

The Butterflies of Delhi will be a useful guide for those who wish to know more about the butterflies found in the parks, gardens and forests of Delhi. Butterflies are excellent indicators of the environment and may be the first casualty of rapidly deteriorating conditions in the city. This book will enable the amateur and scientist alike to take a deeper interest in these colourful winged creatures and hopefully will revive an interest in their conservation.

Kalpavriksh Environmental Action Group is a Delhi and Pune based NGO involved in research, education and activism in the area of environment and ecology. Kalpavriksh members work on nature conservation and sustainable development issues all over India.

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A KALPAVRIKSH PUBLICATION

THE BUTTERFLIES OF DELHI



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ENVIRONMENTAL ACTION GROUP

Published by Kalpavriksh Environmental Action Group 2000

Typeset and designed by Oroon Das, New Delhi

Printed at Aditi Print - o - fast, New Delhi



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Contributory amount: Rs. 30

Made possible by support from the 'Scheme for Environmental Orientation for Schools' of the Ministry of human Resource Development, facilitated by CEE, Centre for Environment Education.



The most humorous portrayal of a biologist is that of the "butterfly hunter", with a net flying over his head and a precipice at his feet. Certainly, the hobby develops into a passion for some, a passion that leads one to strange parts of the world, whether the neighbourhood park or a rainforest.

In India, there is a great deal of work yet to be done in this field. Even in the capital of the country, there is every possibility that persistence will pay off, in that there are a number of butterflies that probably occur but have not been discovered so far. Besides, new larval host plants will certainly be discovered, since the information in this guide has been culled from breeding experiments carried out in other parts of India.

The butterflies included in this guide are the result of work carried out by Julian Donahue and Roger Ashton during the 1960's and 1970's, besides some work carried out by the Indian Agricultural Research Institute, and miscellaneous old records.

Three recorded species have been left out of the present work. These are the Black Rajah (*Charaxes solon*), the Baronet (*Symphaedra nais*) and the Tabby (*Pseudergolis wedah*). For the first, there is no extant specimen to back up the claimed record, although the larval food plant, Tamarind, grows in Delhi. The second feeds on Sal and the single recorded specimen was probably a straggler from further south. The third is a purely Himalayan species, and the single specimen recorded in Delhi was certainly a straggler. Both the latter specimens are in the I.A.R.I. collection.

The brown form of the Common Mime (*Chilasa clytia* form *clytia*) has not been recorded but will certainly turn up, since the black and white form (*dissimilis*) of this butterfly has been recorded.

Two groups - the Pierrots (*Tarucus*) and the Swifts (*Borbo* and *Pelopidas*) pose special problems in identification. The determination of these is better left in the hands of experts, since besides the long series of identified specimens required as comparative material, the comparison of genitalia, which is the only way to positively separate the species, requires some preparation and experience. In the case of the Pierrots, the females are best separated by breeding experiments.

Besides these difficult groups, the study of butterflies promises to be a fruitful field for nature lovers. This guide is written for use in and around Delhi. While the species dealt with are, more often than not, species in different part of India, there are very similar looking species in different parts, for example in the Himalaya or peninsular India, where the text might not prove sufficiently diagnostic.

Each butterfly has two names: a formal or scientific name and trivial or English name. Either can be used, but it is better to use the formal name, since this is universal, while the trivial name changes from place to place. For instance, the Danaid Eggfly (*Hypolimnas misippus*) is also known as the Six Continent Butterfly. To avoid confusion, therefore, it is better to use *Hypolimnas misippus*. The scientific names might appear to be tongue twisters at first sight, but this is not really so. A little practice is all that is required to be able to use them familiarly.

In the arrangement of the families, I have not followed the presently accepted arrangement but put the biggest first and the smallest towards the end. This is intended to facilitate the use of this book in the field.

HOW TO USE THIS BOOK

Ideally, this guide should be handy when a butterfly is observed. Flip through the pages and seek out the illustration that resembles the butterfly.

Consult the text and check whether the butterfly has

the distinctive features mentioned. There may be more distinctive markings than are mentioned in the text, but nevertheless. Remember that butterflies vary quite a lot from individual to individual, so the markings may be small or large, pale or dark. The illustrations are of the actual size of the butterfly, but some individuals may be smaller or larger. If the butterfly has the distinctive characteristics mentioned, you are on the right track.

Confirm your identification by checking the species listed in the "Similar Species" section. When you have done this and are positive about the identity of the butterfly, note down the date, time and place of your observation in the space provided, as well as any further observations, such as the flower the butterfly visited; what it was doing when you saw it; whether it was laying eggs; was it sunny or cloudy; were there a number of the same species or was it alone and whatever else strikes you as noteworthy. Note down each successive time you see the butterfly, so that in due course, the pattern of the butterfly's life will emerge.

TIPS FOR THE BEGINNER

Butterfly watching is not everybody's hobby, so some explanation of the whole thing is set out below. First, let it be said that we know much less about our butterflies than is commonly believed.

Most of the work on butterflies is based on dead specimens. While this sort of study is vital to determine the various species and their place in the arrangement of families, genera, etc., the study of living specimens in nature is equally important, since we get to know the sort of places the species likes, when it flies, its enemies, and so on. A complete study of butterflies requires the results of both studies.

The study of specimens from Delhi has been undertaken in the past and the results are quite clear. The study of the living insects, however, yet remains. We know about the

habits and habitat preferences of the species from other parts of their range, but there are comparatively few observations from Delhi. It is hoped that this will be remedied in the further.

WHERE TO LOOK

Butterflies are known to like flowers and gardens but this is not universally true. There are some species that like garden flowers. Others much prefer over-ripe fruit like bananas. Still others hardly ever visit flowers.

A number of species are easy to observe, since they attract attention with their large size and bright colours. Others are less often seen, although they might be equally abundant. They might prefer hot, rocky places such as parts of the J.N.U. Campus; alternatively, they might be found in high grass or making forays from high trees. Do not only look down: look up. The tops of trees are the favourite haunt of some species, particularly the Blues. On hot days, the banks of rivers or mud puddles in the road hold their share of butterflies, greedily sucking up moisture laden with mineral salts.

Learn to recognise the larval food plants (L.F.P) of the various species: during the right season, the female butterflies can be found in the vicinity of such plants. Planted in a garden, such plants will induce the butterflies to move in.

Key To Identification Of Some Butterflies In The Field

DISTINCTIVE FEATURES	OTHER FEATURES	SPECIES
1. Tailed	Black forewings with red body	<i>Pachliopta aristolochiae</i>
2. Tailed	Black forewings with black body	<i>Papilio polytes</i>
3. Long tails	Whitish with rapid flight	<i>Graphium nomius</i>
4. White	Flight rapid	see family Pieridae
5. Brown with white border	Large; flight slow	<i>Euploea core</i>
6. Brown with white border	Large, flight generally rapid	<i>Chilasa chytia</i> <i>f. chytia</i> <i>Hypolimnas bolina</i> , female
7. Orange with white stripe	Flight rapid	<i>Hypolimnas misippus</i> , female <i>Argyreus hyperbius</i> , female
8. Orange with white stripe	Flight slow	<i>Danaus chrysippus</i> <i>Salatura</i> ; <i>genutia</i>

MIMICRY

A number of butterflies tend to look and behave alike, although they are sometimes from almost unrelated groups. This is known as inter-butterfly mimicry. There are three types of such mimicry, two of which are practiced among Delhi butterflies. The first is known as Batesian mimicry, after its discoverer, Francis Bates. In this, palatable butterflies such as females of *Hypolimnas misippus* and *Argyreus hyperbius* look and behave like the unpalatable *Danaus chrysippus*. Usually, the mimics are found in the same area as the models and not only mimic the colour and pattern of the model but also the flight and habits, so that at times it is almost impossible to tell them apart in nature.

The second type of mimicry is where unpalatable butterflies tend to look and behave alike, to reduce the price of advertising their unpalatability to newcomers. This is known as Mullerian mimicry, after Fritz Muller who discovered it. Such mimicry is practiced between *Danaus chrysippus* and *Salathura genutia*, which is not the best example of this mimicry. There are mimicry rings of a number of species in southern India, the Himalaya and N.E. India which are much better examples of this type of mimicry.

The third type of mimicry is called Self Detractive mimicry, where a butterfly capable of swift flight looks and behaves like slower-flying, commoner butterflies, evidently evading unwelcome attention by merging with the crowd. This is practiced among some Himalayan and N.E. Indian butterflies.

PROTECTION OF THE CATERPILLARS

Larvae of some butterflies, especially the Blues are sometimes attended by certain species of ants. The larvae have special glands on their sides which, when stimulated by the ants, secrete a sweet juice. The ants are extremely fond of this juice and, in return, protect the caterpillar from insect

predators such as wasps, and flies. Such caterpillars are said to be attended by ants and pose special difficulties in breeding, since the larvae rarely survive without ants.

BUTTERFLY BOOKS AND COLLECTIONS

There are two collections of butterflies in Delhi, one at the Indian Agricultural Research Institute(I.A.R.I.) at Pusa Road and other at the National Museum of Natural History on Barakhamba Road.

There are a number of books on Indian butterflies, although the older ones are taxonomically quite out of date. To enable the reader to consult the older literature, a synonymic list has been added at the end of this guide, from where the older names can be used while referring to older books.

The most complete book of Indian butterflies is by Brigadier W.H. Evans called "The Identification of Indian Butterflies". Published by the Bombay Natural History Society in 1932, it is excellent for identifying species but there are no additional notes.

Another good book is M.A. Wynter-Blyth's "Butterflies of the Indian Region", which uses the nomenclature of Evans with copious additional notes. It was published by the Bombay Natural History society in 1957. Reprints of both the above books are available from Today and Tomorrow's Printers and Publishers, 24-B/5, Desh Bandhu Gupta road, New Delhi 110005.

There are books on the butterflies of Sikkim and Nepal for those interested in visiting these places.

SCIENTIFIC PAPERS

For the serious student, the papers by Julian Donahue in the Journal of the Bombay Natural History society of 1966 and 1967 {Volumes 63 (2) and 64 (1)} and that by Roger

Ashton in the same journal of 1972 {Volume 69 (3)} will prove invaluable.

Besides these, there are papers by A.S. Jandu in the Indian Journal of Entomology of 1941, 42 and 43, by D.G. Sevastopulo in the Journal of the Bombay Natural History Society of 1975 (72: 870-871) and by P. Smetacek in the same journal of 1997 (94: 584-585)



2.1

SYSTEMATIC SECTION

THE SWALLOWTAILS

FAMILY PAPILIONIDAE

1. *Pachliopta aristolochiae*

... Common Rose

Description: Upperside forewing black, hindwing black with a central whiter patch and a row of dull red spots along the edge of the wing. Underside hindwing the pattern is repeated, but the spots along the edge of the wing are a bright crimson. The size of the markings varies. The body is crimson below. The female has broader forewings than the illustrated male.

L.F.P. (Larval Food Plants): *Aristolochia indica*; *Bragantia wallichii*; *Aristolochia bracteata*.

