On a Collection of Bornean and other Oriental Blattidae from the Stockholm Museum.

By

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With 1 Plate.

The following pages contain the description of a collection of Oriental Blattidae from the Stockholm Museum. By far the greater part was collected by Dr E. Mjöberg in Borneo, and some by him in Sumatra; a few were taken by Kemner in Java, others in Siam by Count Gyldenstolpe, whilst the remainder came from the Philippines and Japan. The collection comprises about 80 species, 12 of which are described below as new. Also a new genus, *Haplosymploce,* had to be established. I have to thank Professor Sjöstedt for entrusting this valuable collection to me for description.

Some of the Bornean material was taken by Dr Mjöberg on Mount Tibang, Sarawak, which is situated close to the Dutch border and is, after Kinabalu, the highest mountain in Borneo, rising to a height of 9852 feet. The other Bornean material came from Dutch East Borneo, viz. from the Birang River, Kajan River, Mahakam River, Pajau River, Songei Boh, Long Navang, Pasir, Tandjong Redeb and the Kimaues Caves. To save space in the following list, 'Dutch East Borneo' will not be repeated after the names of these rivers and places, nor the name of the collector, Dr Mjöberg.

For the sake of brevity I shall also in the case of the older authors omit all references to literature: they can all be found in Kirby's 'Synonymic Catalogue of Orthoptera', 1904, and in Shelford's 'Blattidae', Genera Insectorum, 1907—1910. Wherever there is a reference to Hebard, his 'Studies in Malayan Blattidae' are to be understood (Proceedings, Academy of Natural Sciences, Philadelphia, Vol. LXXXI (1929), pp. 1—109, 6 pls.). However, I have thought it advisable to give full references in the case of the species first described by myself, as their descriptions are scattered through so many different publications.

The genera *Plumiger, Graptoblatta, Symploce, Parasymploce, Symplocodes, Scalida,* and *Sigmoidella* were all established by Hebard, and *Liosilphoidea* and *Stictolampra* by myself. (Mém. Musée Royal d'Histoire Naturelle de Belgique, hors série, Vol. IV, fasc. 1, pp. 47 & 51 (1931)).

Oxford, March 1933.

List of Species.

Ectobiinae.

Plumiger histrio Burmeister.
1 ♀ Mahakam River.
Graptoblatta notulata Stål.
1 ♂, 2 ♀♀ Buitenzorg, Java (Kemner).
Mareta jacobsoni Hebard.
1 ♂ Tandjong Redeb.

Anaplectinae.

Anaplecta malayensis Shelford.
9 examples, Long Navang.
Anaplecta cornea Hanitsch.
Sarawak Mus. J., Vol. III (1925), p. 79, fig. 1.
6 examples, Mt. Tibang, 1400—1700 m.; 1 example, Pajau River.
Anaplecta humeralis n. sp.
1 ♂ Pajau River.
Anaplectoidea notata Shelford.
1 ♂ Mt. Tibang, 1400—1700 m.

Pseudomopinae.

Blattella bisignata Brunner.
1 ♂, 4 ♀♀ Tandjong Redeb; 8 ♀♀ Long Navang.
Symploce cavernicola Shelford.
1 example, Kimaues Caves.
Symploce excavata Shelford.
1 ♂ Koon Tan, Siam (Gyldenstolpe).
Symploce ridleyi Shelford.
1 ♀ Medan, Sumatra.
Symploce breviramis Hanitsch.
Arkiv f. Zool., Vol. XXI A (1929), p. 10; 1 ♂ Pasir.

Symploce falcifera Hanitsch.
Sarawak Mus. J., Vol. III (1925), p. 81, figs. 4 & 5.
1 ♂, 1 ♀ Mt. Tibang, 1400 m.; 1 ♀ Birang River.

Symploce radicifera Hanitsch.
Bull. Raffles Mus., No. 1 (1928), p. 20. 4 ♂♂, 7 ♀♀ Tandjong Redeb; 1 ♂ Birang River.

Parasymploce irregulariter-vittata Brunner.
1 ♂, 2 ♀♀ Mt. Tibang, 1400—1700 m.; 1 ♂ Mahakan River; 1 ♀ Pajau River.

Parasymploce penicillata Hebard.
2 ♀♀ Pajau River.

Haplosymploce n. g.

Haplosymploce (Ischnoptera) nigra Hanitsch.
Bull. Raffles Mus., No. 1 (1928), p. 15, pl. I, fig. 6. 1 ♀ Mt. Tibang, 1400 m.; 1 ♀ Long Navang.

Symplocodes ridleyi Shelford.
1 ♂ Buitenzorg, Java (Kemner).

Margattea ceylonica Saussure.
3 ♂♂, 2 ♀♀ Long Navang; 1 ♂, 1 ♀ Tandjong Redeb. 2 ♂♂ Pajau River.

Margattea anceps Krauss.
3 ♂♂, 1 ♀ Mt. Tibang, 1400 m.; 1 ♂ Pajau River.

Margattea longe-alata Brunner.
3 ♂♂, 2 ♀♀ Pajau River.

Margattea crucifera Hanitsch.
Sarawak Mus. J., Vol. III (1925), p. 85. 3 ♂♂, 3 ♀♀ Pajau River; 1 ♀ Mahakam River; 2 ♂♂ Mt. Tibang, 1400 m.

