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ON LITTLE-KNOWN MOTHS OF TRIPURA, INDIA

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INTRODUCTION

The paucity of knowledge existing till date on the fauna of Lepidoptera from the state of Tripura in North-East India gives the authors an opportunity to attempt on the present problem. Quite a series of surveys were earlier conducted by different explorers in almost all other states and territories of the North-Eastern Himalayas. But the published account of Lepidoptera is far from complete from the hills and plains of Tripura or " Tipperah ", as earlier known under the " Province of Bengal " This is obviously due to the disadvantage of survey works caused by the prevalence of long range-*cum*-valley type of topography in the state concerned.

The present work highlights the systematic account of 47 species of moths together with their infra-specific variations, as and when observed, under 43 genera in 15 families, being preceded by brief notes on other items of interest as mentioned in the text. Besides, two tables, one dealing with the data of local collections and the other, with those of their global distribution as per literature review, are also incorporated. The measurement of wing expanse, i.e,the tip-to-tip distance between fore wings of bilaterally spread specimens, is given in millimeters (mm). The classification is mainly followed *sensu* Hampson (1892, 1894, 1895, 1896), but with subsequent modifications for the families as cited in the text. All the material, which constitute new locality records for Tripura, have recently been collected by different parties from the Zoological Survey of India chiefly during the pre-winter and winter seasons and, reposited at Z. S. I. Of these, only a few species could not, however, be determined, but their affinities have been provided. The paper is concluded by summary and references.

GENERAL CLIMATOLOGY

ABIOTIC FACTORS

1. *Physiography*

Chatterjee (1965) stated that the elevated lands of North-East India are divisible into three major physiographical areas, of which the "Purvachal", i.e., the eastern zone, is traversed by both mountain ranges of varying altitudes and plains. It is further split up into as many as six subareas. One such subarea is represented by Tripura, where the temperate forest-hills rise abruptly to about 800 metres above the Great River Brahamaputra. These hills are oriented as long ranges alternating with valleys. The edaphic pattern is mostly clayey in origin and thus seems to signify the recency of descency of the land mass in question.

The major undulated division of Tripura belongs to the Indian jurisdiction, whereas the greater portion of the plains is spread over the neighbouring country of Bangladesh. The Indian portion of the state is the smallest of all its counterparts in the North-Eastern Himalayas. It is situated at 23"-24°50' N latitudes and 91°21'- 92°50' E longitudes with an approximate area of 10,450 sq. kms. It is almost entirely surrounded by Bangladesh except the Mizo Hills on the east and the Cachar Hills on the north.

The state of Tripura includes the North, Central/Sadar and South districts. It is bathed by the north-flowing rivers like Zuri, Manu, Dhalai and Khowai and also the largest south-flowing river Gumti. The River Gumti receives a number of streams and cuts right across the ranges amidst deep valley from east to west before its emergence near Radhakishorepur. Also, there are several cascades along its course particularly through the Dumbura Hill.

2. *Climate*

This is made of a varying number of weatherological parameters, of which very important are temperature, humidity and photoperiodicity. In fact, the overall climatic pattern is subject to a fair degree of modifications which are principally brought about by the subtropical or temperate features of the state itself.

The meteorological data, *sensu* Basu (1965) and also the reports of recent faunistic surveys on behalf of Z.S.I. reveal that the maximum temperature is about 40°C in valleys and plains during the summer and the minimum, about 5°C in the hills during winter. The annual rainfall is about 2517.7 mm. The durational difference between the diurnal and nocturnal periods in the natural condition varies rather negligibly as in other areas in the outer line of the North-Eastern Himalayas.

BIOTIC FACTORS

1. *Flora*

In view of the comparatively higher moisture contents than those of colder niches of the Indian subregion, the state of Tripura elicits certain differences of floral distribution from that of the North-Western Himalayas and also Northern and Western Peninsulas.

The growth of plantations is luxurient enough particularly over the hill-tops and also down the valleys at places. These are covered in succession with tall grasses of the Savannah-type and dense forests of the evergreen and broad-leaved types.Elsewhere, majority of these forests are denuded mainly due to the practice of shifting cultivation of crops like jhuming.

The evergreen forests are made of *Pinus* spp. and sporadically distributed hygrophilous trees of *Tectona* together with *Dipterocarpus alatus*, *D. pilosus* and *D. turbinatus*. These are also represented by other plantations including *Anacardium occidentale*, *Bombax malabaricum*, *Castilloea elastica*, *Eugenia jambolana*, *Ficus bengalensis*, *F. esculentus*, *F.*

religiosa, *Shorea robusta*,etc., together with the species of *Bambusa*, *Calamus*, *Hevea* and *Plectoconnia*.

The broad-leaved type is mainly composed of *Acer saccharum*, *Betula alnoides*, *Machilus odoratissima* and also other species of *Castanopsis*, *Magnolia*, *Michaelia*, *Quercus*, etc.

It is quite interesting to note that the plantations on the hill-tops at Tripura are closely allied to those of the well explored Nilgiri Hills in South India, where the impact of maximum similarity of the present fauna is equally marked. Amongst the cultivated crops, *Camelia sinensis*, *Oryza sativa* and the species of *Corchorus* and *Gossypium* are important. Further, the work of afforestation, particularly with *Shorea robusta*, *Tectona grandis* and species of *Hevea*, etc., is in progress amidst certain deforested areas of the state.

2. *Fauna*

Presently, the moths, amidst other animals collected at Tripura, constitute the focal theme. At the initial stage of moth-exploration in the state, the material are represented by a rather poor number of species as compared to those of the well-surveyed adjoining areas of the North-Eastern Himalayas. Nevertheless, they help cast limelight on the distributional pattern of the moths in the state which remains hitherto unexplored in respect of the fauna concerned.

Customarily, the moths differ appreciably from the butterflies in all the four stages of life-cycle by both morphological and behavioural aspects in harmony with their general possession of cryptic *cum* crepusculo-nocturnal habits.Very often, they become seriously nuisible to various plant products of economic importance to mankind.

A total of 96 specimens under study apparently show an approximate sex-ratio of female: male :: 1 : 1.75. About two dozen of the material have been tagged with "at light" labels including 15 for male and 8 for female specimens. All these show that the females are more sluggish in habit and less observed in their ecotones than the comparatively fast-flying males.

BIOTIC ZONATIONS

In relation to the aforesaid account of climatology, the state may be conveniently classified into four distinctly delimited valleys and one plain, called the biotic zones. These, on an overall profile surveillance, alternate, in turn, with six hill ranges extending from western and southern to the eastern and northern directions. Of these, a couple of ranges in the west is also associated with the upland plains.

Only a single macroclimatic biotic zone, i.e., the Dharmanagar Valley, which is situated in the extreme north of Tripura between the Jamraitlang and Sakhantlang ranges and bathed by the rivers Zuri and Deo, could not be successfully explored for the moths.

The localities of the remaining four such zones, actually surveyed from north to south of the state (*vide* Table I) , are as hereunder.

I. KAILASHAHAR VALLEY : This zone is situated between the Sakhantlang and Langtharai ranges of the North Tripura district and bathed by the rivers Manu and Deo. It includes the following collecting localities :-

1. *Kanchanpur* : A fairly big town situated on the bank of the river Deo at a distance of about 40 kms. south of Kumarghat.

2. *Kumarghat* : The Disrict Headquarter situated on the Dharmanagar-Agartala High-way at a distance of about 60 kms. south-west of Dharmanagar.

3. *Manu* : A town situated on the bank of the river Manu at a distance of about 10 kms. north of a large village, Chailingta. The adjoining spot is Jarulcherra.

4. *Kailashahar* : The large forested area of the valley.

II. KAMALPUR VALLEY : This zone is situated between the Langtharai and Atharamura ranges also of the North Tripura district and bathed by the rivers Khowai and Dhalai. It includes the following collecting localities:-

1. *Ganganagar* : A small village situated on the bank of the river Khowai at a distance of about 28 kms. south of Ambassa.

2. *Ambassa*: A small town situated on the Dharmanagar- Agartala Highway at a distance of about 87 kms. east of Agartala; with dense forests in the outskirts. The adjoining spot is Garo Basti.

III. AGARTALA PLAIN : So named after the capital and also the Headquarter of the Central / Sadar district of Tripura, this zone is situated between the low Deotamura-Baramura ranges and the Indo-Bangladesh border on the west of the state. It is bathed by a system of tributaries of the Great River Brahamaputra, of which the largest Gumti flows over here from east to west. It includes a single collecting locality, as follows:-

Agartala : The biggest town of Tripura, with Perathea, Chandmari, Peratina and Bishalgarh as the adjoining collecting spots.

IV. KHOWAI VALLEY: This zone is situated between the Baramura and Atharamura ranges in the South Tripura district, being bathed mainly by the river Khowai. It includes the following collecting localities:-

1. *Charilam*: Located on the Agartala-Udaipur Road at a distance of about 25 kms. south of Agartala.

2. *Udaipur* : The District Headquarter, in the vicinity of which are situated Garjee and Banpath, both on the Udaipur-Belonia Road at a distance of about 65 kms. south of Agartala.

3. *Abhoya* : A small village of which the adjoining spot is Barpathari.

4. *Ampi* : Also a small village on the Amarpur-Teliamura Road at a distance of about 25 kms. south of Teliamura. The adjoining collecting spot is Khowaipur.

5. *Teliamura*: The second biggest town in the state of Tripura, being located at a distance of about 42 kms. east of Agartala. The adjoining spots are Kunjlina, Bramochara, Gomar Tilla, Kali Tilla and the Sripur Village.

6. *Belonia* : Situated at a distance of about 8 kms. south-east of Abhoya.

BIOGEOGRAPHY

The interesting pattern of distribution of the Heteroceran fauna in question may be viewed from two different angles, viz., intra-state (*vide* Table I, pages 330-332) and global (*vide* Table II, pages 333-334).