General Information: A common insect over most of India but not frequently met in Delhi. Usually flies rather slowly about bushes and frequently visits flowers. The



crimson body advertises its unpalatability. It is mimicked by females of the next species. On the wing in Delhi during the post-Monsoon period (September to November). Occurs from Pakistan to China, through Malaysia to Java and the Flores.

Similar Species: *Papilio polytes* female form *stichius*.



2. male

2. *Papilio polytes*

... Common Mormon

Description: The male of this insect is singular, black with a chain of white spots along the edge of the forewing and across the hindwing. There is a small red spot on the inner edge of the hindwing on both surfaces. The females occur in three forms in India. The first form, *cyrus*, looks like the male and can only be distinguished by the genitalia. The second form, *stichius*, looks quite like *Pachliopta aristolochiae*, with an unmarked black forewing, the outer half paler than the inner half.

The hindwing has a central whiter patch and a row of red spots along the outer edge of the wing. This insect is easily distinguished from *P. aristolochiae* by the body, which is black. The third form, *romulus*, has some whiter markings on the forewing. The hindwing lacks the whiter patch of form *stichius*. Instead, all the markings are red. This form mimics the Crimson Rose, *Pachliopta hector*, which is common in peninsular India but has so far not been recorded from Delhi.

L.F.P.: Wild and cultivated members of the Citrus family.



2. form *stichius*



2. form *romulus*

General Information:

This and the next species are the most frequently met Swallowtails in Delhi. The males fly rapidly but the females can be met fluttering about bushes looking for a place to lay their eggs. The similarity of the female form *stichius* to *Pachliopta aristolochiae* is a fine example of mimicry. Both sexes are fond of flowers and the males congregate in large numbers on wet mud and sand. Occurs from India to the Philippines.

3. *Papilio demoleus*

... Lime Butterfly

Description: Sexes

similar. On the upperside, the pattern consists of yellow markings on a black background. The hindwing has a blue and black eye spot on the upper edge and a red mark along the inner edge of the wing. The shade of yellow is pale in freshly emerged specimens and ochreous in older specimens.

L.F.P.: Wild and cultivated members of the Citrus family.



General Information:

Both sexes are swift on the wing and normally keep close to the ground. Fond

of flowers and damp sand, where the males sometimes congregate in large numbers along with males of *Papilio polytes*. Occurs from Iran to western Australia.

Similar species: None.



4. *nomius* underside

4. *Pathysa nomius*
... Spot Swordtail

Description: Sexes similar. Upperside: bluish white with five black bars originating from the upper edge of the forewing. The two bars close to the body cross the wing, the remaining three do not. The outer part of the forewing black with a row of pale spots.

Underside (illustrated) the markings are brown instead of black. The hindwing has a row of black edged red spots along the edge.

L.F.P.: *Saccopetalum tomentosum*; *Polyalthia longifolia*.

General Information:

Both sexes fly rapidly and are fond of flowers. Males are attracted to wet mud, but they rarely gather in large numbers. The distinctive tails on the hindwing are not visible in flight. It is not known whether this species breeds in Delhi or is only an occasional visitor. Recorded as quite common in some years in Jaipur, Rajasthan, where it was not observed to be breeding on its known larval food plants, so this butterfly might migrate in some years. Recorded from Jaipur to Thailand.

Similar Species: Several in other parts of India but none in Delhi.



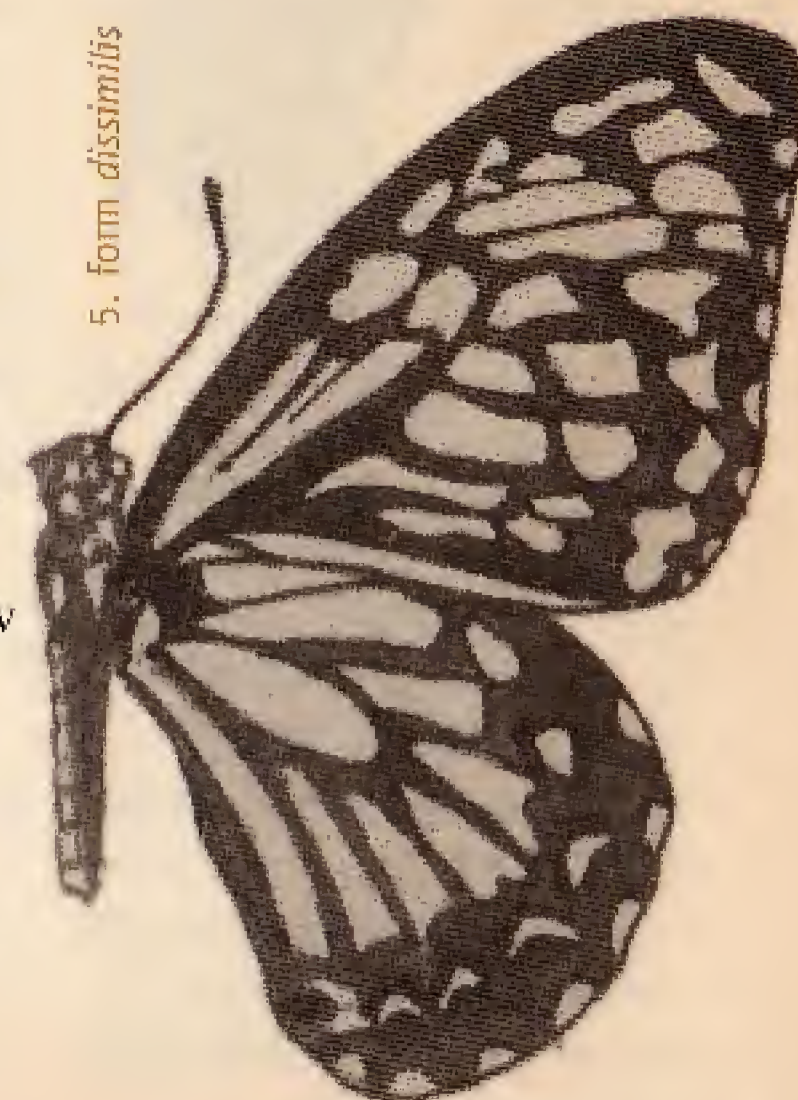
5. *form clytia*

5. *Chilasa clytia*
... Common Mime

Description: Sexes similar. This butterfly occurs in two forms in northern India. The first form, *clytia*, is brown with rows of white spots along the edges of both wings. The second form, *dissimilis*, is white with black markings. Both forms have a row of yellow spots along the edge of the hindwings on the underside, which is distinctive.

L.F.P.: Cinnamon and other members of this family.

5. *form dissimilis*



General Information:

One specimen of form *dissimilis* was seen in Buddha Jayanti Park in August 1967. The flight can be very swift, about high trees, or quite gentle, like the species it mimics, *Euploea core* and *Tirumala limniace*. Both sexes are fond of flowers.

Similar species: form *clytia*: *Euploea core*; form *dissimilis*: *Tirumala limniace*.



2.2

THE WHITES AND YELLOWS

FAMILY PIERIDAE

6. *Leptosia nina*

... Psyche

Description: Sexes similar. Upperside white, forewing with a black spot in the center and the tip of the wing edged with black. Hindwing unmarked or with some black along the wing border.

L.F.P.:

Capparis heyneana;
Crataeva religiosa.



General Information:

This insect is fond of shady undergrowth in open forests. Weak on the wing but capable of dodging through the undergrowth at some speed. Occurs throughout S.E. Asia. Attracted to low growing flowers.

Similar species: *Artogeia canidia*, which is much larger and has a black spot on the hindwing.

7. *Delias eucharis* ...

Common Jezebel

Description: Upperside - white with black venation and a row of pale pink spots along the edge of the hindwing. The female has much darker venation than the male. Underside - forewing markings as above with some yellow marking near the upper edge of the wing. Hindwing markings as above with extensive yellow instead of white and the pink spots are red.



L.F.P.: *Loranthus* spp.
(tree parasites).

General Information:

Generally flies high but visits flowering bushes. The brightly coloured underside is to signal its unpalatability. Occurs from Lahore (Pakistan), throughout India to N. Myanmar.

Similar species: None in Delhi.

8. *Cepora nerissa*

... Common Gull



8. male

Description: Upperside - white with black venation. The female is heavily marked with black. Underside: In the Dry Season Form, the hindwing and the upper tip of the forewing are a pale yellow white. In the Wet Season Form, the yellow is much



8. female

brighter. The veins are marked in grey.

L.F.P.: *Capparis* spp.

General Information:

Flight rapid, generally close to the ground. Swarms at flowering Lantana bushes and other flowers. Among the commonest butterflies in Delhi. Occurs from India to China and Sumatra.

Similar Species:

Appias libythea female.

9. *Belenois aurota*

... Pioneer

Description: Sexes

alike. Upperside - white with black markings. Underside hindwings pale yellow to chrome yellow, with veins marked in black. The female is usually more heavily marked than the male.



9. aurota

L.F.P.: *Capparis* spp.

General Information:

Swarms at flowering Lantana bushes and on wet sand. Flight rapid, usually close to the ground. Frequently met before and after the monsoon. Occurs from Africa, through west Asia to India.

Similar Species: None

10. *Appias libythea*
... Striped Albatross

Description: Upperside and underside white with black markings. The markings are very variable and may be almost absent in some males. Otherwise this butterfly is difficult to confuse with other known Delhi butterflies.

L.F.P.: *Capparis* spp.

General Information:

Flight rapid. Readily attracted to flowers.



10. male



10. female

Difficult to distinguish from other members of this family on the wing. Since this butterfly is a known migrant in other parts of its range, it is not clear whether the Delhi records are from resident populations or parts of some migration. A copulating pair has been recorded from Delhi. Occurs eastwards to the Philippines.

Similar Species: *Cepora nerissa*; several *Appias* species found in other parts of India.

11. *Artogeia canidia*
... Indian Cabbage White

Description: Upperside - white with black markings. The lower dark spot on the forewing is clearly marked in black in the female, while it is a pale grey in the male. Underside the hindwing is a pale yellowish green.

L.F.P.: Cabbage and other members of this family.

General Information: Flight slow, erratic, settling frequently on flowers or to bask. This is a typically montane species that is sometimes found on the plains. In Delhi, all the six known specimens were found between February and April. Although very common in the Himalaya and the hills of south India, it is quite rare on the plains. It would be interesting to know whether this species actually breeds in Delhi or is only a visitor. Occurs from the Himalayas to Japan.

Similar species: *Pieris brassicae*



11. female

12. *Pieris brassicae*
... Large Cabbage white Plate 1

Description: Large. The tips of the forewings end in a sharp point, unlike *A. canidia*. The male is white with a black border to the forewing but no black spots. The female is illustrated.

L.F.P.: Cabbage and other members of this family; *Cassia fistula*.

General Information: The flight is more sustained and powerful than that of *A. canidia*. Both sexes visit flowers. This is a montane species that descends to the plains during winter. The species was recorded from Delhi for the first time in 1996. It is likely that these individu-

als were stragglers from further north. In the Himalaya, it swarms in spring. It is an international pest of cabbage. Europe to Japan, recently (1975) introduced to S. America by mistake, where it was reportedly spreading.

