

GEOMETRIDAE

BY

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SUBFAM. OENOCHROMINAE.

Eumelea vulpenaria florinata GUENÉE.

Eumelea florinata GUEN., *Spec., Gén. Lép.* IX, 392 (1858) (Java).

1 ♂, Sumatra, April-May 1929.

Rather large and bright, not quite so broadly infuscated beneath as in the typical forms.

Eumelea incensa nov. spec.

1 ♀, Menado (Celebes).

(*Type* : Mus. roy. Hist. nat. de Belgique.)

64 mm. Like an overgrown *E. vulpenaria feliciata* Guen. (*Spec. Gén. Lép.*, IX, 393, OBERTH., *Et. Lép. Comp.*, XII, fig. 3301), but less yellow-mixed than most of the ♀ forms of that species, the median line of the forewing almost straight (in *feliciata* markedly curved anteriorly), the outer band on both wings considerably broadened, on the underside bright rosy purple, entirely without the grey admixture which is very general in *feliciata*. *E. biflavata* Warr. (*Nov. Zool.*, III, 357, Borneo), of which *incensa* might possibly be a race, is still smaller, with median line well developed on hind- as well as on forewing, with two characteristic yellow postmedian spots which are not developed in *incensa* and with the outer band more as in *feliciata* than in this.

It is unfortunate that only the ♀ is yet known, but it seems desirable to describe it in order to complete the survey of the collection.

SUBFAM. HEMITHEINAE.

***Pingasa chlora subdentata* WARREN.**

Pingasa subdentata WARR., *Nov. Zool.*, I, 383 (1894) (S. Celebes).

1 ♂, Tonsea Lama, Tondano-Menado (Celebes), 29.II.1929.

On the underside the stronger distal projections of the subterminal band on the veins, from which Warren named this form, is a less outstanding distinction than the developed cell-spot of the hindwing beneath and the yellow proximal suffusions of the underside.

***Lophomachia semialba angiportus* nov. subsp.**

1 ♂, Tonsea Lama, Tondano-Menado (Celebes), 28.II.1929.

(*Type*: Mus. roy. Hist. nat. de Belgique.)

30 mm. Wings with both the green ground-colour and the brown clouding more irrorated with white than in *s. semialba* Walk. (1861, Sarawak), the clouding slightly less extended posteriorly, somewhat intermediate towards that of the Ceylon race *viridior* Prout (1916); distal boundary of the green proximal area differently formed, on the forewing indented at R³, on the hindwing at radial fold, on the forewing moreover with a subquadrate projection behind this indentation, bounded posteriorly by M² and distally leaving only a very narrow white passage between itself and the commencement of the subterminal shading; underside with the dark maculation somewhat restricted, on the hindwing with only one of the spots (the subapical) persisting.

***Agathiopsis basipuncta leptocosma* PROUT.**

Bull. Hill. Mus., II, 247 (1928) (N. Celebes).

1 ♂, Tonsea Lama, Tondano-Menado (Celebes), 28.II.1929.

Celebes marks the western limit of the ranges of this species and — unless *Rhomborista* Warr. may be regarded as a section of the same — of the genus, which, as at present constituted, is essentially Papuan.

***Thalassodes veraria* GUENÉE.**

Spec. Gén. Lép. IX, 360 (1858) (« Nouvelle-Hollande? »).

1 ♂, Sumatra, April-May 1929.

I have pointed out elsewhere (*Gen. Ins., Hemith.*, p. 153) that the determination of Guenée's species — founded on an insufficiently localised specimen in poor

condition, which I have not yet examined personally — is somewhat precarious, but it seems that the present species, which is distributed in Java, Sumatra, Borneo, the Moluccas, etc., best fits his characterisation. I believe the somewhat larger form from North India which I named *aucta* (*loc. cit.*) to be a form of the same species.

***Thalassodes depulsata* WALKER.**

List Lep. Ins., XXII, 555 (1861) (Celebes).

2 ♂♂, Tonsea Lama, Tondano-Menado (Celebes), 24.28.II.1929.

This species has a very wide range from North India to the Philippines and Moluccas and has closely similar representatives in South India, New Guinea and Queensland.

***Hemithea insularia* GUENÉE.**

Spec. Gén. Léop., IX, 385 (1858) (Borneo).

1 ♀, Tonsea Lama, Tondano-Menado (Celebes), 28.II.1929.

