# BECCARI AND MODIGLIANI'S COLLECTION OF SUMATRAN BLATTIDAE IN THE MUSEO CIVICO, GENOA

By R. HANITSCH, Ph. D.

The collection of Blattids from Sumatra and adjacent islands in the Museo Civico, Genoa, which Professor R. Gestro kindly entrusted to me for determination, and which forms the subject of the following pages, is of great historical interest. A part of it had been brought together by Dr. O. Beccari in 1878, but the major portion by Dr. E. Modigliani in the years 1886 to 1894, whilst one specimen was taken by H. Raap in 1896. The collection comprises altogether 64 species, 12 of which are described below as new, including also one new genus, *Dictyoblatta*. However, the most interesting item of this valuable collection is a small and insignificant-looking larva, *Miopanesthia* sp., which bears distinctly developed styles, an occurrence not previously observed in the sub-family Panesthinae.

When in 1915 I published my first paper on « Malayan Blattidae » (Journal, Straits Branch, Royal Asiatic Society, No. 69), only 32 species of Blattids had then been definitely recorded from Sumatra. With one single exception, all these species had originally been described from other parts of the Malay Archipelago, chiefly from Java. Only of *Archiblatta hoevenii* Vollenhoven, the first recorded locality was Sumatra.

Since then I have been able to examine several valuable collections from that island. The first, a small one, was made by Messrs H. C. Robinson and C. Boden Kloss in 1914 in the highlands of Korinchi, W. Sumatra. A larger collection, sent to me by Professor Yngve Sjöstedt of the Stockholm Museum, was made by Dr. E. Mjöberg on the East coast, chiefly Medan and neighbourhood, whilst in charge of the Zoological Division of the Deli Experimental Station in the years 1919 to 1921. It contained

11 new species. Very important in its results was an expedition to the Mentawi Islands, West Sumatra, jointly undertaken in 1924 by Mr. C. Boden Kloss and Mr. N. Smedley ot the Raffles Museum, Singapore, and by Dr. H. H. Karny of the Buitenzorg Museum. Not less than 53 species were obtained on that occasion, including 1 new genus and 19 new species.

Of great interest was a collection from Fort de Kock, on the West coast, and neighbourhood, made by Mr. E. Jacobson in the years 1922 to 1926, which can leave only little to be added from that particular locality. It comprised 55 species, with 1 new genus and 14 new species.

The expedition to the Dutch East Indies by H. R. H. Prince Leopold of Belgium in the year 1929 — the Blattid material of which was entrusted to me by Dr. van Straelen of the Royal Museum, Brussels — brought back 13 species from Sumatra, two of which proved new. A general collection of Oriental Blattidae from the Dresden Museum, sent to me by Dr. Fritz van Emden, included two new species from Tandjong Poera, on the East Coast, taken by R. Heinze. Another collection from the East Coast, submitted to me by Dr. Richard Ebner, of Vienna, had been made by Dr. L. Fulmek, Entomologist to the Deli Experiment Station, in the years 1921 to 1926. It comprised 30 species, two of which proved new.

In addition to these collections, the results of which have duly been published — see under « Literature » at the end of this paper — I have some other important material before me which Dr. H. H. Karny and Mr. H. C. Siebers brought together at Wai Lima, Lampong, Southern Sumatra, in the year 1921. Though not published yet, I have constantly drawn on that collection for the sake of comparison. Most useful for the same purpose have been to me the large collections from the Malay Peninsula which Captain H. M. Pendlebury, Curator of the Selangor Museum, has amassed during recent years, and which I also hope to describe in the near future.

Of the greatest value also has been to me Morgan Hebard's work « Studies in Malayan Blattidae » (Proceedings, Academy of Natural Sciences, Philadelphia, Vol. LXXXI, 1929), and by no means merely because of the large number of new species described by him from Sumatra, but chiefly by his suggestions

for a revised classification of that family of Insects, many of which I have adopted.

The result is that the total number of Blattids known from Sumatra has risen from 32 species in the year 1915 to about 170 at the present day, so that no other part of Malaysia can now claim to be better known as to its Blattid fauna than Sumatra. Most of the types, or at least of the paratypes, of the species described are preserved in the Hope Department of the University Museum, Oxford, where I have carried on the work, and I am greatly indebted to Professor E. B. Poulton, F. R. S., for so kindly placing all the facilities of his department at my disposal during so many years.

*Oxford, August 1932.*

## LIST OF SPECIES.

### Ectobiinae.

*Dyakina apicigera* Walker
*Mareta siccifolia* n. sp.
*Plumiger histrio* Burmeister

### Anaplectinae.

*Anaplecta fulva* Brunner.
*Anaplecta malayensis* Shelford
*Anaplecta maculifera* Hanitsch
*Anaplecta fulvicollis* Hanitsch
*Anaplectella smedleyi* Hanitsch
*Anaplectoidea lampongensis* n. sp.
*Anaplectoidea modiglianii* n. sp.

### Pseudomopinae.

*Blattella bisignata* Brunner
*Symploce radicifera* Hanitsch
*Parasymploce irregulariter-vittata* Brunner
*Parasymploce obliqua* n. sp.

*Margattea anceps* Krauss
*Margattea rectangularis* n. sp.
*Sigmoidella nigra* Hanitsch
*Sigmoidella immaculata* n. sp.
*Pseudophyllodromia laticeps* Walker
*Pseudothyrsocera rubro-nigra* Hanitsch
*Temnopteryx modiglianii* n. sp.
*Allacta raapi* n. sp.
*Dictyoblatta bimaculata* n. g. n. sp.

**Epilamprinae.**

*Pseudophoraspis nebulosa* Burmeister
*Rhabdoblatta procera* Brunner
*Epilampra intermedia* Hanitsch
*Epilampra communis* Hanitsch
*Epilampra modiglianii* n. sp.
*Cyrtonota lata* Hanitsch

**Blattinae.**

*Scabina transversa* n. sp.
*Dorylaea flavicincta* de Haan
*Stylopyga rhombifolia* Stoll
*Stylopyga proposita* Shelford
*Stylopyga semoni* Krauss
*Periplaneta americana* L.
*Periplaneta australasiae* Fabr.
*Periplaneta floweri* Hanitsch
*Periplaneta robinsoni* Hanitsch
*Homalosilpha ustulata* Burmeister
*Blatta concinna* de Haan
*Catara rugosicollis* Brunner
*Archiblatta hoevenii* Vollenhoven
*Archiblatta beccarii* n. sp.
*Protagonista fusca* Hanitsch

**Panchlorinae.**

*Pycnoscelus surinamensis* L.

### Corydinae.

*Eucorydia westwoodi* Gerstäcker
*Homopteroidea nigra* Shelford
*Homopteroidea shelfordi* Hanitsch
*Homopteroidea maculata* Hanitsch
*Ctenoneura brunnea* Hanitsch

### Oxyhaloinae.

*Areolaria signata* Shelford

### Perisphaerinae.

*Paranauphoeta lyrata* Burmeister
*Paranauphoeta basalis* Serville
*Perisphaeria armadillo* Serville
*Perisphaeria glomeriformis* Lucas

### Panesthinae.

*Salganea morio* Burmeister
*Panesthia javanica* Serville
*Panesthia saussurii* Stål
*Panesthia serratissima* Brunner (?)
*Panesthia wallacei* Wood-Mason
*Panesthia transversa* Burmeister
*Panesthia modiglianii* n. sp.
*Panesthia* sp.
*Miopanesthia* sp.

## ECTOBIINAE.

### **Dyakina apicigera** Walker.

1868. *Blatta apicigera* Wlk. — Cat. Blatt. B. M., p. 227 [Java].

1 example, Si-Rambé, Sumatra, Dec. 1890 to March 1891; E. Modigliani.

Recorded from all parts of Malaysia. — Hebard (1929), p. 17, erected the genus *Dyakina* for this species, after Kirby (1904) had placed it under *Phyllodromia* Serville, and Shelford first (1906) under *Theganopteryx* Brunner and subsequently (1912) under *Hemithyrsocera* Saussure.

### **Mareta siccifolia** n. sp.

1 ♀ Sipora, Mentawi Islands. May to June 1894; E. Modigliani.

♀. Head exposed, fuscous, vertex darker; interocular space nearly equal to that between antennal sockets; [antennae mutilated]. Pronotum with the anterior margin parabolic, posterior margin truncate; disk mottled dark and light fuscous; lateral margins broadly hyaline, a few darker spots along the edge.

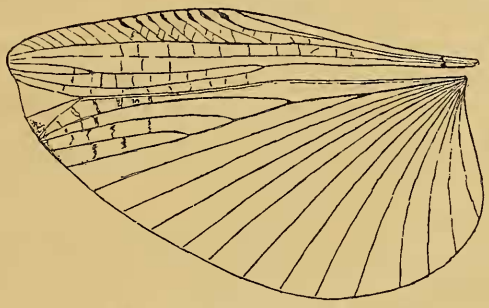

Fig. 1. *Mareta siccifolia* n. sp. Left wing. Enlarged.

Tegmina exceeding the abdomen by $^1/_4$ their length, delicately marked with small castaneous faintly orange-coloured dots, a few more distinct black spots along the distal half of the anterior margin, the whole producing a dead-leaf-like effect. Wings pale fuscous, costal area faintly orange; 16 costals, the first 8 strongly clubbed; radial vein simple, straight; median vein simple; ulnar vein only weakly curved, bifurcate just before its middle, the anterior branch terminally forking again; apical triangle strongly developed, its outer margin produced; venules between the branches of the first axillary vein blotchy. Abdomen above and below mottled light and dark fuscous. Cerci black, with middle portion cream-white. Subgenital lamina with its posterior margin truncate. Legs light testaceous, with black maculae; anterior femora armed with piliform spines only.

♀. Total length 10 mm.

It would have been difficult to settle the systematic position of this Blattid from a single ♀ only, but fortunately I have a

♂ before me, from the Gombak Valley, Selangor, Malay Peninsula (H. M. Pendlebury, Oct. 1921), and another ♂ from Kuching, Sarawak (John Hewitt, Feb. 1907) which apparently belong to the same species. In both specimens the sub-genital lamina is deeply divided, and though in the example from Sarawak the fore-legs are missing, they are intact in the ♂ from Selangor and are of the usual maretoid type, i. e. armed with piliform spines only. They are marked as follows:

♂, from Sarawak; head cream-white, vertex finely dotted with black, face with a large black blotch. Pronotum with a pair of large black maculae, of wavy outline, enclosing a central lighter space. Tegmina as in the ♀ from Sipora, but with definite black spots in addition, reminding of *Mareta stellata* Hanitsch, (A. M. N. H (10), Vol. VII (1931), p. 388, figs. 1 & 2).

♂, from Selangor: head light castaneous, face with a large black blotch. Pronotum similar as in the ♂ from Sarawak, but the two black maculae less distinct. Tegmina as in the ♀, but without the black spots in the ♂ from Sarawak.