Within the state of Tripura, the maximum of a dozen of species are presently explored from Udaipur, being followed in diminutive sequence by 11 from Teliamura, 8 from Kumarghat, 6 from Ambassa, 4 from Agartala, 3 from Ampi, 2 each from Manu, Ganganagar, Charilam and Abhoya and one each from Kanchanpur, Kailashahar and Belonia. Of these, *Amata cyssea* (Cramer), *Euchera nigralbata superstigmaria* (Prout), *Spilarctia casigneta* (Kollar) and *Creatonotus transiens* (Walker) overlap at one or other niches between the first seven but fifth and the penultimate couple amongst the aforesaid localities. According to the data presently assessed, about 64% of the material under study are found in winter, 22% in the pre-winter and 14% in the summer. This apparently suggests that the conceivably low temperature is preferable for the overall thriving of the elements in their habitats. However, for a better conception of their detailed seasonal cycle, further explorations are needed in the state concerned.

As to the pattern of golbal distribution of the fauna, majority of the species are continental in origin, though over 50% are known from the insular belts of Australasia. These are principally oriental hill-dwellers, showing affinities more with the Palaearctic than with other fauna of the world, though the state of Tripura itself is bereft of alpine zone unlike the one elsewhere in the Himalayan inner line range. Analysing from the viewpoint of resemblance amongst the intra-oriental members, a little over 40% from the Chinese and about 50% from the Malayan subregions are mutually common. About 20% are confined in the Indian subregion, where in its different sectors the pattern of distribution of the elements may be broken up into gradations from maximum to the minimum number as given in parentheses in common with the Tripuran fauna. The sequence starts from the Southern Peninsula (33 spp.) onwards to the Eastern Peninsula (28 spp.), Sri Lanka (25 spp.), North-Western Himalayas (23 spp.), Western (22 spp.) and Northern Peninsulas (15 spp.), Andaman and Nicobar Islands (12 spp.) and Central Himalayas (7 spp.). Of these, quite a many, of course, overlap with one another depending on the similarity of their respective niches. Amongst the moths all recorded new for Tripura, no species is endemic nor, strictly speaking, cosmopolitian in India, though *Ceryx imaon sargania* (Butler) and *Eressa confinis catoria* Swinhoe are known to be confined in the North-Eastern Himalayas. With the present discovery, one more subspecies, i.e., *Leucoma submarginata hipparia* (Swinhoe), which was hitherto known from Singapore, also constitutes new locality record for the Indian subregion. Besides, at least one morph, i.e., *Eupterote fabia*, f. *discordans* Butler, is also new for the North-Eastern Himalayas. No material, however, is known to be common with the Laccadive Islands in the South-West Indian Ocean. It is further interesting to note that only a little over 20% of the material under study is represented in the nearest international border of Bangladesh.

Apart from the highest number of 14 species showing Palaearctic affinities, as observed

from the present data of distribution, 11 occur exotically in the Australian, 10 in the Ethiopian, 4 in the Papuan, 3 each in the Malagassic and Hawaiian, 2 in the Neotropical and only one in the Nearctic region.

SYSTEMATIC ACCOUNT

(For the details of material examined, vide code No. in Table I, Pages 330-332)

Order LEPIDOPTERA
Suborder HETEROCERA

I. Family EUPTEROTIDAE

1. **Eupterote fabia** (Cramer)

1779. *Phalaena fabia Cramer, Pap. Exot.*, **3** :pl. 250, fig. B.
1816. *Eupterote fabia*, Hübner, *Verz. bek. Schmett.*, p. 187.

Material examined.-(IV 5h).

Wing expanse.- 88 mm.

Distribution.- Nepal. India : Assam; Tripura; Sikkim; West Bengal (Darjeeling; Calcutta); Andhra Pradesh (Coromandel); Karnataka (Belgaum); Tamil Nadu; Kerala(Malabar). Sri Lanka.

Remarks.- The species was originally referred to as "*Bombyx fabia* Olive."by Cotes &Swinhoe (1887), who , however, did not mention the year of publication of the same. The specimen, which was not earlier known from Tripura, fits well in the species. Hampson(1892) and Seitz(1933) mentioned sexual dimorphism as well as about half a dozen of morphs (ff.) of the species from India. The moth is referable to one such morph (f.), as hereunder.

f. **discordans** Butler: This is recognised by the wings brown in female which is nearly identical in facies with that sex of E. *undata*, f. *invalida* Butler from India and Burma.Hitherto known from Calcutta, it is recorded new for the North-Eastern Himalayas.

II. Family SPHINGIDAE

Division Semanophorae
Subfamily PHILAMPELINAE
Tribe Nephelini

2. **Sphingonaepiopsis pumilio** (Boisduval)

1875. *Lophura pumilio* Boisduval, *Spec. Gén. Lép. Hét.*, **1** : 311.
1903. *Sphingonaepiopsis pumilio*, Rothschild & Jordan, *Revision of Sphingidae*, p. 592.

Material examined.- (II 2c).

Wing expanse.- 31mm.

Distribution.- China. India : Assam (Cachar); Meghalaya (Khasi Hills, c 1525 m); Tripura . Bangladesh. Western Malaysia.

Remarks.- The species, in which the specimen fits well, is known to exhibit crypsis as a dried-up leaf in the natural surrounding. Mimicry with other life-forms is, however, unknown. The moth under study is a little larger in wing expanse than that in male, as mentioned by Bell & Scott (1937). Rare in India, it is recorded new for Tripura.

3. **Macroglossum insipida insipida** Butler

1875. *Macroglossa insipida* Butler, *Proc. zool. Soc. Lond.*,p.242.
1903. *Macroglossum insipida insipida*, Rothschild & Jordan, *Revision of Sphingidae*,p. 642, pl. 3, fig. 10.

Material examined. - (IV 5e).

Wing expanse.- 42 mm.

Distribution.- India : Sikkim; Tripura; Southern Peninsula; Andaman & Nicobar Islands (the Andamans). Bhutan. Sri Lanka. Malaya.

Remarks.- The specimen, a new record for Tripura, fits well in the nominate subspecies of *insipida* Butler. The moth is not known to be attracted to light. Bell & Scott (1937) stated to "have bred the subspecies in S. India, where it is very plentiful towards the end of the rainy season, in forests with very heavy rainfall up to 1000 feet elevation" The subspecies is the only known Indian representative of the species in question.

III. Family SYNTOMIDAE

4. **Ceryx imaon sargania** (Butler)

1879. *Syntomis sargania* Butler, *Trans. ent. Soc. Lond.*, p. 4.
1933. *Ceryx imaon sargania*, Seitz, *Macrolep. World*,**10** : 65

Material examined.- (I 2e).

Wing expanse.- 28-32 mm.

Distribution.- India : Assam (Cachar); Tripura.

Remarks.- This is one of the three known Indian subspecies of *Ceryx imaon* (Cramer). It is distinguished from ssp. *artina* (Butler) and *mota* (Swinhoe) by the fore wings with a long streak between M1 and M2. Seitz (1933) figured a female specimen from Sri Lanka, in which the wings are without hyaline spots. Diurnal and flower-frequenting in

habit, the moth reposes with wings spread out in its niches and when disturbed, takes a darting flight. It mimicks the non-Lepidopteran insects showing a dancing flight aided by the appendage-like hind wings. The specimens are locally common but endemic in the Assam Himalayas. These fit well in the subspecies recorded new for Tripura. Certain schools of thought have, however, introduced the names of the family as "Amatidae" and "Ctenuchidae", but the authors retain here the name "Syntomidae" as such.

5. **Amata sperbius** (Fabricius)

1787. *Zygaena sperbius* Fabricius, *Mant. Ins.*, **2** : 103.
1933. *Amata sperbius*, Seitz, *Macrolep. World*, **10** : 68, pl. 10, figs. g, h.

Material examined.- (IV 2f).

Wing expanse.- 30-33 mm.

Distribution.- South China. Vietnam. India : Sikkim; Assam (Cachar); Tripura. South Burma.

Remarks.- A new record for Tripura, the species is found in the North-Eastern Himalayas and elsewhere. According to Seitz (1933), the female is very robust and black, with the anal segment clothed with yellow-grey hairs. He (*loc. cit.*) further observed that the specimens particularly from Sikkim and Hainan have hind wings of variable colourations of geographical interest, though no subspecies hased on this character has ever been mentioned. The present material fit well in the species with little variation of the hind wing colour.

6. **Amata cyssea** (Cramer)

1782. *Sphinx cysseus* Cramer, *Pap. Exot.*, **4** : 124, pl. 355, fig. B.
1933. *Amata cyssea*, Seitz, *Macrolep. World*, **10** : 68

Material examined.- (I 3), (II 2e), (IV 2e).

Wing expanse.- 25-32 mm.

Distribution.- The Palaearztic region. Pakistan. Nepal. India : Jammu & Kashmir (Kashmir); Himachal Pradesh (Kangra); Sikkim; Tripura; Nagaland; Madhya Pradesh (Mhow); Maharashtra (Bombay); West Bengal (Calcutta); Andhra Pradesh (the Coromandel Coast). Sri Lanka.

Remarks.- The specimens, previously unknown from Tripura, fit well in the species. Seitz (1933) mentioned two aberrants, viz., ab. *cysseoides* (Butler) and ab. *georgina* (Butler), showing respectively "larger" and "reduced" hyaline spots on wings, but no material under study is referable to these aberrants. Earlier, Hampson (1892) considered

the latter aberrant as a distinct species, and the former as its synonym under the genus *Syntomis* Ochsenheimer which has lately been considered as subgenus of *Amata* Fabricius by Obraztsov (1966).

7. **Eressa confinis catoria** Swinhoe

1900. *Eressa catoria Swinhoe, Ann. Mag. nat. Hist.*, (7) **6** : 305.
1933. *Eressa confinis catoria*, Seitz, *Macrolep. World*, **10** : 83.

Material examined.- (I 2c).

Wing expanse.- 24-27mm.

Distribution.- India : Assam; Tripura. Bhutan.

Remarks.- This is one of the three known Indian subspecies of *E. confinis* (Walker). It differs from ssp. *musa* (Swinhoe) and ssp. *intensa* (Rothschild) by the hind wings being dark and unspotted. All the specimens, recorded new for Tripura, fit well in ssp. *catoria* which is confined in the North-Eastern Himalayas, being rather common in the state under review.

