

1900(a)

THE ANNALS

AND

MAGAZINE OF NATURAL HISTORY.

[SEVENTH SERIES.]

No. 33. SEPTEMBER 1900.

XXXIV.—*On some Malacostracous Crustaceans from Malaysia in the Collection of the Sarawak Museum.* By W. F. LANCHESTER, M.A., King's College, Cambridge.

[Plate XII.]

THE Crustaceans with which I deal in this paper were sent to me by Mr. R. Shelford, B.A., Curator of the Sarawak Museum, when I was at Singapore in the early part of 1899, and I am greatly indebted to him for giving me the opportunity of identifying them. He has, further, been kind enough to let me retain all but two of the specimens, and those that may be desiderata to the Natural History Museum at South Kensington will be deposited there. It is a small collection of 38 species (27 genera), and only one of these is new; but some, in particular the Potamons, of which there are five species, have only been recently described. This *Potamon* group, which seems to be especially well represented in Borneo, and which ranges there from sea-level to 6000 feet, numbers many species of more or less definiteness, and greater additions to our collections will no doubt enable us to reduce the number of these somewhat and at the same time to get a clearer idea of their mutual affinities. There is also a specimen of a *Callianassa*, unfortunately somewhat damaged, but almost certainly identical with *C. Martensi*,
Ann. & Mag. N. Hist. Ser. 7. Vol. vi. 17

first described from Mauritius by Mr. Miers and later from Amboina by Dr. de Man, which, if my diagnosis be correct, would point to a disappearance of the eyes in this species; for the corneæ, which in Mr. Miers's younger example are of normal size, are in this one small and out of all proportion to their peduncles, which are flattened and produced, so as to overlap them on all sides.

Since my return from the Straits I have been occupied in describing the Brachyura collected there by Mr. Bedford and myself: the paper dealing with these was read to the Zoological Society in June, and will appear in the 'Proceedings' of that Society later in the year. This being so, I have contented myself with giving references to that paper in cases where, in this, species are mentioned which I have already described.

As regards what few measurements I have taken, I should say that, except where otherwise stated, I have measured the breadth between the bases of the last antero-lateral spines and the length between the posterior margin and a line joining the bases of the internal supraocular spines; my reasons for this I have given in my earlier paper.

It may perhaps be advisable to add that the numbers given in Roman figures with each species correspond to labels affixed by Mr. Shelford, and are inserted for his better convenience in identifying the corresponding examples in his museum.

BRACHYURA.

I. Genus ATERGATIS, de Haan.

1. *Atergatis integerrimus*, Lam.

Cancer integerrimus, Lam. Hist. Anim. sans Vert. t. v. p. 273 (1818).

Atergatis integerrimus, de Haan, Crust. Jap. p. 45, pl. xiv. fig. 1 (1839); A. M.-Edw. Nouv. Arch. Mus. t. i. p. 235 (1865).

Distr. Philippines, Malaysia, Siam, Java, Tuticorin.

No. CCLXXII. *Hab.* Singapore.

A female.

Dim.: Length 34.5 millim., breadth (greatest) 55.5.

2. *Atergatis floridus*, Rumph.

Cancer floridus, Rumphius, d'Amboinsche Rariteit-Kammer, p. 16, pl. viii. fig. 5 (1705).

Cancer ocyroë, Herbst, Naturgesch. d. Krab. pl. liv. fig. 2 (1798).

Atergatis floridus, A. M.-Edw. Nouv. Arch. Mus. t. i. p. 243 (1865).

Distr. Ceylon, Malay Archipelago, Duke-of-York Island, Samoa, Clairemont.

No. CCCX. *Hab.* Pulau Satang.

A female.

Dim.: Length 30 millim., breadth (before last tooth) 43·5.

II. Genus CARPILODES, Dana.

3. *Carpilodes socius*, Lanchester.

Carpilodes socius, Lanchester, P. Z. S. Lond. (1900).

Distr. Singapore.

No. CCCL. *Hab.* Singapore.

A fine male specimen, quite agreeing with my original description. Colour deep red above, a lighter brown-red below; fingers brown, with dirty-white tips.

Dim.: Length 17·25 millim., breadth 29·25.

III. Genus ACTÆA, de Haan.

4. *Actæa areolata*, Dana.