A ♀ from the Botanic Gardens, Singapore (H. N. Ridley, 1908) which in the Oxford Museum collection Shelford had placed under his *Phyllodromia picturata*, (1) stands between the ♂ from Sarawak and the ♂ from Selangor. It is marked as follows: Vertex finely dotted with black, a large black blotch on the face; pronotum with a pair of black maculae; tegmina with the black spots less marked than in the ♂ from Sarawak. — The type (♂) of *picturata* Shelford, in the Oxford Museum, is readily distinguished by the zebra-like markings of the head and the much coarser colour pattern of the tegmina. Its sub-genital lamina is of an irregular maretoid type, divided, the left half larger than the right. Its anterior femora are armed with piliform spines. Shelford says: « front femora not armed beneath ». This is not correct.

**Plumiger histrio** Burmeister.

1838. *Thyrsocera histrio* Burm.-Handb. Entom., Vol. II, p. 499. [Java].

1 example, Siboga, April 1886; 1 example, ibid., Oct. 1890 to March 1891; E. Modigliani.

(1) Ann. Mag. Nat. Hist. (7), Vol. XIX, p. 30 (1907).

Known from all parts of Malaysia, and the Oxford Museum also contains a ♀ from Patuhuang, S. Celebes, Jan. 1896 (presented by Malcolm Burr in 1903).

Shelford (1) had placed this species under *Hemithyrsocera* Saussure, but Hebard (1929), p. 22, established for it the genus *Plumiger* on account of its plumose antennae, retaining *lateralis* Walker, *palliata* Fabr., *soror* Brunner, and *tessellata* Rehn, under *Hemithyrsocera*.

## ANAPLECTINAE.

### **Anaplecta fulva** Brunner

1893. Ann. Mus. Genova (2), Vol. XIII, p. 12. [Burma; Tenasserim].

1 example, Si-Rambé, Sumatra, Dec. 1890 to March 1891. E. Modigliani.

Doubtfully recorded by myself from Medan, Sumatra, (Arkiv för Zool., Vol. XXI$^{A}$ (1929), p. 6), with re-description.

### **Anaplecta malayensis** Shelford.

1906. Trans. Ent. Soc., London, p. 242, pl. XV, fig. 10 [Malay Peninsula].

1 example, Lumut, Sumatra (no date), 1 example, Siboga, Sumatra. Oct. 1890 to March 1891. E. Modigliani.

Recorded by myself from Mt. Murud, Sarawak (Sarawak Mus. J., Vol. III (1925), p. 79), and from Medan etc., Sumatra (Arkiv för Zool., Vol. XXI$^{A}$ (1929), p. 5).

### **Anaplecta maculifera** Hanitsch.

1925, Sarawak Mus. J., Vol. III, p. 80, fig. 2. [Mt. Murud, Sarawak].

1929. Tijdschr. voor Entom., Vol. LXXII, p. 266 [Gunung Singgalang, Sumatra].

1 example, D. Tolong, Sumatra, Nov. 1890; 9 examples, Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

(1) Trans. Ent. Soc., London, 1906, p. 238.

**Anaplecta fulvicollis** Hanitsch.

1929. Tijdschr. voor Entom., Vol. LXXII, p. 267, fig. 1 [Fort de Kock, Sumatra].

4 examples, Si-Rambé, Sumatra, Dec. 1890 to March 1891, E. Modigliani.

**Anaplectella smedleyi** Hanitsch.

1928. Bulletin, Raffles Museum, Singapore, p. 12, pl. I, fig. 2 [Mentawi Is.].

1929. Arkiv för Zool., Vol. XXI[A], p. 6 [Kota Tjane, Sumatra].

1 example, Pangheran-Pisang, Oct. 1890 to March 1891, E. Modigliani.

Hebard (1929), p. 32, pl. I, figs. 4-6, records it from Simalur I., Sumatra, and gives a re-description.

**Anaplectoidea lampongensis** n. sp.

1 example, Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

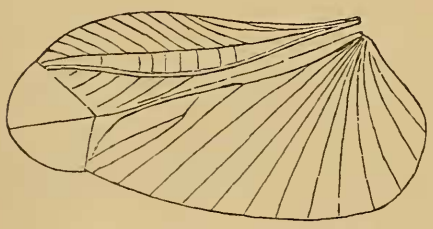

Fig. 2. *Anaplectoidea lampongensis* n. sp. Left wing. Enlarged.

I have before me also two ♂♂ and a ♀ from Wai Lima, Lampong, Sumatra (H. H. Karny, Nov. to Dec. 1921), and as they are in better condition than the specimen from Si-Rambé, I will base the description upon them.

♂ (Wai Lima): Testaceous. — Head covered, testaceous, frons with an indistinct fuscous blotch, divided into 4 parts by a whitish cross; interocular space one half of that between antennal sockets; antennae testaceous. Pronotum roughly hexagonal, with the angles rounded off, broader than long, widest in the middle; disk mottled darker and lighter testaceous; margins broadly hyaline. Tegmina exceeding the body, pale amber, with the mediastinal area hyaline; 14 costals; radial vein weakly

curved; ulnar with 8 oblique discoidal sectors; anal sulcus sharply defined, dark brown, anal veins obsolete. Wings pale fuscous, with the costal area orange; 11 costals, ends slightly thickened; radial vein straight; median vein curved; medio-discal field with 10 transverse venules; ulnar vein strongly curved, with 6 branches, viz. 2 to the dividing vein, and 4 to the apical area; apical area $^1/_5$ the wing length, base obtusely angled, pale fuscous; 1st axillary 4-ramose, branches as in the ♂ of *A. saundersi* Hanitsch (Bull., Raffles Mus., No. 1, 1929, p. 12, pl. I, fig. 3). Abdomen above fusco-testaceous. Supra-anal lamina triangular. Cerci testaceous. Abdomen below testaceous. Sub-genital lamina ample, posterior border rounded, entire. Styles somewhat shifted to the left, unusually large, $^1/_3$ the length of the cerci, with delicate setae. Legs testaceous.

♂ (Wai Lima): Total length 10 mm.

♀ (Wai Lima): Similar to the ♂. Sub-genital lamina apically slightly emarginate. Branching of the 1st axillary as in the ♂ (but not as in the ♀ of *A. saundersi*). Total length 9 mm.

The example (sex?) from Si-Rambé quite agrees with the above description, except that the ulnar vein of the wings has only 5 branches.

### **Anaplectoidea modiglianii** n. sp.

1 ♂ Sereinu, Sipora, Mentawi Is. May to June 1894. E. Modigliani.

♂. General colour shining light castaneous. Head covered, castaneous; antennae testaceous. Pronotum uniform castaneous, posterior margin slightly produced. Tegmina exceeding the abdomen by $^1/_5$ their length, light castaneous; 13 costals, radial simple, 6 longitudinal discoidal sectors. Wings pale golden yellow, costal area deep golden; 8 costals, medio-discal field with 5 transverse venules, ulnar vein 3-ramose.

♂. Total length 7 mm.

Another example from the same locality has the abdomen obscured so that its sex cannot be determined.

The following table may serve to separate the different species of *Anaplectoidea* Shelford.

Ulnar of wings 3-ramose:

Wings with 8 costals; general colour castaneous; Wings pale golden: . . . . . *modiglianii* n. sp.

Wings with 9 or 10 costals; general colour testaceous; Wings castaneous: . . . . . *modesta* Shelford (1)

Wings with 12 costals; general colour amber; Wings pale cream yellow: . . . . . *dohertyi* Shelford (2)

Wings with 13 costals; general colour amber; Wings slightly fuscous: . . . . . *saundersi* Hanitsch (3)

Wings with 14 costals; general colour testaceous; Wings pale fuscous: . . . . . *notata* Shelford (4)

Ulnar of wings 5 or 6-ramose:

Wings with 7 costals; general colour testaceous; Wings faintly yellow: . . . . . *klossi* Hanitsch (5)

Wings with 11 costals; general colour testaceous; Wings pale orange: . . . . . *lampongensis* n. sp.

Wings with 12 costals; general colour light castaneous; Wings fusco-castaneous: . . . . . *nitida* Shelford (6)

## PSEUDOMOPINAE.

### **Blattella bisignata** Brunner.

1893. *Phyllodromia bisignata* Brunner, Ann. Mus. Civ. Genova, Vol. XXXIII, p. 15, pl. I, fig. 1 [Burma].

3 ♂♂, 4 ♀♀ Balighe, Sumatra, Oct. 1890 to March 1891;

1 ♂, 3 ♀♀ Siboga, Sumatra, Oct. 1890 to March 1891;

1 ♂ Pea Ragia, Sumatra, Oct. 1890;

3 ♀♀ Pangherang Pisang, Sumatra, Oct 1890 to March 1891;

2 ♀♀ Padang, Sumatra, March 1886;

1 ♀ Hili Zabobo, Nias, Aug. 1886;

1 ♀ Bua Bua, Engano, May to June 1891. All E. Modigliani.

Recorded by Hebard (1929), p. 60, from Sumatra, Java and

(1) Deutsche Entom. Zeit., 1909, p. 611. — Ceylon.
(2) Ann. Mag. Nat. Hist. (7), Vol. XIX (1907), p. 25. — Sangir.
(3) Bull. Raffles Museum, No. 1 (1928), p. 12. — Mentawi; Singapore
(4) Deutsche Ent. Zeit., (1909), p. 612. — Annam.
(5) J., Siam Soc., Suppl., Vol. VII (1927), p. 10. — S. Annam.
(6) Trans. Ent. Soc., 1906, p. 248. — Celebes and Batchian.

Borneo, by myself also from Sumatra (Misc. Zool. Sumatrana, LXII (1932), p. 3) and Borneo (Ann. Mag. Nat. Hist., (10), Vol. VII (1931), p. 390). In addition I have seen abundant material taken by H. M. Pendlebury on the Malay Peninsula.

The great preponderance of the ♀♀ over the ♂♂ in the above list is noteworthy.

**Symploce radicifera** Hanitsch.

1928. *Neoblattella radicifera* Hanitsch. Bull. Raffles Museum, Singapore, No. 1, p. 20. [Padang, Sumatra; Malay Peninsula].
1929. Arkiv för Zool., Vol. XXI[A], p. 12. [Medan & Sibolangit, Sumatra].
1929. Tijdschr. voor Entom., Vol. LXXII, p. 274. [Fort de Kock, Sumatra].
1931. Ann. Mag. Nat. Hist., (10), Vol. VII, p. 391. [Singapore].
1931. Mém. Mus. R. H. N. de Belgique, Vol. IV, p. 45. [Bali].
1932. Misc. Zool. Sumatrana, No. LXII, p. 4. [Medan, Sumatra].

1 ♀. Siboga, Sumatra, April 1886. 1 ♀. Pangherang-Pisang, Oct. 1890 to March 1891. E. Modigliani.