IV. Family ZYGAENIDAE

Subfamily CHALCOSIINAE

8. **Trypanophora semihyalina** Kollar

1848. *Trypanophora semihyalina* Kollar, *Hugel's Kaschmir*, **4** :457, pl. 19, figs. 1-4.

Material examined.- (I 3).

Wing expanse.- 47 mm.

Distribution.- South China. India : Jammu & Kashmir; Himachal Pradesh (Kangra); Sikkim; West Bengal (Darjeeling; Calcutta); Assam (Cachar); Tripura; Southern Peninsula. Burma.

Remarks.- The specimen, a new record for Tripura, fits well in the species and may be referred to one of the three Indian forms, *sensu* Hampson (1892) and Jordan (1933).

f. **semihyalina** Kollar : This differs from f. *argyrospila* Walker and *humeralis* (Walker) by the discal hyaline patches of fore wings large, tegulae orange and abdomen with complete bands. Apparently, it is not common at Tripura, though Jordan (1933) mentioned the form as "widely distributed in North India"

V. Family DREPANIDAE
Subfamily EUCHERINAE

9. **Euchera nigralbata superstigmaria** (Prout)

1918. *Cyclidia substigmaria superstigmaria* Prout, *Ann. Mag. nat. Hist.*, (9) **2** : 416.
1934. *Euchera nigralbata superstigmaria*, Gaede, *Macrolep. World*, Suppl. **2** : 167.

Material examined.- (II 2f, g), (IV 2g), (IV 5c), (IV 5f).

Wing expanse.- Males, Female 65 - 75 mm.

Distribution.- Nepal. India: Jammu & Kashmir; Himachal Pradesh (Solan; Kulu; Dharmsala); Uttar Pradesh (Mussourie); Sikkim; West Bengal (Darjeeling; Malda); Assam (Dansiri; Silchar; Sibsagar); Meghalya (Khasi Hills; Shillong); Tripura. Bhutan. Burma. Bangladesh.

Remarks.- This is the only Indian subspecies of *E. nigralbata* (Warren). The specimens, new for Tripura, fit well in the subspecies and are common in status. Only in one male, the apex of fore wings is more acute than falcate and 1A of hind wings extends up to a little beyond the middle of anal margin. All the specimens are quite smaller in wing expanse than that given by Hampson (1892) for the species.

VI. Family LIMACODIDAE

Subfamily LIMACODINAE

10. **Susica pallida** Walker

1855. *Susica pallida* Walker, *Cat. Lep. Het. Brit. Mus.*, **5** : 1114.

Material examined.- (IV 2g).

Wing exapnse.- 33mm.

Distribution.- Nepal. India : Sikkim; Tripura. Burma. Japan.

Remarks.- The species, in which the specimen fits well, is a new record for Tripura. The nearest ally, *Tadema sinensis* Walker from China, which was synonymised with *S. pallida* Walker by Hampson (1892) and Seitz (1913), has been revalidated to the specific status under Susica Wasker by Hering (1933,1934). The specimen is larger in wing expanse than that reported earlier.

11. **Phocoderma velutinum** (Kollar)

1848. *Gastropacha velutina* Kollar, Hügel's *Kaschmir*, **4** : 473.
1933. *Phocoderma velutinum*, Hering, *Macrolep. World*, **10** : 720, pl. 90, fig. a.

Material examined.- (IV 5c).

Wing expanse.- 51 mm.

Distribution.- Pakistan. India : Jammu & Kashmir; Uttar Pradesh (Mussourie); Sikkim; Assam (Cachar); Tripura; West Bengal (Malda); Maharashtra (Pune). Burma. Borneo.

Remarks.- The species is well represented by the specimen not earlier known from Tripura. Seitz (1913) mentioned it as "the largest Limacodid", with wing expanse reaching to 78 mm. in female. He (*loc. cit.*) also stated about the distribution of the moth as "throughout the Himalayas and North India, one of the commonest Limacodids; in the spring until May and again in August and September, from 1000 to 5000 ft." But hunting of other literature reveals no locality at least in the Northern Peninsula, from where the species has ever been recorded. The species, earlier placed under *Natada* Walker by Seitz (*loc.cit.)* and also Hampson (1892), has been retransferred to *Phocoderma* Butler by Hering (1933,1934).

12. **Altha nivea** Walker

1862. *Altha nivea* Walker, *J. Linn. Soc. Lond.*, **6** : 173.

Material examined.- (III 1c).

Wing expanse.- 32 mm.

Distribution.- India : Jammu & Kashmir ; Himachal Pradesh (Simla; Solan; Kulu); Sikkim; Assam (Sibsagar); Tripura; Punjab; Madhya Pradesh (Mhow); Maharashtra (Pune); Bihar (Ranchi); Orissa (Ganjam); Southern Peninsula Sri Lanka.

Remarks.- This is the only Indian species of the genus *Altha* Walker, which, *sensu* Seitz (1913), reaches the Palaearctic territory in Kashmir. A new record for Tripura, the specimen fits well in the species. It resembles the form from Sikkim with olive markings in fore wings in which R_2 is stalked with R_{3-5}. Hampson (1892) synnonymised *Candyba punctata* Moore with the species under study, though he (*loc. cit.*) noted, "*Candyba punctata* , Walk., is from Brazil, and the genus is distinct from *Altha*" But this statement was against the view of Cotes & Swinhoe (1887), who already catalogued *C. punctata* from the Indian subregion.

VII. Family LASIOCAMPIDAE

13. **Arguda** sp.

Material examined.- (I 2b).

Wing expanse.- 45 mm.

Remarks.- The specimen fits well in the genus *Arguda* Moore excepting for the eyes being "densely" hairy, as mentioned by Grünberg (1913, 1933). The moth,which could not be identified up to the species, is apparently close to *A. vitta* Moore from the Sundaland, but differs from it by the colouration of the body being paler, fore wings dorsally without discal spot, with postdiscal band and subterminal line indistinct and ventrally with the subterminal band represented by a row of vermilion dots and also the distal area of hind wings paler. The species, of which the male is not known, appears to be rare at Tripura.

VIII. Family LYMANTRIIDAE

Subfamily LYMANTRIINAE
(i) Group Areolatae

14. **Dasychira lineata** (Walker)

1855. *Lymantria lineata* Walker (*pt.*). *Cat. Lep. Het. Brit. Mus.*, **4**: 875
1933. *Dasychira lineata*, Strand, *Macrelep. World*, **10**: 294, pl. 47, flg. a.

Material examined.- (IV 5g).

Wing expense.- 68 mm.

Distribution.- India : Sikkim; Assam (Dansiri); Meghalaya (Khasi Hills); Nagaland; Tripura. Bhutan. Bangladesh. Burma.

Remarks.- A new record for Tripura, the specimen fits well in the species, excepting for the postdiscal and subterminal lines which are much obsolete. Also, the wing expanse is considerably smaller than that mentioned by both Hampson (1892) and Strand (1933).

15. **Leucoma submarginata hipparia** (Swinhoe)

1893. *Redoa hipparia* Swinhoe, *Ann. Mag. nat. Hist.*, (6) **12** : 213.
1933. *Leucoma submarginata hipparia*, Strand, *Macrolep. World*, **10** : 310.

Material examined.- (IV 2b).

Wing expanse.- 38 mm.

Distribution.- India : Tripura. Singapore.

Remarks.- The specimen fits well in the Indian subregion. It differs from subspecies which was not previously known from ssp. *sikkima* Strand at Sikkim and Darjeeling by the fore wings with a very small black discal spot and also, like the hind wings, being transparent white, with minute silvery striae and cilia flesh-coloured. It has the wing

expanse larger than that mentioned by Strand (1933). While Hampson (1892) treated *Redoa* Walker as subgenus of *Leucoma* Stephens, Hering (1930) revalidated it to the generic status including the African species. Hering (*loc. cit.*) cross-referred to *Leucoma* in the Palaearctic Fauna of *Macrolep. World* (Vol. II : 1913) at "p. 123", but the genus could not be traced therein, though strand *(loc. cit.)* did mention the Palaearctic distribution of sp. *submarginata* Walker.

16. **Pendria** sp.

Material examined.- (IV 4b)

Wing expanse.- 45 mm.

Remarks.- The specimen fits well in the genus *Pendria* Swinhoe. The moth, which could not be identified up to species, seems to be allied to *P. rinaria* (Moore) from India (Khasi Hills), Sumatra and Java, but differs from it by the body and fore wings ochreous, latter with distal bands untraceable, subapical spot single, hind wings whitish and cilia in both wings brown throughout. Also, the wing expanse is much reduced, as compared to that of sp. *rinaria* (*vide* Hampson, 1892; Strand, 1933). The species, of which the male is unknown, appears to be rare at Tripura.

(ii) Group Inareolatae

17. **Lymantria** sp.

Material examined.- (IV 5e).

Wing expanse.- 59mm.

Remarks. - The specimen, which fits well in the genus *Lymantria* Hübner, is very much allied to *L. subrosea* (Swinhoe) [=*rosea* Hampson, nom. praeocc.] from India (Assam) and Sri Lanka, but differs from it by the antennal shaft and fore wings not pure white, head, thorax and legs tinged crimson and also by the larger wing expanse (*cf. subrosea* in Hampson, 1892 and Strand, 1933). It is apparently rare at Tripura.

18. **Euproctis** sp.

Material examined.- (I 2g).

Wing expanse.- 49mm.

Remarks.- The specimen, belonging to the genus *Euproctis* Hubner, has close alliance with *E. tonkinensis* Strand from Tonkin, but differs from it by the presence of discal spot on the ventral side of both fore- and hind wings. Strand (1933) stated to have described *tonkinensis* "hesitatingly" by a male which "resembles *E. plana* Wlk., *E. catala* Swh., etc.",

but none of these species, all known from India, has ever been reported to have ventro-discal spots on wings. The present specimen, which is larger in expanse, could not, however, be described new to science due to paucity of material. Apparently, it may be a case of rare geographical variation of *E. tonkinensis* at Tripura.