Actæa areolata, Dana, U.S. Expl. Exp., Crust. vol. i. p. 162, pl. viii. fig. 1 (1852); A. M.-Edw. Nouv. Arch. Mus. t. i. p. 264 (1865).

Distr. Port Molle, Mergui Is., Sooloo Sea.

No. CLXXII. *Hab.* Singapore.

A male, in which, as with other specimens from Singapore, the internal lobule of the protogastric lobe is no broader than the mesogastric; front only moderately prominent.

Dim.: Length 9 millim., breadth 15·5.

5. *Actæa pulchella*, var. *modesta*, de Man.

Actæodes modestus, de Man, Arch. f. Naturgesch. Jahrg. liii. Bd. i. p. 257, pl. ix. fig. 2 (1837).

Actæa pulchella, Lanchester, P. Z. S. Lond. (1900).

Distr. Singapore, Amboina.

No. CCCXCI. *Hab.* Singapore.

A female. I cannot quite convince myself of the specific distinctness of *Actæodes modestus* and *Actæa pulchella*. The genus at least cannot be sustained, based as it is practically on the one character of the greater or less emargination of the finger-tips. But it is, again, more particularly on this character that Dr. de Man has formed his species—"Es scheint mir nun, dass sich die *pulchella* von unserer Art gleichfalls durch die Scheerenfinger unterscheidet." These differences are:—in *A. pulchella* the fingers meet along their length, are only slightly emarginate, and the dactyl *slants obliquely*; in *A. modestus* the fingers gape a little, the tips are strongly

emarginate, and the dactyl *curves* downwards. Now this example and two males which I have already described from Singapore (*t. c.*) show the *modestus* arrangement pretty clearly, though even in this small number one may see a degree of gradation, though a slight one, to the *pulchella* form; while a fourth example, a female, rather smaller (already described, *t. c.*), shows the *pulchella* arrangement, not perfectly, but distinctly. There are no other noticeable differences between the two forms ("sonstige Unterschiede giebt es kaum," de Man, *t. c.*), and I do not think the slight variations in the hand-structure are as yet more than variations. It is true that three distinctions are noticed, but these three are really only one variation, the curvature of the dactyl and the gape of the fingers being implied by the emargination of the finger-tips. And the amount of this emargination, even in my four examples, is not at all constant, the two smaller examples having sharper finger-tips in proportion. It seems to me, therefore, better to retain Dr. de Man's specific name in a varietal sense for those forms of *A. pulchella* in which the spoon-shaped arrangement is well marked, while leaving it open to decision as to whether the difference is truly varietal, or only one of age, sex, or both.

Dim. : Length 11 millim., breadth 16.25.

IV. Genus ETISODES, Dana.

6. *Etisodes anaglyptus*, M.-Edw.

Etisus anaglyptus, M.-Edw. Hist. Nat. Crust. t. i. p. 411 (1835).

Etisodes anaglyptus, Lauchester, P. Z. S. Lond. (1900).

Distr. Philippines, Clairemont, Torres Strait.

No. CCLI. *Hab.* Pulau Satang.

A female. I have already (*t. c. supra*) given a fuller description of this species, as a supplement to M.-Edwards's short diagnosis.

Dim. : Length 35 millim., breadth 52.

V. Genus PILUMNUS, Leach.

7. *Pilumnus vespertilio*, Fabr.

Cancer vespertilio, Fabr. Suppl. Entom. p. 338 (1798).

Pilumnus vespertilio, M.-Edw. Hist. Nat. Crust. t. i. p. 418 (1835);

Haswell, Catal. Austr. Crust. p. 65 (1882).

Distr. Seychelles, Tuticorin, Malay Archipelago, N.W. Australia, New Zealand, Samoa.

No. CCCLXV. *Hab.* Singapore.

A female.

Dim.: Length 11 millim., breadth 14·5.

VI. Genus ERIPHIA, Latr.

8. *Eriphia laevimana*, var. *Smithii*, McLeay.

Eriphia Smithii, McL. Annul. in Smith's Zool. S. Africa, p. 60 (1838).

Eriphia laevimana, v. *Smithii*, Miers, Ann. & Mag. Nat. Hist. ser. 5, vol. v. p. 237 (1880).

Distr. Natal, Kurrachee, Singapore, New Guinea, off Madagascar.

No. CCLVI. *Hab.* Natunas.

