An annotated list of the Carabidae, chiefly collected in East Borneo by Dr Eric Mjöberg with descriptions of new species

By

C. J. LOUWERENS (Hilversum, the Netherlands)

Through the kindness of Dr Eric Kjellander (Naturhistoriska Riksmuseum, Stockholm) I was able to study a number of Carabidae, chiefly from East Borneo and almost entirely collected by Dr Eric Mjöberg.

My best thanks are due to Dr Eric Kjellander for submitting the material to me; to Dr E. B. Britton of the British Museum of Natural History, who kindly examined a few species and compared them with type-specimens in the museumcollections; to Dr Guy Colas of the Museum National d'Histoire Naturelle, Paris and to Mr F. Hieke of the Zoological Museum of the Humboldt University, Berlin for the loan of a number of types and finally to Dr S. L. Straneo (Milano, Italia), who was so kind as to study a few *Caelostomus* and *Metabacetus* and described a new variety of *Caelostomus montanus* Andr. Dr Straneo also allowed me to use his notes upon the two genera.

It is to be understood, that the specimens are collected in East Borneo and that Eric Mjöberg is the collector, unless otherwise stated.

The accompanying camera-lucida sketches are carefully made, nevertheless they are all more or less diagrammatical.

Below follow the enumeration of the collected species with the original references and some notes upon geographical distribution, etc. Regarding the geographical distribution I used, apart from my own notes, two papers of H. E. Andrewes, viz. Catalogue of Indian Insects, part 18, Carabidae, 1930 and A Catalogue of the Carabidae of Sumatra and Java (Tijds. v. Ent., 1933, LXXVI). Also: Dr P. J. Darlington Jr The Carabid Beetles of New Guinea, Part 1, Cicindelinae, Carabinae, Harpalinae through Pterostichinae (Bull. Mus. Comp. Zool., 1962, 126, No 3).

As to the names of the subfamilies and their arrangement I followed Pierre Basilewsky in his Exploration du Parc National de l'Upemba, Carabidae (Institut des Parcs Nationaux, 1953, 10).

The arrangement of the speciesnames is alphabetical.

The types of the new species are in the Stockholm Museum of Natural History. Dr Kjellander has given me permission to retain part of the paratypes and duplicates.

Subfam. *Ozaeninae*

Eustra plagiata Schm.-Goeb. (Faun. Col. Birm., 1846, p. 66).

Mt Tibang, 1400 m, 1 specimen. Largely distributed in India, Burma, Tonkin, Formosa, Sumbawa and Java.

Subfam. *Scaritinae*

Clivina attenuata Herbst (Nat. Syst. Ins. Käf., 1806, X, p. 264).

Sumatra: Medan, 2 specimens. A common species, occuring in North-India, Tenasserim, Malakka, Bushire, Sumatra and Java.

Clivina castanea Westw. (Proc. Zool. Soc. Lond., 1837, p. 128).

Java: Bogor (Buitenzorg), 1 specimen, Dr N. A. Kemner. Common in the whole of South Eastern Asia, including Japan. According to P. J. Darlington Jr the occurrence in New Guinea is doubtful.

Clivina javanica Putz. (Mém. Liège, 1846, II, p. 592). Java: Bogor (Buitenzorg), 2 specimens, Dr N. A. Kemner. Malay States, Sumatra and Java. In Java a very common species.

Clivina memnonia Dej. (Spec. Gén. des Coléopt., 1831, V, p. 592).

Long Navang, 4 specimens. Also a common species with a large distribution: India, Ceylon, Burma, Indo-China, Sumatra and Java.

Clivina tranquebarica Bon. (Obs. Ent. 1813, II, p. 484).

Sumatra: Tjinta Radja, 14 specimens and Medan, 28 specimens. A common insect and widely spread in India, Ceylon, Burma, Indo-China, Malay Peninsula and the Malay Archipelago.

The species of *Clivina* vary a good deal in size, color and especially in the form of the head. A few of the specimens of *tranquebarica* examined are immature.

Syleter paradoxus Putz. (Ann. Soc. Ent. Belg., 1868, XI, p. 21).

Songei Boh., 1 specimen. The species of *Syleter* are seldom met with. *Paradoxus* occurs in Burma, Siam, Cambodia, Cochin-China and Sumatra.

Orictites mjöbergi new species (fig. 1).

Length about 5 mm.

Color very dark red; underside brown red; palpi, antennae, legs, coxae and trochanters more or less pale reddish. Shiny. Body winged.

Head convex, uneven, a little narrower than apex of pronotum with small, slightly prominent eyes, enclosed behind by the genae; mandibles moderately long, sharply pointed at apex, both right and left mandible with a very minute, sharp tooth close to base, visible, when viewed from beneath; antennae short and rather thick, not quite reaching base of pronotum, segments 4 to 10 equal, about as long as wide; labrum 7-setose; clypeus truncate in front without a trace of a denticulation in the middle, wings projecting in front as a blunt rectangle with a more or less oblique apex (in the type-specimen the right wing projects as a sharp tooth), fused with the median part; clypeal suture distinct at sides; the frontal plates are large, separated from the wings by a distinct notch, rounded at sides and with a round, raised area in the middle; three ridges on each side between the eyes, of which the outer and inner ones are thick, more or less costate; the front supra-orbital seta at level of mid-eye, the hind seta at level of hind margin of eye; a very minute, black tubercle just in front of the hind seta; clypeus

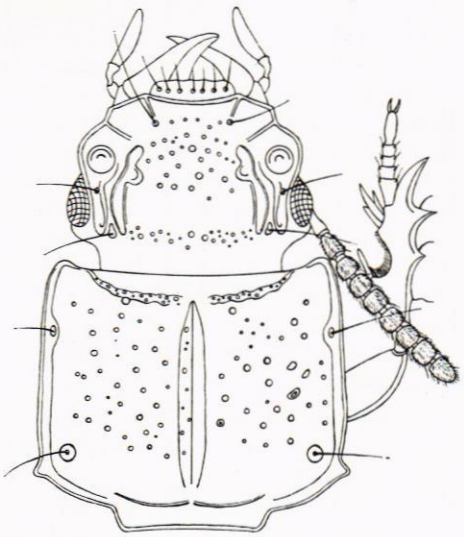

Fig. 1. *Orictites mjöbergi* n. sp., head and pronotum.

depressed in front, smooth; front of head very uneven, punctate with a small fovea in the middle; vertex smooth behind; neckconstriction deep, especially at sides and coarsely punctate. Pronotum very little wider than head, with/ length is about 1,25, the base between the angles slightly wider than apex; sides parallel, side margins and base, which is produced backwards, with a border, sides of base oblique; a fine ridge between the angles running parallel to sides; the front lateral seta at a third from apex, the pores of the hind setae in the centre of the small, round, basal foveae, obliquely in front of the angles, which project laterally as a rather large, rounded tooth, of the other impressions the hind one is lacking, the transverse impression in front is deep, distant from apex at middle and coarsely punctate; the median line is very deep and very wide, finely margined and pointed at both extremities; surface covered with rather widely spaced punctures of varying size, some of them large, confluent and deep. Elytra convex, about twice as long as wide, ratio length/width is about 1,85, little wider than pronotum; sides nearly parallel, wholly bordered, side border behind the squarely rounded shoulders and basal border distinctly crenulate, the border thickened over the shoulders; basal striole well developed; striae wide and deep, especially the inner ones; intervals rather strongly convex, 1 to 3 or 4 tuberculate at base, third interval with five large, setiferous pores; the marginal series of pores forms an unbroken row of setae-bearing, closely placed, small punctures. Underside: ligula unisetose; tooth in the emargination of the mentum very wide, truncate at apex, in the middle raised behind; sides of neck and side pieces of all the sterna rather sparsely punctate with punctures of varying size; metepisterna longer than wide in front with a few large and deep punctures; prosternal process bordered, truncate at apex; ventral segments finely and sparsely punctured along the middle, more densely along front margins and coarsely at sides, especially sides of last ventral segment with a few, oblique,

almost foveate punctures; last ventral segment (of female) with 4 widely spaced setae at apex; mesotibiae with a moderate spur above apex.

