

ON A COLLECTION OF LEPIDOPTERA FROM THE NEORA VALLEY
AND VICINITY, WEST BENGAL, INDIA

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INTRODUCTION

The Zoological Survey of India delegated a six-member group including the author to an expedition at the Neora Valley and vicinity. The other participants were from the Dept. of Botany, University of Calcutta, Kalimpong (Spl.) Forest Division, West Bengal, National Medical College, Calcutta, and the Signal Regiment of the Mountain Division, Eastern Command. The expedition, led by the Calcutta Section of Himalayan Club, lasted from 20th November to 12th December, 1982. The object was to gain basic information about the flora and fauna of the region, in addition to practical information relating to its sociology and medical and defence requirements.

The Neora Valley and adjacent Murti Valley are located in the Kalimpong subdivision of Darjiling district, West Bengal, between 27°5'N and 88°45'E in the East Himalaya. The Neora Valley has previously been surveyed mainly along its eastern ridge, by explorers from the Forest Development Corporation, West Bengal, in 1979, and jointly by members of the Z.S.I. and Botanical Survey of India in 1981. The interior of the region was only reached, with considerable hardship, for the first time in 1982, *via* the western ridge. The Neora Valley well deserves its recognition as one of the most important Biosphere Reserves in India.

The present work gives an account of the faunistic survey carried out, and general climatology of the area visited. It gives an inventory of the Lepidoptera encountered, together with comments on their zoogeography. Some material collected by the earlier survey party of Z.S.I. is included. An Appendix giving details of material data and a route map are provided. *Neptis mahendra samsinga*, ssp. nov., is described and compared with its allies from literature cited in the paper. All the specimens including the *holotype* of the new subspecies are in the Z.S.I. Repository.

PHYSIOGRAPHY

The terrain of the Neora Valley and vicinity occupies an approximate area of 380 sq. kms. It extends from northern tri-junction of Sikkim, Darjiling and Bhutan Himalaya up to the southern foot-hill plain of Samsing, the inter-district border between Darjiling and Jalpaiguri of West Bengal. The altitude of this mountainous domain varies between c 350 and 3,000 m. The western boundary of the Valley, the

MAP OF NEORA VALLEY
 (---> Indicating trek-route followed)