This species seems very common on Sumatra, and from collections which I have received from Captain Pendlebury, also on the Malay Peninsula. Hebard (1929), p. 61, placing it under his *Symploce,* re-describes it and records it from Sarawak.

**Parasymploce irregulariter-vittata** Brunner.

1898. *Phyllodromia irregulariter-vittata* Br. Abh. Senck. Ges., Vol. XXIV, p. 202, pl. XVI, fig. 1. [Borneo; Java].
1929. *Parasymploce dichroa* Hebard. Proc. Acad. N. S., Philadelphia, Vol. LXXXI, p. 73, pl. IV, fig. 10 [Simalur I., Sumatra].

1 ♀ Sipora, Mentawi Is. May to June 1894. E. Modigliani.

My identification of this species is based upon a ♀ from

Sarawak, in the Oxford University Museum, named by Shelford. I have recorded this species from Mt. Murud, Sarawak, 6500′. (Sarawak Mus J., Vol. III (1925), p. 83), and, subsequently placing it under *Neoblattella* Shelford, I described a ♂ from the Mentawi Is. (Bull. Raffles Museum, No. 1 (1928), p. 17. Finally I recorded it from Gunung Singgalang and Baso, Sumatra (Tijdschr. Entom., Vol. LXXII (1929), p. 273).

I am following Hebard now in placing this species under his *Parasymploce*, but consider his *dichroa* as synonymous.

### **Parasymploce obliqua** (1) n. sp.

1 ♂, 1 ♀ Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

As the ♂ is much discoloured, perhaps due to preservation in spirit, the description of the colour is taken from the ♀, but otherwise from the ♂.

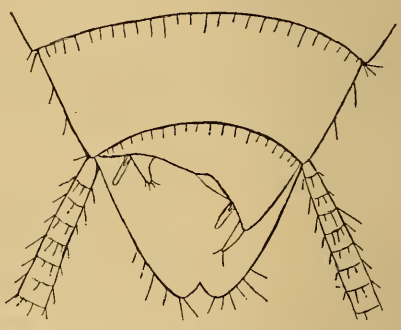

Fig. 3. *Parasymploce obliqua* n. sp. ♂. End of abdomen, from below. Enlarged.

Head partly free, testaceous to light brown; interocular space $^2/_3$ of that between antennal sockets; antennae fuscous. Pronotum with the anterior margin parabolic, posterior margin gently produced; dark testaceous, mottled with yellowish and reddish brown, posterior portion with dark suffusion. Tegmina exceeding the abdomen by nearly $^1/_3$ their length, dark amber; radial vein bifurcate before its middle; 24 costals. Wings testaceous, costal area darker; mediastinal vein 4-ramose; radial vein bifurcate at less than $^1/_3$ from base; 18 costals, not clubbed; median vein single, strongly sigmoid; ulnar vein sigmoid, 3-ramose, i. e. forking at $^2/_3$ of its course, the anterior branch soon forking again; prominent apical triangle, with outer margin distinctly produced. Body fusco-testaceous. Supra-anal lamina (♂) produced, longer than broad, apex emarginate, hirsute along the edges; in the ♀ distinctly

(1) From the shape of the sub-genital lamina in the ♂.

triangular, apex emarginate, hirsute. Cerci fuscous. Sub-genital lamina (♂) asymmetrical, left side much longer than the right, with two pairs of styles, one of them with fine terminal hairs. Front femora armed after type A.

♂ and ♀ : Total length 16.5 mm; body 13 mm; pronotum 3 × 3.8 mm; tegmina 14 mm.

Closely resembles *P. sumatrana* Hebard (1929), (p. 69, pl. IV, fig. 6; pl. V, figs 4 and 5) by the shape of the supra-anal lamina in the ♂ and by the venation of the wings; also *P. penicillata* Hebard (pl. IV, fig. 7) by the slightly darker crescent-shaped caudal suffusion on the pronotum, but differs from either, and also from *P. denticauda* Hebard and *P. dichroa* Hebard, by the shape of the sub-genital lamina in the ♂.

### **Margattea anceps** Krauss.

1903. *Blatta anceps* Krauss, Semon's Zool. Forsch. Austral. u. Mal. Arch., Vol. V, p. 749 [Tjibodas, Java].

1925. *Phyllodromia nigro-vittata* Hanitsch. Sarawak Mus. J., Vol. III, p. 88 [Mt. Murud, Sarawak].

2 ♀ ♀, Si-Rambé, Sumatra, Dec. 1890 to March 1891. E. Modigliani.

A widely distributed species, occurring also on the Malay Peninsula and in the Mentawi Is. (Bull., Raffles Mus. No. 1 (1928), p. 23; Tjid. Entom., Vol. LXXII (1929), p. 276). The two ♀ ♀ specimens distinctly show the sub-genital lamina as described by Krauss « in carinulam brevem elevata et ita quasi acuminata ».

I retain the genus *Margattea* Shelford, in preference to *Kuchinga* Hebard, for reasons given in Ann. Mag. Nat. Hist. (10), Vol. VII (1931), p. 392.

### **Margattea rectangularis** [1] n. sp.

1 ♂. Si-Rambé, Sumatra, Dec. 1890 to March 1891. E. Modigliani.

♂ Colour uniform light fuscous (discoloured by spirit?). Head freely exposed, dark fuscous, inter-ocular distance $^2/_3$ of that

[1] From the shape of the ♂ sub-genital lamina.

between antennal sockets; antennae fuscous. Pronotum sub-orbicular, broadest behind the middle, smoky-hyaline. Tegmina excee-

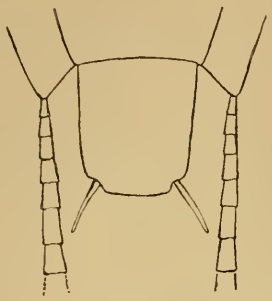

Fig. 4. *Margattea rectangularis* n. sp. ♂. End of abdomen from below. Enlarged.

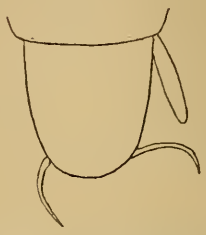

Fig. 5. *Margattea rectangularis* n. sp. ♂ Additional lamina, seen from below.

ding the abdomen by $^1/_3$ their length, fusco-testaceous; 12 costals, of which the 7th and 11th are forked; radial vein simple; 5 longitudinal discoidal sectors. Wings faintly smoky hyaline; mediastinal vein bi-ramose; 8 costal veins, of which 1 to 4 are single and clubbed, the 5th three-ramose, the 6th and 7th bi-furcate, not clubbed; radial vein simple; median vein simple; ulnar vein 4-ramose; apical triangle moderately developed. Supraanal lamina short, broad, sub-triangular. Cerci long, testaceous, with a sub-terminal black ring. Sub-genital lamina large, oblong, longer than broad, styles inserted in a slight emargination on either side of the posterior margin. Immediately above the sub- genital lamina an additional plate, bearing distally on either side a strongly chitinized curved spine, and on the left side of its base a flat spatula-like structure. Legs dull testaceous; front femora proximally with a few stout spines, followed distally by a series of piliform spines (type B).

♂. Total length 12.5 mm.

Possibly allied to *Kuchinga diacantha* Hebard (1929, p. 43, pl. II, fig. 2 & 3). in which, however, the chitinized spines are described as rising from the sub-genital lamina itself, and not from an additional plate.

### Genus **Sigmoidella** Hebard.

Hebard (1929, p. 55) selected *Blatta adversa* Saussure and Zehntner, as genotype of his *Sigmoidella* n. g., characterized (1)

by the anterior femora being armed after Type B, and bearing 3 spines distally; (2) by the radial (= discoidal) vein of the tegmina being simple; and (3) by the median and ulnar (1) veins of the wings being conspicuously sigmoid, the latter with more than two rudimentary branches. The following species should also be classed under *Sigmoidella.*

*Blatta amplectens* Walker, from Morty Island, which I recorded from Penang Hill and described its venation (J., M. B., R. Asiat. Soc., Vol. I (1923), p. 401, figs. 4 & 5);

*Margattea nigra* Hanitsch, from Sumatra (see below);

*Sigmoidella immaculata* n. sp., from Sumatra (see below).

### **Sigmoidella nigra** Hanitsch.

1929. *Margattea nigra* Hanitsch. Tijd. Entom., Vol. LXXII, p. 277 [W. Sumatra].

1 ♂ Si-Rambé, Sumatra, Dec. 1890 to March 1891. 1 example (sex?). Sipora, Mentawi Is., May to June 1894. E. Modigliani.

I first described this species from three localities in Sumatra, viz. from Fort de Kock, Tandjunggadang, and Anei Kloof. The sinuous character of the median and ulnar veins of the wing clearly brings it under *Sigmoidella* Hebard.

### **Sigmoidella immaculata** n. sp.

1 ♀ Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

Fig. 6.
*Sigmoidella immaculata* n. sp.
Outline of pronotum.

♀. Head exposed, light brown, turning to testaceous in the lower part of the face; interocular space $^3/_4$ the width between antennal sockets; antennae fuscous. Pronotum elongate, wider behind than in front, sides much deflexed, anterior border subtruncate, posterior border only faintly produced; light brown, lateral borders yellowish testaceous, posterior border with dark suffusion. Tegmina exceeding the abdomen by $^1/_3$ their length, dark testaceous to

(1) There is an obvious misprint in Hebard's definition, p. 55, last line; for discoidal read ulnar.

amber; 19 costals, of which the last 4 are forked; radial simple; 7 longitudinal discoidal sectors. Wings brownish fuscous; mediastinal vein 4-ramose; radial vein simple; 10 costals; median vein simple, strongly sinuous; ulnar vein strongly sinuous, 4-ramose; apical triangle well developed. Cerci fuscous. Body below testaceous. Anterior femora with 3 large spines, followed by a series of piliform spines (type B).

♀. Total length 12 mm; body 8 mm; pronotum 2.8 × 2.9 mm; tegmina 10 mm.

**Pseudophyllodromia laticeps** Walker.

1869. *Blatta laticeps* Wlk. Cat. Blatt. B. M., Suppl., p. 142 [Singapore].

1 example (sex?), Pangherang-Pisang, Sumatra, Oct. 1890 to March 1891. ♂ Si Oban, Mentawi Is. April to Aug. 1894. E. Modigliani.

Also occurring on the Malay Peninsula and Borneo, but apparently not yet recorded from Java.

**Pseudothyrsocera rubro-nigra** Hanitsch.

1923. *Phyllodromia rubro-nigra* Han. J., M. B., R. Asiat. Soc., Vol. I, p. 412, figs. 11 and 12. [Gunong Angsi, Malay Peninsula].

1928. *Pseudothyrsocera rubro-nigra* Han. Bull., Raffles Museum, No. 1, p. 14 [Siberut and Sipora, Mentawi Is.].

1929. *Pseudothyrsocera rubro-nigra* Han. Tijdschr. Entom., Vol. LXXII, p. 269. [Fort de Kock, Sumatra].