Also a rather widely distributed species, especially if the form described as *duplicata* Prout (1917), from Fergusson I. and British New Guinea, is really a race of it. Otherwise it is known from the Malayan subregion, with a race or close relative in Assam. I believe it has not previously been recorded from Celebes. The specimen is rather large and fullwinged, probably rather dark in comparison with the name-type; but it is a little discoloured and I am not prepared to give a new name in this difficult group without further material.

***Paramaxates polygrapharia* (WALKER).**

Hypochroma polygrapharia WALK., *List Lep. Ins.*, XXI, 439 (1860) (Sarawak).

Paramaxates vagata var. *celebensis* WARR., *Nov. Zool.*, I, 387 (1894) (S. Celebes).

I cannot see that the Celebes forms deviate from the Malayan, which inhabit Sumatra, Selangor, Singapore and Borneo. When Warren erected his *celebensis*, he was evidently unacquainted, or insufficiently acquainted, with true *polygrapharia* and described by comparison with the allied but quite distinct *vagata* Walk. (1861). The latter differs in the absence of red base of hindwing and of whitish subternal patch of forewing, presence of blackish in the lines of forewing, less vertical (about SM¹ more angulated) antemedian and other small differences.

SUBFAM. STERRHINAE.

Scopula actuario (WALKER).

Acidalia actuario WALK., *List Lep. Ins.*, XXII, 752 (1861) (Ceylon).

1 ♀, Sumatra, April-May 1929.

This modest little species seems to occur almost everywhere, at low altitudes, from India to Formosa, the Philippines and the Moluccas and it is uncertain whether *nigranalis* Warr. (1896) = *parumnotata* Warr. (1898), from Java and the Lesser Sunda Islands, is really distinct. Vide *Nov. Zool.*, XXVII, 296.

SUBFAM. LARENTIINAE.

Ecliptopera rectilinea fortis nov. subsp.

2 ♂♂, Tonsea Lama, Tondano-Menado (Celebes), 25.27.II.1929.

(Type: Mus. roy. Hist. nat. de Belgique.)

47 mm. Rather larger and darker than name-typical *rectilinea* Warr. (*Nov. Zool.*, I, 679). Forewing with the brown parts appreciably more dulled with grey; the white line which borders the large midcostal triangle projecting a fine line into the triangle about half-way along M¹ towards its base. Hindwing also rather greyer than in *R. rectilinea*, more uniform, the faint white subterminal receding further from the termen about R², the termen with no trace of the narrow darkened area which stands out conspicuously in *r. rectilinea* and its near allies, the cell-spot larger. Underside with the dark irroration much more copious than in the name-typical race, the dark patch between R³ and M² relatively much less strong and more ill-defined; cell-spots enlarged, somewhat reniform.

Warren founded his *rectilinea* on « several examples from the Khasia Hills and one specimen from S. Celebes which cannot be separated from the Indian form ». Either he did not study them very closely, or else he took the differences to be sexual and not sufficiently weighty to be mentioned in detail. His typical Khasi series was chiefly, if not entirely, ♂ and he gives the wing expanse for that sex — « male 42 to 46 mm. ». (It is to be remarked that he was at times somewhat over-liberal in measuring expanse). But the Tring Museum contains also two ♀♀ (not only « one ») from « S. Celebes, August-September 1891 (W. Doherty) ». These belong to *rectilinea fortis*, as here described. The species has since been received only from North India and Formosa, with the exception of a single poor ♀ from Sambawa, which probably represents yet another race. The extreme inadequacy of the non-Indian representatives hitherto explains its not having yet been dealt with on a zoogeographical basis.

Ziridava xylinaria subrubida WARREN.

Ziridava xylinaria ab. *subrubida* WARR., *Nov. Zool.*, IV, 71 (1877) (Bonthain, S. Celebes).
1 ♂, Tonsea Lama, Tondano-Menado, 24.II.1929.

I have hitherto seen, from Celebes, only Warren's type ♂, but the specimen now before me lends support, at least in a general sense, to the suggestion (*Ins. Samoa*, III, 146) that it should be regarded as a race rather than an aberration. It may be added that its large size and a difference of tone and relative strength of some of the markings on the upperside seem to me as characteristic as the reddish and heavily dark-marked underside on which Warren based the form.

Steirophora fasciata (MOORE).