Similar Species:

Artogeia canidia

13. *Ixias marianne*
... White Orange Tip



13. male

Description :

Upperside - white with a black bordered orange tip to the forewing. Male with the orange area unmarked while the female has some black dots, usually four, in this area. Very rarely, the females exactly resemble the males. Underside is cryptically patterned with yellow and brown, with orange from the forewing

upperside showing through.

L.F.P.: *Capparis* spp.

General Information:

Flight rapid, close to the ground. Both sexes visit flowers. Common before and after the monsoon. Endemic to the Indian subcontinent. Recorded from Lahore (Pakistan), throughout India to Sri Lank.

Similar species: *Colotis etrida*, which is much smaller.



13. fe male

14. *Ixias pyrene*
... Yellow Orange Tip



14. male

Description: Upperside male bright yellow with a black bordered orange patch on the forewing. The hind-wing may or may not have a black border. Female creamy white to pale yellow with black markings. Underside cryptically patterned with yellow and brown.

L.F.P.: *Capparis sepiaria*.

General Information:

Flight rapid, close to the ground. Settles frequently on flowers or to bask. Not a rare butterfly in Delhi. Occurs from India to the Philippines.



14. female

Similar species: None

15. *Colotis amata*
... Small Salmon Arab (PLATE 1)

Description: Upperside salmon pink with black markings in the male. The relatively large pink spot at

the lower end of the forewing's black margin serves to distinguish this species from the similar *Colotis phisadia* which is found further west. The female of *C. amata* is paler than the male, sometimes with a white groundcolour, the black markings duller and usually lacking on the hindwing.



L.F.P.:

Salvadora species

General Information:

Flight rapid, close to the ground. Both sexes visit flowers and bask in the sunshine. Prefers open places rather than forests. Occurs through west through west Asia to western Africa.

Similar species: *Colotis fausta*; *Colotis phisadia*.

16. *Colotis vestalis*
... White Arab

Description: Upperside groundcolour white with black markings in the male, brown markings in the female. The relatively large whiter spot in the middle

of the black forewing margin is distinctive.

L.F.P.: *Salvadora* spp.

General Information:



16.

Flight rapid and close to the ground.

Both sexes are fond of flowers and basking. The

species prefers open, semi arid places to forests.

Endemic to northern India.

Similar species: None

17. *Colotis fausta*

... Large Salmon Arab
PLATE 1

Description: Sexes alike. Upperside - salmon pink with black markings. Some females have a paler pink or white groundcolour.

L.F.P.: *Maerua arenaria*.

General Information:

Flight rapid, close to the ground. Readily visits flowers or sits to bask. Not generally found within forests. Occurs through west Asia to North-Eastern Africa.

Similar
Species:

Colotis amata.



17.



18. male

18. *Colotis etrida*

... Little Orange Tip

PLATE 1

Description: Usually quite small butterflies. Upperside white with a black-bordered red tip to the forewing. The female usually has more dark markings and dusting than the male.

L.F.P.:

Cadaba indica

General

Information:

Capable of quite swift flight but also met fluttering about the undergrowth. Both sexes readily visit flowers. They are fond of open places but also venture into forests. Endemic to India.



18. female

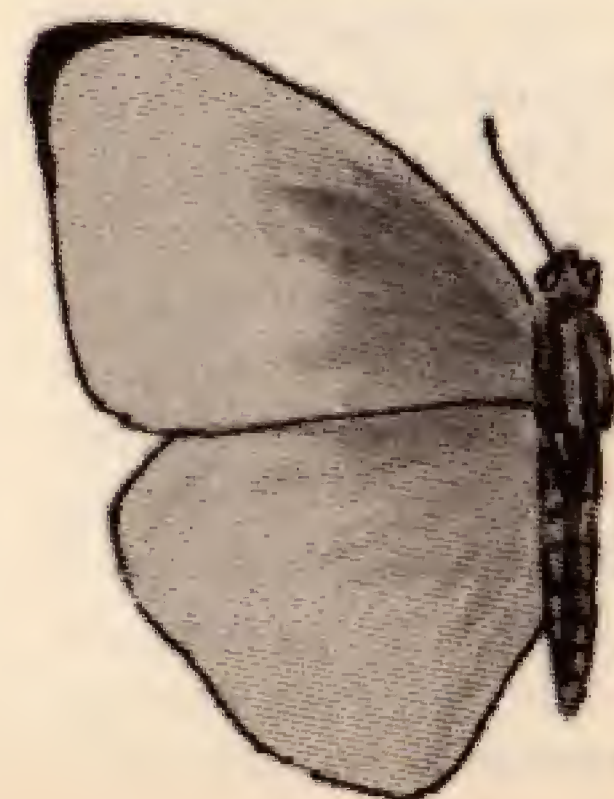
Similar Species: *Ixias marianne*, which is much larger.

19. *Catopsilia pomona*

... Common Emigrant

Description: A very variable butterfly. Males occur in two forms and the females in two forms, the latter with a number of intermediates between the two extreme forms. Males upperside greenish white with some yellow near the base of the wings and the tip of the forewing edged with black. Antennae red or black. Underside unmarked chalky white to pale yellow or with one red edged silver spot in the centre of the forewing and two such spots in the

middle of the hindwing. Females vary from sulphur yellow (form *pomona*) to greenish white (form *crocale*) with black markings. The yellow female form usually has one red ringed silver spot in the middle of the forewing and two such spots in the centre of the hindwing, on the underside. There are usually also some more dark markings and, in some cases, there may be large brownish-purple blotches on the underside. In the white female forms, the extent of black markings on the upperside is variable, some specimens being suffused with dark and some only faintly marked. The underside is unmarked chalky white.



19. male



19. female *pomona*



19. female *crocale*

L.F.P.: *Cassia* spp.,
Butea frondosa; *Bauhinia*
spp.

General Information:
Flight powerful, usually
well above the ground.
Fond of flowers and wet
sand. Occurs from India to
Australia.

Similar species:
Catopsilia pyranthe.

20. *Catopsilia pyranthe*
Mottled Emigrant.

Description: A variable
species. Females are usually
more heavily marked than
the males. Upperside
white with black markings
which may be extensive or
reduced. Underside
mottled with greenish or
brownish, unlike the plain
underside of *Catopsilia*
pomona. The underside may



20. male



20. male

be unmarked or very
prominently marked with
red-ringed silver spots in
the middle of both wings,
with these spots reduced
to a red or black speck in
many individuals.

L.F.P.: *Cassia* spp.

General Information:
Flight powerful, usually
well above the ground.
Fond of flowers and males
congregate in large num-
bers on wet sand. Occurs
from Africa to Australia.

Similar species:
Catopsilia pomona.



20. female



20. female

21. *Eurema brigitta*

... Small Grass Yellow

Description: Sexes
similar. Upperside bright
yellow with a black border
which is evenly curved on
the forewing. The female
normally has a greater
amount of black suffusion
than the male. The black
border does not turn in
along the bottom edge of
the forewing. Underside
with two black specks in
the middle of the forewing.

Some scattered black specks
on the underside hindwing.

L.F.P.:

Cassia spp.

General

**Informa-
tion:** Weak
on the wing,
generally staying close
to the ground. Not very
fond of flowers but swarm
on mud puddles. Occurs
from Africa to Australia.

Similar species: *Eurema*
laeta form *venata*; *Eurema*
hecabe.

22. *Eurema laeta*

... Spotless Grass Yellow

Description: Sexes
similar. Upperside bright
yellow with a black border.
Underside unmarked
which is unevenly curved
on the forewing. The
normal form is easily
distinguished by the
pointed tip of the forewing.
The form *venata* looks very
much like *Eurema brigitta*
but can be distinguished by
the unmarked underside
with only a single tiny
yellow spot in the middle
of the forewing.

L.E.P.: *Cassia* spp.



21. male



22. form taeta

General Information:

Flight generally weak, fluttering about grassy patches, settling frequently. Fond of damp mud and also visit flowers. The range extends to Japan and Australia.

Similar species: *Eurema brigitta*.

23. *Eurema hecabe*
... Common Grass
Yellow



23. male

Description: Sexes alike. Upperside the black margin on the forewing curves inward along the bottom of the wing. A very variable species, with the black markings on the upperside greatly reduced,

in some cases. Some females are white instead of yellow. Underside very variable, with or without a rust coloured patch near the upper tip of the forewing.

L.F.P.: *Cassia* spp., *Sesbania* sp.; Several other *Leguminosae*.

General Information:

Usually the commonest of the *Euremas*. Fond of mud puddles where they congregate in large numbers. Not very fond of flowers. The range extends to Japan and Australia.

24. *Colias fieldii*
... Dark Clouded Yellow

Description: Upperside orange with black markings. The male has a plain black border to the forewing while the female has yellow spots enclosed within this border. Underside hindwing greenish yellow with two red ringed silver spots in the centre of the wing.

L.F.P.: *Trifolium* spp.; *Indigofera* spp.

General Information:
An unusual record for



24. male



2. female

Delhi because this butterfly is rarely found below 1,000 m. elevation in the Himalaya. Recorded in March. Flight rapid and close to the ground. Settles on low growing flowers. The specimens recorded from Delhi appear to be stragglers rather than members of breeding colonies. Occurs along the Himalaya to N. Myanmar.

Similar species: *Colotis fausta*.

THE NYMPHS

FAMILY NYMPHALIDAE

25. *Hypolimnys misippus* ... Danaid Eggfly

Description: Upperside male black with white patches. In certain light, there is a blue sheen around the white patches. Female orange with the upper half of the forewing black, enclosing white spots. Very similar to *Danaus chrysippus* but the presence of a prominent black spot on the upper edge of the hindwing serves to distinguish this species. The border of both wings is chequered. One rare female form lacks the white patches on the forewing while another form has white streaks near the base of the hindwing. Underside male brown with white patches, a chequered border to both wings and a distinctive reddish brown patch on the inner half of the forewing. Female with



25. male upperside



25. male underside

the pattern of the upperside repeated, but the tip of the wing is a washed out orange instead of black and there is a prominent black mark in the centre of the hindwing.

L.F.P.: *Hibiscus* spp.; *Portulaca* spp.; *Amaranthus* spp.; *Abelmoschus* spp.; *Batatas* spp.; *Abutilon* spp.; etc.

General Information:

Flight of male rapid, close to the ground. Female mimics the flight of *Danaus chrysippus* but is capable of swift flight. The three forms of the female effectively mimic the three forms of its model, the unpalatable *D. chrysippus*. The relationship between these two butterflies is one of the finest examples of Batesian mimicry. Fond of flowers and damp mud. This butterfly occurs indiscriminately in a variety of habitation from tropical rain forests and semi-arid regions. Found in North and South America, Africa, Asia, Australia and parts of Europe.

Similar Species: Male: *Hypolimnys bolina* male; Female: *Danaus chrysippus*.