19. **Perina pura** Walker

1869. *Perina pura* Walker, *char. undecr. Het.*, p. 17.

Material examined.- (III 1b)

Wing expanse.- 43mm.

Distribution.- India : Assam (Cachar) ; Tripura ; West Bengal (Calcutta).

Remarks.- This is one of a couple of very similar species of *Perina* Walker. It differs from sp. *nuda* (Fabricius) of the Indo-Sino- plaearctic areas by head, thorax and abdomen whitish. Hampson (1892) and Strand (1933) mentioned sp. *pura* from "North India", but its occurrence in the Northern Peninsula is doubtful. A new record for Tripura, the moth is known to frequent the fig trees shading the streets of tropical towns.

IX. Family HYPSIIDAE

20. **Asota caricae caricae** (Fabricius)

1794. *Noctua caricae* Fabricius, *Ent. Syst.*, **3** (2) : 27.
1933. *Asota caricae caricae*, Seitz, *Macrolep. World*, **10** : 227, pl. 27,fig. d.

Material examined.- (IV 5h).

Wing expanse.- 55 mm.

Distribution.- South China. Vietnam. India : Himachal Pradesh (Kulu); Sikkim; West Bengal (Darjeeling); Assam (Cachar; Sibsagar); Tripura; Maharashtra (Bombay) ; the Andamans. Burma. Sri Lanka. Sundaland. The Philippines.

Remarks.- The specimen, which is a new record for Tripura, fits in the only known Indian subspecies of *Asota caricae*, though it shows certain variations, viz., antennal cilia long-bristled, fore wings with M_1 from below upper angle, hindwings with subterminal row of spots incomplete and abdomen with a prominent dorsal black spot on segment IV. Also, it has a smaller wing expanse than that mentioned by Hampson (1892). The moth appears to be rare at Tripura, though Seitz (1933) stated, "..... imago is extremely common and may be beaten out from the bushes, in which it rests on the underside of leaves". The element was treated by Hampson (*loc. cit.*) under the name of *Hypsa alciphron* (Cramer), with *H. plaginota* Butler as synonym, under Hypsidae; later, it was transferred to *Asota* Hubner (=

Hypsa Hubner) under Hypsinae of Arctiidae by Seitz (*loc. cit.*), who revalidated *plaginota* to the specific status under that genus. Presently, however, the species in question is retained under the family Hypsiidae. Further, Seitz's (*loc. cit.*) citation as, "*A caricae* Bsd.", "*caricae* Don. nec F., ...", is under the comment reserved by the authors.

X. Family ARCTIIDAE

(A) Subfamily SPILOSOMINAE

21. **Spilarctia casigneta** (Kollar)

1844. *Euprepia casigneta* Kollar, *Hugel's Kaschmir*, **4** (2) : 469.
1913. *Spilarctia casigneta*, Seitz, *Macrolep. World*, **2** : 85, pl. 15, fig. b.

Material examined. - (I 2d), (II 2b).

Wing expanse.- 2 Females 36 – 40, 2 Males 48 – 52 mm.

Distribution.- Eastern Siberia. China. India : Jammu & Kashmir; Himachal Pradesh (Kangra; Dharmsala; Dalhausi; Kasauli); Uttar Pradesh (Dehra Dun; Mussourie) ; Sikkim; Assam (Sibsagar); Nagaland; Manipur; Tripura; Arunachal Pradesh ; West Bengal (Calcutta); Maharashtra (Bombay) ; Tamil Nadu (Nilgiris). Bhutan. Burma. Korea. Japan.

Remarks.- The specimens, fitting in the species, are new record for Tripura. These show certain variations, viz., antennae in female tipped with long blackish bristles, antemedial speck on 1A of fore wings in male single or absent, Sc+R1 arising from well before the middle of cell of hind wings and abdomen in female with small blunt and buff anual tufts. Also, the wing expanse in both sexes is much reduced as compared to that given by Hampson (1901),who, however, considered the species in the subfamily Arctiinae. Amongst the material examined, which appear to be common at Tripura, none is referable to the aberrations mentioned by Hampson (*loc. cit.*) and Seitz (1913).

(B) Subfamily ARCTIINAE

22. **Creatonotus gangis** (Linnaeus)

1764. *Phalaena gangis* Linnaeus, *Amoen. Acad.*, **6** : 410.
1901. *Creatonotus gangis*, Hampson, *Cat. Lep. Phal. Brit. Mus.*, **3** : 333.

Material examined.- (II 2d).

Wing expanse.- 39 mm.

Distribution.- China. Pakistan. Nepal. India : Assam (Cachar ; Sibsagar); Meghalaya (Cherrapunji); Tripura; Arunachal Pradesh; Madhya Pradesh (Mhow); West Bengal (Cal-

cutta); Gujarat (Ahmedabad); Maharashtra (Bombay); Andhra Pradesh (Hyderabad); Tamil Nadu (Nilgiris) ; Kerala (Coromandel). Burma. Sri Lanka. Western Malaysia. Java. Australia.

Remarks.- The specimen, fitting in the species, is a new record for Tripura. It shows certain variations, viz., tegulae not broadly black-striped, fore wings with R2 from cell and not stalked with R3-5 (*cf.* Hampson, 1901), black dot at upper and lower angles of cell absent and hind wings with an additional black marking near outer angle and the dark subterminal spot on M2 very minute. Certain aberrations were mentioned earlier by Hampson *(loc. cit.)* and Rothschild (1933), and one more is presently observed in that the stalk of M3 and Cu1a of the right hind wing is much longer than that of the left. The moth is known to be common, though it is apparently not so at Tripura. The species, of which the generic name was spelt as "*Creatonotos*" by Strand (1919) and followed by Daniel (1943), was, however, placed in the subfamily Spilosominae by the latter. The material may be referred to one of the two morphs (ff.), *sensu* Seitz (1913), as hereunder.

f. **gangis** (Linnaeus) : This differs from f. *continuatus* Moore by the median stripe of fore wings not connected with the cell.

23. **Creatonotus transiens** (Walker)

1855. *Spilosoma transiens* Walker, *Cat. Lep. Het. Brit. Mus.*, **3** : 675.
1901. *Creatonotus transiens*, Hampson, Cat. *Lep. Phal. Brit. Mus.*, **3** : 334, fig. 150.

Material examined.- (I 1), (I 2f), (IV 3), (IV 4a), (IV 5a).

Wing expanse.- 2 Females 35 - 45, 2 Males 45 - 50 mm.

Distribution.- China. India : Jammu & Kashmir; Himachal Pradesh (Simla; Kulu); Uttar Pradesh (Kumaon); Skkim; Assam (Sibsagar); Tripura ; Arunachal Pradesh; Punjab (Sultanpur) ; West Bengal (Calcutta); Karnataka (Belgaum); Tamil Nadu (Nilgiris). Bhutan. Bangladesh. Burma. Java. Borneo. Sulawesi. The Philippines. Moluccas.

Remarks.- The species, in which the material fit well, is a new record for Tripura and was also treated, like the preceding one, in the subfamily Spilosominae by Daniel (1943). It was considered under the genus *Phissama* Moore by Hampson (1894), Seitz (1913) and also Daniel (*loc. cit.*) . It shows sexual dimorphism in which the female differs from the male by the creamy-white fore wings and subhyaline hind wings with three black subterminal dots. Certain additional characters and variations are presently observed, viz., fore wings with 2 spots each in and just beyond the cell in both sexes and one small black tornal spot in a single female, hind wings with Cu1a and M3 shortly stalked in males and one subterminal black spot above M2 and two in the anal area in females. Also, the wing expanse in both sexes is smaller than that as mentioned by Hampson (1901). Apparently common at Tripura, the moth dwells in bushes, shows diurnal flight and also becomes attracted to light. The specimens may be referred to two morphs (ff.), *sensu* Hampson (1894), as hereunder.

(a) f. **transiens** (Walker) : Almost white, to which belong four specimens.
(b) f. ***vacillans*** (Walker) : Dark fuscous and hind wings with white cilia, to which belong eight specimens.

XI. Family AGARISTIDAE

24. **Episteme adulatrix** (Kollar)

1848. *Eusemia adulatrix* Kollar, *Hugel's Kaschmir*, **4** : 464, pl. 20, fig. 1.
1914. *Episteme adulatrix*, Jordan, *Macrolep. World*, **3** : 6, pl. 1, fig. a.

Material examined.- (III 1d).

Wing expanse.- 74 mm.

Distribution.- China. Vietnam. Nepal. India : Jammu & Kashmir ; Himachal Pradesh (Simla) ; Uttar Pradesh (Mussourie) ; Sikkim ; Assam (Cachar ; Sibsagar) ; Meghalaya (Cherrapunji) ; Nagaland ; Tripura ; Madhya Pradesh (Mhow) ; Maharashtra (Ratnagiri ; Bombay ; Pune) ; Bihar ; Karnataka (Belgaum ; Kanara) ; Kerala (Calicut) ; Tamil Nadu (Nilgiris). Bhutan. Burma. Sri Lanka.

Remarks.- This is the only Indian species of the genus *Episteme* Hübner, in which the specimen fits well. A new record for Tripura, this diurnal element has the wing expanse smaller than that cited by Hampson (1894). Jordan (1914) mentioned the species as "common in north India, rarer in Kashmir and West China" The specimen may be referred to one of the four forms, " occurring irrespective of locality ", *sensu* Hampson (*loc. cit.*).
f. **afflicta** (Butler) : It differs from *sectinotis* (Butler), *contracta* (Bulter) and *simplex* (Bulter) by the postdiscal spots of fore wings reduced in size.

XII. Family NOCTUIDAE
(A) Subfamily HADENINAE

25. **Pseudaletia separata** (Walker)

1865. *Leucania separata* Walker, *Cat. Lep. Het. Brit. Mus.*, **32** : 626.
1965. *Pseudaletia separata*, Ramani & Rao, *Indian J. Ent.*, **27** (3) : 363.

Material examined.- (IV 3).

Wing expanse.- 40 mm.