Pajan River, 2 specimens, both females.

I have not seen the type of Andrewes' *Orictites minotaur*, but Dr E. B. Britton of the British Museum was kind enough as to compare a specimen of the new species with the type-specimen of *minotaur*, which comes from Borneo too and found it quite distinct. The new species is, apart from color and size, much like *minotaur*. In almost all of its characters it tallies with Andrewes' species, but it is at once recognizable by the 7-setose labrum, the untoothed, truncate clypeus, the rectangularly projecting parts of the wings of head, the front lateral, pronotal seta at a third from apex and the relatively longer elytra.

The two known species of this remarkable genus are to be distinguished as follows:

1 (2) Length 10 mm; black; labrum 6-setose; clypeus 4-dentate in the middle of front; front lateral, pronotal seta just behind the angle; elytra two thirds longer than wide ..... *minotaur* Andr.

2 (1) Length 5 mm; dark red; labrum 7-setose; clypeus not dentate at middle of front; front lateral, pronotal seta at a third from apex; elytra about twice as long as wide ..... *mjöbergi* sp.nov.

Subfam. *Bembidiinae*

Tachys borneensis Andr.? (Ann. Mus. Civ. Stor. Nat. Gen. 1925, 51, p. 418).

Songei Boh., 5 specimens. Only known from Borneo and New-Guinea. The identification is doubtful. In typical forms the elytra are unspotted and the color is dark brown. The specimens examined are darker and each elytron bears a rather large apical spot.

Tachys coracinus Putz. (Ann. Mus. Civ. Stor. Nat. Gen., 1875, p. 739).

Long Navang, 1 specimen; Maratoea Isl., 1 specimen; Mt. Tibang (1700 m), 1 specimen and Pajan River, 1 specimen. A common species with a large distribution. It occurs in: India, Burma, Penang, Perak, Singapore, Siam, Tonkin, Java, Mentawei Isl., Borneo, Celebes, the Philippines and New Guinea.

Tachys lembodes Andr. (Treubia, 1936, 15, p. 418).

Java (without exact locality), 1 specimen, Dr N. A. Kemner. A very interesting and apparently uncommon species, only known from Java.

Tachys sericeus Motsch. (Bull. Soc. Imp. Nat. Mosc., 1851, II, p. 507).

Long Navang, 1 specimen. Known from India and Burma to Sumatra, Borneo and Sumba in the Lesser Sunda Isl. According to P. J. Darlington Jr the occurence in New Guinea is doubtful.

Tachys umbrosus Motsch. (Bull. Soc. Imp. Nat. Mosc., 1851, II, p. 507).

Maratoea Isl., 8 specimens; Kajan River, 3 specimens and Pajan River, 2 specimens. Very common under bark. Distribution: from the Himalay Mts through the whole of S. E. Asia, including the Philippines, New Guinea and the Solomons.

Subfam. *Pterostichinae*

Morion cucujoides Walk. (Ann. Mag. Nat. Hist., 1858, (3), II, p. 203).

Long Navang, 14 specimens. A common species occuring in India, Ceylon, Burma, Siam, Indo-China, Andaman Isl., Malay Peninsula and Archipelago.

Brachidius crassicornis Chaud. (Bull. Soc. Imp. Nat. Mosc., 1852, I, p. 80).

Long Navang, 1 specimen and Pajan River, 1 specimen. Also a common species with a very large distribution: India, Siam, Laos, Andaman Isl., Malay Peninsula, Java, Sumatra, Borneo, Buru, Timor, Tenimbar, Philippines, New Guinea, New Britain and the Solomons.

Caelostomus caprai Straneo (Ann. Mus. Civ. Stor. Nat. Gen., 1938, 60, XVI, p. 66).

Mt Tibang (1400 m), 1 specimen; Long Navang, 2 specimens. Previously only known from Java. Note by S. L. Straneo: these examples, all females, seem to be identical to *C. caprai* from Java. In the original description I cited already an example from Borneo, Sarawak.

Caelostomus montanus Andr. (J. F. M. S. Museum, 1931, p. 446), ssp. *laevis* nov.

Description by S. L. Straneo:

Differs from the typical form from Mt Kinabalu only by the lateral border of the pronotum, which is smooth and does not bear the small tubercles, present in the typical form. Evidently it is a local form.

Long Navang, 5 specimens.

Caelostomus picipes Macl. (Ann. Jav., 1825, p. 24).

Pajan River, 1 specimen. Common through the whole of South Eastern Asia. Also in Japan, New Guinea and Australia (P. J. Darlington Jr).

Metabacetus vandoesburgi Straneo (Rev. Fr. d'Ent., 1948, XV, p. 43).

Mt Tibang, 2 specimens and Pajan River, 3 specimens. Previously only known from Java and Celebes. Note by S. L. Straneo: All *Metabacetus* are very variable, chiefly in size and in the shape of the pronotum. An example from Mt Tibang is nearly identical to the holotype, only the pronotum is narrower; the other example from the same locality is identical to the holotype for the proportions of head, pronotum and elytra, but the size is smaller. (Dr Straneo examined only 2 out of the 5 collected specimens.)

Subfam. *Anchomeninae*

Euplenes aurocinctus Bates (Proc. Zool. Soc. Lond., 1889, p. 384).

Mt Tibang, 1400 m, 3 specimens; Pajan River, 6 specimens. Confined to Sumatra and Borneo.

Onycholabis macrops Louw. (Tijds. v. Ent., 1956, 98, p. 55).

Pajan River, 1 specimen. Only known from Borneo.

Dirotus subiridescens Macl. (Ann. Jav., 1825, p. 17).

Long Navang, 1 specimen. A rare species, occuring in Pahang, Java and Sumatra too.

Lorostemma alutacea Motsch. (Bull. Soc. Imp. Nat. Mosc., 1864, II, p. 330).

Songei Boh., 1 specimen. Through the kindness of Dr E. B. Britton I was able to study a paratype of *Lorostemma informalis* Darl. from New Guinea and a specimen of *L. alutacea* Motsch. from Borneo. I also studied some more paratypes of *informalis*, presented to me by Dr P. J. Darlington Jr and I compared the specimen, collected by Dr Mjöberg with specimens of *L. subnitens* Andr. too. It seems, that the species of *Lorostemma* are very much alike. I think, the ex. examined is nearest to *alutacea* and for the time being I think it better to name it so as only one example is available for study.

Notagonum (*Colpodes*) *circumdatum* Andr. (Zoöl. Med., 1930, 13, p. 196).

Mt Tibang, 1400 m, 13 specimens. A common species in Sumatra and Java.

Notagonum (*Colpodes*) *rugifoveatum* Louw. (Tijds. v. Ent., 1955, 95, p. 51).

Pajan River, 1 specimen.

