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## Studies on the Syntypes of Some Indian Lymantriidae in British Museum (Nat. Hist.), London (Lepidoptera, Noctuoidea)

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### 1. Genus *Carriola* SWINHOE, 1922

Type species *Leucoma ecnomoda* SWINHOE, 1907 (monotypic).

**Diagnostic characters** Head, thorax and abdomen yellowish white; palpi upturned; antennae slightly pectinate in both the sexes; forewings with the costa arched, apex slightly rounded, cell very broad, vein 5 from above the lower angle, 6 from upper angle, 7, 8, 9 and 10 stalked near apex; hind wings with outer margin rounded, hyaline, veins 6 and 7 stalked; abdomen of the male slender and of female rounded.

**Distribution** India, Celebes, Bhutan, Hong Kong, Indonesia, Philippines, Singapore, Sri Lanka.

This genus is known by five species from the world including only one from India which is included in the present study

#### *C. thyridophora* (HAMPSON, 1893)

*Leucoma thyridophora* HAMPSON, 1893

*Carriola thyridophora* BRYK, 1934

HAMPSON's description for this species was based on unspecified number of female specimens from Sikkim. According to the original description the type was located in the collection of ELWES. There is a single female specimen in British Museum (Natural History), London (BMNH) from Sikkim collected by MOLLER with registration number (reg. No.) 1939 1 which appears to be of the original syntypic series from the data labels. The above specimen is hereby designated as Lectotype. From the ELWES' collection this specimen reached to ROTHSCILD's collection who later on deposited it in BMNH under reg. no. 1939 1. The above specimen is also having a label of *Redoa thyridophora* HAMPSON type ♀ in HAMPSON's own handwriting but the specimen fully agrees with the description provided for *Leucoma thyridophora* HAMPSON. Neither HAMPSON nor any other taxonomist ever described any such combination as far as literature is concerned. It appears that HAMPSON first of all thought it to be a species of *Redoa* WALKER and labelled it as such. Later on while describing and publishing the species, he found it to be a species of *Leucoma* HÜBNER but did not change the old label already put by him. Therefore, the name *Redoa thyridophora* may be treated as manuscript or unpublished name.

**Distribution** India: Sikkim

**Material examined** ♀ "TYPE" (red and white, circular, printed), "Sikkim, 1-4000 ft., Coll. Moller" (white, rectangular, handwritten), "H. J. Elwes Coll. (white, rectangular, printed), "Rothschild Bequest 1939/1" (white, rectangular, printed), "*Redoa thyridophora* Hampson", type ♀ (white, rectangular, handwritten), "*Leucoma thyridophora* Hampson" (white, rectangular, handwritten) (Lectotype designated) (BMNH).

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2. Genus: **Dendrophleps** HAMPSON, 1893

Type species *D. semihyalina* HAMPSON, 1893 (monotypic and designated by HAMPSON, 1893)

**Diagnostic characters** Head, thorax and abdomen white; palpi porrect and short; antennae bipectinate with the branches of moderate length; hind tibiae with one pair of spurs; forewings with veins 4 and 5 stalked, 10 from cell, areole absent; hind wings with veins 4 and 5 as well as 6 and 7 stalked; abdomen with dorsal black bands.

**Distribution** India, Bhutan.

This genus is monospecific and included in the present study

**D. semihyalina** HAMPSON, 1893

HAMPSON (1893) described this species for a new genus *Dendrophleps* from Khasi Hills, on the basis of unspecified number of male specimens collected by HAMILTON. It is also mentioned in the text that the type is located in SWINHOE's collection. In BMNH the present author could examine one male and one female specimen from Khasi Hills collected by HAMILTON with reg. no. 1900 250 which are labelled as type. The reg. no. shows that these specimens were purchased by BMNH from Mr. E. SWINHOE. As the original description is based only on male specimens, the female specimen kept as type in BMNH cannot be a type. It appears that the female is although from Khasi Hills and collected by HAMILTON but described later on by SWINHOE in 1895 and labelled as type of *D. semihyalina* HAMPSON. The male specimen labelled as type and available in BMNH, is hereby designated as Lectotype since the holotype was not selected by the original author.