A female.

Dim.: Length 39·5 millim., greatest breadth 54.

VII. SCYLLA, de Haan.

9. *Scylla serrata*, Forskål.

Cancer olivaceus, Herbst, Naturg. d. Krab. ii. p. 157, pl. xxxviii. fig. 3 (1796).

Lupea tranquebarica, M.-Edw. Hist. Nat. Crust. t. i. p. 448 (1835).

Scylla serrata, de Haan, Faun. Japon. Crust. p. 44 (1839); Haswell, Cat. Austr. Crust. p. 79 (1882).

Distr. Cape of Good Hope, Natal, India, Malay Archipelago, China, New Caledonia.

No. LXXXIX. *Hab.* Moratabas.

A young female.

Dim.: Length 48·5 millim., breadth 73.

VIII. Genus NEPTUNUS, de Haan.

10. *Neptunus pelagicus*, Linn.

Cancer pelagicus, Linn. Syst. Nat. (ed. xii.) p. 1042 (1766).

Lupea pelagica, M.-Edw. Hist. Nat. Crust. t. i. p. 450 (1835).

Neptunus pelagicus, Hasw. Cat. Austr. Crust. p. 77 (1882).

Distr. Muscat, Persian Gulf, India, Malay Archipelago, Port Curtis, Sydney, Shanghai, Zanzibar.

No. CCCLXVI. *Hab.* Buntal.

A female.

Dim.: Length 28 millim., breadth 52·5.

No. CCCXXX. *Hab.* Santubong.

A male.

Dim.: Length 16·25 millim., breadth 28.

	L.	R.
Length of last lateral teeth in ♀	= 5 mm.	9·5 mm.
" " ♂	= 4·5 "	4·5 "

IX. Genus GONIOSOMA, A. M.-Edw.

11. *Goniosoma affine*, Dana.

Charybdis affinis, Dana, U.S. Expl. Exp., Crust. vol. i. p. 286, pl. xvii. fig. 2 (1852).

Goniosoma affine, A. M.-Edw. Arch. Mus. t. x. p. 384 (1861); de Man, Mergui Crust. p. 80, pl. v. fig. 2 (1888).

Distr. India, Mergui Is., Singapore.

No. CCCXXXI. *Hab.* Buntal.

A female, in which the two median lobes of the front are broken off. I can detect no signs of teeth on the posterior margins of the penultimate joints of the natatory (last) legs.

Dim.: Length 23·5 millim., breadth 37.

12. *Goniosoma rosæum*, Jacq. et Lucas. (Pl. XII. fig. 1.)

Thalamita rosæa, Jacq. et Luc. t. iii. p. 5, pl. v. fig. 11 (=Hombron et Jacq. Voy. au Pôle Sud, Crust. 1853).

Goniosoma rosæum et rostratum, A. M.-Edw. Arch. Mus. t. x. pp. 378-9, pl. xxxv. fig. 2 (1861).

Distr. Mouths of Ganges, Calcutta, Gulf of Martaban, New Guinea.

No. IX. *Hab.* Buntal.

A male; in which there is a small distinct tooth on the base, posteriorly, of each first antero-lateral tooth, and a slight pubescence on the branchial regions. *G. rostratum* differs only in being less orbicular, in having the two median teeth of the front more advanced, and in the possession of only two spines on the hand, and I do not think it is specifically distinct.

Dim.: Length 17·5 millim., breadth 24·5.

X. Genus THALAMITA, Latr.

13. *Thalamita Dance*, var. *Stimpsoni*, A. M.-Edw.

Thalamita Stimpsoni, A. M.-Edw. Arch. Mus. t. x. p. 362, pl. xxxv. fig. 4 (1861).

Thalamita Dance, de Man, Mergui Crust. p. 78, pl. iv. figs. 8, 9 (1888).

Distr. Torres Strait, Sandwich Islands, W. Australia, Malay Archipelago.

No. CCCLII. *Hab.* Singapore.

A young female.

Dim.: Length 8 millim., breadth 12·5.

XI. Genus POTAMON, Sav.

14. *Potamon (Perithelphusa) Büttikoferi*, de Man.

Potamon (Perithelphusa) Büttikoferi, de Man, Notes from the Leyden Museum, vol. xxi. pts. i.-iii. pp. 80-86, pl. vi. fig. 6 (1899).