Scalida gemmata n. sp.
1 ♀ Pajau River.

Scalida pantherina n. sp.
1 ♂ Mt. Tibang 1700 m.; 1 ♂ Pajau River.

Sigmoidella amplectens Walker.
1 ♂ Birang River.

Sigmoidella charon n. sp.
1 ♂ Pajau River.

Chorisoblatta megaspila Walker.
1 ♂ Pajau River; 1 ♀ Mt. Tibang, 1400 m.

Pseudophyllodromia pulcherrima Shelford.
8 examples, Pajau River.

Pseudophyllodromia laticaput Brunner.
1 ♂ Mahakam River.

Liosilphoidea lata Hanitsch.
J., Mal. Br., R. Asiat. Soc., Vol. I (1923), p. 416, fig. 14; Mém. Mus. R. Hist. Nat. Belg. (hors série), Vol. IV (1931), p. 47.
1 ♂ Buitenzorg, Java (Kemner).
Ceratinoptera gyldenstolpei n. sp.
1 ♀ Doi Vieng Par, Siam (Gyldenstolpe).
Ceratinoptera variegata n. sp.
1 ♂ Mt. Tibang, 1700 m.

Epilamprinae.

Compsolampra liturata Serville.
2 ♀♀ Buitenzorg, Java (Kemner).
Morphna maculata Brunner.
1 ♂ Kuching, Sarawak.
Morphna mjöbergi Hanitsch.
Sarawak Mus. J., Vol. III (1925), p. 90, fig. 7. 4 ♂♂, 4 ♀♀ Pajau River; 1 ♂ Long Navang.
Rhicnoda natatrix Shelford.
1 ♀ Pajau River; 1 ♀ (immature) Mt. Tibang, 1300 m.; 1 ♀ (immature), Buitenzorg (Kemner).
Calolampra guttifera n. sp.
2 ♂♂ Mt. Tibang, 1400—1700 m.
Pseudophoraspis nebulosa Burmeister.
1 ♂ Long Navang; 1 ♀ Pajau River. — Sumatra: 1 ♂ Tjinta Radja; 1 ♂ Medan; 1 ♂ Pulo Weh.
Rhabdoblatta procera Brunner.
1 ♂ Songei Boh; 1 ♂ Birang River; 1 ♂ Long Navang; 3 ♀♀ Medan, Sumatra; 1 ♀ Buitenzorg, Java (Kemner).
Stictolampra lurida Burmeister.
4 ♂♂, 3 ♀♀ Long Navang; 1 ♂ Mahakam River. 1 ♂, 3 ♀♀ Buitenzorg, Java (Kemner).
Epilampra saravacensis Shelford.
1 ♂ Pajau River.

Blattinae.

Platyzosteria soror Brunner.
1 ♂ (juv.) Buitenzorg, Java (Kemner).
Dorylaea flavicincta de Haan.
1 ♀ Buitenzorg (Kemner).
Dorylaea umbellifera n. sp.
1 ♀ Pajau River.

Dorylaea pallipalpis Serville.
1 ♂ Birang River; 1 ♂ Kajang River.
Stylopyga rhombifolia Stoll.
1 ♂ Buitenzorg (Kemner); 1 ♀ Java (Nyman); 1 ♀ Koon Tan, Siam (Gyldenstolpe).
Blatta concinna de Haan.
2 ♂♂, 1 ♀ Long Navang.
Periplaneta americana L.
3 ♂♂, 3 ♀♀ Medan, Sumatra; 1 ♂ Brastagi, Sumatra; 2 ♂♂, 1 ♀ Buitenzorg (Kemner); 1 ♂ Wijnkoops, Java (Kemner); 1 ♂ Doi Par Sakeng, Siam (Gyldenstolpe).
Periplaneta australasiae Fabr.
1 ♂, 1 ♀ Long Navang; 1 ♂ Birang River; 5 ♂♂, 6 ♀♀ Buitenzorg (Kemner); 1 ♂ Wijnkoops, Java (Kemner).
Periplaneta picea Shiraki.
2 ♂♂ Kobe; 1 ♀ Karinzawa, Japan (Ida Trotzig).
Periplaneta montana Hanitsch.
J., M. B., R. Asiat. Soc., Vol. I (1923), p. 440, figs. 25 & 26.
1 ♂ Buitenzorg, Java (Kemner).
Periplaneta niveipalpis Hanitsch.
Sarawak Mus. J., Vol. III (1925), p. 96. 4 ♂♂, 1 ♀ Long Navang.
Periplaneta succinea Hanitsch.
Sarawak Mus. J., Vol. III (1925), p. 97. 2 ♂♂ Mt. Tibang, 1400—1700 m.
Homalosilpha ustulata Burmeister.
1 ♂, 1 ♀ Long Navang; 1 ♀ Buitenzorg (Kemner).
Catara rugosicollis Brunner.
3 ♂♂, 4 ♀♀ Mt. Tibang, 1400—1700 m. 2 ♂♂ Long Navang; 2 ♂♂, 1 ♀ Pajau River.

Panchlorinae.

Pycnoscelus surinamensis L.
1 ♂ Mt. Tibang, 1400 m.; 2 ♀♀ Long Navang; 2 ♂♂, 2 ♀♀ Medan, Sumatra; 4 ♀♀ Java (Kemner); 1 ♀ Doi Par Sakeng, Siam (Gyldenstolpe).

