

# The Lithosiids, collected by Dr. L. J. Toxopeus in Central Celebes, with remarks on some allied species\*)

by  
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In June-July 1936, Dr. L. J. Toxopeus made a collecting trip through Southern and Central Celebes, a general account of which was published by him in "De Trop. Nat." XXVI (1937) 180 and XXVII (1938) 11 Sep. Having acquired a good deal of his Heterocera, I am in the opportunity to give a review of the Lithosiids of the region concerned, following the arrangement as accepted by Strand: Lep. Cat. pars 26 (1922). The number of species is relatively small, maybe that the collector neglected these less conspicuous moths or that the time was too short and the season less favourable. There can be no doubt, of course, that there must occur an exceedingly large number of species, many of them inconspicuous, less known or even new to science.

A single specimen, collected by Mr. Kalis in about the same region, is included, and several allied species from other islands are taken into consideration, as their examination proved to be useful.

I give preference to the name Lithosiids for the whole family, *Lithosia* F. (1798) being older than *Arctia* Schr. (1801). "*Lithosiadae*", "*Arctiadae*" &c., as written by Hampson and others, is decidedly wrong, being in contradiction with art. 4 of the International Rules of Zool. Nomenclature. Moreover, it is linguistically impossible.

## Subf. Nolinae

### 1. *Roeselia lignifera lignifera* Wlk.

Wlk.: J. L. S. VI (1862) 137 ♂ (*Sarbena*): N. Born. — Hps.: Tr. E. S. (1895) 297 (*Cyphotopsyche ustipennis*): Bhut.; id.: Moths IV (1896) 506, f. 268 ♂; id.: Cat. II (1900) 52, f. 17 (*Roes. lign.*). — Sn.: T. v. E. XLVII (1904) 140, pl. 10, f. 2a—b (1). (*R. ustip.*): Java. — Seitz X (1913), 111, pl. 13 h. — Strd.: Lep. Cat. pars 24 (1920) 479. — van E.: Het Sum. (1930 sep.) 82.

1 ♀, 29 mm, Sidaonta, Palu. The species was first described from N. Born., and afterwards recorded from Bhut., Ind., Ceyl., Java and Sum. This is the first record from Cel.

## Subf. Lithosiinae

### 2. *Nishada marginalis marginalis* Fld.

Fld.: Reise Nov., Lep. (1874), pl. 139, f. 14 (*Cyrtochila*?): Cel. — Hps.: Cat. II (1900) 112 ♂ (*Nish.*). — Dr.-S. X (1914) 216, pl. 14 d. — Strd.: Lep. Cat. pars 26 (1922) 518. — Tams: Mém. Mus. Roy. N.H. Belg., h.s., IV/12 (1935) 34 ♀: Cel.

3 ♂♂, Tadjambu.

The figure in Seitz l.c. is rather poor. Antennae ciliate, above base distinctly thickened. Palpi very small, second joint broadly hairy beneath. Proboscis well developed. Wings rather broad, in fore wing  $v_3$  and  $v_4$  stalked,  $v_5$  absent,  $v_7$ ,  $v_8$  and  $v_9$  stalked,  $v_{10}$  wanting. No areola. Venation of hind wing much reduced, only visible  $v_1$ ,  $v_3$ ,  $v_4$  and  $v_6$ , above the latter a conspicuous sex brand under the dilatated costa, consisting of a comb of spatulate hairs, covering a mass of erectile hairs. On the third tergite a peculiar (scent?) organ seems to be developed.

The coloration of fore wing is dull orange, with a broad, black marginal band. The hind wing is dark greyish with the base light orange.

In future, the genus *Nishada* will become split up in its natural components, and

\*) It was intended to illustrate this paper by a photographie plate. Before reproduction, however, this plate and the negatives were lost by war action; unfortunately it is not possible to replace it at this moment.



then the old Felderian name *Cyrtochila* gets some chance to become applied for this species.

### 3. *N. aureocincta aureocincta* Debauche.

Debauche: Bull. Mus. Roy. N.H. Belg. XIV/9 (1938) 11 ♂ ♀, f. 5 (♂ genit.): Menado.

2 ♀ ♀ from Tadjambou, 28 and 30 mm, and 1 ♀ from Malino, 1000 m, 31 mm.

Debauche describes the species at length, pointing out that it comes very near *N. aurantiaca* Rthsch., from Toli-Toli, N. Cel.

I saw another ♂ ♀ from Menado (leg. van Braeckel, in coll. Nieuwenhuis, Rotterdam). The sex brands of the ♂, on hind wing underside, along costa and anal margin are very obvious.

### 4. *N. sambara sambara* Moore.

Horsf.-M.: Cat. Lep. Ins. E. I. C. II (1859) 304 ♀ (*Lithosia*): Java. — Wlk.: J. L. S. VI (1862) 103 ♀ (*L. intacta*): N. Born. — Sn.: T. v. E. XXII (1879) 83 ♂ ♀, pl. 7, f. 5 ♀, 5 a ♂ (*L. chryseola*): S. Cel.; Java. — Hps.: Cat. II (1900) 113, f. 54 ♂ (*N. samb.*). — P. & S.: T. v. E. XLVII (1904) 142: Java. — Dr.-S. X (1914) 217, pl. 14 d ♀. — Strd.: Lep. Cat. pars 26 (1922) 518. — van E.: Het. Sum. (1930 sep.) 177. — Debauche: Bull. Mus. Roy. N.H. Belg. XIV/9 (1938) 10 ♂ ♀: N. Cel.

1 ♂, 33 mm, from Malino. The species is easily recognizable by its uniform dark yellow coloration and by the obvious male sex brands on hind wing underside, along costa and v<sub>1</sub>. Abdomen upperside with long hair tufts. The insect is recorded from the Larger Sunda Islands, including Bali and Celebes, and from the Philippines.

### 5. *N. benaminea benaminea* n. sp.

1 ♂, Tadjambou, 14 mm.

The smallest species of the genus. Body including antennae, palpi and legs, as well as fore wings, entirely yellow; hind wings paler, slightly suffused with greyish, chiefly near apex. Underside of hind wing along costa and apex and underside of fore wing darker greyish brown. Wing venation as usual, in fore wing v<sub>10</sub> apparently wanting, v<sub>7</sub>, v<sub>8</sub>, v<sub>9</sub> stalked. Cell short and narrow, dc present. In cell, near base, a small, circular androconium patch on underside, also distinctly visible on upperside as a bladderlike structure. Costal area of hind wing strongly dilatate, covering androconium patch of fore wing. Abdomen with long, lateral tufts on segm. 4 or 5. Hind tibiae with two pairs of long spurs.

♀ unknown.

### 6. *Eilema chiloides chiloides* Wlk.

Wlk.: J. L. S. VI (1862) 109 ♀ (*Teulisna*): N. Born.; id. ib. p. 111 ♂ (*Corcu a torta*): N. Born.; id. Cat. XXXV (1866) 1890 ♂ (*Ityca humeralis*): Mal. — Fl d.: Reise Nov., Lep. (1874), pl. 106, f. 13 (*Diastrophia dasypyga*): Cel. — Swh.: Cat. Ox I (1892) 119 ♂, pl. 3, f. 10 ♂ (*Corc. torta*); id. ib. p. 120 ♀, pl. 4, f. 10 ♀ (*Teul. chil.*). — Hps.: Cat. II (1900) 135 ♂ ♀ (*Ilema chil.*). — Dr.-S. XI (1914) 205, pl. 14 i ♂ (*Lithosia*). — Strd.: Lep. Cat. pars 26 (1922) 542 (*Eil.*).

1 ♀, Tadjambou.

A large specimen, agreeing fairly well with Swh.'s figure of Wlk.'s type specimen, from Borneo. The species has a large distribution, from Malaya to N. Australia, provided that the insects, treated as synonyms by Hps. l.c., are the same. The citations above show that the synonymy is rather complicated.

### 7. *Bitecta murina murina* Heyl.

Heyl.: C. R. S. E. Belg. XXXV (1891) p. CCCCXI ♂ (*Lithosia [Bitecta]*): Java. — Hps.: Cat. II (1900) 180 ♂. — P. & Sn.: T. v. E. XLVII (1904) 145: Java. — Dr.-S. X (1914) 203, pl. 15 d. — van E.: Zool. Med. V (1920) 136: Sum. — Strd.: Lep. Cat. pars 26 (1922) 594. — van E.: Het. Sum. (1930 sep.) 163.

1 ♂, Tadjambou.

It is characterized by the narrow wings. The species was not known from Cel.; its distribution comprises Born., Sum. and Java.