25. female

26. *Hypolimnys bolina*

Great Eggfly

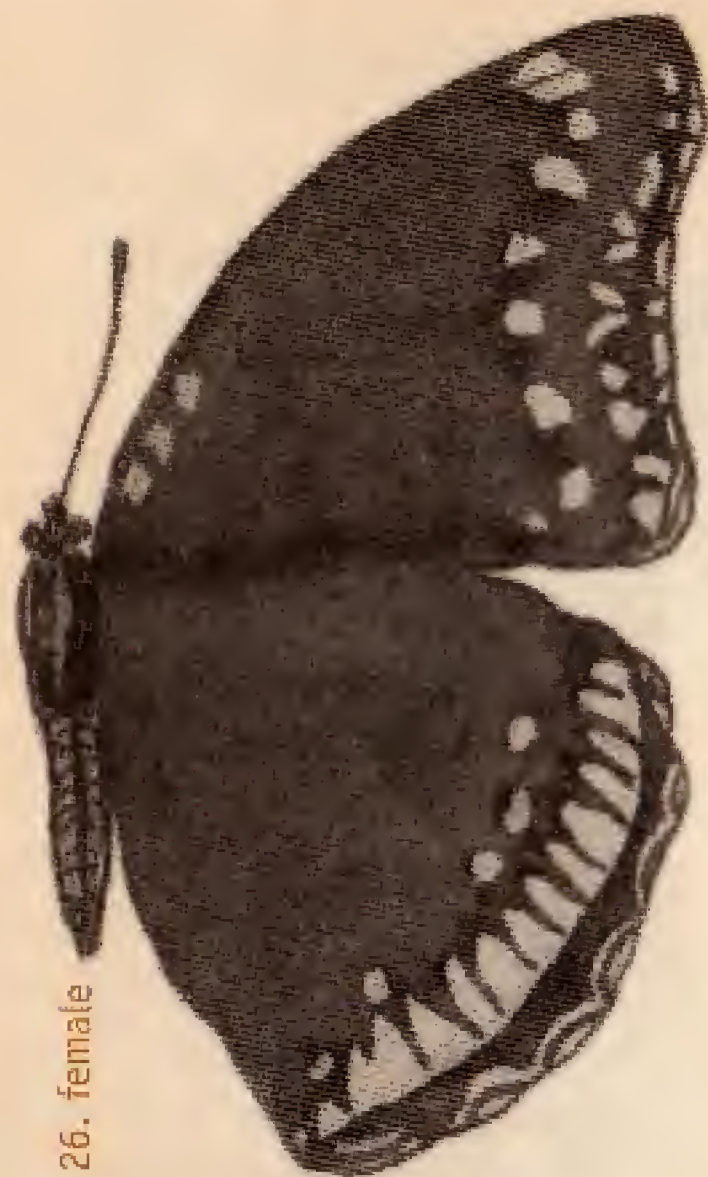
Description: Upperside male very dark brown with blue-tinged pale patches on both wings, which are iridescent in certain light. A row of white dots extends beyond the middle of both wings. The hindwing may or may not be bordered with a row of white "teeth" like markings as in the female. Female dark brown with cream coloured markings along both wings. Underside the female's pattern is repeated in washed-out brown in both sexes.

L.F.P.: *Ipomoea* spp.; *Ficus* spp.; *Portulaca* spp.; etc.

General Information: Flight swift, usually a few metres above the ground.



26. male



26. female

Fond of visiting flowers. The females at times mimic the flight of the *Euploea* group, so that despite their large size, it is difficult to recognise them from a distance. Occurs from India to Australia.

Similar species: Male : *Hypolimnas misippus* male; Female : *Euploea core*, *Chilasa clytia* form *clytia*.

27. *Junonia lemonias*
... Lemon Pansy

Description: Sexes alike. Upperside olive green with yellow markings and an orange-ringed blue-black

spot on each wing. Under-side the groundcolour varies from pink to pale brown, with or without markings.

L.F.P.: Jute; *Nelsonia* spp.; *Asteracantha* spp.



27.

General Information:

Flight swift, close to the ground, settling frequently on flowers or to bask. Prefers forested areas. Occurs from Pakistan to the Philippines.

Similar Species: None.

28. *Junonia orithya*
... Blue Pansy

Description : Sexes alike. Upperside forewing black with a white band across the wing, beyond which there is a grey area with some white markings. Two red-ringed blue spots on each wing, the lower

spot on the forewing and both spots on the hindwing on a shining blue area. The inner part of the hindwing black and some thin black bands along the outer edge of the wing.



L.F.P.: *Mimosa* spp.; *Hygrophila* spp.; *Antirrhinum* spp.

General Information:

Swift on the wing, generally keeping low. Fond of flowers and of basking with the wings spread flat. Prefers open, sunny places. Occurs from Africa to Japan and Australia.

Similar species: None.

29. *Junonia hierta*
... Yellow Pansy

Description: Upperside a bright yellow with black markings. On the hindwing there is a prominent

shining blue patch on the black area near the base of the wing. The size of the black markings is variable.

L.F.P.: *Asteracantha* sp.; *Mimosa* sp.; etc.



General Information:

Swift on the wing, flying about open, sunny places and settling frequently with wings open. Not very common in Delhi. The range extends to China and Cambodia.

Similar species: none.

30. *Junonia almana*
... Peacock Pansy

Description: Sexes alike. Upperside bright orange with some brown markings along the upper edge of the forewing. There is a large eye-like marking on the hindwing and a

smaller such spot on the forewing. Underside is like a dry leaf or pale brown with a series of eye-like markings on the hindwing. In the latter form, the shape of the forewing is less jagged than the dry-leaf form.

L.F.P.: *Acanthus* spp.;
Osbeckia spp.; *Gloxinia* spp.



General Information:
Flight rapid, close to the ground. Fond of flowers and sunning itself with wings spread. The range extends from India to the Philippines.

Similar species: None.

31. *Junonia atlites*

... Grey Pansy

Description: Sexes alike. Upperside pale grey with darker grey markings

and a row of red and black spots across both wings. Underside pale grey with some dark brown lines and the spots of the upperside repeated, though on a reduced scale.

L.F.P.: *Hygrophila* spp.;
Asteracantha spp. *Barleria* spp.



General Information:
Flight comparatively slower than the other *Junonias*. Fond of flowers and settling with wings open. Generally found near water. Not a common species in Delhi. Range extends from India to Sulawesi.

Similar Species: None

32. *Cynthia cardui*

... Painted Lady

PLATE 1

Description: Sexes alike. Upperside salmon pink with some black markings on the inner half of the forewing. The outer half of the forewing is black with some white spots. The hindwing has a row of round black dots across it and a row of black marks along the edge of the wing. The underside is cryptically patterned. The tip of the antennae are white.

L.F.P.: *Artemisia* spp.;
Blumea spp.; *Debregeasia*; etc.

General Information:
Flight rapid, settling frequently to investigate flowers. The males are territorial, flying up and down a favorite clearing for hours or days at a time. It is a well known migrant, which has been found all over the world except in South America.

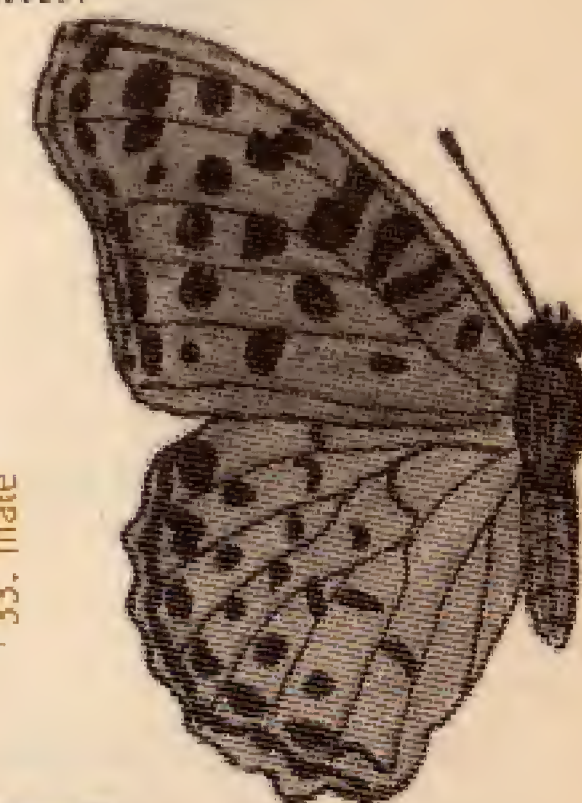
Similar species: None.

33. *Argyreus hyperbius*

... Indian Fritillary

Description: Upperside the male is orange with black spots. In the female, the outer half of the

forewing is darkened with blue and black, with a white band across the dark area, resembling *Danaus chrysippus*, which it mimics. Underside the hindwing is patterned with olive green and silver, with some black lines.



33. male

33. female

L.F.P.: *Viola* spp.; in Delhi perhaps on cultivated pansies.

General Information:

Flight rapid, close to the ground. Fond of visiting low growing flowers. The female at times mimics the flight of *Danaus chrysippus* and *Salatura genutia*, both unpalatable species which this palatable species mimics. This is another typically montane species which is an unusual record for Delhi. Three male specimens are known from Delhi, collected in March and April. It is not known whether this species breeds in Delhi. Occurs from Ethiopia to Japan and Papua New Guinea.

Similar Species: Female - *Danaus chrysippus*; *Salatura genutia*; Male - *Phalanta phalantha*.

34. *Phalanta phalantha*

... Common Leopard

Description: Sexes alike. Upperside orange with black markings. Underside pale orange with some purplish suffusion and black markings. The underside is very easily distinguished from that of the similar looking *Argyreus hyperbius* male.

34. male



L.F.P.: *Flacourtia* spp.; *Salix* spp.; *Smilax* spp.

General Information:

Flight rapid, the males fond of maintaining a "beat" about clearings, returning repeatedly to a favourite perch. Readily visit flowers and damp mud. The range extends from Africa to Australia.

Similar Species:

Argyreus hyperbius male.

35. *Ariadne merione*

... Common Castor

Description: Sexes alike. Seasonal forms vary. Upperside brown with some darker brown bands across the wings, outlined in black. Underside much darker brown with some of the markings of the upperside repeated. The shape of this butterfly is difficult to confuse.

35. male



L.F.P.: Castor oil plant; *Tragia* spp.

General Information:

Known from Delhi from two specimens. The flight is slow and lazy, generally in the immediate vicinity of Castor Oil plants, the larval food plant. Visit flowers and settle frequently to bask. The range extends from India to the Philippines.

Similar species: None.

36. *Acraea terpsicore*

... Tawny coster

Description: Sexes alike. Upperside : deep orange with black markings and a row of pale spots in the black border of the hindwing. The wings are papery.

L.F.P.: *Modecca palmata*; *Hibiscus cannabinus*;

36. male



Passiflora spp.; members of the Cucumber family.

General Information:

Flight slow, fluttering, close to the ground. Settles frequently on grass or low growing flowers. Prefers open, sunny places. An unpalatable butterfly. Endemic to India and Sri Lanka.

Similar Species: None.

THE TIGERS AND CROWS

SUBFAMILY DANAINAE

37. *Danaus chrysippus*

... Plain Tiger

Description: Sexes alike. Upperside orange with black marks. The upper part of the forewing is black with a white band across it and some scattered white marks. The hindwing has a narrow black band with white spots along the edge. Underside the pattern of the upperside is repeated. One rare form lacks the white band and black area on the forewing while another rare form has white streaks on the orange of the hindwing upperside. The female lacks the largest black dot in the middle area of the hindwing depicted in the illustrated male.