Distr. Sintang.

No. CCXCII. *Hab.* Mt. Matang, 3000 feet.

A male. Dr. de Man describes the "ischial line" on the posterior maxillipedes as being parallel to the inner margin of the ischial joint; in this example it is oblique, slanting away from it from before backwards.

Dim.: Greatest length 28·5 millim., greatest breadth 35.

15. *Potamon (Perithelphusa) borneense*, var. *hilaris*, de Man.

Potamon borneensis, var. *hilaris*, de Man, Notes Leyden Mus. vol. xxi. pts. i.-iii. p. 71, pl. v. fig. 4 (1899).

Distr. Sintang.

No. XCVIII. *Hab.* Kuching: freshwater.

A male.

Dim.: Greatest length 18·5 millim., greatest breadth 23.

16. *Potamon (Parathelphusa) tridentatum*, var. *incertum*, Lanchester. (Pl. XII. fig. 2.)

Potamon (Parathelphusa) tridentatum, var. *incertum*, Lanchester, P. Z. S. Lond. (1900).

Distr. Singapore (Botan. Gardens).

No. CXXXVI. *Hab.* Kuching: presumably freshwater, but

I have no note to that effect.

A male, quite agreeing with the forms I have already described from Singapore; though in this specimen the lobulation of the extraorbital tooth is even more striking, giving it all the appearance of having four antero-lateral teeth, such that the second is truncated, while the rest are sharp.

Dim.: Length (including rostrum) 30·5 millim., breadth between last teeth 37·5.

17. *Potamon (Geothelphusa) Bürgeri*, de Man.

Potamon (Geothelphusa) Bürgeri, de Man, Notes Leyd. Mus. vol. xxi. pts. i.-iii. pp. 121-127, pls. xi., xii. fig. 14 (1899).

Distr. Mount Liang Koeboeng.

No. xcv. *Hab.* Kuching.

A female example, quite agreeing with Dr. de Man's description of a male, except in regard to the following points:—The *left* chelipede is the larger, and not the right; the fingers, moreover, which on the right side meet all along their length, are somewhat widely separate on the left. The mesogastric groove is continued faintly on to the front, and shows a tendency to bifurcation behind; there is also a faint oblique depression between the gastric and branchial regions on each side.

Dim.: Greatest length 15.5 millim., greatest breadth 21.

18. *Potamon (Thelphusa) bidiense*, sp. n.

(Pl. XII. fig. 3.)

No. CCCLXXVII. *Hab.* With this specimen I have the following note from Mr. Shelford:—"Caves at Bidi in pools; the caves were absolutely dark. Body pale brown, legs white."

A male. This form is closely related to one obtained by Dr. de Man from the Dutch Expedition to Central Borneo, and named by him *P. Melanippe*, which is itself allied to *P. Austenianum*, a form described by Wood-Mason from Assam. Like them, this specimen is most noticeable for the length and slenderness of its legs; but the penultimate pair are a little *more* than three times as long as the carapace, and their meri are also longer than the carapace by nearly a fifth of their length. In this, too, they differ from *P. Melanippe* in that the meri of the last four legs are armed with a small blunt spine anteriorly, quite close to the distal end. The external maxillipeds are precisely similar to those of *P. Melanippe*; the chelipedes, too, are essentially similar, except that the fingers do not quite meet along their length and their tips decussate. The shape of the male abdomen is, however, quite different: the sixth segment is indeed quite similar to that of *P. Melanippe*; but the fifth, instead of being narrower at its base than at its extremity, is, if anything, ever so little broader, with its sides straight and practically parallel; as a consequence of this, the transition from the narrower terminal to the broader basal segments is much less marked than in Dr. de Man's form.

Epigastric lobes very prominent; no crest parallel to the anterior margin of the front, general surface of the carapace rather thickly punctate than granular. Upper surface of meri of ambulatory legs with two granular eminences. There is a minute epibranchial tooth as in *P. Melanippe*, behind which the sides are obliquely rugose.

