : 45-50 mm.

*Distribution* : The subspecies is distributed from Baluchistan and Chitral (Pakistan) through Kashmir to western Himalayas, ascending to about 7,000 feet. Uttarakhand : Dehra Dun, Haridwar, Almora, Tehri, Bageshwar and Uttarkashi districts.

25. *Ixias marianne* (Cramer)**The White Orange Tip**

1779. *Papilio marianne* Cramer, *Pap. Exot.*, 3 : 41, pl. 217, figs. C, D, E.

1871b. *Ixias Marianne* (Cramer) : Butler, *Lep. Exot.*, 8 : 253.

**General Ecology** : It is the most striking of the scrubland butterflies. It is a sun-loving butterfly that flies among bushes and small trees. It feeds on nectar from flowers. The males occasionally drink from damp patches. Female is seen very much less frequently than the male. It is more common during the monsoon and post monsoon periods. In summer, the males gather on damp patches and feed in the company of Emigrants, Grass Yellows and Lime Butterfly.

**Diagnostic Characters** : Antennae reddish-brown; head and thorax anteriorly with reddish-brown hairs; thorax above with white hairs; abdomen black; under side of head, thorax and abdomen white.

**Male** : Upper side : Wings chalk white. Forewing with broad apical half black; a broad apical patch of orange extending from costa and narrowed posteriorly to a little below vein 2. Hindwing with broad terminal black border.



Upper side Male

**Female** : Similar to male. Upper side : Forewing with orange patch narrower, posteriorly truncated, not extended below vein 2; four black spots in the orange areas 2 to 5. Under side : Bright sulphur-yellow with a few brownish spots on the hindwing. Markings slightly larger. Four black dots on orange patch in areas 2 to 5. In both sexes the markings on under side are more pronounced in the dry season form. In winter season form, both wings dusted with black at the base.

*Wingspan* : 50-55 mm.

**Distribution** : The species is very common throughout Peninsular India, ascending to about 6,500 feet in Himalayas. Uttarakhand : Dehra Dun, Haridwar, Tehri, Almora, Bageshwar, Nainital and Uttarkashi districts.

26. *Ixias pyrene kausala* Moore  
**The Yellow Orange Tip**

1877. *Ixias kausala* Moore, *Ann. Mag. nat. Hist.*, (4) 20 : 49

1939. *Ixias pyrene kausala* Moore : Talbot, *Fauna of British India (Butterflies)*, 1 : 446.

**General Ecology** : It is a very common butterfly, flies in the bushes and shrubs at the edge of forested areas, with a fast and straight flight. It basks in the morning with its wings open. It feeds on the nectar of various species of flowers, also visits damp patches, streams and shaded nallahs.

**Diagnostic Characters** : **Male** : Upper side : Wings yellow, forewing with costal and apical area black and a large orange band nearer the cell than to apex, entering the end of the cell. Hindwing narrow with black outer border. Under side : Pale yellow, speckled with fuscous-brown; row of blackish-brown spots, more or less in the form of ocelli. Forewing usually with a black tornal spot.



**Upper side Male**

**Female** : Upperside : Similar to male but does not have orange band. Under side : Pale yellow with brown spots. Hindwing with the outer black border wider than in the male. This species also shows seasonal variation, the dry season form with the border being narrow or absent.

**Wingspan** : 50-80 mm.

**Distribution** : The subspecies ranges from Baluchistan and Chitral (Pakistan) to Kumaon, ascending to about 7,000 feet in Himalayas. Uttarakhand : Dehra Dun, Haridwar, Almora, Bageshwar, Nainital, Tehri and Uttarkashi districts.

27. *Valeria valeria hippia* (Fabricius)  
**The Common Wanderer**

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

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

**General Ecology** : It is found in areas of moderate to high rainfall. It inhabits open forests, dense scrub, and woodlands. The characteristic wandering flight has rendered it the name. Males fly untiringly, 1 to 5 meters above the ground. Its flight is usually moderate,

neither fast nor slow, but when disturbed it can be erratic and fast. The females are much less commonly seen than the males.



Upper side Male



Under side Male

*Diagnostic Characters*

Antennae black; head, thorax and abdomen fuscous; the thorax clothed with long bluish hairs; under side of palpi, thorax and abdomen pale silvery bluish-white  
*Male* Upper side Wings Shining sky-blue. Forewing with costa broadly and apex and outer margin very broadly black. Hindwing with costal and inner margins broadly whitish; outer margin broadly black, especially at the apex. All veins blackened. Under side : Forewing pale blue, the outer margins obscurely fuscous; a sub-marginal series of very indistinct whitish lunulated spots. Forewing with the vein broadly, bordered with black. Hindwing with veins 6, 7 and 8 broadly, the rest of veins very narrowly, edged with black.  
*Female* : Upper side : Black with bluish white markings. Forewing with two parallel streaks in the cell; a series of post-cellular stripes, very irregular in length. Hind wing black; costa and inner margin broadly white; cell with two narrow

streaks, joined at the base; post cellular stripes and sub-marginal spots much as on the forewing, but much regular. Under side : As upper side, but with the ground colour dull, dusky, and diffuse, the margin broader but less clearly defined; apical area of forewing dusted with white. Antennae, head, thorax, and abdomen much as in the male but darker.

*Wingspan* 65-80 mm.

*Distribution* : The subspecies is common throughout India, Myanmar and other parts of the Oriental region. Uttarakhand Dehra Dun, Haridwar, Tehri, Almora, Bageshwar and Pauri districts.

### Subfamily COLIADINAE

#### 28. *Catopsilia crocale* (Cramer)

#### The Common Emigrant

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

1990. *Catopsilia crocale crocale* (Cramer) : Ghosh, Mondal & Chaudhary. *Rec. zool. Surv. India*, 86(1) : 20.

**General Ecology :** A very common butterfly found throughout the country, including drier parts. Sometimes swarms of this butterfly can be seen just after the monsoon. This is a fast flier, rises high in the air, and cover long distances. The flight is straight with up and down curves. It is also known to migrate. It is extremely fond of settling on various species of flowers like *Lantana*, Fiddle-leaves, *Jatropha*, *Poinsettia*, Crape myrtle, Pomegranate, Bougainvillea and Sunflower etc. It also visits damp patches, sometimes a large congregation of these butterflies can be seen mud puddling.

**Diagnostic Characters :** **Male :** Upper side : Wings chalky white, yellow or greenish yellow. Fore wing with costa narrowly black to the base, wider at the apex. Hindwing unmarked rarely with marginal black vein dots. Under side without markings, yellow or yellowish white. Forewing often white in the posterior distal area.  
**Female :** Upper side : Creamy white to yellow. Forewing with a black disco-cellular spot, usually forming a bar to the costa; costal margin black from base to apex; an outer marginal black border, wider at the apex. Hindwing with outer marginal black border. Under side: Similar to the male, varying to ochraceous buff. Antennae black.



Upper side Male

**Wingspan :** 55-80 mm.

**Distribution :** The species is very common throughout India and ascends up to 8,000 feet in Himalayas. Also occurs in Sri Lanka, Myanmar to Southern Asia. Uttarakhand : Dehra Dun, Haridwar, Nainital, Pauri, Rudra Prayag, Chamoli, Pithoragarh, Bageshwar, Champawat, Tehri Uttarkashi and Udham Singh Nagar districts.

29. *Catopsilia pyranthe* (Linnaeus)

## The African Emigrant

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

1881a. *Catopsilia pyranthe* (Linnaeus) Moore, *Lep. Ceylon*, 1 : 124, pl. 47, fig. 2, 2a.

**General Ecology** : This is an energetic and very common butterfly, which rarely rests during its activity period. It is most active during morning and early afternoon. It covers long distances in a single flight. On hot days the males gather in large numbers on wet soil. When resting, the wings are closed over the back but the forewings are not drawn between the hindwings. It is a regular migrant in the plains of peninsular India. It feeds on the flowers of herbs and shrubs e.g. *Lantana camara*, Pomegranate, red gram, bitter gourd, *Medicago sativa* and several other plants.



Upper side Male



Under side Male

**Diagnostic Characters** : Antennae reddish, head and thorax brown; abdomen white; under side of palpi, thorax and abdomen white.

**Male** : Upper side : Wings chalky white or greenish. Forewing with apical and marginal narrow black border; a black disco-cellular spot, which may be absent. Hindwing with marginal black dots or spots with a continuous narrow border. Under side : Greenish, with reddish-brown strigae and disco-cellular spots.

**Female** : Upper side : Wings greenish-white to greenish-yellow. Forewing with black border, and a black disco-cellular spot. Under side : Similar to male with prominent disco-cellular ring spots. Both wings with post-discal series of reddish brown spots.

**Wingspan** : 50-70 mm.

Wynter-Blyth (1957), Varshney (1997) and Larsen (1987) believe that *Catopsilia florella* is only a dry season form of *pyranthe* and hence there seems to be no justification to treat *Catopsilia florella* separately.

**Distribution** : The species is very common throughout India, ascending upto 9,000 feet in Himalayas. Also occurs in Sri Lanka, Myanmar and South-east Asia. Uttarakhand : Dehra Dun, Haridwar, Almora, Chamoli, Bageshwar, Nainital, Pauri, Pithoragarh, Tehri, Champawat, Uttarkashi and Udham Singh Nagar districts.

30. *Gonepteryx rhamni nepalensis* (Doubleday)**The Common Brimstone**

1847. *Gonepteryx nepalensis* Doubleday, *Gen. Diurn. Lep.*, 1 : 71.

1907. *Gonepteryx rhamni nepalensis* (Doubleday) : Rober, In : Seitz. *Macrolep.*, *Fauna Palaearctica*, 1 : 61, t. 246.

**General Ecology** : The word butterfly is derived from the butter-yellow colour of the male of this species. It is very common in North-West Himalayas. It flies in open country and forest edges. Both the sexes are fond of visiting flowers of Marigold, *Caltha palustris*, *Gentian* sp. etc.

**Diagnostic Characters** : Antennae, palpi and head above reddish brown; thorax with dull yellowish grey hairs; abdomen above black, yellow on the sides; under side of palpi, thorax and abdomen yellowish-white.

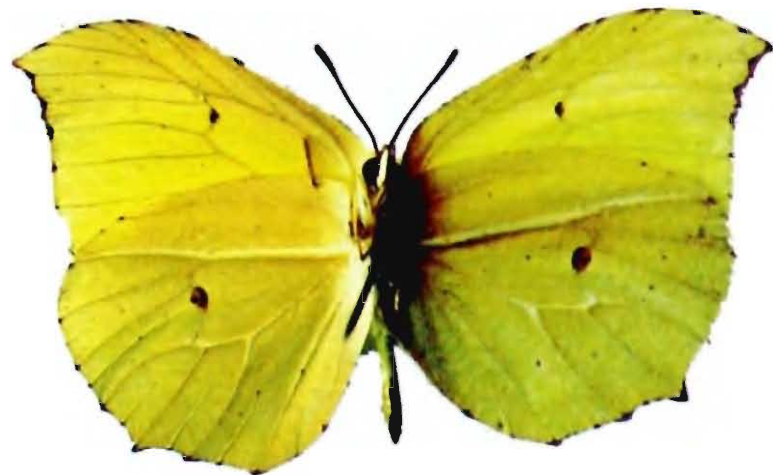
**Male** : Upper side : Wings sulphur-yellow; an orange disco-cellular spot on both wings. Forewing with apex more falcate. Under side: Pale yellowish green. **Female** : Upper side : Creamy white. Forewing with apex sharply produced and falcate; marginal dots more distinct; disco-cellular spots on both wings larger and brighter. Hind wing toothed at vein 3. A dark orange spot present at the end of cell in each wing. Under side : Pale Yellowish-white or greenish.

**Wingspan** : 60-70 mm.

**Distribution** : This subspecies is distributed from Chitral (Pakistan) to northern Myanmar and occurs from 2,000 to 10,500 feet in the North-West Himalayas. Uttarakhand : Dehra Dun, Haridwar, Almora, Chamoli, Pauri, Nainital, Tehri, Rudra Prayag and Uttarkashi districts.



Upper side Male



Under side Male

31. *Eurema laeta laeta* (Boisduval)  
The Spotless Grass Yellow

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

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

*General Ecology* : A very common butterfly of drier regions. It flies close to the ground for very short distances and visits various flowers like *Smithia sensitivex*, *Tridax*, *Vernonia*, *Sida* sp. and many more lowly growing flowers.

*Diagnostic Characters* : Antennae yellow, with scattered dusky scales; head with pinkish pubescence; thorax and abdomen black with scattered yellow hairs and scales; under side of palpi, thorax and abdomen pale yellowish-white.

*Male and female* : Upper side : Wings yellowish. Wet season form: Forewing apex and termen rounded and broadly black, but is not excavated between vein 3 and does not run on the inner edge being unevenly rounded. Hindwing with narrow terminal black border. Under side : Duller ground colour. Both wings evenly but sparsely dusted with black. Forewing paler yellow. Hindwing with black dots.

*Dry season form* : Forewing pointed and termen sharply cut and straight. Upper side a rich brighter yellow. Forewing with broad black apex and terminal border ending at vein 2. Hindwing darker on margin reduced or absent. Under side of both the wings with pale yellow ground colour. Forewing with apical area and basal half of costa dusted with pink scales. Hindwing with a darker oblique line.



Upper side Male

*Wingspan* : 30-45 mm.

*Distribution* : The subspecies is very common throughout peninsular India, ascending to about 8,000 feet in North-West Himalayas. Also occurs in Sri Lanka. Uttarakhand : Dehra Dun, Haridwar, Almora, Chamoli, Bageshwar, Nainital, Pauri, Pithoragarh, Tehri, Champawat, Uttarkashi and Udham Singh Nagar districts.

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

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

1932. *Eurema hecabe fimbriata* (Wallace) : Corbet and Penlebury, *Bull. Raffles Mus. Sing.*, 7 : 160, pl. 5.

**General Ecology** : It is found all over India and abundant in many places. It occurs in large open patches in the evergreen forests, semi-evergreen and deciduous forests and also near the human habitations. It has a weak fluttering flight. Although it is named “Grass Yellow”, it is not dependent on grasses. It feeds mostly on small, low growing flowers of plant species of the genera *Cassia*, *Wagatea*, *Acacia*, *Serbania*, *Albizia*, *Caesalpinia* etc.. The males also visit damp patches and are a regular member of mud-puddling assemblage. It is most active in the morning and at noon.

**Diagnostic Characters** : Head with antennae greyish yellow, club black; head, thorax and abdomen yellow, shaded with fuscous; under side of palpi, thorax and abdomen yellowish white.

**Male and female** : Upper side : Wings bright yellow. Wet season form : Forewing with black broad border and has an excavated between veins 2 and 4. Under side: Paler than upper side. Forewing with a prominent reddish-brown patch. Hindwing with a slightly curved sub-basal series of three spots. Both wings with minute reddish-brown costal and outer marginal terminal specks at vein ends.

**Dry season form** : Similar to wet season form. Border black and narrow. Under side : Markings on both the wings reddish brown and prominent.

**Wingspan** : 40-50 mm.

**Distribution** : The subspecies ranges from Punjab to Kumaon, ascending to about 9,000 feet in North-West Himalayas. Also occurs in Pakistan. Uttarakhand : Dehra Dun, Haridwar, Nainital, Pauri, Almora, Pithoragarh, Tehri, Bageshwar, Champawat, Uttarkashi and Udham Singh Nagar districts.



Upper side Male

33. *Eurema brigitta rubella* (Wallace)**The Small Grass Yellow**

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

1939. *Eurema brigitta rubella* (Wallace) : Talbot, *Fauna of British India (Butterflies)*, 1 : 515-517.

*General Ecology* : This is a very common butterfly. It flies close to ground, around bushes. It is a weak flier. Its congregation can be seen in the undergrowth. It visits low growing flowers.

*Diagnostic Characters* : Antennae, head, thorax and abdomen dusky black, the thorax with some yellow hairs; under side of palpi, thorax and abdomen whitish-yellow.

*Male and female* : Upper side : Wings bright yellow. Forewing with apex and termen broadly black with inner edge evenly rounded. Hindwing with the termen broadly or narrowly black. Under side : Forewing with costa narrowly edged with pink; two well marked small black spots on the end cell. Hindwing with a spot at the base, followed by three transversely placed spots and an elongate, delicate, loop-like disco-cellular spot; black above and below the disco-cellular spot are small diffuse black spots. Both the wings with black marginal vein dots. This species shows seasonal variations. Wet season form has broad black areas. The name *rubella*. (Wallace) applies to the dry season form. The dry season form has more dusting and is paler. The males have no sex bands on the hindwing.



Upper side Male

*Wingspan* : 30-40 mm.

*Distribution* : This species is very common throughout India, ascending to about 12,500 feet in North-West Himalayas. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Dehra Dun, Haridwar, Almora, Chamoli, Bageshwar, Nainital, Pauri, Pithoragarh, Tehri and Uttarkashi districts.

### 34. *Colias electo fieldi* Menetries The Dark Clouded Yellow

1855. *Colias fieldi* Menetries, *Enum. Corp. Mus. Petr.*, 1 : 79, pl. 1, fig. 5 (Male).

1939. *Colias electo fieldi* Menetries : Talbot, *Fauna of British India (Butterflies)*, 1 : 562-563.

**General Ecology** : It is very common throughout the Himalaya. It inhabits open hillsides and hilltops and is a fast flier, visiting various types of low growing flowers such as *Taraxacum officinale*, *Gentiana carinata*, *Primal* sp., *Calhan poultries* etc. It is most common between pre-monsoon and post-monsoon period.

**Diagnostic Characters** : Antennae, head and thorax interiorly salmon pink, antennae club darkening to brown; thorax and abdomen dusky greenish-black.

**Male** : Upper side : Forewing deep orange, inner margin broad pale yellow; outer margin broadly black; disco-cellular spot pale yellow in colour. Under side : Paler, the costal margin narrowly. Hindwing overlaid with pale dull green and disco-cellular spot large.  
**Female** : Upper side : Same as male, but borders spotted with ground colour. Hindwing heavily dusted with black scaling. Under side: As in the male.

**Wingspan** : 45-65 mm.

**Distribution** : The subspecies is distributed from Baluchistan through North-west and western Himalayas to Sikkim. Also occurs in Nepal. Mondal (1984) recorded the species from as high as about 16,000 feet in Tons Valley. Uttarakhand : Almora, Bageshwar, Chamoli, Dehra Dun, Haridwar, Nainital, Rudra Prayag, Champawat, Udham Singh Nagar, Pauri, Pithoragarh, Tehri and Uttarkashi districts.



Upper side Male



Under side Male

35. *Colias erate erate* (Esper)

## The Pale Clouded Yellow

1805. *Papilio erate* Esper, *Die Schmett.*, Suppl., 3 : 13, pl. 119, fig. 3. (Male).

1880. 1(b). *Colias erate erate* (Esper) : Butler, "On a collection of Lepidoptera from Kandahar" *Proc. Zool. Soc. Lond.*, : 409.

*General Ecology* : It is a very busy butterfly, keeps constantly on move, fluttering rapidly within a meter from the ground. It visits flowers. Both the sexes frequently settle to feed on low growing flowers.

*Diagnostic Characters* : *Male* : Upper side : Wings lemon yellow. Forewing with a small, oval, disco-cellular black spot; apex and outer margin broadly black, broadest at the apex and narrowing to tornus; with or without yellow sub-marginal black spot. Hindwing deep orange-yellow with disco-cellular and broken marginal black spots.



Upper side Male



Under side Male



Upper side Female

Under side Lemon yellow; base and costa of fore-wing and basal half of hindwing lightly dusted with black. Forewing with disco-cellular spot as on upper side. Both wings with cilia and a marginal line salmon-pink. *Female* : Same as male, but the ground colour on either sides paler yellow or white. Forewing : Upper side with sub-marginal spots larger and more numerous than those in the males.

*Wingspan* : 45-55 mm.

*Distribution* : This subspecies ranges from Baluchistan to Chitral (Pakistan) and Kumaon. It has been recorded between 5,000 to 11,000 feet in the Himalayas between March and July before rains and then between November and March in the dry season. Uttarakhand : Dehra Dun, Haridwar, Tehri and Uttarkashi districts.

### 3. Family DANAIDAE

#### Milkweed Butterflies

The members of this family are commonly known as Tigers, Crows and Tree Nymphs. They are large sized and tough, and leathery Butterflies possessing an unpleasant smell and unpaletable juices. The odour and unpleasant taste has been evolved to protect them from their natural enemies like birds and lizards.

All the species are fond of visiting and feeding on flowers, most of them like resting on damp patches, and over ripe fruits. They are sun-loving. They have a slow flight, feign death when caught.

The males have special scent organs and also possess a pair of abdominal hair pencils. The forelegs being imperfect unfitted for the walking in both the sexes characterize this family. The cells are closed on both the wings. No seasonal variation is observed in this group of butterflies.

Talbot (1947) recorded only three genera viz. *Danaus* Kluk, *Euploea* Fabricius, and *Idea* Fabricius from the Indian region. The present study is referable to first two genera, the genus *Idea* is not known from Western Himalayas.

Some common species of this family are *Euploea core core*, *Danaus chrysippus*, *Danaus genutia* etc.

#### 36. *Danaus chrysippus chrysippus* (Linnaeus)

##### The Plain Tiger

1758. *Papilin chrysippus* Linnaeus, *Syst. Nat.*, (10th ed.) : 471.

1947. *Danaus chrysippus chrysippus* (Linnaeus): Talbot, *Fauna of British India (Butterflies)*, 2 : 21.

**General Ecology :** It is the commonest of all the Indian butterflies and the strongest flier of the genus *Danaus*. It flies in an undulating fashion and generally remains on wing for longer periods. It visits flowers of Lantana, Jatropha, Ceylon Carissa, Common Zinnia, Marigold, Sunflower, Radish and Barseem.

**Diagnostic Characters :** Antennae black; head and thorax black, spotted with white; abdomen ochraceous above and whitish below.

**Male and female :** Upper side : Wings reddish brown. Forewing with black borders



Upper side Male

and variable numbers of white spots in the costa and apex; apical half black, four white spots from costa to vein 4; smaller white spots also in area 3 and at the cell end, on costa and at the outer margin; veins not blackened. Hindwing: Ground colour paler; outer margin narrowly black, with an incomplete series of white spots; with four small black spots around the cell in male and three in female and a pouch in male. Under side : Dull orange. Forewings dark brown in the upper half with spots in the black area. Hindwing with six black spots.

The female of Danaid Egg-fly (*Hypolimnas misippus*) mimics the Plain Tiger and it is very interesting that mimic and the model are found together.

*Wingspan* : 70-80 mm.

*Distribution* : The subspecies is very common throughout India, ascending to a height of about 9,000 feet in Himalayas. Uttarakhand : Chamoli, Dehra Dun, Haridwar, Almora, Bageshwar, Nainital, Pauri, Pithoragarh, Tehri and Uttarkashi districts.

### 37. *Danaus genutia genutia* (Cramer)

#### The Common Tiger

1779. *Papilio genutia* Cramer, *Pap. Exot.*, 3 : 23, pl. 206, figs. C & D.

1998. *Danaus genutia genutia* (Cramer) : Mondal & Maulik, *Fauna of Meghalaya, State Fauna Series*, 4 (Part-6) : 236.

*General Ecology* : It is popularly known as the Monarch Butterfly all over the world. Also known as "The Common Tiger" It is a well known migrant and found throughout India in the areas of heavy rainfall, forest edges and scrub jungles. It visits flowers of Indian Chest nut, Feather Cock's Comb, Zinnia, Cosmos and Cadilla etc. It is known to migrate in large numbers in the plains and hills of South India.

*Diagnostic Characters* : Antennae black; head and thorax black with white spots and streaks; abdomen orange brown, with white markings.

*Male and female* : Upper side : Forewing reddish brown with bold black veins and white apical spots cell end. Hindwing paler than forewing bearing two complete series of white spots. Under side : Paler, Hindwing with more prominent black lines along the veins.

*Wingspan* : 75-100 mm.