8. *Darantasia pardalina celebensis* Draudt.

Dr. - S. X (1914) 187: Cel.

1 ♀, 23 mm, Neengo.

In bad condition. The fore wings are yellow, with prominent and sharp black markings; outer halfth of costa and termen black, inner halfth of costa whitish, a yellow patch near lower halfth of termen. Underside of hind wing with more yellow. of fore wing corresponding with upperside.

The nominotypical *pardalina* Fld. is known from the Sula Isl. only.

## Cyana Wlk.

Dr. Toxopeus captured three different species in Centr. Cel., they will be dealt with in a separate paper.

9. *Graptasura polygrapha polygrapha* Fld.

Fld.: Reise Nov., Lep. (1874), pl. 106, f. 7 (*Cyme*): Cel. — Hps. Cat. II (1900) 422, f. 333 ♀ (*Gr.*). — Kby.: Cat. I (1892) 299 (*Nepita?*). — Dr. - S. X (1914) 159. — Strd.: Lep. Cat. pars 26 (1922) 767.

4 ♂♂ from Tadjambu, 30—33 mm.

Antennae minutely ciliate, proboscis well developed. Hind tibiae with two pairs of very small spurs. In fore wing,  $v_{11}$  like a cross bar connected with  $v_{12}$  towards costa free again;  $v_5$  present, from lower halfth of dc;  $v_7$ ,  $v_8$ ,  $v_9$  stalked; dc well developed, slightly angled inwards. In hind wing,  $v_5$  present, from near lower angle of cell. dc well developed, angled inwards; indication of a longitudinal vein in cell,  $v_6$  wanting,  $v_8$  from upper border of cell.

The markings of the fore wing are rather intricate, as all the lines are doubled. On dc, a small black dot in a circular area of the ground colour. Ground colour yellowish to luteous red towards termen. Hind wings with a broad dark margin 1 band, connected with the wing base by a streak along lower border of cell and  $v_2$ . or this streak wanting.

The species is known from Cel. only.

*Asura* Wlk., typ. *cervinalis* Wlk.: Australia.

The genus causes considerable difficulties to the systematist. It consists of several different groups, and there can be hardly any doubt that these groups will have the rank of separate genera in future.

If we consider as belonging to *Asura* all the species which have  $v_{11}$  and  $v_{12}$  anastomosing in fore wing, several insects, hitherto included in *Miltochrista*, must be transferred to *Asura*, viz. the species *lineata* Wlk. and its allies. They show clearly the connection of both veins in fore wing, moreover, the valva differs much from the other *Miltochrista*'s here under consideration.

Under the *lineata*-group, the following species are ressorting: 1) *lineata* Wlk.: Sum.; 2) *nigrocincta* Sn.: S. Cel.; 3) *calligenioides* Sn.: S. Cel.; 4) *plumbilineata* Hps.: N. Cel. They may be treated as follows.

10. *A. lineata lineata* Wlk. & *calligenioides* Sn.: Text fig. 1—2.

Wlk.: Cat. III (1885) 760 ♀ (*Ammatho*): Sum. — Btl.: Tr. E. S. (1877) 343. — Sn.: T. v. E. XXII (1879) 87 ♂♀. pl. 7, f. 10 ♂ (*Setina calligenioides*): S. Cel. — Swh.: Cat. Ox. (1892) 103 (*Lyclene lin.*): Sum. S. Cel. — Hps.: Cat. II (1900) 482 ♂♀ (*Miltochr.*) — P. & S.: T. v. E. XLVII (1904) 162, (*calligenioides* Sn. p. p.): Java. — Strd.: Lep. Cat. pars 26 (1922) 814 p.p. — van E.: Het Sum. (1930) (sep.) 110 (*M. lineata*).

4 ♂♂ and 1 ♀. Benkulen. S. Sum. (Walsh).

I think they are the real *lineata* Wlk. They are characterized by the brick red fore wings, with an ante- and a postmediana and the cilia greyish black. An antemarginalis is wanting. The antemediana is rather straight, the postmediana strongly curved a dark streak connects the postmediana with the termen on  $v_4$ . The hind wings are dull yellowish red, with a rather narrow marginal area grey. In the only ♀, the coloration of forewing, from base to postmediana, is lighter, more yellowish red.

Furthermore, I have a series of 4 ♂♂ and 3 ♀♀ from W. Java which I can hardly distinguish from the Sumatran form, perhaps that the abdomen in the latter is more greyish, in the Javanese specimens more reddish.



Finally, I have 7 ♂♂ from Tadjambou which obviously belong to the same collective species. They are large, 30—32 mm, the coloration is more vivid, the marginal band in hind wing a little broader, the abdomen more black. The question arises if these specimens from Centr. Cel. are the same as *Setina calligenioides* Sn. (1879), from S. Cel., treated by Dr.-S. X (1914) 136 \*) as a separate species, whereas Strd. l.c. includes it under *lineata*. Judging from Sn.'s figure, l.c. I am not sure if both are identical; Sn.'s specimens are smaller, with a basalis in fore wing and the postmediana double. Only in one of my specimens a basalis is indicated, the postmediana is always simple, connected with the termen by one or more dark streaks. We must realize, however, that Sn.'s *calligenioides* came from S. Cel., whereas my material is from Centr. Cel.; there may be local differences.

When examining the ♂ genitals of these three forms from Sum., Java and Cel., we can state that these structures are nearly the same in the Sum. and Java form so that they can be united under *lineata* Wlk. In my Cel.-specimens, however, these structures are slightly, but distinctly, different so that they can be treated as a subspecies, under the name *lineata calligenioides* Sn., provided that this Centr. Cel.-insect is the same as Sn.'s species from S. Cel.! At any rate, this name cannot be attributed to the Javanese form, as Sn. erroneously did in 1904. The form from Java, as that from Sum., must be called *lineata lineata* Wlk.; cfr. text fig. 1—2.

It is probable that *M. lineata* Wlk., mentioned by Jurriaanse and Lindemans (1919) 35 from Buton, belongs to *calligenioides* Sn.

#### 11. *A. nigrocincta nigrocincta* Sn.: Text fig. 3.

Sn.: T. v. E. XXII (1879) 86 ♂, pl. 7, f. 9 (*Setina*): S. Cel. — Hps.: Cat. II (1900) 482 (*Mitochr. lineata* nec Wlk., p.p.). — Dr.-S. X (1914) 136. — Strd.: Lep. Cat. pars 26 (1922) 814 (*lineata* nec Wlk. p.p.).

3 ♂♂, Tadjambou.

I attribute them to this species. They agree fairly well with Sn.'s figure l.c., though in my specimens the entire coloration is a little more vivid. They are characterized by the nearly complete lack of markings in fore wing, the broad marginal band in hind wing and the general coloration which is decidedly paler than in the preceding group.

Hps. (1900) and, perhaps on this authority, Strd. (1922) treated this species as a form or even as a synonym of *lineata* Wlk., though Sn. (1904) had already insisted upon the validity of his *nigrocincta*.

The ♂ genitals prove that the opinion of Sn. is correct. Chiefly the valva is obviously different from that of the *lineata*-forms, cfr. fig. 3.

#### 12. *A. trifasciata trifasciata* n.sp.: Text fig. 4.

1 ♂, 26 mm, holotypus, Tadjambou.

Differing from *A. lineata* Wlk. by the following characters: fore wing slightly more yellowish red, suffused with grey, with three distinct grey crossbands, viz. a basal one and two median ones, these being more approached and strongly curved in upper halfth. Before termen, a grey shade with projections towards termen on v<sub>4</sub> and v<sub>6-7</sub>. Cilia dark grey. Hind wing dull luteous, only the apex and cilia greyish. Head and thorax red, abdomen black. Underside of the same coloration, outer halfth of fore wing dark greyish.

♂ Genitals, fig. 4 quite different from those of both preceding species, the valva with its apex shorter, broadened, with one large and one smaller tooth along lower border near apex. Aedeagus with the vesica protruding in the only specimen under consideration, this vesica with many rugosities and 3-4 strong short chitinous teeth, a fourth tooth in the interior of the aedeagus.

It is interesting that there are three species of this *Asura*-group in Centr. Cel., which according to our conception, may be arranged as follows:

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\*) Dr.-S. l.c. gives "*lineata* Hps." as a synonym of *calligenioides* Sn. A "*lineata* Hps.", however, does not exist, there is only a *lineata* Wlk., which has priority above *calligenioides* Sn. Perhaps the error may be explained by the custom of Snellen not to mention the authorship of Wlk., but to consider as the author of a Walkerian species the first subsequent author who gave a recognizable description or figure.