**Material examined** ♂ "TYPE" (red and white, circular, printed), "Khasia Hills (Hamilton) 1900 250" (white, rectangular, handwritten), "3494 ♂, Khasia Hills Hamilton type, *Dendrophleps semihyalina* Hampson" (white, rectangular, partially printed and handwritten), "*Dendrophleps semihyalina* Hampson type ♂" (white, rectangular, handwritten) (Lectotype designated); ♀, "TYPE" (red and white, circular, printed), "Khasia Hills Hamilton" (white, rectangular, printed), "*Dendrophleps semihyalina* Hampson, ♀, described by Swinhoe, Trans. Ent. Soc. Lond., 1895 14" (white, rectangular, printed), "1900 250" (white, rectangular, handwritten) (BMNH).

3. Genus: **Leucoma** HÜBNER, 1806

Type species *Bombyx salicis* LINNAEUS, 1758 (cited by WESTWOOD, 1840)

**Diagnostic characters** Palpi unturned, reaching vertex of head; antennae bipectinate, branches being longer in male and shorter in female; hind tibiae with two pairs of spurs; forewings with veins 7, 8, 9 stalked and 10 from the cell and sometimes anastomosing slightly with 8 and 9 to form areole; hind wings with veins 6 and 7 stalked.

**Distribution** India, South America, Australia, Burma, China, Indonesia, Philippines, Sri Lanka.

This genus is known by about 40 species in the world including 8 Indian species. The present study include only one species from India.

**L. sericea** (MOORE, 1879) (comb. nov.)

*Stilpnotia sericea* MOORE, 1879

*Caviria sericea* HAMPSON, 1893

*Caragola sericea* SWINHOE, 1903

*Euzora sericea* SWINHOE, 1922

MOORE's description for this species is based on unspecified number of male and female specimens from Mussoorie collected by Captain LANG and from Darjeeling collected by ATKINSON. The original series was distributed among LANG, STAUDINGER and MOORE himself. The present author could trace out two males and three females in BMNH under reg. no. 94/106 and 1927/360 which appear to be of original syntypic series from the data labels. Since the original author had not selected the holotype, one male from Darjeeling

with reg. no. 94/106 collected by ATKINSON is hereby designated as Lectotype and the remaining one male and two females from Mussoorie with reg. no. 1927/360 and 94/106 respectively and one female from Darjeeling with reg. no. 94/106, are designated as Paralectotypes. BRYK (1934) has wrongly mentioned the locality of type Sikkim.

This species was originally described under genus *Stilpnotia* WESTWOOD & HUMPHREYS. HAMPSON (1893) transferred it under genus *Caviria* WALKER but SWINHAE (1903) put it under genus *Caragola* MOORE. Later on SWINHAE himself treated it as a species of genus *Euzora* TURNER. BRYK (1934) also agreed with SWINHAE (1922). However, here it is transferred under genus *Leucoma* HÜBNER because of the following characters: Palpi upturned, hind tibiae with two pairs of spurs, hind wings with vein 5 from above angle, 6 and 7 stalked.