Apart from minor differences it tallies very well with the type (♀), which comes from Java. The ex. from Pajan River (♂) is a little more convex, darker with the light parts of side margins of pronotum and elytra narrower, the dorsal pores in the third interval of the elytra very small, last ♂ ventral segment bisetose apically. The elytra have an extremely fine, purplish tinge.

I am using the opportunity to add a few remarks to the original description. As to the collecting place "Mt Papandajan, (E. Walsh)" is an error. Correctly it has to be "Mt Pandan, Madiun, (C. J. Louwerens)". As to the accompanying sketch, in reality the anterior, pronotal angles are more broadly rounded and the punctures in the basal impressions are of a different size and more widely and irregularly spaced. The elytra are somewhat iridescent and, at places, very slightly purplish too.

Also found in Sumatra.

Colpodes beccarii Andr. (Ann. Mus. Civ. Gen., 1930, 53, p. 435).

Pajan River, 1 specimen. Also in Sumatra.

Colpodes dulit Louw. (Tijds. v. Ent., 1955, 98, p. 45).

Mt Tibang, 1400 m, 17 specimens. As far as I know confined to Borneo. Where it occurs, it seems common.

Colpodes lautulus Andr. (Journ. Fed. Mal. Mus., 1931, p. 457).

Mt Tibang, 8 specimens. Occurs in India, Sumatra, Java and Bali. According to Andrewes perhaps a variety of *Colpodes smaragdipennis* Chaud. from Sumatra.

Colpodes obscuritarsis Chaud. (Ann. Soc. Ent. France, 1878, p. 375).

Long Navang, 1 specimen. The distribution is a large one: Rangoon, the Philippines, Sumatra and Java. Not a common insect.

Colpodes purpurascens Andr. (Tijds. v. Ent., 1929, 72, p. 329).

Mt Tibang, 1400 m, 6 specimens. Sumatra, Java and Bali.

Colpodes rufitarsis Chaud. (Bull. Soc. Imp. Nat. Mosc., 1850, I, p. 385).

Pajan River, 5 specimens. Also in Bhamo, Malay Peninsula, Java and Sumatra.

Colpodes saphyrinus Chaud. (Ann. Soc. Ent. France, 1878, p. 366).

Mt. Tibang, 1400 m, 3 specimens; Pajan River, 2 specimens. A handsome species occuring in Penang, Laos, Banquey, Tonda, Java, Celebes and New Guinea (var. *sloanei* Darl.). According to F. van Emden (Arb. morph. taxon. Ent. Berlin-Dahlem, 1936, 3, p. 268) I stated in Treubia, 1953, 22, p. 83, that in *saphyripennis* Chaud. the front lateral, pronotal seta is wanting. That is not correct. *Saphyrinus* Chaud. and *saphyripennis* Chaud. are very much alike and both species have two lateral, pronotal setae all right.

Colpodes (sens. lat.) *tibang* new species. (Figs 2 and 3.)

Length about 11 mm.

Reddish brown with palpi, antennae and explanate margins of pronotum lighter; apex of palpi whitish. Shiny. Body winged.

Head convex, measured over the eyes a little wider than pronotum between anterior angles; labrum truncate; clypeal suture very distinct; frontal impressions small and undeep; a wide and deep impression parallel to eyes and connected behind with the short, oblique genae; eyes moderately large, prominent; two supra-orbital setae and pores on each side, the posterior seta

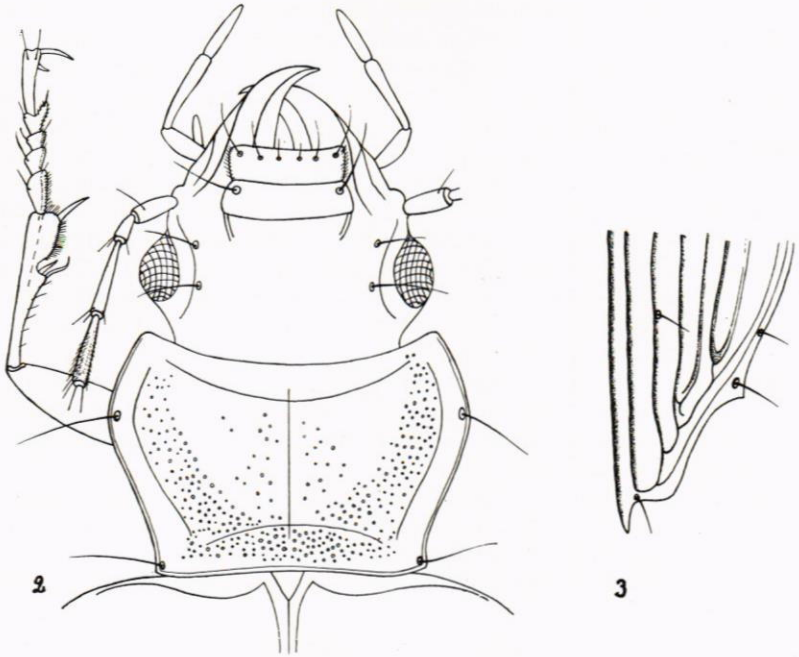

Fig. 2. *Colpodes* (*s. l.*) *tibang* n. sp., head and pronotum. Fig. 3. Same, apex of right elytron.

placed about at level of mid-eye; antennae slender, reaching about basal third of elytra, segments 1 to 3 and basal third of 4 smooth, rest finely pubescent; vertex and neck with some fine, transverse lines, for the rest the surface is smooth. Pronotum convex, transverse, ratio width at widest point/length over the median line is about 1.60, widest a little before middle, where the anterior lateral seta is placed, the posterior seta just in front of the angle; sides finely bordered, gently rounded anteriorly to widest point, which is weekly angulate, then in an almost, oblique line contracted to posterior angles, which are nearly right and slightly rounded, very finely emarginate before the angles; the explanate part of the sides moderately wide, very little wider behind, a distinctly impressed line separating explanate part from disk of pronotum; ratio width apex/base is about 0.87; apex emarginate with a little advanced, rounded angles; base bordered, right, the sides a little oblique and very slightly produced backwards; transverse impressions fine but distinct; median line deeper, not quite reaching base and apex; basal foveae moderately large and moderately deep; sides and basal area rather finely and densely punctate; disk with a few scattered punctures. Elytra convex, relatively long and narrow with nearly parallel sides; ratio length/width is about 1.85; width base of pronotum/width of elytra is about 0.70; wholly bordered; shoulders rounded; apex with outer angles obtusely angulate and sharply pointed; sutural interval prolonged in a rather long, sharp spine; extreme apex truncate over a distance of intervals 2 and 3 taken together, sides of apex between outer angles and truncate part long, oblique and nearly right;

striae deep, indistinctly punctate; intervals slightly convex, intervals 3, 6 and 7 more so behind; 3rd interval bipunctate, the pores behind middle, adjoining stria 2; surface without any depressions. No microsculpture on head and pronotum, the distinct lines on the elytra form on average isodiametric meshes. Underside: mentum with a simple, large tooth in the emargination; submentum bisetose; prosternal process with a fine border, triangular apically; metepisterna twice as long as wide in front; venter smooth, somewhat uneven at sides; last ventral segment of ♀ with 2 setae on each side of apex; fourth segment of all tarsi emarginate, but weekly so in the hindtarsi; pro- and mesotarsi not grooved; traces of extremely fine, indistinct grooves visible on each side of the metatarsi; protarsi bristled beneath, segments 3 and 4 with some golden hairs; claw segment not haired at sides.