*Distribution* : The subspecies is available throughout the year, though less common in cold weather. When occurring in drier region, the orange brown part of the hindwing tends to become paler or whitish. It is found up to 8,000 feet in Himalayas. Uttarakhand : Chamoli, Dehra Dun, Haridwar, Almora, Nainital, Bageshwar, Rudra Prayag, Pauri, Tehri, Pithoragarh, Champawat, Uttarkashi and Udham Singh Nagar districts.



Upper side Male

38. *Parantica sita* (Kollar)**The Chestnut Tiger**

1844. *Danais sita* Kollar, *In: Hugel's Kaschmir und das Reich der Siek*, 4 : 424, pl. 6.

1984. *Parantica sita sita* (Kollar) : Ackery & Vane-Wright, *Milkweed Butterflies* : 178.

**General Ecology** : It is fairly common along most of the Himalayas, and in the hills of Assam. It is found in all sort of country. It has a high and soaring flight often well above the tree level. It visits damp patches and also seen on the flowers of chestnut tree, *Cedrella* etc.

**Diagnostic Characters** : Antennae black; head and thorax black, spotted with white; abdomen from brown to bright ochraceous, whitish beneath.



**Upper side Male**

**Under side Male**

**Male and female** : Upper side : Forewing black or fuliginous black with the bluish white sub-hyaline markings. The whole of cell and three-fourths of the basal area is filled with broad bluish-white streak; five very large quadrate discal spots; two long sub-apical streaks; three short streaks beyond cell; a sub-marginal series of rounded spots, decreasing in size anteriorly, and curved inwards opposite the apex; an incomplete sub-marginal series of smaller spots. Hindwing : Chestnut-red, with sub-hyaline streaks and spots, streak from the base, in area 1 a, 1 b, not reaching the margin, two broad streaks in area 1 c, united to near their apex; a stripe filling the cell. Male with two scent pouches, the largest on the area 1 b and the smaller one in the 1 a. Under side : Markings similar, clearer and more complete. Forewing with the apical area also chestnut brown.

**Wingspan** : 85-110 mm.

**Distribution** : The species is common from Kashmir to Sikkim and Assam, ascending to about 8,000 feet in Himalayas. Also occurs in Bhutan and Myanmar. Uttarakhand : Chamoli, Dehra Dun, Haridwar, Pauri and Pithoragarh districts.

39. *Tirumala limniace leopardus* (Butler)**The Blue Tiger**

1866. *Danais limniace* var. *leopardus* Butler, *Proc. zool. Soc. Lond.*, : 2, fig. 10 (Female).

1984. *Tirumala limniace leopardus* (Butler) Ackery & Vane-Wright. *Milkweed Butterflies* : 198.

**General Ecology** : It is a large sized and very common butterfly found throughout the plains and hills of India. It flies slowly, but faster during migration or when disturbed. It settles frequently on wet places. It is mainly an inhabitant of woodlands, gardens, edges of forests etc.

**Diagnostic Characters** : Antennae black; head and thorax blackish with white spots and streaks; abdomen dusky black.

**Male and female** : Upper side : Forewing black with irregular white or pale blue spots and streaks. Cell with a single narrow streak at base and a large indented white spot beyond it, two white streaks below the cell. Hindwing black with irregular bluish-white spots and streaks. Streaks in the cell broad and forked. Under side : Markings similar as on upper side. Forewing dusky black at basal two-thirds and olive brown apically. Hindwing olive brown. Male with sex pouch in interspace.



Upper side Male

**Wingspan** : 90-100 mm.

**Distribution** : The subspecies ranges from Baluchistan and Chitral to Kumaon, West Bengal and Sikkim, ascending to 5,000 feet in Himalayas. Also occurs in Sri Lanka, Bangladesh, Bhutan, China, Nepal, Myanmar Sumatra, Thailand and Vietnam. Uttarakhand : Dehra Dun, Haridwar, Pauri, Nainital and Tehri districts.

40. *Tirumala hamata septentrionis* (Butler)**The Dark Blue Tiger**

1874. *Danais septentrionis* Butler, *Ent. Mon. Mag.*, 11 : 163.

2006. *Tirumala hamata septentrionis* (Butler) Gupta & Maulik, *Fauna of Nagaland, State Fauna Series*, 12 : 283.

**General Ecology :** It is a very common butterfly throughout the hilly and forest region. It is found throughout the year but commonest at low elevations during wet weather. It is a slow flier and visits moist places. It visits flowers and can be seen feeding on flowers of *Cirsium* species.

It closely resembles *Tirumala limniace* (Cramer), but is always sufficiently distinct to be easily recognized, even on the wings.

**Diagnostic Characters : Male and female :** Upper side : The back ground colour of wings is dark and semi-hyaline markings narrower and of a bluish-white tint. Forewing with two narrow streaks in area 1 b, never coalescent, the upper one forming an oval detached spot; the short streaks above vein 5 are outwardly never truncate, always acute. Hindwing with two cell streaks united at the base but separate distally.



Upper side Male

Under side : Darker than in *T. limniace leopardus*. Male with a pendulous pouch on hindwing, in area 1 c.

**Wingspan :** 80-105 mm.

**Distribution :** The subspecies is fairly common in Himalayas, ranges from Kulu to Assam, ascending to about 8,000 feet and Nagaland, Arunachal Pradesh, Manipur, Meghalaya, Jammu & Kashmir, Sikkim, West Bengal and Darjeeling. Also occurs in Bhutan, China, Malaya, Myanmar, Nepal, Sumatra, Taiwan and Thailand. Uttarakhand : Almora, Dehra Dun, Haridwar, Nainital, Pithoragarh, Tehri and Uttarkashi districts.

#### 41. *Parantica aglea melanoides* Moore

##### The Glassy Tiger

1883. *Parantica melanoides* Moore, *Proc. zool. Soc. Lond.*, : 247.

1984. *Parantica aglea melanoides* Moore : Ackery & Vane-Wright, *Milkweed Butterflies*, : 175.

**General Ecology :** A transparent blue-brown butterfly of hilly regions, mostly in areas of heavy rainfall. It is a weak flier as compared to other Tigers and comes out of forests only to visit flowers of *Lantana*, *Ageratum* etc. It is a known migrant and frequents damp patches occasionally.

**Diagnostic Characters :** Antennae black; head and thorax black, spotted with white; abdomen blackish-brown, ochraceous beneath.

*Male and female* : Upper side Wings dark brown. Forewing with bluish-white semi-hyaline streaks and spots; cell streak divided lengthwise into two portions, and united at base, with black lines traversing throughout; most spots progressively decreasing in size; a



Upper side Male

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 united at base; streak in inner area and below the cell, long and narrow; other spots larger in post-discal area but decreasing towards margin. Males with a larger scent pouch on vein 2. Under side : Dark brown, the streaks are often much blurred.

*Wingspan* : 70-85 mm.

*Distribution* : The subspecies is fairly common from Kashmir to Sikkim and Assam, ascending to about 8,000 feet in Himalayas. Also occurs in Myanmar. Uttarakhand : Dehra Dun, Haridwar, Tehri, Nainital, Champawat, Udham Singh Nagar and Uttarkashi districts.

#### 42. *Euploea core core* (Cramer)

##### The Common Indian Crow

1780. *Papilio core* Cramer, *Pap. Exot.*, 3 : 133, pl. 266, Figs. EF.

1947. *Eupolea core core* (Cramer) Talbot, *Fauna of British India (Butterflies)*, 2 : 66.

*General Ecology* : This glossy brown butterfly is very common. It may be seen sailing lazily in all types of country and flying about shrubs and bushes in search of its foodstuff. It visits low growing flower plants, i.e. Lantana, Common Zinnia, *Meyenia laxiflora*, marigold etc. Even if disturbed, it does not usually fly away and even if takes off, soon returns to the same spot. It generally flies during early morning and evening and rests in groups during afternoon.

#### *Diagnostic Characters* : Male and female

Upper side : Wings glossy brown with marginal and sub-marginal white spots either equal or decreasing in size. Forewing much darker than hindwing with short bands. Under side : Light brown with markings similar to that of upper side, and a white spot at the end cell of the forewing is prominent. The male often sails with its curved abdomen and extended powder puff-like yellow hair pencils.



Upper side Male

This butterfly is mimicked by *Chilasa clytia* Linnaeus, and female of *Hypolimnas bolina* Linnaeus.

*Wingspan* : 80-95 mm.

*Distribution* : The subspecies is very common throughout India at altitude below 8,000 feet. Uttarakhand : Almora, Chamoli, Dehra Dun, Nainital, Pauri, Pithoragarh, Bageshwar, Tehri, Champawat, Uttarkashi and Udham Singh Nagar districts.

#### 43. *Euploea mulciber mulciber* (Cramer)

##### The Striped Blue Crow

1777. *Papilio mulciber* Cramer, *Pap. Exot.*, 2 : 45, pl. 127, figs. C-D.

1911. *Euploea mulciber mulciber* (Cramer) Tytler, *J. Bombay nat. Hist. Soc.*, 21 : 49.

*General Ecology* : It is commonest of the Danaids. It flies about 1-6 meters above the ground. Females may fly lower over bushes and shrubs. It can be found in almost all types of terrain and forested areas. They are also attracted to cow dung, urine, salt sources, wet rocks and damp patches. De Niceville (1897) has reported it in swarms at times. But no migration of this species has been recorded so far.

*Diagnostic Characters* : Antennae, head, thorax and the abdomen dark brown; abdomen glossed with greenish blue above; head, thorax and abdomen beneath with white spots and transversely banded.

*Male* : Upper side : Forewing glossy-black, with blue spot and with pale terminal, marginal and discal spots. Spot in end cell present. Upper Hind wings unspotted except for a light brown scent-patch. Apical half has greyish scales and a small yellow patch of specialized scales.



Upper side Female



Under side Female



Upper side Male



Under side Male

*Female* : Upper side : Pale and similar to male, except on the hindwing narrow white discal streaks, spots similar but white. Forewing blue glossed areas are similar. Under side : Markings as on the upper side but clear, distinct and broad.

*Wingspan* : 90-100 mm.

*Distribution* The subspecies is common from Kulu to Assam and Madras to West Bengal. Also common in China, Malay Peninsula, Myanmar, Nepal, Sumatra and Vietnam. Uttarakhand : Dehra Dun, Haridwar, Nainital, Almora, Bageshwar, Champawat, Udham Singh Nagar, Pauri and Tehri districts.

#### 4. Family ACRAEIDAE

Members of family Acraeidae are small to medium-sized butterflies. They are tawny or yellow in colour. They are mostly distributed in Africa. Only two species are known to occur in India viz. *Acraea issoria* (Hubner) and *Acraea violae* (Fabricius). Both of them occur in Uttaranchal.

The forewings are long and hindwings rounded, free from the abdomen along their inner margins, not channeled to receive it.

They love sunshine and visit various flowers. They are weak fliers. They fly close to the ground and often seen basking early in the mornings. Like Danaids, Acraeids are also well protected, and when in captivity, the species eject a sort of protective, oily, yellowish evil-smelling fluid, which is obnoxious to predators.

In both the sexes; the forelegs are unsuitable for walking; the cells are closed in both the wings. Anal veins are free in forewing.

##### 44. *Acraea issoria anomala* Kollar

##### The Yellow Coster

1844. *Acraea anomala* Kollar, *In* : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 425, pl. 3, figs. 3, 4.

1910. *Acraea issoria anomala* Kollar, *The Butterflies of Kumaon, Part-1, J. Bombay nat. Hist. Soc.*, 20 : 141.

*General Ecology* : A localised rapid flier but when at rest can easily be captured. It is fond of settling on leaves and flowers. It inhabits open and scrubby country. Sun loving, can be seen basking early in the morning.

*Diagnostic Characters* : Antennae, head, thorax and abdomen black and thorax with ochraceous yellow pubescence anteriorly; under side of thorax and abdomen black and spotted with a very pale ochraceous spots.

*Male and female* : Upper side : Wings yellow brown. Forewing with the veins along the costal margin broadly, and apical half of those along the outer margin narrowly, black, decreasing in width towards tornal and transversed by an ante-marginal series of small spots of ground colour. Hindwing bearing spots of ground colour and the sub marginal zigzag line; outer area with marginal wavy black line.



Upper side Male

Underside of forewing yellow, becoming paler towards the apex, the veins much darker, and the black disco-cellular mark showing through. Hindwing with ground colour a delicate pinkish-white, the veins conspicuously black; sub-marginal line lunulate, edged with black on inner as well as outer margin. The markings of female are usually darker than the males. According to Peile (1937) the species is abundant at Mussoorie in the month of June at 3,000 feet.

*Wingspan* : 45-65 mm.

*Distribution* : The subspecies ranges from Kulu to Kumaon between 3,000 to 6,000 feet. Uttarakhand : Almora, Chamoli, Dehra Dun, Haridwar, Bageshwar, Champawat, Nainital, Rudra Prayag, Tehri and Udham Singh Nagar districts.

#### 45. *Acraea violae* (Fabricius)

##### The Tawny Coster

1775. *Papilio violae* Fabricius, *Syst. Ent.*, (3) 1 : 460 no. 74.

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

*General Ecology* : This yellowish-brown butterfly seen during the latter part of June becomes most abundant in July between 2,000 to 7,000 feet. A localized butterfly, seldom straying far from its food plants. Its flight is very slow, fluttering and close to the ground. Often found basking in the early morning hours. It is fond of settling on leaves and flowers of Land-Caltrops, Lantana, Tall chaste, Monk's Pepper tree, etc. It inhabits open and scrubby country but not forest. It exudes a yellowish, foul-smelling, oily liquid when disturbed.

*Diagnostic Characters* : Antennae black; head and thorax black, spotted with ochraceous and white; abdomen anteriorly black, posteriorly ochraceous yellow with black lines. Under side of palpi, thorax and abdomen ochraceous; thorax spotted with ochraceous, abdomen with basal longitudinal black lines.

*Male* : Upper side : Wings tawny. Forewing with a transverse black cell spot; an irregular disco-cellular black bar; post-discal black spots in areas 1b, 3, 4, 5, 6, and 10, those in 4 to 6 parallel to end of cell; apex and outer margin narrowly black, narrowing posteriorly, and with short projections on the veins. Hindwing with a basal lines of four or five black spots, a similar spot in the middle of cell, and a sub-costal black spot above it; a discal series of obscure blackish spots; a



Upper side Male

minute post-discal black dot in areas 4 and 6; a broad black marginal border, bearing a sub-marginal series of small spots of the ground colour. Under side : Ochraceous-yellow. Forewing: Paling to whitish on the apex, with black markings as on upper side, but more clearly defined; sub-marginal spots much larger, white, not tawny; base of wing black, separated from the basal black spots by two or three larger whitish spots.

*Female* : Similar to male. Upper side : Ground colour duller, the black spots on both wings larger, upper post-discal spots on forewing often coalescing, and forming an irregular oblique short band; marginal black border on both wings proportionally broader. Hindwing : Sub-marginal spot larger and whitish. Under side : Paler and duller, markings as on upper side, spot on hindwing well defined.

*Wingspan* : Male and female : 50-65 mm.

*Distribution* : Peninsular region to Punjab and the lower altitudes of Himalayas upto 7,000 feet, West Bengal, Bihar and Sikkim. Also occurs in Sri Lanka. Uttarakhand : Dehra Dun, Haridwar, Almora and Bageshwar districts.

## 5. Family SATYRIDAE

### Browns

Members of the family Satyridae are usually dull brown or blackish in colour, occasionally with yellowish or white patches on wings. Under side often ocellated and beautifully variegated. The flight is weak, slow, and jerky or bouncing, rather close to the ground littered with dead fallen leaves.

Some species particularly in hilly regions, prefer open meadows and grasslands with small herbs, shrubs and bushes. They are less dependant on sunlight than the gaudy coloured butterflies, often seen on the wings even on cloudy and rainy days when no other butterfly usually venture to come out.

The species mostly feed on grasses including bamboos. Most of the species do not visit flowers but are attracted to over-ripe fruits, sap and salts like Common Evening Brown, even get attracted to light.

The forelegs in both the sexes are very small and unfitted for walking and cell closed in both the wings.

Seasonal variations are best known in this family, particularly in Evening Brown where no two specimens in the dry season look alike and appear like dead leaves, often with fungus like markings, looking all the more natural.

Some common species of this family occurring in the State are *Mycalesis perseus* (Fabricius.), *Mycalesis mineus mineus* (Linnaeus.), *Lethe maitrya* (de Niceville), *Lethe confusa confusa* Aurivillius, *Lethe verma verma* (Kollar).

#### 46. *Mycalesis perseus blasius* (Fabricius)

##### The Common Bushbrown

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

1947. *Mycalesis perseus blasius* (Fabricius) :  
Talbot, *Fauna British India, Butterflies*, 2 :  
132-133.

*General Ecology* : This butterfly is commonest of the group found in wetter and dense forested areas. These are very shy butterflies with weak flight. When disturbed, fly close to the ground for short distance and settles in the undergrowth. Males occasionally settle on damp patches, prefer, tree sap and rotting fruits as food.



Upper side Male

**Diagnostic Characters** : Antennae brown above, greyish white below, the club tipped with ochraceous; head, thorax and abdomen brown, paler beneath.

**Male and female** : Upper side Forewing with an ocellus in area 2. Ground colour of both wings dark to pale brown. Both wings with a pale sub-marginal and a marginal line, placed close together, and obscure on forewing. Underside : Both wings with ground colour as on upper side and crossed by a narrow, discal, bluish white line, its inner side edges with darker brown; sub-marginal and marginal lines paler.

Under side of forewing with a curved series of four ocelli in area 2 to 5. Hindwing with seven ocelli enclosed with a pale line, as on forewing. The name *blasius* (Fabricius) applies to the wet season form.



Under side Male

**Wingspan** : 38-55 mm.

**Distribution** : The subspecies ranges from Kangra (Himachal Pradesh) to Myanmar and ascends to 5,000 feet in Himalayas. Uttarakhand : Dehra Dun, Haridwar and Udham Singh Nagar districts.

#### 47. *Mycalesis mineus mineus* (Linnaeus)

##### The Dark Band Bushbrown

1767. *Papilio mineus* Linnaeus, *Syst. Nat.* (12th ed.), 1 (2) : 768.

1947. *Mycalesis mineus mineus* (Linnaeus)  
: Talbot, *Fauna of British India, Butterflies*, 2 : 134-136.

**General Ecology** : It is commonest butterfly among Bush Browns and found in hills and plains.

**Diagnostic Characters** : Antennae, head, thorax and abdomen brown; antennae club with black and ochraceous mark.



Upper side Male

*Male and female* Upper side of wings dark brown; both wings with sub-marginal and marginal, slender, pale lines. Fore wing with a single white centred fulvous ring, black ocellus in area 2; some times a similar smaller ocellus in area 5, without any pale surrounding area. Hindwing unmarked, sometimes with one or two obscure ocelli.

Under side : Deep brown; both wings with a discal, dusky white band, well defined inwardly, diffuse outwardly; a post discal series of ocelli, surrounded by a dusky yellowish line; these ocelli vary from 2 to 4 on the forewing and 5 to 7 on hindwing; posterior four ocelli on hindwing are in a straight line, one in the area two is the largest and 4, 5 are the smallest.



Under side Male

*Wingspan* : 45-50 mm.

*Distribution* : The subspecies is generally common from Kulu to Myanmar and ascends to about 6,000 feet in Himalayas. Uttarakhand : Dehra Dun, Haridwar, Almora, Bageshwar, Nainital and Pauri districts.

#### 48. *Lethe confusa confusa* Aurivillius

##### The Banded Tree Brown

1898. *Lethe confusa* Aurivillius, *Ent. Tidskr.*, 18 : 142.

1932a. *Lethe confusa confusa* (Aurivillius) : Evans, *Identification of Indian Butterflies*, 2 : 105.

*General Ecology* : Very common species, fond of visiting moist patches and salt encrustations. It has territorial habit, very aggressive towards intruders. Rests with its wings closed and hardly seen basking.



Upper side Male

*Diagnostic Characters* : Antennae, head, thorax and abdomen dull brown; antennae tipped with ochraceous.

*Male and female* : Upper side : Wings brown. Forewing with discal, oblique, curved, white band; two sub-apical, obliquely placed, white-spots. Hindwing uniform, ocelli of underside showing through. Underside : Uniform brown; both wings with sub-basal, sub-marginal and



Under side Male

marginal sinuous lilacine-white lines. Forewing with discal white bar as on upper side, a sub-apical lilac patch bearing three ocelli in straight line and with a very short white bar joining it with the costa. Hindwing with two medial lilac lines meeting on the dorsal margin and a strongly arched series of black ocelli with white specks in centre, an inner ochraceous ring and outer lilac ring, the apical ocellus very large.

*Wingspan* : 50-55 mm.

*Distribution* : The subspecies is common in its range from Murree (Pakistan) to Sikkim and Assam, found between 2,000 to 7,500 feet in Kumaon hills. Also occurs in Myanmar. Uttarakhand : Dehra Dun, Almora and Bageshwar districts.

#### 49. *Lethe insana insana* (Kollar)

##### The Common Forester

1844. *Satyrus insana* Kollar, In : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 448, pl. 16, figs. 3, 4.

1911. *Lethe insana insana* (Kollar) : Fruhstorfer, In : Seitz. *Gross-Schmett. der Erde, Fauna Indo-Austral.*, 9 : 317.

*General Ecology* : The Common Forester seen from April to October in the Himalayas, rather uncommon west of Mussoorie. Its flight is slow, often settles, especially along earthy banks on roadsides.

*Diagnostic Characters* : Antennae, head, thorax and abdomen brown; antennae annulated with white.



Upper side Male

*Male* : Upper side : Wings brown to dark brown. Forewing with discal band showing through from below; two sub-apical, small ochraceous spots. Hindwing uniform, a post-discal, curved series of four round black spots, the apical spots sometimes elongate; sub-marginal and marginal slender black lines. Under side : Paler. Forewing with basal half darkest; a discal, broad, oblique pale bar, a sub-apical, short, narrow band bearing three white-centered obscure, small ocelli. Hindwing with a sub-basal, discal and sub-marginal slender brown lines; a curved post discal series of black ocelli with white-centered six ocelli, each ocellus with inner ochraceous and outer pale rings.

*Female* : Upper side : Forewing with a broad, oblique white band not quite reaching the tornus and the sub-apical spots white.

Underside : Whitish band as on upper side, margined inwardly by irregular shading, and out-wardly by a triangle of dark brown; outer margin broadly pale yellowish-brown with three small ocelli in vertical order, Hindwing as in the male.



Under side Male

*Wingspan* : 55-60 mm.

*Distribution* : The subspecies ranges from Chamba (Himachal Pradesh) to Kumaon. According to Peile (1937) the male is not uncommon at Mussoorie in the nallahs at 5,000 to 6,000 feet, the female very scarce. Wynter-Blyth (1940) found the species commonly occurring in the middle of September at Sungri, (8,500 feet). Uttarakhand : Dehra Dun, Almora, Chamoli, Rudra Prayag, Nainital, Bageshwar and Uttarkashi districts.

#### 50. *Lethe jalaurida jalaurida* (de Niceville)

##### The Small Silverfork

1880. *Zophoessa jalaurida* de Niceville, *J. Asiat. Soc. Beng.*, 49(2) : 245, pl. 10, fig. 19.