1929. *Pseudothyrsocera fulva* Hebard. Proc. Acad. Nat. Sci., Philadelphia, Vol. LXXXI, p. 79, pl. IV. fig. 12. [Fort de Kock, Sumatra].

1 ♂ Si-Rambé, Sumatra, Dec. 1890 to March 1891. 1 ♂ Nias 1886 E. Modigliani.

Hebard's description, figure and locality of his *fulva* n. sp. leave to me no doubt that it is merely a synonym of the present species.

**Temnopteryx modiglianii** n. sp.

2 ♂ ♂. Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

♂. Minute, testaceous. — Head exposed, testaceous; vertex with 4 longitudinal brown stripes which between the eyes meet to form a transverse brown line; lower face mottled light and dark brown; interocular space equal to that between antennal sockets, palps testaceous; antennae (missing in the type, perfect in the paratype) exceeding the body, testaceous. Pronotum large, anterior border parabolic, posterior border truncate; disk mottled fulvous and brown; lateral margins broadly hyaline, with a narrow fulvous border all round. Tegmina truncate, reaching to the end of the third abdominal tergite only; mediastinal area large; radial vein with 4 costals; ulnar vein bifurcate; anal area very large, with 3 indistinct anals. Wings much reduced, scale-like, barely $^1/_4$ the length of the tegmina and quite narrow, with venation obsolete. Abdomen above mottled light and dark testaceous. Supra-anal lamina triangular, twice as broad as long, apex rounded, entire. Cerci lanceolate, cream-white above, with a sub-terminal brownish band; testaceous below. Abdomen below mottled light and dark testaceous. Sub-genital lamina large, square, posterior border minutely emarginate; styles at either end. Legs testaceous; anterior femora proximally with 3 large spines, followed by a long series of piliform spines (type B); hind legs very long.

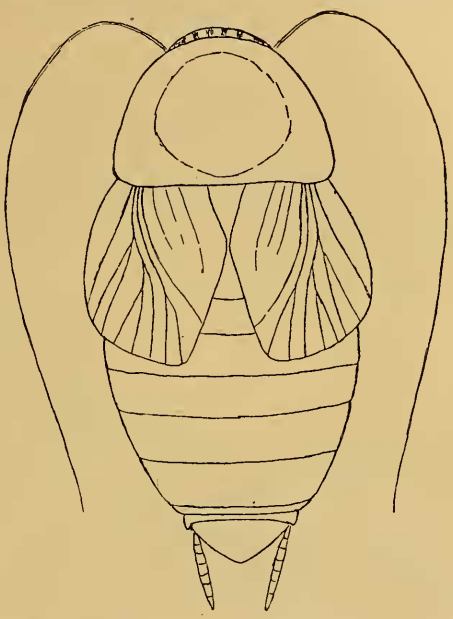

Fig. 7. *Temnopteryx modiglianii* n. sp. ♂. × 9.

♂. Total length 8 mm.

This species may be identical with *Temnopteryx fulva* Brunner, from Java (Nouv. Syst. Blatt., 1865, p. 85), but Brunner's description is so meagre, consisting of eight words only, and is not accompanied by an illustration, that this has to remain in doubt. Besides, Brunner defines *Temnopteryx* as having a single style, and the tegmina as touching each other in a straight line, whilst the present species has two distinct styles, and the tegmina touch each other only at a single point and then recede.

**Allacta raapi** n. sp.

1 ♀. Batu Island, W. Sumatra. H. Raap, 1896-7.

♀. Head freely exposed, deep amber, a transverse white line between eyes and antennal sockets; interocular space $^3/_4$ of

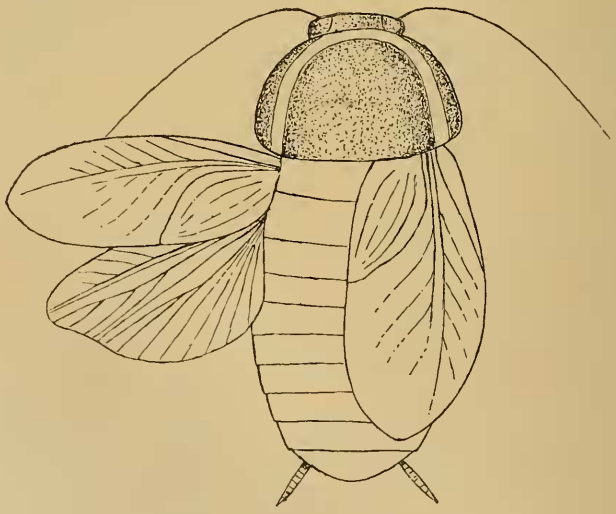

Fig. 8. *Allacta raapi* n. sp. ♀. × 7.

that between antennal sockets; antennae testaceous. Pronotum broad, anterior and posterior margins truncate; deep amber, in front with a broad white marginal line, becoming sub-marginal at the sides. Tegmina reaching not quite to the apex of the abdomen, amber, with two lighter patches, viz. one in the centre, and the other near the distal end of the anterior border of each tegmen; venation obscured: radial vein simple, about 10

costals, discoidal sectors oblique, nearly obsolete; anal area large, with about 5 anals. Wings (in poor condition) fully developed, dull orange; radial vein apparently simple, costal area with a large whitish patch; median vein simple; ulnar vein 4-ramose. Body above and below light castaneous to dark amber. Cerci brownish, with white tips. (Supra-anal and sub-genital laminas in poor condition). Legs dark amber; anterior femora unarmed; median and posterior femora sparsely spined.

♀. Total length 9 mm.

Allied to *Allacta parva* Shelford, from Sarawak, (type in the Oxford Museum) and to *A. overbecki* Hanitsch, from Java (type in the Dresden Museum, paratype in the Oxford Museum). However, the former species has the pronotum uniformly brown, with the exception of a triangular testaceous mark at the anterior margin; and the latter species has the disk of the pronotum castaneous, and the lateral margins broadly yellowish hyaline, besides having the wings much reduced.

### **Dictyoblatta** new genus.

Allied to *Mareta* Bolivar by its front femora being armed with piliform spines only, and by its sub-genital lamina (♂) being bifid, but differing from it by the absence of an apical triangle in the wings. Venation of the tegmina closely reticulate. — Standing intermediate between the two sub-families Ectobiinae and Pseudomopinae.

### **Dictyoblatta bimaculata** n. sp.

1 ♀ Si Oban, Mentawi Islands, Apr. to Aug. 1894, E. Modigliani.

I am able to supplement the description of this single ♀ by that of two specimens (♂ and ♀) from Lubok Tamang, Pahang, 3500′ (H. M. Pendlebury, 5. 3. 1924). In addition the Oxford Museum contains fragments of a ♀ from M$^t$ Matang, Sarawak (June 1898).

♂ (from Pahang). Head freely exposed, liver-brown; interocular space equal to that between antennal sockets; antennae brownish. Pronotum large, oval to sub-circular, greatest width

just behind the middle; posterior margin sub-truncate; disk shining black, its centre with a crescent-like depression; lateral margins broad, hyaline, with numerous delicate setae. Tegmina exceeding the abdomen by $^1/_3$ their length, fuscous brown, each with a large yellowish semi-hyaline patch at $^1/_3$ from the base, just outside the middle of the anal sulcus; veins raised, knotted, together with the venules producing a close reticulation; 9 costals; radial vein simple; anterior ulnar vein parallel to the radial, giving off 5 or 6 oblique branches towards the posterior border; posterior ulnar vein simple, parallel to the anal sulcus; 4 anal veins. Wings hyaline, centre of costal area opaque brown; radial vein simple; 8 costals; median vein terminally bifurcate; ulnar vein giving off 3 complete branches towards the apex; no apical triangle; posterior half of wing fan-like folded. Body above brownish. Supra-anal lamina very short, posterior margin rounded, entire. Cerci large, ferruginous. Sub-genital lamina small, triangular, apex minutely bilobed, each lobe with an extremely short knob-like style. Legs light testaceous; anterior femora with piliform spines only (Maretoid type); posterior femora with a few delicate spines on their distal end; posterior tibiae strongly armed; metatarsus very long, entirely spined; no arolia.

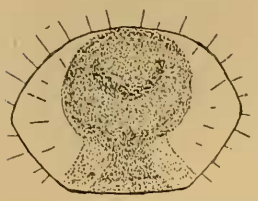

Fig. 9. *Dictyoblatta bimaculata* n. g. and sp. Pronotum. Enlarged.

Fig. 10. *Dictyoblatta bimaculata* n. g. and sp. Left tegmen. Enlarged.

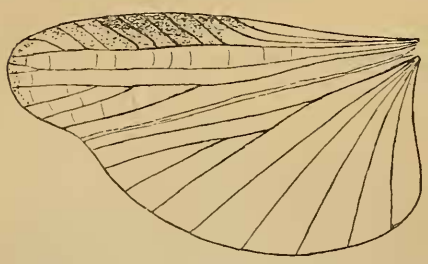

Fig. 11. *Dictyoblatta bimaculata* n. g. and sp. Left wing. Enlarged.

♀. Similar to the ♂; sub-genital lamina large, semi-orbicular, mottled testaceous and black.

♂ and ♀ (from Pahang); total length 11 mm.; ♀ (from Mentawi): total length 9 mm.

## EPILAMPRINAE.

### **Pseudophoraspis nebulosa** Burmeister.

1838. *Epilampra nebulosa* Burm. - Handb. Entom., Vol. II, p. 505. [Java].

1 ♀. Mt. Singalang, Sumatra, July 1878. O. Beccari.

2 ♀♀. Bawolovalani, Nias. May 1886. E. Modigliani.

Common throughout Malaysia. Noteworthy is only the single ♀ example from Singalang which is quite unusually short. Its dimensions are:

♀. Total length 21 mm; body 20 mm; pronotum 6.2 × 9.5 mm; tegmina 15 mm.

### **Rhabdoblatta procera** Brunner.

1865. *Epilampra procera* Br. - Nouv. Syst. Blatt., p. 192 [Java].

1 ♀ Mt. Singalang, Sumatra. July 1878. Beccari.

Also common throughout Malaysia. I gave a description of a ♂ in Bull., Raffles Museum, No. 1 (1928), p. 30, as Brunner's was based upon a ♀.

### **Epilampra intermedia** Hanitsch.

1925. Sarawak Museum J., Vol. III, p. 95. [Mt. Dulit, Sarawak].

1 ♀. Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

The single example differs from the type, also ♀, in the Oxford Museum, by its larger size and darker colour; especially its abdomen is uniform castaneous below, instead of a lighter castaneous, with black spots. The measurements are:

| | type ♀ from Sarawak | | ♀ from Sumatra | |
|---|---|---|---|---|
| Total length | 30 | mm. | 35 | mm. |
| body | 23 | » | 33 | » |
| pronotum | 6.5 × 8 | » | 8.5 × 10 | » |
| tegmina | 25 | » | 26.5 | » |

**Epilampra communis** Hanitsch.

1928. Bulletin, Raffles Museum, No. 1, p. 32. [Mentawi Is.].

1 ♀. Kifa-juc. Engano. May 1891. E. Modigliani.

