NEW AND LITTLE KNOWN INDONESIAN *LYMANTRIIDAE* (Lep.)

by

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The Lymantriidae dealt with in this paper were included in a collection sent to me for determination from the Museum Zoologicum Bogoriense, by courtesy of Dr M. A. LIEFTINCK. Insects from Sumatra are of considerable interest, and several species are now recorded from this island for the first time. Those from Java, Celebes and Borneo are for the most part well known and called for little comment. Where necessary, specimens in the collection of the British Museum (Natural History) have also been included. The types of new species have been deposited in the Leiden Museum, but duplicate specimens, where available, were returned to Bogor or have kindly been presented to the British Museum. While determining some species of *Rhypotoses,* it was found necessary to include a short revision of that genus.

Euproctis flavolimbatulana STRAND, 1918. — Java and Malaya. 1 ♂, Lubuksikaping, C. W. Sumatra, 450 m, 1923-27.

Euproctis subnotata WALKER, 1865. — India, Ceylon, China, Siam and Malaya. 1 ♂, 1 ♀, Deli, Sumatra, March and December 1934. 1 ♂, Lubuksikaping, C. W. Sumatra, 450 m, 1923-27.

Euproctis servilis WALKER, 1865. — Celebes, Java and Bali. 1 ♂, 1 ♀, Mt Tanggamus, S. Sumatra, 600 m, December 1939 and March 1940.

Euproctis transversa MOORE, 1859 (fig. 1).

Artaxa transversa MOORE, 1859, Cat. Lep. Mus. E.I.C., 2 : 352, pl. 9a, f. 8.
Euproctis guttistriga WALKER, 1862, J. Linn. Soc. (Zool.), 6 : 129. (Syn. nov.).

In a small group of very similar species, much confusion has been caused in the past by dissimilarity between the sexes. By studying all available specimens it became apparent that all males are areolate, the females all inareolate, and that the markings of the two sexes may differ. Two main species are involved, *E. transversa* and *E. poppaea* sp.nov., with entirely different male genitalia and ranges which overlap, and each is further divided into two species.

The type of *E. transversa* is a female from Java (HORSFIELD), and MOORE's illustration is good. The male genitalia (see illustration) have an undivided clasp, toothed on the dorsal edge, and with a short rounded projection. The aedeagus is tipped with a heavy right-angled projection. The range of *E. transversa* covers east and west Java, Borneo, Sumatra

and Malaya, extending also to Bali, where markings in the males (3 specimens in B.M. collection) are reduced, but the male genitalia unchanged. The type of *E. guttistriga*, a male from Sarawak (WALLACE), corresponds in all respects to Javanese males, and *E. guttistriga* is now sunk.

Euproctis coelebs COLLENETTE, 1932 (fig. 2).

Euproctis coelebs COLLENETTE, 1932, Novit. Zool. 38 : 74, pl. 2, f. 45.
Euproctis innupta COLLENETTE, 1932, Novit. Zool. 38 : 75, pl. 2, f. 46. (Syn. nov.).

This species was thought to be confined to Malaya, but the present collection from the Bogor Museum contains one male, agreeing in markings and genitalia, but with the large expanse of 44 mm, from 400 m, Long Petak, Central East Borneo, October 1925.

The striking differences between the two sexes, in venation and markings, are shown in the original descriptions and illustrations. The male is more strongly marked than in *E. transversa*, particularly the discocellular spot, which is absent or very small in the latter species. Male genitalia are somewhat similar (see illustration), but the clasp is toothed on two edges and the rounded projection is broader. The aedeagus is stouter and the right-angled projection differently situated. Females have a clearly marked difference in the genitalia, but are best distinguished from *E. transversa* by the larger size and heavier markings, well shown in the illustrations.

Euproctis poppaea sp. nov. (fig. 3, 13 & 14).

In this species, as compared with *E. coelebs*, the markings are reduced, the antemedial fascia on the fore-wing of both sexes being absent or confined to interneural markings between the cell and the inner margin. The markings in the postmedial fascia are also reduced. The most distinctive features of the male genitalia are illustrated, showing the clasp with long subsidiary arm and aedeagus with a single curved spine at some distance from the tip.

Expanse: ♂, 39-42 mm, ♀ 45-54 mm.

In coll. British Museum (Nat. History), 1 ♂, 4 ♀ (including holotype and allotype), Mt Kina Balu, N. Borneo; 1 ♂, Balikpapan, E. Borneo; 1 ♀, Borneo; 2 ♀, Mt Gede, Java; 1 ♀, Lawas, Sumatra; 1 ♀, Medan, Sumatra; 1 ♀, Sumatra. In coll. Bogor Museum, 2 ♂, Tandjong Pandan, Billiton.