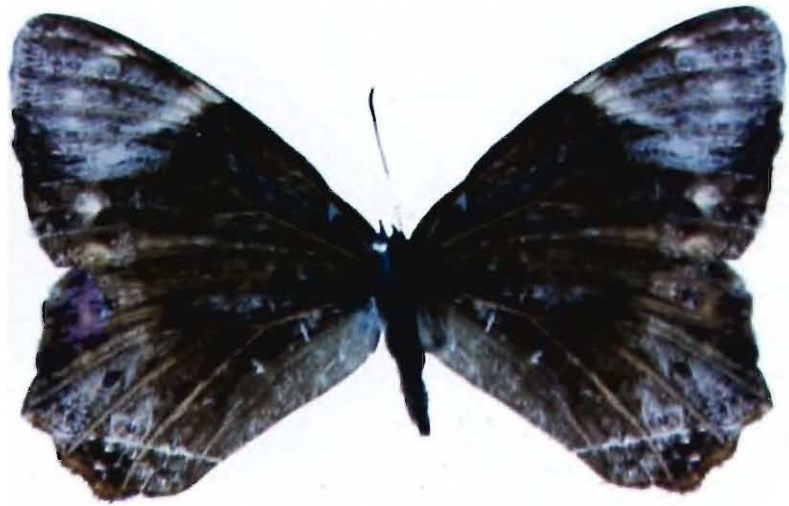
1911. *Lethe jalaurida jalaurida* (de Niceville) : Fruhstorfer : In *Seitz.Gross-Schmett. der Erde, Fauna Indo-Austral.*, 9 : 313.

*General Ecology* : A butterfly of bamboo forests; occurs in the North-west Himalayas from April to October and flies close to the ground, sometimes settling on flowers, roadsides and forest paths.

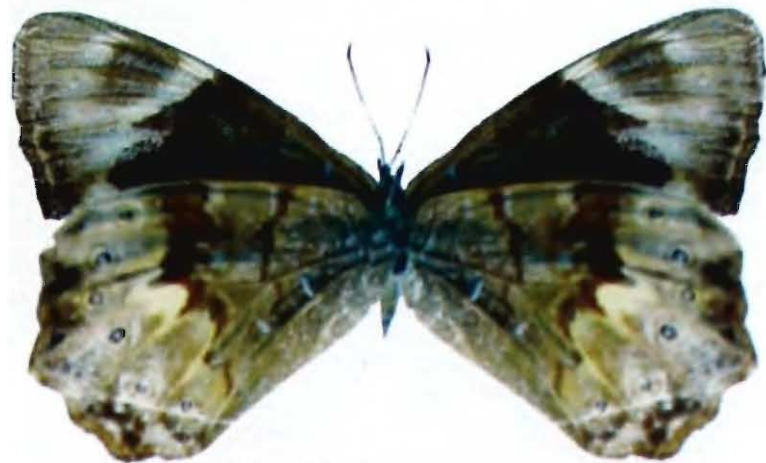
*Diagnostic Characters* : Antennae, head, thorax and abdomen brown, pale ochraceous beneath. *Male and female* : Upper side : Wings reddish-brown with a silky gloss. Forewing

with an ochraceous-white broad bar in the cell, and a discal zigzag macular band, ochraceous-white, the cell bar edged on both side and the discal band on the inner side, with diffuse dark brownish-black; a short sub-apical spot, ending below in three faint small spots and a broad sub-terminal dark band. Hindwing with a post-discal, dusky black band; a discal, broad, pale band, bearing a curved row of five round black spots; a sub-marginal dark sub-lunular band. Underside : Forewing paler and without any gloss, markings as on upper side, more distinct, the post-discal area paler. Hindwing with a basal, a sub-basal, a short median, and a discal zigzag white line; a post-discal, curved series of six black ocelli, each ocellus with a blue centre, an inner ochraceous and an outer brown ring.

*Wingspan* : 50-55 mm.



Upper side Male



Under side Male

*Distribution* : The subspecies ranges from Kulu to Kumaon and ascends to 7,000 to 11,000 feet in the North-West Himalayas. Wynter-Blyth (1940) records it as occurring sparingly in the Narkanda-Bhagi forest and in Kulu, above 6,000 feet, from June to September. Uttarakhand : Almora, Chamoli, Nainital, Bageshwar, Champawat and Uttarkashi districts.

### 51. *Lethe baladeva baladeva* (Moore)

#### The Treble Silverstripe

1865. *Zophoessa baladeva* Moore, *Proc. zool. Soc. Lond.*, 769, pl. 41, fig. 5.

1911. *Lethe baladeva baladeva* Fruhstorfer : In Seitz. *Gross-Schmett. der Erde, Fauna Indo-Austral.*, 9 : 314, t. 97d.

*General Ecology* : It is very shy, an uncommon species; flies in the forested areas and along paths and streams.

*Diagnostic Characters* : Antennae, head, thorax and abdomen brown; antennae tipped with ochraceous.

*Male and female* Upper side : Wings brown, the markings of underside showing through by transparencies, more clearly on the hindwing. Hindwing with black spots of unequal size. Underside : Forewing yellowish-brown with yellowish-white transverse bands; a post discal silvery white band; a series of 5 minute black ocelli, with white pupils, a broad ochraceous ring, and outwardly margined by an ochraceous transverse line. Hindwing with a discal, silvery white band, crossing apex of cell, a post discal series of six silver-centred,



Upper side Male

Yellow-ringed black ocelli, the apical ocellus very large, the tornus bearing two prominent reddish-ochraceous marks. The hindwing produced at apices of vein 2 and 4.

*Wingspan* : 55-65 mm.



Under side Male

*Distribution* : The subspecies ranges from Kumaon to Sikkim, at an altitude ranging from 5,000 to 9,000 feet. Uttarakhand : Almora, Bageshwar, Champawat and Nainital dist.

## 52. *Lethe maitrya maitrya* de Niceville

### The Barred Woodbrown

1880. *Lethe maitrya* de Niceville, *J. Asiat. Soc. Beng.*, 49(2) : 245, pl. 10, fig. 20.

*General Ecology* : Inhabit low elevations where bamboos grow in abundance. A very shy insect and weak flier; hardly ever visit flowers and seldom settle on the damp patches, undergrowth or tree trunk.

*Diagnostic Characters* : Antennae brown, annulated with white; head, thorax and abdomen brown deep shining.

*Male and female* : Upper side : Wings deep shining brown. Forewing crossed beyond the cell by a pale ochraceous, outwardly curved band, narrowest and more prominent at the costa, almost obsolete on reaching the third median nervule. Hindwing with the ocelli below showing through indistinctly in black spots, and a sub-marginal series of black lunules.

Under side : Forewing with a prominent outwardly short, broad, curved bar across the cell just beyond its middle; the band beyond the cell of the upper side, but much more distinct, both ochraceous. A sub-apical spot as above but whitish, below which are four minute white spots. Hindwing crossed by four very irregular purplish lines from base towards outer margin; a sub-apical band of six ocelli, the first four from the apex joined, the fifth separate, the sixth small and geminate; ocelli brown and not boarded inwardly with ochraceous.

*Wingspan* : 45-55 mm.

*Distribution* : The subspecies ranges from Kulu to Bhutan and ascends to about 11,000 feet in Himalayas. Uttarakhand Almora district.



Under side Male



Upper side Male

### 53. *Lethe rohria rohria* (Fabricius)

#### The Common Tree Brown

1787. *Papilio rohria* Fabricius, *Mant. Ins.*, 2 : 45.

1947. *Lethe rohria rohria* Talbot, *Fauna of British India (Butterflies)*, 2 : 200-201.

*General Ecology* : A butterfly of hills with thick growth of bamboo forests. Remains active during early morning and late evening, spending rest of the day at rest. It is a weak flier and never flies far, even if disturbed; gets attracted towards animal dung, over ripe fruits and tree sap.

*Diagnostic Characters* : Antennae black with ochraceous tip; head, thorax and abdomen brown.

*Male and female* : Upper side : Dark brown. Male : Upper side : Forewing with a costal and two sub-apical white spots. Hindwing with ocelli of underside showing through, forming

two or three obscure black spots and two slender sub-marginal black lines. Underside: Paler and less brilliant. Forewing with narrow and white lines, a broad discal and narrower post-discal white band forming a V; post-discal band bearing a series of four yellow-ringed black ocelli; two sub-apical white spots and marginal ochraceous lines. Hindwing with a sub-basal, white line, followed by a curved series of six black ocelli, inner ring ochraceous, outer brown, the whole series bordered on both sides by lilac-white lines. *Female* : Upper side: Forewing with a discal, broad oblique white band, with a posterior white spot in area 1 b. Under side : As in the male, but markings more pronounced, the white discal band on forewing very prominent.



Upper side Male



Under side Male

*Wingspan* : 60-70 mm.

*Distribution* : The subspecies ranges from South India to Panchmarhi and Kashmir to Sikkim, found between 3,000 to 6,000 feet in western Himalayas. Also occurs in Myanmar. Uttarakhand: Dehra Dun, Almora, Bageshwar and Tehri districts.

#### 54. *Lethe verma verma* (Kollar) The Straight-Banded Treebrown

1844. *Satyrus verma* Kollar, In : Hugel's *Kaschmir und das Reich der Seik*, 4 (2) : 447, pl. 10 fig. 23.

1911. *Lethe verma verma* (Kollar) : Fruhstorfer ; In Seitz. *Gross-Schmett. Erde. Fauna Indo-Austral.*, 9 : 324.

*General Ecology* : Abundant species especially in North-west Himalayas between 4,000 to 9,000 feet from spring to autumn. The flight is weak and of very short distance. It is fond of settling on the bark of trees and earthen banks along roadsides.

*Diagnostic Characters* : Antennae, head, thorax and abdomen brown, antennae tipped with ochraceous.

*Male and female* : Upper side Wings brown. Forewing with an even, broad, oblique, white discal band, ending near the margin just above vein 2, in the female continued below vein 2. Hindwing with a two or three faint white centered, bluish, small, obscure ocelli. Both wings with pale sub-marginal and marginal lines. Underside : Forewing with white band as above; two white-centered, ochraceous ringed, black ocelli. Hindwing with two very irregular sinuous brown lines, scaled with lilac and a post-discal series of six white-centered black ocelli encircled with a yellowish, a brown and a silvery ring. Both wings with sub-marginal and marginal pale ochraceous lines.

*Wingspan* : 55-60 mm.

*Distribution* : The subspecies ranges from Kashmir to Kumaon, recorded from Himalayas from 3,000 to 7,000 feet. Uttarakhand Almora, Dehra Dun, Bageshwar and Uttarkashi districts.



Upper side Male



Under side Male

### 55. *Lasiommata schakra schakra* (Kollar)

#### The Common Wall

1844. *Satyrus schakra* Kollar, In : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 446, pl. 15, figs. 3, 4.

1947. *Pararge schakra schakra* (Kollar) : Talbot, *Fauna of British India (Butterflies)*, 2 : 242-243.

*General Ecology* : The Common Wall is one of the commonest butterflies of the western Himalayas, extending eastwards as far as Sikkim. It can be seen in all seasons around the rocky roadside, and pitching on the rocks or sunny banks. The flight is lively and fairly close to the ground.

*Diagnostic Characters* : Antennae brown; head and thorax dark grey and abdomen pale brown. Both sexes differing slightly.



Upper side Male



Under side Male

*Male* : Upper side : Wings silky dark brown. Forewing with four large orange spots in distal area, the apical one being the largest, bearing a black white-centered ocellus; a sub-marginal brown line. Hindwing uniform; a post-discal row of six black, white-centered, orange ringed ocelli. Underside : Greyish white. Forewing with discal orange area; two lines crossing the cell, edged outwardly by dark lines; an irregular, orange-brown line, not reaching the tornus; sub-marginal and marginal dark lines. A large sub-apical ocellus and a minute ocellus beyond it towards apex. Hindwing with orange brown lines; a distal curved row of six ocelli, each ocellus with rings of pale yellow and brown, alternately two of each, a sub-marginal and marginal brown line.

*Female* : The orange spot bearing the ocellus on the upper side of the fore wing, inwardly bordered by a broad, pale, short line.

*Wingspan* : 55-60 mm.

*Distribution* : It is reported from Baluchistan and Chitral (Pakistan) to Kumaon and is common from 4,500 to 11,000 feet in Himalayas.

Uttarakhand : Almora, Chamoli, Dehra Dun, Tehri, Bageshwar, Rudra Prayag, Pithoragarh and Uttarkashi districts.

### 56. *Rhaphicera moorei moorei* (Butler)

#### The Small Tawny Wall

1867. *Rhaphicera moorei* Butler, *Ann. Mag. nat. Hist.*, (3) 14 : 164, pl. 4, fig. 4.

1947. *Rhaphicera moorei moorei* (Butler) : Talbot, *Fauna of British India (Butterflies)*, 2 : 250, fig. 76.

*General Ecology* : The Small Tawny Wall is a local species of temperate regions. It is found in the Himalayas between 7,500 to 14,000 feet during August. Some times it visits the flowers and rests in shady undergrowths or under rocks with wings closed.

*Diagnostic Characters* : Antennae black; head, thorax and abdomen dusky brown.

*Male and female* Upper side : Wings ochraceous-yellow. Forewing with basal area shaded with dusky brown; discal yellow spot in area 3 bears a black dot, some time absent. Hindwing with basal area shaded with dusky brown; distal patch in area 4 bears a black spot.

Under side : Paler, dull ochraceous yellow. Forewing with post discal line more evenly curved and ending at inner margin. Hindwing with six white-centred black ocelli in discal and outer areas, with two dark lines in the cell.

*Wingspan* : 55-60 mm.

*Distribution* : The subspecies ranges from Shimla to Sikkim, found from 7,000 to 11,000 feet in Kumaon hills. Uttarakhand : Almora, Chamoli, Dehra Dun, Bageshwar and Pithoragarh districts.



Upper side Male

### 57. *Aulocera brahminus* (Blanchard)

#### The Narrow Banded Satyr

1844. *Satyrus brahminus* Blanchard, *In* : Jacquemont's *Voy. Dans Inde*, 4, Ins., : 22, pl. 2, fig. 4.

1932. *Aulocera Brahminus* Blanchard : Evans, *Identification of Indian Butterflies*, 2<sup>nd</sup> ed. : 116.

*General Ecology* : It is a large, powerful and heavily built butterfly. It is an inhabitant of Himalayas, preferring open country. The flight is graceful and fast. The species is fond of sunshine and rests on ground and rocks and occasionally on flowers.

*Diagnostic Characters* Antennae, head, thorax and abdomen dark brown.



Upper side Male



Under side Male

*Male and female* Upper side Wings black with a bronzy sheen; both wings crossed by a post-discal oblique band of white spots, excurved on hindwing. Forewing with band-interrupted sub-apically by a large round black spot, enclosed by a white spot on outer, upper and inner edges. Hindwing band narrow, not reaching inner margin, cilia alternately black and white. Under side Pale brown, markings as on upper side but irrorated with minute specks and striae of white; forewing irroration less prominent at basal, discal and inner areas. Hindwing darker in lower basal half, with a post discal, lunular, irregularly curved black band.

*Wingspan* : 55-68 mm.

*Distribution* : The species is not common and occurs at high elevation to above 13,500 feet in Himalayas. Uttarakhand : Chamoli, Dehra Dun, Almora, Bageshwar, Pithoragarh and Uttarkashi districts.

### 58. *Aulocera padma padma* (Kollar)

#### The Great Satyr

1844. *Satyrus padma* Kollar, *In* : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 445 pl. 15, figs. 1, 2.

1932. *Aulocera padma padma* (Kollar) : Evans, *Identification of Indian Butterflies*, 2<sup>nd</sup> ed. : 116.

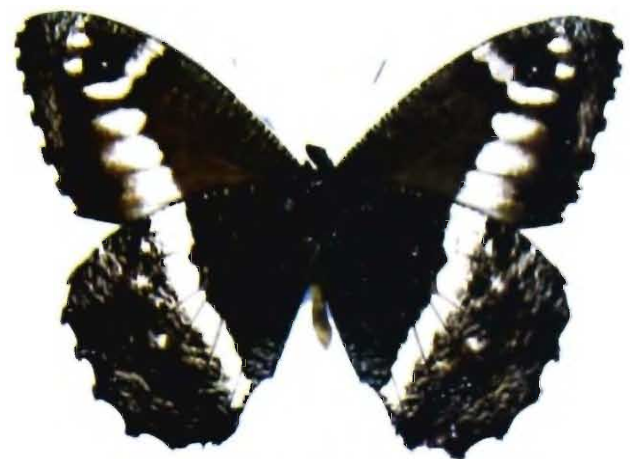
*General Ecology* : It is the largest species of the *Aulocera* genus. It has a powerful and graceful flight, very difficult to catch. It is fond of settling on roads, hilltops and ridges, often sits on the ground with closed wings. The male is very aggressive and chases intruders.

*Diagnostic Characters* Antennae, head, thorax and abdomen black.

*Male and female* : It is larger than *Aulocera brahminus*. Upper side : Wings dark brown to black with out bronzy sheen. Forewing with broad discal band, straight not tinged, marginal three white spots well separated, conical and pointed outwardly; sub-apical black spot not prominent; white spot in inner side of sub-apical spot continued to costa in female. Hindwing with broad band, generally touching inner margin.



Upper side Female



Under side Female

Under side : Silky brown; dark brown discal bands sharply defined on inner edges, diffused on outer side. Forewing with a sub-marginal, broad dark brown band; spots on areas three and four of discal band separate. Basal area of hindwing very dark, the greyish white, very delicate and fine striae and tinged with purplish. Post-discal black band broad, having a series of irregular triangular white blotches.

*Wingspan* : 70-98 mm.

*Distribution* : It is found in all sort of country above 4,000 feet, and ranges from Kashmir to Assam and ascends to about 9,000 feet in Himalayas. Uttarakhand : Chamoli, Dehra Dun, Rudra Prayag and Uttarkashi districts.

### 59. *Aulocera swaha swaha* (Kollar)

#### The Common Satyr

1844. *Satyrus swaha* Kollar, *In* : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 444, pl. 14, figs. 1, 2.

1932. *Aulocera swaha swaha* (Kollar) : Evans, *Identification of Indian Butterflies* 2<sup>nd</sup> ed. : 117.

*General Ecology* : It is smaller than the Great Satyr. The flight is weak, found above 5,000 feet, prefers open, grassy hillsides and sunny places in forests, seen from August to October.

*Diagnostic Characters : Male and female*  
 : Upper side : Wings dark brown, glossed with greenish. Forewing with discal broader white band, not excurved on the hindwing, tinged with creamy yellow; with a sub-apical black spot enclosed by a white spot, less distinct; the white spot on its inner edge not continued to costa. Hindwing paler, with discal band broader, narrowing posteriorly, not reaching the inner margin except rarely in female, and the vein crossing it usually not darkened. Under side : Paler. Forewing: The base and margins marbled with greyish-white striae. Hindwing with lower basal area tinged with green; post-discal, lunular, black and straighter; a distal broad band of greyish white striae; marginal black lines not fully developed on both wings.



Upper side Male



Under side Male

*Wingspan* 60-70 mm.

*Distribution* The subspecies is common from Chitral (Pakistan) to Sikkim and ascends to about 10,000 feet in Himalayas. Peile (1937) recorded it from August to October at 6,000 to 10,000 feet from hillsides and very common at Nainital in September. Also occurs in Nepal. Uttarakhand Almora, Chamoli and Rudra Prayag districts.

60. *Aulocera saraswati* (Kollar)

**The Striated Satyr**

1844. *Satyrus saraswati* Kollar, *In* : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 448, pl. 14, figs. 3, 4.

1867. *Aulocera saraswati* (Kollar) : Butler, *Ent. Month. Mag.*, 4 : 121, no. 2.

*General Ecology* The Striated Satyr greatly resembles the Common Satyr. Unlike the Common Satyr, it shows a decided preference for open, grassy ditch sides, where it swarms in late August.

*Diagnostic Characters* : Antennae, head, thorax and abdomen dark brown.

*Male and Female* : Upper side : Wings dark brown, glossed greenish, with a whitish band, the white band very broad and nearly even throughout and reaching inner margin on hind wing; apex and tornus much more rounded. A large blind ocellus present in sub-apical area. In the female forewing, the whitish spot on the inner edge of the black sub-apical spot is large and elongate, in the male minute.

*Underside* Yellowish. Hindwing with the ocellus pupilled with white spot; numerous fine black striae except on the discal and post-discal bands, the former inwardly margined by a slender dark brown line, the latter very distinct, black and diffuse at the edges, very broad towards inner margin of forewing. Female is larger than the male and paler in colour, the markings on the under side similar but less prominent.



Upper side Male

*Wingspan* : 60-75 mm.

*Distribution* : The species ranges from Chitral (Pakistan) to Sikkim and ascends to about 10,000 feet in Himalayas. Uttarakhand Chamoli, Dehra Dun, Rudra Prayag, Pithoragarh and Uttarkashi districts.

61. *Callerebia scanda scanda* (Kollar)**The Pallid Argus**

1844. *Erebia scanda* Kollar, *In : Hugel's Kaschmir und das Reich der Siek*, 4(2) : 452, pl. 17, figs. 3, 4.

1867. *Callerebia scanda* Kollar: Butler, *Ann. and Mag. of Nat. Hist., Third series*, 20 : 217, n. 1.

*General Ecology* : A very common butterfly seen along roadside in the month of August. It has a typical Brown's flight. When disturbed, it flies dodging out of reach of the collector. It can be seen basking for a very short time.

*Diagnostic Characters* : Antennae, head, thorax and abdomen brown.

*Male and female* : Upper side : Wings velvety brown, becoming paler over discal areas. Forewing with a very pale fulvous-ringed, oval, dark brown sub-apical ocellus. Underside : Uniform brown, forewing with ocellus as upper side; a sub-marginal, faint, darker brown band. Hindwing more or less dusted with white over posterior two-thirds; two small sub-basal, fulvous ringed, white pupilled black ocelli, and above them four minute white dots.



Under side Male

*Wingspan* : 50-60 mm.

*Distribution* : The subspecies has been recorded from Kashmir to Kumaon and upto an altitude of 8,000 feet in Himalayas. Uttarakhand : Dehra Dun, Almora, Bageshwar, Tehri, Pithoragarh, Uttarkashi and Chamoli districts.

62. *Ypthima sakra nikaea* Moore**The Himalayan Five-ring**

1874. *Ypthima nikaea* Moore, *Proc. zool. Soc. Lond.*, : 567.

1932. *Ypthima sakra nikaea* Moore Evans, *The Identification of Indian Butterflies* : 123.

*General Ecology* : This butterfly is common in the rainy seasons but found throughout the year, on grassy slopes and edges of forest. It feeds on flowers of various species and flies close to the ground. Its flight is weak. It also visits damp patches. This butterfly does not show any seasonal forms.

*Diagnostic Characters* : Antennae, head, thorax and abdomen amber-brown, paler beneath.

*Male and female* Upper side: Wings amber-brown, outer margin darker, forewing with a large, oval and oblique, bi-pupilled yellow-ringed ocellus, with outer dark brown ring.



Upper side Male

Hindwing with four white pupilled ocelli, apical and tornal ocelli absent or sometimes faintly marked, other two are always minute. Under side : Pale-brown, thickly with brown striated. Forewing with sub-apical ocellus as on upper side, but larger and more distinct. Hindwing with five prominent, yellow-ringed ocelli, the two sub-apical ocelli encircled by a common yellow ring, the next three ocelli in straight line and the tornal ocellus are bi-pupilled.

*Wingspan* : 45-55 mm

*Distribution* : The subspecies is common from Murree (Pakistan) to Kumaon (India) and ascends to about 9,000 feet in western Himalayas from May to October. Uttarakhand : Almora, Chamoli, Tehri, Bageshwar and Uttarkashi districts.

### 63. *Ypthima ceylonica huebneri* (Kirby) The Common Four-ring

1871. *Ypthima huebneri* Kirby, *Syn. Cat. Diurn. Lep.*, : 95.

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

*General Ecology* : A very common butterfly of fairly open hill country. The flight is short, constantly or frequently settling on leaves or on grass along roadsides.

*Diagnostic Characters* : Antennae, head, thorax and abdomen greyish-brown, abdomen paler beneath.

*Male and female* : Wet season form Upper side Wings greyish-brown. Forewing with a sub-apical large ocellus, black, bi-pupilled, with yellow-ring. Hindwing with two, sometimes



Upper side Male



Under side Male

three, uni-pupilled post discal ocelli. Under side : Greyish white, not very densely covered with transverse brown striae. Forewing with sub-apical ocellus as on upper side. Hindwing with one sub-apical and three contiguous posterior ocelli. Both wings crossed by dark bands, faint on the hindwing. In dry season form both wings somewhat paler on both sides, discal and sub-marginal bands more pronounced. Hindwing under side with ocelli minute or absent.