**Distribution** India: Cherrapunji, Darjeeling, Kashmir, Khasi Hills, Mussoorie, Shillong, Sikkim; W China; Tibet.

**Material examined** ♂, "TYPE" (red and white, circular, printed), "Moore Coll., 94 106" (white, square, printed), "Darjiling, ♂, Atkinson" otherside of the label "*Stilpnotia sericea* ♂ (type) Moore" (white, rectangular, handwritten), "1933/453" (white, rectangular, printed), "Gen. Slide No. 49 301" (green, rectangular, printed) (Lectotype designated); ♀, "TYPE" (red and white, circular, printed), "Moore Coll., 94 106" (white, square, printed), "Masuri, ♀, Lang" otherside of the label "*Stilpnotia sericea* ♀, type moore" (white, rectangular, handwritten); ♀, "203 ♀, Masuri, June-July" (white, rectangular, handwritten) "Moore Coll., 94 106" (white, square, printed), "Masuri, ♀, Lang" otherside of the label "*Stilpnotia sericea* ♀, type Moore" (white, rectangular, handwritten); ♀, "Moore Coll., 94/106" (white, square, printed), "Darjiling ♀" otherside of the label "*Stilpnotia sericea* ♀, type Moore" (white, rectangular, handwritten); ♂, "2611 ♂, Darjiling, Moore, *sericea* type" (white, rectangular, handwritten), "Masuri, ♂, Lang, 203" otherside of the label "*Stilpnotia sericea* ♂, Moore" (white, rectangular, handwritten) (Paralectotypes designated) (BMNH).

#### 4. Genus: *Mardara* WALKER, 1865

**Type species** *M. calligramma* WALKER, 1865 (monotypic).

**Diagnostic characters** Body stout; palpi stout and porrect; antennae rather short; hind tibia with two pairs of long spurs; forewings slightly rounded at tips, vein 10 given off shortly after areole, anastomosing with 7, 8, 9 to form the areole; hind wings with veins 6 and 7 stalked; abdomen not extending beyond the hind wings, apical tuft large.

**Distribution** India, Bhutan, Nepal.

This genus is known only from India, Bhutan and Nepal by 5 species. However, the present study include only two species.

#### (1) *M. albostrata* HAMPSON, 1893

The original description is based on unspecified number of male specimens from Manipur and Naga Hills collected by DOHERTY. It is also mentioned in the text that the type is located in ELWES collection. In BMNH, two male specimens (one from Naga hills and one from Manipur) with reg. no. 1939 1 could be examined which appear to be of original syntypic series from the data labels. Both specimens belong to ELWES collection. Out of them, the one from Manipur collected in 1889 at the height of 5000 ft., is labelled as type in HAMPSON's own handwriting but as nothing is mentioned regarding holotype in the text, the above specimen is hereby designated as Lectotype and the one from Naga Hills collected in August 1889 at the height of 2500-7000 ft., is designated as Paralectotype. Both the above specimens were brought to ROTHSCILD's collection from ELWES collection which latter on were donated to BMNH in 1939 under reg. no. 1939 1.

**Distribution** India: Manipur, Naga Hills.

**Material examined** ♂, "TYPE" (red and white, circular, printed), "Mao, Manipur, 5000 ft., Doherty, 89" (white, square, handwritten), "786" (white, rectangular, printed), "Collectio, H. J. Elwes" (white, rectangular, printed), "Rothschild Bequest, B.M. 1939 1" (white, rectangular, printed), *Mardara albostrata* Hampson, type ♂ (white, rectangular, handwritten) (Lectotype designated); ♂, "Naga hills, 2500-700 ft., Aug. 1889, W Doherty"

(white, rectangular, printed), "*mahoba* n. sp. (white, rectangular, handwritten), "Collectio, H. J. Elwes" (white, rectangular, printed), "*Mardara albostrata* Hampson" (white, rectangular, handwritten), „Rothschild Bequest, 1939 1" (white, rectangular, printed) (Paralectotype designated) (BMNH).

(2) **M. calligramma** WALKER, 1865

WALKER (1865) described this species from Darjeeling, based on unspecified number of male specimens present in the collection of Mr. ATKINSON. In BMNH, the author could examine two male specimens from Darjeeling under reg. no. 94 106. The labels with the specimens did not show any indication whether they belong to Mr. ATKINSON's collection or not, but a lot of collection of Mr. ATKINSON was lying with Mr. MOORE which ultimately reached to BMNH under reg. no. 94, 106. In view of the above facts, the two male specimens are hereby treated as specimens of original syntypic series. Out of them one male is hereby designated as Lectotype and the other one as Paralectotype because the original author had not selected the holotype.