Euproctis venata sp. nov. (fig. 4, 15 & 16).

This species is nearly related to *E. poppaea*, described above, but can be easily distinguished in both sexes by means of the figures. The veins

on the upperside of fore-wing are lighter than the ground colour, the fasciae are uniform and clear, and the antemedial runs from the upper margin of cell to the inner margin of the wing. The male genitalia show a much shorter subsidiary arm to the clasp.

Expanse: ♂, 41 mm, ♀ 49-56 mm.

In coll. British Museum (Nat. History), 1 ♂, 3 ♀ (including holotype and allotype), Lebong Tandai, Benkulen, W. Sumatra, C. J. BROOKS; 1 ♀, Sumatra.

Euproctis distracta WALKER, 1865. — Sarawak. Described from a single male. 1 ♂, Tjikopo, Mt Pangrango, W. Java, 900 m, September 1940.

Euproctis ormea SWINHOE, 1903. — Borneo and Malaya. 1 ♀, Lubuksikaping, C. W. Sumatra, 450 m, 1923-27.

Euproctis atestacea atestacea HAMPSON, 1893 (fig. 5).

The type of this species is a female from Darjiling. A male in the present collection from C. W. Sumatra, Lubuksikaping, 450 m, 1923-27, expanse 43 mm, agrees in appearance and genitalia with several males from Darjiling, Sikkim and the Khasis. Two males from Malaya in the British Museum collection show an interesting sub-specific difference, and are described below.

Laelia atestacea prasiaelitys subsp. nov. (fig. 6).

♂. Indistinguishable in markings from N. E. Indian specimens of *L. atestacea*. The aedeagus in Indian specimens (see fig. 5) possesses a stout curved spur dorsally near the tip, longer than the width of the aedeagus, this spur being almost obsolete in the Malayan specimens. The clasp in Indian specimens is longer than broad with a different arrangement of spines, shown in the illustration, to the almost round clasp of Malayan males.

Expanse: 43 and 47 mm.

1 ♂ (holotype), Gunong Ijau, Malaya; 1 ♂, Malacca, Malaya, 1904, J. WATERSTRADT, both in British Museum collection.

Rhypotoses COLLENETTE, 1932.

This genus was erected for a Javanese species, *R. atima* COLLENETTE, having in many respects a resemblance to *Dasychira* STEPHENS, but distinguished by the peculiar position of vein 11, which rises beyond the areole from the stalk of veins 8-10, or from the end or near the end of the areole. In the hind-wing veins 3-4 and 6-7 are stalked, distinguished from *Parakanchia* B.-BAKER, in which vein 3 is separated from 4, the latter being stalked with 5 or from a point.

In naming some insects in the present collection, it became apparent that several other species should be transferred to *Rhypotoses*, and these are reviewed below. Females are known in only three species. It is quite possible that those missing are very different in appearance from the