Mt Tibang, 1400 m, 1 specimen.

The new species is rather different from all other *Colpodes* (sens. lat.) I know of. The relatively long and narrow elytra, the bipunctate, third elytral interval and the long, oblique sides of the apical truncature may render recognition not very difficult.

Compard with *Colpodes puncticollis* Bates, *pleuralis* Jord. and *dianus* Jedl., which are all of nearly the same size as *tibang, puncticollis* is otherwise coloured; *pleuralis* has the puncturation coarse and both *pleuralis* and *dianus* have the elytra without mucro and the clawsegment setulose beneath.

Subfam. *Perigoninae*

Perigona parvicollis Andr. (Tijds. v. Ent., 1929, 72, p. 328).

Pajan River, 1 specimen. Also in Sumatra.

Perigona ruficollis Motsch. (Bull. Soc. Imp. Nat. Mosc., 1851, 2, p. 506).

Long Navang, 3 specimens. Common and with a large distribution: India, Perak, Singapore, Siam, the Philippines, Sumatra, Java, Batchian Isl. and Great Sangir Isl.

Subfam. *Harpalinae*

Gnathaphanus impressipennis Cast. (Trans. Royal Soc. Vict., 1868, 8, p. 186).

Madoera, 1 specimen, Dr N. A. Kemner. An interesting species, occuring in Kuala Lumpur, Singapore, Sumatra, Java, Sumbawa, Amboina Isl., New Guinea, Australia, New Caledonia and Samoa. In Java it is very common.

Gnathaphanus philippensis Chevr. (Rev. Zool., 1841, p. 221).

Timor Isl., 1 specimen, 11.VII. 1894, Dr Carl Aurivillius. India, Sumatra, Java, Celebes, the Philippines, Australia, New-Britain. I am not absolutely sure of the correct name. The specimen examined is rather small (hardly 10 mm), but the distribution of the punctures in the 3rd elytral interval is exactly as in *philippensis*, viz. on basal half touching stria 3 and on apical half touching stria 2. The place of those punctures is characteristic for this species of *Gnathaphanus*.

Gnathaphanus (*Pseudognathaphanus*) *punctilabris* Macl. (Ann. Jav., 1825, p. 10).

Sumatra: Medan, 1 specimen. Common through South East Asia (not N. W. India), Formosa, Java, Celebes and the Philippines.

The genus *Gnathaphanus* consists of two groups. The first group contains forms in which the oblique, impressed line between frontal impression and eye is wanting: genus *Gnathaphanus* Macl. (s. str.). In the second group the oblique eye-line is present: genus *Pseudognathaphanus* Schaub. According to Arnošt Jedlička *Pseudognathaphanus* is a subgenus of *Kareya*, (Acta Ent. Mus. Nat. Pragae, 1957, 31, p. 92). In *Kareya* (s. str.) the elytra are very finely haired, but smooth in the subgenus *Pseudognathaphanus*. The following Indonesian species belong to *Gnathaphanus* (s. str.): *impressipennis* Cast., *licinoides* Hope (Amboina Isl. and New Guinea), *philippensis* Chevr., *subolivaceus* Macl., *vulneripennis* Macl., *basilewskyi m.* and *parallelus* m. Only one Indonesian species of *Pseudognathaphanus* is known, viz. *punctilabris*. *Gnathaphanus* (s. str.) contains forms with short head, strongly dilated and depressed in front and with apical truncature of elytra strongly sinuate, to which belong: the Indonesian *licinoides, philippensis* and *vulneripennis*. The second group consists of species, which have the head normal neither strongly dilated nor depressed in front and with a slight sinuation of apex of elytra, viz. the Indonesian *impressipennis, subolivaceus, basilewskyi* and *parallelus*.

Hypharpax dentipes Wied. (Zool. Mag., 1823, 2, 1, p. 54).

Java: Bogor (Buitenzorg), 3 specimens, all ♂♂, Dr N. A. Kemner. Confined to Java. The ♂♂ are at once recognizable by the curved tibiae of the hind legs, strongly so in the large specimens.

Platymetopus flavilabris F. (Suppl. Ent. Syst., 1798, p. 59) var. *punctipollis* Bates (Ann. Soc. Ent. France, 1889, p. 269).

Sumba, 3 specimens, Dr Carl Aurivillius. Also in Indo-China, Yunnan, Burma, Andaman Isl., Malay Peninsula, Sumatra, Java and Borneo and Amboina Isl.

Hyphaereon lautulus Andr. (Tijds. v. Ent., 1929, p. 322) (figs 4 to 7).

Pajan River, 1 specimen. Also known from Sumatra. Three species of *Hyphaereon* are known, all Indonesian, which may be keyed out als follows:

1 (4) Basal border of elytra obtusely angulate at shoulder, apex of elytra rounded and only very slightly emarginate before extreme apex
2 (3) Pronotum moderately contracted behind, the posterior angles a little obtuse; basal foveae and area densely punctate. Java, ... *reflexus* Macl.
3 (2) Pronotum strongly contracted behind, the posterior angles rather strongly obtuse; puncturation only in the foveae. Celebes, ... *celebensis* Louw.
4 (1) Basal border of elytra rounded at shoulder; apex of elytra with a strongly hooked outer angle and strongly sinuate before extreme apex. Sumatra and Borneo, ... *lautulus* Andr.

Trichotichnus laticeps Andr. (Ark. f. Zool., 1930, 21 A, p. 4).

Long Navang, 1 specimen. Also in Sumatra.

Stenolophus (Egadroma) smaragdulus F. (Suppl. Ent. Syst., 1798, p. 60).

Long Navang, 1 specimen; Java: Bogor (Buitenzorg), 1 specimen, Dr N. A. Kemner and Lombok, 2 specimens, Dr Carl Aurivillius. Very variable and very common throughout the whole of South Eastern Asia. Also in Japan and Queensland.

Stenolophus (Egadroma) smaragdulus F. var. *quinquequstulatus* Wied. (Zool. Mag., 1823, 2, 1, p. 58).

Long Navang, 1 specimen. As variable and common as the typical form.

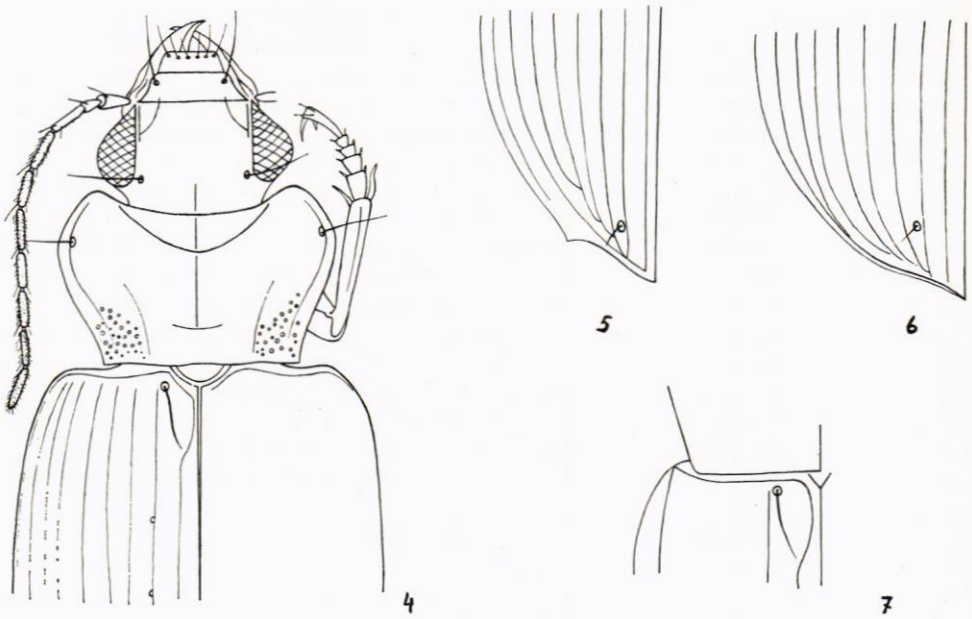

Fig. 4. *Hyphaereon lautulus* Andr., head and pronotum. Fig. 5. Same, apex of left elytron. Fig. 6. *Hypaereon reflexus* Macl., apex of left elytron. Fig. 7. Same, base of left elytron.