Corydinae.

Dyscologamia funebris n. sp.
1 ♂ Birang River.
Dyscologamia pilosa Walker.
1 ♀ Buitenzorg, Java (Kemner).

Homopteroidea nigra Shelford.
6 examples, Pajau River; 2 examples, Mt. Tibang, 1400 m.; 1 example Kajau River.
Homopteroidea shelfordi Hanitsch.
Sarawak Mus. J., Vol. III (1925), p. 99, fig. 12; Tijdschr. Entom., Vol. LXXII (1929), p. 294, fig. 6. 1 ♀ Long Navang.
Ctenoneura fulva Hanitsch.
Sarawak Mus. J., Vol. III (1925), p. 101, figs. 13 & 14. 1 example Mt. Tibang 1400 m.; 1 example Long Navang; 2 examples Pajau River.

Oxyhaloinae.

Diploptera dytiscoides Serville.
1 ♂ Buitenzorg, Java (Kemner).
Chorisoneura lativitrea Walker.
1 example, Mt. Tibang, 1400 m.
Chorisoneura virescens Walker.
1 ♀ Long Navang.
Areolaria fieberi Brunner.
1 ♀ Buitenzorg, Java (Kemner).
Areolaria uniformis Hebard.
1 ♂ Mahakam River.
Prosoplecta (Areolaria) bipunctata Brunner.
1 ♂, 1 ♀ Mt. Banahao, Luzon (collector?).
Prosoplecta sex-punctata n. sp.
1 ♀ Imugan, Luzon (collector?).

Perisphaerinae.

Paranauphoeta atra Shelford.
1 ♀ Long Navang.
Paranauphoeta brunneri Shelford.
2 ♀♀ Long Navang.
Paranauphoeta lyrata Burmeister.
15 ♂♂, 47 ♀♀ Long Navang.
Perisphaeria armadillo Serville.
1 ♂ Pajau River; 1 ♂ Long Navang; 1 ♀ Mt. Tibang, 1400 m.
Perisphaeria glomeriformis Lucas.
1 ♀ Aroroi, Philippines (collector?).
Glyptopeltis wallacei Hanitsch.
J., F. M. S. Museums, Vol. XVII, part 2 (1933), p. 331.
1 ♂ Mt. Tibang, 1700 m.

Panesthinae.

Salganea morio Burmeister.
Sumatra: 1 ♂ Bah Lias; 1 ♂ Piso Piso; 1 ♀ Sinaboeng, 2260 m.

Salganea inaequaliter-spinosa Hanitsch.
J., F. M. S. Museums, Vol. XVII, part 2 (1933), p. 332. 1 ♂, 3 ♀♀ Mt. Tibang, 1400 m.

Panesthia javanica Serville.
3 ♂♂ (micropterous form), 1 ♂ (normal), 3 ♀♀ (micropterous form), 1 ♀ (normal, Mt. Tibang, 1400 m., 2 ♂♂, 1 ♀ Long Navang; 2 ♂♂, 1 ♀ 'Borneo'. — Sumatra: 4 ♂♂, 3 ♀♀ Medan; 1 ♂, 1 ♀ Bah Lias; 1 ♂, 1 ♀ Pulu Berhalla. — 2 ♂♂ Buitenzorg, Java (Kemner).

Panesthia bifasciata n. sp.
1 ♀ Mt. Tibang, 1700 m.

Panesthia pilosa n. sp.
1 ♂ Mt. Tibang, 1700 m.

Dolichosphaeria deplanata Hanitsch.
J., M. B., R. Asiat. Soc., Vol. I (1923), p. 455. 1 ♀ Long Navang.

Description of new species.

Anaplecta humeralis n. sp.
1 ♂ Pajau River, E. Borneo (E. Mjöberg).

♂. Head covered, pale orange; antennae dark fuscous, palps light fuscous; inter-ocular distance equal to width between antennal sockets. Pronotum sub-oval, broader than long; disk pale orange, lateral margins broadly hyaline, posterior border blackish suffused. Tegmina just exceeding the abdomen, orange in colour, a brownish blotch occupying the anal area and spreading slightly beyond it, but not reaching the mediastinal field; 10 costals, radial vein simple, 4 longitudinal discoidal sectors. Wings dark fuscous; mediastinal vein biramose; 5 costals, costal area deeply opaque; medio-discal field with 5 transverse venules; median vein simple; ulnar field with one transverse venule, ulnar vein simple; 1st. axillary 3-ramose; apical area $^2/_5$ the total wing length, basal margin nearly straight. Abdomen below dull testaceous. Cerci testaceous. No styles. Legs light testaceous.

♂. Total length 5 mm.

I have before me another example (sex? abdomen missing), taken by Dr Karny at Wai Lima, Lampong, Sumatra, Nov.—Dec. 1921.

Haplosymploce[1] n. g.

Hebard (Proc. Acad. Nat. Sci. Philadelphia, Vol. LXXXI, 1929, p. 61) points out that *Ischnoptera reversa* Walker and *Ischnoptera*

montis Shelford, having unbranched discoidal (= radial) veins both of tegmina and wings, cannot belong to his *Symploce*. I find that two other species are similarly characterized, viz. *Ischnoptera nigra* Hanitsch, from the Mentawi Islands, but also represented in the present collection, and an unnamed Blattid from Tonkin in the Oxford Museum. I propose grouping these species under *Haplosymploce* n. g., which may be defined as follows:

front femora armed after type A; radial vein both of tegmina and wings simple; ulnar vein of wings sigmoid, with several complete, and one or more incomplete branches; no apical triangle.