Remodes fasciata MOORE, *Lep. Coll. Atk.*, p. 270 (1888) (Cherrapunji).

Phthonoloba olivacea WARR., *Proc. Zool. Soc. Lond.*, 1893, p. 363 (1893) (Darjiling).

Sauris normis HMPSN., *Faun. Ind., Moths* III, 408 (1895) (Sikkim).

Steirophora auratisquama WARR., *Nov. Zool.*, IV, 67 (1897) (Java).

1 ♀, Tonsea Lama, Tondano-Menado (Celebes), 24.II.1929.

Nothing satisfactory has yet been made of the racial differentiation — if any — of this moderately variable species. All the first three names cited above certainly belong to the N. Indian forms of one and the same species. Moore's type ♂ (in coll. Staudinger) and « type ♀ » (in his own collection) are both ♂♂, and the ♀ was first made known by Warren under the name of *olivacea*. Hampson (1895) quite erroneously sank *fasciata* to *lineosa* Moore, placed (as I learned from the British Museum collection) a medley of forms as *olivacea* and gave to a slight aberration of true *fasciata* the name of *normis* nov. sp. (« 80 » mm. is a misprint for 30). Warren's type of *auratisquama* is small and dark, just possibly a different species, though I do not think so; most of the Javan specimens that I have seen are rather small, but otherwise less divergent than this « type » from Indian *fasciata*, while a few are quite similar to the full-sized forms from Malaya, Borneo, the Philippines, etc., and these latter I cannot yet differentiate racially from the Indian. In New Guinea the structure-group — though scarcely the same species — reappears as *Steirophora violacea* Warr. (1906); *graphica* Prout (1916), which I once took to represent *fasciata* in that fauna, has the special abdominal organ shorter and other differences.

The Celebes ♀ is fairly large (34 mm.), rather light and clean-looking, with the markings well expressed, the antemedian a little less sinuous than usual, the pair of lines proximal to the subterminal partly coalescent and dark-spotted;

but it is so closely matched by one of my Selangor (Bukit Kutu, 3,400 feet) ♀♀ that I regard it as probably a recurrent aberration.

The genus *Steirophora* Warr., which I cited in *Journ. Bomb. Nat. Hist. Soc.*, XXXI, 783 as « the subgenus (? genus) *Steirophora* », is clearly entitled to generic rank. Its separation from *Sauris* does not rest only on the « long, horny, scaled, tongue-shaped process from the base of the abdomen » in the ♂ beneath (which in my manuscripts I have called, for brevity, the « steira ») and other ♂ modifications, but also on the pronounced (often wide) separation of veins R³ and M¹ of the ♀ (in *Sauris* they are stalked or coincident, or at least connate) and it is in fact a development of *Phthonoloba* Warr. with the areole simple. The hindtibial spurs of the ♂, which Warren states to be absent, are generally indicated by vestiges, sometimes mere nipples, but can hardly now be functional.

SUBFAM. GEOMETRINAE.

***Thinopteryx praetoraria* (FELDER).**

Urapteryx praetoraria FELD., *Reise Novara, Lep. Het.*, t. CXXII, p. 13 (1875) [Celebes].
1 ♂, Menado (Celebes).

This fine species, to which erroneous localities were originally attributed, has long been known to belong only to Celebes. Cfr Swinhoe, *Ann. Mag. Nat. Hist.* (7), XVI, 154 (1905).

***Hyposidra afflictaria* (WALKER).**

Lagyra afflictaria WALK., *List Lep. Ins.*, XXXV, 1540 (1866) (Celebes).
Hyposidra albomaculata SNELL., *Tijd. v. Ent.*, XXIX, 89, t. IX, p. 2 (1881) (Celebes).
5 ♂♂, Tonsea Lama, Tondano-Menado (Celebes), 22.23.24.II.1929.

An endemic development of a very widely distributed Indo-Australian genus.

***Semiothisa emersaria translineata* (WALKER).**

Macaria translineata WALK., *List Lep. Ins.*, XXXV, 1658 (1866) (Celebes).
1 ♀, Tonsea Lama, Tondano-Menado (Celebes), 25.II.1929.

***Semiothisa avitusaria stigmica* nov. subsp.**

1 ♀, Tonsea Lama, Tondano-Menado (Celebes), 27.II.1929.
(Type: Mus. roy. Hist. nat. de Belgique.)