- 1) *Asura lineata calligenioides* S n.
- 2) „ *nigrocincta nigrocincta* S n.
- 3) „ *trifasciata trifasciata* R p k e.,

whereas a fourth species, described as *Miltochrista plumbilineata* H p s., from N. Cel., but probably an *Asura* sensu latiore, may also belong to this group. It is unknown to me. In future, when the large genus *Asura* will be divided in its natural components, a new will be unavoidable for the *lineata*-group.

### 13. *A. platyrhabda platyrhabda* T a m s.

T a m s: Mém. Mus. Roy. H.N. Belg., h.s. IV/12 (1955) '36 ♀, pl. 1. f. 6: N. Cel.

I have 1 ♂, 18 mm, from Todjambu, which I ascribe to this species, though not without hesitation, as the holotypic specimen, a ♀, is much larger, 26 mm! The coloration of head, including antennae, palpi and patagia, is yellow, tegulae the same, but with a dark patch in centre. Wings with cilia of a delicate crimson colour, grading into yellow near base of fore wing. The markings of fore wing decidedly black, consisting of several basal and subbasal dots, one rather straight and distinct mediana, a dot on dc, short streaks on the distal parts of the veins. These streaks don't reach the marginal dark line. Underside about the same as upperside, but the markings more dilute. Abdomen yellowish, legs yellowish, with some greyish brown, chiefly on the fore tibia and the end of the tarsus. Hind tibia with two pairs of spurs.

This insect belongs to a difficult group of small *Asura*'s which in future will become united under a separate name. As Dr. T a m s l.c., points out it is related to *A. sinica* Moore: Shanghai, *terminana* Moore: Khas. and *circumdata* Wlk.; Born., all of which H p s. (1900) has sunk to *A. strigipennis* H. - S ch.: Australia. I think that there are several more species to be placed in this group, partially described under *Miltochrista*. The species are mostly yellowish.

In my ♂ of *A. platyrhabda* T a m s, v<sub>11</sub> approaches v<sub>12</sub> over a short distance very much, but does not seem to anastomose with it virtually. One may expect that a careful study of the ♂ genitals will provide a useful base for a better taxonomic understanding of these small moths.

Concerning the future denomination, B tl. (1877) and K by. (1892) 309 have adopted the generic name *Sesapa* for these and a lot of allied *Asura*'s, with *inscripta* Wlk. as a typus, fix. K by. l.c. Judging from the figure in Seitz II (1912), pl. 11 d, there arises some doubt whether this species really belongs to the group under consideration, so that perhaps another name must be chosen.

### 14. *A. nigriciliata nigriciliata* H p s.

H p s.: Cat. II (1900) 445 ♀, pl. 30, f. 19 ♀: Sangir. — Dr. - S. X (1914) 148, pl. 17 g: ib. — Str d.: Lep. Cat. pars 26 (1922) 791. — van E.: Treubia VII (1929) 344 ♂: Buru; Sang.; Cel.

I have 1 ♂ and 2 ♀♀ from Todjambu and 1 ♂ from Sidaonta, Palu 1500 m. W. Cel., 7. 37 (K al i s), which I attribute to this species; at any rate, they come very near to it. The ground colour is a delicate crimson, about as in the preceding species, slightly turning into yellowish in the ♀, more dull reddish and slightly hyaline in the ♂. The hind wings including cilia uniformly delicate crimson. The grey markings in fore wing are irregular and variable, an antemedian and median cross line are bent towards each other, forming an irregular H or X; a small black dot on dc; postmediana strongly curved and undulating; antemarginalis well developed, heavily waved; cilia grey.

### 15. *A. quadrifasciata quadrifasciata* R t h s ch.

R t h s ch.: Nov. Zool. XX (1913) 209 ♀: N. Cel. — Dr. - S. X (1914) 150 ♀: ib. — H p s.: Cat. II (1900) 765, pl. 40, f. 6 ♂: ib. — Str d.: Lep. Cat. pars 26 (1922) 794.

1 ♂, 23 mm, Todjambu. Antennae rather strongly ciliate. Wings broad, fore wing dark yellow with irregular, black markings. cilia also black. Basal halfth of hind wing ochreous, with a slight reddish tinge, outer halfth greyish black. Abdomen except anal region dark grey. Underside with the same markings as upperside, more crimson. Legs yellowish and crimson, spotted with black.



16. *A. latimargo latimargo* n. sp.

1 ♂, 21 mm, holotypus, Tadjambu. ♀ Unknown.

♂. Antennae rather strongly bipectinate, pectinations shorter towards tip, but reaching it. Palpi small, directed downwards. Proboscis present, but rather weak. Wings broad. In fore wing,  $v_{11}$  anastomosing with  $v_{12}$ ,  $v_7$ ,  $v_8$ ,  $v_9$  stalked. Hind tibiae with two pairs of short spurs. General coloration a dark, rich yellow (about "capucine yellow", Ridgw. pl. 3), with dark black markings on the wings. This yellow colour is shown by the head, including antennae and palpi, the body and the legs; only one small, dark dot between bases of antennae; tegulae and notum slightly black dotted. Both wings of the dark yellow ground colour, with a very broad, black, margin, on fore wing extending something along costa; fore wings with some black markings, consisting of six basal and subbasal dots, a slightly curved mediana, crossing cell, and a dc-dot. Costa near base slightly black.

On account on the anastomosing  $v_{11}$  and  $v_{12}$  in fore wing, I place this characteristic species in the genus *Asura*; though it later may become transferred to a new genus or, at least, to a special subgenus.

*Miltochrista* Hb., typ. *miniata* Forst.: Europe.

The genus is also a very large one, Dr. S. X (1914) 134 records not less than 73 species from the Indoaustralian region, besides a lot of subspecies &c. Many of them, or even groups of species, are unsufficiently known; we have already transferred the *lineata*-group to *Asura*; and it may be expected that the present arrangement of so many species and their demarcation is far from being definite.

17. *M. scripta scripta* Wlk.: Text fig. 6.

Wlk.: Cat. XXXI (1864) 254 ♂ (*Barsine*): Cel. — Sn.: T. v. E. XXII (1879) 88 ♂ ♀, pl. 7, f. 11 ♀ (*Hypocrita meander*): S. Cel. — Swh.: Cat. Ox I (1892) 108 (*Barsine scripta*). — Hps: Cat. II (1900) 486 (*Milt.*). — Strd.: Lep. Cat. pars 26 (1922) 823. — Tams: Mém. Mus. Roy. N.H. Belg., h.s., IV/12 (1935) 37 ♂ ♀: N. Cel.

7 ♂ ♂ and 1 ♀, Tadjambu, 2 ♂ ♂ Watamtjisa, Bone (Veen, 6. 35). They may belong to this species, as they agree rather well with the figure of Sn.'s *meander*. The coloration is a light straw yellow, legs of the same coloration or a little darker, with exception of the fore legs which are, as well as the palpi, darker greyish yellow. Antennae dark greyish brown. In the ♂, the last abdominal sternites, before anal tuft, not darkened or only slightly grey.

The ♂ genitals, fig. 6, show the uncus slender, curved, and pointed; the valva of normal shape, with an elongate, beak shaped projection along lower margin, representing the harpe, and with two dentiform projections from upper border. The aedeagus is short and stout, with a large amount of rugosities in its interior, some of them becoming more or less dentiform.

18. *M. erythropoda erythropoda* n. sp.: Text fig. 5.

4 ♂ ♂, Tadjambu, 1 ♂ Neengo, 500 m, Watampone; 1 ♀ Malino; holo-, allo- and paratypes, 30—39 mm.

This species comes very near to the preceding one with which it has a great superficial resemblance. The entire coloration is something more vivid; the markings, always variable to a certain extent in this group, are practically the same or perhaps a little darker and more prominent. The main differences are as follows: antennae distinctly reddish, palpi and fore legs beautifully crimson, other legs dark yellow, more or less suffused with crimson. In the ♂, the abdomen, chiefly on upperside, light crimson; on underside more dark yellow, the last sternites, before anal tuft, black. In the ♀, upper- and underside of abdomen yellow; other characters as in the ♂.

The ♂ genitals differ from the preceding species chiefly by the reduction of the harpe which is much smaller or even reduced to a knob along lower border of valva. See fig. 5.