Haplosymploce nigra Hanitsch.

Ischnoptera nigra Hanitsch. Bull. Raffles Museum, No. 1 (1928), p. 15, pl. I, fig. 6. (Mentawi Islands).

1 ♀ Mt. Tibang, Sarawak 1400 m.; 1 ♀ Long Navang, E. Borneo (E. Mjöberg).

My original description of this species needs correcting and supplementing. The radial vein of the tegmina should have been described as simple, not as 'bifurcate from near base', and that of the wings, though correctly figured, should have been expressly stated to be simple.

The specimens from the Mentawi Islands were all ♂♂, but those of the present collection are ♀♀, as also two examples from the Malay Peninsula which I have before me, viz. one from Rim, Malacca, and the other from Batu Kurau, Perak. All these ♀♀ measure from 20 to 22 mm. in total length, as against 16 mm. of the ♂♂ from the Mentawi Islands, and the number of incomplete branches of the ulnar vein of the wings varies in the ♀♀ from two to four. However, they agree in all other particulars.

Scalida gemmata n. sp. Plate XII, fig. 1.

1 ♀ Pajau River, East Borneo (E. Mjöberg).

♀. Head covered, marbled light and dark brown, a vertical cream-white streak on the face; palps and antennae testaceous; inter-ocular distance 1/2 the width between antennal sockets. Pronotum sub-orbicular, posterior border sub-truncate; front half of disk testaceous, with a median white line; posterior half whitish, with 3 short brownish lines; lateral margins broadly hyaline. Tegmina exceeding the body by 1/4 their length, hyaline, with numerous scattered brownish ring-like markings; 14 costals, radial vein simple, 7 oblique discoidal sectors. Wings hyaline, mediastinal vein bifurcate, 9 costals, their ends greatly thickened, brownish; radial

[1] ἁπλόζ simple, from the simple—not forked—radial vein of tegmina and wings.

vein simple; median vein simple; ulnar vein straight, forking in the middle, the anterior half forking once more; apical triangle well developed, a dark brown blotch just outside its posterior border. Body below mottled brown and testaceous, a whitish streak in the middle line. Cerci long, testaceous above, darker below. Legs testaceous, tibiae with darker markings; front femora armed after type B, viz. with 3 heavy spines near the centre, followed by a series of very minute piliform spines; front femora distally with 3 heavy spines.

♀. Total length 13 mm.

This and the following species, *S. pantherina* n. sp., differ from the other species of *Scalida* Hebard[1] by their colour. *S. funebris* Walker, *S. fragilis* Hebard and *S. tricaudata* Hebard have the pronotum dark, with pale margins, whilst *S. latius-vittata* Brunner has the pronotum pale, with a black horse-shoe shaped design. Further, in all these four species the tegmina are more or less uniform castaneous in colour. *S. gemmata* n. sp., just described, has tegmina beset with ring-like markings, whilst those of *pantherina* are clouded.

Scalida pantherina n. sp.

1 ♂ Mt. Tibang, Sarawak, 1700 m.; 1 ♂ Pajau River, Dutch Borneo (E. Mjöberg).

♂. Head exposed, castaneous, a pale orange band across the forehead; palps fuscous; (antennae missing); inter-ocular distance rather more than width between antennal sockets. Pronotum broad, sub-oval, greatest width behind the centre; disk fusco-castaneous to black, in front and at the sides narrowly bordered with fulvous; lateral margins broadly hyaline. Tegmina exceeding the abdomen by $^1/_3$ their length, pale yellowish hyaline, clouded with light yellowish brown; 14 costals; radial vein bifurcate at $^4/_5$ of its course; 7 oblique discoidal sectors. Wings dark fuscous, costal border narrowly fulvous; 8 costals, the first 5 simple, the others forked, ends thickened; radial vein terminally forked; median vein simple; ulnar vein almost straight, with 5 complete branches (in the paratype one of them not quite complete); apical triangle well developed. Body above shining black; supra-anal lamina narrow, posterior border rounded. Cerci testaceous. Body below shining black, with the middle portion of the posterior sternites dull testaceous; sub-genital lamina trapezoidal; only the left style observed. Anterior femora with 3 larger spines, followed by a series of minute piliform spines (type B).

♂. Total length 10.5 mm.

[1] Proc., Acad. Nat. Sci., Philadelphia, Vol. LXXXI (1929), p. 50.

Sigmoidella charon n. sp.

1 ♂ Pajau River, East Borneo (E. Mjöberg).