41 mm. Larger than the other races of *avitusaria* Walk., rather broad-winged, the hindwing with the teeth not very strong. Abdomen with the

paired dark dorsal spots strong. Ground-tone light brown, inclining to cinnamon-drab, the irroration strong, the macular remnants of the violet-whitish ground-colour in the median area weak; postmedian line weakened, except from the subcostal angle to the costa, here rather more oblique than in the other forms. Underside with the pale parts whiter (less brown-tinged) than in them, but very strongly and coarsely irrorated and with the subterminal and terminal cloudings brighter cinnamon, the colour-scheme recalling some African *Semiothisa*, notably the most irrorated forms in the group of *amarata* Guen.; apical white patch of forewing normally developed, posterior one obsolescent, mainly clouded over with the cinnamon colouring; postmedian line feeble, rather more proximally placed than the normal, on the forewing separated from the cinnamon subterminal shade by rather conspicuously white interneural spots.

Of the variable spots outside the postmedian, the unique type shows on the forewings a small, slightly oblique one between R^3 and M^1 , the hindwing a large, elongate blackish one (circ. 2.5 mm.) in the same position, its proximal part accompanied by a very small subsidiary one in front of R^3 .

S. avitusaria (Walk., 1860, Sarawak) is represented in India by the race *odataria* Swinh. (1893, Shillong), which differs little from the name-type, in the Moluccas by *a. violavittata* Pagenst. (1888, Amboina), in New Guinea by an unnamed race similar to the last-named. I should have been inclined to regard *stigmica* as a distinct species had I not had an ab. from Fak-Fak, Dutch New Guinea, very similar on the upperside but with more normal *avitusaria* underside and not above the average in size. The Celebes ♂ will be awaited with interest.

Cleora repetita (BUTLER).

Boarmia repetita BUTL., *Ann. Mag. Nat. Hist.* (5), X, 232 (1882) (Duke of York I.).

1 ♂, Tonsea Lama, Tondano-Menado (Celebes), 23.II.1929.

A rather pretty aberration of this endlessly variable species, which occurs almost everywhere from Nias, the Malay Peninsula and the Philippines to Queensland and the Solomons (vide *Bull. Hill Mus.*, III, 186-187); varied shades of brown, with the lines sharply written, very black.

The earliest known specimen of the species was from Celebes, namely *inflexaria* Snell. (1881) and by this name — unfortunately preoccupied — it was long known.

Ectropis (Ruttelerona) cessaria (WALKER).

Boarmia cessaria WALK., *List Lep. Ins.*, XXI, 383 (1860) (Ceylon).

1 ♂, Sumatra, April-May 1929, a good, well-marked specimen. 1 ♀, Kandy (Ceylon).

Widely distributed from India to New Guinea.

***Petelia medardaria* HERRICH-SCHAEFFER.**

Aussereur. Schmett., I, t. 94, p. 534 (1856) (India).

1 ♂, Tonsea Lama, Tondano-Menado (Celebes), 22.II.1929.

Rather small, but otherwise typical of the form with strong median line developed.

Common throughout the greater part of the Indo-Australian Region.

***Tasta chalybeata* WARREN.**

Nov. Zool., IV, 76 (1897) (S. Celebes).

3 ♂♂, Tonsea Lama, Tondano-Menado (Celebes), 22.II.1929.

Three assumed « species » of *Tasta*, namely the genotype *micaceata* Walk. (1862, Borneo), the present insect and *reflexa* Swinh. (1902, Khasis; also from Bhotan and Sikkim) are presumably races of a single species, differing in little excepting the size, shape and orientation of the ocellus on the hindwing.

APPENDIX

A second lot of *Geometridae* received afterwards contained the following species :

Cosmethis rosenbergi PAG., a ♀ from Dobo (Aroe), 26.III.1929.

Arycanda emolliens WALK., a ♀ from Tanggarie (Celebes-Menado) (Van Braekel).

A. maculosa WALK., a ♀ from Tandjong-Slamat (Sumatra), 5.V.1929.

A. georgiata GUEN., a ♀ from Tondano (Celebes-Menado) (Van Braekel).

Derxena nivea discata WARR., two ♀♀ from Manoi (New Guinea), 2.III.1929.

Clepsimelea phryganeoides major PROUT, Tondano (Celebes-Menado) (Van Braekel), a single specimen.