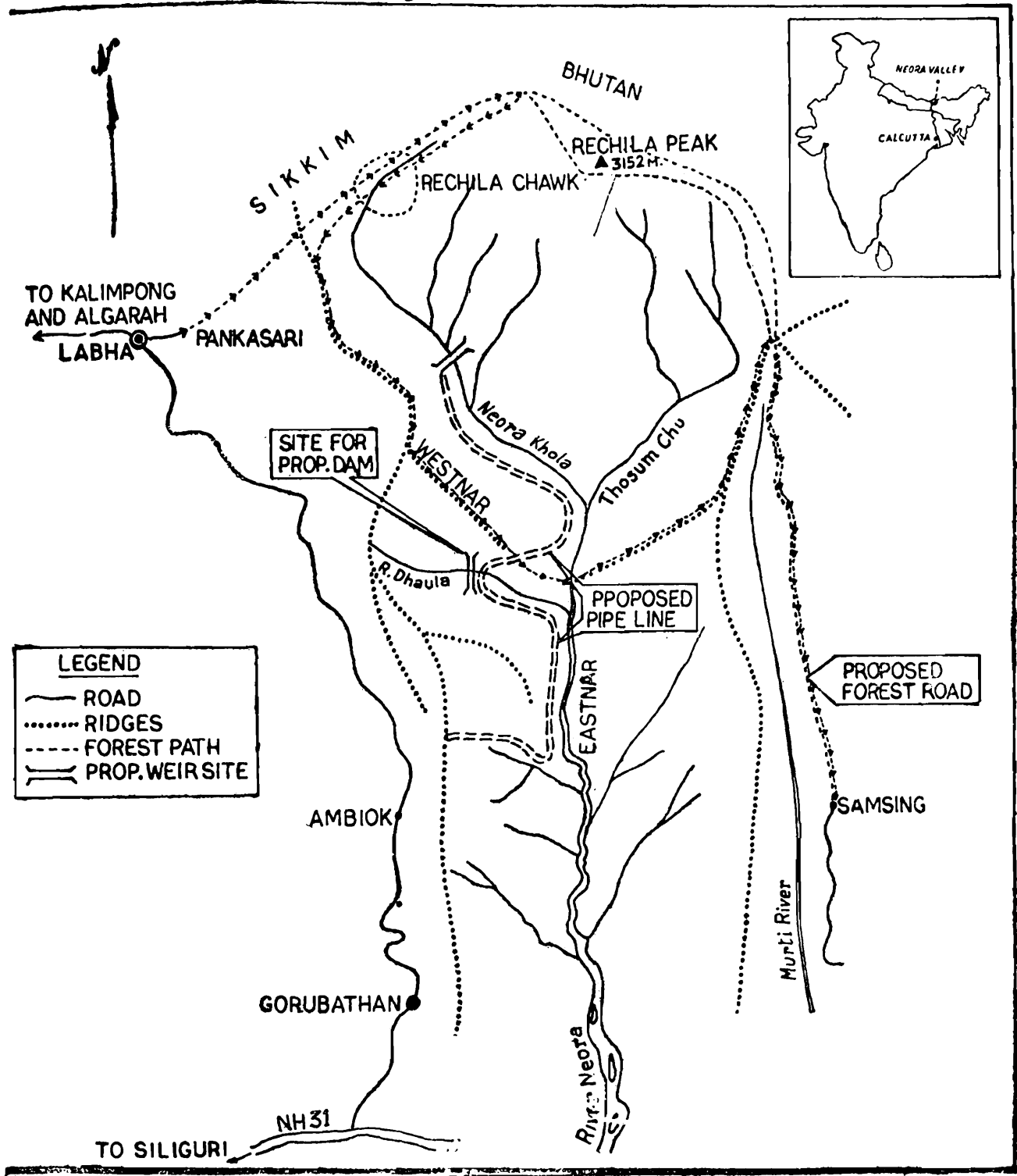


Fig. 1. Map of Neora Valley and environs

West Nar, extends from the Pankhasari Block at a higher elevation in the north through Sakham down to Garubathan, leading to Kalimpong. Its eastern boundary, the East Nar, originates from a point beyond the Thosam Chu and emerges at Samsing off the Murti Valley in the south. The Murti Valley is linked by an abandoned mule-track across the upper reaches with Rechi La at the further north of Labha (a small forest village having a temporary market). At the Rechi La Chowk, the hill tribals cultivate potato crops in season and sell at Labha. There is no permanent settlement at the Rechi La Chowk, where grazing occurs during summer months, up to its lower reaches. The land belongs to the Forest Dept., Govt. of West Bengal, and is leased to F.D.C.L.

Topographically a 'V'-shaped valley, the area is extremely rugged, with high hills dissected by deep ravines and gorges covered with thick plantations. Throughout its extent, there are long ridges, and precipices of varying heights. Prolific undergrowth is also no less uncommon in many places, including near the bed of Neora Valley in particular. The hill stream, locally called 'Neora Khola', flows torrentially. Open meadows or steppes are hardly visible from both the upper and lower reaches. The forest canopy is too thick to allow the penetration of sunlight to the floor. Scattered kraging in the lower reaches has been carried out for constructing forest roads and dams, installing waterpipes, for shifting cultivation and so on. However, the centrally rugged terrain offers a safe haven for much wildlife, including butterflies and moths.

As to the riverine system, it may be noted that amongst the eight major rivers flowing in North Bengal, three drain the Neora Valley and vicinity. Extending from west to east, in turns, the river Chel, about 55 kms. long and 90-150 m. wide, arises from the Pankhasari Block and flows along the West Nar. The River Neora, about 60 kms. long and 90-125 m. wide, arises from the Rechi La Chowk below its ridge (= 'danda', as locally known) and flows through the central zone but inclined to the West Nar. The River Murti, about 20 kms. long and 30-60 m. wide, arises from the Thosam hills and flows along the East Nar. Of these, the longest river Neora has a catchment-basin of about 135 sq. kms. and is reported to have its maximum discharge of water amounting to about 12,000 cusecs and the minimum, 23 cusecs.

CLIMATE

The wide range of altitudes is responsible for the marked climatic differences observed in the region. The conditions vary from tropical to temperate or even subalpine, in accordance with the elevation of the area. At Rechi La (c 3,000 m.), the snowfall was 30.50-61.00 cm. during 24 hours at the time of visit by the team. The rainy season prevails from the middle of May to October. Similarly, due to the topography, the annual rainfall varies from 225-750 cm. ; in the catchment area it averages 625 cm. At further lower reaches, for example, at Mo Chowki and Samsing

in the East Nar forest block of the Kalimpong Forest Division, the approximate annual rainfall varies from 450-500 cm.

TREKKING

The course of trekking route (*vide* fig. 1) by the latest team, including the author, is briefly described. On this occasion the team started at the higher altitude, not the lower, as in the Indian Tons Valley Expedition (*vide* Mandal, 1984).