In regard to the habitat from which it was taken, there is no evidence to show that this species is essentially a cave-dwelling one; though its occurrence in a dark cave is very interesting, and shows the possibility of such being the case. The eyes in this individual are normal; its colour is perhaps paler than in the Thelphusidæ generally (but cf. *Potamon bicristatum*, de Man: "carapace lead-coloured, legs yellowish marmorate"). But a loss of colour of this nature is not necessarily a permanent feature, and proves very little as to the ways of the species as such. The possibility must always be borne in mind that a particular habitat, such as this, may be one temporarily acquired by certain, possibly locally limited, members of a species; should this residence become permanent, a local race may be formed. But in this case, at least, the evidence is very little, and not much can be deduced from it in either direction.

Dim.: Greatest length 12.25 millim., greatest breadth 14; length of penultimate pair of legs 40, length of merus of penult. pair 15.

XII. Genus SESARMA, Say.

19. *Sesarma calypso*, de Man.

Sesarma (*Parasesarma*) *calypso*, de Man, Zoolog. Jahrb. Syst. Bd. ix. pp. 185-9, fig. 34 (1896).

Sesarma calypso, Lanchester, P. Z. S. Lond. (1900).

Distr. Atjeh, Singapore.

No. xxxviii. *Hab.* Buntal.

A female. Superior border of hand raised to a strong crest on its inner side, against which the four pectinated ridges abut. Fingers with seven or eight of the characteristic "Treppen-förmig" tubercles.

Dim.: Greatest length 16 millim., breadth (including external orbital angles) 20.5.

20. *Sesarma quadrata*, Fabr.

Cancer quadratus, Fabr. Ent. Syst. Suppl. p. 341 (1798)

Grapsus (*Pachysoma*) *quadratus*, de Haan, Crust. Jap. p. 222, pl. viii. fig. 3 (1839).

Distr. Malay Archipelago, Japan.

No. LXXXIII. *Hab.* Santubong.

A small female.

Two obscure pectinated ridges, and 8-10 low tubercles on the dactyl.

Dim.: Greatest length 9.25 millim., breadth (including external orbital angles) 12.

XIII. Genus OCYPODE, Fabr.

21. *Ocypode ceratophthalma*, Pallas.

Cancer ceratophthalmus, Pall. Spic. Zool. ix. p. 83, pl. v. fig. 17 (1772).

Ocypode ceratophthalma, Fabr. Suppl. Ent. Syst. p. 347 (1798); Miers, Ann. & Mag. Nat. Hist. ser. 5, vol. x. p. 379, pl. xvii. fig. 1 (1882).

Distr. Very wide; from E. Africa to the Pacific.

Nos. LXXXVI, CCCLXI., CCXC. *Hab.* Santubong, Buntal.

A male, with styles 11.5 millim. long (breadth of carapace at epibranchial angles 36); a female, with styles .75 long (breadth of carapace 28); and a small male, with no ocular styles (breadth of carapace 18.5).

	♂ 1. millim.	♂ 2. millim.	♀. millim.
<i>Dim.</i> : Greatest length of carap.	32	15.5	24.5
Greatest breadth of carap.	36	18.5	28

XIV. Genus UCA, Leach (= *Gelasimus*, Latr.).

22. *Uca annulipes*, M.-Edw.

Gelasimus annulipes, M.-Edw. Hist. Nat. Crust. t. ii. p. 55 (1837); de Man, Mergui Crust. p. 118, pl. viii. figs. 5-7 (1888), ubi syn.

Distr. Zambesi, Durban, India, Malay Archipelago, Samoa, Lu-chu (China).

No. XXVIII. *Hab.* Santubong.

A male, left-handed.

Dim.: Greatest length 7.5 millim., breadth (with external orbital angles) 13.5.

XV. Genus MACROPHTHALMUS, Latr.

23. *Macrophthalmus carinimanus*, M.-Edw.

Macrophthalmus carinimanus, M.-Edw. Hist. Nat. Crust. t. ii. p. 65 (1837); Miers, Ann. & Mag. Nat. Hist. ser. 5, vol. v. p. 306 (1880); Haswell, Cat. Austr. Crust. p. 88 (1882).

Distr. Malaysia.

No. CCCLVI. *Hab.* Santubong.

A male.

Dim.: Greatest length of carapace 9.5 millim., breadth (across ext. orb. angles) 21.

24. *Macrophthalmus depressus*, Rüppell.

Macrophthalmus depressus, Rüpp. Beschreib. 24 Art. kurzschw. Krab. p. 19, pl. iv. fig. 6 (1830).