There is some possibility that the species may prove to be the same as *M. sanguinctincta* Hps.: Cat. II (1900) 481, pl. 32, f. 16 ♂: Batjan, recorded by van E.: Zool. Med. V (1920) 128 ♂ from Halmaheira; at least it seems to come near to it. It may be also allied to *M. celebesa* Tams: Mém. Mus. Roy. H.N. Belg., h.s., IV/12 (1935) 37 ♂, pl. 1, f. 7: N. Cel., but the fore wing is described as "flame scarlet", the entire coloration being more red. It is a pity that Dr. Tams makes no mention



of the genital apparatus; without a description or a figure of this structure such complicated insect groups, like these *Miltochrista*'s remain undeterminable.

#### 19. *M. cuneonotata* Wlk. subsp. ?

Wlk.: List III (1855) 759 (*Ammatho cuneonotatus*): Ceyl. — Btl: Tr. E. S. (1877) 341 (*A. roseororatus*): N. Born.; id. ib. p. 342 (*cunenonot.*): Ceyl.; N. Born.: id.: A. M. N. H. [5] VIII (1881) 380 (*collivolans*): Sum. — Sw h.: Cat. Ox. I (1892) 106 (*Barsine cun.*): Ceyl.; id. ib. p. 107 (*roseororata*): N. Born. — Hps.: Moths II (1894) 117 (*Milt. cun.*). — Pgst.: Jen. Denkschr. VIII (1895) 213: Tjibodas. — Hps.: Cat. II (1900) 482; id.: J. Bomb. N. H. S. XIII (1900) 586. — P. & S.: T. v. E. XLVII (1904) 162 (*M. roseor.*): W. Java. — Dr.-S. X (1914) 136 (*cun. &c.*). — Str d.: Lep. Cat. pars 26 (1922) 808. — van E.: Treubia VII (1929) 342 ♂ ♀: Buru; id.: Het. Sum. (sep. 1930) 111 ♂ ♀, pl. 2, f. 14, 14 a—b ♂ (*cuneonot.*): Sum. &c.

1 ♀, Neengo, 35 mm; 1 ♀, Todjambu, 42 mm, obviously both the same, unfortunately no ♂♂ are at hand, though there is a slight possibility that they belong to the ♂♂, here recorded as *scripta* Wlk. or that they might form a new subspecies. The ground colour in both specimens is a reddish yellow, with some more red along costa near apex of fore wing. The markings are prominent, grey. The hind wing of the smaller specimen has some indistinct apical grey patches and the cilia grey, with the exception of anal region. In the other ♀, these patches are wanting and the cilia being grey near apex only. On the underside, the pattern of the upperside is indicated in the marginal area only, in the smaller specimen more than in the larger one.

The identification of the Malayan *cuneonotata*-forms or subspecies is still a matter of uncertainty. Unfortunately lack of material prevents me to enter deeper upon this question. I can only state that judging from Moore's figure, l.c., the nominotypical form from Ceyl. is not the same as the Malayan form so that the latter ought to bear at least a subspecific name. If one considers *scripta* Wlk., from Cel., as a separate species, than *roseororata* Btl. from N. Born. comes into consideration, which name is already used by P. & S., l.c., for the form from W. Java. There is still another name, of later date, available, viz. *collivolans* Btl., from Sum. What I consider as *collivolans* from Sum., are smaller, entirely yellow specimens which come very near to *scripta* Wlk. from Cel. Van E. l.c. who figures a yellowish and a reddish *cuneonotata* from Sum., suggests that *scripta* from Cel. and *sanguitincta* from the Mol. are the same. Regarding the former, he may be right; but if *sanguitincta* might prove to be the same as *erythropoda* Rpke., the latter represents a separate species.

There is still another species which is uncertain to me, viz. *cruciata* Wlk., described from N. Born. Van E. l.c. records it from Java; what I have as *cruciata* from W. Java, is smaller than *cuneonotata*, in both sexes darker and intensely red, with slight traces of yellow between the veins, the X-mark on fore wings distinct, the lines, forming the X, rather straight, at least not undulating. Van E. l.c. has no specimens from Sum. I have 1 ♀, rather worn and faded, ground colour dull reddish yellow, from Medan, Deli (Fulmek) which I attribute to this species, the X-mark being very clear and obvious.

The ♂ genitals are figured here of a large, dull brick red *cuneonotata* from Djunggo-Ardjuno, E. Java (fig. 7) and of a small, yellow specimen (= *collivolans*?) from Dolok Ilir, E. C. Sum. (fig. 8). Both figures show the small chitinous tooth along upper border of valva which seems to be characteristic for this group and which occurs in *scripta* and *erythropoda* too. In fig. 8, the harpe seems more blunt and curved, but this is due to a less favourable orientation of the structure in the slide. In my *cruciata* from W. Java, the genitals are so different that this species can hardly be included in the *cuneonotata*-group.

#### 20. *M. chi chi* n. sp.

♂. A smaller species. Antennae greyish brown, with cilia and long dense hairs. Palpi minute, third joint very small, acute. Proboscis well developed. Head pale testaceous, no dark frontal spot, only first joint of antennae black. Patagia and tegulae black, bordered with testaceous. Notum partially rubbed off. Fore wing pale testaceous, with black markings consisting of several dots in basal area, an antemediana and a median anastomosing in cell and therefore forming the Greek letter  $\chi$  (chi), a short streak on dc, a strongly bent and heavily dentate postmediana, black striae on veins beyond postmediana, black marginal line and grey cilia. Hind wings paler



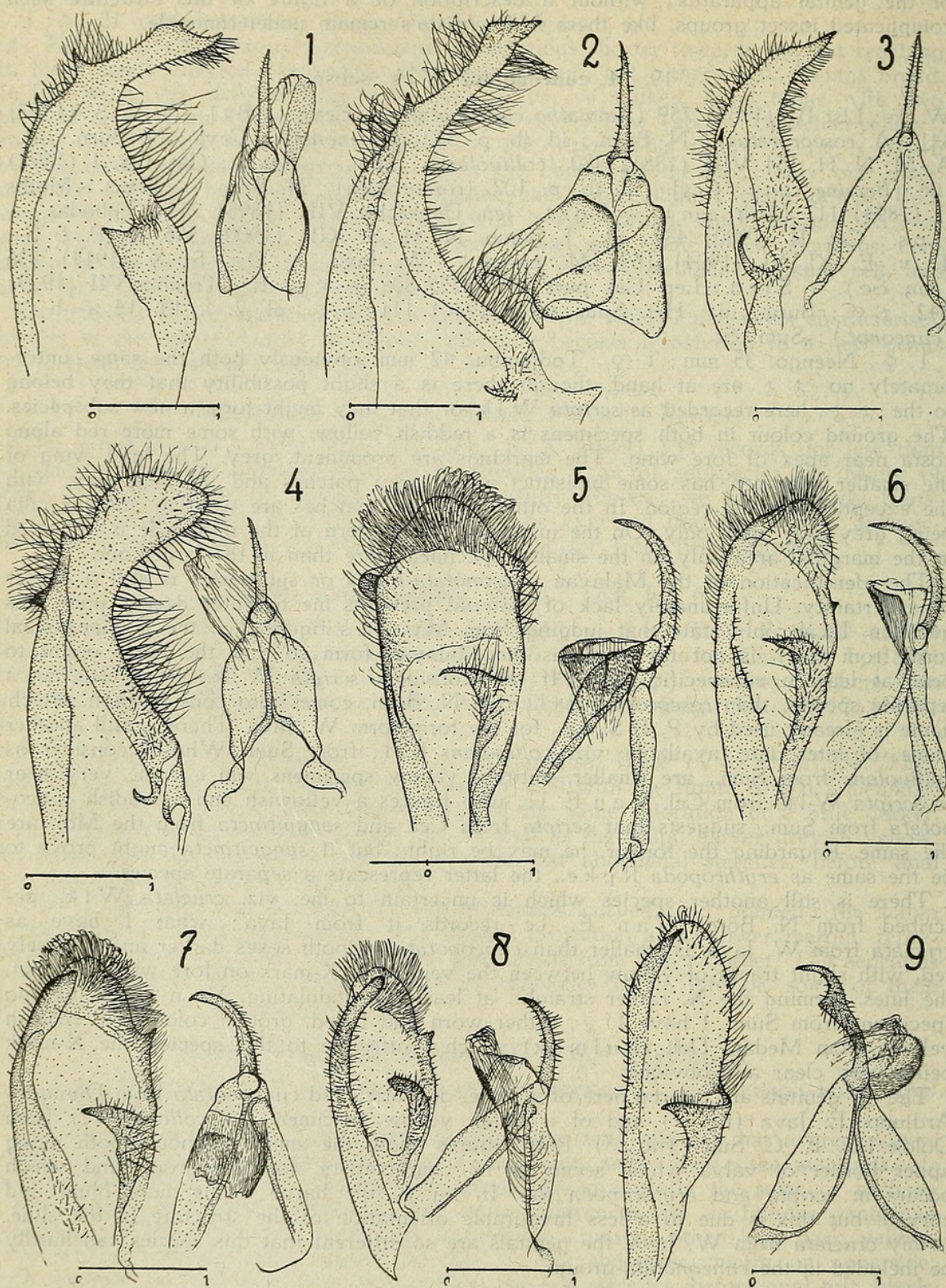


Fig. 1. *As. lineata lineata* Wlk.: Sum.