Trekking started on Nov. 23 from the Pankhasari Block, about 8 kms. north of Labha, at c 2,400 m. The foot-track was followed along a distance of c 5 kms. northwards to the Rechi La Chowk at an altitude of c 3,000 m., where the team had to make two nights' halt in a cow-shed temporarily used by the local people. From here, a distance of c 24 kms. was traversed on the way to Jorpokhri towards the Rechi La Peak and back. Jorpokhri (c 3,100 m.), a spot with a couple of natural ponds, is near the Rechi La Peak, the highest point in the area along the Pankhasari-Rechi La ridge. From here, the team started moving downwards and southwards, mostly along the ridge of the Neora. The members first arrived at an unknown destination on a trek of c 5 kms. and pitched tents under the shade of *Rhododendron* at c 2,200 m. They left for the next camp at an almost similar distance, the locality of which was also unknown at c 2,000 m. under the shade of *Echinocarpus*. The next camp was at Doban, where the Rivers Neora and Thosam are confluent. The terrain is too steep to negotiate and marked by a fairly large rocky cave (named by the leader of the expedition as 'Mandal Cave'). In one stage, fixed rope was used to negotiate the foot-track across a high waterfall. The next camp was at Bhanjan (c 2,000 m.) which was reached after 15 km.-march amidst the shade of very tall Maple trees. From here, the members split up into a couple of subgroups : the smaller group proceeding westwards, while the other, including the author, southwards to reach the next camp at Mo Chowki (c 1,500 m.) where it lodged at the Beat House after traversing a distance of 8 kms. The final leg of the trek ended at Samsing (c 350-650 m.), where these members arrived after traversing a further distance of 8 kms. They had to await the smaller party in the Forest Rest House at Samsing, forming the exit from the dense forest, for four days. This was a worrying time, finally relieved by a happy reunion on Dec. 9.

The entire team did their best to gather data for their respective disciplines, especially in the Neora Valley. But the trekking was very tough. The team covered an overall distance not less than 60 kms. in 13 days, over difficult gradients from north to south of the terrain. The small party trekked even further during their 17 days, through unknown and even rougher area of the West Nar. In course of negotiating the awesome and yet picturesque terrain, the River Neora had to be crossed very cautiously several times at different places over the loose boulders and wooden logs used by the

accompanying Support-Team of High Altitude Porters (HAPS). The track was very narrow, meandering and branching, so that the way was easily lost. To avoid this, every precaution was adopted by the Advance Party to mark the foot-track with pieces of red cloth as signals being visibly tied to the twigs at regular intervals along the track from one camp to another in a routine manner.

Attempts of collecting specimens for about a couple of weeks were made during the course of trekking as well as at the different camps and stations. After collection, the specimens were treated with suitable preservatives. The rather limited results should not frequently be taken to indicate that the diversity of Lepidoptera in the Neora Valley is in any way impoverished.

Appendix : This gives the locality-wise material data of Lepidoptera and other particulars of the terrain surveyed. Material (*cf.* 'Systematic Account' for the sl. no. of spp./sspp. from the coded localities given hereunder) against the dagger (†)-marked dates have been collected by *R. K. Ghosh* & party of the Z.S.I., and the rest by the author. '††'-marked sl. no. indicate that the specimens have been collected 'at light'.

- (A) **Labha** (alt. *c* 2,400 m.) : 105 kms. north of New Jalpaiguri ; sl. no. (23, 26, 28-31, 33)††, in and around the Forest Rest House ; 22.xi.1982. Climate perhumid ; temperature 4-10°C. Gradual change from tropical to temperate vegetation noticed.
- (B) **Rechi La** (alt. *c* 3,000 m.) : 16 kms. north of Labha, along the Pankhasari-Thosam Ridge ; sl. no. 13, 34 ; 24.xi.1982. Temp. 3-8°C. Predominant vegetation comprising algae, fungi (*Agaricus* spp.), lichens (Crustose), mosses (*Pogonatum* and *Polytrichum* spp.), ferns (*Polypodium* sp.) and angiosperms (spp. of bamboo, maple, oak, orchid, *Rhododendron*, etc.). A cultivated land of potato also observed in the cow-shed area.
- (C) **Camp III** (alt. *c* 2,200 m.) : At an unnamed locality, 5 kms. south of Rechi La, 26.xi.1982. Temp. 5°C. Flora notably represented by filamentous blue-green algae, *Agaricus*, *Phallus*, *Polyporus*, lichens, *Lycopodium*, *Selaginella*, *Equisetum* and also the angiosperms including heavy thickets of bamboo, *Rhododendron*, *Quercus*, *Acer*, *Anaphalis*, *Cutunelis* and different herbs and shrubs of Asteraceae, Campanulaceae, Convolvulaceae, Rubiaceae, etc.
- (D) **Camp IV** (alt. *c* 2,000 m.) : Also at an unnamed locality, 5 kms. south of Camp III, 27.xi.1982. Temp. 7°C. The forest-floor oversaturated with wet humus and mostly occupied by maple ; the path being very soft, subsided and blocked by highly decomposed large trunks of dead trees : all these, together with precipices overhanging the dark 'Mandal Cave' and steep slope along the western spur making the trek quite punitive.