**Distribution** India: Darjeeling, Kangra Valley, Mussoorie, Naga Hills, Nagrishpur, Sikkim, Simla.

**Material examined** ♂, "Moore Coll., 94 106" (white, square, printed), "Darjeeling, ♂" otherside of the label "*Mardara calligramma* Wlk." (white, rectangular, handwritten), "TYPE" (green and white, circular, printed label by the side of specimen) (Lectotype designated); ♂, "Moore Coll., 94 106" (white, square, printed), "Darjeeling, ♂" otherside of the label "*Mardara calligramma* Wlk." (white, rectangular, handwritten) (Paralectotype designated) (BMNH).

5. Genus: **Numenes** WALKER, 1855

**Type species** *N. siletti* WALKER, 1855 (monotypic).

**Diagnostic characters** Body slender; palpi hairy and upturned; antennae deeply pectinated; legs stout, hind tibiae with two pairs of long spurs; forewings subtriangular and hardly hooked at the tip, veins 9 and 10 stalked, anastomosing with 7 and 8 to form an areole; hind wings with veins 6 and 7 form cell; abdomen with a short, brown stripe at the base, and not extending beyond the hind wings.

**Distribution** India, S. Africa, Bangladesh, Bhutan, Borneo, Burma, Taiwan, Java, Madagascar, Philippines.

This genus is represented by 11 species in the world including three from India. However, only one is presented in the present study.

**N. siletti** WALKER, 1855

*Pseudomesa quadriplagiata* WALKER, 1855a

*Numenes strandi* BRYK, 1934

WALKER's description for this species is based on five specimens (sex not mentioned) ("a, b" Silhet presented by E. DOUBLEDAY, "c, d" Silhet from Rev STAINFORTH's collection and "e" Java from East India Company's collection). Although the sex is not mentioned by the original author but from the description it appears that the specimens examined by him were all females. In BMNH, there are three females specimens (one from Silhet with reg. no. 43, 58 and two from Silhet with reg. no. 45 107) which appear to be of original syntypic series from the data labels. Since the holotype was not selected by the original author, one female out of the above three with reg. no. 43 58 is hereby designated as Lectotype and the remaining two with reg. no. 45 107 as Paralectotypes.

**Distribution** India: Kashmir, Khasi Hills, Nagrishpur, Sikkim; Bangladesh; Borneo; Burma; Java; Philippines.

**Material examined** ♀, "43 58" (white, circular, handwritten), "Silhet" (white, circular, handwritten), "*Numenes siletti*" (white, rectangular, handwritten) (Lectotype designated); 2 ♀♀, "45 107" otherside of the label "Silhet" (white, circular, handwritten) (Paralectotypes designated) (BMNH).

6. Genus: **Pantana** WALKER, 1855

Type species *P. dispar* WALKER, 1855 (designated by KIRBY, 1892).

**Diagnostic characters** Body slender; proboscis very short or obsolete; palpi porrect, pale fuscous and naked; antennae deeply pectinated in male about half the length of the body; legs not much hairy, fore tarsi without lateral tuft of hairs, hind tibiae with two pairs of long spurs; forewings short and broad, slightly convex along the costa, veins 9 and 10 stalked; hind wings very broad; abdomen somewhat tufted at the tip.

**Distribution** India, Bhutan, Burma, Cambodia, China, Taiwan, Hong Kong, Indonesia, Pegu, Philippines.

This genus is known by 19 species in the world including 6 species from India. The present study include only two species.

(1) **P. delineata** (WALKER, 1855a)

*Genusa delineata* WALKER, 1855a

*C. circumdata* WALKER, 1855a

*Stilpnotia sordida* WALKER, 1856

*Genusa comparata* WALKER, 1865

*Laelia delineata* BUTLER, 1881

*Pantana delineata* KIRBY, 1892

WALKER (1855a) described this species on the basis of two males from SYLHET presented by E. DOUBLEDAY. In BMNH, the above two specimens are present under reg. no. 43 58 (one specimen was searched out from additional box no. 5 (W)). Since the holotype was not selected by the original author, one male out of the above two is hereby designated as Lectotype and another one with broken antennae as Paralectotype.