Macrophthalmus affinis, Guérin, Crust. 'Favorite,' p. 172, pl. 1. fig. 2 (1839).

Macrophthalmus depressus, Hend. Trans. Linn. Soc., 2nd ser. Zool. v. p. 389 (1893); de Man, Zoolog. Jahrb. Syst. Bd. viii. p. 578 (1895).

Distr. Pamban, Rameswaram, Bombay, Red Sea, North Australia.

No. XIV. *Hab.* Buntal.

A male. The granulations on the carapace are very fine, distinctly visible under the lens; and there is a well-marked mesial groove on the front, extending back to the level of the external orbital angles. In a smaller female specimen Dr. de Man found no spine on the merus of the last leg; there is one present in this example, which is a little larger. Prof. Henderson (*t. c.*) says: "The ambulatory legs are pubescent, with a single tooth near the anterior distal end of merus,"—making no exception as regards the last pair.

I note, in addition, in my specimen the presence of a thick hairy tuft on the anterior surface of the merus of the chelipedes, and another at the base, internally, of the fingers.

Dim.: Greatest length of carapace 11.25 millim., breadth (across orbital angles) 14.

Prof. Henderson gives the length of a male as 11 millim., and its breadth 17; Dr. de Man's specimen is given as 8.25 millim. long and 12.2 broad.

XVI. Genus CALAPPA, Fabr.

25. *Calappa hepatica*, Linn.

Cancer hepaticus, Linn. Syst. Nat. p. 1048 (1766).

Calappa tuberculata, Fabr. Ent. Suppl. p. 345 (1798); Herbst, Naturg. d. Krab. i. pl. xiii. fig. 78 (1796).

Calappa hepatica, Hasw. Cat. Austr. Crust. p. 136 (1882).

Distr. Red Sea, E. Africa, Natal, India, China, Sandwich Is., Australia.

No. CCCXXXVII. *Hab.* Natunas.

A male.

Dim.: Length 35 millim., greatest breadth 55.

XVII. Genus MATUTA, Fabr.

26. *Matuta victrix*, Fabr.

Cancer victor, Fabr. Ent. Syst. ii. p. 449 (1793).

Matuta victor, id. Ent. Suppl. p. 369 (1798).

Matuta victrix, Miers, Trans. Linn. Soc., 2nd ser. Zool. vol. i. p. 243, pl. xxxix. figs. 1-3 (1877).

Distr. Red Sea, E. Africa, Natal, Madras, Japan, Port Jackson, Fiji Is.

No. VI. *Hab.* Santubong.

A young male.

Dim.: Length 26 millim., breadth 28·5.

ANOMURA.

XVIII. Genus CÆNOBITA, Latr.

27. *Cænobita spinosus*, M.-Edw., var. *olivieri*, Owen.

Cænobita olivieri, Ow. Crust. 'Blossom,' p. 84; Dana, U.S. Expl. Exp.

Crust. vol. i. p. 470 (1852); Hasw. Cat. Austr. Crust. p. 160 (1882).

Cænobita spinosa, var. *olivieri*, Ortmann, Zool. Jahrb. Syst. Bd. vi. p. 318, pl. xii. fig. 24 (1892).

Distr. Madras, Nicobar, Tahiti, N.W. Australia.

No. CCCXIX. *Hab.* Santubong.

A male. Fore part of carapace much less tumid than in the species; outer surface of penultimate joint of the left third leg with a rounded crest in its distal half. It is possible that this variety is the young stage of the species. A specimen in the Museum collection at S. Kensington, labelled "*C. olivieri*, Pelew I.," should, I think, be referred to *C. perlata*. Length of carapace 27·5 millim.

XIX. Genus PETROLISTHES, Stimpson.

28. *Petrolisthes hastatus*, Stm.

Petrolisthes hastatus, Stm. Proc. Ac. Nat. Sci. Philad. p. 241 (1858).

Porcellana inermis (Heller), de Man, Merg. Crust. p. 212 (1888).

Petrolisthes hastatus, Ortmann, t. c. p. 260 (1892).

Distr. Mergui, Nicobar, Noordwachte I. (Java), Japan.

No. CCLXIV. *Hab.* Pulau Satang.