- (E) **Doban** (alt. c 2,000 m.) : 5 kms. south of Camp IV ; sl. no. 12, 13, 32†† ; 29.xi.1982. Temp. 7.5°C. A change to the tropical vegetation observed once again in a clinal manner.
- (F) **Bhanjan** (alt. c 2,000 m.) : 15 kms. south of Doban ; sl. no. 24†† ; 1.xii.1982. Temp. 8°C. Butterflies observed in a very scanty number as compared to their larvae.
- (G) **Mo Chowki** (alt. c 1,500 m.) : 8 kms. south of Bhanjan ; sl. no. 1, 8, 11, 14, 20 ; 24.ix.1981†, sl. no. 24†† ; 3.xii.1982. Temp. 15°C.
- (H1) 8 kms. west (alt. c 600 m.) of the **Forest Rest House, Samsing (S.F.R.H.)**, 8 kms. south of Mo Chowki : sl. no. 7, 9 ; 22.iv.1981†.
- (H2) 13 kms. north-west (alt. c 1,000 m.) of S.F.R.H. : sl. no. 9 ; 23.iv.1981†.
- (H3) 3 kms. south (alt. c 650 m.) of S.F.R.H. : sl. no. 4, 5, 16, 18, 21 ; 5.xii.1982.
- (H4) 3 kms. east (alt. c 650 m.) of S.F.R.H. : sl. no. 6, 10, 19, from shady wet forest and along roadside ; sl. no. 25††, 27††, in and around F.R.H. ; 7.xii.1982.
- (H5) 2 kms. north (alt. c 350 m.) of S.F.R.H. : sl. no. 2, 3, 6, 15, 17, 18, 22, along the bank of the River Murti ; 8.xii.1982. Temp. 15°C ; climate extremely foggy. Terraced cultivation of paddy, banana and tea plantations observed in plenty.

FLORA

The Neora Valley has several types of forest, with tropical and temperate vegetation amidst the deciduous, semi-evergreen and evergreen zones of the East Himalaya. All represent excellent natural resources of the area. Recently, however, certain belts at lower reaches have been denuded by the human agency.

Upper Montane Zone : This is represented by the temperate flora occurring between c 1,700-3,200 m. Of these, the commonest forms are *Machilus edulis* and *Alcimandra cathcartii* up to the altitude of c 2,100 m. Next follows the high-level oak-forest of *Quercus pachyphylis*, *Q. liniatta*, *Q. lamellosa*, etc., up to c 2,400 m. Other broad-leaved varieties, such as, *Acer campbella*, *Ficus nemoralis*, etc., are limited up to the further height of c 2,700 m. The only indigenous conifer of the area is *Tsuga dumosa*. Amongst the epiphytes, the common forms are *Coelogyne ochracea*, *C. grandiflora*, *C. elegance*, *Bolbophyllum* sp., *Ploene humilis*, *P. procoax*, *Calanthis* sp., etc. The commonest parasitic plant is a species of *Harchur*. The undergrowth is mainly formed by *Girardiana heterophylla* and *Rubus ellipticus*.

Lower Montane Zone : This is represented by the tropical flora occurring between c 750-1,700 m. A great majority of the trees are evergreen, of which the predominant species are *Castanopsis indica*, *C. tribuloides*, *Schima wallichii*, etc., from c 750-1,500 m.

Amongst numerous parasitic species, the largest climber tree is *Macrocarpa*. At lower elevations, the forests are characterised by the large concentration of orchids, figs and aroids, while bamboo and cane form the typical undergrowth. Due to the dense growth and low penetration of sunlight, the ferns are rather poor. In contrast, species of *Lycopodium*, *Cyathes*, etc., are plentiful. In addition, a number of timber-yielding trees and a vast acreage of tea plantations could also be observed at Mo Chowki and Samsing.

For Further notes on the flora of the Neora Valley, *vide* Rastogi (1984) and Rastogi & Purokait (1984).

FAUNA

The 34 species and subspecies of butterflies and moths recorded here represent only a small fraction of the diversity of the Lepidoptera from this tropical region. However, because little recent work has been done on the butterflies of the area and even less on the moths, the author considers it valuable to list all the species/subspecies found and their exact provenance. It appears that, although most of the elements are well-known to occur in north-eastern India, precise records for the Kalimpong subdivision (Darjiling District) of West Bengal have not been published previously.

LIST OF SPECIES/SSPP. OF LEPIDOPTERA ENCOUNTERED [* , Recorded new for West Bengal ; ** , new for the East Himalaya]

Order LEPIDOPTERA

Superfamily (A). PAPILIONOIDEA

Family I. PIERIDAE

- *1. *Appias pandione lalage* (Db.)
- *2. *Appias lyncida eleonora* (Bd.)
- *3. *Pieris (Artogeia) canidia indica* Ev.
4. *Catopsilia pomona pomona* (Fabr.)
5. *Eurema brigitta rubella* (Wall.)
6. *Eurema hecabe contubernalis* (Mre.)