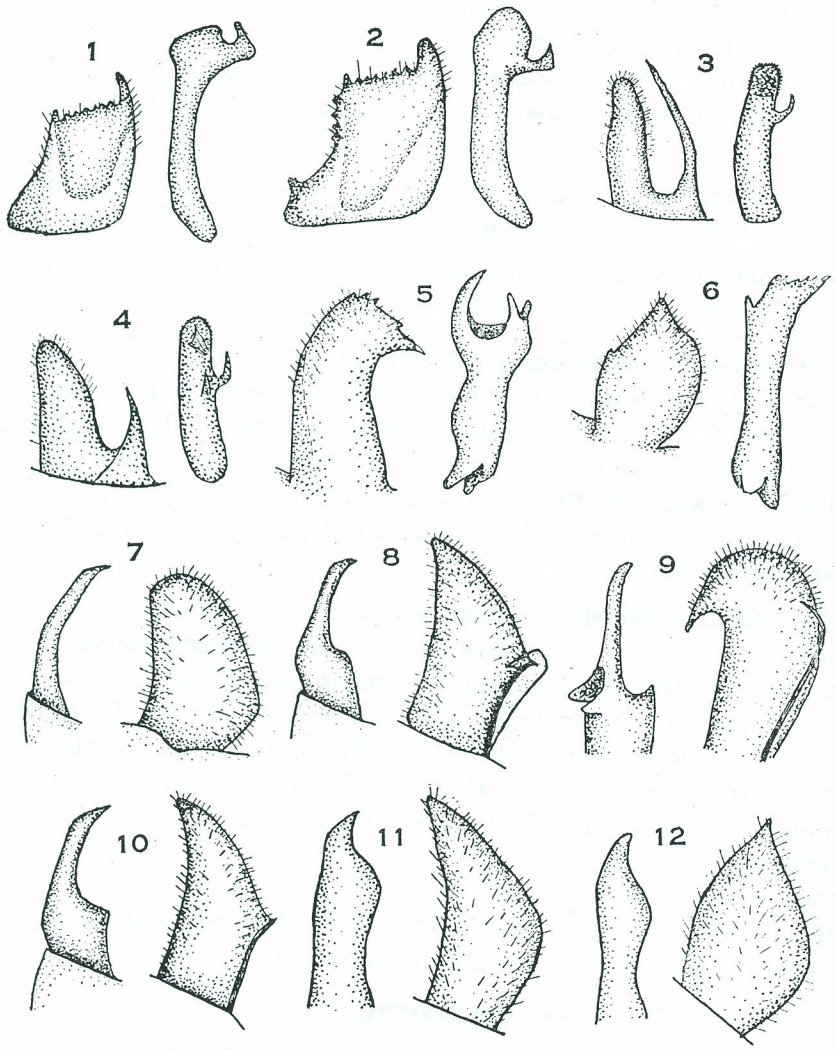

Fig. 1-6. Left clasp viewed from left, and aedeagus, of *Euproctis transversa* MOORE (1), *E. coelebs* COLLENETTE (2), *E. poppaea*, sp.n. (3), *E. venata*, sp.n. (4), *Laelia a. atestacea* HAMPSON (5), and *L. atestacea prasiaelitys*, subsp.n. (6).

Fig. 7-12. Uncus and left clasp, viewed from left, of *Rhypotoses atima* COLLENETTE (7), *R. brooksi*, sp.n. (8), *R. humida* SWINHOE (9), *R. strigifimbria* WALKER (10), *R. ruptata* WALKER (11), and *R. adela* COLLENETTE (12).

males and unrecognised, but a most careful search has been made without success. Male genitalia have been examined for all species and show close relationship.

Rhypotoses atima COLLENETTE, 1932 (fig. 7).

Rhypotoses atima COLLENETTE, 1932, Zool. Meded. Leiden, 14 : 182.

Described from two males from West Java, expanse 38 and 42 mm. In the present collection are seven males from Mt Gede, W. Java, with an expanse of 36-42 mm, and a single male from Tjikopo, W. Java, with an expanse of 34 mm. Females are unknown. Male genitalia, now illustrated, have a long narrow uncus without shoulders and a rounded clasp. In the British Museum (Nat. Hist.) are 19 males from three localities in E. Java,