Distribution.- Europe. U. S. S. R. The Ethiopian region. China. Pakistan. India : Jammu & Kashmir ; Himachal Pradesh (Simla ; Kasauli ; Kulu ; Solan ; Dharmsala ; Narkunda); Sikkim ; West Bengal (Darjeeling ; Calcutta) ; Assam (Sibsagar) ; Meghalaya (Shillong; Khasis) ; Manipur ; Tripura ; Punjab (Sultanpur ; Murree ; Cambellpur) ; Madhya Pradesh

(Mhow; Jabbalpur); Maharashtra (Bombay; Pune); Tamil Nadu (Nilgiris). Java. Australia. Papua. Neotropical and Nearctic regions. Korea. Japan.

Remarks.- The species was earlier considered as synonym of *Cirphis unipuncta* (Haworth) by Hampson (1905) and later of *Sideridis unipuncta* (Haworth) by Warren (1914). The moth, a new record of Tripura, fits well in the species. It may be referred to one of a couple of aberrations, *sensu* Hampson (*loc. cit.*), as hereunder.

ab. **punctulata** (Blanchard) : This differs from ab. *saccharivora* (Bulter) by body grey-brown and fore wings with striae and stigmata quite distinct.

26. **Cirphis yu** (Guenee)

1852. *Leucania yu* Guenee, *Hist. nat. Ins. Lep. Noct.*, **1** : 78.
1905. *Cirphis yu*, Hampson, *Cat. Lep. Phal.. Brit. Mus.*, **5** : 550.

Material examined.- (II 1b).

Wing expanse.- 35 mm.

Distribution.- India : Sikkim ; Tripura ; Maharashtra (Bombay) ; Karnataka (Kanara); Kerala (Malabar) ; the Andaman & Nicobar Islands. Burma. Sri Lanka. Singapore. Borneo. The Philippines. Loochoo Islands.

Remarks.- The species, in which the specimen fits well, was formerly called *Leucania exempta* Walker. It is a new record for Tripura.

(B) Subfamily ACRONYCTINAE

27. **Prodenia litura** (Fabricius)

1775. *Noctua litura* Fabricius, *Syst. Ent.*, p. 601.
1909. *Prodenia litura*, Hampson, *Cat. Lep. Phal. Brit. Mus.*, **8** : 245.

Material examined.-(IV 5h).

Wing expanse.- 35 mm.

Distribution .- Africa. Western Asia. China. Nepal. India : Himachal Pradesh (Kulu ; Kasauli ; Dharmasala) ; Uttar Pradesh (Allahabad) ; Punjab (Sultanpur) ; Sikkim ; Manipur; Tripura ; Maharashtra (Bombay ; Bandra ; Ratnagiri) ; Karnataka (Kanara); Kerala (Travancore ; Permad) ; Tamil Nadu (Nilgiris ; Coimbatore). Burma. Sri Lanka. Singapore. Borneo. Java. Papua. Australia. The Hawaiian region.

Remarks.- The species, in which the specimen fits well, is a new record for Tripura. It was, however, placed in the subfamily Amphipyrinae by Warren (1914).

28. **Laphygma exigua** (Hubner)

1808. *Noctua exigua* Hubner, *Eur. Schmett. Noct.*, p.362.
1909. *Laphygma exigua*, Hampson, *Cat. Lep. Phal. Brit. Mus.*, **8** : 265, fig. 68.

Material examined.- (IV 6).

Wing expanse.- 27 mm.

Distribution.- Europe. Africa. U.S.S.R. Western Asia. China. Vietnam. India : Himachal Pradesh (Simla ; Dharmsala) ; Sikkim ; Manipur ; Tuipura ; Punjab (Cambellpur) ; Uttar Pradesh (Allahabad) ; Tamil Nadu (Gooty ; Nilgiris). Burma. Sri Lanka. Australia. Hawaii. Japan.

Remarks.- The species was also placed in the subfamily Amphipyrinae by Warrem (1914). It is known to be a pest on Lucerne and Cotton. The specimen, a new record for Tripura, fits well in the species and may be referable to one of the two aberrations, *sensu* Hampson (1909).

ab. **pygmaea** (Rambur) : Recognisede by the fore wings being almost uniformly pale brown and size very small.

(C) Subfamily CATOCALINAE

29. **Parallelia fulvotaenia** (Guenee)

1852. *Ophiusa fulvotaenia* Guenee, Hist. nat. Ins. Noct., **3** : 272.
1913a. *Parallelia fulvotaenia*, Hampson, *Cat. Lep.Phal. Brit. Mus.*, **12** : 585.

Material examined.- (IV 2d).

Wings expanse.- 64 mm.

Distribution.- Natal. Central and South China. India : Assam (Dibrugrah); Tripura. Bangladesh. Burma. Sri Lanka. Western Malaysia. Sumatra. Borneo. Java. Japan.

Remarks.- The moth , a new record for Tripura, fits well in the species which is widely distributed from the Ethiopian region to the Far East. It has wing expanse much smaller than that mentioned by Hampson (1913 a). Warren (1914), who treated the species in the genus *Ophiusa* Ochsenheimer, however, noted, " two or three appreciably different forms " including two of his subspecies from the Austro-Malayan belts, but none of these holds good for the present material.

30. **Chalciope hyppasia** (Cramer)

1779. *Noctua hyppasia* Cramer, *Pap. Exot.*, **3** : 99, pl. 250, fig.E.
1913 b. *Chalciope hyppasia*, Hampson, *Cat. Lep. Phal. Brit. Mus.*, **13** : 27.

Material examined.- (I 2e).

Wing expanse .- 42-43 mm.

Distribution .- The Ethiopian and Malagassic regions. Western Asia. China. Pakistan. India : Himachal Pradesh (Kulu; Kangra); Uttar Pradesh (Mussourie; Allahabad; Kanpur);Punjab (Sultanpur); Assam; Meghalaya (Shillong); Manipur; Tripura; West Bengal (Calcutta); Maharashtra (Bombay; Pune; Ratangiri); Tamil Nadu (Nilgiris; Coimbatore); the Andaman & Nicobar Islands (Camorta; Nancowry). Burma. Sri Lanka. Sundaland. The Philippines. The Australo-papuan regions.

Remarks.- The moth , a new record for Tripura, fits well in the species formerly known under the genus *Trigonodes* Guenée. Reportedly, it shows sexual dimorphism in which the hind wings of female is much browner than in male. The specimen under study may be referable to one of the three aberrations, *sensu* Hampson (1913 b).

ab. **inacuta** (Guenee) : Recognised by the fore wings with the postdiscal triangular patch shorter.

31. **Mocis undata** (Fabricious)

1775. *Noctua undata* Fabricious, *Syst. Ent.*, p. 600.
1913b. *Mosic undata*, Hampson, *Cat. Lep. Phal. Brit. Mus.*, **13** : 91, fig.25.

Material examined.- (I 2a).

Wing expanse.- 40 mm.

Distribution.- The Ethiopio-Malagassic regions. China. India : Himachal pradesh (Dharmsala) ; Assam (Dibrugarh) ; Meghalaya (Shillong) ; Manipur ; Tripura ; Uttar Pradesh (Allahabad) ; Punjab; Madhya Pradesh (Jabbalpur); Bihar (Darbhanga); West Bengal (Calcutta); Maharashtra(Bombay; Ratnagiri; Thane;Wangni); Kerala (Travancore); Tamil Nadu (Nilgiris); the Andaman and Nicobar Islands (Nancowry). Bangladesh. Burma. Sri Lanka. Western Malaysia Sumatra. Java. The Philippines. Korea . Japan.

Remarks.- The moth, which fits well in the species, is a new record for Tripura. The species was formerly known as *archesia* (Stoll *in* Cramer) under the genus *Remigia* Guenee, Which was , on one hand, synonymised with *Mocis* Hübner by Hampson (1913 b) and segregated, on the other , as a valid genus by Warren (1914). Warren (*loc. cit.*), however, placed the species in question under *Cauninda* Moore. *M. undata* is known to exhibit sexual dimorphism in which the female has hind wings ventrally deep yellow. The specimen under study is closely allied to one of the five forms, i.e., *gregalis* (Guenee) from Taiwan and Java, being dull grey and without black spot in the area of dorsum, but it differs by the prominent distal markings of fore wings.

32. **Pericyma umbrina** (Guenee)

1852. *Alamis umbrina* Guenee, *Hist. nat. Ins. Noct.*, **3**:4.
1913 b. *Pericyma umbrina*, Hampson, *Cat. Lep. Phal. Brit. Mus.*, **13** : 301, fig. 75.

Material examined.- (IV 2a).

Wing expanse.- 35 mm.

Distribution.- India : Jammu & Kashmir (kashmir) ; Himachal Pradesh (Kulu; Dharmsala ; Simla) ; Uttar Pradesh (Dehra Dun; Almorah ; Mughal Sarai); Sikkim; Assam; Manipur; Tripura; Punjab (Sultanpur ; Cambellpur) ; Madhya Pradesh (Jabbalpur; Mhow); Maharashtra (Bombay). Bangladesh.

Remarks.- The moth , new for Tripura, fits well in the species. The species, earlier known under the genus *Homoptera* Boisduval, was subsequently treated under *Alamis* Guenée by Warren (1914) , though he (*loc cit* .) maintained the status of *Pericyma* Herring- Schaffer but for other species. Presently , the species is retained after the system of Hampson (1913 b) . It also exhibits sexual dimorphism , in which the female has both wings ventrally with indistinct waved brown lines beyond cell. The specimen may be referred to one of the four aberrations, *sensu* Hampson (*loc. cit.*) and Warren (*loc cit.*). ab. ***perfusa*** (Warren): Recognised by both wings being dark brown almost throughout

33. **Fodina oriolus** Guenée

1852. *Fodina oriolus* Guenée , *Hist. nat. Ins. Lep . Noct.*, **3** : 274.

Material examined.- (IV 5b).

Wing expanse .- 38 mm.