Family II. NYMPHALIDAE

Subfamily (a). DANAINAE

7. *Danaus genutia genutia* (Cr.)
- *8. *Parantica sita sita* (Cr.)
9. *Euploea core core* (Cr.)

Subfamily (b). SATYRINAE

10. *Mycalesis visala visala* Mre.
- *11. *Mycalesis suaveolens suaveolens* W.-M. & de N.
12. *Lethe sidonis* (Hewit.)
13. *Melanitis leda ismene* (Cr.)

Subfamily (c). ACRAEINAE

14. *Acraea violae* (Fabr.)

Subfamily (d). NYMPHALINAE

15. *Neptis hylas kamarupa* Mre.
16. *Neptis mahendra samsinga*, ssp. nov.
17. *Precis lemonias lemonias* (Linn.)
18. *Precis almana almana* (Linn.)
19. *Aglais cashmirensis aesis* (Fr.)
- **20. *Cirrochroa thais thais* (Fabr.)

Family III. LYCAENIDAE

21. *Lestranicus transpectus* (Mre.)
22. *Heliophorus epicles indicus* (Fr.)

Superfamily (B). BOMBYCOIDEA

Family IV. SATURNIIDAE

23. *Caligula thibeta extensa* (Butl.)

Family V. EUPTEROTIDAE

24. *Eupterote undata* (Blanch.)

Family VI. SPHINGIDAE

25. *Acherontia lachesis* (Fabr.)

Superfamily (C). NOCTUOIDEA

Family VII. LYMANTRIIDAE

26. *Leucoma sericea* (Mre.)

Family VIII. ARCTIIDAE

27. *Nyctemera adversata* (Schall.)

Family IX. NOCTUIDAE

28. *Agrotis segetum* (D. & S.)
 *29. *Blenina quinaria* Mre.
 *30. *Diphtherocome discibrunnea* (Mre.)
 *31. *Autographa nigrisigna* (Wlk.)
 32. *Eudocima tyrannus* (Guen.)

Superfamily (D). GEOMETROIDEA

Family X. GEOMETRIDAE

33. *Synegiodes sanguinaria* (Mre.)
 34. *Ourapteryx ebuleata ebuleata* (Guen.)

SYSTEMATIC ACCOUNT

[For details of material examined, *vide* Appendix]

Order LEPIDOPTERA

Superfamily (A). PAPILIONOIDEA

Family I. PIERIDAE

- *1. *Appias pandione lalage*, Talbot (1949 : p. 492)
 [W. s. f. *durvasa* (Moore)]

Material examined : (G) One ♂.

Wing expanse : 58 mm.

The subspecies occurs in northern India and extends to northern Burma.

- *2. *Appias lyncida eleonora*, Talbot (1939 : p. 398)
 [W. s. f.]

Material examined : (H 5) one ♀.

Wing expanse : 50 mm.

The subspecies occurs in the East Himalaya and also elsewhere in the Oriental Region.

- *3. *Pieris (Artogeia) canidia indica* Evans (1926 : p. 712)

Material examined : (H 5) one ♂.

Wing expanse : 55 mm.

The subspecies is widespread in the Indian subregion. Most authors would currently recognise small whites such as *canidia* as belonging to a separate subgenus, *Artogeia* Verity. The correct authority for *canidia* is Linnaeus (not 'Sparrman' nor 'Evans', as cited by Talbot, 1939).

4. *Catopsilia pomona pomona*, Corbet & Pendlebury (1978 : p. 108)

[f. *crocale* (Cramer)]

Material examined : (H3) One ♂.

Wing expanse : 58 mm.

The subspecies is widespread in the Australo-Oriental Regions. The species *crocale* (*vide* Talbot, 1939) is now considered as a form of *C. pomona* (Fabr.) by Corbet & Pendlebury (1978) following Wheeler (1943). The cold weather males, as the one examined (= ♂ f. *hilaria*, Talbot), have vinous markings on the underside of hind wing.

5. *Eurema brigitta rubella*, Talbot (1939 : p. 515)

[D.s.f. *rubella* (Wallace)]

Material examined : (H3) One ♂.

Wing expanse : 45 mm. (larger than usual, as cited by Talbot, 1939 and Wyter-Blyth, 1957).

The subspecies is widespread in the Indian subregion and also extends to southern China.

6. *Eurema hecabe contubernalis*, Talbot (1939 : p. 527)

[W.s.f. *merguiana* (Moore)]

Material examined : (H4) One ♀ ; (H5) 1♂, 1♀.

Wing expanse : 40-45 mm.