Stenolophus (*Egadroma*) *smaragdulus* F. var.

Long Navang, 2 specimens; Songei Boh., 1 specimen. The Oriental species of *Egadroma* are difficult to identify because the great differences in size, colour and form, especially of the pronotum. Without a study of the types identification must be doubtful.

Subfam. *Odacanthinae*

Ophionea interstitialis Schm.-Goeb. (Faun. Col. Birm., 1846, p. 20).

Birang River, 1 specimen; Java, 1 specimen, Dr N. A. Kemner. A very common insect with an enormous distribution: India, Ceylon, Siam, Indo-China, Malay Peninsula and Archipelago.

Subfam. *Hexagoniinae*

Dinopelma bouchardi Pllde (Ins., 1914, 4, p. 167).

Mt Tibang, 1400 m, 1 specimen. Not common and also occuring in Sumatra.

Subfam. *Callistinae*

Callistomimus quadricolor Putz. (St. Ent. Zeit., 1877, p. 101).

Mahakam River, 1 specimen. In Java a common species. It occurs in Sikkim and in India too.

Chlaenius hamifer Chaud. (Bull. Soc. Imp. Nat. Mosc., 1856, 2, p. 209).
Long Navang, 1 specimen. Common and with a large distribution, viz. India, Burma, Siam, Indo-China, Hongkong, Formosa, Ceylon, Singapore, Sumatra and Java.

Subfam. *Licinae*

Rembus (*Diplocheila*) *laevigatus* Bates (Ann. Mus. Civ. Stor. Nat. Gen., 1892, 32, p. 326).
Sumatra: Medan, 1 specimen. Commonly met with in India, Siam, Indo-China, the Philippines, Java, Sumatra and Celebes. The occurence in Japan is doubtful.

Subfam. *Orthogoniinae*

Orthogonius doriae Putz. (Ann. Soc. Ent. Belg., 1871, p. 104).
Pajan River, 1 specimen. Only known from Borneo and apparently not a common species.
Orthogonius picilabris Macl. (Ann. Jav., 1825, p. 27).
Songei Boh., 1 specimen. A rather common Malayan species known from Malay Peninsula, Java and Sumatra.
Orthogonius sp.
Pajan River, 1 specimen. Many species of *Orthogonius* are already described. For a good deal they are very much like one another and consequently difficult to name. A careful study of the types is necessary, I think.

Subfam. *Lebiinae*

Physodera eschscholtzi Parry (Trans. Ent. Soc. Lond., 1849), p. 179).
Long Navang, 1 specimen. India, Sikkim, Burma, Laos, Tonkin, China, Sumatra, Java, the Philippines. A fine species not uncommon in wooded regions of its large area of distribution.
Celaenephes parallelus Schm.-Goeb. (Taun. Col. Birm., 1846, p. 77).
Long Navang, 5 specimens. A common species, occuring in India, Ceylon, Andaman Isl., Siam, Indo-China, Malay Peninsula and Archipelago, Australia, Samoa and New Caledonia. Apparently rare in cultivated regions.
Risophilus hamatus Schm.-Goeb. (Faun. Co. Birm., 1846, p. 35).
Mt Tibang, 1700 m, 1 specimen. Known from India too.

Subfam. *Coptoderinae*

Coptodera eluta Andr. (Trans. Ent. Soc. Lond., 1923, p. 30).
Long Navang, 1 specimen. India, Ceylon, Burma, Siam, Indo-China, Andaman Isl., Formosa and the Malay Archipelago.
Dolichoctis sp. near *angulicollis* Chaud. (Ann. Soc. Ent. Belg., 1869, 12, p. 245). (Figs 8 to 11.)
Tandjong Redeb, 1 specimen. In figs 8 and 9 I give a sketch of the left half of pronotum and of the right elytron of the type-specimen of *angulicollis* and in figs 10 and 11 of the left half of pronotum and the right elytron of an example from Java. The species is somewhat variable in the form of the pronotum and in the pattern of the elytra, which consists of two fasciae,

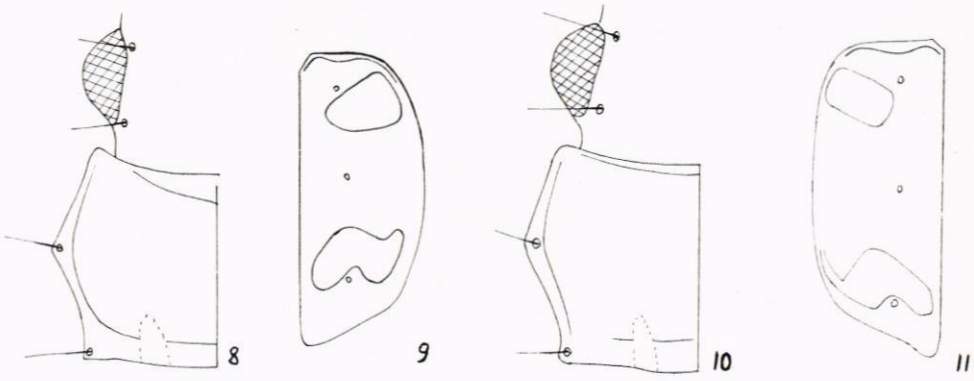

Fig. 8. *Dolichoctis angulicollis* Chaud., after the type, left side of head and pronotum. Fig. 9. Same, right elytron. Fig. 10. *Dolicoctis angulicollis* Chaud., from Java, left side of head and pronotum. Fig. 11. Same, left elytron.

which are interrupted in the middle. The specimen examined is in shape and size much like *angulicollis*, but instead of the two fasciae the elytra bear four more or less rounded spots.

Dolichoctis kjellanderi new species. (Fig. 12.)

Length about 5 mm.

Head and pronotum black; elytra very dark brown-red with narrowly side margins and apex pale reddish, each elytron with two spots of the same colour, the front spots crescent-shaped, interrupted in the middle, reaching from margin to half of interval 2, the hind spots forming a zigzag, covering the whole width of the elytra; underside piceous; mouth parts, antennae, coxae, trochanters and legs much lighter, pale yellowish red. Shiny. Body winged. Microsculpture distinct, on head on average isodiametric, on pronotum moderately and on elytra strongly transverse.