**Distribution** N. E. India, Bangladesh, Burma.

**Material examined** ♂, "43 '58" (white, circular, handwritten), "Silhet" (white, circular, handwritten), "2. GENUSA DELINEATA" (white, rectangular, printed) (Lectotype designated); ♂, "43/58" (white, circular, handwritten), "Silhet" (white, circular, handwritten) (Paralectotype designated) (BMNH).

(2) **P. luteiceps** SWINHÖE, 1896

SWINHÖE's description for this species is based on two male specimens from Cherrapunji. In BMNH, above two specimens are present and labelled as types. In case of one male with locality label Cherrapunji, there is one more label of locality Khasis with reg. no. 94/121. The reg. no. indicates that this specimen is a type purchased from C. SWINHÖE from India. In view of the above, it is felt that the locality label of Khasis was put by mistake in BMNH and actually this is syntype of *P. luteiceps* SWINHÖE from Cherrapunji. Since the holotype was not selected by the original author, one of the males with reg. no. 1926/239 is hereby designated as Lectotype and the other with reg. no. 96/121 as Paralectotype.

**Distribution** India: Cherrapunji, Darjeeling.

**Material examined** ♂, "4601" (handwritten) otherside of the label "Cherrapunji" (typed) (white, rectangular), "*Pantana luteiceps* Swinhoe, type ♂" (white, square, handwritten in SWINHÖE's handwriting), "Swinhoe Coll., Brit. Mus., 1926/239" (white, rectangular, printed) (Lectotype designated); ♂, "TYPE" (white, rectangular, printed), "Khasis, 96/121" (white, rectangular, printed), "*Pantana luteiceps* type ♂, Swinhoe" (white, rectangular, handwritten in HAMPSON's handwriting) (Paralectotype designated) (BMNH).

7 Genus **Redoa** WALKER, 1855a

Type species *R. submarginata* WALKER, 1855a (designated by KIRBY, 1892).

**Diagnostic characters** Body pilose and moderately stout; proboscis very short; palpi upturned reaching vertex of head; antennae deeply pectinated; hind tibiae with two pairs of spurs; forewings acuminate with veins 7, 8, 9 stalked, 10 anastomosing slightly

with 8 and 9 forming an areole; hind wings with veins 6 and 7 stalked or sometimes originated with the cell; abdomen not extending beyond the hind wings.

**Distribution** India, South Africa, Bangladesh, Burma, Indonesia, Pakistan, Sri Lanka.

This genus is known by about 13 species from the world including 5 species from India. The present study include only one species.

#### **R. diaphana** MOORE, 1879

MOORE's description for this species is based on unspecified number of male and female specimens from Darjeeling, present in his own collection and in the collection of Dr. STAUDINGER. In BMNH, four male specimens from Darjeeling could be examined which appear to be of original syntypic series from the data labels. The female specimens of the original series could not be examined. All the above specimens belong to MOORE's collection. Since the original author had not selected the holotype, one male out of the four, is hereby designated as Lectotype and rest three as Paralectotypes.

**Distribution** India: Bengal, Darjeeling, Sikkim; Burma.

**Material examined** ♂, "Moore Coll., 94 106" (white, square, printed), "Darjeeling ♂" other side of the label "*Redoa diaphana* ♂ Moore" (white, rectangular, handwritten) (Lectotype designated); ♂, "TYPE" (red and white, circular, printed), "Darjiling ♂, Atkinson" otherside of the label "*Redoa diaphana* ♂, type Moore" (white, rectangular, handwritten), "Moore Coll., 94 106" (white, square, printed); 2 ♂♂, "Moore Coll., 94 106" (white, square, printed), "Darjiling ♂" otherside of the label "*Redoa diaphana* ♂ Moore" (white, rectangular, handwritten) (Paralectotypes designated) (BMNH).

#### A c k n o w l e d g e m e n t s

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