♂. General colour black. — Head almost hidden, shining black; inter-ocular distance equal to width between antennal sockets; palps and antennae dark fuscous. Pronotum with the anterior border parabolic, posterior border obtusely angled; shining black, lateral margins narrow testaceous. Tegmina exceeding the abdomen by nearly 1/4 their length; black, in transmitted light fusco-castaneous, mediastinal area testaceous; 18 costals, radial vein simple, 6 longitudinal discoidal sectors, 6 anals. Wings hyaline, costal area and apex infuscated; mediastinal vein bifurcate, ends deep black; 11 costals, the proximal ones also deep black; radial vein simple; median vein simple; ulnar vein strongly sigmoid, with 2 complete and 1 incomplete branches; apical triangle moderate. Supra-anal lamina short, rounded. Cerci dark fuscous. Body below mottled light and dark fusco-castaneous. Sub-genital lamina elongate, slightly hirsute. Styles terminal. Legs fusco-testaceous. Front femora armed after type B.

♂. Total length 13.5 mm.

This species comes very close to *Sigmoidella nigra* Hanitsch[1], from Sumatra, but differs from it by its larger size (viz. 13.5 mm. as against 11 mm. in total length), by the lateral margins of pronotum and tegmina being less bright in colour, and by the ulnar vein of the wings having an incomplete branch in addition to the two complete branches.

Blatta funebris Walker, from Sarawak, the type of which is in the Oxford Museum, seems to be another near ally of *S. charon*. But the head of it is orange in colour, instead of black, and its pronotum and tegmina show no pale margins. The Blattid from Sarawak which Hebard (p. 55) somewhat doubtfully identifies with *funebris* and which he places under his *Scalida*, may prove to be *Sigmoidella charon*.

Ceratinoptera gyldenstolpei n. sp.

1 ♀ Doi Vieng Par, Siam (Count Gyldenstolpe).

♀. Head slightly exposed, light castaneous; interocular distance almost equal to width between antennal sockets; antennae exceeding the body, pale testaceous. Pronotum with the anterior margin parabolic, posterior margin truncate; disk reddish castaneous, lateral margins pale fulvous, not meeting in front. Tegmina not quite reaching to the end of the abdomen, pale reddish castaneous, humeral region infuscated; 11 costals; radial vein simple; 5 somewhat oblique discoidal sectors. Wings much reduced, 2/3 the length of

[1] Tijdschr. Entom., Vol. LXXII (1929), p. 277, and Ann. Mus. Civ. Genova, Vol. LVI (1932), p. 63.

the tegmina and barely $^1/_5$ their width, venation obscured. Abdomen above castaneous. Supra-anal lamina triangular. Cerci testaceous. Abdomen below mottled light and dark brown, with a narrow yellowish lateral border. Legs with the femora castaneus, tibiae and tarsi testaceous; hind legs very long; anterior femora armed after type B.

♀. Total length 8.5 mm.

The only other species of *Ceratinoptera* known from the Indo-Chinese sub-region is *C. annamensis* Hanitsch, from Dalat Langbian, S. Annam, 5000′ (J., Siam Soc., Nat. Hist. Suppl., Vol. VII (1927), p. 18). This latter species is, however, considerably lighter in colour then *gyldenstolpei*, and has the wings, though smaller than the tegmina, yet with fully developed venation.

Ceratinoptera variegata[1] n. sp.

1 ♂ Mt. Tibang, Sarawak, 1700 m. (E. Mjöberg).

♂. Head covered; vertex bright orange red; forehead black, with a median vertical white stripe; lower face testaceous, with the sides black; inter-ocular distance $^2/_3$ the width between the antennal sockets; antennae fuscous; palps with the basal joints testaceous, terminal joint fuscous. Pronotum with the anterior margin parabolic, posterior margin truncate, sides rounded; shining deep castaneous to black, lateral margins fulvous, broad, irregular. Tegmina as long as the abdomen, corneous, mediastinal area fulvous, remainder castaneous; 11 costals, the last 3 of which are forked; radial vein simple; 8 slightly oblique discoidal sectors. Wings hyaline, costal area dull yellowish; mediastinal vein bi-ramose, 8 costals of which the last three are ramose; median vein straight, simple; ulnar vein straight, 3-ramose; apical triangle small. Supra-anal lamina short, triangular. Cerci testaceous, tips black. Abdomen below reddish testaceous, lateral margins black. Sub-genital lamina triangular, keeled. Styles minute. (Legs missing.)

♂. Total length 13 mm.

Apparently closely allied to *C. sundaica* Fritze, from Java, but differing from it by the more complicated markings of the head which in the latter species is merely described as 'caput castaneum, ore et antennis rufo-castaneis, occipite et vertice in medio flavis'.

Calolampra guttifera n. sp. Plate XII, fig. 2.

2 ♂♂, Mt. Tibang, Sarawak, 1400—1700 m. (E. Mjöberg).

♂. Head freely exposed; vertex testaceous, face shining black, labrum dull testaceous, palps and antennae dark fuscous; inter-ocular distance equal to $^2/_3$ the width between antennal sockets.

[1] From the variegated colouring of the head.

Pronotum with the anterior margin broadly parabolic, posterior margin obtusely produced; disk shining black, lateral margins broadly fulvous, anterior margin very narrow. Tegmina exceeding the abdomen by nearly $^1/_3$ their length, yellowish hyaline, with numerous (about 60) large light-brown blotches, densest along the proximal half of the radial vein; anal area deeply punctured. Wings hyaline, costal margin yellowish suffused. Central portion of abdominal sternites shining deep castaneous to black, sides mottled light and dark brown. Cerci testaceous. Sub-genital lamina sub-oval. Styles testaceous. Legs testaceous; posterior metatarsus of para-type (missing in type) about equal in length to the remaining joints together, entirely spined; 1st and 2nd tarsal joints also spined; pulvilli minute; arolia present.