The subspecies is Indo-Malayan in distribution, being earlier recorded from the Western Garhwal Himalaya by Mondal (1984). Its dubious synonyms, *hecabeoides* (Ménétriès) and *aesiope* (Ménétriès) after Talbot (1939), should be placed with *E.h. hecabe* (Linn.) from southern China (*vide* Corbet, 1941).

Family II. NYMPHALIDAE

Subfamily (a) DANAINAE

7. *Danaus genutia genutia*, Ackery & Vane-Wright (1984 : p. 122)

[f. *grynion* (Fruhstorfer)]

Material examined : (H1) One ♂.

Wing expanse : 78 mm.

The subspecies is widely distributed in the Oriental Region. While Talbot (1943, 1949) adopted the name *plexippus* (Linn.) as conspecific with *genutia*, Ackery & Vane-Wright (1984) have considered both as distinct species, of which the former occurs in America.

***8. *Parantica sita sita*, Ackery & Vane-Wright (1984 : p. 178)**

[f. *tytia* (Gray)]

Material examined : (G) One ♀.

Wing expanse : 97 mm.

The subspecies occurs throughout the Himalaya and also extends to south-eastern Tibet. All recent revisionary work on the milkweed butterflies (Danainae) recognises the distinctness of such elements as *sita* from true *Danaus*, and separates *sita* and its allies in the genus *Parantica* (e.g., Corbet & Pendlebury, 1978 ; Morishita, 1981 ; Ackery & Vane-Wright, 1984).

9. *Euploea core core*, Ackery & Vane-Wright (1984 : p. 228)

[f. *core* (Cramer)]

Material examined : (H1) One ♂, 1 ♀ ; (H2) 1 ♀.

Wing expanse : 75-95 mm.

The subspecies is widespread in the Oriental Region.

Subfamily (b). SATYRINAE

10. *Mycalesis visala visala*, Talbot (1949 : p. 140)

[D.s.f. *indistans* (Moore)]

Material examined : (H4) 2 ♂.

Wing expanse : 52-54 mm.

The subspecies occurs in northern India and Burma.

***11. *Mycalesis suaveolens suaveolens*, Talbot (1949 : p. 152)**

Material examined : (G) One ♂.

Wing expanse : 55 mm.

The subspecies (nec *suavolens*) occurs in the East Himalaya and also Burma.

12. *Lethe sidonis*, Talbot (1949 : p. 172)

[D.s.f. *vaiivarta* Doherty]

Material examined : (E) One ♂.

Wing expanse : 46 mm.

The species occurs throughout the Himalaya and also extends to Tibet. It is amongst a very few butterflies in India, that is known to cross the north of the crestline forming the semi-tropical extreme end of eastern Tibet (*vide* Mani, 1986).

13. *Melanitis leda ismene*, Talbot (1949 : p. 366)

[♂ : D.s.f. *ismene* (Cramer) ; ♀ : W.s.f. *determinata* Bulter]

Material examined : (B) 2♂ ; (E) 1♂, 1♀.

Wing expanse : 65-84 mm. (♀ larger : *cf.* Talbot, 1949).

The subspecies is widespread in the Oriental Region ; it occurs also in the Eastern Palearctic.

Subfamily (c). ACRAEINAE

14. *Acraea violae*, Talbot (1949 : p. 466)

Material examined : (G) One ♂.

Wing expanse : 55 mm.

The species is widespread in the Indian subregion.

Subfamily (d). NYMPHALINAE

15. *Neptis hylas kamarupa*, Eliot (1969 : p. 61)

Material examined : (H5) One ♂.

Wing expanse : 55 mm.

The subspecies occurs in the East Himalaya and Burma. Evans (1932) treated it as *ssp. adara* Moore, but Eliot (1969) has considered *kamarupa* Moore as the correct subspecies name, of which *adara* is a junior synonym.

16. *Neptis mahendra samsinga*, *ssp. nov.* (fig. 2)

Description : Upperside fore wing with the streak beyond cell long and pointed, all the white markings narrow and lower postdiscal band directed to almost the mid-termin. Underside hind wing with fuscous lines outlining the discal and postdiscal bands absent, being confined to a prominent fuscous line on the outside of discal band, and marginal fascia brownish throughout ; both wings with ground colour deep brown.

Material examined : (H3) HOLOTYPE ♂ (Z. S. I. Reg. No. 22323/H 9).

Wing expanse : 60 mm.

