

NOTES ON INSECTS OF FOREST IN EAST PAKISTAN

Lepidoptera: Papilionoidea 1.

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The note presented here is the first in a series giving preliminary data from the insect collections made by the staff of the Entomology Section, Forest Research Institute, Chittagong. The major part of the insects were set and preserved by Mr. Abdul Majid, Insect Setter, who also took an active part in much of the field collection work .

Since the start of the Entomology Section in July, 1969, the basis of reference collection of insects has been laid . Such collection of insects from the forested areas of East Pakistan has previously not been present in the province and is essential for all future forest entomological work to be carried out, in biology , as well as in control and extension service .

The butterflies here described belong to three families :
9 species of Papilionidae, 26 of Nymphalidae and 10 of Pieridae.
Approximately 20 species are not yet identified. In describing the size of the different species we have used the wing span: small = less than 4 cm , medium = 4 to 7 cm, large = 7 to 11 cm, and very large = more than 11 cm .

Our description is only indicative . For a more detailed description one should study for instance Fauna of British India .

Whereas most of our specimens were collected in flight, only a few were reared from larvae . It is our aim in the future to concentrate more on the rearing of larvae to adults insects, in order to obtain more knowledge of the larvae - host relationship and the forestry importance of the insects .

Also , a full literature review and a survey of other insect collections available in East Pakistan are required . In this article we have only traced down facts available in the reference mentioned . This note, therefore, is to be regarded as a preliminary one, summarizing data collected as at present . New knowledge regarding the butterflies will be added from time to time .

As regard to identifications of the butterflies we have mainly depended on the Fauna of British India, available in the Department of Zoology, Dacca University where we received valuable help from Dr. Ameen, Reader of Entomology .

Also , we acknowledge the assistance given by Dr. Ghulam Ullah Chaudhury, Forest Entomology, Pakistan Forest Institute, Peshawar , and his staff when we compared a part of our collection with specimens identified by British Museum . A number of species from East Pakistan's forest areas were collected during the period 1962-65 under a PL. 480 scheme. These species are now present at Pakistan Forest Institute, Peshawar, West Pakistan .

Thanks are due to many of the Forest Officers and other staff of the Forest Service, East Pakistan, for their help given to our team when in the field .

PAPILIONIDAE

9 species were identified so far . The hind wings of several species with thin prolongations ("Swallow tails").

Chilasa clyta clyta (L.)

Large sized butterfly with brownish wings . White to yellow spots along the margins .

2 specimens caught during flight in the northern and eastern part of the province . The brilliantly coloured larvae are reported to feed on the foliage of several forest trees (BEESON 1961, p.507) but have been of some importance only on Cinnamomum camphora and C.zeylanicum (BROWNE 1968 , p. 155).

Graphium antiphates naira (.Moore)

Large sized butterflies with whitish wings. Front wings with dark cuneate patterns .

4 specimens caught during flight in eastern and northern forest areas .

Graphium sarpedon L.

Medium to large sized butterflies with brilliantly dark and bluish-green wings .

2 specimens caught during flight in eastern forest areas . The green larvae are known feeding on foliage of Lauraceae including Cinnamomum spp. , but also on Michelia champaca (BROWNE 1968, p. 313).

Papilio demolius (L.)

Large sized butterfly with wings patterned black and yellow .

50 specimens of this " Chequered Swallow Tail Butterfly " were collected during flight in almost all parts of East Pakistan . We also reared the adult from larvae feeding on Citrus limonum. The larvae are green or straw coloured with brown and white markings. They are well known as a pest on Citrus leaves, but are also reported to feed on Aegle marmelos , Cheoroxylon swintonia, Zizyphus mauritania and other forest trees and scrubs (BEESON 1961 , p. 508).

Papilio memnon agena L.

Very large sized butterfly with blackish - blue wings .

5 specimens of this " Great Mormon Butterfly" were caught during flight in the southern forest areas . The larvae feed principally on young leaves of Rutaceae and are known as a pest of Citrus in Malaysia and Indonesia and of Michelia champaca in India (BROWNE 1968 , p. 516).

Papilio polytes Fabr.

Large sized butterfly with black wings . A row of white spots crosses the hind wings .

32 specimens caught during flight in most forest areas .

Polydorus aristolochy Fabr.

Large sized butterfly with black wings. The hind wing is spotted white and red .

26 specimens collected during flight in most forest areas . The larvae have been reported to defoliate Aristolochia sp. and Dioscorea wallichii (BEESON 1961 , p. 508).

Polydorus hector (L.)

Large sized butterfly with black wings . White patterns on the fore wings , red spots on the hind wings .

3 specimens caught during flight in the southern forest areas.

Troides helena cerebrus (C & R. Felder)

Very large sized butterfly with black wings . Hind wing with yellow patterns .