♂. Total length 22 mm.; body 17 mm.; pronotum 4×6 mm.; tegmina 19 mm.

The ♀ is unknown, but will probably be found to have abbreviated tegmina.

This is apparently the first species of *Calolampra* so far recorded from Malaysia. *Epilampra laevis* Brunner, from Tenasserim, which Shelford correctly places under *Calolampra* on account of the truncate tegmina of the ♀ (♂ unknown), comes near it, but differs by the markings of the head ('caput ferrugineum, fascia fusca inter oculos') and by the tegmina not being spotted. — Of *Calolampra pedisequa* Rehn, from Trang, Lower Siam, unfortunately only an immature ♂ is known.

Dorylaea pallipalpis Serville.

1839. *Kakerlac pallipalpis* Serv.-Ins. Orth., p. 71 [Java].

1 ♂ Birang River; 1 ♂ Kajang River.

Brunner[1] placed this species under *Periplaneta* Burm., but Kirby[2] removed it to *Methana* Stål, and Shelford[3] followed him in this. I suggested[4] that its proper place should be under *Dorylaea* Stål, and Hebard[5] finally assigned it to that genus. Both *Periplaneta affinis* Saussure and *Dorylaea unicolor* Shelford are probably synonymous with this species, as pointed out by me (loc. cit.).

Dorylaea atrocaput Hanitsch, from Mt. Murud, Sarawak (E. Mjöberg, 1922—3) is a closely allied species, differing, from *pallipalpis* by its much darker colour and especially by its intensely black shining head.

[1] Nouv. Syst. Blatt., 1865, p. 238.

[2] Syn. Catal. Orth., Vol. I (1904), p. 136.

[3] Genera Insectorum, Blattinae, 1910, p. 11.

[4] J., M. B., R. A. S., Vol. I (1923), p. 435; and Sarawak Mus. J., Vol. III (1925), p. 94.

[5] Proc., Acad. Nat. Sci., Philadelphia, Vol. LXXXI (1929), p. 80.

Dorylaea umbellifera n. sp. Plate XII, fig. 3.

1 ♀ Pajau River, East Borneo (E. Mjöberg).

♀. Head exposed, castaneous; eyes apart $^2/_3$ the width between antennal sockets; antennae castaneous. Pronotum with the anterior margin parabolic, posterior margin gently rounded; fulvous, narrowly bordered with black all round, disk with an umbrella-shaped black design. Tegmina exceeding the abdomen by $^1/_5$ their length, uniform castaneous. Wings rufo-castaneous. Body below black, each sternite with a pair of sub-marginal semi-lunar yellowish maculae. Legs castaneous, posterior metatarsus exceeding the combined length of the remaining joints, armed beneath; 1st. tarsal joint spined, 2nd. and 3rd. unarmed; pulvilli small; arolia present.

♀. Total length 25 mm.; body 22 mm.; pronotum 7×9.5 mm.; tegmina 18 mm.

Near *D. rhabdotops* Hebard, from Simalur Island, West Coast of Sumatra, and reported by myself also from Fort de Kock, Sumatra. It differs from *rhabdotops* by the head being uniform castaneous, instead of marked with broad alternating bands of black and yellow, and by the design on the pronotum which in *rhabdotops* lacks the stalk of the 'umbrella'.

Dyscologamia funebris n. sp. Plate XII, fig. 4.

1 ♂ Birang River, East Borneo (E. Mjöberg).

♂ Head slightly exposed, shining black; base of labrum testaceous; palps dark fuscous; antennae moniliform, dark fuscous, apex fulvous; eyes sub-contiguous, separated by only $^1/_5$ the width between antennal sockets; ocelli conspicuous, dull orange. Pronotum transversely oval, black, densely granular, anterior border strongly pilose with stiff reddish-brown hair. Tegmina exceeding the abdomen by nearly $^1/_2$ their length, uniform dark fuscous to black, in transmitted light slightly reddish. Wings dark fuscous, costal margin almost black. Supra-anal lamina transverse, slighly notched posteriorly, sides rounded. Cerci rufous. Abdomen below very dark fusco-castaneous, pilose. Sub-genital lamina transversely oval; styles long, black, pilose. Legs dark fusco-castaneous, pilose.

♂. Total length 26 mm.; body 17 mm.; pronotum 6×9 mm.; tegmina 22 mm.

This species of which only the ♂ is known, differs from *D. pilosa* Walker, from Java, chiefly by its much darker colour. *D. pilosa* is ferruginous, and the type ♂ which is in the Oxford Museum, shows on either tegmen a transparent blotch just behind the anal vein, a point not mentioned by Walker. Hebard, in reporting *pilosa*, ♂ and ♀, from Sumatra (from a cave near Baso, and from Fort de Kock, both on the West Coast), suggests that *D. cesticulata* Saussure, based on a ♀ from Singapore, as well as *D. cho-*

pardi Hanitsch, from the Batu Caves, Selangor (which name I substituted for *Miroblatta silphoides* Chopard) are synonymous with *pilosa*. I have re-examined the material, ♂ and ♀, from Fort de Kock (E. Jacobson, 1924—5) which I described[1] under the name of *D. cesticulata,* and having now before me additional examples, ♂ and ♀, from the Batu Caves (E. Seimund, 11. 10. 1930), I have come to the conclusion that Hebard is correct in regarding both *cesticulata* and *chopardi* as synonymous with *pilosa*. The transparent blotches on the tegmina which are distinct in the type, seem very variable: they are present in Hebard's specimen from Baso, absent in my own material from Fort de Kock, but again visible, though faintly, in the ♂ from the Batu Caves.