*Wingspan* : 30-35 mm.

*Distribution* : This subspecies is common from 4,000 to 5,000 feet in the hills and throughout Peninsular India to Assam. Also occurs in Myanmar. Uttarakhand : Dehra Dun, Haridwar, Tehri and Pauri districts.

#### 64. *Ypthima nareda nareda* (Kollar)

##### The Large Three-ring

1844. *Satyrus nareda* Kollar, *In* : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 451, no. 12.

1932. *Ypthima nareda nareda* (Kollar) : Evans, *Identification of Indian Butterflies* (2<sup>nd</sup> ed.) : 120.

*General Ecology* : It is a hill flying species found in open, grassy 'khud' sides and in lightly wooded country, seen throughout the year.

*Diagnostic Characters* : Antennae, head, thorax and abdomen, brown, abdomen pale beneath. *Male and female* : Upper side : Wings pale brown; cilia of both the wings whitish-brown; the broad sub-marginal band of under side shows through. Forewing with sub-apical ocellus. Hindwing with a sub-tornal and a minute tornal spot. Under side : Pale ochraceous; striations well marked and uniformly spread; ocelli as on under side more or less in line; hindwing with a large sub-apical ocellus. Both wings with sub-marginal, dark band, that in the forewing broadening posteriorly.



Upper side Female



Under side Female

*Wingspan* : 40-45 mm.

*Distribution* : The subspecies is common from Kashmir to Kumaon and ascends to about 10,000 feet in Himalayas. Also occurs in Nepal. Uttarakhand : Almora, Chamoli, Bageshwar, Nainital, Tehri and Uttarkashi Distts. According to McKinnon (1899) it is common in Mussoorie from April to October. There is no dry season form. Peile (1937) records the subspecies as common in Kumaon at 2,000 to 7,000 feet, April to October.

65. *Ypthima baldus baldus* (Fabricius)**The Common Five-ring**

1775. *Papilio baldus* Fabricius, *Syst. Ent.*, (3) 1 : 829.

1947. *Ypthima baldus baldus* (Fabricius) : Talbot, *The Fauna of British India (Butterflies)*, 2 : 337-338.

*General Ecology* : It is a very common butterfly of dry and moist deciduous forests. It flies in open country and evergreen forest areas. It is active throughout the year. It visits wet soil, especially in the summer or on hot days. It is a frequent visitor of flowers, unlike most other Browns; Fond of small herbs and shrubs, especially *Adelocrysum*, *Tridax* etc.

The Dry season form and wet season form may be obtained from the suitable localities.



Upper side Female



Under side Female

*Diagnostic Characters Male and female* : Wet Season form Upper side Wings brown; both fore and hindwings with the outer margins much darker, with sub basal and discal bands. Forewing with a sub-apical large ocellus, oval, black, bipupilled, and yellow-ringed. Hindwing with two smaller post discal ocelli and two-minute tornal ocelli. Under side : Brownish-white, both wings with prominent sub-basal, discal and sub-marginal brown bands. Hind wing with six smaller ocelli in pairs, two tornal, two medians and two in sub apical area. Female: Upper side of both the wings with the area surrounding the ocelli paler, closely striated with brown. Under side is paler than the male and the transverse dark bands more clearly defined. Dry season form in paler and the ocelli on the upper side of hindwing reduce to specks.

*Wingspan* : 32-48 mm.

*Distribution* : The subspecies is common from North-West Himalayas (Chamba) to Assam upto 5,000 feet in Himalayas. Also occurs in Myanmar. Uttarakhand : Mussoorie in the month of March and April, and from July to October in Dehra Dun, Haridwar and Tehri districts..

66. *Melanitis leda ismene* (Cramer)**The Common Evening Brown**

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

1947. *Melanitis leda ismene* (Cramer) : Talbot, *Fauna of British India, Butterflies*, 2 : 366-369.



Upper side Male

Under side Male

*General Ecology* : It is the commonest of all butterflies seen throughout the country, frequently getting attracted to light like moths. During daytime they rest in shaded undergrowths. They are common in cities. Fond of ripe fruits and attracted to tree-sap, toddy and damp patches. When disturbed, fly to a very short distance and settles in shaded undergrowth. The flight is jerky and weak. In the monsoon months, they may be seen flying over the rice fields in the morning and evening, most probably in search of a mate.

It is the best example for seasonal variations in the shape of wings, colour markings and ocelli.

*Diagnostic Characters* : Antennae, head, thorax and abdomen in both forms, brown or greyish-brown; antenna ringed with white, the tip ochraceous.

*Wet-season form : Male and Female* : Upper side : Wings brown. Forewing with two large sub-apical black spots, each with small pure white spots in its discal part, the inner edge of this black patch bordered narrowly with ochraceous, interrupted in area 4; costal margin narrowly pale. Hindwing, in area 2, with a sub-marginal, dark, white-centred fulvous-ringed ocellus. Underside : Paler, densely striated with dark brown.

Forewing with a discal, curved, dark brown, narrow band; a post discal similar band; a row of four ocelli. Hindwing with a row of six ocelli, the apical and sub-tornal are largest.

*Dry season form : Male and female* : Forewing with apex obtuse and fulcate, outer margin straight or sinuous. Upper side: Brown; markings especially the ochraceous lunules inwardly bordering the black sub-apical spots on forewing, larger than in the wet form. Hindwings without an ocellus in area 2, but posteriorly replaced by 3-4 minute white sub-marginal spots.

*Under side* : Very variable, with various shades of grey-black, yellow, ochraceous-brown and ochraceous-red; ocelli are completely obscure on both wings, but when present represented only by white specks or dots.

*Wingspan* : 60-80 mm.

*Distribution* : The subspecies is extremely common throughout India, except deserts, ascending upto 7,000 feet in the hills. Uttarakhand : Almora, Chamoli, Dehra Dun, Haridwar, Pauri, Pithoragarh and Tehri districts.

67. *Elymnias hypermnestra undularis* (Drury)

## The Common Palmfly

1773. *Papilio undularis* Drury, *Illustr. Exot. Ins.*, 2 : pl. 10, figs. 1, 2.

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

**General Ecology :** This is the commonest and most widely distributed species of the Palm-flies, the only one to be found in Peninsular India. It is also found along the warm valleys of Himalayas. Resident of palm forests, avoid bright sunlight but fond of chequered shade. Flight is weak, male often settling on palm tree. The female is less seen than the male, and when on wings is an excellent mimic of the Plain Tiger, *Danaus chrysippus* or the Common Tiger, *Danaus genutia*.

**Diagnostic Characters :** Antennae, head, thorax and abdomen brown; abdomen paler beneath. **Male :** Upper side : Wings blackish-brown with purple gloss. Forewing with a sub-marginal series of blue spots, curving strongly inwards and becoming more elongate near apex, forming an oblique bar to costa. Hindwing with outer margin broadly bright chestnut, sometimes with a paler blue spots. Under side : Pale brown with fine striations. Forewing with a sub-apical, broadly triangular, pale purplish-white markings; both wings with a purplish-white area. Hindwing with a small white spot and toothed in both the sexes. **Female :** Upper side : Reddish-brown with apex and borders dark brown, spotted with white. Forewing with broad white band below apex. Under side : Markings similar to male, the pale whitish markings more extensive; inner margin broadly with striae.



Upper side Male



Upper side Female

Wood-Mason (1887) records that the males emit a strong odour resembling vanilla.

**Wingspan :** 72-86 mm.

**Distribution :** This subspecies is common from Dehra Dun to Madhya Pradesh, West Bengal and Assam. Also occurs in Myanmar. Uttarakhand : Almora, Haridwar, Bageshwar and Dehra Dun districts.

## Family 6. ERYCINIDAE

### Beaks, Punches and Judies

The members of family Erycinidae are small in size. They are brown on upper side with a tawny horizontal band on each wing; the under side of hindwings are usually grey and protectively marked with dark brown dots and patches. The most obvious character that makes them unmistakable is the enormous prolongation of the palpi in front of the head, giving the appearance of a beak, thus commonly known as The Beaks, The Punches and The Judies.

All the species are confined to hilly, wooded country, preferring thick forest and shaded areas. They are found around streams and in clearings.

The flight of all the members is rapid, keeping in air for a short period at a time. The Beaks generally settle with the wings closed together over the back and the forewing drawn into the hindwings. The Judies always settle with wings half open.

The members of this family never visit flowers but can be encountered near water sources. The sexes are different in appearance but none of the males have any secondary characteristics.

The food-plants belong to the genus *Libythea* Urticaceae family.

The common examples found in the State are, the Common Beak (*Libythea leptia*), The Club Beak (*Libythea myrrha*), The Common Punch (*Dodona durga*) and The Tailed Punch (*Dodona eugenes*).

#### 68. *Libythea myrrha* Godart

##### The Club Beak

1819. *Libythea myrrha* Godart, *Enc., Meth.*, 9 : 171, no. 4.

**General Ecology :** A small sized, very common butterfly found near streams in forests, settling very readily on damp patches. It is always wary, gets frightened and flies off rapidly. It visits flowers of *Anaphesis* species in Garhwal Himalaya.

**Diagnostic Characters :** Antennae, palpi and body dark brown, paler below. The colour of cilia throughout ochraceous brown.

**Male :** Upper side : Both wings dark brown and almost black, with tawny markings. Forewing with a cell streak; two



Upper side Male

sub-apical orange yellow spots placed obliquely, sometimes separated, sometimes joined into a band, giving a club-like appearance, apex cut off at the tip, with a margin produced into a tooth at vein 4 and falcate below it. Hindwing with an orange-yellow broad discal band, wide and diffused at the abdominal margin but elsewhere well defined and not reaching the costa; outer margin wavy. Under side : Paler, forewing with a tawny marking as above, the discal streak wider, occupying almost the entire basal area of the cell, the apex irrorated with purplish. Hindwing with no tawny discal band, irrorated throughout with purplish. *Female* : paler throughout, the tawny markings larger.

*Wingspan* : 45-55 mm.

*Distribution* : The species is common in North-India to Assam, and ascends to about 9,000 feet in North-West Himalayas. Also occurs in Myanmar. Uttarakhand : Almora, Dehra Dun, Haridwar, Bageshwar, Pithoragarh and Tehri districts.

#### 69. *Libythea leptia* Moore The Common Beak

1857. *Libythea leptia* Moore, In : Horsfield and Moore's *Cat. Lep. Mus. E.I.C.*, 1 : 240, no. 519

*General Ecology* : A little butterfly, abundantly found, usually in the deep of forest anywhere where there is sunlight. It has a variety of flights like rapid flight, skipping and sailing. It is commonest around forest streams in the dry season and may be seen settling in large numbers on damp sand at their edges.

*Diagnostic Characters* : *Male and female* : Upper side : Wings dark brown. Forewing with an orange-yellow streak in the cell, divided into two portions widening in the apex of cell, a large square spot of the same colour beyond it on the disc in interspace 2 and 3, a sub-costal white spot and a pre-apical double spot, the lower portion orange-yellow, the upper portion white. Hindwing uniform, with a discocellular orange patch near vein 2 to vein 6. Under side : Paler. Forewing markings as on upper side but the pre-apical double spot white; costal margin and apex of wing greyish. Hindwing more or less covered with grey scales and blotches of green and dark brown.



Upper side Male

*Wingspan* : 45-50 mm.

*Distribution* : The species is recorded from Kashmir to Assam and South India and ascends to about 3,000 to 9,000 feet in North-West Himalayas. Uttarakhand : Dehra Dun, Haridwar, Pauri, Tehri, Pithoragarh and Uttarkashi districts.

70. *Dodona durga* (Kollar)**The Common Punch**

1844. *Melitaea durga* Kollar, *In* : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 441, pl. 13, figs. 3, 4.

1932. *Dodona durga* (Kollar) Evans, *Identification of Indian Butterflies* : 194.

*General Ecology* : A brown coloured butterfly with tawny spots on wings. It inhabits forests of North India often near water stream and flies in the sunshine. It is a quick flier but settles frequently with its wings closed. The males visit damp patches and flowers as well.



Upper side Male

Under side Male

*Diagnostic Characters* : *Male* : Upper side : Both wings dark brown with numerous dark yellow spots. Forewing with yellow short streaks across the cell, another at its end and a large one beyond from the costa, yellow spots near the bases of the median interspaces, below the cell, post discal and sub-marginal areas; five linear spots from below apex to toral angle. Hindwing with the disco-cellular marked with an ochraceous line; an irregular discal series of spots, a sub-marginal and marginal linear series coalesce above the anal lobe. Under side with the spots large and pale yellow throughout. Forewing with the base and inner margin fuscous, the base of costa ochraceous, the base of cell enclosing a black spot, other markings as above. Hindwing with ochraceous markings. *Female* : Larger than male, wings broader, outer margin of forewing more convex, apex less produced, markings similar throughout as in the male.

*Wingspan* : 30-40 mm.

*Distribution* : The species is very common all over the outer range of western Himalayas and ascends to about 9,000 feet. Uttarakhand : Almora, Chamoli, Dehra Dun, Haridwar, Nainital and Tehri districts.

71. *Dodona eugenes* Bates**The Tailed Punch**

1867. *Dodona eugenes* Bates, *J. Linn. Soc. Zool.*, 9 : 371.

*General Ecology* : The Tailed Punch is an aggressive butterfly. It can be found along water streams and shaded areas. It sits with wings closed and sucks moisture. Its flight is weak and short and also visits flowers of *Anphalis*.



Upper side Male

Under side Male

*Diagnostic Characters* : *Male* : Upper side : Wings dark, blackish brown. Forewing with a narrow line across the middle, a curved streak near the hind angle, and about thirteen small spots equally distributed over the apical half of the wing; all these marks are whitish. Hind wing with the outer portion traversed by four indistinct brownish-tawny lines; at the apex are two black spots, edged with the light brown; on the broad square lobe at the anal angle is quadrate black spot, a slender tail arising from its outer edge. Under side : Tawny brown with silky shiny strips and spots on the hindwing and costa of forewing.

*Female* : Large, the wings broader, the apex of the forewing more rounded, and the outer margin of the wings convex; all the markings larger and paler.

*Wingspan* : 35-45 mm

*Distribution* : The species is common in outer Himalayas from Murree (Pakistan) to Assam, ascending to about 4,500 feet in Himalayas. Also occurs in Bhutan. Uttarakhand : Pithoragarh district.

## Family 7. NYMPHALIDAE

### Brushfooted Butterflies

The members of this family are the most beautiful amongst butterflies. Always bright and brilliantly, coloured, most of them have tawny background with black markings which may be banded, spotted, blotched, striped, or variegated with very different patterns. The wings are of varied shape, the hind wings may be tailed, toothed, scalloped, sharply angled and indented, or evenly rounded. The bodies are robust, the thorax stoutly built and abdomen comparatively short.

The fore legs are imperfect in both the sexes and the cell open in both the wings.

The family comprises more than a hundred genera from the world, of which around fifty are found in India.

The size varies from very large Kaisers, the Great Eggfly, Oak-leaf (135 mm Wingspan) to minute Baby Lascar (25 mm.).

They are fast fliers, difficult to catch. All the species of this family visit flowers and are fond of sunshine and basking. Some species are attracted to over-ripened fruits, fruits dipped in beer, or freshly dropped dung.

The family Nymphalidae displays some interesting examples of Mimicry. The females of the Danaid Eggfly, *Hypolimnastis misippus*, perfectly mimic the Plain Tiger, *Danaus chrysippus*, both in appearance and habits, the male being entirely different in appearance. The Oak-leaf is beautiful and brilliantly coloured on the upper side, but very dull and completely different coloured and marked on under side, like a dry leaf.

The sexes may be similar or different and the seasonal variation is well exhibited in some like Pansies, Oak-leaves etc.

Some common species of the family Nymphalidae found in the State are *Athyma opalina* (Kollar), *Neptis mahendra* Moore, *Neptis hylas astola* Moore, *Cyrestis thyodamas* Boisduval, *Hypolimnastis bolina* (Linnaeus,) etc.

72. *Athyoma opalina* (Kollar)**The Himalyan Sergeant**

1844. *Limenitis opalina* Kollar, In : *Hugel's Kaschmir und. das Reich der Siek*, 4(2) : 427.

1857. *Athyoma opalina* (Kollar) : Horsfield and Moore, *Cat. Lep. Mus. E.I.C.*, 1 : 171, no. 351, fig. 2.

*General Ecology* : A very common species in the western Himalayas but rare towards the East. It flies in the open areas and sunny nallahs where it can be seen in the company of the Common and Himalayan Sailers. It settles on damp patches, stones, leaves and bushes.



Upper side Male

Under side Male

*Diagnostic Characters* : *Male* : Upper side : Wings black with creamy-white markings. Forewing with a narrow streak and two spots at its outer end in the cell, a triangular spot beyond, a sub-apical series of three spots; a discal series of four spots from area three to inner area; two sub-marginal wavy pale lines, the inner one is prominent towards the apex and inner angle. Hindwing brownish black with creamy markings; discal white band from the costal to inner margin, divided by the black veins; sub-marginal series of white lunules placed from apex to inner margin.

Under side : Forewing reddish brown; the posterior half of wings duller, the hindwing suffused with pale lilac, the white markings as on upper side but broader, the dorsal margin of hindwing greenish-blue. *Female* : Differs from the male in the ground colour on both sides being much paler, and all the white markings considerably large.

*Wingspan* : 55-70 mm.

*Distribution* : The species ranges from Kashmir to Sikkim and Assam, Uttarakhand : Almora, Chamoli, Dehra Dun, Haridwar, Pauri, Pithoragarh and Tehri districts ascending to about 10,000 feet in Himalayas. Also occurs in Myanmar.

**73. *Neptis hylas astola* Moore**  
**The Common Sailer**

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

1932 *Neptis hylas astola* Moore: Evans, *The Identification of Indian Butterflies*, *Bombay nat. Hist. Soc.*, : 166.

*General Ecology* : This is a very common, widely distributed butterfly of wooded and hilly regions. It prefers well-watered and densely vegetated nallahs. It flies with the wings spread flat and glides without much effort. However, it is a quick flier and a superb dodger, therefore, not so easy to net. It feeds exclusively on the nectar of flowers and spends most of its time close to the damp ground to suck up the moisture.

*Diagnostic Characters* : *Male and female* : Upper side : Wings black with white markings. Forewing with white streaks, triangular spot and a sub-marginal series of five white spots towards the apex. The cell of the forewing is entirely white. Hindwing with a sub-basal broad white band of more even width throughout and an outer series of squarish white spots. Under side : Red brown with white marking; the white sub-basal band of hindwing not distinctly black-edged, the reddish band followed it evenly and tapering towards the apex; the macular discal band a little narrower and not distinctly black bordred.

*Wingspan* : 45-60 mm.

*Distribution* : The subspecies is common throughout the year in India and ranges from Kashmir eastwards to Myanmar, ascending to about 9,000 feet in Himalayas. Uttarakhand : Almora, Dehra Dun, Haridwar, Pauri, Tehri, Bageshwar, Pithoragarh and Uttarkashi districts.



**Upper side Male**



**Under side Male**

74. *Neptis mahendra* Moore  
The Himalayan Sailer

1872. *Neptis mahendra* Moore *Proc. zool. Soc. Lond.*, : 560, pl. 32, fig. 2.

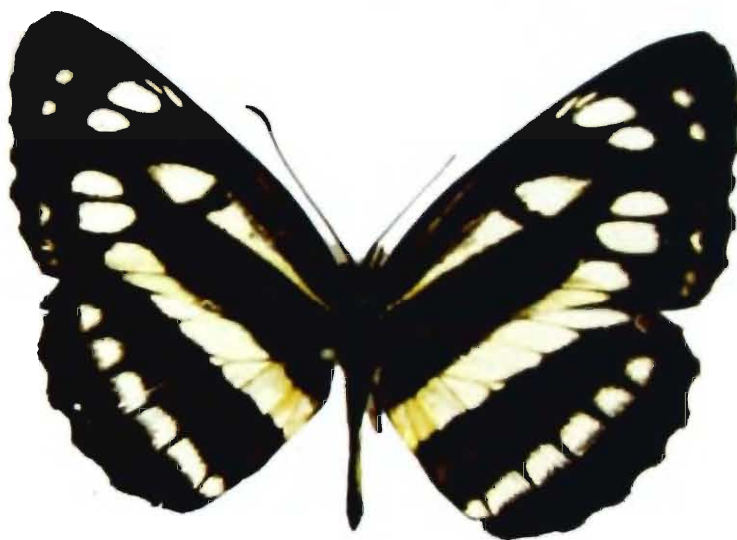
1969. *Neptis mahendra mahendra* Moore : Eliot, *Bull Bri. Mus. (nat. Hist.) ent. Suppl.*, 15 : 79.

*General Ecology* A very common butterfly of North-West Himalayas, fond of sunlight; frequently basks on leaves and rocks with its wings held wide open.

*Diagnostic Characters* *Male and female* : Upper side : Wings dull black, elongate, markings white. Forewing cell with a single narrow streak and with a large triangular spot beyond; a discal series of long spots and a post discal transverse series of small spots, not always complete. Hindwing with a discal band of white spots widening at costa, and a sub-marginal series of spots from below apex to near tornal angle. Under side : Deep brownish, ferruginous; markings white, broad; discal band of the hindwing is widened out at the costa. All the white markings are very prominent. In winter season form, the white markings are narrowed.

*Wingspan* : 55-60 mm.

*Distribution* : The species is common from Chitral (Pakistan) to Kumaon and ascends to about 8,000 feet in North-West Himalayas. Uttarakhand Dehra Dun, Haridwar, Pauri, Almora, Chamoli, Bageshwar, Pithoragarh and Tehri districts.



Upper side Male



Under side Male

75. *Neptis yerburyi yerburyi* (Butler)**The Yerbury's Sailer**

1886. *Neptis yerburyi* Butler, *Proc. zool. Soc. Lond.*, : 360.

1932. *Neptis yerburyi yerburyi* (Butler) Evans, *The Identification of Indian Butterflies*, *Bombay nat. Hist. Soc.*, : 167.

**General Ecology** : It is found in well-wooded nallahs and ravines, fond of sunlight and basks on rocks and leaves with its wings held wide open. In the hot, dry weather many of them settle on damp patches near streams.

**Diagnostic Characters** : *Male and female* : Closely resembles with *Neptis mahendra* and *Neptis hylas*.  
**Upper side** : Wings dull black, elongate and markings creamy white. Forewing with a single triangular spot beyond apex of cell, more elongate and pointed at apex, the posterior three of the discal series of spots shorter and more obliquely placed, the post-discal series of small spots more complete.

**Under side** : Hindwing with the black edging to the white discal spots absent. Forewing with the cell end spot and cell streak being conjoined.

**Wingspan** : 60-70 mm.

**Distribution** : The subspecies is common in its range from Kashmir to Kumaon and ascends to about 6,000 feet in Himalayas. Uttarakhand : Chamoli, Dehra Dun, Haridwar, Pauri, Tehri, Uttarkashi and Pithoragarh districts.