It is surprising that the present collection contains only a single ♀, whilst Messrs Kloss, Karny and Smedley brought more than three hundred specimens back from their expedition to the Mentawi Islands in 1924, viz. 155 from Siberut, 153 from Sipora, 32 from North Pagi, and 6 examples from Pulau Tello, Batu Islands.

**Epilampra modiglianii** n. sp.

1 ♀. Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

♀. Head exposed, pale orange, vertex closely punctured with black, face with a broad vertical black stripe; inter-ocular space $^3/_4$ of that between antennal sockets; antennae dark fuscous. Pronotum sub-elliptical, posterior margin obtusely angled; smooth; fulvo-testaceous, closely marked with black spots of different sizes, viz. about 10 large irregular blotches in the middle and in the circumference of the disk; secondly, a large number of medium-sized round spots scattered over the whole of the pronotum; thirdly, minute dots, closely filling the interstices between the larger spots. Tegmina exceeding the abdomen by nearly $^1/_3$ their length, fulvo-testaceous to cream-yellow, closely impresso-punctate in their proximal half, especially in the anal area; with dense masses of large and small irregular blotches, black in the proximal half, turning castaneous distally. Supra-anal lamina ample, rounded, apically emarginate. Cerci dull testaceous. Abdomen below testaceous, with large and small black blotches, except in the middle line; sub-genital lamina with a large black central blotch. Legs dull testaceous, upper margins of femora black; posterior metatarsus

Fig. 12.
*Epilampra modiglianii* n. sp. ♀ × 1 ½.

at least as long as the remaining joints together, entirely spined; tarsal joints distally with two spines each; pulvilli small, terminal; tarsal claws symmetrical; arolia large.

♀. Total length 35 mm; body 25 mm; pronotum 7 × 8.2 mm; tegmina 30 mm.

The insect has a striking resemblance to *Hedaia horologica* Kirby, from the Khasia Hills, the type (♂) of which is in the British Museum (1) (Ann Mag. N. H., (7), Vol. XII (1903), p. 280). However, the latter species, by the way a thing of great beauty, is somewhat larger: body 35 mm; tegmina 40 mm; and though the tegmina show markings identical with those of *modiglianii*, the minute dots of the pronotum are much less marked.

**Cyrtonota lata** Hanitsch.

1929. Tijdschr. voor Entom., Vol. LXXII, p. 282, fig. 2. [W. Sumatra].

1 ♀. Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

The single example is somewhat smaller than the type, also ♀, which I first described from Anai Kloof, W. Sumatra, viz.:

| | type ♀ from Anai Kloof | | ♀ from Si-Rambé | |
|---|---|---|---|---|
| Total length | 34 | mm. | 28 | mm. |
| pronotum | 10 × 15 | » | 9 × 11 | » |
| tegmina | 20 | » | 18 | » |

Hebard (1929), p. 90, records *Homalopteryx malcolmsmithi* Hanitsch (2) from Air Bangis, Sumatra, placing it, however, under *Pseudophoraspis* Kirby. I have no doubt that the specimen before him was *C. lata*. The posterior metatarsus of *malcolmsmithi* is uniseriately spined along its proximal half only, and the tarsal joints are not armed at all, whilst in *lata* the metatarsus is biseriately spined along its entire length, and the tarsal joints are spined too. Hebard describes his specimen as with « the caudal metatarsus armed ventral with two rows of minute spines », which agrees with *lata*, but not with *malcolmsmithi*.

(1) Kirby, by a curious error, states the type to be ♀. I have examined it and find it quite unmistakably ♂.

(2) From Annam; see J., Siam Soc. N. H., Suppl. Vol. VII (1927), p. 20, fig. 12.

## BLATTINAE.

### Scabina transversa (1) n. sp.

1 ♂ (immature?) Padang, Sumatra, 1890. E. Modigliani.

♂. Minute. — Head slightly exposed; vertex fulvous, with 4 short longitudinal castaneous lines; face castaneous, bordered all round with fulvous; interocular space nearly equal to distance between antennal sockets; antennae dull castaneous. Pronotum with the anterior margin parabolic, posterior margin truncate; deep castaneous, bordered with fulvous in front and at the sides. Tegmina sub-quadrate, touching in the middle line, deep castaneous, with a broad lateral fulvous border and a lighter circular blotch near their base. Wings minute. Body above castaneous, sides with a narrow fulvous border; second tergite with a pair of transverse fulvous lines. Cerci with their basal half castaneous, distal half fulvous. Body below castaneous, with fulvous border. Legs fulvous, with castaneous blotches on coxae and femora. (Posterior metatarsi missing).

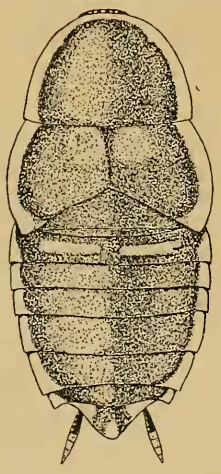

Fig. 13. *Scabina transversa* n. sp. ♂. × 7.

♂. Total length 8 mm.

The genus *Scabina* was established by Shelford for *Pelmatosilpha (?) antipoda* Kirby, from Queensland (Trans. Ent. Soc., London, 1909, p. 305). The only other species described so far is *Scabina horrida* Hanitsch, from N. Borneo (Treubia, Vol. III (1923), p. 207, fig. 8, and J., M. B., R. Asiat. Soc. Vol. I (1923), p. 441, fig. 27). The present species differs from *horrida* by its much smaller size, by its scutellum being exposed, and by its markings which remind of *Platyzosteria soror* Brunner.

(1) From the transverse markings of the second tergite.

**Dorylaea flavicincta** de Haan.

1842. *Blatta flavicincta* de Haan. Temminck, Verhand. Orth., p. 50. [Java].

1 ♀ Bua-Bua, Engano. May to June 1891. E. Modigliani.

Widely distributed throughout Malaysia; also occurring in Madagascar and Formosa.

**Stylopyga rhombifolia** Stoll.

1813. *Blatta rhombifolia* Stoll. Spectres, Blatt., p. 5, pl. III d., fig. 13.

1 ♂, 2 ♀♀ Siboga, Sumatra. Oct. 1890 to March 1891. E. Modigliani.

Cosmopolitan.

**Stylopyga proposita** Shelford.

1911. Ann. Mag. N H. (8), Vol. VIII, p. 5, pl. I, fig. 1 [Batavia, Java].

1 ♂ Mt. Singalang, Sumatra. July 1878. O. Beccari.

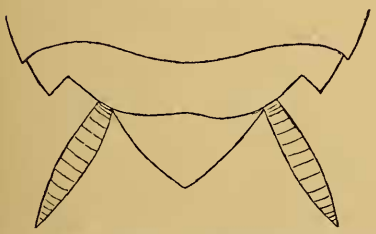

Fig. 14. *Stylopyga proposita* Shelf. ♂. End of abdomen from above. Enlarged.

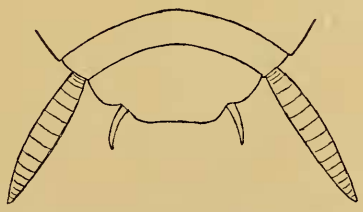

Fig. 15. *Stylopyga proposita* Shelf. ♂. End of abdomen from below. Enlarged.

1 ♂ Siboga, Sumatra. April 1886. E. Modigliani.

1 ♂ Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

Besides the above three specimens I have recently been able to examine several examples from the Paris Museum, viz, 2 ♂♂ and 2 ♀♀ from Palaboehan Ratoo, Java, and 1 ♂ from Soekaboemi, Java, all collected by E. Cordier in 1908. This Javanese

material agrees in size (viz. 22 to 24 mm. in total length) with the type, ♂, from Tanah Abang, Batavia, in the Paris Museum, whilst the Sumatran examples show considerable variation in size, viz.

| | ♂ type Batavia | ♂ Siboga | ♂ Si-Rambé | ♂ Singalang |
|---|---|---|---|---|
| total length | 24 mm. | 28 mm. | 20 mm. | 15 mm. |
| pronotum, length | 7.5 » | 10 » | 6.5 » | 5 » |
| pronotum, width | 10 » | 12 » | 8.5 » | 6 » |

### **Stylopyga semoni** Krauss.

1903. Semon, Zool. Forsch. Mal. Arch., Vol. V, p. 751 [Tjbodas, Java].

1 ♂. Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

The single example is slightly smaller than the type ♂, measuring only 15 mm. as against 17 to 20 mm. in length. — Recorded by Hebard (1929), p. 83, from Pulau Jarak, W. Coast, Malay Peninsula.

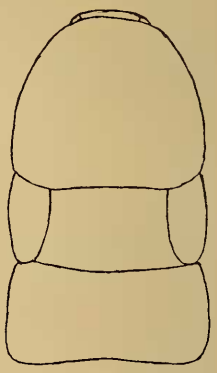

Fig. 16.
*Stylopyga semoni* Krauss ♂
Fore part of body. × 6.

### **Periplaneta americana** L.

1758. *Blatta americana* L. Syst. Nat. (ed. X), p. 424.

1 ♂. Lelemboli, Nias. Aug. 1886. — 1 ♂. Balighe, Sumatra. Oct. 1890 to March 1891. — 2 ♀♀ Si-Rambé, Sumatra. Dec. 1890 to March 1891. — 1 ♀ Pangherang-Pisang, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

Cosmopolitan.

### **Periplaneta australasiae** Fabr.

1775. *Blatta australasiae* Fabr. Syst. Ent., p. 271.

1 ♂, 1 ♀, Si-Rambé, Sumatra. Dec. 1890 to March 1891.

1 ♀. Sumatra. E. Modigliani.

1 ♀. Mt Singalang, Sumatra. July 1878. O. Beccari.

Cosmopolitan.

**Periplaneta floweri** Hanitsch.

1931. Ann. Mag. Nat. Hist. (10), Vol. VII, p. 400 [Bangkok, Siam.].

1932. Misc. Zool. Sumatrana, LXII, p. 5. [Medan, Sumatra].

1 ♂. Siboga, Sumatra. Oct. 1890 - March 1891. E. Modigliani.

The single example (♂) is practically of the same dimensions as the type (♂) in the British Museum, viz. total length 17mm., body 12 mm.; pronotum 4 × 4.4 mm., tegmina 13 mm. But whilst in the type the pronotum is sub-oval, with its greatest width behind the middle, and corrugated (due to shrinking?), the pronotum of the present specimen is smooth, its anterior margin parabolic, and its posterior margin faintly produced.

I have also before me a ♂, from Pulo Tioman (V. Knight, June 1915), and another ♂, from the Langkawi Is. (H. M. Pendlebury, April 1928).