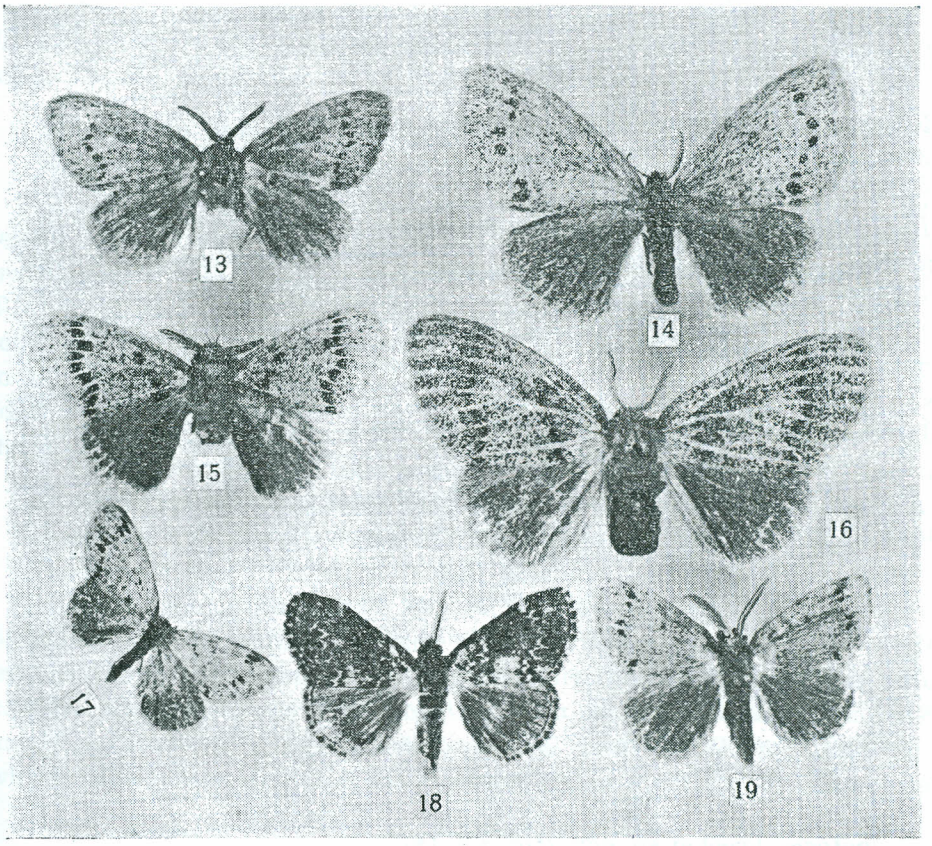

Fig. 13. *Euproctis poppaea*, sp.n., holotype ♂. — Fig. 14. *E. poppaea*, sp.n., allotype ♀. — Fig. 15. *E. venata*, sp.n., holotype ♂. — Fig. 16. *E. venata*, sp.n., allotype ♀. — Fig. 17. *Rhypotoses glebula* SWINHOE (?), ♀ Natuna Is. — Fig. 18. *R. brooksi*, sp.n., holotype ♂. — Fig. 19. *R. humida* SWINHOE, holotype ♂.

expanse 31-35 mm, averaging about 33 mm. These are noticeably smaller and somewhat darker than examples from West Java, but are otherwise similar. The differences are not due to elevation, but may represent local races from separate mountain ranges.

Rhypotoses phloeochroa COLLENETTE, 1932.

Euproctis phloeochroa COLLENETTE, 1932, Novit. Zool. 38 : 75, pl. 2, f. 35.

The original series consisted of five males from Malaya. Three further males from Bukit Kutu, Selangor, are in the British Museum collection.

Expanse 37-43 mm, female unknown.

As compared with the Javanese *R. atima,* genitalia and markings do not differ, but the ground colour of the fore-wing is snuff brown as compared with Prout's brown and the expanse matches only with the West Javanese race. *R. phloeochroa* probably represents a Malayan subspecies, but females, when known, may give further information.

Rhypotoses glebula SWINHOE, 1906 (fig. 17).

Aroa glebula SWINHOE, 1906, A.M.N.H., (7) 17 : 544.

Dasychira alampeta COLLENETTE, 1932, Novit. Zool., 38 : 85, pl. 1, f. 85.

R. glebula was described from Sumatra and *D. alampeta* from Malaya, and a single male is in the present collection from C. W. Sumatra. A series of 18 males is in the British Museum from localities in North Borneo, including Mt Kinabalu and Mt Mulu. Males from these three countries are not distinguishable. In markings the species is similar to *R. atima,* but specimens are plainly separable as they are uniformly small, falling within the limits of 28-30 mm. Male genitalia are also similar, but the uncus has pronounced shoulders towards the base of the trunk.

A careful search through collections for the female has produced in the British Museum a single insect from Bunguran, Natuna Islands, Sept.-Oct. 1894, A. H. EVERETT, which is now illustrated. These islands are midway between Malaya and North Borneo. The insect has the unusual venation of *Rhypotoses,* and the wing shape resembles that of other females in the genus as dealt with below. The postmedial fascia does not exactly match that of any male of *R. glebula,* but is not inconsistent with the determination. While there is little doubt that this insect is the required female, the different patria prevents the designation of neallotype.

Rhypotoses brooksi sp. nov. (fig. 8 & 18).

♂. Palpus and legs Prout's brown, mixed on the legs with tawny olive. Antennal shaft sayal brown, the pectinations darker. Thorax and abdomen

Prout's brown, mixed sparsely on the abdomen with light buff; dorsal tufts of Prout's brown on basal segments of abdomen; anal tuft tawny olive. Ground colour of fore-wing Prout's brown, a light antemedial fascia and a crenate postmedial fascia with points on the veins and concavities terminad; a dark spot on the discocellulars and a series of prominent dark lunular spots beyond the postmedial; a dark terminal line; fringe Prout's brown, tawny olive at the vein-ends. Underside of fore-wing, hind-wing above and beneath, and fringes, Saccardo's umber to snuff brown, lightly mixed with tawny olive, and with tawny olive at the vein-ends on the fringes.

Expanse: 28-34 mm.