Head convex, over the large, prominent eyes a little wider than apex of pronotum between the angles; mandibles with sharply pointed tips; labrum truncate in front; two setae on each side of head, both placed in a narrow groove, parallel to eyes; clypeal suture well developed; antennae short, reaching a little beyond base of elytra; surface without any puncturation. Pronotum convex; ratio largest width/length along the median line is about 1.66 and ratio apex/base both between the angles is about 0.90; very finely margined, moderately explanate, more widely behind; base nearly straight with almost right, a little rounded angles; apex emarginate with distinct, a little advanced, rounded angles; sides equally and moderately rounded from apex to near base, then in a right line contracted to the angle; widest at about middle; the front lateral pore and seta are wanting, the hind pore and seta on the margin and on the angle; transverse impressions obsolete; median line moderately cut; the basal foveae oblique, moderately large and moderately deep, with a straight and deeper line at bottom, at the same distances from the angles and the median line; the foveae finely and sparsely punctate, the area between them somewhat irregularly punctured; for the rest the surface is smooth. Elytra convex, subquadrate, ratio width/length is about 0.90, ratio width of elytra/width of basis of pronotum is about 1.50; sides

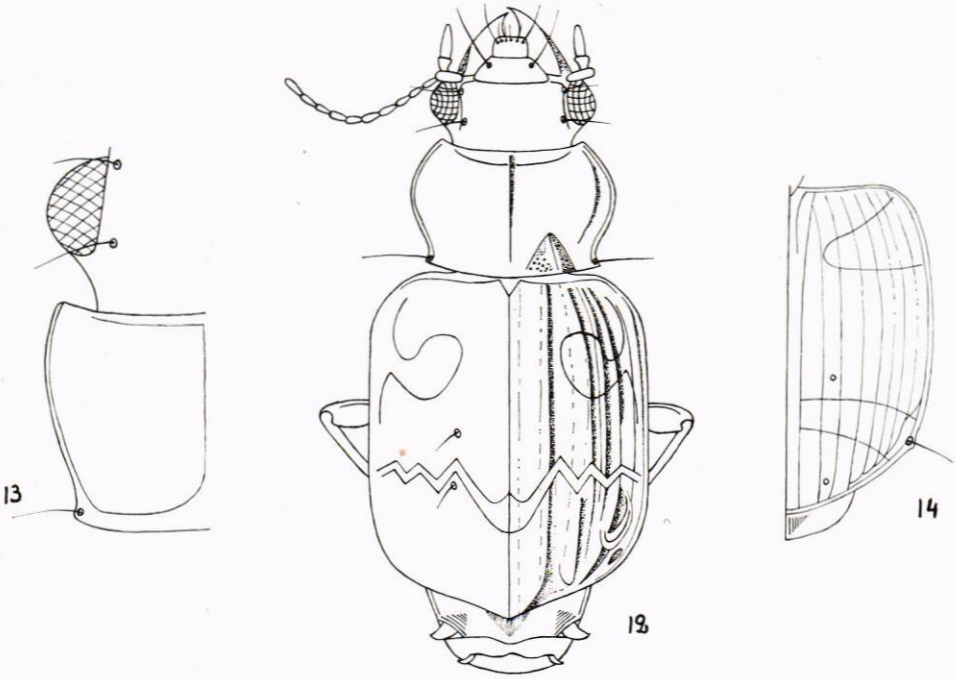

Fig. 12. *Dolichoctis kjellanderi* n. sp. Fig. 13. *Dolichoctis pallipes* n. sp., left side of head and pronotum. Fig. 14. Same, right elytron.

finely bordered, basal border entire; rather strongly rounded over the shoulders, nearly parallel at sides; apex oblique, practically without emargination; striae extremely finely impressed, but visible at places, indistinctly punctate; surface very uneven at sides and especially in the apical area; the two inner intervals almost flat, the third interval with 2 setiferous pores, just in front and behind of the produced part of the zigzagspot, placed down the middle of the interval, the apical part strongly raised, sixth and seventh intervals costate, more so apically, costate part of interval six interrupted at level of the dorsal pores, eight almost costate throughout; at about apical third an oblong widening out between seven and eight; the suture at apex somewhat thickened; surface only microscopically punctate. Underside: ligula wide, a little rounded in front and with a fine ridge down the middle; emargination of mentum not toothed; prosternal process margined, truncate at apex; side pieces of metasternum about twice as long as wide in front; last ventral segment of ♀ quadrisetose at apex, the rather large pores placed on the same level; claw segment smooth, claws toothed; surface very minutely punctate and very minutely haired.

Mt Tibang, 1400 m, 1 specimen.

In *Dolichoctis tenuilimbata* Oberth. and *lunigera* Andr., both from Sumatra, the pronotum also is unisetose on each side; the front spots on the elytra nearly alike, but in both species the hind spots are round; the elytra are normally striate in *tenuilimbata* as well as in *lunigera*. I think the new

species is at once recognizable by the unusual uneven surface of the intervals of the elytra.

Dolichoctis microdera Andr. (Ann. Mag. Natural Hist., 1930, (10), 6, p. 664).
Songei Boh., 1 specimen. Also in Sumatra and Batjan Isl.

Dolichoctis pallipes new species. (Figs 13 and 14.)
Length about 4.5 mm.

Colour dark brown-red; head more red, ventral segments along the middle lighter; mouth parts, segments 1 to 4 of antennae, side margins of pronotum and broadly of elytra and legs with coxae and trochanters pale yellowish; antennal segments 6 to 11 and partly segment 5 dark; tip of segment 11 yellowish; each elytron with two ill defined fasciae, yellowish or yellowish red, the fascia in front oblique, more or less concave and running from interval 3 to margin, the hind fascia narrower, from interval 2 to margin and curving vaguely to extreme apex. Shiny, a little iridescent. Body with well developed inner wings.

Head convex with a very distinct, isodiametric microsculpture; measured over the large, prominent eyes a little wider than apex of pronotum between the angles; antennae short, reaching basal sixth of elytra; labrum very slightly emarginate in front; clypeal suture clearly marked; two setae and pores over the eyes on each side of head, placed in the narrow eye-grooves, which run parallel to eyes; surface not punctate. Pronotum with very distinctly impressed microscopical reticulation, the meshes from nearly isodiametric to moderately transverse at places; convex; relatively rather narrow compared with the broad elytra; ratio width/length is about 1.60, widest a little before middle; both apex and base of nearly equal width; the very finely margined and narrowly explanate sides gently rounded to near base, then right to the rounded, obtuse hind angles; the single lateral pore and seta on the border and on the angle, the seta in front is wanting; base straight, the sides of which a little oblique; of the transverse impressions, the hind one is marked by underlying pores, the front one very finely impressed; the median line moderately deep cut; basal foveae moderately large and moderately deep, near the angles, more or less round and with some fine punctures at bottom; surface finely, transversely striate and sparsely, microscopically punctate. Microsculpture from isodiametric to moderately transverse. Elytra with a strongly transverse microsculpture; convex; subquadrate, ratio width/length is about 0.85, rather more than twice as wide as pronotal base; basal border entire; shoulders squarely rounded, behind them a slight compression, sides nearly parallel with an oblique, truncate apex, practically not emarginate; striae moderately impressed, very minutely punctate; intervals little convex, sparsely, microscopically punctate, interval 3 with two, very small, dorsal pores behind middle, just in front and behind the spot near the middle of the interval. Underside: prosternal process margined, triangular at apex; metepisterna twice as lang as wide in front; claw segments smooth; claws toothed; last ventral segment of ♂ and ♀ bi- and quadrisetose at apex respectively.

Songei Boh., 2 specimens, one of which is immature; Long Navang, 1 specimen. The type comes from Songei Boh.