Distribution .- India : Sikkim ; Tripura. Bhutan Bangladesh

Remarks .- A new record for Tripura , the moth fits well in the species . It is very much allied to *F. pallula* Guenée from the North-Western Himalayas , Assam, Calcutta and also Sri Lanka, but can be distinguished from it by the hind wings without fuscous black at base. Besides, the specimen is quite smaller in wing expanse than that mentioned by Hampson (1894) . Also, the moth seems to be a good mimic of *Zalissa transiens* (Walker) that belongs to the family Agaristidae

(D) Subfamily NOCTUINAE

34. **Hypocala moorei** Butler

1892. *Hypocala moorei* Butler, *Ann. Mag. nat. Hist.*, (6) **10** : 21.

Material examined.- (I 4).

Wing expanse .- 44 mm.

Distribution .- Western Africa. India : North-Western Himalayas ; Sikkim;Tripura ; Karnataka (Kanara) Sri Lanka.

Remarks .- The species, in which the specimen fits well, is a new record for Tripura. It is very much allied to the generic type-species, *H. deflorata* (Fabricius) from Africa and also India, but differs from it by the hind wings with terminal band inwardly even and a small linear orange spot, the subterminal one being absent. Hampson (1894), however, mentioned, " W. Africa " as one of the habitats of the species and not "Western China", which was only indicated by Warren (1914) Warren (*loc. cit.*) did not mention any Indian or African locality for the species concerned.

35. **Ophideres hypermnestra** (Cramer)

1780. *Phalaena* (*Noctua*) *hypermnestra* Cramer, *Pap. Exot* ., **4** : pl. 323, figs. A, B.
1894. *Ophideres hypermnestra,* Hampson, *Fauna Brit. India,* Moths, **2** : 562.

Material examined.- (IV 1b).

Wing expanse .- 86 mm.

Distribution .- India : Sikkim; Meghalaya (Khasi Hills); Tripura; Maharashtra (Pune); Karnataka (Kanara; Belgaum); Kerala (Malabar); Tamil Nadu (Nilgiri Hills); the Andaman & Nicobar Islands (Andamans). Burma. Bangladesh. Sri Lanka.

Remarks.- The species, in which the moth fits well, is a new record for Tripura. It shows sexual dimorphism in which the female is provided with large and small white rufous-striated patches and spots on fore wings below and beyond cell, at outer angle and below apex. This, along with the preceding one and the following two species, has been placed in the subfamily Noctuinae by Warren (1914).

36. **Adris tyrannus** (Guenée)

1852. *Ophideres tyrannus* Guenee, Hist. *nat. Ins. Noct.*, **3** : 110.
1914. *Adris tyrannus,* Warren, *Macrolep. World,* **3** : 362, pl. 66c.

Material examined.- (I V 2d).

Wing expanse .- 101 mm.

Distribution .- China. India : Himachal Pradesh (Simla; Kulu); Sikkim; Meghalaya

(Khasi Hills); Tripura; West Bengal (Calcutta); Maharashtra (Bombay). Malaya. Java. Japan.

Remarks.- A new record for Tripura, the species is already known to exhibit varying patterns of colouration particularly in fore wings,as mentioned by Warren (1914) from its different habitats. The specimen under study matches well with description of the taxon from India by both Hampson (1894) and Warren (*loc. cit.*), though it is faily shorter in wing expanse than that hitherto known.

37. **Raparna** sp.

Material examined.- (IV 5h).

Wing expanse.- 25 mm.

Remarks.- This indetermined species, found for the first time at Tripura, is very much allied to the widely distributed member, *R. imparata* (Walker) from West Africa, South Yemen, Pakistan, India (including Punjab, Tamil Nadu, West Bengal, Assam and Manipur), Sri Lanka and also Japan. But the specimen examined differs from it by the absence of dark costal and terminal series of black specks of fore wings and of cell-spot of hind wings. The genus, in which the moth fits well, was earlier placed in the subfamily Focillinae by Hampson (1895) and later transferred to Noctuinae by Warren (1914).

XIII. Famiy URANIIDAE

Subfamily MICRONIINAE

38. **Micronia aculeata** Guenée

1857. *Micronia aculeata* Guenée, *Hist. nat. Ins. Lep. Phal.*, **2** : 26, pl. 13, fig. 8.

Material examined.- (IV 5d).

Wing expanse.- 43 mm.

Distribution.- South China. India : Himachal Pradesh (Kulu); Sikkim; Assam(Cachar; Sibsagar); Tripura; Uttar Pradesh (Mirzapore); West Bengal (Calcutta); Maharashtra (Pune); Tamil Nadu (Nilgiri Hills); the Andaman & Nicobar Islands (Andamans). Bhutan. Burma. Sri Lanka. The Sundaland. The Philippines.

Remarks.- Typical of the Indian forest districts, the species, in which the moth fits well, is a new record for Tripura. It was reported by Seitz (1913) as " very common " in most of its habitats. The moth is known to repose on the underside of leaves,with the wings spread

out like the Geometers. Seitz (*loc. cit.*) stated that the Indian examples have the wings longer and more pointed than the Chinese ones, which Gaede (1933) observed these as only a little less yellowish than f.*sondaicata* Guenée from Sundaland.

XIV. Family GEOMETRIDAE

(A) Subfamily GEOMETRINAE

39. **Zamarada translucida** Moore

1887. *Zamarada translucida* Moore, Lep. Ceyl., **3** : 432, pl. 197, fig. 2.

Material examined.- (II 2a).

Wing expanse.- 35 mm.

Distribution.- India : Meghalaya (Khasis) ; Nagaland; Tripura; Orissa (Ganjam); Tamil Nadu (Nilgiris). Sri Lanka. Western Malaysia. Borneo.

Remarks.- The Specimen, not previously recorded from Tripura, agrees well with the known description of the species. The species, like the following one, is presently placed under the subfamily Geometrinae with which Boarmiinae has been synonymised by Prout (1912) Later, Fletcher (1974) has contributed an exhaustive revision of the concerned genus from the Old World.

40. **Hyposidra talaca** (Walker)

1860. *Lagyra talaca* Walker, *Cat. Lep. Het. Brit. Mus.*, **20** : 59.
1895 . *Hyposidra talaca*, Hampson, *Fauna Brit. India*, Moths, **3** : 213, fig. 117.

Material examined.- (III 1a).

Wing expanse.- 45 mm.

Distribution.- India : Sikkim; Assam (Cachar; Sibsagar); Meghalaya (Khasis); Tripura; Maharashtra (Pune); Karnataka (Kanara); the Andaman & Nicobar Islands (Andamans). Bhutan. Burma. Sri Lanka. Java. Borneo. Sulawesi. The Philippines.

Remarks.- This is one of the eight species, of which all but *H. albifera* (Moore) are known from the Eastern Himalayas, sp. *albifera* occurring in the Western Himalayas. The specimen, new for Tripura, fits well in the species. The moth was mentioned by Hampson

(1895) to occur " throughout India " It differs from the South Indian members, belonging to the morph, f. *rigusaria* (Walker), by being not much red in tinge.

(B) Subfamily ORTHOSTIXINAE

41. **Eumelia rosalia** (Cramer)

1782. *Phalaena (Geometra) rosalia* Cramer, *Pap. Exot.*, **4** : 152, pl. 368, fig. f.
1895 *Eumelia rosalia*, Hampson,*Fauna. Brit. India,* Moths, **3** : 320, fig. 155.

Material examined.- (II 1a).

Wing expanse.- 56 mm.

Distribution.- China. Bhutan. India : Sikkim; Assam (Sibsagar); Tripura; Tamil Nadu (Coromandel; Nilgiris); the Andaman and Nicobar Islands (Andaman, Nicobar and Great Nicobar). Bangladesh. Burma. Sri Lanka. Java. The Philippines. The Australian region.

Remarks.- The specimen, which fits well in the species, was hitherto unknown from Tripura, though Hampson (1895) cited the distribution of the species as " throughout India " but without giving the particular localities of the country. He (*loc.cit.*) considered the species in the subfamily Orthostixinae which is equivalent to Oenochrominae, as mentioned by Prout (1912) for the Palaearctic members. The material may be referred to one of the three morphs from India, as hereunder.

f. **ludovicata** Guenée : Recognised by the fore wings being much more orange and with diffused bands.

XV. Family PYRALIDAE

(A) Subfamily SCHOENOBIINAE

42. **Tryporyza incertulas** (Walker)

1863. *Catagela incertulas* Walker, *Cat. Lep. Het. Brit. Mus.*, **27** : 143.
1960. *Tryporyza incertulas*, Common, *Auster. J. Zool.*, **8** (2).

Material examined.- (IV2a).

Wing expanse.- 30 mm.

Distribution.- India ; Tripura; Nagaland; West Bengal (Calcutta); Maharashtra (Pune). Burma. Sri lanka. Java. Borneo.

Remarks.- The specimen, which fits well in the species, is a new record for Tripura. The

moth, earlier mentioned as *Schoenobious incertellus* by Hampson (1896), has been considered by common (1960) as *incertulas* under the genus *Tryporyza* Common. It is known to exhibit sexual dimorphism in which the female differs from male by the fore wings fuscous brown, hind wings pale fuscous and also by the larger wing expanse.

(B) Subfamily PYRAUSTINAE

43. **Pycnarmon cribrata** (Fabricius)

1794. *Phalaena cribrata* Fabricius, *Ent. Syst.*, **3** (2) : 215.
1939 a. *Pycanarmon cribrata*, Klima, *Lep. Cat.*, **89** : 20.

Material examined.- (IV 2a).

Wing expanse.- 21 mm.

Distribution.- The Ethiopian region. China. Vietnam. India : Tripura; Maharashtra (Bombay; Khandala); Tamil Nadu (Nilgiri Hills). Burma. Sri Lanka. The Sundaland. The Lesser Sunda Islands. The Australo-Papuan regions. The Hawaiian reigion. Korea. Japan.