6 ♂ (including holotype), Lebong Tandai, W. Sumatra, August and November 1921, C. J. BROOKS, all in British Museum (Nat. Hist).

Larger than *R. glebula* which also occurs at Lebong Tandai, and easily distinguished by the series of prominent postmedial spots on the fore-wing. The male genitalia are nearest to those of *R. strigifimbria.*

Rhypotoses humida SWINHOE, 1906 (fig. 9 & 19).

Euproctis humida SWINHOE, 1906, A.M.N.H., (7) 17 : 543.

This species is known only from Malaya and in the male sex. The female was formerly thought to be the insect described as *Euproctis transversa* MOORE, but the true male of *E. transversa* has now been traced. *E. humida* does not appear to have been illustrated, and this is now remedied. The male genitalia show that the species is most closely allied to *R. strigifimbria,* with a thickening or reinforcement to the ventral edge of the clasp. There is a paired process dorsally towards the base of the uncus, and a sharp curved point on the clasp.

Rhypotoses strigifimbria WALKER, 1862 (fig. 10).

Lacida strigifimbria WALKER, 1862, Journ. Linn. Soc. (Zool.), 6 : 126.
Artaxa fracta WALKER, 1865, List Lep. Ins. B.M. 32 : 333.

Known only from Borneo and in the male sex. The illustration in SEITZ, Grossschm. d. Erde X, pl. 43h is a fair representation. In the genitalia, the clasp has a reinforcement along the ventral edge and the uncus has pronounced shoulders towards the base. The members of the genus mentioned above have dark hind wings; in the present species and those which follow the males have light hind wings.

Rhypotoses ruptata WALKER, 1862 (fig. 11).

Artaxa (?) ruptata WALKER, 1862, Journ. Linn. Soc. (Zool.), 6 : 126.
Euproctis arenacea HAMPSON, 1893, Fauna of Br. India, 1 : 476. (Syn. Nov.).
Mardara ruficeps HAMPSON, 1896, Fauna of Br. India, 4 : 489. (Syn. nov.).
Cifuna biundulans HAMPSON, 1897, Bombay Nat. Hist. Soc. 11 : 294. (Syn. nov.).

The type of *R. ruptata* is a male from Sarawak. It is in poor condition and without an abdomen, but specimens from Sumatra and Malaya appear to correspond. From north-east India HAMPSON has described a male from Sikkim (*E. arenacea*), a female from Bhutan (*M. ruficeps*) and a male from the Khasis (*C. biundulans*). There is some variation in markings and the series are small, but I can find no specific differences and have now sunk these Indian species to *R. ruptata*. For notes on markings, see next species.

Rhypotoses adela COLLENETTE, 1932 (fig. 12).

Euproctis adela COLLENETTE, 1932, Novit. Zool. 38 : 70, pl. 1, f. 3 (female). A.M.N.H., 1949, (12) 1 : 734, pl. 13, f. 9 (male).

The female was described from Malaya, the male from Java, the latter from a large series of both sexes. This species resembles *R. ruptata*, but both species fly in Malaya. In the male genitalia, the clasp is more pointed and differently shaped to *R. ruptata*, as illustrated. In the fore-wing of the male, the space between the antemedial and the base of the wing is dark, not light and matching the ground colour as in *R. ruptata*. The patch of bistre just before the apex of the fore-wing, prominent in the male, and also in both sexes of *R. ruptata*, is absent in all females of *R. adela*. In the present collection there are two females from Tjikopo, Mt Pangrango, W. Java, 700 m.

Dasychira zelotica hamilleter subsp. nov.

D. zelotica COLLENETTE was described in 1932 from a single pair taken in Malaya. In the present collection is a series from Sumatra, very similar in markings to the Malayan specimens, but having the preterminal fascia on the fore-wing of the male more strongly marked and continuous. In the male genitalia two spines are produced from the juxta which are rather longer than the width of the aedeagus, less than half that length in the Malayan male. The teeth on the clasp in Sumatran males are also much stronger.

Expanse: ♂ 48-53 mm, ♀ 75-82 mm.

6 ♂, 3 ♀ (including holotype and allotype), Lubuksikaping, C. W. Sumatra, 450 m, 1923-27.

Dasychira chalana costiplaga WALKER, 1862. — Sarawak, Borneo and Malaya.

4 ♂, Lubuksikaping, C. W. Sumatra, 450 m, 1923-27. In coll. British Museum, 1 ♂, Benkulen, W. Sumatra; 4 ♀, Lebong Tandai, W. Sumatra, July, November & December, 1921 and 1922.