Fig. 2. *As. lineata calligenioides* Sn.: Centr. Cel.

Fig. 3. *As. nigrocincta nigrocincta* Sn.: Centr. Cel.

Fig. 4. *As. trifasciata trifasciata* Rpke.: Centr. Cel.

Fig. 5. *Miltochr. erythropoda erythropoda* Rpke.: Centr. Cel.

Fig. 6. *Miltochr. scripta scripta* Wlk.: Centr. Cel.

Fig. 7. *Miltochr. cuneonotata* Wlk.: E. Java.

Fig. 8. *Miltochr. cuneonotata? collivolans* Btl.: E. C. Sum.

Fig. 9. *Miltas. celebensis celebensis* Rpke.: Centr. Cel.



yellowish, the marginal edge slightly marked with dark brown, the underside of hind wing with two dark cross lines, the inner one heavier than the outer one, slightly transparent on upperside, but more dilute. Abdomen pale testaceous above and below, hind legs yellowish, banded with brown, middle and fore legs mostly greyish brown.

1 ♂, 23 mm. Tadjambu (holotypus).

By the wing venation —  $v_{11}$  and  $v_{12}$  in fore wing separate — the species proves to belong to *Miltochrista* Hb. senu latiore. As far as one can judge without morphological examination, it forms with certain other species, f.i. *hypoprepoides* Wlk., *radians* Moore, *syntypica* Sw., *zebrina* Moore and *prominens* Moore, a separate group which in future will deserve a special name.

#### *Miltasura* n. g.

♂. Antennae strongly ciliate; palpi small, straight, third joint minute. Proboscis well developed. In fore wing,  $v_{11}$  anastomosing with  $v_{12}$ , towards costa free again,  $v_7$ ,  $v_8$  and  $v_9$  stalked. The anastomosing  $v_{11-12}$  place the genus near *Asura*, though its general appearance is more that of a *Miltochrista*. In hind wing,  $v_{4-5}$  and  $v_{6-7}$  stalked,  $v_8$  from about  $\frac{2}{3}$  upper border of cell. Hind tibiae with two pairs of small spurs.

The ♂ genitals (fig. 9) show a characteristic ventral projection of uncus not yet observed in *Miltochrista* and *Asura*, as far as examined.

♀. About the same as ♂, the antennae also strongly ciliate.

#### 21. *M. celebensis celebensis* n. sp.. Text fig. 9.

♂. Ground colour variable, from pale straw yellow to darker yellow, more or less suffused with reddish. Antennae greyish brown, palpi reddish, with the third joint, at least on its outer side, greyish brown. Head yellow, between antennae a broad, dark streak; patagia, tegulae and thorax yellow, banded with greyish brown. Fore wing with a complete greyish brown pattern, consisting of a subbasalis, an ante- and a postmediana, the two latter anastomosing below cell, and a heavy antemarginalis, with at least two radiations towards termen. All these markings broad, more or less confluent. Cilia grey. Hind wing including cilia very pale yellow, also in the reddish form. Abdomen yellowish to reddish, not darkened towards tip. Legs reddish with dark bands near apex of tibiae. Underside of wings with the pattern of upperside more or less indicated.

The reddish specimens show the dark pattern extended, the interspaces filled up with red, with the exception of a prominent basal and discal, orbicular area which remain yellow and, therefore, are obviously contrasting. This form deserves a special name: f. *jucunda* n.

2 ♂♂, 24—26 mm, Tadjambu, of the darker yellow form; 1 ♂, 28 mm, ib., very pale yellow, but slightly worn; 2 ♂♂, 28—29 mm, ib., f. *jucunda*; 1 ♀, 36 mm, Para Salamakki, G. Lampobatang, 1650 m, f. *jucunda*. This ♀ has the fore wing much darkened, the pale discal area small, but prominent; hind wing and abdomen light reddish.

#### *Allochrista* n. g.

♂. Antennae rather short, not reaching  $\frac{1}{2}$  costa, bipectinate, the branches of the joints slightly claviform, much shortening towards tip. Palpi very small, porrect, slightly surpassing frons; head densely hairy, on vertex the pilosity somewhat elongated.

Wings rather broad, costa of fore wing straight, apex slightly acute, termen slightly oblique, nearly straight. Hind wing rounded, nearly as broad as long. In fore wing,  $v_5$  strongly curved, nearly from the same point as  $v_4$ ;  $v_7$ ,  $v_9$ ,  $v_9$ ,  $v_{10}$  stalked,  $v_{11}$  largely connected with the stalk of  $v_{7-10}$ ,  $v_{12}$  largely coincident with the upper border of cell. Dc present, bluntly angled inwards. In hind wing,  $v_3$ ,  $v_4$ ,  $v_5$  from lower angle of cell,  $v_5$  curved,  $v_6$  and  $v_7$  from upper angle of cell,  $v_8$  from near base of  $v_7$ , free; dc present, bluntly angled inwards. Hind tibiae with one pair of small, apical spurs only.

♂ Genitals (fig. 10) very simple, small and rather weak. Uncus and tegumen not sharply separated, triangular. Valvae narrow and slender, tapering towards apex, blade shaped, without harpe and other structures. Aedeagus straight, slightly tapering, in the specimen examined, the vesica protruded, with a large area of regularly arranged spiculi, directed backwards. A juxta well developed, saccus weak.

♀ unknown.

By the wing venation as well as by the genital structure, this genus proves to be



a very distinct one; its systematical position is not yet clear, though it may stand near *Asura* and *Miltochrista*.

22. *A. toxopei toxopei* n. sp.: Text fig. 10.

♂. Antennae yellowish, the branches darker. Head including palpi yellowish to peach red; the end of palpi slightly black tipped. Patagia, tegulae and notum light peach red, centre of patagia and tegulae with a greyish dot. Wings less densely scaled, fore wings pale yellowish with some light greyish brown markings as follows: some indistinct dots near base, an antemediana and mediana, both angled above lower border of cell; the veins beyond mediana, including upper portion of dc, as well as the cilia, of the same, light greyish brown coloration. In three of the specimens, the mediana passes on the inner side of dc. Hind wing pale yellowish, the cilia grey with a slight grey dc-dot. Abdomen yellowish to peach red, no prominent anal tuft. Under-side of wings about the same as upperside, but paler. Legs light yellowish, slightly mixed with greyish, chiefly on inner side of fore legs.

4 ♂♂, 26—28 mm, holo- and paratypes, Tadjambu. ♀ Unknown.

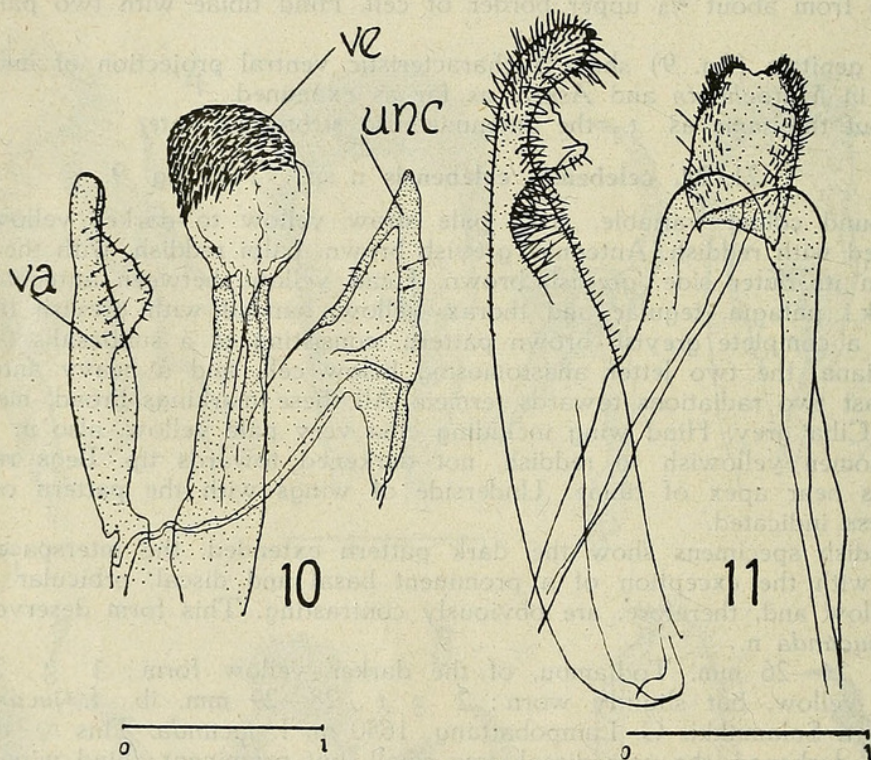


Fig. 10. *Allochrista toxopei* R p k e.. ♂ genitals: ve vesica with spiculi; unc uncus; va valva. One valva omitted.