Remarks.- The species, in which the specimen fits well, is a new record for Tripura and possibly also for the entire North-Eastern Himalayas, though Hampson (1896) referred to its distribution as " throughout India ", but without mentioning any specific locality. Cotes & Swinhoe (1889), as cross-referred to by Hampson (*loc.cit.*), also did not mention any locality of the species from the North- Eastern Himalayas. The species was earlier treated as *Pycnarmon caberalis* (Guenee) by Hampson (*loc.cit.*), then as *Entephria cribrata* (Fabricius) also by Hampson (1898) and later transferred to the genus *Pycnarmon* lederer by Klima (1939 a). The material differs from both the morphs, viz., f.*caberalis* (Guenee) and f. *abdicalis* (Walker), *sensu* Hampson (1896), by the fore wings with the two conjoined apical black spots defined by a distinct terminal black line which tapers towards tornus and is interrupted by the subterminal black spots.

44. **Diaphania laticostalis** (Guenée)

1854. *Margarodes laticostalis* Guenée, *Hist. nat. Ins. Lep. Delt. & Pyral.*, p. 303.
1963. *Diaphania laticostalis*, Mathur & Singh, *Indian Forest Rec. Ent.*, (NS) **10** (6).

Material examined.- (IV 2c).

Wing expanse.- 38-40 mm.

Distribution.- Pakistan. india: sikkim; Assam (Sib-sagar; Dansiri); Tripura; the Andaman & Nicobar Islands (Andamans). Bhutan. Bangladesh. Burma. Sri Lanka. The Malayan subregion and the Australian region.

Remarks.-The species, in which the specimen fits well, is a new a record for Tripura. This, along with the following couple of species, was earlier treated under the Genus *Glyphodes* guenee by Hampson (1896, 1898), but later considered under *Diaphania* Hübner by Klima (1939 b) and also Mathur & Singh (1963).

45. **Diaphania unionalis** Hübner

1824. *Diaphania unionalis* Hübner, *Samml. eur. Schmett. pyr.*, fig. 132.

Material examined.- (IV 1a).

Wing expanse.- 36 mm.

Distribution.- South Europe. The Ethiopian region. Malagasy. " Throughout India " including Tripura. Sri Lanka. Australia.

Remarks.- The specimen fits well in the species which is recorded new for Tripura, though Hampson (1896) referred to its habitat as " throughout india " and elsewhere, as cited above. Hampson (*loc. cit.*) mentioned only a single form, i.e.,f. *quinquepunctalis* (Boisduval), from which the present example differs by the brown specks of fore wings being present in traces.

46. **Diaphania indica** (Saunders)

1851. *Eudioptes indica* saunders,*Trans ent. Soc. Lond.*, (2) **1** : 163, pl. 12, figs. 5-7.
1963. *Diaphania indica*, Mathur & Singh, *Indian Forest Rec.Ent.*, (NS) **10** (6).

Material examined.- (IV 4a).

Wing expanse.- 26 mm.

Distribution. The Ethiopian region. China. Pakistan. India : Uttar Pradesh (Dehra Dun); Sikkim; Tripura; Haryana (Ambala) : Madhya Pradesh (Mhow) ; Maharashtra (Bombay; Pune) ; West Bengal (Calcutta) ; Bihar (Pusa ; Ranchi) ; Tamil Nadu (Nilgiri Hills) ; Andaman & Nicobar Islands (Great Nicobar). Burma. Sri Lanka. Java. Sulawesi. Australia.

Remarks.- This widely distributed species, which was already reported for the first time from the Great Nicobar Island by Mondal & Bhattacharya (1980), constitutes new locality record for Tripura, too. The specimen fits well in the species, the larvae of which are known to feed on the Cucurbitaceous and Corchorous species.

47. **Psara phaeopteralis** (Guenée)

1854. *Botys phaeopteralis* Guenée, *Hist. nat. Ins. Lep. Delt. & Pyral.*, p. 349.
1939b. *Psara phaeopteralis*, Klima, *Lep. Cat.*, **94**.

Material examined .- (IV 2a).

Wing expanse.- 24 mm.

Distribution.- The Ethiopian region. Southern Yemen. Pakistan. India : Himachal Pradesh (Solan); Uttar Pradesh (DehraDun; Mirzapur); Sikkim; Tripura; Madhya Pradesh (Mhow); Maharashtra (Mahabaleshwar; Bombay; Pune); West Bengal (Calcutta); Bihar (Pusa); Tamil Nadu (Nilgiri Hills); the Andaman & Nicobar Islands (Andamans). Burma. Sri Lanka. Java. The Australian region. The Neotropical region.

Remarks.- A new record for Tripura, the specimen fits well in the species, of which one male "at light" was also reported from the South Andamans by Mandal & Bhattacharya (1980). The Species is known as a serious pest of *Anisomeles ovata*. It was earlier considered under the genus *Pachyzancla* Meyrick by Hampson (1896, 1899).

SUMMARY

The paper deals with the systematic account of 47 species distributed over 43 genera and 15 familes of moths— all recorded new for the state of Tripura in North-East India. Local and geographical variations for certain species are also annotated, wherever possible. Besides, the account is preceded by the general highlights on physiography and climate amidst the abiotic factors on one hand and flora and fauna, particularly the moths, amongst the biotic compoments of the state, on the other. Over and above, an overall review of macroclimatic biotic zonations with specific mention of their collecting stations in the state visited by different parties from Zoological Survey of India mainly during the winter and pre— winter seasons between 1969 and 1978 and also that of global distribution of the fauna are made, being accompanied by their respective tables. While the scope of the present work is briefly introduced at the beginning, references mostly consulted in relation to the concerned problem are cited at the end of the paper.

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REFERENCES

Basu, S., *in* Gopalachari, K., 1965. *The Gazetteer of India*, 1 : xii + 652 pp. Nasik.

Bell, T.R.D. & Scott, F. B., 1937. *The Fauna of British India*, Sphingidae, 5: xviii + 537 pp. , 124 figs., 15 pls., tables, map. London.

Chatterjee, S. P., *in* Gopalachari, K., 1965. *The Gazetteer of India*, 1 : xii + 652 pp. Nasik.

Common, I. F. B., 1960. A revision of the Australian stem-borers hitherto referred to *Schoenobius* and *Scirpophaga* (Lepidoptera: Pyralidae, Schoenobiinae). *Austr. J. Zool.*, **8** (2): 307 - 347, 2 pls.

Cotes, E. C & Swinhoe, C., 1887. *A Catalogue of the moths of India*, pts. I - II, 1 - 255 pp. Calcutta.

Cotes, E. C. & Swinhoe, C., 1889. *A Catalogue of the moths of India*, pts. V - VII, 591 - 812 pp. Calcutta.

Daniel, F., 1943. Beitrage zur Kenntnis der Arctiidae Ostasiens under besonderer Beriicksichtigung der Ausbeuten. H. Hönes aus diesens Gebiets Lep. Het. Part. II. *Mitt.ent. Ges.*, **33**: 673 - 758.

Fletcher, D. S., 1974. A revision of the Old World genus *Zamarada* (Lepidoptera: Geometridae). *Bull. B. M. (N.H.) Ent. Suppl.*, **22**: 1 - 498.

Gaede, M., *in* Seitz, A., 1933. The Indo - Australian Bombyces and Sphinges. *The Macrolepidoptera of the World*, **10**: 909 pp., pls. Stuttgart.

Grünberg, K., *in* Seitz, A., 1913. The Palaearctic Bombyces and Sphinges. *The Macrolepidoptera of the World*, **2**: 479 pp., pls. Stuttgart.

Grünberg, K., *in* Seitz, A., 1933. The Indo- Australian Bombyces and Sphinges. *The Macrolepidoptera of the World*, **10**: 909 pp., pls. Stuttgart.

Hampson, G. F., 1892. *The Fauna of British India*, Moths, **1**: xxiii + 527 pp., 333 figs. London.

Hampson, G. F., 1894. *The Fauna of British India*, Moths, **2**: xxii+609 pp., 325 figs. London.

Hampson, G. F., 1895. *The Fauna of British India*, Moths, **3**: xxviii + 546 pp., 226 figs. London.

Hampson, G. F., 1896. *The Fauna of British India*, Moths, **4**: xxviii + 594 pp., 287, figs. London.

Hampson, G. F., 1898. A revision of the moths of the subfamily Pyraustinae and family Pyralidae. Part I. *Proc. zool.Soc. Lond.*, **1898**: 590 - 761, pls. 49,50.

Hampson, G. F., 1899. A revision of the moths of the subfamily Pyraus - tinae and family Pyralidae. Part II. *Proc. zool.Soc. Lond.*, **1899**: 172 - 291.

Hampson, G. F., 1901. *Catalogue of the Lepidoptera Phalaenae in the British Museum*, **3**: xix + 690 + 23 pp. London.

Hampson, G. F., 1905. *Catalogue of the Lepidoptera Phalaenae in the British Museum*, **5**: xvi + 634 + 25 pp. London.

Hampson, G.F., 1909. *Catalogue of the Lepidoptera Phalaenae in the British Museum*, **8** : xiv + 583 + 28 pp. London.

Hampson, G.F., 1913 a. *Catalogue of the Lepidoptera Phalaenae in the British Museum*, **12** : xiii + 626 + 29 pp. London.

Hampson, G.F., 1913 b. *Catalogue of the Lepidoptera Phalaenae in the British Museum*, **13** : xiv + 609 + 32 pp. London.

Hering, M., *in* Seitz, A., 1930. The African Bombyces and Sphinges. *The Macrolepidoptera of the World*, **14** : 599 pp., pls. Stuttgart.

Hering, M., *in* Seitz, A., 1933. The Indo Australian Bombyces and Sphinges. *The Macrolepidoptera of the World*, **10** : 909 pp., pls. Stuttgart.

Hering, M., *in* Seitz, A., 1934. The Indo Palaearctic Bombyces and Sphinges. *The Macrolepidoptera of the World*, **2** (Suppl.) : 315 + 16 pp., pls. Stuttgart.

Jordan, K., *in* Seitz, A., 1914. The Noctuiform Phalaenae. *The Macrole - pidoptera of the World*, **3** : 511 pp., pls. Stuttgart.

Jordan, K., *in* Seitz, A., 1933. The Indo Australian Bombyces and Sphinges. *The Macrolepidoptera of the World*, **10** : 909 pp., pls. Stuttgart.