Eliot (1969) has fixed the identity of several subspecies of *Neptis mahendra* Moore. These are *ssp. extensa* Leech [from Western China : Szechwan], *ssp. mahendra*,

Fruhstorfer [from the North-West Himalaya], ssp. *ursula* Eliot [from North-Western Yunnan] and also probably another anonymous one from South-eastern Tibet. The ssp. *samsinga*, nov., differs from the foregone counterparts basically by the fore wing lower postdiscal band not directed to termen just below apex (cf. ssp. *extensa*, *ursula* and the anonymous one), nor to apex (cf. ssp. *mahendra*). The new subspecies is otherwise very much close to the ssp. *extensa* and *mahendra*, having the fore wing upperside with all the white markings narrow and hind wing underside with marginal fascia not blotted out in M3-and Cula-areas, but differs from the former by the hind wing marginal fascia not whitish and, from the latter by the fore wing streak beyond cell not short and blunt. It differs from the ssp. *ursula* by the fore wing white markings narrow, hind wing marginal fascia not blotted out and both wings with ground colour not red. It also differs from the anonymous subspecies by the shape and size of fore wing markings and colouration of hind wing underside.

17. ***Precis lemonias lemonias***, Evans (1932 : p. 176)

[W. s. f.]

Material examined : (H 5) one ♀.

Wing expanse : 53 mm.

The subspecies occurs in the East Himalaya and Burma. It is also found in the Chinese subregion. Quite a few dead and mutilated specimens were observed by the author on profile survey of the area ; this might have been caused by the attacks of lizards, also found in plenty, as main predator of *lemonias*.

18. ***Precis almana almana***, Fruhstorfer (1912 : p. 519)

[♂ : D. s. f. ; ♀ W. s. f.]

Material examined : (H 3) One ♂ ; (H 5) 1 ♀.

Wing expanse : 54-55 mm. (smaller : cf. Wynter-Blyth, 1957).

The subspecies occurs in the Indian subregion, extending to Hong Kong, China, Taiwan, Vietnam and the Philippines,

19. ***Aglaia cashmirensis aesis***, Fruhstorfer (1912 : p. 527)

Material examined : (H 4) One ♀.

Wing expanse : 61 mm.

The subspecies occurs in northern India. It flies all the year round between c 700-5,000 m. at Darjiling and Sikkim. The butterfly was treated under the genus *Vanessa* Fabricius by Bingham (1905) and also Fruhstorfer (1912), but recently it has been placed in *Aglaia* Dalman (*vide* Mandal, 1984).

****20. *Cirrochroa thais thais*, Evans (1932 : p. 189)**

[D.s.f. *relata* de Nicéville]

Material examined : (G) One ♂.

Wing expanse : 75 mm.

The subspecies occurs in eastern and southern peninsular India. It ascends to c 2,000-2,500 m. in a straight flight. The present discovery reveals its occurrence in the East Himalaya, too.

Family III. LYCAENIDAE

21. *Lestranicus transpectus*, Eliot & Kawazoé (1983 : 73)

[D.s.f.]

Material examined : (H3) One ♀.

Wing expanse : 27 mm.

The species, earlier placed in the genus *Celastrina* Tutt by Cantlie (1962), occurs in the East Himalaya and Burma. It is also found in Bangladesh, Thailand, Vietnam and China.

22. *Heliophorus epicles indicus*, Cantlie (1962 : p. 85)

[f. *indicus* (Fruhstorfer)]

Material examined : (H5) One ♀.

Wing expanse : 27 mm.

The subspecies occurs in northern India and the Andaman Islands. It is also found in Nepal and Burm. It is known to fly in the Himalaya up to c 2,500 m. during the spring-autumn period.

Superfamily (B). BOMBYCOIDEA

Family IV : SATURNIIDAE

23. *Caligula thibeta extensa*, Seitz (1928 : p. 515)

Material examined : (A) One ♂.

Wing expanse : 150 mm.

The subspecies is confined to the East Himalaya.

Family V. EUPTEROTIDAE

24. *Eupterote undata*, Seitz (1924 : p. 427)

[f. *consimilis* Moore]

Material examined : (F) One ♂ ; (G) 1 ♀.

Wing expanse : 95-110 mm.

The species is widespread in the Indian subregion, hiding at day time amidst the undergrowth preferably of thorny *Opuntia*, to avoid bird-attack.

Family VI. SPHINGIDAE

25. *Acherontia lachesis*, Bell & Scott (1937 : p. 55)

Material examined : (H4) One ♂.

Wing expanse : 125 mm.

The species is widespread in the Oriental Region.

Superfamily (C). NOCTUOIDEA

Family VII. LYMANTRIIDAE

26. *Leucoma sericea*, Bryk (1934 : p. 122)

Material examined : (A) One ♂.

Wing expanse : 40 mm.

The species, treated under the genus *Euzora* Turner by Bryk (1934), occurs in northern India. It is also known from Tibet and western China. Strand (1915), however, placed it in the genus *Caragola* Moore, but the recent authority would consider to place this species in *Leucoma* Hübner.

Family VIII. ARCTIIDAE

27. *Nyctemera adversata*, Arora & Chaudhury (1982 : p. 8)

Material examined : (H4) One ♀.