Fig. 11. *Schistophleps major* R p k e., ♂ genitals; aedeagus and one valva omitted.

*Schistophleps* H p s. and *Chamaita* W l k.

The genera *Schistophleps* and *Chamaita*, in the Far East contain a number of species which are very imperfectly known. These insects are inconspicuous, small, tinny and pale maths with a less marked pattern; they can, however, easily be separated by their genital structures, as far as I can judge. In a later publication I hope to describe some new or little known species from the Archipelago. Dr. Toxopeus brought home three species which seem to be new to science and which may be described as follows.

23. *Schistophleps major major* n. sp.: Text fig. 11.

First antennal joint not elongated, costa of fore wing not much arched, not hairy; v7-8 and v9-10 stalked, v12 ending on v11; with 4—5 cross bars between v12 and costa. The entire coloration is white, the fore wing slightly overshadowed with very light brownish which forms some indistinct dots chiefly on the veins; one dot in centre of cell, another one on dc.

In hind wing, v8 from near upper angle of cell, the cell divided by a mediana.

1 ♂, 21 mm, holotypus; Tadjambu.



The ♂ genitals, fig. 11, are rather strong, the uncus blunt, with two rounded lobes near base; valva elongate, its characteristic shape can be seen in the figure. Aedeagus strongly curved.

#### 24. *Schistophleps minor minor* n. sp.

Smaller than the preceding species; the head, base of antennae and fore wings more hairy. End of  $v_{11}$  not connected with  $v_{12}$ , no veinlets between costa and  $v_{12}$ . In hind wing,  $v_8$  from about  $\frac{1}{2}$  upper border of cell.

Coloration white, the fore wing with a slight brownish tinge. No distinct dots on dc or in cell.

1 ♀, 16 mm; Todjambu.

#### 25. *Chamaita celebensis celebensis* n. sp.

1 ♀, 18 mm, holotypus, Todjambu. I regret that there is no ♂ at hand, for closer morphological examination.

A rather large species. Costa of fore wing very hairy, strongly curved.  $V_{12}$  free from base of wing,  $v_{11}$  and  $v_{10}$  from upper border of cell,  $v_9$  wanting,  $v_7-8$  stalked,  $v_6$  curved upwards,  $v_5$  slightly from below middle of dc, dc distinct, angled inwards, the other veins present, straight. In hind wing,  $v_8$  from  $\frac{1}{3}$  upper border of cell, cell long, large, dc angled inwards.

Color white, very hyaline, with very faint, light, brownish cross markings on fore wing; a curved antemediana and a strongly arched postmediana can be distinguished, as well as a marginal row of elongated dots on the nerfs. Probably a small darker dot between base of  $v_4$  and  $v_5$ .

#### 26. *Eugoa incerta incerta* n. sp.

1 ♀, 19 mm. Malino. 100 m.

Head, antennae and palpi light greyish, thorax and fore wings of the same coloration, the latter with some black markings, consisting of several basal dots, an incomplete, undulating antemediana, two discal dots, the upper one on dc, the lower one between base of  $v_2$  and  $v_3$ , an undulating, less prominent postmediana, the area beyond it darker grey, an incomplete antemarginale, formed by internerval dark dots and starting from apex and bent inwards on  $v_2$ , a very regular row of marginal dots. Cilia light grey, darkening towards outer margin. Abdomen grey. Underside light greyish, shining, of fore wings darker. Pectus and legs near base whitish.

The species stands near *bipunctata* Wlk. of which I have a series from Java. It seems to be quite different, chiefly by the postmediana which is more straight and less oblique, and by the arrangement of the two discal dots which in *bipunctata* Wlk. are placed on dc and in the cell, whereas in *incerta*, there is only one dc-dot and another dot vertically below it, in  $c_2$ .

#### Subf. Arctiidae.

#### 27. *Maenas malayensis* H p s.: Text fig. 12—13.

H p s.: Cat. III (1901) 249 ♀, pl. 43, f. 2 ♀: Bali. — P g s t.: Jen. Denkschr. VIII (1905) 212, pl. 13, f. 7 ♂ (*Alpenus maculifascia* Wlk.): Tjibodas. — R t h s c h.: Nov. Zool. XVII (1910) 117 ♂ ♀: Lombok; id. ib. (*maculifascia roseata*): Tim.; Mol.: Amb.: Queensl. — R t h s c h.: S. X (1914) 238 (*maculif. mal.*): Bali; Lomb. — S t r d.: Lep. Cat. pars 22 (1919) 162 (*maculif. ab. roseata*): Tim.; Buru; Tern.; Mol.; Amb.; Queensl.; id. ib. p. 163 (*mal.*): Peru (sic!); Bali; Lomb.

There exists much uncertainty with regard to the correct separation of the different species of the genus *Maenas* H b.: Verz. (1822?) 167, typ. *vacula* Stoll: S. Afr. By its general feature, the genus comes near *Spilosoma* sensu lat., but may be separated by the absence of median spurs in hind tibiae. If we compare the ♂ genitals of *Sp. lubricipedum*, the typus generis of *Spilosoma*, with those of *Maenas maculifascia* or *malayensis*, there is a striking difference. In *lubricipedum* and allies, these structures are heavily chitinized, robust and large; in *maculifascia* and allies, they are weak and small, representing quite another typus.

Two of the species, described under *Maenas*, are common in the Archipelago, viz. *maculifascia* Wlk.: List III (1855) 676 ♀ (*Spilos.*): Java, and *malayensis* H p s. l.c. The former is characterized by the pale yellowish coloration of abdomen in both sexes; in the ♀, the dark cross bands of fore wing are rather well developed. *Maculifascia* must have a wide distribution, from Malaya to the Philippines. I have a good



series from Sum. (Deli and Lampongs) as well as from Java. In the latter island, it is common everywhere, but only in the lowlands, perhaps hardly reaching the 1000 m line. The caterpillar, excellently figured by P. & S.: T. v. E. XLVIII (1905), pl. 6, f 1, is common in cultivated land, often running with great speed over sunny roads &c., like *fuliginosa* in Europe does. They live gregariously on a great variety of plants, some of them enumerated by P. & S. l.c.; on the young, succulent shoots of low dadap (*Prythrina* sp.) they are often to be seen in large numbers; to cocoa trees (*Theobroma*) they may become troublesome, see Cultuurgids VIII (1907) 183. Before moulting, they construct large webs where they shelter during this critical period. Once I had such a web in my garden at Salatiga, Centr. Java, along the stem of a young *Spa-thodea*-tree which had a length of about 70 cm!

In the mountains of Java, however, this insect is replaced by what I consider as *malayensis* H p s., characterized by a distinctly red abdomen in ♂, lighter crimson in ♀, the grey markings in the latter being much reduced, sometimes nearly wanting, whereas in the ♂, these markings are darker grey, more or less confluent and therefore more prominent. H p s. in his diagnosis, l.c., does not mention the colour of the abdomen, differentiating both species by the pattern of fore wing only. He correctly alludes to the weak pattern of the ♀. R t h s c h. (1910) l.c. describes a new subsp. of *maculifascia*, as *roseata*, from Timor, Buru, Amb., Mol. and N. Austr., furthermore, he mentions *malayensis* as a distinct species from Lombok. In Seitz X, l.c., however, he makes no mention of *roseata* and treats *malayensis* as a subsp. of *maculifascia*, pointing out that the abdomen in *malayensis* is red. Strand (1919) l.c. enlists *roseata* as an "ab." of *maculifascia* and records *malayensis* as a distinct species. P g s t. l.c.