Brunner, in Ann. Mus. Genova, Vol. XXXIII (1893), p. 39, pl. I, figs. a & b, describes *Dyscologamia (Homoeogamea) capucina* from Tenasserim, the tegmina of which show two pale blotches each. The Oxford Museum has a ♂ from 'N. Borneo, opposite Labuan' which Shelford had identified with that species. Except for these two blotches, *capucina* is extremely similar to *pilosa*.

The length of the tegmina of the ♀ of *pilosa* has to be mentioned yet. In the specimen from the Batu Caves, described by Chopard, and in one from the same locality which Mjöberg sent me some years ago, they barely reach to the base of the supra-anal lamina. In the ♀ from those caves, collected by Seimund, they are exactly as long as the abdomen, but in the ♀ from Fort de Kock they exceed it by about 2 mm, whilst Saussure describes the tegmina of his ♀ from Singapore as covering the abdomen or slightly surpassing it. In the ♀ of the present collection from the Stockholm Museum, from Buitenzorg, Java (Kemner), they exceed the abdomen by 5 mm. However, this is an unusually large specimen, measuring 29 mm. in total length.

Prosoplecta sex-punctata n. sp. Plate XII, fig. 5.

1 ♀ Imugan, Luzon. (Collector?)

♀ Elliptical in outline; strongly convex. — Head slightly exposed, vertex light brown, face black; inter-ocular distance $^2/_3$ the width between the antennal sockets; antennae ferruginous, distally darker. Pronotum half again as broad as long, greatest width much before the middle; anterior margin slightly concave, posterior margin strongly convex; lateral margins drawn out into blunt angles; light brownish yellow, very narrowly bordered all round with black; disk with a large black blotch, rounded in front, bilobed behind; a pair of faint small black spots near the posterior margin. Tegmina just exceeding the body, pale brownish yellow, each tegmen with 3 black spots, viz. one at the base of the ulnar vein, a

[1] Tijdschr. voor Entomologie, Vol. LXXII (1929), p. 290.

second near the middle of the radial vein, a third at 3/4 of the radial vein; venation obscured. Wings black. Body below black, posterior margin of the sub-genital lamina red. Legs dark castaneous to black, posterior tarsi reddish, spines reddish.

♀. Total length 13 mm.; greatest width 10 mm.

Closely allied to *P. nigroplagiata* Shelford, from the Philippines, and, like that species, seeming to mimick some Cassid beetle (P. Z. S., 1912, p. 370, pl. XLVIII, fig. 9). However, *nigroplagiata* is smaller, viz. only 9.5 mm. in total length, its pronotum is marked by a number of small dots, instead of by one large ma cula, and each tegmen shows two thick lines in addition to the roundish maculae. Shelford describes the ground colour of his species as 'ochreous'. For *sex-punctata* the somewhat clumsy term of 'light brownish yellow' seems more correct.

Panesthia bifasciata n. sp. Plate XII, fig. 6.

1 ♀. Mt. Tibang, Sarawak, 1700 m. (E. Mjöberg).

♀. Head exposed, shining black, vertex with an oval depression; eyes apart as far as the antennal sockets; antennae black, last 4 joints orange. Pronotum with the anterior margin transversely excised, a blunt cornu on either side; posterior margin gently rounded; disk in its anterior half deeply depressed; shining black, deeply and coarsely punctured. Tegmina not quite reaching to the supra-anal lamina, rather narrow; bicolorous, left tegmen with two fulvous areas alternating with two black ones, viz. (1) a fulvous area occupying the base of the tegmen; (2) a black one, narrow at the costal border, spreading out towards the hinder border; (3) a fulvous, or pale orange area, broad at the costal border, narrow at the hinder border; (4) a black area, occupying the tip of the tegmen; right tegmen with a pale fulvous basal portion, remainder black, with only a narrow orange streak along the middle of the costal margin. Wings with the basal 2/3 almost colourless, distal 1/3 dark fuscous. Body, both above and below, and legs shining black. Supra-anal lamina deeply pitted, posterior margin with 6 faint crenulations. Cerci black.

♀. Total length 25 mm.; pronotum 5 × 8 mm.; tegmina 19 mm.

The bicolorous Malaysian species of *Panesthia* are as follows:

Panesthia transversa Burmeister, ♂×♀ recorded, besides from the whole of Malaysia, also from Ceylon, Burma and China; tegmina coloured with 4 transverse bands of black, fulvous, black, fulvous. — *P. mandarinea* Saussure is probably synonymous. See my remarks in Ann. Mus. Genova, Vol. LVI (1932), p. 85.

Panesthia bifasciata n. sp., ♀ from Mt. Tibang, Sarawak; tegmina with 4 transverse bands of fulvous, black, fulvous, black (i. e. in reversed order of *P. transversa*).