Near *tenuilimbata* Obert. and *lunigera* Andr., both of which however have a different, elytral pattern.

Dolichoctis rotundata Schm.-Goeb. (Faun. Col. Birm., 1846, p. 62).

Pajan River, 3 specimens; Sumatra, 1 specimen. A species with an enormous distribution: Ceylon, Burma, Siam, Laos, Tonkin, Japan, Andaman Isl., the Malay Archipelago, the Philippines, the Aru Isl., New Guinea and Australia. Accordingly very variable in shape, size and in the form of the elytral spots.

Holcoderus gloriosus Andr. (Zool. Med., 1931, 14, p. 73).

Java: Bogor (Buitenzorg), 1 specimen, Dr N. A. Kemner. A handsome species, uncommon and also known from Sumatra.

Holcoderus smaragdinus Andr. (Ann. Mag. Nat. Hist., 1926, 19, p. 287).

Long Navang, 1 specimen. Also in Tonkin, and Sumatra.

Gen.?

Long Navang, 1 specimen. In a bad state of preservation. It is too fragile and too much broken to bear study.

Brachyctis rugulosa Chaud. (Ann. Soc. Ent. Belg., 1869, 12, p. 252).

Long Navang, 1 specimen and Mahakam River, 1 specimen. Also in Penang, Singapore, Sumatra, Java and the Philippines.

Subfam. *Pericalinae*

Pericalus aeneipennis new species (fig. 15).

Length about 9 mm, width about 3.5 mm.

Colour of upperside: head dark bluish green; pronotum dark green (in one of the 3 specimens examined almost black); elytra aeneous green, but in one specimen the brassy tinge is wanting; underside; venter piceous to black with green or bluish green epipleura of elytra; side pieces of pronotum green or bluish too; legs blackish with brown trochanters and brown tarsi; segments 1 to 4 of antennae dark brown with pale apieces, segments 5 to 11 brown. Shiny. Body winged.

Head with very large, hemisperical eyes; width over the eyes/width pronotum between the front angles is about 1.40; front margin of labrum notched in the middle, raised along the median line; clypeus rather deeply, longitudinally grooved behind; about 6 to 7 ridges and 5 to 6 grooves along the eyes, the outer ones curving outwards in front, the inner ones nearly straight and all more or less irregular, the 2 or 3 inner grooves shortest, deep, reaching only a little beyond mid-eye level; hind supra-orbital seta at level of hind margin of eye; antennae long, reaching almost middle of elytra; neck very weekly constricted; surface smooth. Pronotum cordiform, narrower than head measured over the eyes; ratio width at widest point/length is about 1.30; front margin and base of nearly the same width; wholly bordered, sides moderately expanded; anterior angles a little rounded, moderately advanced, hind angles almost right, sharply pointed and projecting a little laterally; of the two lateral setae, the anterior one is placed at widest point at a third from apex, the posterior one on the border just in front of the angle; median line finely impressed, deeper behind; front transverse impression shallow, hind one and the basal foveae deep; surface finely, transversely striate at places, smooth. Elytra with squarely rounded shoulders; width between shoulders/width base of pronotum is about 1.50; margins tapering with largest width a little behind middle; length/largest width is about 1.30; apex emarginate with outer angles hooked but not or practically not toothed; extreme apex pointed, not provided with a distinct denticle;

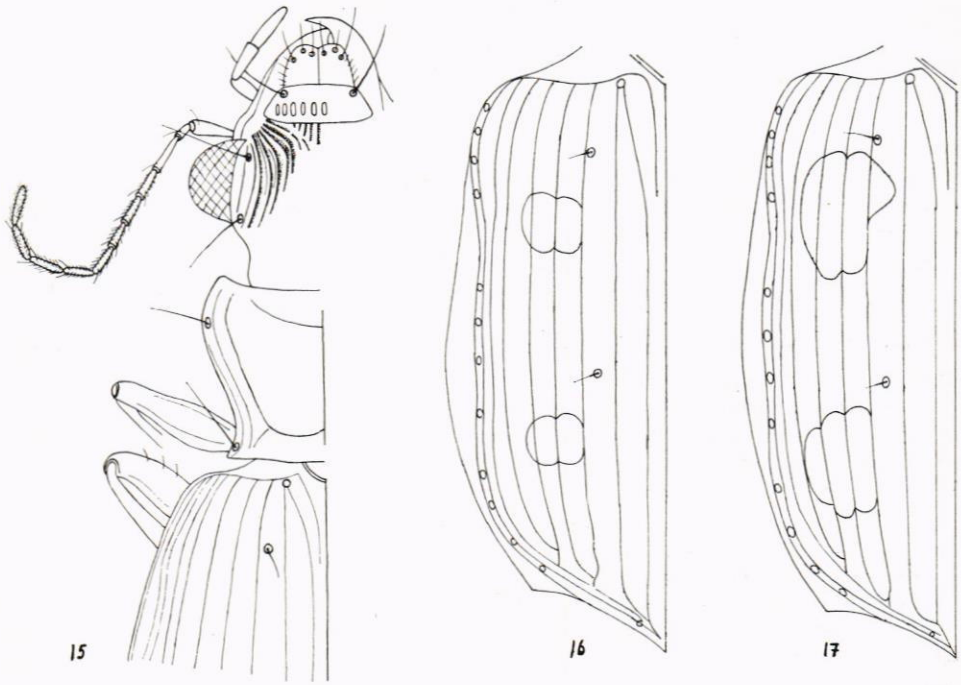

Fig. 15. *Pericalus aeneipennis* n. sp., left side of head and pronotum. Fig. 16. *Pericalus longicollis* Chaud., from Perak, left elytron. Fig. 17. Same, from Long Navang, left elytron.

the striae rather deep, impunctate, intervals a little convex, the third interval with 3 dorsal pores. Microsculpture: none on head, moderately transverse on both pronotum and elytra, more distinct on the latter. Underside: metepisterna a little longer than wide in front; ventral segments minutely punctate, each puncture bearing a very minute hair; last ventral segment of ♀ with 2 closely placed setae on each side of apex.

Long Navang, 3 specimens, all ♀♀.

Though a little different in colour the three specimens undoubtedly belong to the same species. I know of only 2 species of *Pericalus* with unspotted elytra, viz. *cicindeloides* Macl. from Java, Sumatra, Perak and Palawan and *fascinator* Andr. from Madras. *Cicindeloides* has the elytra bluish-purplish and *fascinator* black.

Pericalus depressus Andr. (Ann. Mag. Nat. Hist., 1926, XVIII, p. 285).

Long Navang, 3 specimens. Also known from the Malay Peninsula and Sumatra.

Pericalus longicollis Chaud. (Ann. Soc. Ent. Belg., 1869, XII, p. 159). (Figs 16 and 17.)

Long Navang, 5 specimens. Also in the Philippines, Perak, Malakka and Sumatra. Fig. 16 is a sketch of left elytron of a typical specimen from Perak, in which both the spots are small. In the 5 specimens examined (fig. 17) the spots are much bigger than in typical examples. In all other aspects the specimens from Long Navang tally so well with the typical specimens, that I do not hesitate to consider them as identical with *longicollis*.