**Periplaneta robinsoni** Hanitsch.

1915. J., S. B., R. Asiat. Soc., No. 69, p. III, pl. IV, fig. 23 [Sandaran Agong, Sumatra, 2500 feet].

1929. Archiv för Zool., Vol. XXI A, p. 16 [Sibolangit, and Medan, Sumatra].

1 ♂ Lelemboli, Nias, Aug. 1886. — 1 ♀ Gunung Sitoli, Nias, May 1886. — 1 ♀ Siboga, Sumatra, Oct. 1890 to March 1891. E. Modigliani.

Not known yet from outside Sumatra and Nias. Readily distinguished by its deep black pronotum and purplish-castaneous tegmina.

**Homalosilpha ustulata** Burmeister.

1838. *Periplaneta ustulata* Burm. Handb. Entom., Vol. II, p. 503. [Java].

1 ♂, 1 ♀ Lelemboli, Nias, Aug. 1886. E. Modigliani — 1 ♀ Gunung Sitoli, Nias, May 1886. E. Modigliani — 1 ♂,

4 ♀♀ Siboga, Sumatra. Oct. 1890 to March 1891. E. Modigliani. Distributed throughout the whole of Malaysia.

### **Blatta concinna** de Haan.

1842. Temminck, Verhand. Orth., p. 50. [Java].

5 ♂♂, 3 ♀♀. Balighe, Sumatra. Oct. 1890 to March 1891. E. Modigliani.

Distributed throughout Malaysia, Burma, Indo-China, Japan and Australia. — Hebard (1929), p. 84, erected the genus *Blattina* for this species.

### **Catara rugosicollis** Brunner.

1865. *Deropeltis rugosicollis* Br. Nouv. Syst. Blatt., p. 245. [Java ?].

1 ♂ Siboga, Sumatra. Oct. 1890 to March 1891 — 1 ♂, 1 ♂ larva, 2 ♀♀ Pangherang-Pisang, Sumatra. Oct 1890 to March 1891. E. Modigliani.

Common throughout Malaysia.

### **Archiblatta hoevenii** Vollenhoven.

1862. Tijdschr. Entom., Vol. V, p. 106; pl. VI, figs. 1 and 2 [Sumatra].

3 ♀♀ larvae. Si-Rambé, Sumatra, Dec. 1890 to March 1891. E. Modigliani.

Distribution: the whole of Malaysia.

### **Archiblatta beccarii** n. sp.

1 ♂. Mt. Singalang, Sumatra. July 1878. O. Beccari.

1 ♂. Balighe, Sumatra. Oct. 1890 to March 1891. E. Modigliani.

1 ♀. Si-Rambé, Sumatra. Dec. 1890 to March 1891. E. Modigliani.

♂. Apterous, black. — Head covered; deep castaneous to black, shining; interocular space equal to that between antennal sockets; antennae uniform dark castaneous to black, proximal joints smooth, distal joints slightly pubescent. Pronotum longer than broad, rectangular; disk circular, with the circumference raised and callosities radiating from the centre; a transverse depression behind the centre; a narrow median ridge running along its entire length; coarsely, but sparsely pitted; dull black. Mesonotum and metanotum with median longitudinal ridge of the pronotum continued along their entire length; also coarsely rugose and pitted. Abdomen with its greatest width at the 3rd and 4th segment. Supra-anal lamina rounded, entire. Cerci cylindrical, segmentation obsolete, above shining light castaneous, smooth, below with ferruginous pubescence. Body below castaneous, shining. Sub-genital lamina subtriangular, apex blunt; black, with orange border; styles symmetrical, cylindrical, deep orange. Legs uniformly deep castaneous; anterior femora with a thick row of setae along their lower margin; right anterior femur with one apical spine, none observed on the left side; median and posterior femora unarmed, except for 2 apical spines each; posterior tibiae with 3 spines on the outer, and 5 spines on the inner aspect, and with 5 apical spines. Posterior metatarsus (slightly mutilated in the ♂ type from M[t] Singalang, but perfect in the ♂ paratype from Balighe) only about $^1/_3$ as long as the remaining joints together, entirely unarmed; tarsal joints unarmed; claws symmetrical; arolia present, small.

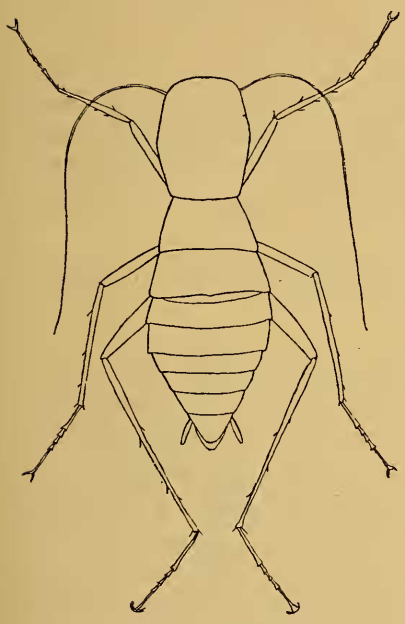

Fig. 17. *Archiblatta beccarii* n. sp. ♀. × 1 $^1/_2$.

♀. In size and colouring practically agreeing with the ♂ type; the radiating callosities of the pronotum less marked, but

with a more distinct transverse depression behind the centre of the disk; sub-genital lamina without valve, but with two sharp folds instead.

| | ♂ | | ♀ | |
|---|---|---|---|---|
| Total length | 29 | mm. | 30 | mm. |
| pronotum | 9.5 × 7.5 | » | 10 × 8 | » |
| post. femora | 13 | » | 14 | » |
| post. tibiae | 15 | » | 15 | » |
| post. tarsi | 7.5 | » | 7.8 | » |

I regard these three examples as full grown, as becomes evident when comparing the larger of the two ♂ specimens with a ♂ larva of the same size of *Archiblatta hoevenii* Voll., in which mesonotum and metanotum have their posterior lateral angles produced into large lobes, clearly indicating the rudiments of tegmina and wings.

The differences between *A. beccarii* n. sp. and *A. hoevenii* Voll. may be tabulated as follows:

| *A. beccarii* | *A. hoevenii* |
|---|---|
| apterous | tegmina and wings fully developed; shining castaneous |
| colour: dull black | with 2 broad cream-white rings |
| antennae: colouring uniform | coarsely rugose, with numerous coarse punctures |
| pronotum: slightly rugose, with a few scattered punctures | mesonotum and metanotum of the larva with large posterior lateral lobes |
| mesonotum and metanotum: posterior lateral angles only slightly, or not at all produced | castaneous, with posterior tibiae deep orange. |
| legs: uniform dark castaneous to black | |

**Protagonista fusca** Hanitsch.

1925. Sarawak Mus. J., Vol. III, p. 97, fig. 11. [M[t] Dulit, Sarawak].

1 ♂, 1 ♀ Pangherang-Pisang, Sumatra. Oct. 1890 to March 1891. E. Modigliani.

The ♂ of the present collection agrees with the type (♂),

except for slight differences in colouring, viz. tegmina almost black, instead of fusco-castaneous, and the abdomen below castaneous in the centre, black at the sides, instead of entirely black.

The ♀ quite agrees with *P. aterrima* Hanitsch, from Bandar Baroe, E. Coast, Sumatra (Arkiv för Zool., Vol. XXI A (1929), p. 17, of which only the ♀ is known (type in the Stockholm Museum). This latter name, being a synonym, must therefore be suppressed. The error arose by my having only a single ♀ before me when describing it.

*P. pertristis* Hanitsch, from the Malay Peninsula, of which only the ♀ is known, appears to be a good species, differing from *P. fusca* chiefly by its cinnamon-brown tegmina (J, M. B., R. Asiat. Soc., Vol. I (1923), p. 444, fig. 28; type in Oxford Museum).

## PANCHLORINAE.

### Pycnoscelus surinamensis L.

1767. *Blatta surinamensis* L. Syst. Nat., ed. XII, p. 687 [Surinam].

3 ♂♂, 1 ♀ larva Siboga, Sumatra, April 1886; 2 ♀♀ Siboga, Sumatra. Oct. 1890 to March 1891; 1 ♀ Padang, Sumatra. 1890; 1 ♀ Lumut, Sumatra. 1890; 9 ♀♀ Balighe, Sumatra. Oct. 1890 to March 1891; 3 ♀♀ Si-Rambé, Sumatra. Dec. 1890 to March 1891; 1 ♀ Lelemboli, Nias, Aug. 1886; 1 ♂ larva, Engano, May 1891. E. Modigliani.

Hebard (1929), p. 95, remarks on the scarcity of the males as compared with the females of this species in the New World and states that « in Malaysia males are quite as often encountered as female ». However, the above list shows the great preponderance of the females at least in Sumatra.

Noteworthy is the difference in size of the mature (winged) specimens; whilst the above 3 ♂♂ from Siboga are practically all of the same size, measuring 19 to 20 mm., the females vary considerably, the smallest ♀ from Nias measuring only 14 mm., and the largest ♀ from Si-Rambé 24 mm.

## CORYDINAE.

### **Eucorydia westwoodi** Gerstäcker.

1861. *Corydia westwoodi* Gerst. Arch. f. Naturg., Vol. XXVII, p. 114 [1 ♀ Assam].

1915. *Corydia maxwelli* Hanitsch. J., S. B., R. Asiat. Soc., No. 69, p. 126, pl. II, fig. 10. [1 ♂ Maxwell's Hill, Perak; 1 ♂ Lingga Mt., Sarawak; 2 ♀♀ Bukit Kutu, Selangor].

1 ♂, Siboga, Sumatra, Oct. 1890 to March 1891. E. Modigliani.

*Corydia maxwelli* Hanitsch is an undoubted synonym of *C. westwoodi* Gerst. — This species is widely distributed (Assam, Malay Peninsula, Sumatra, Borneo); but is far from common. Besides the above listed examples I know only of a single ♀, in British Museum collection, labelled « Sumatra ». The two sexes show an interesting dimorphism. The head is orange in the ♂, black in the ♀. The tegmina are yellow in both sexes, with a round black spot in the centre of each tegmen, and the tips infuscated, but whilst in the ♂ the mediastinal area is yellow, it is black in the ♀. The underside of the abdomen is orange-yellow in the ♂, but black in the ♀, with orange margins. The legs have the coxae and femora orange in the ♂, but black in the ♀. Tibiae and tarsi are black in both sexes.

I am following Hebard (1929), p. 97, in placing this species under his *Eucorydia*, distinguished from *Corydia* Serville, amongst other characters, by having the interocular space conspicuously wider than that between the antennal sockets.

### **Homopteroidea nigra** Shelford.

1906. Trans. Ent. Soc., London, p. 274, pl. XVI, figs. 13 & 14. [Sarawak; Sumatra].

16 examples, Si-Rambé, Sumatra, Oct. 1890 to March 1891; 12 examples, Sipora, Mentawi Is., May to June 1894. E. Modigliani.