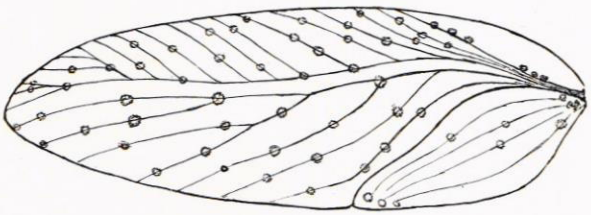

Fig. 1. *Scalida gemmata* n. sp. ♀ left tegmen. × 8.

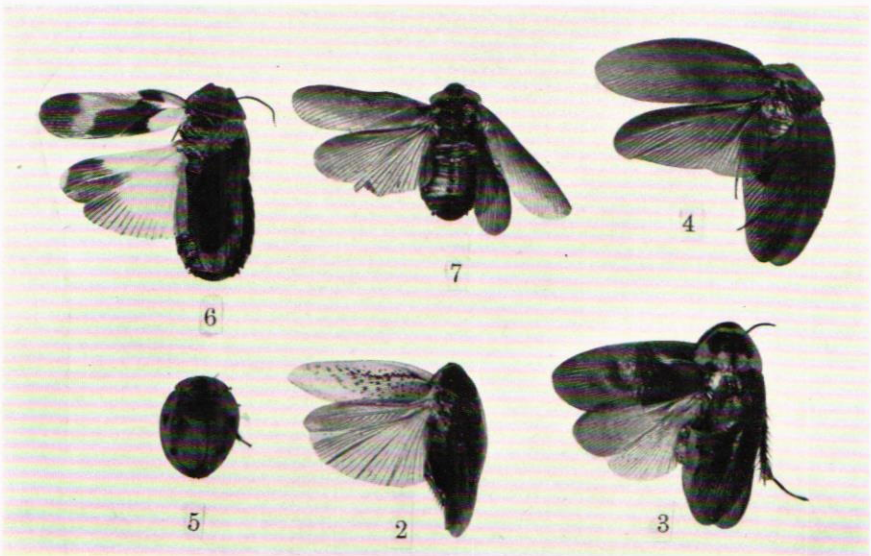

Fig. 2. *Calolampra guttifera* n. sp. ♂. × 1 1/2.
Fig. 3. *Dorylaea umbellifera* n. sp. ♀. × 1 1/2.
Fig. 4. *Dyscologamia funebris* n. sp. ♂. × 1 1/2.
Fig. 5. *Prosoplecta sex-punctata* n. sp. ♀. × 1 1/2.
Fig. 6. *Panesthia bifasciata* n. sp. ♀. × 1 1/2.
Fig. 7. *Panesthia pilosa* n. sp. ♂. × 1 1/2.

Hanitsch.

Panesthia shelfordi Hanitsch, ♂, from Mt. Penrissen, Sarawak; proximal $^2/_5$ of tegmina fulvous, distal $^3/_5$ black, with a small fulvous patch on the costal margin within the black area. See J., M. B., R. Asiat. Soc., Vol. I (1923), p. 458, fig. 32.

Panesthia hilaris Kirby ♀, from Sandakan, Borneo. »Tegmina yellowish hyaline, the basal third and a spot on the middle of the costa of the right tegmen, corresponding to a stripe on the left tegmen not reaching the inner margin.»[1]

Panesthia modiglianii Hanitsch, ♀, from Sumatra. Tegmina black, apex suffused with fulvous; a large triangular fulvous macula, its base near the middle of the costal margin, its apex at the distal end of the anal vein. Ann. Mus. Civ. Genova, Vol. LVI (1932), p. 88, fig. 19.

Panesthia pilosa n. sp. Plate XII, fig. 7.

1 ♂ Mt. Tibang, Sarawak, 1700 m. (E. Mjöberg).

♂. Head exposed; vertex and face shining black, granulate; mouth parts and palps dark testaceous; inter-ocular distance nearly equal the width between antennal sockets; antennae fuscous, apex ferruginous. Pronotum oval, transverse, anterior margin entire, not emarginate; posterior margin gently rounded; a deep depression just behind the anterior margin, a more shallow one in front of the posterior margin; dark castaneous to black, minutely punctured. Tegmina exceeding the abdomen by $^1/_6$ their length, dark fuscous, proximal $\frac{1}{3}$ of costal margin black. Wings smoky brown, costal margin blackish. Supra-anal lamina transversely oval, shining black, closely pitted, posterior margin entire. Cerci bulbous, reddish. Body below with the anterior sternites dark testaceous, posteriorly turning to reddish ferruginous. Legs testaceous; coxae and femora strongly pilose, the hairs being long and dense; right anterior femur not armed (left missing).

♂. Total length 22 mm.; body 17.5 mm.; pronotum 5×6.2 mm.; tegmina 18 mm.

Closely allied to *P. birmanica* Brunner, from Mt. Mooleyit, Tenasserim, 500—600 m. (Ann. Mus. Civ. Genova (2), Vol. XIII (1892—3), p. 54). It agrees with that species by its small size, by the anterior margin of the pronotum not being emarginate and by the posterior margin of the supra-anal lamina being entire, but differs from it by its lighter colour, by the disk of the pronotum not being even, by the strong pilosity of its legs, and by the anterior femora being unarmed.

[1] Thus Kirby, in A. M. N. H. (7), Vol. XI (1903), p. 413. The word 'black' is evidently to be supplemented.