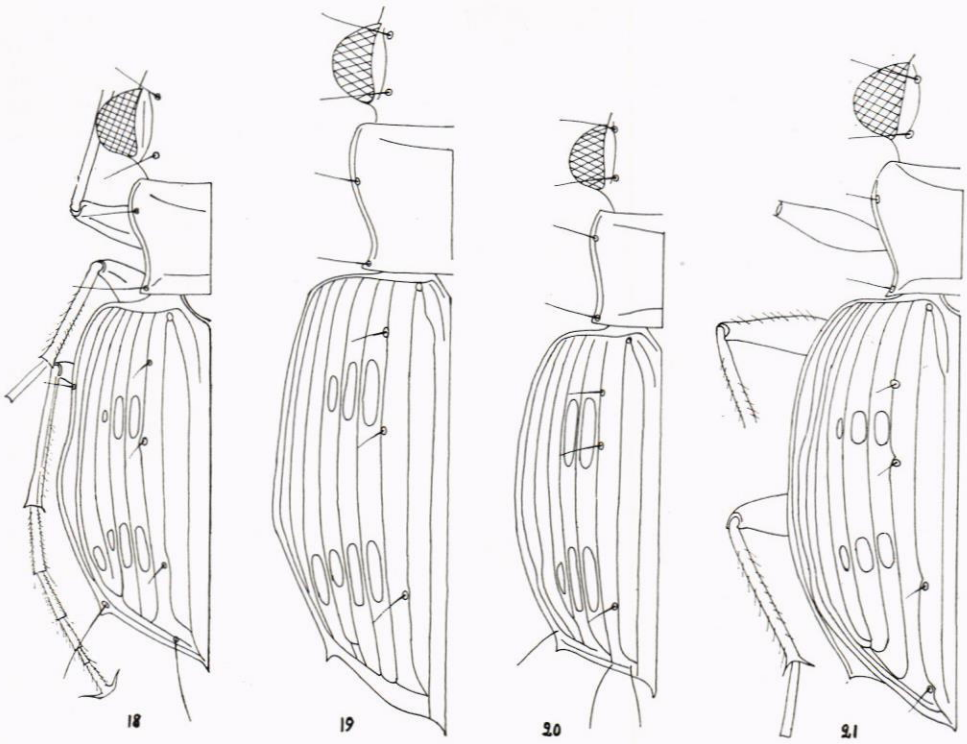

Fig. 18. *Pericalus quadrimaculatus* Macl., fom Java, left side. Fig. 19. *Pericalus laetus* Schaum, from Celebes, after an ex., compared with the type, left side. Fig. 20. *Pericalus gratus* Schaum, after the type, left side. Fig. 21. *Pericalus tetrastigma* Chaud., from Perak, left side.

Pericalus quadrimaculatus Macl. (Ann. Jav., 1825, p. 15). (Figs 18 to 21.)

Long Navang, 74 specimens. A Malayan species, occuring in Perak, Malakka, Siam, Java, Borneo, Lombok and Amboina Isl. Also in Sumatra. Without a doubt the commonest species of all *Pericalus* and also abundantly found in cultivated regions. Variable in build, the size and form of the small, elytral spots, the denticle terminating the sutural interval, which is wanting is some specimens, etc. Some have the side margins of the elytra evenly rounded from base to outer angle of apex, without any compression before middle.

It is a well-known fact, that the genus can be divided into two, well-defined groups. The first group contains the larger forms with the pronotum cordiform, moderately to broadly margined and with the anterior, pronotal angles advanced. With the exception of 3 species (see above) they have ornate elytra. The smaller species form the second group, in which the pronotum is subcordiform with very narrowly margined sides and not or hardly not advanced anterior angles. They have all spotted elytra, in most cases each spot broken in smaller ones, which do not fill up the whole width of the interval. The number and size and also the shape or the small spots are variable. So are the denticles at extreme apex of the elytra. To the first

group belong: *cicindeloides* Macl., *guttatus* Chevr., with its variety *violaceus* Andr., *longicollis* Chaud., *ornatus* Schm.-Goeb., etc. Of the second group I give in figs 18 to 21 sketches of the left elytral half of four species for comparison, which clearly show, that those, though differing in colour and minor details, are much like one another. There are more such species as: *figuratus* Chaud. (Celebes), *klapperichi* Jedl. (New Pommeren), *picturatus* Chaud. (Celebes), etc. and I have in my collection an as yet undescribed species from Borneo with very large, elytral spots. The sketches are to scale, but one must bear in mind, that the specimens sometimes differ considerably in size. Fig. 18 is a typical example of *quadrimaculatus* from Java; fig. 19 is *laetus* Schaum (Celebes), a sketch of an ex., which I compared with the two types; fig. 20 shows *gratus* Schaum (Celebes), a sketch after one of the two types and fig. 21 is a sketch of *tetrastigma* Chaud. from Perak. This species is blue in colour and the elytra have only small spots. *Laetus* and *gratus* seem to be rare. Of the former I saw, besides the types, only one specimen and of the latter I never saw, with the exception of the types, a single specimen.

Catascopus elegans Weber (Obs. Ent., 1801, p. 45).

Long Navang, 7 specimens. Also in South-East Asia (but not in China and Japan), Australia, Solomon Isl., New Guinea, and New Britain. A common, variable species.

Catascopus facialis Wied. (Zool. Mag., 1819, I, p. 165), var *angulatus* Chaud. (Berl. Ent. Zeitschr., 1861, p. 117).

Long Navang, 8 specimens. Commonly distributed in the Malay States and Archipelago.

Catascopus facialis Wied., var. *poultoni* Andr. (Ann. Soc. Ent. Belg., 1921, p. 209).

Long Navang, 1 specimen. Uncommon and also occuring in Sumatra.

Catascopus smaragdulus Dej. (Spec. Gen., 1825, I, p. 331).

Long Navang, 1 specimen. Also in India, Burma, Malay States, Tonkin, Java, Sumatra and Samar Isl.

Subfam. *Thyreopterinae*

Sinurus opacus Chaud. (Ann. Soc. Ent. Belg., 1869, XII, p. 130).

Kajan River, 1 specimen. In Java not a common species. It also occurs in Burma, Andaman Isl., Perak, Java, Sumatra and the Philippines.

Peripristus ater Cast. (Etudes Ent., 1835, p. 149).

Long Navang, 1 specimen; Sumatra: Medan, 2 specimens. Also in India, Burma, Nicobar Isl., Malay States, Siam, Indo-China, and Java.

Sfitakantha impressa Schm.-Goeb. (Faun., Col. Birm., 1846, p. 80).

Pajan River, 1 specimen. Also in Assam, Burma, Malay States, Laos, Java and Sumbawa.

Subfam. *Dryptinae*

Drypta lineola Macl. (Ann. Jav., 1825, p. 27), var. *immaculata* Louw., (Verh. Naturf. Ges. Basel, 1953, 64, p. 317).

Long Navang, 1 specimen. Also in Sumba Isl., Salajar Isl., Java and Celebes.

Additional notes

Dr P. J. Darlington Jr (Harvard University, U.S.A.) was so kind as to examine the following species, which I sent to him for study.

Tachys borneensis Andr. (see p. 174) Notwithstanding the slight difference in color and the spotted elytra it is *borneensis* all right.

Colpodes (in a broad sense) sp.

Mt Tibang, 1400 m. 1 specimen.

Perhaps an undescribed species but the specimen examined is too much broken to render a more profound study.

Gen.?

Pajan River, 1 specimen.

This species, belonging to the subfam. *Harpalinae*, looks as if it might be a *Coleolissus*, but as the generic classification in this group of Carabidae is based partly on the clothing of the ♂ tarsus, further study has to be delayed till the ♂ is known. The collected specimen is a ♀.