Wing expanse : 55 mm.

The species (= *plagifera* Wlk.) is widespread in the Oriental Region except Sri Lanka and possibly also peninsular India. It has been observed at Samsing to fly together with the strikingly mimicking butterfly, *Pieris (Artogeia) canidia indica* Evans.

Family IX. NOCTUIDAE

28. *Agrotis segetum*, Kapur & Arora (1971 : p. 101)

Material examined : (A) 3 ♂, 1 ♀.

Wing expanse : 38-43 mm. (one ♂ and ♀ larger : cf. Kapur & Arora, 1971).

The species is much widespread in the Indian subregion, extending to the Eastern Palaearctic up to Japan through China and also to the Western Palaearctic up to Europe

through U.S.S.R. It is also found in Africa. Its maximum altitudinal range is c 3,000 m. Warren (1909) treated the species in the genus *Euxoa* Hübner under the subfamily Euxoinae, while Kapur & Arora (1971) placed it in *Agrotis* Ochsenheimer under Agrotinae after Hamson (1903).

*29. **Blenina quinaris**, Warren (1913 : p. 293)

Material examined : (A) One ♂.

Wing expanse : 35 mm.

The species occurs in the East Himalaya and also western China.

*30. **Diphtherocome discibrunea**, Poole (1989 : 322)

Material examined : (A) One ♀.

Wing expanse : 37 mm. (smaller : cf. Hampson, 1894).

The species is restricted in the East Himalaya. It was treated under the genus *Diphthera* Treitschke by Hampson (1894).

*31. **Autographa nigrisigna**, Kostrowicki (1961 : p. 465)

Material examined : (A) One ♀.

Wing expanse : 38 mm.

The species, that takes the place of *gamma* (Linn.) in the Palaearctic Region (*vide* Warren, 1913), occurs in northern India and also China.

32. **Eudocima tyrannus**, Poole (1989 : 401)

Material examined : (E) One ♀.

Wing expanse : 105 mm. (smaller : cf. Hampson, 1894).

The species is widespread in the Oriental Region ; it is also found in Japan.

Superfamily (D). GEOMETROIDEA

Family X. GEOMETRIDAE

33. **Synegiodes sanguinaria**, Prout (1934 : p. 48)

Material examined : (A) One ♂.

Wing expanse : 36 mm.

The species, which was treated in the genus *Acidalia* Treitschke under the subfamily Acidaliinae by Hampson (1895), is restricted to the East Himalaya. It has subsequently been placed with the Sterrhinae by Prout (1934).

34. *Ourapteryx ebuleata ebuleata*, Prout (1915 : p. 335)

Material examined : (B) One ♂.

Wing expanse : 45 mm. (smaller ; cf. Hampson, 1895).

The subspecies is widespread in northern India (except the North-western Himalaya) ; it also extends to western China. Prout (1915) considered the moth and its allies under the subfamily Geometrianae in place of Boarmiinae as treated by Hampson (1895).

RESUME

L'article s'incorpore d'un compte-rendu systématique de la faune des Lépidoptères du vale Néora et des environs au Bengale d'Ouest parmi les Himalayas de l'est. C'est accompagné d'en commentaires zoogéographiques et des observations climatologiques générales de l'aire visite' par l'auteur sur une expédition en 1982. Les 22 papillons et, 12 phalenes sont inclues, la plupart desquelles sont récolté'es par l'auteur. Il raconte, avec une carte de la région, son expérience de la route de marche au pas. Une appendice par rapport aux données des échantillons est pourvue. Toutes les espèces et sous-espèces ont pour nouveaux dossiers de répartition du vale Néora et ses environs. Parmi celles-ci, 8 du Bengale d'Ouèst et une seule, *Cirrochroa thais thais* (Fabr.), des Himalayas de l'est sont connues pour la première fois. *Neptis mahendra samsinga*, ssp. nov., est aussi de'crite.

ACKNOWLEDGEMENTS

The author is grateful to the Director and to Dr. A. K. Ghosh, Scientist—SF, Zoological Survey of India, respectively for providing laboratory facilities to the work and for co-ordinating the project-oriented expedition. He is thankful to Dr. S. K. Ghosh, Officer-in-Charge, Mrs. M. Choudhury, Jnr. Zoological Asstt., Lepidoptera Section, and Mr. A. K. Ghosh, Artist, of the same Institute, for numerous courtesies, and also to Mr. K. Guha, Leader of the expedition, for according prodigal co-operation to the field work in the Neora Valley and environs. Finally, he is highly indebted to the Director as well as to Dr. J. D. Holloway, Lepidoptera Specialist, International Institute of Entomology (I. I. E.), London, for encouragement and also for kindly getting checked the updated nomenclature of species incorporated in the work.

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