A not uncommon species. I have recorded it from Siberut, Mentawi Is., and from Sumatra (Bull., Raffles Mus., No. 1 (1928),

p. 37, and Hebard (1929), p. 96, from Sandakan, B. N. Borneo, and from Simalur I., W. coast, Sumatra.

**Homopteroidea shelfordi** Hanitsch.

1925. Sarawak Mus. J., Vol. III, p. 99, fig. 12 [Sarawak; Larut Hills, Malay Peninsula].
1929. Tijdschr. voor Entom., Vol. LXXII, p. 294, fig. 6 [Fort de Kock, Sumatra].
7 examples, Si-Rambé, Sumatra, Oct. 1890 to March 1891. E. Modigliani.

**Homopteroidea maculata** Hanitsch.

1929. Tijdschr. voor Entom., Vol. LXXII, p. 297, figs. 7 & 8 [Lubuksikaping, Sumatra].
2 examples, Si-Rambé, Sumatra, Oct. 1890 to March 1891; 2 examples, Sereinu, Sipora, May to June 1894; 1 example, Si-Oban, Mentawi Is., Apr. to Aug. 1894. E. Modigliani.
Readily distinguished from the two other species of *Homopteroidea* by the two light maculae on its tegmina.

**Ctenoneura brunnea** Hanitsch.

1929. Tijdschr. voor Entom., Vol. LXXII, p. 292, fig. 5 [Gunung Singgalang, W. Sumatra].
7 examples, Si-Rambé, Sumatra, Oct. 1890 to March 1891. E. Modigliani.

## OXYHALOINAE.

**Areolaria signata** Shelford.

1906. Trans. Ent. Soc., London, p. 273 [Sarawak].
2 examples, Sipora. Mentawi Is., May to June 1894. 3 examples, Si-Oban, Sipora; Apr. to Aug. 1894. E. Modigliani.
Recorded previously by me from the Mentawi Is., from North Pagi, and from Lau Kahit, Sumatra (Bull., Raffles Mus., No. 1 (1928), p. 38, pl. II, fig. 7).

## PERISPHAERINAE.

### **Paranauphoeta lyrata** Burmeister.

1838. *Nauphoeta lyrata* Burm. - Handb. Entom., Vol. II, p. 508 [Java].

2 ♂♂, 5 ♀♀ Siboga, Sumatra, Oct. 1890 to March 1891; 2 ♀♀ Pangherang Pisang. Sumatra, Oct. 1890 to March 1891; 3 ♂♂, 2 ♀♀ G. Sitoli, Nias, May 1886. E. Modigliani.

Distribution: The whole of Malaysia and Celebes. — The two ♀♀ examples from Pangherang-Pisang are decidedly darker in colour than those from Siboga and Nias, with the orange spots on the tegmina more clearly marked, instead of washed-out.

### **Paranauphoeta basalis** Serville.

1839. *Blatta basalis* Serv. - Ins. Orth., p. 95 [Java].

1 ♂ Sipora, Mentawi Is., May to June 1894; 1 ♀ Si-Oban Sipora, April to Aug. 1894; E. Modigliani.

Besides from Java and Sumatra also recorded from the Malay Peninsula, but apparently not yet from Borneo.

### **Perisphaeria armadillo** Serville.

1831. Ann. Sci. Nat., Vol. XXII, p. 44 [Java].

3 ♀♀ Si-Rambé, Sumatra, Dec. 1890 to March 1891. E. Modigliani.

This is apparently the first record from Sumatra, though I have also specimens (6 ♀♀) before me, collected by Karny and Siebers at Wai Lima, S. Sumatra (Nov.-Dec. 1921). This species is now known also from the Malay Peninsula, Singapore, Celebes, Amboina, Aru, New Guinea and Dinner Island (off the S. E. coast of N. Guinea). Curiously enough, there seems to be no definite record yet from Borneo, but I have abundant material before me taken by Mjöberg in Sarawak (1923), and by Pendlebury on Kina Balu (1929).

**Perisphaeria glomeriformis** Lucas.

1863. *Perisphaera glomeriformis*, Lucas. - Ann. Soc. Ent. France, (4), Vol. III, p. 408, pl. IX, figs, 10 & 10 a. [Cochin China; Philippines].

3 ♀♀. Bua-Bua, Engano. May to June 1891. E. Modigliani.

The only other record of this species seems to be my own, from Bukit Kutu, Malay Peninsula, 3000 feet. (J., S. B., R. Asiat. Soc., No. 69 (1915), p. 142). This species can be separated from the former as follows:

*P. glomeriformis:* ♀: head black; body faintly greenish, finely punctured; eyes close together;

*P. armadillo:* ♀: head yellow; body above black, smooth; eyes further apart;

*P. lucasiana* S. & Z., which is not represented in this collection, differs from either species by being coarsely punctured.

## PANESTHINAE.

**Salganea morio** Burmeister.

1838. *Panesthia morio* Burm. - Handb. Entom., Vol. II, p. 513 [Java],

3 ♀♀ Si-Rambé, Sumatra, Dec. 1890 to March 1891; 1 ♀ Lelemboli, Nias, Aug. 1886. E. Modigliani.

Distribution: the whole of Malaysia. Also recorded from Ceylon and Amboina (Vienna Museum).

**Panesthia javanica** Serville.

1831. Ann. Sci. Nat., Vol. XXII, p. 38 [Java].

1839. Ins. Orth., p. 131, pl. II, fig. 5.

3 ♂♂, 2 ♂♂ larvae, 5 ♀♀ Mt. Singalang, Sumatra, July 1878. O. Beccari.

3 ♂♂, 1 ♀ larva, Lelemboli, Nias, Aug. 1886; 1 ♀, 1 ♀ larva, Bawolovalani, Nias, May 1886; 2 ♀♀, G. Sitoli, Nias, May 1886; 2 ♂♂, 1 ♂ larva, 1 ♀, Si-Rambé, Sumatra, Dec. 1890 to March 1891; 1 ♂, 3 ♀♀ Padang, Sumatra, 1890; 1 ♂, 2 ♂♂ larvae, 5 ♀♀, 1 ♀ larva, Siboga, Sumatra, Oct. 1890 to March 1891; 1 ♀ Pangherang-Pisang, Sumatra, Oct. 1890 to March 1891; 1 ♂, 1 ♂ larva, Sipora, Mentawi Is., May to June 1894; 3 ♂♂, 2 ♀♀ Si Oban, Sipora, May to Aug. 1894; E. Modigliani.

Distributed throughout the whole of Malaysia and exceedingly common. — Of the above specimens the following deserve special notice: a ♂, from Mt. Singalang, measuring 55 mm., with enormous cornua to its pronotum; a ♀ from the same locality, 58 mm., with very small cornua; a ♀ from Si Oban, Sipora, 50 mm., with unusually slender body.

### **Panesthia saussurii** Stål.

1877. Öfver. K. Vet. Akad. Förh. Vol. XXXIV, No. 10, p. 37 [Philippines].

2 ♂♂, 2 ♀♀. Si-Rambé, Sumatra, Dec. 1890 to March 1891. E. Modigliani.

I am placing here 4 examples which differ from *P. javanica* Serv. by their smaller size and deep black colour. The emargination on the anterior border of the pronotum is broadly rectangular in the ♂♂, but semi-lunar in the ♀♀.

Measurements: ♂ 29 mm., ♀ 32 mm. in total length.

### **Panesthia serratissima** Brunner (?).

1865. Nouv. Syst. Blatt., p. 394. [Ternate].

1 ♀ larva. Mt. Singalang, Sumatra. July 1878. O Beccari.

The single specimen in the collection is thus labelled « *Panesthia serratissima* Brunner (?) ». It agrees well enough with the original description, except that it is certainly not « tota nigra », but deep castaneous, with the legs orange.

**Panesthia wallacei** Wood-Mason.

1876. J., Asiat. Soc. Bengal, Vol. XLV, part 189.

1877. Ann. Mag. Nat. Hist., (4), Vol. XIX, p. 117. [Sinkep I., near Singapore].

1 ♂, 1 ♀ Sipora, Mentawi Is., May to June 1894. E. Modigliani.

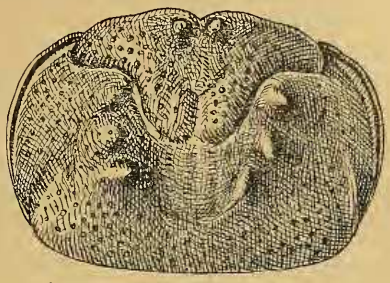

Fig. 18. *Panesthia wallacei* W.-M. Pronotum. × 3 1/2.

I collected two specimens (♂ and ♀) of this species on Gunong Kledang, Perak, March 1898, and the Oxford University contains two examples (♀ ♀), from the Baram River, Sarawak (Charles Hose, 1908). These seem to be the only records of this species. The dimensions of the six specimens known are:

| | | |
|---|---|---|
| ♂, Sinkep I.: . . . . | body | 36.5 mm. |
| ♂ & ♀, Gunong Kledang, Perak: | » | 34 » |
| ♀, Baram, Sarawak: . . . | » | 38 » |
| ♂ & ♀ Sipora, Mentawi Is.: . | » | 42 » |

The curiously trilobate pronotum, the parallel sides of the body, and the entire, not crenulated, supra-anal lamina will always distinguish this from allied species.

**Panesthia transversa** Burmeister.

1838. Handb. Entom., Vol. II, p. 513 [Java]

1 ♂, 1 ♂ larva, 2 ♀♀ Siboga, Sumatra. Oct. 1890 to March 1891. E. Modigliani.

Burmeister characterizes this species as follows: « Nigra, nitida; pronoti incisura lata profunda, medio et utrinque cornigera: elytris alisque longitudine abdominis, basi nigris, fascia media pallida. Long. I". Brunner (Nouv. Syst. Blatt., 1865, p. 395 describes under this name a ♀ from Ceylon, and later (Ann. Mus. Genova (2), Vol. XIII (1893), p. 51) a ♂ from Burma, the main points of

the description of the ♂ being: antennae black, with their terminal portion yellow; anterior margin of the pronotum deeply sinuate, centre of the sinus with a tubercle, sides of the pronotum drawn out into horns; and of the ♀: pronotum feebly emarginate; tegmina with their basal $^1/_3$ black, remainder pale yellow; supra-anal lamina indistinctly crenulate; ♂ 34 mm., ♀ 30 mm. in total length.