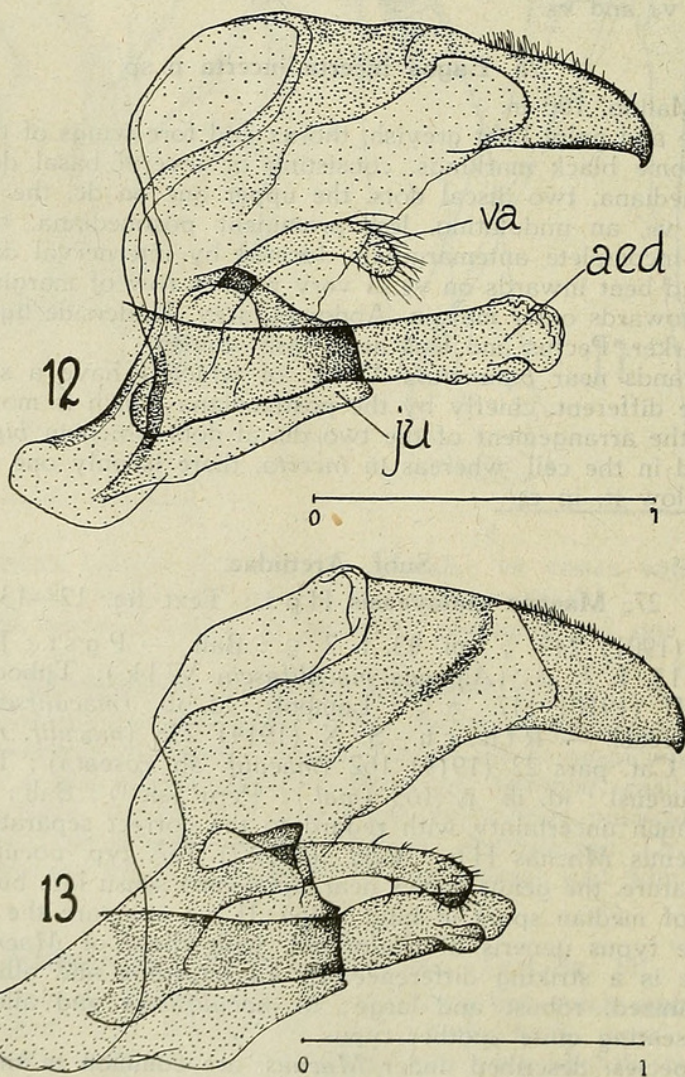


Fig. 12. *Maenas malayensis* H p s., Djunggo-Ardjuno, E. Java; ♂ genitals; aed aedeagus; va valva; ju juxta. One valva omitted.

Fig. 13. The same, ♂ from Batjan. The slight difference shown by the valva, may be due to a different orientation in the slide.



has recorded, and figured a ♂ of what he calls *Alpenus maculifascia* from Tjibodas, 1450 m. In the figure, the abdomen is rather dull yellowish than red. This may be due to greasiness, or the locality is erroneous, as from this altitude only *malayensis* can be expected.

From Sum., *malayensis* is unknown to me, all the many specimens which I received from that waste island, belonging undoubtedly to *maculifascia*; van E. l.c. does not mention it. From Java as already stated, I have *maculifascia* from the lower country only, including localities as Bandung, 700 m, Salatiga, 580 m. *Malayensis* is very numerous at higher elevations, I have it a.o. from Perbawatee, 1000 m, Sindanglaja, 1400 m, Tosari 1750 m, Idjen Plains, 1500 m, &c.

From Cel., I have a series of 17 ♂♂ from Tadjambou and 1 ♂ from Sidaonta, Palu (Kalis); unfortunately, there is no ♀ at hand. Furthermore, I saw it numerous in the island of Batjan (July-Aug. 1929) where it occurred already at sea level. It defoliated with preference young dadap shrubs. But I have never seen a typical *maculifascia* from Cel. or other Moluccan islands. Thus we arrive at the following arrangement:

*Maenas maculifascia* Wlk.: Sum.; Java (low lands).

„ *malayensis* Hps.: Java (mountains); Bali; Cel. (low land and mountains?); Moluccos (low land and mountains?)

In N. Australia, the species is represented by *M. areoscapa* Trn., it must remain beyond consideration, on account of lack of material.

Last but not least the question arises whether *maculifascia* and *malayensis* are separate species or not. The geographic distribution gives some indication, that they are indeed separate. In Java, I have seen no intermediate forms. In future, investigators should pay attention to these insects, chiefly on an altitude where both may be supposed to meet each other, i.e. about 1000 m. Crossing experiments are much desirable.

The ♂ genitals are very simple and consist of a proportionally heavy uncus + tegumen, its shape being about triangular. The valva is reduced to a club like appendage, slightly bent and with the apex very blunt and somewhat hairy. The aedeagus is rather short and thick without any prominent chitinous structure. Ventrally it is supported by a large, shield like juxta. I have made several slides of both species from various localities, unfortunately they show no striking differences. The pilosity of the apex of valvae may be variable within small limits, but this is certainly not sufficient to discriminate the species. Therefore, we may conclude that in this case, the male genitals are less useful for a definite demarcation of the species under consideration, perhaps on account of their very simple construction.

## 28. *Spilosoma leopoldi leopoldi* Tams.

Tams: Mém. Mus. Roy. H.N. Belg., h.s., IV/12 (1935) 37 ♂, pl. 1, f. 8—9 ♂♂ (*Diacrisia*): N. Cel.

10 ♂♂ from Tadjambou, the insect must be common there. They are rather variable, the ground colour being either more red or more ochreous buff, the black median fascia in fore wing often more or less obsolete, in one specimen completely wanting: f. *extincta* n.

Hps.: Cat II (1900), had the misfortune to unite all the so-called *Spilosoma*'s, with a large number of quite different Arctiinae, under *Diacrisia* Hb. which hereby has become a very large and very heterogeneous genus. Future authors will have the task to split up this "genus" into its natural components and to attach correct names to them, though I fear that this task by no means will be a simple one. A satisfactory arrangement even of the few European "*Spilosoma*'s" causes difficulties. Lempke, in his Cat. Nederl. Macrolep., T. v. E. LXXXI (1938) 271, enumerates *lubricipedum* L. under *Spilarctia* Btl., on p. 237 *menthastri* Esp. and *urticae* Esp. under *Spilosoma* Steph. and *mendica* Cl. under *Diaphora* Steph., whereas Tams (1939) gives for *mendica*: "*Cynia* Hb., Zutr. Samml. Ex. Schm. I (1817) 7, as fixed by the Dict. Univers. (1844)". I can only find *Cynia* Hb.: Verz. (1822?) 167 (by war circumstances not at hand here), resp. Zutr. &c., 2. Heft (1823), pl. 558 (67), f. 387—388 (*Cynia budea* = *Hyphantria cunea* Drury: Ill. &c. (1773) 36, pl. 18, f. 4).

## 29. *Sp. dohertyi dohertyi* Rthsch.

Rthsch.: Nov. Zool. XVII (1910) 151 ♂ (*Diacr.*): Centr. Cel. — Rthsch.-S.



X (1914) 250 ♂. — H p s.: Cat. suppl. II (1920) 387. pl. 59, f. 5 ♂ (*Spilos.*). — T a m s: Mém. Mus. Roy. H.N. Belg., h.s., IV/12 (1935) 37 ♂ : N. Cel.

4 ♂ ♂, Tondano; 1 ♀ Malino.

I am inclined to attribute these insects to this species. They are slightly variable, the ground coloration is dirty whitish, more or less suffused with brownish on fore wing and red on hind wing. The transversal fasciae on fore wing are very incomplete, only indicated by two black dots near inner margin, the outer ones sometimes connected by a faint postmediana with the outer black dots on costa. A row of slight black dots in apex. Abdomen above red, with a dorsal and a lateral row of black dots, underside whitish. Antennae whitish, first joint of palpi and sometimes base of second red, second and third black, frons black.

### 30. *Sp. sumatrana sumatrana* S w h.

S w h.: A.M.N.H. [7] XVI (1905) 143 ♂ : E. Sum.; id.: ib. [8] XVIII (1916) 212 ♀ : Sum. — R t h s c h.: Nov. Zool. XVII (1910) 147 ♂ ♀, XVIII (1911), pl. 3, f. 31 (*sumatrensis* [sic!] *continentalis*) : Mal.; id.: ib. ♂ (*sumatrensis javanica*) : E. Java. — R t h s c h. - S. X (1914) 248, pl. 23 c ♂ ♀. — S w h.: A.M.N.H. [8] XVIII (1916) 212 ♀ : Sum. — H p s.: Cat. suppl. II (1920) 410 (*Spilos.*). — R t h s c h.: J. F. M. St. Mus VIII/2 (1920) 113 ♂ ♀ : Centr. Sum. — v a n E.: Het. Sum. (sep. 1930) 187 (*Diacr.*). — R p k e.: Misc. Zool. Sum. XCIX (1935) 4 : E. Sum.