Upper side Male

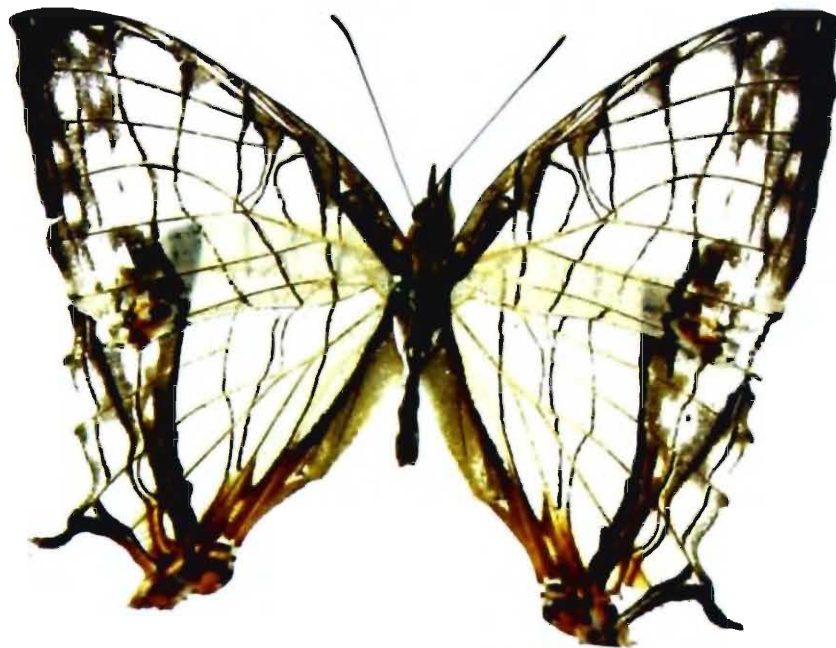


Under side Male

76. *Cyrestis thyodamas* Boisduval  
**The Common Map Butterfly**

1836. *Cyrestis thyodamas* Boisduval, In : *Cuvier's Reg. Animal, Ins.*, 2, pl. 138, fig. 4.

*General Ecology* : A very delicate and beautiful butterfly, aptly called Map Butterfly, because of its wings having map like markings and irregular outlines. It is often seen soaring backward and forward over mountains, and streams in richly wooded areas. It flies very slowly with a jerky flight, keeping the wings horizontally for longer time than any other Indian butterfly. On alert, takes a very erratic and fast flight. In western Himalayas, it visits flowers of Buddleia and Chestnut. It also visits damp patches.



Upper side Male

*Diagnostic Characters : Male and female* : Upper side : Forewing whitish in male and yellowish in female, with map like black markings and irregular vertical dark outlines across both wings. Wings broad and semi-transparent. Tornus of forewing and apex of hindwing cut off. Hindwing tailed at vein 4 and lobed at tornus. Tornus lobe of the hindwing yellowish brown with a central large round black spot.

Under side : Paler, marked much as above, the dusky red markings at the anal angle and lobe of the hindwing more distinct.

*Wingspan* : 50-60 mm.

*Distribution* : This hill species ranges from Kashmir to Kumaon, and ascends to about 8,000 feet in Himalayas. Uttarakhand : Almora, Chamoli, Dehra Dun, Haridwar, Pauri, Tehri, Rudra Prayag, Bageshwar, Pithoragarh and Uttarkashi districts.

77. *Hypolimnas bolina* (Linnaeus)**The Great Eggfly**

1758. *Papilio bolina* Linnaeus, *Syst. Nat.*, (10<sup>th</sup> ed) : 479, no. 124.

1911. *Hypolimnas bolina* (Linnaeus) : Tytler, *J. Bombay nat. Hist. Soc.*, 21(1) : 54.

**General Ecology** A beautiful butterfly, rare in the drier portions of western India, occasionally found in gardens, abundant in the moist regions, particularly in the warm valleys and sub-mountain tracts. It feeds exclusively on nectar with its wings partially closed while sipping the nectar. It is a pugnacious species which sails forth and chases away any butterfly that comes close.



Upper side Male



Upper side Female

**Diagnostic Characters** Body above dark indigo-blue, head marked with a few pale spots; palpi beneath white, abdomen and thorax with a few whitish spots.

**Male** : Upper side : Wings very dark indigo blue. Forewing with a large elongated macular white spot, margined with bright bluish from upper disco-cellular to vein 3, with a row of small white ocelli from apex to the tornus of hindwing. Hindwing with a broad medial whitish fascia. Under side : Dark olivaceous brown. Forewing with the white markings as above, but with the large macular spot almost extending to costa, not prominently margined with bluish, and followed by a small pale spot beneath the second median nervule. Hindwing with a small sub-costal pale bluish spot followed by a paler medial fascia ending at the inner margin, sub-marginal area pale greyish, with some dots.

**Female** : Upper side : Dark brown with outer discal row of small, pale yellow or whitish spots on both wings. Forewing with concave margin, having more or less obscure marginal and inner terminal markings. Two blue spots in the cell in wet season form and one in dry season form. Hindwing with broad pale yellow or white termen, bearing a dark wavy line or band. Under side : Brown with bands of white spots and patches. The female of this species is a good mimic of The Common Indian Crow (*Eupolea core*).

**Wingspan** : 70-110 mm.

**Distribution** : The species is widely distributed and found almost throughout the plains. It ascends normally to about 7,000 feet in Himalayas. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Almora, Dehra Dun, Haridwar, Pauri, Bageshwar, Pithoragarh and Tehri districts.

78. *Hypolimnas misippus* (Linnaeus)

## The Danaid Eggfly

1764. *Papilio misippus* Linnaeus, *Mus. Ludov. Ulr.*, : 264, pl. 20, fig. 85.

1932. *Hypolimnas inachus* (Linnaeus) : Evans, *Identification of Indian Butterflies*, ed., 2 : 175, pl. 23, fig. 30.1.

**General Ecology** : It is common in the regions of moderate rainfall and open country, especially during the monsoon. It flies and settles much closer to the ground, generally settling on a prominent place in sunlight. The females are very shy and found near food plants. The female is a wonderful mimic of the Plain Tiger (*Danaus chrysippus*) both in appearance and habits. It is a strong and fast flier; visits flowers of Lantana, Common Zinnia, Sunflower and Marigold.

**Diagnostic Characters** : Body above concolourous with wings; head spotted with white; body beneath fuscous, spotted with white; legs fuscous, greyish-white beneath; palpi white beneath.

**Male** : Upper side : Wings very dark indigo-blue. Forewing with an oblong sub-apical white spot; a large elongated white spot in the apex. Hindwing with a large irregularly rounded discal white spot. Both wings with the discal patch surrounded by iridescent purplish blue. Under side : Forewing with the large discal spot as above. Hindwing with reddish ochraceous crossed by a broad white fascia, oval spots prominent, which in the hindwing occupy the entire discal area and a prominent black costal spot.

**Female** : Upper side : Reddish ochraceous. Forewing with black margin from base, widening across apex of cell and curving and terminating at anal angle. Under side : Forewing as above. Hindwing light orange with three black spots and a row of small sub-marginal white spots.

**Wingspan** : 70-85 mm.

**Distribution** : The species is common throughout India, ascending to about 7,500 to 9,500 feet in Himalayas. Also occurs in Pakistan, Bangladesh, Sri Lanka, Malaysia, Myanmar, China, Africa and Australia. Uttarakhand : Dehra Dun, Haridwar, Pauri and Tehri districts.



Upper side Male



Upper side Female

79. *Kallima inachus* (Boisduval)  
**The Orange Oak-Leaf**

1836. *Papilio inachus* Boisduval, In : Cuvier's *Reg. Anim. Ins.*, 2 : pl. 139, fig. 3.

1882. *Kalima inachis* (Sic) (Boisduval) : De Niceville, *J. Asiat. Soc. Beng.*, 51(2-3) : 58.

**General Ecology** : It is one of the most beautiful butterfly among Nymphalids, with the upper side being beautiful and brightly coloured. The leaf-like under side is most wonderful example of protective resemblance. It is difficult to locate the butterfly once it settles down on a twig, riverside boulder, tree trunks or on ground with its wings closed. It is found in the thick forests of mountainous and hilly districts, at low or moderate elevations. This species, a fast flier, gets attracted to over-ripe fruits and damp patches.

**Diagnostic Characters : Male and female**  
 : Upper side : Wings dark violet-blue to deep steel blue with orange discal band and broad black band on the forewing. Forewing large, sub-triangular; costa very much rounded, slightly emigrate near the base; apex less or more acute and produced; outer margin five-sixths of the length of the costa, concave below the apex. Hindwing elongate, sub-triangular; costal margin much attached at the base, outer margin rounded, anal angle gradually produced into a tail.

Under side : Much different from the upper side, all shades of bright coloration rather dull and like a dead and dry leaf, like midrib with vein branching off from midrib and often marked with spots, blotches as if of fungus and mould on dead leaves in dry season form. This species has well marked seasonal variation, the dry season form being paler than wet season form.

**Wingspan** : 85-110 mm.

**Distribution** : The species ranges from Kashmir eastwards through Kumaon to Sikkim and Assam, also recorded from Orissa and Maharashtra. Also occurs in Nepal and Myanmar. Uttarakhand : Dehra Dun, Haridwar, Tehri and Uttarkashi districts up to an altitude of 8,000 feet.



Upper side Male



Under side Male

80. *Junonia hierta hierta* (Fabricius)**The Yellow Pansy**

1758. *Papilio hierta* Fabricius, *Ent. Syst.*, (Suppl.) : 424, no. 281.

1932. *Junonia heirta* (Fabricius) Evans, *The Identification of Indian Butterflies*, *Bombay nat. Hist. Soc.*, : 176.

*General Ecology* : A beautiful species that prefers hot and sunny places in the forests, particularly fond of dry riverbeds, stony uncultivated fields and roads; very often fly in front of the collector. It flies slightly just above the ground and intermittently settling and flying not far from the collector's sight. It may be seen almost throughout the year.



Upper side Male

Under side Male

*Diagnostic Characters* : *Male* : Upper side : Black. Fore-wing with broad medial yellow patch, extending from the base to beyond the disco-cellular, and then narrowed and bent downward; two short paler yellow streaks before the apex. Hindwing black, with large broad sub-anal yellow patch, and a large distinct blue sub-basal spot. Under side : Forewing pale yellow-brown; medial patch paler yellow and suffused outwardly, crossed by black discoidal lines; two black discal spots. Hindwing with basal half greyish-yellow; discal area pale yellow, crossed with brown lunular lines. *Female* : Upper side : Forewing dark yellowish-brown, with the yellow patch paler, shortened basally, and crossed by two black lines on middle of the cell, and a broader disco-cellular band; black ocelli present in area 2 and 5. Hindwing with very small upper and lower discal ocelli, and two marginal lunular yellowish lines. Under side : As in male.

*Wingspan* : 45-60 mm.

*Distribution* : This subspecies is very common at low elevations and plains in India, but less common above 4,000 feet and ascends to about 9,000 feet in Himalayas. Also occurs in Sri Lanka and Pakistan. Uttarakhand : Dehra Dun, Haridwar, Pauri, Nainital, Pithoragarh, Tehri, Uttarkashi and Udham Singh Nagar districts.

81. *Junonia orithya* (Linnaeus)**The Blue Pansy**

1764. *Papilio orithya* Linnaeus, *Mus. Ludov. Ulr.*, : 278, no. 96.

1994. *Junonia orithya* (Linnaeus): Varshney, *Oriental Insect*, 28 : 176.

*General Ecology* : One of the prettiest of Indian butterflies, found throughout the country but more in dry, open plains than in forests. The dry riverbeds and stony paths are its favourite habitats; remains active during the hottest part of the day. It visits flowers of Marigold, Bachelor's button, Lantana, Heliotrope etc.



Upper side Male

Under side Male

*Diagnostic Characters : Male* : Upper side : Forewing: Basal two-thirds blue black, apex pale brown with white transverse bands; outer discal area below apex shining blue; two orange ringed ocelli in area 2 and 5. Hindwing shining blue with two ocelli near outer margin in area 2 and 5; a black basal angular patch curving across the cell towards the anal angle, and merging into brown on the abdomen margin; two pale marginal lines.

Under side : Dull ochraceous, with white markings and wavy lines. Ocelli visible in forewing only.

*Female* : Larger than the male, both the ocelli more prominent and of a bright red. Upper side : Basal half area of hindwing being entirely black. Both the sexes are variable in colour and markings due to seasonal variation. The dry season form being pale stone-grey colour on under side, compared to that in wet season form.

*Wingspan* : 40-60 mm.

*Distribution* : The species ranges from Pakistan eastwards through Himalayas to Sikkim. The species is common in India during March to October in North-west Himalayas and ascends to about 9,000 feet. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Dehra Dun, Chamoli, Haridwar, Pauri, Rudra Prayag, Pithoragarh, Tehri, Uttarkashi and Udham Singh Nagar districts.

82. *Junonia lemonias* (Linnaeus)

## The Lemon Pansy

1758. *Papilio lemonias* Linnaeus, *Syst. Nat.*, (10th ed.) : 473, no. 93.

1994. *Junonia lemonias* (Linnaeus). : Varshney, *Oriental Insect*, 28 : 176.

**General Ecology** : A somewhat bold butterfly, having strong territorial and aggressive behaviour. It flies quickly and strongly but with less fluttering of wings. It visits various species of flowers viz. Lantana, Bachelor's Bottom, Cosmos etc. and rests on ground. On approaching, it darts ahead with rapid wing beating, but settles soon not very far.

**Diagnostic Characters** : *Male and female* : Upper side : Forewing dark brown or greyish brown with the cell crossed by slender waved black lines near base, two waved black lines enclosed a pale yellowish-brown band beyond the middle, and a similarly coloured band at about end of cell; discal and sub-marginal series of yellowish-brown spots extending on the tornal angle and two blue centered red ringed ocelli in area 2 and 5, the ocellus in area 2 indistinct and prominent in area 5. Hindwing dull yellowish-brown with a large ocellus enclosing 2-minute white spots and lower black spot.



Upper side Male

Under side : Yellowish-brown in male, pinkish in female with several wavy lines and the lower ocellus in the forewing visible. The seasonal variation is quite well marked, with the ocelli on wings prominent in wet season form and reduced in dry season form.

**Wingspan** : 45-60 mm.

**Distribution** : This is widespread and common species occurring almost everywhere in the plains in region of heavy rainfall. It is distributed from Kashmir to Kumaon, Assam and ascends to about 8,000 feet in Himalayas. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Almora, Dehra Dun, Haridwar, Pauri, Nainital, Bageshwar, Pithoragarh, Tehri, Champawat, Uttarkashi and Udham Singh Nagar districts.

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

1758. *Papilio almana* Linnaeus, *Syst. Nat.*, (10th ed.) : 472, no. 89.

1932. *Junonia almana almana* (Linnaeus) : Varshney, *Oriental Insect*, 28 : 176.

*General Ecology* : A common and beautiful butterfly, found in cultivated areas, forest clearings and paths. It basks in sunshine, in the early morning. It has a highly territorial behavior and often chases away intruders. It visits flowers of Marigold, Lantana, Land Caltrops etc.



Upper side Male



Under side Male

*Diagnostic Characters* : *Male and female* : Upper side : Forewing orange-yellow, the cell and the costal area to near the apex of wing crossed by four short dark bands, a pale-centered ocellus with the two black rings and generally two pre-apical ocelli. Hindwing with three border lines as on forewing but well defined, a very large pale yellow black-ringed ocellus spreading over interspaces 4 to 7, the center inwardly reddish-yellow with two white spots, outwardly black. In some specimens a small black-ringed ocellus in interspace 2 is present. Under side : Leaf-like and pale yellowish-brown. In wet season form, the ocelli are more prominent on hindwing and margins of wings smooth. In dry season form, the apex in forewing is prominently toothed and without ocelli, hindwing is produced into a narrow tail.

*Wingspan* : 60-65 mm.

*Distribution* : This subspecies occurs throughout India, ascending to about 7,500 feet in Himalayas. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Almora, Dehra Dun, Haridwar, Pauri, Bageshwar and Tehri districts.

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

1763. *Papilio atlites* Linnaeus, *Cent. Ins.*, : 24, no. 72.

1994. *Junonia atlites* (Linnaeus) : Corbet & Pendlebury, *Butterflies of Malaya Peninsula* : 159.

*General Ecology* : Inhabits heavy rainfall regions and does not occur in dry areas; very fond of settling on shrubs close to wet areas. It visits flowers of various plants.

*Diagnostic Characters : Male and female* : Upper side : Pale grey. Forewing with two wavy black lines crossing the middle of the cell, and two similar ones at the end of the cell; a very wavy and fuscous line crossing the wings a little beyond the cell, and between this and the outer margin are two wavy fuscous lines, between which the colour is distinctly paler, and is marked with a series of six ocellated spots, of which the first, 2 and 5 are largest and most brightly coloured. Hindwing with two wavy fuscous lines crossing end of the cell, and remaining markings similar and continuous to those on the forewing; only five ocelli are present, some of the ocelli in both wings are orange-yellow on the inside. Under side : Very pale; the cell crossed by the fuscous lines as above; the ocelli more distinct; marginal and sub-marginal lines indistinct. Female larger in size and generally darker in colour than the male; the ocellated spots above larger and more distinct, with the area on which they are placed much paler.



Upper side Male

*Wingspan* : 55-65 mm.

*Distribution* : The species is very common throughout plains of India and occurs around paddy fields, ascends up to 7,500 feet in Himalayas. Also occurs in Sri Lanka, Myanmar, China and Malaysia. Uttarakhand : Almora, Dehra Dun, Haridwar, Tehri, Chamoli, Nainital, Champawat, Bageshwar, Udham Singh Nagar, Pauri and Uttarkashi districts.

85. *Junonia iphita* (Cramer)  
**The Chocolate Pansy**

1779. *Papilio iphita* Cramer, *Pap. Exot.*, 3 : pl. 209, figs. C, D.

1992. *Junonia iphita* (Cramer) : Corbet & Pendlebury, *Butterflies of Malaya Peninsula* : 159.

*General Ecology* : It is found in wetter and well-wooded hilly regions, it is seldom found in the plains of upper India and never in the drier parts. It is fond of settling on damp patches, wet roads and shady places. It also visits flowers of various species. It has a bold flight, but not to any great distance, rests with wings closed.



Upper side Male

*Diagnostic Characters* : *Male and female* : Upper side : Forewing brown with indistinct dark brown bands; the apical half of wing is somewhat paler and sub-apical spot whitish; sub-marginal lines wavy and dark. Hindwing with the apical half paler and with the bands on the forewing continued, but the inner one more waved; four to five ocellated spots between area 2 and 5. Sub-marginal lines as on forewing. Under side : Paler; both wings crossed by two somewhat broad, dark, basal fasciae, the first crossing the middle of cell of the forewing, curved inwardly on cell of hindwing, the second crossing forewing at the apex of cell, and terminating on hindwing a little beyond end of cell; ocellated spots obscure on both the wings. In dry-season form, the apex of forewing is produced and angulated and the hindwing lobed at tornal angle, with the under side paler and leaf-like.

*Wingspan* : 55-80 mm.

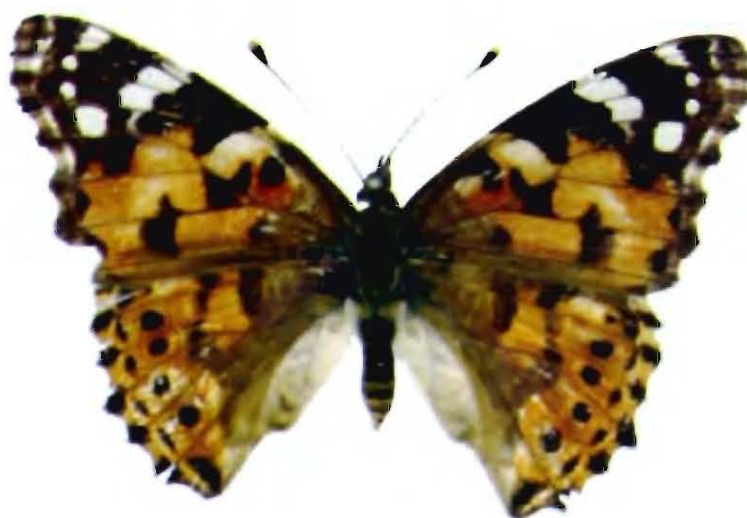
*Distribution* : The species occurs throughout the Himalayas as far west as Kashmir, ascending up to 9,000 feet, and also found in central and southern India. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Almora, Chamoli, Dehra Dun, Haridwar, Nainital, Pauri, Bageshwar, Champawat, Pithoragarh, Tehri, Uttarkashi and Udham Singh Nagar districts.

86. *Cynthia cardui* (Linnaeus)  
The Painted Lady

1758. *Papilio cardui* Linnaeus, *Syst. Nat.*, (10<sup>th</sup>ed.) : 475, no. 107.

1971. *Cynthia cardui* (Linnaeus) Field, *Smithson Contr. Zool.*, **84** : 37.

*General Ecology* A cosmopolitan species, seen in fields, gardens, highways, open grounds, disturbed human habitations and waste lands. It is greatly attracted by flowers. Its flight is rapid, dashing, and discontinuous and loves to return to the same spot from where it is driven. It basks with both the wings fully open and rests with wings closed or partly closed.



Upper side Male

*Diagnostic Characters : Male and female* : Upper side : Both wings ochraceous-red. Forewing with basal area ochraceous brown, an oblique irregular-shaped angular band from middle of cell to the tornal angle, before the apex is a short white band and a curved series of four spots, margin dark brown. Hindwing with the basal area, a confluent discal band and the costal border ochraceous-brown, a transverse discal row of five black spots with slightly paler outer ring, a sub-marginal row of lunular spots, and a marginal row of larger spots. Under side : Forewing similar as upper side but the basal area more red and the apex and outer margin ochraceous, some additional black spots on forewing cell. Hindwing ochraceous, richly spotted and marbled with deep shades of ochraceous and brown, an oval spot across the middle of cell and the row of five discal spots as above but developed into ocelli, the 2 and 5 largest, with blue centers and black outer rings.

*Wingspan* : 55-70 mm.

*Distribution* : Widely distributed and well known throughout India, as a migratory species, all over the world. In India, it ascends to about 5,000 feet in Himalayas. Uttarakhand : Chamoli, Dehra Dun, Haridwar, Almora, Rudra Prayag, Bageshwar, Champawat, Udham Singh Nagar, Nainital, Pauri, Pithoragarh, Tehri and Uttarkashi districts.

87. *Vanessa indica* (Herbst)**The Indian Red Admiral**

1794. *Papilio atlanta indica* Herbst, *Nat. Schmetz.*, 7 : 171, no. 64, pl. 180, figs. 1, 2.

1911. *Vanessa indica* (Herbst) Tytler, *J. Bombay nat. Hist. Soc.*, 21(1) : 62.

*General Ecology* : Inhabits wooded region, forests, and open country, disturbed human habitations and gardens. It flies rapidly up and down, frequently settling on the ground with the wings three-fourths or half open. It is always wary and difficult to approach, best caught when feeding on flowers. Gets attracted to droppings, dung and rotting fruits.

*Diagnostic Characters : Male and female* : Upper side : Forewing dark brown or black, with a broad medial oblique irregular red band having three large black spots; basal area and posterior margin golden brown; apical half black, with a sub-apical series of white quadrate spots and an outer apical series of white small dots. Hindwing golden brown, with marginal red band having small black spots in the center. Under side : Paler. Forewing with three small blue spots beyond the cell. Hindwing with dark brown, beautifully marked, marbled and irrorated with white, grey, dark brown to black; marginal area pale ochraceous.

*Wingspan* : 55-65 mm.

*Distribution* : Common wherever its food-plant, the nettles are found. It ranges from Kashmir eastwards to Myanmar and ascends to about 9,000 feet in North-west Himalayas. Also occurs in South India. Uttarakhand : Almora, Dehra Dun, Haridwar, Chamoli, Bageshwar, Champawat, Udham Singh Nagar, Nainital, Pauri, Pithoragarh, Tehri and Uttarkashi districts.



Upper side Male



Under side Male

88. *Vanessa egea* (Cramer)**The Eastern Comma**

1775. *Papilio egea* Cramer, *Pap. Exot.*, 1 : pl. 78, figs. C, D.

1886. *Vanessa egea* (Cramer) : De Niceville, *The Butterflies of India, Burma and Ceylon*, 2 : 237.

*General Ecology* : Inhabits grassy meadows and open hilltops at high elevations. There is considerable difference between the spring and autumn forms, the spring forms being pale, especially in the northern parts of its range. It flies rapidly and swiftly. It frequently settles on the ground or on leaves.