L.F.P.: *Calotropis* spp.; *Asclepias* spp.

General Information: This butterfly is the model



37. male

of a number of mimics due to its unpalatability. All the three forms of this butterfly described above are mimicked by matching forms of the female of *Hypolimnas misippus*. The males settle in large numbers of certain flowers such as Heliotrope in order to collect certain chemicals that trigger the process of courtship. The flight is generally slow. Occurs from Africa to Japan and Australia.

Similar species:

Hypolimnas misippus females; *Argyreus hyperbius* females.

38. *Salatura genutia*

... Striped Tawny Tiger

Description: Sexes alike. Upperside deep orange with black veins. The upper part of the forewing is black with a white band and there are numerous white spots on the black area of both wings. Underside the pattern of the upperside is repeated. Males have a small flap on the underside of the hindwing, a little below the centre of the wing.



38. male

L.F.P.: *Raphistemma* spp.; *Ceropegia* spp.; *Cynanchum* spp.

General Information: This butterfly looks

somewhat like *Danaus chrysippus* which is also an unpalatable species. This is an example of Mullerian mimicry. The flight is slow and males congregate on certain flowers to collect chemicals that trigger the courtship process. The range extends to China and Australia.

Similar species: *Argyreus hyperbius* female; *Danaus chrysippus*.

39. *Tirumala limniace*

... Blue Tiger

Description: Sexes alike. Upperside pale bluish white with black markings. The male has a prominent brown flap below the centre of the hindwing on the underside. Underside the pattern of the upperside is repeated but the black markings are brown.

L.F.P.: *Asclepias* spp.; *Hoya* spp. *Calotropis* spp.; etc.

General Information: An unpalatable species that is mimicked by *Chilasa clytia* form *dissimilis*. Flight rather swift, readily



attracted to flowers. Males congregate on certain flowers to obtain chemicals that trigger the courtship process. Occurs to Hong Kong and over most of S.E. Asia.

Similar Species: *Chilasa clytia* form *dissimilis*.

40. *Euploea core*
Common Crow

Description: Sexes alike. Both surfaces brown with white spots along edges of wings.

L.F.P.: Oleander; *Ficus* spp. (figs)

General Information:
An unpalatable species that is mimicked by *Chilasa*

clytia form *clytia*. The males visit certain flowers to obtain chemicals necessary for courtship. Flight not rapid, sailing. Fond of shady places. The range extends to Australia.

Similar Species: *Chilasa clytia* form *clytia*.

THE BROWNS

SUBFAMILY SATYRINAE

41. *Mycalesis perseus*
... Common Bushbrown
PLATE 1

Description: Sexes alike. Upperside brown with a large yellow ringed black spot on the forewing, usually one much smaller black spot above it. Upperside the wet season form has a distinctive narrow white line across the middle of both wings. In the wet season form, there is a row of large "eyespot" across both wings while in the dry season form, these spots are reduced to minute specks.

L.F.P.: Grasses.

General Information:
Flight rapid, close to the ground. Prefers shady places. Visits flowers but much prefers over-ripe fruit and tree sap where a number of individuals may congregate. Occurs from India to Malaysia.

Similar species: A number in other parts of India, none in Delhi.

42. *Ypthima inica*
... Lesser Threering
PLATE 1

Description: Sexes alike. Upperside dark brown with one large yellow ringed black spot containing two small white spots on the forewing. Hindwing with one smaller black spot containing one white spot. Underside pale grey, with numerous fine lines. Forewing with the same spot as above, hindwing with three "eyespot". In the wet season form, these spots are prominent but in the dry season form the hindwing spots are reduced to black specks or may even be absent.

L.F.P.: Grasses.

THE BLUES AND HAIRSTREAKS

FAMILY LYCAENIDAE

General Information:
Flight slow, "hopping"
among grass and low
growing bushes. Occasion-
ally visit flowers. Prefer
grassy places with some
shade. Endemic to the
Indian subcontinent.

Similar Species: Several
in other parts of India.

43. *Melanitis leda*
... Common Evening
Brown

Description: Sexes
alike. Upperside brown.
The dry season form has a
distinctive outline. The
forewing has a black patch
containing two white spots
and surrounded, on the
inner edge, by orange. The
underside is very variable,
generally resembling a dry
leaf. The wet season form
lacks the orange area on
the forewings, besides
having the shape of the
wings not as distinctive as
the dry season form. The
underside is pale brown
with numerous fine white
lines and a row of yellow
ringed black spots across
both wings. The black spots
have a white spot in the
centre.

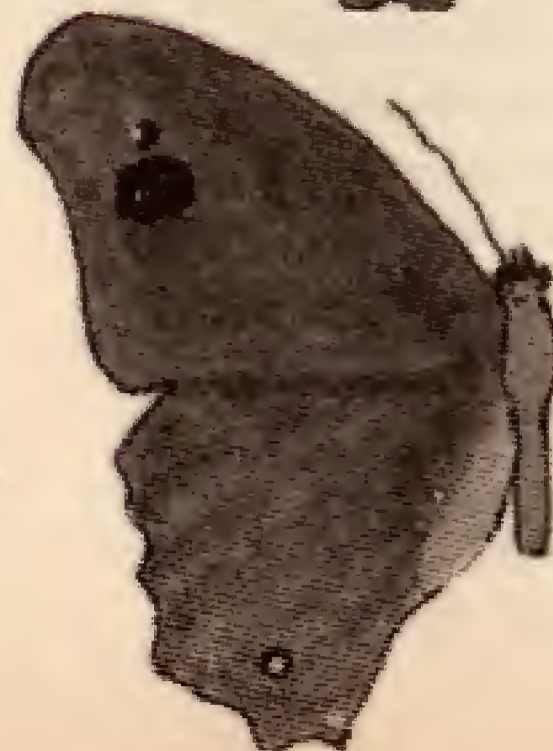
L.F.P.: Grasses.

General Information:
Flight rapid, jerky. Fond of
shady places where they
blend in with dry leaves
when sitting. Active during
the evening, sometimes
attracted to electric lights at
night. Very fond of over-
ripe fruit, rarely attracted
to flowers. Range extends
from Africa to Japan and
Australia.

Similar Species: Two in
other parts of India.



43. dry season form



43. wet season form

44. *Tarucus nara*
... Striped Pierrot
PLATE 2

Description: This and
the following three species
are very variable and, as a
consequence, cannot be
properly separated on the
basis of size, shape or wing
colouration. The males can
only be distinguished by an
examination of the
genitalia and the females
can only be distinguished
by breeding the different
species. Upperside the
males are varying shades of
blue with a black border to
both wings and a thread
like tail on the hindwing.
There may or may not be
some black spots in the
middle of the forewing.
The females are generally
brown, with some whitish
area marked with dark
spots, the base of the wings
usually suffused with blue.

Underside is usually white,
sometimes creamy with
black markings or brown
markings which may not be
present at all in some
specimens. In this species,
the markings are in the
form of stripes on the
hindwings, except for a row
of dots along the edge.

L.F.P.: *Zizyphus jujuba*.

General Information:
Flight rapid, keeping low
and settling frequently on
low-growing bushes. The
caterpillars are attended by
ants. Endemic to the
Indian subcontinent and
Myanmar.



Similar species: *Tarucus*
balkanica; *Tarucus indica*,
Tarucus callinara; several
other species in other parts
of India.

45. *Tarucus balkanica*
Black Spotted Pierrot

Description: See 44

Tarucus nara. Male *T. balkanica* are comparatively dark blue above, usually with some dark spots beyond the middle of the wing.

L.F.P.:

Probably
Zizyphus spp.

General

Information: The subspecies *nigra* which occurs in India and Pakistan is quite rare in Delhi, so that only one of this species was found in a series of 35 *Tarucus* specimens collected on the Ridge. Flight rapid about low bushes, on which they settle frequently.

Similar species: *Tarucus nara*; *Tarucus indica*; *Tarucus callinara*; several other species.

46. *Tarucus indica*
Pointed Pierrot

Description: See 44

Tarucus nara. A very variable insect for which the most unvarying character is probably the shape of the forewing,

which is somewhat produced and the outer edge is not as rounded as in the males of other *Tarucus* species. The black border to the forewing is usually comparatively wide, approx. 1 mm. There is a dark spot in the middle of the wing and normally no spots beyond this.

L.F.P.: Probably
Zizyphus.

General Information :
Of the 508 specimens of *Tarucus* collected from Delhi in one study, only two turned out to belong to this species. Known to occur from Baluchistan, Pakistan to Bengal and Chennai.

Similar species: *Tarucus nara*; *T. balkanica*; *T. callinara*.

47. *Tarucus callinara*
Spotted Pierrot
PLATE 2

Description: Underside all the dark markings are in the form of spots, not streaks as in the other species. In the third row of

spots from the outer edge of the hindwing, the upper three spots are in line. Upperside the males are blue with a black border and a single spot in the middle of the forewing. The females are like other *Tarucus*. On the basis of the distinctive underside, the females of this species are the only ones that can be rather easily distinguished from the other species.

L.F.P.: Probably
Zizyphus spp.

General
Information:
Flight rapid,
about low

bushes, settling frequently. Occurs throughout India and on to Thailand.

Similar Species: *Tarucus nara*; *T. balkanica*; *T. indica*.

48. *Leptotes plinius*
... Zebra Blue
PLATE 3

Description: Upperside male unmarked pale blue with a narrow dark border. Female whitish with brown markings and blue suffusion towards the base of both wings. Underside

white with brown bands and spots, with two yellow ringed dark spots with blue centres, one on either side of the tail on the hindwing. The pattern on the underside is distinctive.

L.F.P.: *Plumbago zeylonica*;
Albizia lebbek;
Sesbania aculeata.

General
Information: Flight rapid, the males always returning to a damp patches. The range extends to Australia but this species has not been recorded from Malaysia.

Similar Species: The *Tarucus* group.

49. *Azonus ubaldus*
... Bright Babul Blue
Description: Upperside males bright blue with a broad brown border. Females brown, without any blue. Underside the forewing lacks a black spot in the centre of the wing and the hindwing lacks a short black line originating at the base of the wing, extending upwards, both of

which are present in *Azanus jesous*.

L.F.P.:

Flowers of
Acacia spp.



General Information:

Flight rapid, fond of damp mud. Generally found on flowers of *Acacia*, their food plant. Occurs from Africa to N. Myanmar.

Similar Species: *Azanus uranus*; *Azanus jesous*.

50. *Azanus uranus*
... Dull Babul Blue
PLATE 3

Description: upperside males dull blue with narrow threadlike dark borders to the wings. Females brown suffused with blue towards the base of the wings. Underside markings very similar to *Azanus ubaldus* but fainter.

L.F.P.:

Acacia senegal.

General

Information: Flight rapid, fond of damp mud. Generally found on flowers of *Acacia*, their foodplant, occurs from Africa to India.



Similar Species: *Azanus ubaldus*; *Azanus jesous*.