Klima, A., 1939a. *Lepidopterorum catalogus*, **89** : 1-224. The Hague.

Klima, A., 1939b. *Lepidopterorum catalogus*, **94** : 225-384. The Hague.

Mandal, D. K. & Bhattacharya, D. P ., 1980. On the Pyraustinae (Lepidoptera : Pyralidae) from the Andaman, Nicobar and Great Nicobar Islands, Indian Ocean. *Rec. zool. Surv. India*, **77** : 293-342, one table, 8 pls.

Mathur, R.N. & Singh, B., 1963. Immature stages of Indian Lepidoptera. No. 13. Pyralidae, Subfamily Pyraustinae. *Indian Forest Rec., Ent.*, (NS)**10** (6).: 117 - 145.

Obraztsov, N. S. , 1966. Die Palaearctischen *Amata* Arten. *Veroff. Zool.Staatssamml. Munchen*, **10** : 1 - 383, 30 pls.

Prout, L.B., *in* Seitz,A., 1912. The Palaearctic Geometrae. *The Macrolepidoptera of the World*, **4** : 479 pp., pls Stuttgart.

Rothschild, W. V., *in* Seitz, A., 1933. The Indo Australian Bombyces and Sphinges. *The Macrolepidoptera of the World*, **10** : 909 pp., pls Stuttgart.

Seitz, A., *in* Seitz, A., 1913. The Palaearctic Bombyces and Sphinges. *The Macrolepidoptera of the World*, **2** : 479 pp., pls Stuttgart.

Seitz, A., *in* Seitz, A., 1933. The Indo Australian Bombyces and Sphinges. *The Macrolepidoptera of the World*, **10** : 909 pp., pls Stuttgart.

Strand, E., 1919. Arctiidae : Arctiinae. *Lepid. Cat.*, **22** : 1 - 415.

Strand, E., *in* Seitz, A., 1933. The Indo Australian Bombyces and Sphinges. *The Macrolepidoptera of the World*, **10** : 909 pp., pls Stuttgart.

Warren, W., *in* Seitz, A., 1914. The Noctuiform Phalaenae. *The Macrolepidoptera of the World*, **3** : 511 pp., pls Stuttgart.

TABLE I. COLLECTING DATA OF MATERIAL FROM THE STATE OF TRIPURA

District	Biotic zones	Collecting stations	Date of collection	Ordinal no. of species††	Cardinal No. of exs.		Parties leg.
		With their parenthesised Code No.†			Male	Female	
I	II	III	IV	V	VI	VII	VIII
NORTH	KAILASHAHAR VALLEY	Kanchanpur	17. ii. 1971 (I 1)	23	2*		*V. C. Agrawal*
		Kumarghat	26. xi. 1972 (I 2a)	31		1*	"
		"	22. xii. 1972 (I 2b)	13		1	"
		"	25, 27, 29. xii. 1972 (I 2c)	7	9	2	"
		"	26, 27. xii. 1972 (I 2d)	21	2*		"
		"	27, 29. xii. 1972 (I 2e)	4	5		"
		" : Near Forest R. Office	" "	30	4*		"
		"	29. xii. 1972 (I 2f)	23	5		"
		"	30. xii. 1972 (I 2g)	18	1*		"
		Manu : Jarulcherra	26. xi. 1972 (I 3)	6	1		*M. S. Shihsodia*
		" "	" "	8		1	"
		Kailashahar : In & arround F. R. H.	28. v. 1978 (I 4)	34		1*	*J. K. Jonathon*
	KAMALPUR VALLEY	Ganganagar	12. xii. 1972 (II 1a)	41		1	*V. C. Agrawal*
		"	14. xii. 1972 (II 1b)	26		1	"
		Ambassa	1. i. 1973 (II 2a)	39		1	"
		"	2, 3. i. 1973 (II 2b)	21	1*	8	"
		"	3. i. 1973 (II 2c)	2	1		"
		"	16. xi. 1974 (II 2d)	22	1		*M. S. Shihsodia*
		" : Garo Basti (c 200-250 m)	21. xi. 1974 (II 2e)	6	1		"
		" : 1 km. eastward	26. x. 1977 (II 2f)	9	1		*N. Muraleedharan*
		"	24. v. 1978 (II 2g)	9	2	1	*J. K. Jonathon*

TABLE I (contd.)

I	II	III	IV	V	VI	VII	VIII
SADAR CENTRAL	AGARTALA PLAIN	Agartala : Perathea	3. xi. 1969 (III 1a)	40	1		*V. C. Agrawal*
		" : Chandmari	10. xi. 1969 (III 1b)	19		1	"
		" : Peratina	30. xi. 1969 (III 1c)	12	1		"
		" : Bishalgarh	20. xi. 1979 (III 1d)	24	1		"
SOUTH	KAILASHAHAR VALLEY	Charilam	15. xi. 1969 (IV 1a)	45	1		"
		"	21. xi. 1969 (IV 1b)	35		1	"
		Udaipur : Banpath	17. xi. 1969 (IV 2a)	32		1	"
		" : "	" "	42		1	"
		" : "	" "	43	1		"
		" : "	" "	47		1	"
		" : Garjee	24. xi. 1969 (IV 2b)	15		1	"
		" : "	25. xi. 1969 (IV 2c)	44	3		"
		" : "	1. xii. 1969 (IV 2d)	36		1	"
	KAMALPUR VALLEY	" : "	" "	29		1	"
		" : "	7. xi. 1974 (IV 2e)	6	1		*M. S. Shihsodia*
		" : "	8. xi. 1974 (IV 2f)	5	2		"
		" : "	14. v. 1978 (IV 2g)	9	1*		*J. K. Jonathon*
		" : "	" "	10	1		"
		Abhoya : Barpathari	4. xii. 1969 (IV 3)	23	1		*V. C. Agrawal*
		" : "	" "	25		1*	"
		Ampi : In & around F. R. H.	17. i. 1971 (IV 4a)	23	1*	3*	"
		" : "	" "	46			"
		" : Khowaipur	9. xii. 1972 (IV 4b)	16			

TABLE I (contd.)

I	II	III	IV	V	VI	VII	VIII
SOUTH	KHOWAL VALLEY	Teliamura :	29. i. 1971 (IV 5a)	23	1		*V. C. Agrawal*
		" : Kunjlina	14. x. 1974 (IV 5b)	33		1	*M. S. Shihsodia*
		" : Bramochara	10. x. 1974 (IV 5c)	9	1		"
		" : "	" "	11			"
		" : Gomar Tilla	14. x. 1977 (IV 5d)	38	1		*N. Muraleedharan*
		" : "	19. x. 1977 (IV 5e)	3	1		"
		" : "	" "	17	1		"
SOUTH		" : Kali Tilla	20. x. 1977 (IV 5f)	9	1		"
		" : Sripur Village	26. x. 1977 (IV 5g)	14		1	"
		" : in & around	20. v. 1978 (IV 5h)	1		1*	*J. K. Jonathon*
	KAMALPUR VALLEY	F. R. H.					
		" : "	" "	20	1*		"
		" : "	" "	27	1*		"
		" : "	" "	37		1*	"
		" : "	" "	10	1		"
		Belonia : In & around F. R. H.	27. ix. 1977 (IV 6)	28	1*		*N. Muraleedharan*

N. B. : †, Cross-referred to the *'Material examined'* of the relevant species under 'SYSTEMATIC ACCOUNT' ;
††, Corresponding to the serial number of species as in the text; *, specimens collected "at light"

TABLE II. GLOBAL DISTRIBUTION OF THE MOTHS RECORDED NEW FOR THE STATE OF TRIPURA

Sl. no. of species as per Systematic Account	PALAEARCTIC	ETHIOIAN	MALAGASSIC	ORIENTAL											PAPUAN	AUSTRALIAN	HAWAIIAN	NEOTROPICAL	NEARCTIC	Remarks, if any
				CHINESE	INDIAN									MALAYAN						
					Himalayan			Peninsular				Insular									
					N. WESTERN	CENTRAL	N. EASTERN	WESTERN	NORTHERN	EASTERN	SOUTHERN	S. WESTERN	SOUTHERN	S. EASTERN							
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	IX	XX	XXI	XXII
1						+	+			+	+		+								
2				+			+			+					+						
3							+				+		+		+						
4							+														
5				+			+				+										
6	+				+	+	+	+	+	+	+		+								
7							+														
8				+	+		+			+	+										
9					+	+	+			+	+										
10	+					+	+				+										
11					+		+	+			+				+						
12					+		+	+	+	+	+		+		+						

TABLE II (contd.)

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	IX	XX	XXI	XXII
13							+														Sp. indet.
14							+			+	+										
15							+								+						
16							+														_"_
17							+														_"_
18							+														_"_
19							+			+											
20				+	+		+	+			+		+	+	+						
21	+			+	+		+	+		+	+										
22				+	+	+	+	+	+	+	+		+		+		+				
23				+	+		+		+	+	+				+		+				
24				+	+	+	+	+	+	+	+		+								
25	+	+		+	+		+	+	+	+	+				+	+	+		+	+	
26	+						+	+			+		+	+	+						
27	+	+		+	+	+	+	+	+		+		+		+	+	+	+			
28	+	+		+	+		+		+		+		+				+	+			
29	+	+		+			+			+	+		+		+						
30	+	+	+	+	+		+	+	+	+	+		+	+	+	+	+				
31	+	+	+	+	+		+	+	+	+	+		+	+	+						
32							+	+	+	+											
33							+			+											
34		+		+	+		+				+		+								
35							+	+		+	+		+	+							
36	+			+	+		+	+		+					+						
37							+														_"_
38				+	+		+	+		+	+		+	+	+						
39							+		+	+	+		+		+						
40							+	+			+		+	+	+						
41				+			+			+	+		+	+	+						
42							+	+		+	+		+		+						
43	+			+			+	+			+		+		+	+	+	+			
44					+		+			+			+	+	+		+				
45	+	+	+		+		+	+	+	+	+		+				+				
46		+		+	+		+	+	+	+	+		+	+	+		+				
47	+	+			+		+	+	+	+	+		+	+	+		+		+		