*Diagnostic Characters : Male and female* : Upper side : Both wings pale reddish-yellow, the outer margin with two dusky red lines, with a series of indistinct pale yellow lunules within. Forewing with two black spots, one above the other in the middle of the cell, a large quadrate black spot from the costa to the third median nervule at its end, a round spot in the middle of the sub-median interspace, a diffused blackish patch on the costa near the apex. Hindwing with a black spot on the middle of the costa reaching the second sub-costal nervule, and another at the end of the cell.

Under side : Both wings pale brown, beautifully marbled and streaked with various shades of the ochraceous, brown, and black, a discal irregular pale band. Hindwing with a white mark at the end of the cell formed of two straight lines.

*Wingspan* : 45-65 mm.

*Distribution* : The species ranges from Baluchistan (Pakistan) eastwards to Nepal and Bhutan and ascends to about 11,000 feet in western Himalayas. Uttarakhand Tehri and Uttarkashi districts.



Upper side Male



Under side Male

89. *Aglais cashmirensis* (Kollar)**The Indian Tortoise-shell**

1844. *Vanessa cashmirensis* Kollar, *In* : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 442, no. 1, pl. 11, figs. 3-4.

1983. *Aglais cashmirensis* (Kollar) : Varshney, *Rec. zool. Surv. India, Occ. Paper No.*, 47 : 8.

*General Ecology* : Commonest species of the North-West Himalayas, found all the year round. It can be seen in all kinds of terrain. It visits various kinds of flowers like *Taraxacum officinale*, *Aster sikkimensis*, *Gentiana carinata* etc. It loves sunshine and can be seen basking on paths with the wings widespread. The flight is rapid, always close to the ground seldom sustained for long distance.



Upper side Male

*Diagnostic Characters* : *Male and female* : Upper side : Both wings coloured rich chestnut. Forewing with a quadrate black bar across the middle of the cell, then a pale yellow bar, then another much larger black bar, with another narrower pale yellow bar beyond it, with a small bluish-white costal spot placed outwardly against it. Apex cut off at the tip and produced and angulated at vein 6. Hindwing with a basal area blackish; inner margin paler in basal half; outer margin black, bearing-prominent bluish lunules, followed by two paler lines; margin toothed at vein 4. Under side : Both wings brown at bases, paler beyond, and thickened striated with black; a sub-marginal lunulated black line. Forewing with a narrow oval black spot with pale center at the base of the cell, two fine black zig-zag lines enclosing a black space across the middle of cell. Hindwing with prominent ochraceous spot at the lower end of the cell, and two fine black lines enclosing a blackish space across its middle. It shows seasonal variations, the wet season form being brighter and dry season form shows darker broods.

*Wingspan* : 55-65 mm.

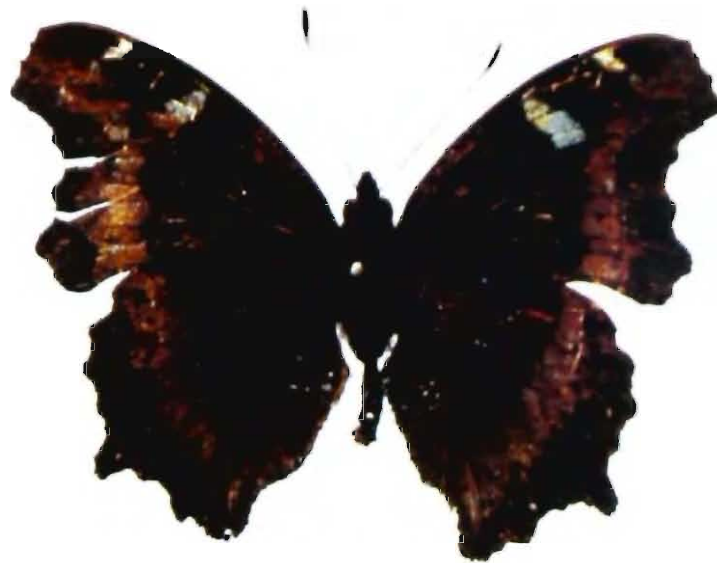
*Distribution* : The species ranges from Waziristan (Pakistan) to Sikkim, and is common in its range from low elevations to 15,000 feet in Himalayas. Uttarakhand : Almora, Chamoli, Tehri, Pauri, Rudra Prayag, Bageshwar, Pithoragarh and Uttarkashi districts.

90. *Kaniska canace* (Linnaeus)**The Blue Admiral**

1767. *Papilio canace* Linnaeus, *Syst. Nat.* (12<sup>th</sup> ed.), 1(2) : 779, no. 173.

1983. *Kaniska canace* (Linnaeus) : Varshney, *Rec. zool. Surv. India, Occ. Paper No.*, 47 : 8.

*General Ecology* It is found in the wooded country of hilly regions and vicinity of water. It flies fast and straight, up and down over streambeds, roads, paths etc. It frequently settles on damp patches, over ripe fruits, sugar, honey and sap. It rarely visits flowers. It has a favourite resting spot to which it returns again, rather hard to catch.



Upper side Male

*Diagnostic Characters : Male and female* Upper side Both wings deep indigo-blue, crossed by a broad discal paler blue band with a few white dots at the anterior end, the band gradually increasing the width from the costa to the anal angle, and bearing a series of small black spots along its outer border in the hind wing; inner margin lighter; outer margin lobed at vein 4. Forewing with the costa more or less broad blue bar. Under side : Most beautifully variegated and striated with black, green, ochraceous, pale violet and ferruginous, crossed by a prominent discal dark broad band, with the edges irregular and scalloped. Fore wing with a small ochraceous spot at the outer lower end of the cell. Hind wing with a prominent tail like projection in the middle. Female, usually larger than the male, markings similar, but the marginal blue lines usually obsolete, the angulations of the outer margins broader and larger.

*Wingspan* : 60-75 mm.

*Distribution* : The species ranges from Chitral (Pakistan) eastwards through Kumaon to Sikkim and Assam, ascending to about 9,000 feet in Himalayas. Also occurs in Myanmar. Uttarakhand : Almora, Chamoli, Dehra Dun, Nainital, Rudra Prayag, Bageshwar, Champawat, Udham Singh Nagar, Pithoragarh, Tehri and Uttarkashi districts.

91. *Argyreus hyperbius hyperbius* (Johanssen)**The Indian Fritillary**

1764. *Papilio hyperbius* johanssen, *Amoen Acad.*, 6 : 408, no. 75.

1932. *Argyreus hyperbius hyperbius* (Johanssen) : Evans, *Identification of Indian Butterflies*, : 182.

**General Ecology** : It is one of the beautiful species of the family Nymphalidae. It occurs in the hilly regions and seen in open areas, cultivated fields and gardens in the plains. It visits flowers of Zinnia, Aztec, Marigold, Buckwheat etc. It rests on the ground with wings closed and sometimes basks with its wings three-fourths open. The male is a fairly fast flier compared to the female.

**Diagnostic Characters** : *Male* : Upper side : Wings bright orange yellow with yellowish green base. Forewing with black sinuous cellular lines, quadrate, triangle, dentate, and round spots; marginal lines. Hindwing pale; 7 discal spots and marginal border black and dentate and followed by a row of slender brown or blue lunules.

Under side : Forewing red on basal area, pale ochraceous and greenish at apex. Apex with two apical series of white lunules. *Female* : Upper side : Brownish-ochraceous on basal area; marking broader; apical area with blue black interspaces and obliquely crossed by a white band. Under side : Forewing reddish and other markings as on male but larger. Hind wing greenish, ochraceous-brown, crossed by three black zigzag lines and a sub-marginal line broadly bordered by silvery white; a discal row of spots centered with silvery.

**Wingspan** : 65-85 mm.

**Distribution** : The subspecies is distributed from Chitral (Pakistan) to Assam, recorded also from Madhya Pradesh and Mt.Abu, in Rajasthan, ascending to about 9,000 feet in Himalayas. Also occurs in Nepal and Myanmar. Uttarakhand : Almora, Chamoli, Dehra Dun, Haridwar, Pauri, Rudra Prayag, Tehri, Pithoragarh and Uttarkashi districts.



Upper side Male



Under side Male

92. *Issoria lathonia* (Linnaeus)  
The Queen of Spain Fritillary

1767. *Papilio lathonia* Linnaeus, *Syst. Nat.* (12<sup>th</sup> ed.), 1(2) : 786. no. 213.

1990. *Issoria lathonia* (Linnaeus) : Varshney, *Revised Nomenclature for Butterfly taxa : Jour. Bom. nat. Hist. Soc.*, **87** : 60.

*General Ecology* : It is a common butterfly of temperate region, found in the forest clearings, hilltops and paths. It flies at lower elevations throughout the year. Its flight is rapid and zig-zag, close to the ground. It visits flower of *Taraxacum officinale*, *Primula denticulate*, *Aster* etc. and is often seen basking with its wings three-fourths opened.



Upper side Male

*Diagnostic Characters : Male* : Upper side : tawny, with black spots. Forewing with the base, costa and inner margin tawny, hindwing with basal and abdominal area widely, mottled with darker coloured scales. Forewing with a reniform spots enclosing a portion of the ground colour, a transverse spot beyond and one closing the end of the cell. Hindwing with a spot closing the cell, three angled series of black spots in continuation of those on the forewing, the outer margin as on forewing.

Under side : Paler, Forewing with the submarginal series of black spots pupilled with silver, a prominent silver spots within the upper most spot of this series, and a five apical marginal silver spots increasing to the third which is the largest. Hindwing yellowish brown with a large silver spot.

*Wingspan* : 50-60 mm.

*Distribution* : The species is one of the commonest Himalayan species of *Argyreus* and ascending to about 5,000 to 8,000 feet in Himalayas. Also occurs in Nepal and Myanmar. Uttarakhand : Almora, Chamoli, Dehra Dun, Pauri, Tehri, Pithoragarh and Uttarkashi districts.

**93. *Childrena childreni* (Gray)**  
**The Large Silver Stripe**

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

1990. *Childrena childreni* (Gray) : Varshney, Revised Nomenclature Butterfly taxa, *Jour. Bom. nat. Hist. Soc.*, 87 : 59.

*General Ecology* : It is the finest of all Indian Fritillaries and attains largest size. It is a North-West Himalayan species. It flies very rapidly and can be found along grass slopes, roads, in glades and in open country. It frequently settles on the ground and flowers; rather an uncommon species.



Upper side Male

Under side Male

*Diagnostic Characters* : *Male* : Upper side : Forewing dark orange with two narrow sinuous lines across the middle of the cell. Pre-apical area pale orange; black spots in middle and end of cell, the former not touching the medial nervule and followed by two sub-marginal series of rounded spots. Hindwing as the forewing; with a streak at the end of the cell, a discal-angular series of six spots beyond the cell, an inner sub-marginal series of five round spots, another series of eight spots beyond, becoming somewhat lunular towards the anal angle; margin dentate. Under side : Forewing red; pre-apical area ochraceous and the apex greenish, crossed by two silvery lines; other markings as above but more prominent. Hindwing rich shining greenish ochraceous, crossed by many silvery lines and bands, edged black on one or both sides; outer margin dentate. Head and body thickly clothed with fulvous hairs.

*Female* : Differs from the male only in the ground colour as under side being much dull.

*Wingspan* : 75-100 mm.

*Distribution* : The species ranges from Chitral (Pakistan) to Kumaon and Assam, ascending to about 7,000 to 10,000 feet in Himalayas. Also occurs in Myanmar. Uttarakhand : Almora, Chamoli, Nainital, Tehri, Rudra Prayag, Bageshwar, Udham Singh Nagar, and Uttarkashi districts.

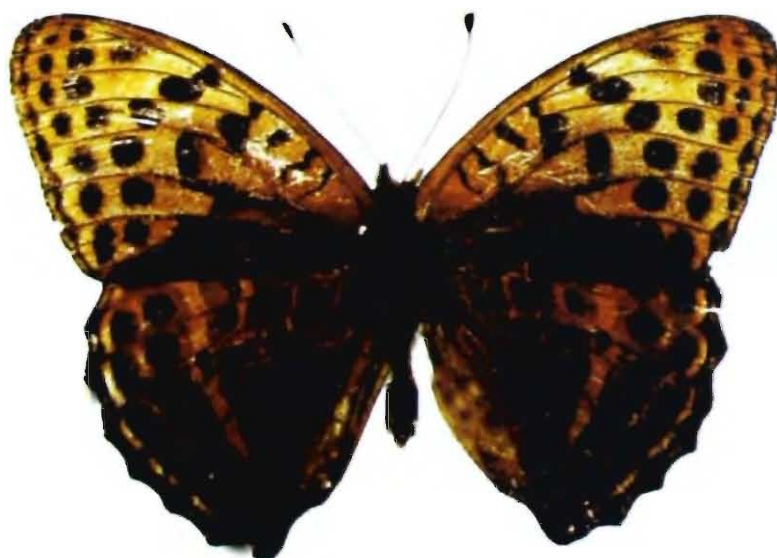
94. *Fabriciana kamala* (Moore)

## The Common Silver-stripe

1857. *Argynnis kamala* Moore, In : Horsfield and Moore's *Cat Lep Mus. E.I.C.* 1 : 156, no. 324.

1990. *Fabriciana kamala* (Moore) : Varshney, Revised Nomenclature for Butterfly taxa, *Jour. Bom. nat. Hist. Soc.*, 87 : 59.

*General Ecology* It is much smaller than *Childrena childreni*, found along roads, in glades, at the edges of forest and in open country, frequently pitching on the ground or on shrubs, thistles, brambles and visits low growing flowers. The flight is fast and rapid.



Upper side Male

*Diagnostic Characters : Male and female* Upper side : Wings golden-yellow. Forewing dusky ochraceous at the base, all the veins deeply marked with black, sub-marginal row of spots are less defined and continuous, marginal row is connected between the vein-lets by a narrow line. Hindwing with an irregular zig-zag inner black band, than a row of five round black spots, and a sub-marginal row of seven linear-shaped spots, also a marginal black line.

Under side : Forewing with the markings as on upper side, apex dusted with dark green scales bearing two lines of silvery spots. Hindwing beautiful metallic green with five silvery sub-marginal and inner bands and a series of marks about the basal half silvery white; between the sub-marginal and inner band some small spaces of yellow, and an indistinct row of reddish spots.

*Wingspan* : 65-75 mm.

*Distribution* : The species is common from Chitral (Pakistan) to Kumaon from above 6,000 feet, and ascends to about 10,000 feet in Himalayas Uttarakhand : Almora, Chamoli and Rudra Prayag districts.

95. *Phalanta phalantha phalantha* (Drury)**The Common Leopard**

1773. *Papilio phalantha* Drury, *Illus. nat. Hist.*, 1 : pl. 21, figs. 1, 2.

1997. *Phalanta phalantha phalantha* (Drury) : Varshney *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 31 : 18-19.

**General Ecology** : A very Common species, occurring in the gardens and at the edges of jungles. It avoids shady places. It visits flowers of Lantana, Thistles, Pigeon berry, *Tridax* species and damp patches, and wet roads. Sometimes dozens of individuals assemble at mud puddling sites in the hot season. It is fond of basking in sunshine. Its flight is fast with jerky movements. It has a very strong territorial behaviour and chases any butterfly, which comes in its range.

**Diagnostic Characters : Male and female**  
 : Upper side : Wings bright yellowish brown with row of black spots and wavy lines. Forewing with the apical half of the costal margin having four narrow wavy fasciae, a straight discal series of six spots placed between the nervules, followed by a similar series of four spots, a sub-marginal series of black spots from apex to above vein 2, the spot below vein 2 rounded and largest; inner marginal area without any spot. Hindwing with some transversely wavy linear fasciae on basal area; a discal series of four rounded spots; two wavy sub-marginal fasciae with a marginal series of elongate spots. Under side : Similar as above but most of dark markings very paler and glossy and the dry season form has a more prominent purple gloss on the upper side. The upper side of this species closely resembles that of an *Argyreus*.

**Wingspan** : 50-60 mm.



Upper side Male



Under side Male

**Distribution** : The subspecies occurs throughout the year in the plains of India and ascends to about 8,000 feet in Himalayas. Also occurs in Sri Lanka, Pakistan and Myanmar. Uttarakhand : Almora, Dehra Dun, Haridwar, Rudra Prayag, Chamoli, Uttarkashi, Nainital, Pauri, Udham Singh Nagar, Pithoragarh and Tehri districts.

96. *Ariadne merione* (Cramer)

## The Common Castor

1777. *Papilio merione* Cramer, *Pap. Exot.*, 2 : pl. 144-Figs. G, H.

1932. *Ariadne merione* (Cramer) : Nandi & Varshney, *Rec. zool. Surv. India*, 85(1) : 127.

*General Ecology* : Also known as Castor Butterfly, abundant in the hills and forested areas. It occurs in castor fields and around edges and bushes. It occurs throughout the year. It is a weak flier and prefers to fly close to the ground and in the neighborhood of its host plant, i.e., Castor.

*Diagnostic Characters : Male and female* : Upper side : Wings rusty brown. Forewing with a sub-apical small white spot and transverse black wavy lines and discal lines doubled. Forewing with a series of obscure spots with in the sub-marginal markings. The outer edge of fore wing much rounded. Hindwing with the markings similar and generally continuous with those of the forewing, but the inner of the three sub-marginal lines replaced by a series of castaneous spots placed between the nervules.



Upper side Male

Under side : Duller and slightly darker than upper side, the transverse dark bands broader and more diffuse. Forewing with a small whitish spot in the pre-apical area. In dry season form specimens, the ground colour paler, the transverse lines more distinctly in pairs, forming bands.



Under side Male

*Wingspan* : 45-60 mm.

*Distribution* : The species is quite common from Kashmir to Kumaon and ascends to about 7,000 feet in North West Himalayas, recorded also from Orissa and Madhya Pradesh. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Almora, Dehra Dun, Haridwar, Nainital, Bageshwar, Champawat, Pauri, Pithoragarh, Tehri and Udham Singh Nagar districts.

97. *Cupha erymanthis* (Drury)

## The Rustic

1770. *Papilio erymanthis* Drury, *Exot. Ent.*, 1 ; pl. 15, Figs. 3-4.

1883. *Cupha erymanthis* (Drury), *J. Asiat. Soc. Beng.*, 51(2-3) : 58.

*General Ecology* : Inhabitant of thickly forested areas. It flies close to the ground with a weak flight. When disturbed, it dives into the undergrowth. Both the sexes visit flowers and males occasionally to damp patches.

*Diagnostic Characters* : *Male and female* : Upper side : Wings yellowish brown. Forewing with broad and rounded black apex, with two yellowish irregular spots, bright yellow transverse discal band having 3 black spots. Hindwing with narrow, black, strongly and irregular waved line crossing wing near apex of cell followed by a discal series of five black spots in interspaces 2 to 6; a post discal series of black lunules, a sub-terminal black band.

Under side : As above but pale ochraceous. Forewing apical area brownish; a discal, transverse, slender, chest-nut-brown lunular line bordered outwardly by a series of dark spots, and an inner and an outer transverse sub-terminal series of small denate spots. Hindwing with a transverse discal series of lunules outwardly margined with purple, followed by a series of dark black spots.

*Wingspan* : 50-60 mm.

*Distribution* : The species occurs from Mussoorie (western Himalaya) to Assam and Sikkim, ascends to about 5,000 feet in western Himalayas, also recorded from South India. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Dehra Dun, Tehri, Almora, Bageshwar, Champawat, Udham Singh Nagar and Nainital districts.



Upper side Male



Under side Male

98. *Sephisia dichroa* (Kollar)

## The Western Courtier

1844. *Limenitis dichroa* Kollar, *In : Hugel's Kaschmir und das Reich der Siek*, 4(2) : 429, no. 1, pl. 8, figs. 1-2.

1932. *Sephisia dichroa* (Kollar) Evans, *The Identification of Indian Butterflies*. Bombay nat. Hist. Soc., : 147.

*General Ecology* : It is fairly common butterfly, visits damp patches, dung, flowers, over-ripe fruit etc. and generally found in shaded nallahs bordering forested regions and along streams. It flights rapid and generally returning to the same spot.



Upper side Male

*Diagnostic Characters* : Male and female : Upper side : Both wings dark brown above. Forewing with two tawny, irregular broken bands, crossed by black veins. Preapical and sub-terminal spots tawny in male and whitish in female.

Hindwing with black vein and black outer discal band. Under side: Paler, markings as on upper side but paler; marginal series of lunules more conspicuous on hindwings.

*Wingspan* : 60-75 mm.

*Distribution* : The species is distributed from Chitral to Kumaon and ascends to about 8,000 feet in western Himalayas. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Dehra Dun, Almora, Bageshwar, Chamoli, Champawat, Haridwar and Nainital districts.



Under side Male

## 8. Family LYCAENIDAE

### Blues

Members of the family Lycaenidae are commonly known as “**The Blues**” They are small to medium-sized butterflies, with predominantly blue wings but major colour being violet to various shades of blue. Brown, chestnut, or blackish tinge on the upper side of wings are not uncommon. Upper side of wings may be unmarked, or may be spotted or banded, with a variety of colours. The under side is typically spotted, banded and streaked in intricate patterns and hind wings with the outer margin smoothly curved, or the termen produced into a lobe or a tail, which may be long or thread like.

Both the sexes have fully developed forelegs and the pre-costal vein is absent in the hind wing. They are very delicate, very slow fliers and found almost everywhere (meadows, open grasslands, shrubs and forest clearing). The males are fond of sunshine and visit flowers and damp patches but the females seldom venture out of their habitats.

Many species show in their early stages association with ants. The ants carry caterpillars to their nests and nurse them for their sweet-scented juice and in return protect the caterpillars and chrysalis from their enemies.

Seasonal variations occur in a number of species, like change of colour and markings on the wings sometimes being very pronounced. Some species appear so much alike that often it becomes difficult to separate them with certainty except by examination of their genitalia.

The Lycaenids are among the smallest of the butterflies. The “Grass Jewel” is the smallest of all the Indian butterflies, measuring about 15 mm.

Some common species of this family occurring in the State are *Castalius rosimon* (Fabricius), *Lampides boeticus* (Linnaeus), etc.

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

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

1907. *Castalius rosimon* (Fabricius) : Bingham "*The Fauna of British India*" (*Butterflies*), 2 : 424.

*General Ecology* : A common species of the open deciduous forests, scrub, grasslands and near human habitations. A weak flier and always flies close to the ground; avoids thickets or shaded places, preferring edges and roads in the forests; fond of sunshine and basking. It visits flowers and damp patches.



Upper side Male

Under side Male

*Diagnostic Characters* : Head, thorax and abdomen black above and white beneath, the latter banded at the sides.

*Male* : Upper side : Both wings white, with a grey-blue base, over which a brilliant silvery irroration, varying according to the light; anterior margin and border blackish-brown. Forewing with a very irregular series of square, broad, dark spots on disco-cellular and post-discal area. Hindwing with spots as on forewing but narrow and not irregularly placed. Under side: Both wings white with deep spots and streaks.

*Female* : Larger than male, both wings with posterior border broader, the black colour more prominent; both wings as in the male. The species shows seasonal variation. The specimens on the wings during the rains are much darker and heavily marked than those occurring in the dry season.

*Wingspan* : 24-32 mm.

*Distribution* : The species is common throughout India including Andaman and Nicobar Islands, ascending to about 7,000 feet in Himalayas. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Almora, Dehra Dun, Haridwar, Tehri, Bageshwar and Pauri districts.

100. *Lampides boeticus* (Linnaeus)**The Pea Blue**

1767. *Papilio boeticus* Linnaeus, *Syst. Nat.* (12<sup>th</sup> ed.), 1(2) : 789, no. 226.

1962. *Lampides boeticus* (Linnaeus) : Cantlie, The Lycaenidae portion of Brig. Evans "The Identification of Indian Butterflies, 1932 : 69.

**General Ecology :** One of the most widely distributed of all Blues, very common in agricultural fields, where peas, beans and their relatives are grown. It is a very persistent migrant. It migrates to northwest India in large numbers from South India in March and April. It is very strong on wings, flies fast with rapid wing beats and is fond of sunshine and open places, visiting flowers. It also often settles on ground and damp patches.