51. *Azanus jesous*
... African Babul Blue
PLATE 3

Description: Upperside males blue with a narrow dark border. Females brown with blue suffusion near the base of the wings and a prominent dark spot in the middle of the forewing. The outer half of the forewing is whitish and the border is dark.

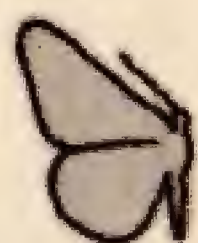
Underside there is a prominent dark spot in the middle of the fore wing (lacking in the previous two species) and a short black line extending upward from the base of the hindwing.

L.F.P.: *Acacia* spp.

General

Information: Flight rapid, fond of damp mud. Generally found on flowers of *Acacia*, their foodplant. Occurs to South Africa.

Similar Species: *Azanus ubaldus*; *Azanus uranus*.



52. *Chilades laius*
... Lime Blue (PLATE 4)
Description: Tailless.

The pattern on the underside varies from pale brown to grey, with some dark patches on the hindwing in the wet season form. Upperside the males are dull blue with a narrow dark border to the wings. The females vary from dark brown with some blue suffusion in the wet season form to pale blue with wide dark borders in the dry season form.

L.F.P.: Lemon family
(*Citrus* spp).

General Information: Generally found in the immediate vicinity of its larval food plant, i.e. *Citrus* trees. The flight is not very rapid and the insect is fond of settling on flowers. The range extends to the Philippines.

Similar Species:
Chilades parrhasius;
Euchrysops cnejus.



53. *Chilades parrhasius*
Small Cupid (PLATE 3)

Description: With a thread-like tail on the hindwings. Upperside male with unmarked blue wings, narrow dark borders to both wings and a single dark spot on the hindwing near the origin of the tail. Female dark with some blue suffusion on the dry season form, almost lacking blue suffusion in the wet season form.

L.F.P.:

Unknown.

General

Information: Flight slow, near the ground. Settles frequently on flowers or to bask. Range extends to Saudi Arabia.

Similar species:
Euchrysops cnejus.

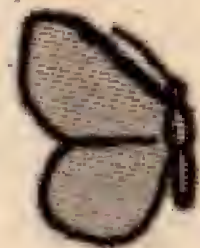


54. *Freyeria trochylus*
Grass Jewel (PLATE 2)

Description: Upperside male and female brown. Underside pale brown with white markings and a row of four prominent black spots on the hindwing which may or may not be crowned with orange.

L.F.P.: Pea pods;
Vetches; Heliotropum;
Indigo; etc.

**General
Information:**
The smallest



Indian butterfly. Flight
weak, close to the ground.
Settles frequently on
flowers and to bask. Occurs
from Africa to Australia.

Similar species: *Zizina*
otis; *Zizula hylax*. Another
member of the genus found
in other parts of India is
very similar.

55. *Zizina otis*
... Lesser Grass Blue
(PLATE 2)

Description: Upperside
male dark blue with broad
dark borders. Female
brown with some blue
suffusion near the base of
the wings. Underside the
spots on the forewing are
black and very prominent,
while the markings on the
hindwing are fainter.

L.F.P.: *Zornia diphylla*;
Sesbania aculeata; *Alysicarpus*
vaginalis.



General Information:

Flight weak, close to the
ground. Settles frequently
on flowers and damp
patches. Occurs to S.E.
Asia.

Similar Species: *Freyeria*
trochylus; *Zizula hylax*;
Zizeeria karsandra;
Pseudozizeeria maha.

55. *Pseudozizeeria maha*
... Pale Grass Blue
(PLATE 2)

Description: Upperside
male pale blue with dusky
dark border. Female
unmarked brown. Under-
side grey to pale brown
with white and dark
markings. No prominent
dark spot on hindwing.
Generally larger than the
other Grass Blues.

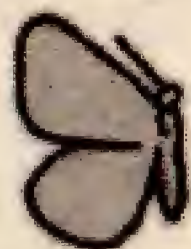
L.F.P.: *Oxalis* spp.;
Tephrosia spp.; *Nelsonia* spp.

General

Information:

Flight weak, close
to the ground.
Settles frequently on
flowers or to bask. Gener-
ally prefers open places. To
Japan and the Philippines.

Similar Species: *Zizina*
otis; *Zizula hylax*; *Zizeeria*
karsandra.



57. *Zizeeria karsandra*
... Dark Grass Blue
(PLATE 2)

Description: Upperside
male dark blue with dark
borders. Female brown,
sometimes the base of the
wings has some blue
suffusion. Underside very
like *Pseudozizeeria maha*, but
this species is usually
smaller than *P. maha*.

L.F.P.: *Zornia diphylla*;
Amaranthus
viridis.

General

Information:

Flight weak, close
to the ground. Settles
frequently on flowers or to
bask. Occurs from Africa to
New Guinea.

Similar Species:

Pseudozizeeria maha; *Zizina*
otis; *Zizula hylax*.

58. *Zizula hylax*
... Tiny Grass Blue
(PLATE 2)

Description: Upperside
male dark blue with a
broad dark border. Female
brown. Underside pale grey
with clearly defined
markings. There are two
clearly marked spots along



the upper edge of the
forewing, one on either
side of the large mark in
the middle of the wing.
These are distinctive.

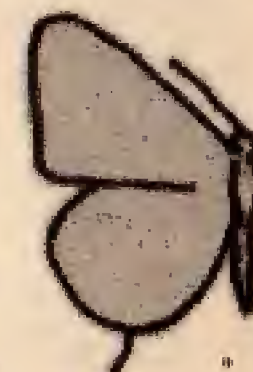
L.F.P.: Vetches; *Nelsonia*
spp.; Lantana.

**General
Information:**

Flight weak,
close to the
ground. Settles
frequently on flowers or to
bask. Occurs to Africa and
eastern America.

Similar Species:

Pseudozizeeria maha; *Zizina*
otis; *Zizeeria karsandra*.



59. *Euchrysops cnejus*
... Gram Blue (PLATE 4)

Description: Upperside
male blue with a narrow
dark border and two
prominent orange crowned
black spots on the
hindwing, one on either
side of the tail. Female with
the dark border on the
forewing occupying most of
the wing. Underside grey
with white markings and
some black spots on
hindwing, the two above
the tail on the hindwing
orange-crowned and
prominent.

L.F.P.: Pods of peas, beans, gram etc.; *Butea frondosa*; *Acacia* spp.; etc.

General Information:

This butterfly is a minor pest of gram crops. Flight rapid, about small trees and bushes. Fond of flowers and damp patches. To Australia.

Similar Species:

Chilades parrhasius;
Catochrysops strabo.

60. *Catochrysops strabo*
... Forget Me Not
(PLATE 4)

Description: Upperside male pale blue with a narrow dark border to the wings and a large, prominent dark spot above the tail on the hindwing. Female dull pale blue with a broad dark border, two rows of whitish spots along the edge of the hindwing and a prominent yellow-crowned dark spot above the tail on the hindwing. Underside pale grey with white markings, two white ringed black spots along the upper edge of the

hindwing and a prominent yellow-crowned black spot above the tail.

L.F.P.: *Ougenia dalbergioides*;
Cylista scariosa;
Schleichera trijuga.

General Information:

Flight rapid, fond of settling on flowers and damp mud. Occurs from India to the Moluccas.

Similar Species:

Lampides boeticus; *Euchrysops cnejus*; *Chilades parrhasius*.

61. *Lampides boeticus*
... Pea blue (PLATE 4)

Description: Upperside male pale blue with a narrow dark border to the wings. Female brownish with blue suffusion near the base of the wings. Hindwing of both sexes with one prominent black spot and one smaller indistinct black mark above the tail. Underside pale brown with white markings, two dark spots crowned with orange near the hindwing tail and a broad white band running across the hindwing.

L.F.P.: Peas; Beans; Gram; *Butea frondosa*; *Crotalaria* spp.; etc.

General Information:

Flight rapid, migrating in large swarms. One of the commonest butterflies in Delhi. Visits flowers. The range extends from Europe to Japan and from Africa to Australia.

Similar Species:

Euchrysops cnejus;
Catochrysops strabo.

62. *Prosotas nora*
... Common Line Blue
(PLATE 3)

Description: Upperside male brown, which is shining blue when viewed from a certain angle. Female with a much wider dark border to the forewing than the male. The female usually lacks blue on the hindwing. The underside varies from grey to brown with a variable pattern of whitish lines. There is a prominent dark spot on the hindwing above the tail, which is usually also present on the upperside.

L.F.P.: *Acacia* spp.; *Mimosa* spp.

General Information:

Flight swift, generally about trees and bushes. Settles frequently on flowers or to bask. The range extends to Australia.

Similar Species: Several in other parts of India.

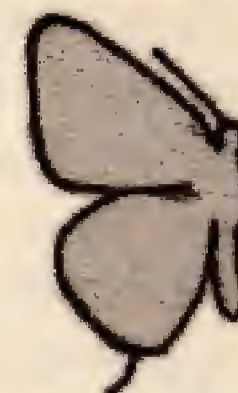
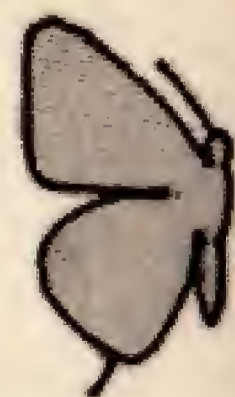
63. *Spindasis vulcanus*
... Common Silverline
(PLATE 1)

Description: Upperside slaty with a black spotted orange area on the forewing and some orange near the tails on the hindwing. The female lacks the slight bluish suffusion of the male. Underside pale yellow with black-edged red bands.

L.F.P.: *Clerodendron* spp.; *Zizyphus* spp.; *Plectronia* spp.

General Information:

Flight swift, usually near the ground. Males return to a favourite perch. Fond of flowers. The caterpillars are attended by ants.



Occurs from India to Java.

Similar Species:

Spindasis ictis.

64. *Spindasis ictis*

... Common Shot

Silverline (PLATE 1)

Description: Upperside both sexes with a clearly defined orange patch on the forewing, with some black spots in it. Underside varies from pale yellow to light brown with black edged bands. The bands may be very faintly marked in some specimens.

L.F.P.: Unknown.

General Information:

Flight rapid, settling frequently on favourite perches. Fond of flowers.

Endemic to the Indian sub-continent and Sri Lanka.

Similar Species:

Spindasis vulcanus.

65. *Virachola isocrates*

... Common Guava

Blue (PLATE 1)

Description: Upperside male blue, which is iridescent shining blue in

certain light. Female pale brown with an orange mark in the middle of the forewing. Underside pale grey with darker grey markings.

L.F.P.: Pomegranate; Guava; Tamarind; *Randia dumetorum*, *Strychnos nuxvomica*; *Gardenia* spp.; etc.

General Information:

The larvae feed inside the fruit of the plants mentioned above. Flight rapid, generally high above the ground. Fond of flowers. Populations of this butterfly are greatly affected by the use of pesticides. Occurs to Thailand.

Similar Species: None in Delhi.



65. *Rapala iarbus*

... Common Red Flash

Description: Sexes similar. Upperside bright red with a black border.