22 specimens caught during flight in southern and eastern forest areas .

NYMPHALIDAE DANINAE

9 species were identified so far .

Danais chrysippus L.

Medium sized butterfly with orange wings. Wing margins black, fore wing with broad black tip spotted with white .

46 specimens caught during flight in most forest areas. The larvae are reported to feed on Calotropis gigantea and C. procera (BEESON 1961 , p. 505).

Danais guatama Moore

Large sized butterfly with brownish-black wing having many bluish white patterns.

1 specimen caught during flight in the southern- most part of the province .

Danais limniace Cramer

Medium to large sized butterfly with black wings heavily spotted and pattered with white .

6 specimens collected during flight in most forest areas .

Danais plexippus L.

Medium to large sized butterfly with orange wings spotted with black . Black margin on forewing spotted with white . Veins are drawn in black .

19 specimens caught during flight in most forest areas . The larvae are recorded to feed on Cropegia sp. (CHAUDHURY 1966, p. 113).

Danais vulgaris Butler

Medium sized butterfly with bluish white wings having black margins and many black spots and patterns ,

13 specimens caught during flight in southern and eastern forest areas .

Euploea alcatloe Godart

*Medium sized butterfly with brown wings . Fore wings without white spots, hind wings having 2 rows of white spots .

1 specimen caught during flight in southern - most part of the province .

Euploea core Cramer

Medium sized butterfly with brown wings. Fore - and hind wings, both, with 2 rows of white spots .

48 specimens caught during flight in all forest areas except in the northern - most part . The larvae are reported to feed on species of Ficus , flolarrhena , Nerium and on Streblus as per (BEESON 1961, p. 115).

Euploea dione Westwood

Large sized butterfly with blackish- brown wings . Fore wings with 1-3 small white spots , and reflecting light metallicly blue at certain angles .

6 specimens caught during flight in eastern forest areas .

Euploea klugii Moore

Large sized butterfly with blackish - brown wings. Fore wings metallicly blue with several white spots.

18 specimens caught during flight in southern and eastern forest areas .

Euploea mulciber Cramer

Large sized butterfly with blackish brown wings . Metallic bluish fore wings with many white spots . Hind wings in female with many white spots and lines .

5 specimens caught during flight in southern and eastern forest areas .

SATYRINAE

4 species were identified so far .

Melanitis ismani Cramer

Medium sized butterfly with dirty - brown wings . Several not very distinct "eyes" present in a row parallel with the margin .

5 specimens caught during flight in the southern, eastern and northern part of the province .

Mycalesis misetes de Niceville

Small to medium sized butterfly with dark brown wings. One black "eye" with white central point present on fore wing .

7 specimens caught during flight in southern, eastern and northern forest areas .

Mycalesis nicosia Hewitson

Small to medium sized butterfly with dark brown wings . Row of "eyes" parallel with margin present on underside . One "eye" on each wing visible on upper side .

11 specimens caught during flight in southern and northern forest areas .

Ypthima nareda (Kollar)

Small sized butterfly with dark brown wings . One big "eye" present on upper side of fore wings . 2 smaller "eyes" on upper side of hind wing .

19 specimens caught during flight in southern and eastern forest areas .

NYMPHALINAE

So far 13 species were identified .

Aridane aridane L.

Medium sized butterfly with rusty brown wings. Several dark lines parallel with margin .

15 specimens caught during flight in southern and eastern forest areas .

Cethosia cynae Drury

Medium to large size butterfly with orange wings in female, whitish in male . Wings are fringed with black and the tip of fore wing is black with a white band .

28 specimens caught during flight (or reared) in the southern and eastern part of the province . We reared adult from larvae feeding on Passion flower in Chittagong .

Hypolimnas bolina (L.)

Large sized butterfly with blackish wings. One big white spot bordered with blue present on each wing .

1 specimen caught during flight in northern forest areas .

Junonia almana L.

Medium sized butterfly with brownish orange wings. Two "eyes" on each wing the biggest "eye" placed on the hind wing .

69 specimens collected during flight in all forest areas except in the northern part of the province .

Junonia atlites Johansson

Medium sized butterfly with slightly brown to fleshy coloured wings . 3 dark lines are found along with and a row of "eyes" , some of these , parallel with the margin .

20 specimens collected during flight in southern and eastern forest areas .

Junonia hierta Fabr.

Medium sized butterfly with yellow or lighty orange coloured wings . Hind wing with a large blue or violet irregular spot .

Junonia lemonias L.

Medium sized butterfly with dark brown wings. One big orange "eye " on each wing .

41 specimens caught during flight in the southern and eastern forest areas .

Junonia orithya L.

Small to medium sized butterfly with dark brown wings . A large irregular blue area on fore most part of hind wing . Two orange " eyes " on each wing .