Saussure (Mém. Soc. Genève, Vol. XVII (1863), p. 168, pl. I, fig. 25) described and figured a Blattid, of doubtful sex (abdomen missing), from China, under the name of *Panesthia mandarinea,* and in Vol. XX (1869-70), p. 286, pl. III, fig. 23, recorded another Blattid from the « East Indies » which he took to be the ♀ of the previously described form, and which he now regards as the ♂. However, Wood-Mason (J., Asiat. Soc., Bengal, Vol XLV (1876), p. 190) showed that these two Blattids had nothing to do with each other and re-named the latter (from the « East Indies ») *Panesthia saussurii* n. sp. — Stål (Öfver. K. Vet. Akad. Förh., Vol. XXXIV (1877), p. 37), unacquainted with Wood-Mason's work, unfortunately described an entirely different Blattid under the same name, *Panesthia saussurii* n. sp., a form closely related to, but smaller than *P. javanica* Serville. On the same page Stål establishes the sub-genus *Caeparia* for the second form of *P. mandarinea* Sauss. (= *P. saussurii* W. — M.). Brunner (Ann. Mus. Civ. Genova (2), Vol. XIII (1893), p. 48) accepts this genus, but calls Saussure's second form *Caeparia mandarinea* Sauss., whilst Kirby (Syn. Cat. Orth., B. M., Vol. I (1904), p. 201) more correctly calls it *Caeparia saussurii* Wood-Mason, by which name this Insect should be known in future.

Whether the name *Panesthia mandarinea* Saussure for the first form has any claim to be retained, is more than doubtful. Saussure considered the type specimen to be a ♂, though the abdomen was missing, but his exquisite illustration, showing a pronotum with a truncated anterior margin and without a trace of horns, leaves no doubt that it is a ♀. Further, Saussure's description does not give a single character in which his species differs from *P. transversa* Burmeister. In fact he says: « C'est avec la *P. transversa* B., que cette espèce a le plus d'analogie. Elle s'en distingue par l'échancrure du prothorax, qui n'offre

pas de tubercule médian ». This quite agrees with the ♀ of *P. transversa* B., whilst the ♂ of that species is readily distinguished by the two lateral horns and the single median tubercle of the pronotum. The name *P. mandarinea* Sauss. should be abandoned. The Blattid from Lundu, Sarawak, which I described and figured in J., S. B., R. Asiat. Soc., No. 69 (1915), p. 149, pl. VI, fig. 33, is plainly the ♂ of *P. transversa* B.

The ♀♀ of this species show the typical colouring, viz. head, pronotum and abdomen black; antennae black, with a subterminal ring of yellow; tegmina with their basal $^1/_3$ black, remainder pale fulvous, with an indefinite darker blotch in the centre. In the single ♂ of this collection the black colour is everywhere replaced by castaneous to deep orange and brick red. It may be described as follows:

♂. Head freely exposed, vertex with a deep oval depression; entirely punctured; castaneous; eyes lemon-yellow, inter-ocular distance nearly equal to that between antennal sockets; antennae castaneous, with a sub-terminal ring of dull orange. Pronotum twice as broad as long, castaneous, coarsely punctured; anterior margin with a deep sinus, the latter with a broad median tubercle, and enclosed on either side by a large curved horn; behind the tubercle a deep depression, bounded behind by a blunt ridge. Tegmina exceeding the 7th abdominal tergite, but not reaching quite to the end of the abdomen; widest in their basal half, then suddenly narrowing; basal $^1/_3$ dark castaneous, remainder dull fulvous, with an ill-defined darker blotch in the centre. Wings in length and colouring similar to the tegmina. Abdomen above entirely and coarsely pitted, deep orange to brick-red, with the posterior margin of each tergite narrowly deep castaneous; posterior margin of 7th tergite straight, sides practically smooth, backwards drawn out into short spines; supra-anal lamina also coarsely pitted, posterior margin with only faint crenulations and a minute tubercle on either side. Cerci deep orange. Abdomen below deep orange to light castaneous, each sternite with a broad sulcus of the same colour; less coarsely pitted than the tergites. Legs castaneous, tips of spines black; anterior femora with one spine each; pulvilli large, cream-yellow.

The Oxford Museum contains a ♂ example, labelled « Borneo », and another ♂ labelled « Singapore, Mr. Horsley 1864 », both

named « *P. mandarinea* Sss. » by Shelford, which I also take to belong to *transversa* Burm. The two specimens are of the normal colouring, viz. body black, tegmina bi-colorous.

The following table gives the measurements of the specimens (♂ & ♀) from Siboga; of the ♂ from Lundu, Sarawak; of the ♂ ♂ in the Oxford Museum from « Borneo » and Singapore respectively; of Brunner's ♀ from Ceylon, and of the same author's ♂ and ♀ from Carin Chebà, Burma.

| | Siboga ♂ | Siboga ♀ | Lundu ♂ | Borneo ♂ | Singapore ♂ | Ceylon ♀ | Burma ♂ | Burma ♀ |
|---|---|---|---|---|---|---|---|---|
| | mm. | mm. | mm. | mm. | mm. | mm. | mm. | mm. |
| body . . . . | 40.— | 39.5 | 39.— | 34.— | 29.— | 30.— | 34.— | 30.— |
| pronotum, length . | 7.3 | 7.— | 9.5 | 6.2 | 6.— | 6.— | 6.5 | 5.8 |
| pronotum, width . | 15.— | 13.— | 14.5 | 12.— | 10.— | 10.— | 12.— | 10.5 |
| tegmina . . . | 29.— | 29.— | 32.— | 27.— | 23.— | 23.— | 30.— | 25.— |

**Panesthia modiglianii** n. sp.

2 ♀♀ Siboga, Sumatra. Oct. 1890 to March 1891. E. Modigliani.

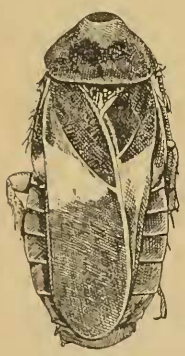

Fig. 19.
*Panesthia modiglianii* n. sp. ♀. × 1 1/2.

♀. Size smaller than *P. transversa* Burm. General colour black, except for an orange-coloured sub-terminal ring of the antennae, and a dull fulvous band across the tegmina.

Head exposed, finely punctured, shining black; labrum fusco-testaceous; antennae black, with an orange-coloured sub-terminal ring of about 8 joints; interocular distance equal to that between the antennal sockets. Pronotum black, deeply punctured; anterior border without cornua and with only a small and shallow emargination: behind it a triangular depression, bounded posteriorly by a raised protuberance. Tegmina shorter than the abdomen, just exceeding the 7th abdominal segment, considerably narrower than the abdomen, dull black, with a broad dull fulvous vitta across their middle, apex suffused with fulvous. Wings black, shading to dull testa-

ceous apically. Abdomen above coarsely punctured, dull black, each segment along its posterior margin with a russet pubescence. Supra-anal lamina with the posterior margin entire, without crenulations, except for a shallow protuberance on either side; covered by a thick russet pubescence. Cerci black, also pubescent. Abdomen below black, punctured, each segment with a smooth sulcus; sub-genital lamina with traces of pubescence. Legs black, their upper side with russet pubescence; anterior femora without spines; pulvilli large, orange.

♀. Total length 28 mm.; pronotum 6 × 9 mm.; tegmina 22 mm.

The ♂ is unknown, but will very likely be found to have a pronotum with pronounced cornua.

**Panesthia** sp.

1 ♀ larva. Si-Rambé, Dec. 1890 to March 1891. E. Modigliani.

♀ larva. Apterous. Anterior half of body (i. e. pronotum, mesonotum, metanotum and first three abdominal segments) very finely and closely punctured; posterior half progressively more coarsely punctured.

General colour: dull castaneous. Head slightly free; vertex shining dark castaneous, with few punctures; face reddish castaneous, closely punctured; labrum and maxillary palps dark orange; antennae reddish castaneous, shading to ferruginous apically. Pronotum with the anterior margin parabolic, without cornua; posterior margin gently rounded; anterior half with a triangular depression, its apex pointing backwards; a pair of small tubercles near the posterior border. Mesonotum and metanotum each with a pair of short transverse ridges near the posterior border. The first three or four anterior tergites closely granular, punctured; the following tergites coarsely punctured. 7th tergite with its anterior border strongly convex, so that it is twice as long in the middle line as at the sides; sides finely granular, posteriorly drawn out into a short tooth. Supra-anal lamina with 13 crenulations. Cerci short, reddish, slightly pubescent. Legs dark orange to light castaneous; anterior femora unarmed.

Total length 26 mm.

This species of which only the ♀ larva is known, cannot be identified with any other described species of *Panesthia*. The finely granular sides of the 7th tergite are perhaps more characteristic of *Miopanesthia* Saussure than of *Panesthia* Serville.

### **Miopanesthia** sp.

1 ♂ larva, Si-Rambé, Sumatra, Dec. 1890 to March 1891. E. Modigliani.

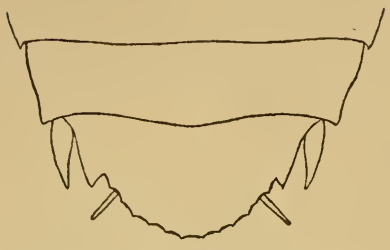

Fig. 20. *Miopanesthia* sp. ♂ larva. End of abdomen from above. Enlarged.

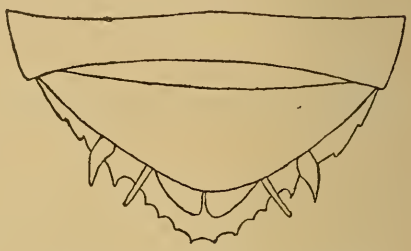

Fig. 21. *Miopanesthia* sp. ♂ larva. End of abdomen, from below. Enlarged.

♂. Small, uniform pale testaceous, apterous. — Head exposed; eyes very small, black, placed behind the antennal sockets, antennae pale testaceous. Pronotum with the anterior margin parabolic, posterior margin sub-truncate; a curved transverse thickening in front of the centre of the disk; centre of disk depressed, bordered behind and at the sides by a horseshoe-shaped ridge. Mesonotum and metanotum with the posterior angles slightly produced backwards. All tergites with a pronounced sulcus. Angles of 6th tergite produced backwards into a blunt spine, those of the 7th into sharp spines. Supra-anal lamina produced, its posterior margin with 13 sharp-pointed crenulations. Cerci curved, subtriangular, pointed. Abdominal sternites with distinct sulci, broadest in the centre, narrowing towards the sides. Sub-genital lamina bilobed. Styles present, slender, cylindrical, nearly as long as the cerci, their sides with delicate hairs, apex with longer hairs. Legs uniform pale testaceous; all femora without spines.

♂ larva: total length 13 mm.

The presence of distinct styles in larval Panesthinae has never yet been recorded and is of the greatest interest. Fortunately I have before me a long series of an undescribed *Miopa-*

*nesthia* from Gunong Benom, Pahang, 5000' to 7000', collected in July and August 1925 by Mr. I. H. Evans, Curator of the Perak Museum. There not only the ♂, but also the ♀ larvae possess styles, though there is no trace of them in the full-grown examples of either sex. I hope to describe this curious condition in more detail at some future time.

## LITERATURE.

[N. B. Only the literature from the beginning of the present century is given. For earlier works I must refer to the lists in my « Malayan Blattidae », 1915, and « Malayan Blattidae », Part II, 1923].

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