L.F.P.: *Zizyphus* spp.; *Nephelium* spp.; *Melastoma* spp.

General Information:

The only bright red Hairstreak in Delhi. Flight rapid, about trees and bushes. Fond of flowers. To Borneo.

Similar

Species: None.



THE SKIPPERS

FAMILY HESPERIDAE

67. *Hasora chromus*

Common Banded Awl

Description: Upperside male unmarked brown. Female with two large, translucent yellowish-white patches on the forewing. Underside hindwing with a whitish broad band across the wing, ending in a dark patch at the bottom of the wing. The size and shape of the wings is distinctive.

L.F.P.: Castor;
Pongamia glabra;
Heynia trijuga.

General Information:

Swift on the wing. Fond of flowers and basking. Occurs from India to Australia.

Similar Species: None



67. male

68. *Badamia*

exclamationis ... Brown Awl

Description: Sexes alike. Upperside brown with some white markings in the middle of the wing. These markings are wider in the female. The shape of the wings, especially the narrow forewing, is distinctive.

L.F.P.: *Ficus* spp.;
Terminalia spp.; *Combretum* spp.; *Linociera* spp.

General Information:

Flight very swift, stopping to investigate flowers. Generally settles under leaves. Active at dawn and dusk. To Australia.

Similar Species: None



68. male

69. *Spialia galba*

... Indian Skipper

Description: Sexes alike. Upperside brown with numerous white markings.

L.F.P.: *Hibiscus* spp.;
Sida rhombifolia; *Waltheria indica*.

General

Information:

Flight rapid, close to the ground. Settles frequently to bask with the hindwings horizontal and the forewings nearly vertical. The range extends from Pakistan to Myanmar.

Similar Species : None.



70. *Suastus gremius*

... Indian Palm Bob

Description: Sexes alike. Underside the pale brownish grey hindwing with the series of black spots along the outer edge is distinctive.

L.F.P.: Palms.

General

Information:

Flight swift, stopping a moment to rest on a leaf or



70. underside

flower. Fond of basking in the sun. The range extends to China.

Similar Species: None

71. *Gangara thyrasis*

... Giant Redeye

Description: The large size is distinctive. Sexes



71. male

similar. Upperside dark brown with semi-transparent markings on the forewing.

L.F.P.: Palms.

General Information:

On the wing at dawn and dusk. Flight swift, rarely settling. The range extends to the Philippines. Known from Delhi from a single specimen.

Similar Species: None.

72. *Telicota colon*

Pale Palm Dart

Description: Sexes similar. Upperside orange with black markings. Underside duller orange with diffused markings.

The only orange and black skipper in Delhi.

L.F.P.: Sugarcane.

General Information : Flight swift, settling on flowers and leaves but not for long. Difficult to follow in flight. The range extends to Australia.

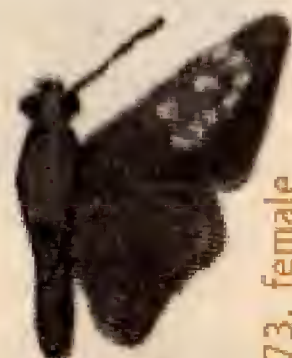
Similar Species: None.

73. *Gegenes nostradamus*
... Dingy Swift

Description: Upperside males usually plain brown. Females with a row of pale spots across the forewing. Underside ashy grey, the males with pale spots reduced or obscure. Female



73. male



73. female

with pale spots across the forewing and hindwing. There is no spot in the middle of the forewing in both sexes.

L.F.P.: Grasses.

General Information: Flight rapid, close to the ground. Visits flowers and is fond of basking. Active at dawn and dusk but is also found during the day. The range extends to Iran.

Similar Species: *Parnara naso*; *Borbo cinnara*; *Pelopidas thrax*; *Pelopidas mathias*.

74. *Parnara naso*
... Variable Swift

Description: Upperside brown with white spots across the forewing and hindwing. The size of these spots is very variable. Underside these spots are repeated. The only reliable character to distinguish this species is that both sexes lack the lowest spot on both surfaces of the forewing, which is present in the similar species.



74. male

L.F.P.: Uncertain. Probably grasses.

General Information: Flight swift, settling on flowers or to bask. Prefers shady areas to open grasslands. To the Philippines.

Similar Species: *Gegenes nostradamus*; *Borbo cinnara*; *Pelopidas mathias*; *Pelopidas thrax*.

75. *Borbo cinnara*
... Wallace's Swift

Description: Brown with white spots. This species usually lacks any spots in the middle of the forewing, on both surfaces. The usual row of whiter spots across the forewing and hindwing may be prominent, obscure or even missing on the hindwing. Best separated by an examination of the genitalia.

L.F.P.: Rice; Grasses.

General Information: Flight swift, settling on flowers and to bask. There is little information on the distribution, life history or preferences of this and the next two species due to

taxonomic changes, subsequent to which very little work has been carried out. Occurs throughout India to the Philippines, and Australia.

Similar Species: *Gegenes nostradamus*, *Parnara naso*; *Pelopidas thrax*; *Pelopidas mathias*.

76. *Pelopidas thrax*
... Western Swift

Description: This and the next species have two spots in the middle of the forewing on the upperside and one spot in the same position on the underside. Besides these, there is the usual series of white spots across both wings which may be large or indistinct. This species is best separated from *Pelopidas mathias* by an examination of the genitalia.

L.F.P.: Probably grasses.

General Information: See information under 74 *Borbo cinnara*. The range extends to Egypt.

Similar Species: *Pelopidas mathias*; *Borbo cinnara*; *Parnara naso*; *Gegenes nostradamus*.

77. *Pelopidas mathias*
... Small Branded Swift

Description: See 76

Pelopidas thrax.

L.F.P.: Grasses.

General Information:

See information under 75

Borbo cinnara. The commonest skipper in Delhi. Fond of flowers. The range extends from Pakistan to Japan and Australia.



Similar Species:

Pelopidas thrax; *Borbo cinnara*; *Parnara naso*; *Gegenes nostradamus*.



- | | |
|---|--|
| 1. <i>Pachliopta aristolochiae</i>
<i>Tros aristolochiae</i>
<i>Polydorus aristolochiae</i> | 20. <i>Catopsilia pyranthe</i>
<i>Catopsilia florella</i> |
| 4. <i>Pathysa nomius</i>
<i>Graphium nomius</i> | 21. <i>Eurema brigitta</i>
<i>Terias libythea</i> |
| 5. <i>Chilasa clytia</i>
<i>Papilio clytia</i> | 22. <i>Eurema laeta</i>
<i>Terias laeta</i> |
| 6. <i>Leptosia nina</i>
<i>Leptosia xiphia</i> | 23. <i>Eurema hecabe</i>
<i>Terias hecabe</i> |
| 8. <i>Cepora nerissa</i>
<i>Huphina nerissa</i> | 24. <i>Colias fieldii</i>
<i>Colias edusina fieldii</i> |
| 9. <i>Belenois aurota</i>
<i>Anaphaeis aurota</i>
<i>Belenois mesentina</i> | 27 to 31
<i>Junonia</i>
<i>Precis</i> |
| 11. <i>Artogeia canidia</i>
<i>Pieris canidia</i> | 32. <i>Cynthia cardui</i>
<i>Vanessa cardui</i> |
| 14. <i>Colotis phisadia</i>
<i>Colotis calais</i> | 33. <i>Argyreus hyperbius</i>
<i>Argynnis hyperbius</i> |
| 19. <i>Catopsilia pomona</i>
<i>Catopsilia crocale</i> | 34. <i>Phalanta phalantha</i>
<i>Atella phalantha</i> |



Names in *italics* are synonyms; the figures indicate those assigned to species.

35. *Ariadne merione*
Ergolis merione
36. *Acraea terpsicore*
Telchinia violae
38. *Salatura genutia*
Danaus genutia
39. *Tirumala limniace*
Danaus limniace
45. *Tarucus balkanica*
Tarucus nigra
46. *Tarucus indica*
Tarucus theophrastus
48. *Leptotes plinius*
Syntarucus plinius
53. *Chilades parrhasius*
Euchrysops contracta
Euchrysops minuta
54. *Freyeria trochylus*
Zizeeria trochylus
Zizeeria putli
55. *Zizina otis*
Zizeeria otis
57. *Zizeeria karsandra*
Zizeeria knysna
Zizeeria lysimon
58. *Zizula hylax*
Zizeeria gaika
62. *Prosotas nora*
Nacaduba nora
65. *Rapala iarbus*
Rapala melampus
Rapala jarbus
66. *Virachola isocrates*
Deudorix isocrates
67. *Hasora chromus*
Hasora alexis
69. *Spialia galba*
Syrichtus galba
72. *Telicota colon*
Astychius augias
74. *Parnara naso*
Baoris guttatus bada
75. *Borbo cinnara*
Baoris zelleri cinnara
76. *Pelopidas thrax*
Baoris mathias thrax
77. *Pelopidas mathias*
Baoris mathias

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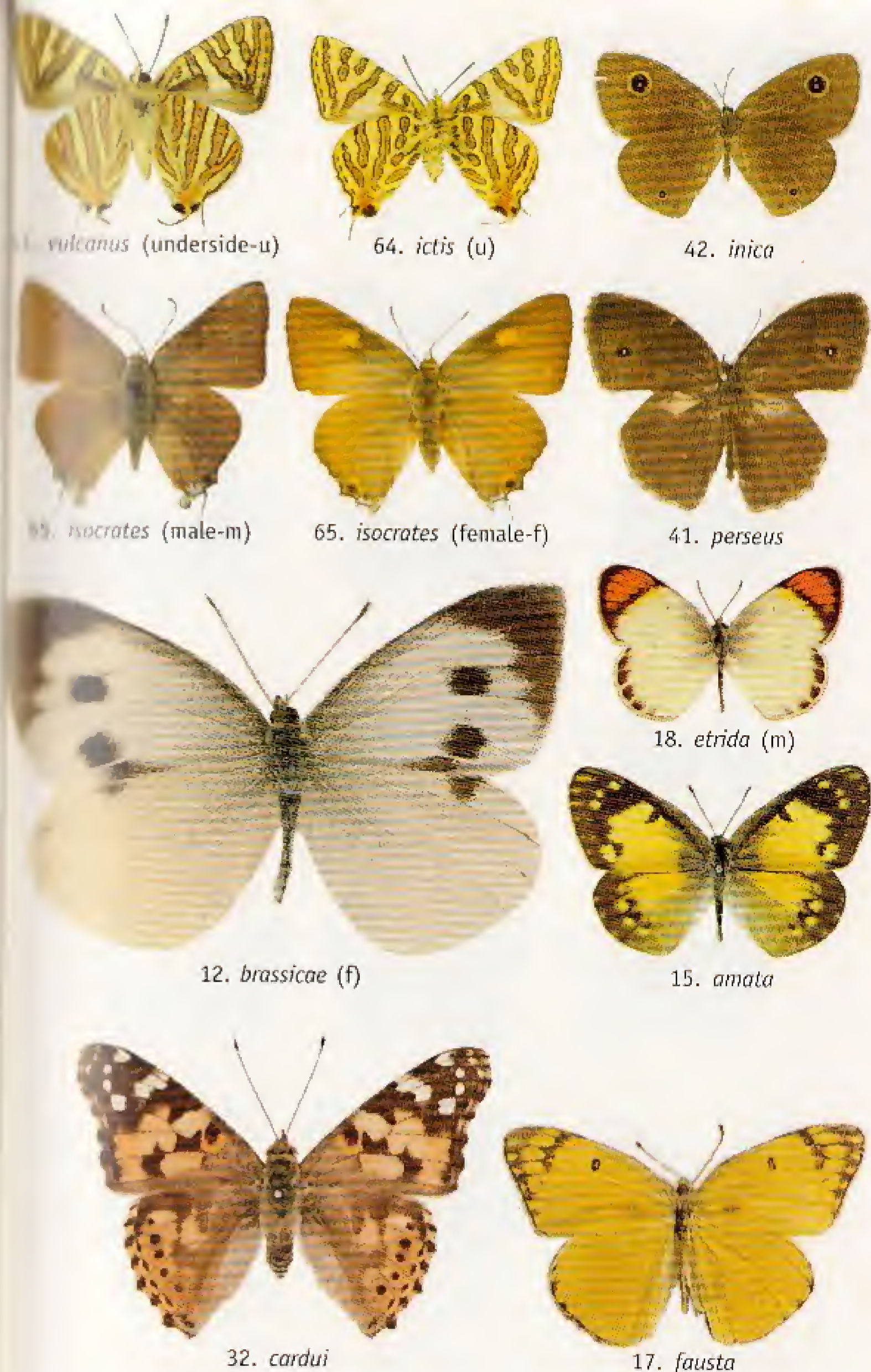