10 specimens collected during flight in southern and northern forest areas .

Lebadea mortha Fabr.

Medium sized butterfly with brownish wings . A white band crosses fore - and hind wings , both .

3 specimens caught during flight in the southern - most part of the province .

Neptis hylas L.

Medium sized butterfly with brown and white striped wings .

24 specimens caught during flight in the southern and eastern forest areas . The larvae are believed to feed largely on foliage of cover crops in rubber plantations, and has not been recorded as a pest of forest trees . However, subspecies N.h. astola feeds on leaves of Dalbergia sissoo in India (BROWNE 1968, p. 470-71).

Parthenos gambrisius Fabr.

Large sized butterfly with brown and grey coloured patterns . A large part of fore wing transparent .

1 specimen caught during flight in Chittagong Hill Tracts . Specimens observed also in eastern forest areas

Preucus iphita Cramer

Medium sized butterfly with dark brown wings with lighter brown zones parallel with margins .

10 specimens caught during flight in southern and western forest areas .

Zemera flegyas Cramer

Small sized butterfly with brown wings , with many white and dark spots .

10 specimens collected during flight in southern and eastern forest areas .

PIERIDAE

10 species were identified so far .

Catopsilia crocale Cramer

Medium to large sized butterfly with sulphur yellow wings. Fore wings with black lip and margin, and one black spot .

15 specimens caught during flight in all forest areas of the province . We reared the adult from larvae feeding on Cassia fistula . Larvae are reported feeding on foliage of Butea frondosa , Bauhinia racemosa and Cassia spp. (BEESON 1961 , p. 508).

(BROWNE 1968, p. 137) Notes also Butea monosperma as host plant , but states that the species is most frequently associated with Cassia amiculata , C. fistula , C. javanica , C. nodosa , and C. siamea . The damage to Cassia is several, resulting in die - back or deformed growth .

Catopsillia pomona L.

Medium to large sized butterfly with slight yellow wings, sulphur yellow at the base .

51 specimens mainly caught during flight in all forest areas in the province except in the northern - most part . We reared the adults for larvae feeding on leaves of Cassia fistula. (BEESON 1961, p. 509) also re-ports Cassia fistula as a host plant , but the insect species does not appear as a major pest, although severe defoliations may occur occasionally (BROWNE 1968, p. 138).

Catopsilia pyranthe (L.)

Medium sized butterfly with bluish - white wings . Fore wing with black tip and small black spot .

47 specimens were collected mainly during flight in all forest areas except in the Sundarbans . We reared the adults from larvae feeding on Lannea coromandelica .(BEESON 1961, p.508) reported Cassia auriculata C. occidentalis, C. tora and Sesbania grandiflora as hosts . To this list BROWNE (1968, p. 138) added Cassia javanica, C. nodosa and C. siamea . He also states that severe damages sometimes have occurred in parts of India and Pakistan .

Delias agalia L.

Medium to large sized butterfly with dark wings, spotted with bluish-white . Inner part of hind wings yellow on upper side, red on under side .

1 specimen caught during flight in norther forest area .

Delias descobesi (Boisduval)

Medium to large sized butterfly with dark fore wings and yellow hind wings, the latter fringed with black .

1 specimen caught during flight in southern forest area .

Delias eucharis Drury

Medium to large sized butterfly with white wings, the veins drawn with black . A row of red spots present on the margin of hind wings.

9 specimens caught during flight in central and northern forest areas .

Delias hyparete indica (Wallace)

Medium to large sized butterfly with greyish fore wings and pinkish - whitish hind wings . Under side of hind wing yellow with broad red margin .

6 specimens caught during flight in southern and northern forest areas .

Eurema (Terias) hecabe L.

Small sized butterfly with yellow wing . Fore wings with black tip.

110 specimens caught in all forest areas of the province. The larvae feed principally on the foliage of Leguminaceae , but are also recorded feeding on trees of other families (BROWNE 1968, p. 291). The host register includes according to him and to BEESON (1961) : Acacia sp. , Albizzia procera , A. falcata , Caesalpinia sp. , Cassia fistula , C. siamea , Pithecolobium dulce , Sesbania sp. , Tectonia grandis , and Wagates sp.

Severe defoliations are known on Albizzia falcata (in Malaya) , Cassia siamea (in Fiji) and Tectonia grandis (in nurseries and young plantations in Malaya).

Huphina nerissa (Fabr.)

Small to medium sized butterfly with white wings patterned with black . An elongated white cell bordered with black is found on fore wing.

6 specimens caught during flight in southern, northern and western part of the province .

Pareronia hippa Fabr.

Medium to large sized butterfly with greenish-bluish wings .

Veins drawn sharply with black . Female darker than male .

4 specimens caught during flight in central and northern forest areas .

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