Under side Male



Upper side Female



Under side Female

**Diagnostic Characters :** *Male* : Upper side : Both wings violet-blue with two tornal spots on hindwing. Forewing with the costal margin narrowly and the outer margin more broadly pale fuscous. Hindwing with the costal and posterior margins pale fuscous, two large black spots at the anal angle. Underside : Both wings pale brown or whitish with narrow brown bands. Hindwing with two orange crowned tornal black spots. In between the brown bands a broad whitish discal band.

*Female* : Upper side : Both wings dark brownish with blue scaling at the bases; generally with obscure white marginal crescent. Forewing with a discal bluish patch. Hindwing has a slightly long, white tipped tail; two outer greyish sub-marginal bands, the inner broadest; black anal angular spots as in the male, distinctly margined with greenish. Under side : Both wings as in the male.

**Wingspan :** 24-36 mm.

**Distribution :** The species is common throughout the country and ascends to about 10,000 feet in Himalayas. Uttarakhand : Chamoli, Dehra Dun and Haridwar districts.

101. *Lycaena pavana* (Kollar)**The White-Bordered Copper**

1844. *Polyommatus pavana* Kollar, *In* : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 416, pl. 5- figs. 5, 6 (male).

1932. *Lycaena pavana* (Kollar) Evans, *The Identification of Indian Butterflies* : 244.

*General Ecology* : A fairly common species that occurs during summer months on the outer ranges of the western Himalayas. It loves sunshine and open places, especially waste lands. The flight is lively but not very fast, close to the ground and seldom sustains. It visits low growing flowers.



Upper side Male

*Diagnostic Characters* : *Male and female* : Upper side : Forewing rich copper red, the costa narrowly, the outer margin broadly black; three black spots in the discoidal cell; a discal series of seven spots placed in the echelon. Hindwing dark brown with an obscure central copper patch; a linear black spot at the end of the cell, two similar spots beyond it; a strong marginal band of copper crescents. Under side: Forewing bright orange, the outer margin cinereous, bearing an outer series of black dots and an inner series of prominent black spots. Hindwing brownish-grey, with prominent black spots surrounded by a narrow whitish ring, three towards the base, three on the disc, two at the end of the cell. *Female* : Upper side : Forewing differs from the male in the outer black border being broader. Hindwing without central copper patch. Under side : Both wings like the male.

*Wingspan* : 32-38 mm.

*Distribution* : The species is common on the outer ranges of western Himalayas from Kashmir to Kumaon and ascends to about 13,000 feet. Doherty (1886) reports it from Kumaon between 4,500 and 13,000 feet. Uttarakhand : Almora, Chamoli, Nainital, Pithoragarh, Tehri, Bageshwar, Champawat, Uttarkashi and Udham Singh Nagar districts.

102. *Heliophorus sena* (Kollar)**The Sorrel Sapphire**

1844. *Polyommatus sena* Kollar, *In: Hugel's Kaschmir und das Reich der Seik*, 4(2) : 415, pl. 5, figs. 3, 4 (male).

1957. *Heliophorus sena* (Kollar) : Wynter-Blyth, *The Butterflies of Indian Region* : 303.

*General Ecology* : Undoubtedly a common species in Western Himalayas and easy to catch. It is found in fairly dry and open ground. It flies quickly but never long distance, settles frequently on flowers, rocks and leaves of low growing vegetation on road, normally paths, in the sunny glades or nallahs. The females do not come out into open areas and are not seen as often as the males.

*Diagnostic Characters : Male* :  
 Upper side : Both wings dark shining violet. Forewing with broad dark border. Hindwing with the costal and outer margin broadly black, the latter bearing a prominent series of orange lunules enclosing rounded black spots, the last outwardly marked with fine bluish-white dots, an intensely black anteciliary line. Under side : Both wings dull ochraceous, a fine black anteciliary line. Forewing with a submarginal orange lunulated band from the first median nervule decreasing to the apex, inwardly defined by a narrow white lunular line.

Hindwing with the outer margin similarly marked as in forewing but the marking broader. *Female* : Upper side : Both wings dark brown; the orange lunulated sub-marginal band on the hindwing as in the male, but more or less continued on the forewing. Under side : Both wings as in the male.

*Wingspan* : 28-33 mm.

*Distribution* : The species is very common from Chitral (Pakistan) to Kumaon and ascends to about 9,000 feet in Himalayas. Uttarakhand Almora, Chamoli, Dehra Dun, Tehri, Pauri, Nainital, Rudra Prayag, Bageshwar, Uttarkashi and Pithoragarh districts.



Upper side Male



Upper side Male

103. *Heliophorus androcles coruscans* (Moore)**The Green Sapphire**

1882. *Ilerda coruscans* Moore, *Proc. zool. Soc. Lond.*, : 248.

1957. *Heliophorus androcles coruscans* (Moore) Wynter-blyth, *The Butterflies of Indian Region* : 304.

*General Ecology* : It is one of the most beautiful of Indian butterflies, found along forest paths, open fields and wastelands and human habitations. A fast flier and sun loving butterfly. It flies close to the ground for short distances. Both sexes are seen basking with their wings fully open early in the morning hours. Rests in the thickets and bushes with wings closed. It visits flowers, damp patches and droppings.



Upper side Male



Under side Male

*Diagnostic Characters Male* Upper side : Forewing brilliant metallic green or blue with the costa narrowly and increasingly, the apex very widely, and the outer margin decreasing black. Hindwing with the disc and base green, the costa and outer margin broadly black, two orange colour lunules at the anal angle. Under side : Both wings are yellow, with a discal dark somewhat narrow lunular line; forewing has a disco-cellular line, a sub-marginal dark line, beyond which the wing is sometimes marked slightly with vermillion, the usual conspicuous oval black spot inwards defined by a narrow white line at the anal angle. In the hindwing the usual small indistinct dark dots scattered over the disc and base.

*Female* : Upper side : Dull smoky-black. Forewing with small orange discal lunules. Hindwing with an orange marginal band. Under side: Both wings as in male.

*Wingspan* : 30-35 mm.

*Distribution* : The subspecies has a very wide distribution throughout the outer ranges of western Himalayas from Kashmir to Kumaon at an altitude ranging between 4,000 to 12,000 feet in Himalayas. Uttarakhand : Almora, Chamoli, Dehra Dun, Tehri, Rudra Prayag, Bageshwar, Uttarkashi and Pithoragarh districts.

104. *Pseudozeeria maha* (Kollar)**The Pale Grass Blue**

1844. *Lycaena maha* Kollar, *In* : Hugel's *Kaschmir und das Reich der Siek*, 4(2) : 422.

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

*General Ecology* : It is one of the commonest butterflies of hilly regions. It can be seen in open grassy patches along river beds, disturbed human habitations and borders of cultivated fields. It is a weak flier, does not fly very far and flies close to the ground. It visit low growing flowers and settles on leaves with wings closed, basks in the morning with wings partly open, but when it feeds or rests, it keeps its wings closed over its backs.



Upper side Male

Under side Male

*Diagnostic Characters* : Head, thorax and abdomen bluish above; antennae with white rings.

*Male* : Upper side : Both wings silvery bluish, with the entire border narrow and fuscous. Under side : Forewing with a series of large black spots in the cell as well as a bar end cell. Hindwing with a series of small black dots, that in area 6 midway between 5 and 7 and in line. All the dots circled with whitish.

*Female* : Upper side : Both wings dark brown to fuscous with basal blue scaling. Under side : With darker markings.

The species shows well-marked seasonal variation, the specimens, which occur during rains are much darker than those which occur during the dry season.

*Wingspan* : 26-30 mm.

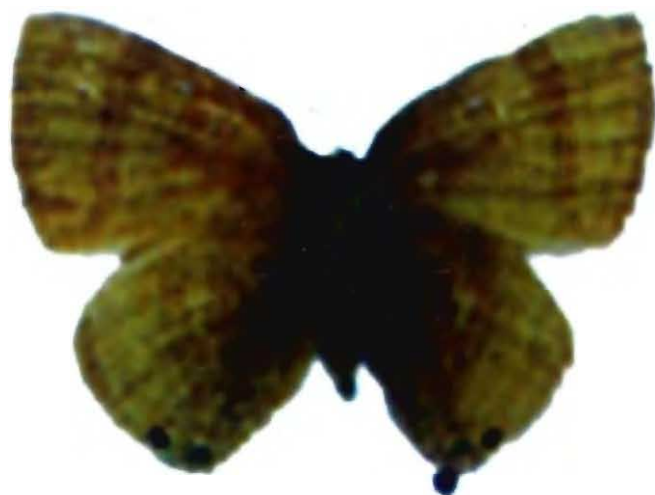
*Distribution* : The species occurs throughout India, ascending to about 9,000 feet in Himalayas. Also occurs in Pakistan, Bangladesh, Nepal and Myanmar. Uttarakhand : Dehra Dun, Haridwar, Pauri, Tehri, Bageshwar, Uttarkashi and Udham Singh Nagar districts.

105. *Rapala varuna* (Hewitson)**The Indigo Flash**

1863. *Deudorix varuna* Hewitson, *Illustr. Diurn. Lep.*, : 22, no. 16.

1957. *Rapala varuna* (Hewitson) : Wynter-Blyth, *The Butterflies of Indian Region* : 361.

*General Ecology* It is a beautiful and robust little butterfly, somewhat resembling the Skippers in its manner of flight, which is straight and very fast. It lives in thick and hilly areas, but sometimes found on the plains. It sits with its wings closed and loves visiting flowers. Male also visits damp patches.



**Upper side Male**



**Under side Male**

*Diagnostic Characters : Male* : Upper side : Both wings dull shining dark indigo-blue or brilliant rich deep ultra marine-blue. Forewing with costa narrowly, the apex widely and decreasingly to the anal angle, where it ends in a point, black. Hindwing with costa and outer margin narrowly black, the abdominal margin pale fuscous, the anal lobe black, inwardly with a patch of dull ochraceous ferruginous scales. Under side : Both wings dull slaty-brown, with deep black markings; forewing discal band white edged on both sides and usually broad. Hindwing discal band generally curved and parallel to termen; bar end cell usually close to discal band.

*Female* : Upper side : Both wings as in male, but the blue not so brilliant. Under side : Both wings pale ochraceous-brown, all the markings dark brown. Hindwing with the lower portion of discal band filled in with ferruginous; a fine anticiliary white line, obsolete anteriorly.

*Wingspan* : 28-32 mm.

*Distribution* : The species is widely distributed in India, both at low elevations in the hills and in the plains and ascends to about 7,000 feet in Himalayas. Also occurs in Sri Lanka and Myanmar. Uttarakhand : Dehra Dun and Nainital districts.

106. *Celastrina huegelii* (Moore)

**THE LARGE HEDGE BLUE**

1882. *Cyaniris huegelii* Moore, *Proc. zool. Soc. Lond.*, : 204.

**General Ecology** : It is an extremely common butterfly. It can be found in the gardens, shrubs, hedges etc. and more nearer streams. The species is noticeably not fond of settling on damp patches. The food plant of this species is *Princeia utilis* of family Rosaceae.

**Diagnostic Characters** : *Male* :  
 Upper side : Both wings similar in colour, but of a darker blue tint. Forewing: with a more slender blackish marginal band. Hindwing with a clearly defined marginal line. Under side : Grey. Both wings with similar but more distinct markings, the discal series of spots on the hindwing linear in shape, the marginal spots and sub-marginal lunular band much more prominent.  
*Female* : More dusky throughout.  
 Upper side : Forewing with broader blackish marginal broader, the latter with well-defined inner pale dentate marks, the inner area beyond and the veins also dusky black. Under side : Both wings as in the male.

**Wingspan** : 34-40 mm.

**Distribution** : The species is common in Uttarakhand. Its ranges from 3,500 to 12,000 and is common from Kashmir to Kumaon. Uttarakhand: Dehra Dun, Tehri, Rudraprayag, Uttarakashi, Chamoli, Almora, Pithoragarh, Bageshwar and Champawat districts.



Upper side Male



Under side Male

## 9. Family HESPERIIDAE

### Skippers

Members of this family are popularly known as “**Skippers**” They are mostly small in size and very active in habits. They are always dark brown to black in colour and spotted or banded with white or yellow, and the markings often being semi-transparent; very few are brightly coloured.

The bodies of these butterflies are very robust and strong. In both the sexes, the legs are perfect and functional for walking. The legs are covered with very dense, long and thin scales; antennae are placed wide apart, tapering to a point at the tip or with a curved hook. The head is wider than the thorax and eyes are large and prominent.

The flight is usually very rapid. They are fond of basking in sunshine and visit flowers, damp patches; some feed on bird's droppings. The eggs are dome shaped, smooth or ridged longitudinally. The smooth and cylindrical caterpillars spend their life in cells made of leaves. They feed on dicotyledon, grasses, palms, bamboos and ginger etc.

The family HesperIIDae is the third largest family of the butterflies in the world. In India, about 320 species are known to occur, of which only 63 are recorded from Western Himalaya and 42 from Uttarakhand. The present account deals with only four species.

#### 107. *Celaenorrhinus leucocera* (Kollar)

##### The Common Spotted Flat

1844. *Hesperia euocera* Kollar, In : *Hugel's Kaschmir und der Reich der Seik*, 4 (1) : 454, pl. 18, fig. 3, 4.

1897. *Celaenorrhinus leucocera* (Kollar) : Elwes & Edward, *Trans.R. ent. Lond.*, 14, pl. 4 : 116.

*General Ecology* : As the butterflies of this group keep their wings spread flat, they are called “**Flats**” The Common Spotted Flat a is butterfly of shaded areas, evergreen and mixed deciduous forests, especially in low land country. It rests with wings widely open on the under sides of the leaves. It often visits flowers and occasionally wet patches. Its flight is rapid but seldom sustained for long distance.

*Diagnostic Characters* : Male and female : Upper side : Wings dark brown. Forewing with a white discal band formed of 5 semi-transparent spots and 5 apical spots, which are joined to each other. The wings margin chequered with black and white. Hindwing with a few obscure non-transparent orange ochraceous spots.



Upper side Male

Female similar to male but two large discal bands disconnected in the forewing. The male has shaft plain white antennae where as the female has brown antennae with white club. Under side : Markings as above but pale with an additional yellowish brown small round spot in the cell.

*Wingspan* : 45-55 mm.

*Distribution* : Widely distributed species in the plains and ascends to about 8,000 feet in Himalayas. Uttarakhand : Almora, Nainital and Bageshwar districts.

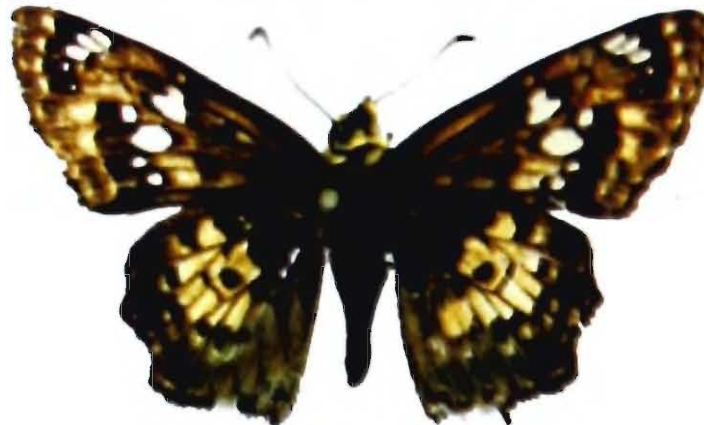
### 108. *Caprona ransonnetti* (Felder)

#### The Golden Angle

1868. *Pterygaspidea ransonnetti* Felder, *Verh. Zool. Bot. Ges. Wein.*, : 284.

1987. *Caprona ransonnett* (Felder) : Elwes & Edward, *Trans. R. ent. Lond.*, 14, pl. 4 : 150-151.

*General Ecology* : A common butterfly with angular wings, seen in the lowland forests. It is a fast flier, flight always close to the ground and does not sustain for long distance. It visits flowers and damp patches and often settles on the top of leaves. It can be caught while basking in the sun.



Upper side Male

*Diagnostic Characters* : *Male and female* Upper side : Wings dark brown. Forewing with central and marginal golden-brown areas having semi-transparent, large and small white spots in the disc and a group of small elongate spots in the apex. Hindwing dark brown with central yellow-brown area divided by dark veins in the wet season form. The dry season forms are much paler with extensive yellow-brown markings.

Under side : Hindwing white with basal, discal and marginal rows of dark spots.

*Wingspan* : 35-45 mm.

*Distribution* : The species ranges from peninsular India to Madhya Pradesh and Himachal Pradesh to Assam. Also occurs in Bangladesh, Myanmar, and Sri Lanka. Uttarakhand : Dehra Dun, Haridwar and Pauri districts.

109. *Oriens gola* (Moore)**The Common Dartlet**

1877. *Padrona gola* Moore, *Proc. zool. Soc. Lond.*, : pl. 58, fig. 9.

1949. *Oriens gola* (Moore) : Evans, *A Catalogue of HesperIIDae from Europe, Asia and Australia in British Museum (Nat. Hist.)* : 372.

*General Ecology* It is generally seen in the forest areas of heavy rainfall; fond of visiting flowers. It flies closer to ground at low elevations rapidly, but never to a great distance.



Upper side Male

*Diagnostic Characters : Male and female* : Upper side : Wings dark brown with tawny yellow markings. Forewing with lower part of straight tawny yellow discal band central (spot in 1 b is in the middle of 1 b, spot end cell co-joined to spot in 2); con-joined apical spots 6 to 8; spot end cell, may be one above it. Hindwing with central discal band; no spot in cell. The discal bands on the upper side are not divided by black veins.

Under side : Hindwing usually orange with prominent black spot.

*Wingspan* : 24-28 mm.

*Distribution* : The species is common in South India, Kumaon to Sikkim and Assam and ascends to about 6,500 feet in Himalayas. Also occurs in Sri Lanka and Myanmar. Uttarakhand Dehra Dun, Haridwar, Pithoragarh, Champawat, Nainital and Udham Singh Nagar districts.

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

1775. *Papilio folus* Cramer, *Pap. Exot.*, 1 : pl. 74- fig. 7.

1949. *Udaspes folus* (Cramer), Evans : *A Catalogue of Hesperidae from Europe, Asia and Australia in British Museum (Nat. Hist.)* : 292.

**General Ecology** : It is quite common in open areas of forests as well as on the plains, more abundant in neighbourhood of streams where it settles on stones. Its flight is quick, short and close to the ground. It can be seen basking early in the morning with hind wings fully expanded and forewings partly opened. Like most of the Skippers, it is a nectar-lover. It visits flowers of *Vincoroses* and Lantana, its favourite nectar sources. It also visits cow dung rarely.

**Diagnostic Characters** : Head, thorax and abdomen dark brown to black above, paler beneath.

**Male and female** : Upper side : Wings dark brown with large semi-transparent spots. Forewing with nine white-yellowish spots in discal and sub-apical area, 1 b to 9. Hindwing with a large semi-transparent, yellowish-white patch in the middle from area 1 to 6. Under side : Paler, forewing similar as on the upper side, hindwing with white patch bordered with dark brown streak extending to the base and outer margin mostly greyish-white. A small black spot is present on the darker costal area. The species has been reported as a pest on ginger and turmeric.

**Wingspan** 40-48 mm.

**Distribution** : The species is common in southern India, Madhya Pradesh, Uttar Pradesh and West Bengal to Assam. Also occurs in Myanmar. Uttarakhand : Haridwar district.



Upper side Male



Under side Male

## REFERENCES

- Arora, G.S. & Mandal, D.K., 1977. On Scientific results of Swiss Zoological Expedition to India. Part I. Butterflies of Garhwal District. *Newl. zool. Surv. India*, **3**(4) : 229-234.
- Arora, G.S. 1994. Lepidoptera: Butterflies. In : *Fauna of Rajaji National Park, Conservation Area Series*, **4** : 245-300. *Zool. Surv. India*, Calcutta.
- Arora, G.S. 1995. Lepidoptera: Rhopalocera. In : *Fauna of Western Himalaya, Himalayan Ecosystem Series*, **1** : 61-73. *Zool. Surv. India*, Calcutta.
- Arora, G.S. 1997. Lepidoptera: Rhopalocera. In : *Fauna of Nanda Devi Biosphere Reserve (Uttanchal), Conservation Areas Series*, **9** : 67-88. *Zool. Surv. India*, Calcutta.
- Baindur, G. 1993. The butterflies of Nanda Devi in Scientific and Ecological Expedition Nanda Devi, 2<sup>nd</sup> May to 22<sup>nd</sup> July, 1993 : 35-43. Army H.Q., New Delhi.
- Barnardi, G. 1952. Lepidopteres recolted par A. Barbezat Au Cours de L 'Expedition Lyonnaise 1951 *Au Garhwal Bull. Mens. Soc. Linn.*, Lyon, **21**(3) : 251-259.
- Carter, D. J. 1992. Handbook- *Butterflies and Moths* : 304. Darling Kindersley Ltd. London
- Chaturvedi, N. 1981. Some entomological notes from a visit to the Valley of Flowers. *J. Bombay nat. Hist. Soc.*, **78**(2) : 402-405.
- D' Abrera, B. 1982-1985. *Butterflies of Oriental Region*, 3 vols. (Hill House, Melbourne).
- Doherty, W. 1886. A list of butterflies in Kumaon. *J. Asiat. Soc. Beng.*, **55**(2) : No. 3 : 103-140.
- Evans, W.H. 1932. *The Identification of Indian Butterflies*, 2<sup>nd</sup> Revised edition, 454 pp., 32 pls. *Bombay nat. Hist. Soc.*, Bombay.
- Hannington, F. 1910-11. The butterflies of Kumaon. *J. Bombay nat. Hist. Soc.*, **20**(1) : 130-142; **20**(2) : 361-372; **20**(3) : 871-872.
- Haribal, M. 1988. *Butterflies of Sikkim: Himalyas and their Natural History*. *J. Bombay nat. Hist. Soc.*, **85** : 271-280.
- Haribal, M. 1992. *The Butterflies of Sikkim : Himalaya and their Natural History*, Sikkim Nature Conservation Foundation, Gangtok, 217 pp+60 pls.
- Kollar, V. 1844. Lepidoptera in C.F. Von Hugel "Kaschmir und das Reich der Siek, Stuttgart, **4**(2).
- Kumar, Arun & Kumar, Parmod, 1998. Lepidoptera: *Butterflies of Panchchuli Multidimensional Expedition*, Panchchuli, 25<sup>th</sup> April to 31<sup>st</sup> May, 1998 : 77-78, Army H.Q., New Delhi.