1 ♂, 32 mm, Todjambu.

It agrees rather well with my specimens of *sumatrana* from Deli, but the entire coloration is of a much lighter type, three cross fasciae on fore wing are indicated, hind wing light greyish brown, a black dot on dc, traces of dark submarginal dots are hardly discernible. Abdomen laterally dull reddish, legs and head dark brown. It resembles the subsp. *javanica* R t h s c h. and may in future prove to be a subsp. This insect has not yet been recorded from Cel.

As v a n E., l.c. has pointed out the synonymy of this species, as well as that of the nearly allied *Sp. strigatula* Wlk. and *amilada* S w h. is not beyond every doubt.

### 31. *Sp. rothschildi rothschildi* n. sp.

1 ♂, 42 mm. Todjambu.

Antennae greyish brown, the ridge towards apex white scaled. Palpi with the first and second joint red, third brownish. Head beneath greyish brown, above rather pure white. Patagia whitish as head above, slightly bordered with crimson, near their median line with a large, dark grey brown patch. Tegulae white, only with a dark brownish patch in basal third. Mesonotum whitish, very slightly suffused with crimson in basal part, with a number of brown patches arranged, and partially confluent, according to the ordinary *Spilosoma* pattern. Hind wing whitish, more suffused with red along costa and anal margin, with four greyish brown patches, one on dc, a second on v<sub>5</sub>, a third between v<sub>3</sub> and v<sub>2</sub>, a fourth indistinct, in anal angle. Abdomen red, with a dorsal and lateral rows of small, dark patches. Legs red and greyish; underside of wings more suffused with red, chiefly along costa.

It may come near *Diacrista sparsalis* Wlk.: List XXXI (1864) 287 ♀ : N. Cel. of which only the ♀ seems to be known. It may be even the ♂ of this species, though the general coloration of both wings, especially of hind wing, is more whitish.

### 32. *Amsacta lactinea lactinea* C r.

C r.: Pap.Ex. II (1777) 58, pl. 133 D ♀ (*Phal. Bomb.*) : Batavia. — H r s f. - M.: Cat. Lep. Ins. E.I.C. II (1859) 361 ♂ ♀, pl. 16, f. 12 (l.), 12 a (coc.), 12 b (p.) (*Aloa*) : Java &c. — S n. T. v. E. XXI (1876) 8 : Java; id.: ib. XXII (1879) 101 ♂ : S. Cel. — H p s.: Moths II (1894) 27 (*Cretonotus*). — P g s t.: Jen. Denkschr. VIII (1895) 212. — H p s.: Cat. III (1901) 328, f. 147 ♂ (*Amsacta*). — R t h s c h. - S. X (1914) 251. — S t r d.: Lep. Cat. pars 22 (1919) 240. — T a m s: J. N. H. S. Siam VI (1924) 233 ♂ : Siam. — v a n E.: Het. Sum. (sep. 1930) 194 : Sum. &c. — T a m s: Mém. Mus. Roy. H.N. Belg., h.s., IV/12 (1935) 28 ♀ : Sum.

1 ♀, 57 mm. Paletay, S. Bone (C. Veen, via Toxopeus).

The species is common and has a wide range from S. Japan, China, Formosa, through India, Malacca, the Archipelago, reaching the Phil. and N. Guinea. Its pat-



tern is remarkably constant, even so that no subspecies can be distinguished. Perhaps this uniformity is due to a certain homozygotisme.

### 33. *Cretonotus transiens transiens* Wlk.

Wlk.: List III (1855) 675 ♀ (*Spilosoma*): Ind.; Cel.; id. ib. p. 685 (*Amphissa vacillans*): Hongk. — Hrsf.-M.: Cat. Lep. Ins. E.I.C. II (1859) 362 ♂ ♀, pl. 9 a, f. 14 ♀ (nec ♂!), pl. 16, f. 13 (l.), 14 (p.) (*Phissama vac.*): Java. — Sn.: T. v. E. XXII (1879) 101: S. Cel. — Btl.: Ill. &c. III (1879) 5, pl. 42, f. 4. — Hps.: Moths II (1894) 29, f. 10 ♂; id.: Cat. III (1901) 334, f. 150 ♂. — P. & S.: T. v. E. XLVIII (1905) 190. — Rthsch.-S. X (1914) 252. — Strd.: Lep. Cat. pars 22 (1919) 246. — Rthsch.: J. F. M. St. Mus. VIII/3 (1920) 113: Centr. Sum. — Tams: J. N. H. S. Siam VI (1924) 234: Siam. — van E.: Het. Sum. (sep. 1930) 195: Sum. — Tams: Mém. Mus. Roy. H.N. Belg. h.s. IV/12 (1935) 38: Sum. — Rpk.: Misc. Zool. Sum. CXIX (1935): Sum.

4 ♂ ♂, 4 ♀ ♀, Tadjambu; 1 ♂, Neengo.

A common species, widely spread from S. Japan through S. E. Asia, the Larger Sunda isl., Cel. and the Phil.

### 34. *Pericallia aequata aequata* Wlk.

Wlk.: List XXXI (1864) 160 ♀ ♂ (*Satara*): Cel. — Fld.: Reise Nov., Lep. (1874), pl. 107, f. 16 (*Arctioneura lorquini*): N. Cel. — Hps.: Cat. III (1901) 350 (*Per. aequ.*). — Rthsch.: Nov. Zool. XVII (1910) 167. — Rthsch.-S. X (1914) 257, pl. 64 h ♂ ♀. — Strd.: Lep. Cat. pars 22 (1919) 259.

6 ♂ ♂, Tadjambu, 1 ♂, Malino, 1 ♂, 1 ♀, Centr. Cel.

These specimens agree with the fig. in Seitz l.c. of *aequata*, at any rate they don't represent intermediate forms between this species and *lorquini*, as one might expect. *Lorquini* from N. Cel. seems to be a prominent subspecies, if it has not the rank of a separate species.

*Pericallia*, as used by Hps., Rthsch. a.o., seems to be rather heterogeneous. In future, when it will be separated in its natural components, the name *Satara* Wlk. may become reestablished for *aequata* (sole species and, therefore, *typus generis*). *Satara* may be related to *Niasana* Rpk.: Ent. Ztschr. (Frkf.-M.) LI (1937) 194, *typ. dehanna* Pgst., but the wing venation and the ♀ antenna are different. In *Niasana*,  $v_6$  and  $v_7$  in hind wing are on a long stalk, in *Satara*, they are separate. In the former, the ♀ antenna is bipectinate, in the latter it is slightly ciliate only.

### 35. *P. rudis rudis* Wlk.

Wlk.: List XXXI (1864) 287 ♀ (*Areas*): Amb.; Cel.; Makian. — Sw h.: Cat. Ox. I (1892) 176 ♀, pl. 4, f. 6 ♀: S. Cel. — Hps.: Cat. III (1901) 360 ♀. — Rthsch.: Nov. Zool. XVII (1910) 171. — Rthsch.-S. X (1914) 256 ♂ ♀, pl. 24 i ♀, pl. 25 a ♂ (*Per. pasinuntia* Cr.). — Strd.: Lep. Cat. pars 22 (1919) 268

1 ♀, 60 mm, Tadjambu.

It agrees rather well with Wlk.'s type specimen, as figured by Sw h. l.c. only the light patches on fore wing are a little larger, the discal patch nearly reaching hind margin. The coloration of these patches is less pure white, but a little pinkish. The hind wings are entirely crimson, with a dark greyish brown costal patch near apex, two small dark patches on dc and two or three such patches near anal angle. The antennae are ciliate. In hind wing,  $v_6$  and  $v_7$  from upper angle of cell, separate.

*P. rudis* Wlk. belongs to a group of beautiful and conspicuous Arctiine moths which are widely spread through the Moluccos. The demarcation of the species is not yet a definite one. Rthsch.-S. l.c. has treated *rudis* Wlk. as a subsp. of the old *pasinuntia* Stoll from Amb., whereas Strd. l.c. enumerates it as a separate species. We follow Strd. with the reserve that lack of material does not enable us to enter upon this question.

### Sub. *Nyctemerinae*.

Dr. Toxopeus collected about 10 species which will be dealt with in another paper. He told me personally that these moths sometimes were so numerous at lamplight that they became annoying. Therefore, he did not pay much attention to them.

### Subf. *Asotinae* (*Hypsinae* auct.)

There were no *Asotinae* under the material received.





Roepke, W. 1944. "The Lithosiids, collected by Dr. L. J. Toxopeus in Central Celebes, with remarks on some allied species." *Tijdschrift voor entomologie* 87, 77–91.

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