PLATE 1



male-(m)



female-(f)



underside-(un)

56. *maha*



(m)



(f)

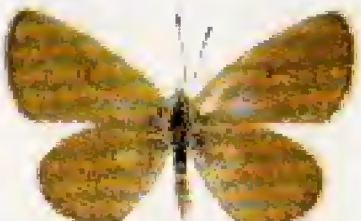


(un)

55. *otis*



(m)



(f)



(un)

57. *karsandra*



(m)



(f)



(un)

58. *hylax*



upperside



(un)

54. *trochylus*



47. *callinara* (un)



(m)



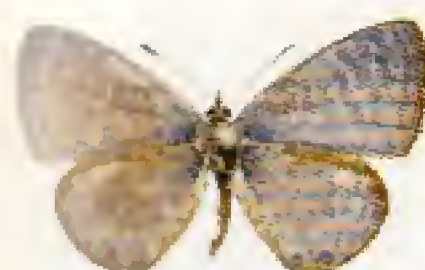
(f)



(un)

44. *nara*

PLATE 2



male-(m)



female-(f)



underside-(un)

48. *pilinius*



(m)



(f)



(un)

49. *abaldus*



(m)



(f)



(un)

50. *uranus*



(m)



(f)



(un)

51. *jesous*



(m)



(f)



(un)

53. *parrhasius*



(m)



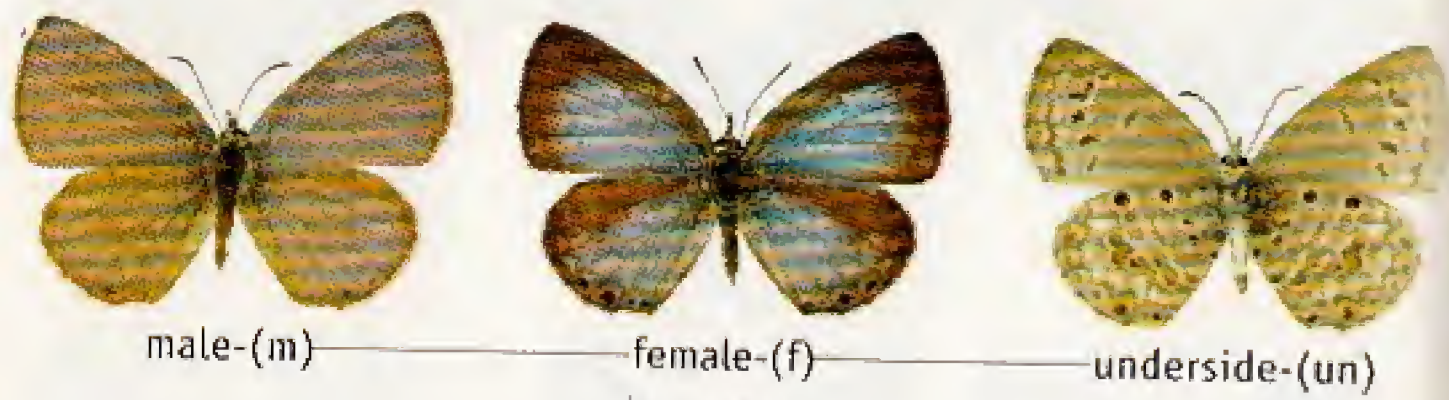
(f)



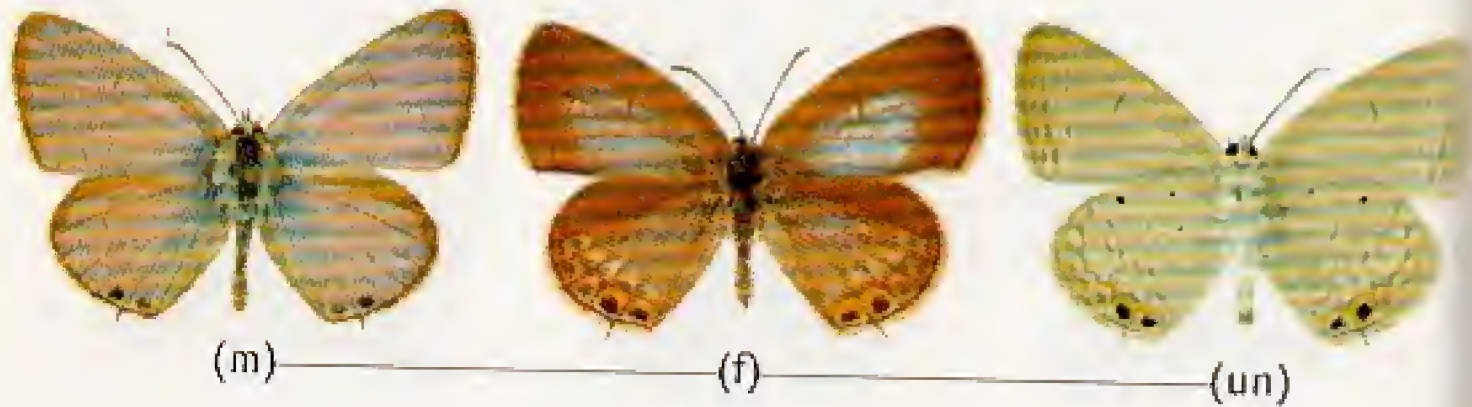
(un)

62. *nora*

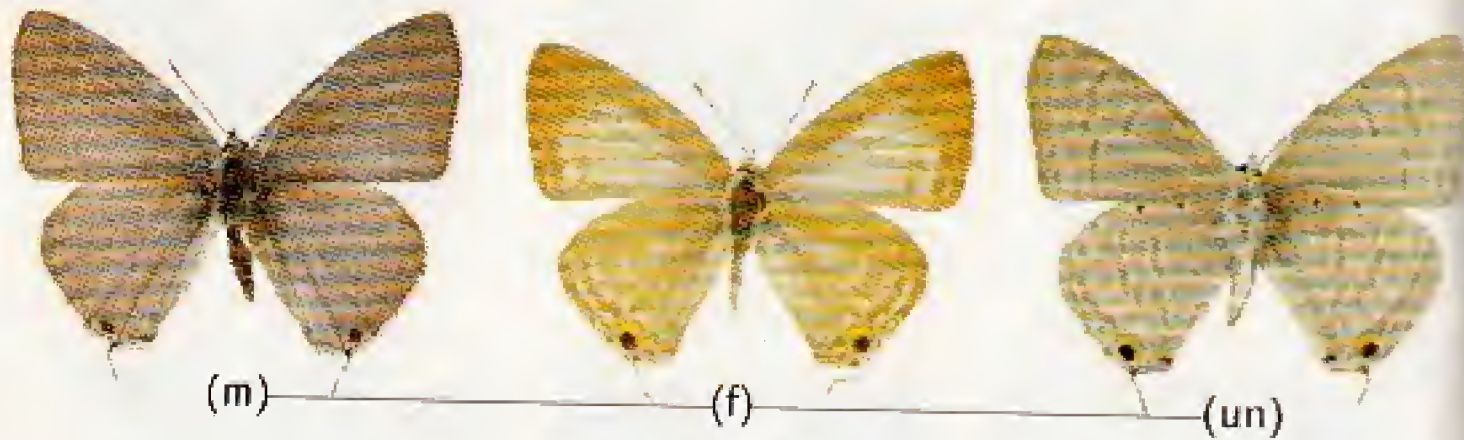
PLATE 3



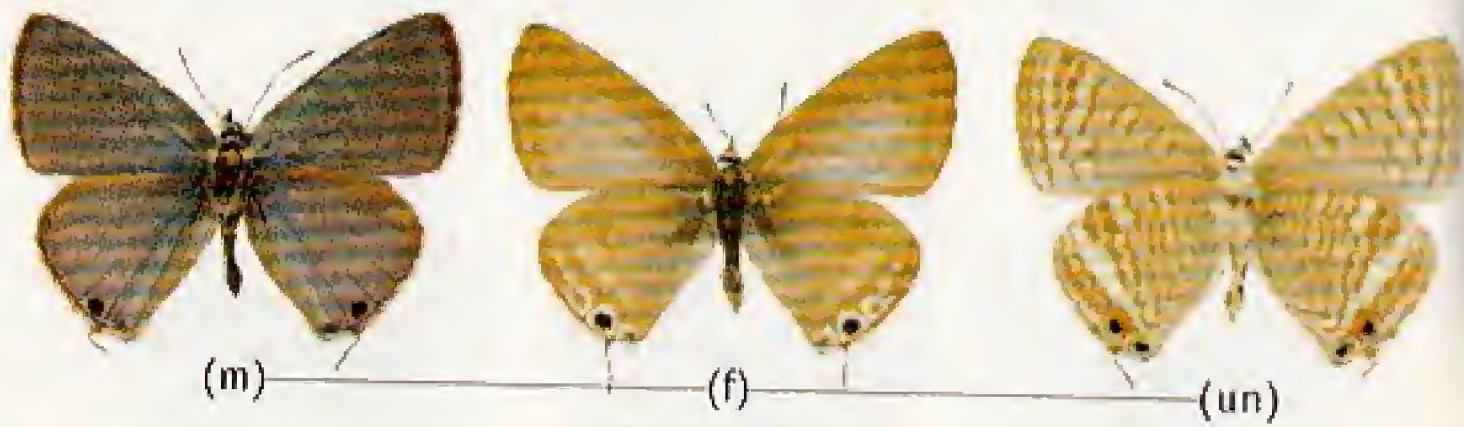
52. *laius*



59. *cnejus*



60. *strabo*



61. *boeticus*