- Kumar, Parmod & Gupta, S.K. 2004. Lepidoptera : Rhopalocera. In : *Some selected fauna of Govind Pasu Vihar, Conservation Areas Series*, 18 : 9-20. *Zool. Surv. India*, Kolkata.
- Kunte, K.J. 2000. *Butterflies of Peninsular India*, 1-254 pp.+31 pls.
- Lesse, H. 1952 Lepidopteres recoltés par A. Barbezat Au Cours de 'Expedition Lyonnaise 1951 *Au Garhwal Bull. Mens. Soc. Linn.*, Lyon, 21 (3) : 203-206.
- Larsen Torben, B. 1987-88. The Butterflies of the Nilgiri Mountains of southern India (Lepidoptera: Rhopalocera). *J. Bombay nat. Hist. Soc.*, 84(1) : 26-54; 84(2) : 291-316; 84(3) : 560-584; 85(1) : 26-43.
- Mackinnon, P.W. and De Niceville L. (1899). List of *Butterflies of Mussoorie in Western Himalaya and neighbouring regions*. *J. Bombay nat. Hist. Soc.*, 11 : 205-221, 368-385, 585-605.
- Mandal, D.K. 1984. *Account of the Indian Tons Valley Expedition 1972*. With an annotated list of species and Redescription of *Colias electo* Menetries (Order : Lepidoptera) from the Indian Palaearctic Region. *Rec. zool. Surv. India, Occ. Pap. No.*, 57 : 1-31.
- Mani, M.S. and Singh, S. 1962. *Entomological Survey of Himalayas*. xxvi. *J. Bombay nat. Hist. Soc.* 59(1) : 77-99.
- Mani, M.S. 1982. *Butterflies of Himalayas*. Oxford and IBH, New Delhi.
- Marshall, G.F.L. and Niceville, L.de. 1883. *The Butterflies of India, Burma and Ceylon*, 1 : 1-321, XVII pls; 1886, 2 : IV + 332 pp., pls. XVIII-XXIV; 3 : 1-503, pls. XXV-XXIX (Taylor & Francis London).
- Moore F.(1890-1907). *Lepidoptera Indica*. Vols. I-VII Lovell and Reeve London.
- Ollenbach, O.C. 1930-31. Butterflies collecting grounds at Mussoorie (Uttaranchal). *J. Bombay nat. Hist. Soc.*, 34 : 836-840.
- Peile H.D. 1937. A guide to collection of *Butterflies in India*. Staples Press London.
- Shields, O. 1984. *Oriental Lycaenidae, Riodinidae and Hesperidae* from the Central Nepal Himalaya. *J. Bombay nat. Hist. Soc.*, 81(3) : 546-550.
- Singh, Arun Pratap & Bhandari, R.S. 2003. *Butterflies diversity in tropical moist deciduous Sal forests of Dehra Dun Valley*. *Indian Forester*, October : 1257-1268.
- Stempffer, H. 1952. Lepidopteres recoltés par A. Barbezat Au Cours de. Expedition Lyonnaise 1951 *Au Garhwal Bull Mens. Soc. Linn.*, Lyon, 21 (3) : 181-184.
- Talbot, G.1939. *The Fauna of British India, Butterflies*, 1 : XXIX+600 pp., 3 pls.

- Talbot, G. 1947. *The Fauna of British India including Ceylon and Burma (Butterflies)*, **2** : XV+506 pp., 2 pls. 1 map. (Published By Taylor and Francis, London).
- Varshney, R.K. 1977. *Index Rhopalocera Indica* : An idea of local list of butterflies from India and neighbouring Countries, *Rec. zool. Surv. India*, **73** : 159-178.
- Varshney, R.K. 1979-90. Revised nomenclature for taxa in Wynter-Blyth book on the *Butterflies of the Indian Region*. *J. Bombay nat. Hist. Soc.*, **76**(1) : 33-40; **82**(2) : 309-321 & **87**(1) : 53-61.
- Varshney, R.K. 1993, *Index Rhopalocera indica* Pt. III. Genera of Butterflies from India and neighbouring countries. *Oriental Ins.*, **27** : 347-372.
- Varshney, R.K. 1994, *Index Raphalocera Indica* Pt. III. Genera of Butterflies from India and neighbouring countries. *Oriental Ins.*, **28** : 151- 198.
- Varshney, R.K. 1997. *Index Rhopalocera Indica* Pt. III. Genera of Butterflies from India and neighbouring Countries. *Oriental Ins.*, **31** : 83- 138.
- Willams C.B. 1930 *Migration of Butterflies*. : 296-301. Oliver and Boyd, Edinburgh, U.K. *Bombay nat. Hist. Soc.*, Bombay; xx + 523 pp., 72 pls.
- Wynter-Blyth, M.A. 1957. Butterflies of Indian Region, *The Bombay nat. Hist. Soc. Bombay*, XX+523pp., 72 pls.

**Table 1.** Distribution of Butterfly species dealt, in the State of Uttarakhand.

		Dehradun	Haridwar	Pauri	Tehri	Rudraprayag	Uttarkashi	Chamoli	Nainital	Almora	Pithoragarh	Bageshwar	Champawat	Udhamsingh Nagar
Sl. No.	Name of the species	1	2	3	4	5	6	7	8	9	10	11	12	13
	Family PAPILIONIDAE													
1.	<i>Pachliopta aristolochiae</i> (Fabricius)	+	+	+	+						+			
2.	<i>Chilasa clytia clytia</i> (Linnaeus)	+	+	+	+				+					
3.	<i>Papilio polytes romulus</i> Cramer	+	+	+	+	+	+	+	+	+	+	+	+	+
4.	<i>P. protenor protenor</i> Cramer	+	+	+	+	+	+	+		+	+	+		
5.	<i>P. polyctor polyctor</i> Boisduval	+	+	+	+		+		+		+		+	+
6.	<i>P. demoleus demoleus</i> Linnaeus	+	+	+	+	+	+	+	+	+	+	+	+	+
7.	<i>P. machaon punjabensis</i> Eimer	+	+		+	+	+	-	+	+	+	+	+	
8.	<i>P. paris paris</i> Linnaeus	+	+				+		+				+	+
9.	<i>Graphium cloanthus cloanthus</i> (Westwood)	+	+	+	+	+		+	+	+	+	+		
10.	<i>Graphium eurous</i> (Leech)						+		+					
11.	<i>Graphium nomius nomius</i> (Esper)	+	+		+				+					
12.	<i>G. sarpedon</i> (Linnaeus)	+	+		+									

Sl. No.	Name of the species	1	2	3	4	5	6	7	8	9	10	11	12	13
13.	<i>Parnassius hardwickei</i> Gray	-						+	+	+	+	-		
14.	<i>Graphium agamemnon</i> (Linnaeus)	+	+	+							+			
	Family PIERIDAE													
15.	<i>Leptosia nina nina</i> (Fabricius)	+	+	+	+	+	+			+	+	+		
16a.	<i>Metaporia agathon phryxe</i> (Boisduval)	-	+			+	+	+			+			
16b.	<i>M. a. caphusa</i> (Moore)	+	+		+	+				+	+	+	+	
17.	<i>M. leucodice soracta</i> (Moore)	+	+				+		+			+		
18.	<i>Delias belladonna Horsfieldi</i> (Gray)	+	+	+	+			+	+	+	+	+	+	+
19.	<i>Delias eucharis</i> (Drury)	+	+	+	+		+		+	+		+	+	
20.	<i>Anaphaeis aurota aurota</i> (Fabricius)	+	+	+	+		+		+	+	+	+	+	+
21.	<i>Ceporia nerissa phryne</i> (Fabricius)	+	+		+		+		+	+				
22.	<i>Pieris canidia indica</i> (Evans)	+	+	+	+	+	+	+	+	+	+	+	+	+
23.	<i>Pieris brassicae nepalensis</i> Doubleday	+	+	+	+	+	+	+	+		+			
24.	<i>Pontia daplidice moori</i> (Rober)	+	+		+		+			+		+		
25.	<i>Ixias marianne</i> (Cramer)	+	+		+		+		+	+		+		

Sl. No.	Name of the species	1	2	3	4	5	6	7	8	9	10	11	12	13
26.	<i>Ixias pyrene kausala</i> (Moore)	+	+		+		+		+	+		+		
27.	<i>Valeria valeria hippia</i> (Fabricius)	+	+	+	+					+		+		
28.	<i>Catopsilia crocale</i> (Cramer)	+	+	+	+	+	+	+	+		+	+	+	+
29.	<i>C. pyranthe</i> (Linnaeus)	+	+	+	+		+	+	+	+	+	+	+	+
30.	<i>Gonepteryx rhamni nepalensis</i>	+	+	+	+	+	+	+	+	+				
31.	<i>Eurema laeta laeta</i> (Boisduval) Doubleday	+	+	+	+		+	+	+	+	+	+	+	+
32.	<i>E. hecabe fimbriata</i> (Wallace)	+	+	+	+	+			+	+	+		+	+
33.	<i>E. brigitta rubella</i> (Wallace)	+	+	+	+		+	+	+	+	+	+		
34.	<i>Colias electo fieldi</i> Menetries	+	+	+	+	+	+	+	+	+	+	+	+	+
35.	<i>Colias erate erate</i> (Esper)	+	+		+		+							
Family DANAIDAE														
36.	<i>Danaus chrysippus</i> Linnaeus	+	+	+	+		+	+	+	+	+	+	+	+
37.	<i>D. genutia genutia</i> (Cramer)	+	+	+	+	+	+	+	+	+	+	+	+	+
38.	<i>Parantica sita</i> (Kollar)	+	+	+				+			+			
39.	<i>Tirumala limniace leopardus</i> (Butler)	+	+	+	+				+					
40.	<i>T. hamata septentrionis</i> (Butler)	+	+		+		+		+	+		+		

Sl. No.	Name of the species	1	2	3	4	5	6	7	8	9	10	11	12	13
41.	<i>Parantica aglea melanoides</i> Moore	+	+		+		+		+			-	+	+
42.	<i>Euploea core core</i> (Cramer)	+		+	+		+	+	+	+	+	+	+	+
43.	<i>E. mulciber mulciber</i> (Cramer)	+	+	+	+	-			+	+		+	+	+
	Family ACRAEIDAE													
44.	<i>Acraea issoria anomala</i> Kollar	+	+		+	+		+	+	+		+	+	+
45.	<i>A. violae</i> (Fabricius)	+	+							+		+		
	Family SATYRIDAE													
46.	<i>Mycalesis perseus blasius</i> (Fabricius)	+	+											+
47.	<i>M. mineus mineus</i> (Linnaeus)	+	+	+					+	+		+		
48.	<i>Lethe confusa confusa</i> Aurivillius	+						-		+		+		
49.	<i>L. insane insana insana</i> (Kollar)	+	-	-		+	+	+	+	+		+		
50.	<i>L. jalaurida jalaurida</i> (deN)	-					+	+	+	+		+	+	
51.	<i>L. baladeva aisa</i> Fruhstofer	-							+	+		+	+	
52.	<i>L. maitrya maitrya</i> deN	-								+				
53.	<i>L. rohria rohria</i> (Fabricius)	+			+					+		+		
54.	<i>L. verma verma</i> (Kollar)	+					+			+		+		

Sl. No.	Name of the species	1	2	3	4	5	6	7	8	9	10	11	12	13
55.	<i>Lasiommata schakra schakra</i> (Kollar)	+	-		+	+	+	+	-	+	+	+		-
56.	<i>Rhaphicera moorie moorie</i> Butler	+	-	-	-	-	-	+	-	+	+	+	-	-
57.	<i>Aulocera brahminus</i> (Blanchard)	+	-	-	-	-	+	+	-	+	+	+	-	-
58.	<i>A. padma padma</i> (Kollar)	+	-	-	-	+	+	+	-	-	-	-	-	-
59.	<i>A. swaha swaha</i> (Kollar)	+	-	-	-	+	+	+	-	+	+	+	-	-
60.	<i>A. sàraswati</i> (Kollar)	+	-	-	-	+	+	+	-	-	+	-	-	-
61.	<i>Callerebia scanda scanda</i> (Kollar)	+	-	-	-	+	+	+	-	+	+	+	-	-
62.	<i>Ypthima sakra nikaea</i> Moore	-	-	-	+	-	+	+		+	-	+	-	-
63.	<i>Y. ceylonica huebneri</i> Kirby	+	+	+	+	-	-	-	-	-	-	-	-	-
64.	<i>Y. nareda nareda</i> (Kollar)	-	-		+		+	+	+	+		+		
65.	<i>Y. baldus baldus</i> (Fabricius)	+	+		+			-						
66.	<i>Melanitis leda ismene</i> (Cramer)	+	+	+	+			+		+	+			
67.	<i>Elymnias hypermnestra undularis</i> (Drury)	+	+							+		+		
Family ERYCINIDAE														
68.	<i>Libythea myrrha</i> Godart	+	+		+					+	+	+		
69.	<i>L. leptia</i> Moore	+	+	+	+		+				+	-		

Sl. No.	Name of the species	1	2	3	4	5	6	7	8	9	10	11	12	13
70.	<i>Dodona durga</i> (Kollar)	+	+		+		+	+	+	+				
71.	<i>D. eugenes</i> Bates	-									+			
	Family NYMPHALIDAE													
72.	<i>Athyma opalina</i> (Kollar)	+	+	+			+	+		+	+			
73.	<i>Neptis hylas astola</i> Moore	+	+	+	+		+			+	+	+		
74.	<i>N. mahendra</i> Moore	+	+	+	+			+		+	+	+		
75.	<i>N. yerburyi yerburyi</i> Butler	+	+	+	+		+	+			+			
76.	<i>Cyrestis thyodamas</i> Boisduval	+	+	+	+	+	+	+		+	+	+		
77.	<i>Hypolimnas bolina</i> (Linnaeus)	+	+	+	+					+	+	+		
78.	<i>H. misippus</i> (Linnaeus)	+	+	+	+									
79.	<i>Kallima inachus</i> Boisduval	+	+		+		+							
80.	<i>Junonia hierta hierta</i> (Fabricius)	+	+	+	+		+		+		+			+
81.	<i>Junonia orithya</i> (Linnaeus)	+	+	+	+	+	+	+			+			+
82.	<i>Junonia lemonias</i> (Linnaeus)	+	+	+	+		+		+	+	+	+	+	+
83.	<i>Junonia almana almana</i> Linnaeus	+	+	+	+					+		+		
84.	<i>Junonia atlites</i> (Linnaeus)	+	+	+	+		+	+	+	+		+	+	+
85.	<i>Junonia iphita</i> (Cramer)	+	+	+	+		+	+	+	+	+	+	+	+
86.	<i>Cynthia cardui</i> Linnaeus	+	+	+	+	+	+	+	+	+	+	+	+	+

Sl. No.	Name of the species	1	2	3	4	5	6	7	8	9	10	11	12	13
87.	<i>Vanessa indica</i> (Herbst)	+	+	+	+		+	+	+	+	+	+	+	+
88.	<i>V. egea</i> (Cramer)	-	-		+		+							
89.	<i>Aglais cashmirensis</i> (Kollar)	-	-	+	+	+	+	+		+	+	+		
90.	<i>Kaniska canace</i> (Linnaeus)	+	-		+	+	+	+	+	+	+	+	+	+
91.	<i>Argyreus hyperbius</i> <i>hyperbius</i> (Johanssen)	+	+	+	+	+	+	+		+	+			
92.	<i>Issoria lathonia</i> Linnaeus	+	-	+	+		+	+		+	+			
93.	<i>Childrena childreni</i> (Gray)	-	-		+	+	+	+	+	+		+		+
94.	<i>Fabriciana kamala</i> (Moore)	-	-			+	+	+		+		+		
95.	<i>Phalanta phalantha</i> <i>phalantha</i> (Drury)	+	+	+	+	+	+		+	+	+			+
96.	<i>Ariadne merione</i> (Cramer)	+	+	+	+				+	+	+	+	+	+
97.	<i>Cupha erymenthis</i> (Drury)	+	-		+				+	+		+	+	+
98.	<i>Sephisia dichroa</i> (Kollar)	+	+					+	+	+	+	+		
Family LYCAENIDAE														
99.	<i>Castalius rosimon</i> (Fabricius)	+	+	+	+					+		+		
100.	<i>Lampides boeticus</i> (Linnaeus)	+	+	-	-			+	-				-	
101.	<i>Lycaena pavana</i> (Kollar)	-	-		+		+	+	+	+	+	+	+	+

Sl. No.	Name of the species	1	2	3	4	5	6	7	8	9	10	11	12	13
102.	<i>Heliophorus sena</i> (Kollar)	+		+	+		+	+		+	+	.		
103.	<i>H. androcles coruscans</i> (Moore)	+	+		+	+	+	+		+	+	+		
104.	<i>Pseudozizeeria maha</i> (Kollar)	+	+	+	+		+						+	+
105.	<i>Rapala varuna</i> (Hewitson)	+							+					
106.	<i>Celastrina hugelli</i> (Moore)	+			+	+	+	+		+	+	+	+	
Family HESPERIIDAE														
107.	<i>Celaenorrhinus leucocera</i> (Kollar)	-							+	+		+		
108.	<i>Caprona ransonnetti</i> (Felder)	+	+	+										
109.	<i>Oriens gola</i> (Moore)	+	+						+		+		+	+
110.	<i>Udaspes folus</i> (Cramer)	-	+						+					

*Note :* Distribution of the species in Uttarakhand is based on the collection actually available with the author or reported by previous workers.

## INDEX

- Acraea issoria anomala* 53  
*Acraea violae* 54  
 Acraeidae 53  
 African Emigrant 38  
*Aglais cashmirensis* 99  
*Anaphaeis aurota aurota* 29  
*Argyreus hyperbius hyperbius* 101  
*Ariadne merione* 106  
*Athyma opalina* 82  
*Aulocera brahminus* 67  
*Aulocera padma padma* 68  
*Aulocera saraswati* 70  
*Aulocera swaha swaha* 69  
 Banded Bree-Brown 58  
 Barred Wood Brown 62  
 Bath White 33  
 Beaks 77  
 Blues 109  
 Blue Admiral 100  
 Blue Pansy 91  
 Blue Tiger 48  
 Browns 56  
*Callerebia scanda scanda* 71  
*Caprona ransonnetti* 119  
*Castalius rosimon* 110  
*Catopsilia crocale* 37  
*Catopsilia pyranthe* 38  
*Celastrina huegelii* 117  
*Celaenorrhinus leucocera* 118  
*Ceporia nerissa phryne* 30  
 Chestnut Tiger 47  
*Chilasa clytia clytia* 10  
*Childrena childreni* 103  
 Chocolate Pansy 95  
 Club Beak 77  
*Colias electo fieldi* 43  
*Colias erate erate* 44  
 Common Beak 78  
 Common Blue Apollo 21  
 Common Blue bottle 20  
 Common Brimstone 39  
 Common Bush-brown 56  
 Common Cabbage White 31  
 Common Caster 106  
 Common Dartlet 120  
 Common Emigrant 37  
 Common Evening Brown 74  
 Common Five-ring 74  
 Common Forester 59  
 Common Four-ring 72  
 Common Grass Yellow 41  
 Common Gull 30  
 Common Indian Crow 50  
 Common Jezebel 27  
 Common Leopard 105  
 Common Map 86

- Common Mime 10  
 Common Mormon 12  
 Common Palmfly 76  
 Common Peacock 14  
 Common Pierrot 110  
 Common Punch 79  
 Common Rose 10  
 Common Sailer 83  
 Common Satyr 69  
 Common Silver-stripe 104  
 Common Spotted Flat 118  
 Common Three-ring 73  
 Common Tiger 46  
 Common Tree-brown 63  
 Common Wall 65  
 Common Wanderer 35  
 Common Yellow Swallowtail 16  
*Cupha erymenthis* 107  
*Cynthia cardui* 96  
*Cyrestis thyodamas* 86  
 Danaid Eggfly 88  
 Danaidae 45  
*Danaus chrysippus* 45  
*Dadona eugenes* 80  
*Danaus genutia genutia* 46  
*Parantica sita* 47  
 Dark Blue Tiger 48  
 Dark Brand Bush-Brown 57  
 Dark Clouded Yellow 43  
*Delias belladonna horsfieldi* 28  
*Delias eucharis* 29  
*Dodona durga* 79  
 Eastern Comma 98  
*Elymnias hypermnestra undularis* 67  
 Erycinidae 77  
*Euploea core core* 50  
*Euploea mulciber mulciber* 51  
*Eurema brigitta rubella* 42  
*Eurema hecabe fimbriata* 41  
*Eurema laeta laeta* 40  
*Fabriciana kamala* 104  
 Glassy Blue Bottle 17  
 Glassy Tiger 49  
 Golden Angle 119  
*Gonepteryx rhamni nepalensis* 39  
*Graphium agamenon* 22  
*Graphium cloanthus cloanthus* 17  
*Graphium eurous* 18  
*Graphium nomius nomius* 19  
*Graphium sarpedon* 20  
 Grass Demon 121  
 Great Satyr 68  
 Great Blackvein 25  
 Great Eggfly 87  
 Green Sapphire 114  
 Grey Pansy 94  
*Heliophorus androcles coruscans* 114  
*Heliophorus sena* 113  
 Hesperidae 118  
 Hill Jezebel 28

- Himalayan Blackvein 26  
 Himalayan Five-ring 71  
 Himalayan Sailer 84  
 Himalayan Sergeant 82  
*Hypolimnas bolina* 87  
*Hypolimnas misippus misippus* 88  
 Indian Cabbage White 31  
 Indian Fritillary 101  
 Indian Red Admiral 97  
 Indian Tortoise-shell 99  
 Indigo Flash 116  
*Issoria lathonia* 102  
*Ixias marianne* 34  
*Ixias pyrene kausala* 35  
*Kallima inachus* 89  
*Kaniska canace* 100  
*Letha baladeva* 61  
*Letha insane insane* 58  
*Lycaena pavana* 112  
*Lampides boeticus* 111  
 Large Cabbage White 31  
 Large Hedge Blue 117  
 Large Silver-stripe 103  
 Large Three-ring 73  
 Lemon Pansy 92  
*Leptosia nina nina* 24  
*Lethe confusa confusa* 58  
*Lethe jalaurida jalaurida* 60  
*Lethe maitrya maitrya* 62  
*Lethe rohria rohria* 63  
*Lethe verma verma* 64  
*Libythea lepita leptia* 78  
*Libythea myrrha* 77  
 Lime Butterfly 15  
 Lycaenidae 109  
*Melanitis leda ismene* 74  
*Metaporia a. caphusa* 26  
*Metaporia agonthon phryxe* 25  
*Metaporia leucodice soracta* 26  
 Milkweed Butterflies 45  
*Mycalesis mineus mineus* 57  
*Mycalesis perseus blasius* 56  
 Narrow Banded Satyr 67  
*Neptis hylas astola* 83  
*Neptis mahendra* 84  
*Neptis yerburyi yerburyi* 85  
 Nymphalidae 81  
 Orange Oak-leaf 89  
*Oriens gola* 120  
*Pachliopta aristolochiae* 10  
 Painted Lady 96  
 Pale Clouded Yellow 44  
 Pale Grass Blue 115  
 Pallid Argus 71  
*Papilio demoleus demoleus* 15  
*Papilio machaon punjabensis* 16  
*Papilio polyctor polyctor* 14  
*Papilio polytes romulus* 12  
*Papilio protenor protenor* 13  
 Papilionidae 9

- Parantica aglea melanoides* 49  
*Lasiommata schakra schakra* 65  
 Paris Peacock 17  
*Parnassius hardwickei* 21  
 Pea Blue 111  
 Peacock Pansy 93  
*Phalanta phalantha phalantha* 105  
 Pieridae 23  
*Pieris brassicae nepalensis* 31  
*Pieris canidia indica* 31  
 Pioneer 29  
 Plain Tiger 45  
*Pontia daplidice* 33  
 Psyche 24  
 Punches 77  
 Queen of Spain Fritillary 102  
*Junonia almana almana* 93  
*Junonia atlites* 94  
*Junonia hierta hierta* 90  
*Junonia iphita* 95  
*Junonia lemonias* 92  
*Junonia orithya* 91  
*Papilio paris paris* 17  
*Rapala varuna* 116  
*Rhaphicera moorie moorie* 66  
 Rustic 107  
 Satyridae 56  
*Sephisia dichroa* 108  
 Six bar Swordtail 18  
 Small Grass Yellow 42  
 Small Silver fork 60  
 Small Tawny Wall 66  
 Sorrel Sapphire 113  
 Spangle 13  
 Spot Swordtail  
 Spotless Grass Yellow 40  
 Straight Banded Tree-brown 64  
 Striated Satyr 70  
 Striped Blue Crow 51  
 Tailed Jay 22  
 Tailed Punch 80  
 Tawny Coster 54  
*Tirumala hamata septentrionis* 48  
*Tirumala limniace leopardus* 48  
 Treble Silver-stripe 61  
*Udaspes folus* 121  
*Valeria valeria hippia* 35  
*Vanessa egea* 98  
*Vanessa indica* 97  
 Western Courtier 108  
 White Orange tip 34  
 White-bordered Copper 112  
 Yellow Coster 53  
 Yellow Orange tip 35  
 Yellow Pansy 90  
 Yerburyi's Sailer 85  
*Ypthima baldus baldus* 74  
*Ypthima ceylonica huebneri* 72  
*Ypthima nareda nareda* 73  
*Ypthima sakra nikaea* 71