A female. I have compared this with Dr. de Man's slightly smaller specimens, and find the following differences:—The antero-lateral margin in this female is grooved in its anterior third, this groove passing up and obliquely backwards

on the carapace. This groove is less conspicuous in Dr. de Man's examples according to their smaller size. In the Sarawak form also the tooth at the end of the posterior margin, and the three teeth on the anterior margin of the carpus of the chelipedes, are reduced in size; in fact, the foremost tooth on the anterior margin, and the one just behind it, are only just visible. These distinctions I consider to be, without doubt, due to age only.

Length 8.5 millim., breadth 8.25.

MACRURA.

XX. Genus CALLIANASSA, Leach.

29. *Callianassa Martensi*, Miers. (Pl. XII. figs. 4, 4 a.)

Callianassa Martensi, Miers, P. Z. S. Lond. (1884) p. 13, pl. i. fig. 1; de Man, Arch. f. Naturg. Jahrg. 53, Bd. i. p. 432, pl. xxi. fig. 1 (1887).

Distr. Mauritius, Amboina.

No. LXVI. *Hab.* Buntal.

A male. This specimen, though rather damaged—having, in particular, lost both chelipedes—I believe to be a representative of Mr. Miers's species. It exhibits certain differences on a comparison with the type specimen, but these seem to be explained by the greater size of this example, *i. e.*, they are differences of age. The most striking difference is in the frontal region; the rostrum is shorter than in the type, in which latter it reaches to the middle of the cornæ of the eyes, while in this it barely reaches halfway to the cornæ. These cornæ are themselves much reduced in size in proportion to their peduncles, while the latter have become very acutely angulated at their antero-internal angles, now *in front* of the cornæ, so that the two peduncles form in front a short blunt tooth in the median line. From this angle to their antero-external angles the border is concave, there being another tooth, smaller than the median one, at the latter angle. The whole peduncle is very flattened and the cornea appears only as a small black spot just in front of the centre of its upper surface. Besides this, the ischium and merus of the third maxillipedes form a broad opercular plate, and the dactyl is bent back on the greatly enlarged propodos, so as to make this appendage subchelate. Both these points are more prominently developed in the larger animals than in Mr. Miers's smaller one. In other respects these two forms agree.

Dim.: Length from tip of rostrum to tip of telson about 81 millim.

XXI. Genus *SENEX*, Pfeffer (= *Panulirus*, Gray).30. *Senex ornatus*, Fabr.

Panulirus ornatus, Fabr. Suppl. Ent. Syst. p. 400 (1798); Hasw. Cat. Austr. Crust. p. 171 (1882).

Senex ornatus, Ortmann, t. c. p. 34 (1892), ubi syn.

Distr. East Africa, Ceylon, Malay Archipelago, N. Australia, Hongkong, Japan, Samoa.

No. xc. *Hab.* Pulau Satang.

A male of this very variable species. On the antennal segment are four forwardly-directed teeth arranged in a square, the two anterior being larger; between these latter, but nearer to the left one than the right, is a small "Nebendorn." In a larger specimen in the Museum collection, from Natunas, there are two "Nebendornen" halfway between each of the anterior and posterior teeth. The second and third abdominal segments are marked with an interrupted transverse hirsute furrow; the specimen from Natunas is without these, but has a deep furrow on the first abdominal segment, without hairs, as in this specimen.

Dim.: Base of eyes to posterior margin of carap. 37 millim.

XXII. Genus *ATYA*, Leach.31. *Atya armata*, A. M.-Edw.

Atya armata, A. M.-Edw. Ann. Soc. Entom. France, ser. 4, t. iv. p. 149 (1864).

? *Atya moluccensis*, de Haan, Crust. Jap. p. 186, pl. O (1839).

Atya moluccensis, de Man, Weber's Zool. Ergebn. p. 357, pl. xxi. fig. 20 (1892).

Distr. Malay Archipelago, Samoa, New Caledonia.

No. LXX. *Hab.* Simanggang.

A male, which is certainly identical with *A. armata*. Whether it is the same as de Haan's species, as Mr. Miers seems to think (Ann. & Mag. N. H. (5) v. p. 382), is rather more difficult to determine, for de Haan's description is too brief. I have compared the mouth-parts of this specimen with de Haan's figures (*vide* pl. O), but the latter are too diagrammatic for an accurate comparison; as far as I can determine, however, the two are essentially similar.

Dim.: Length from orbital margin to tip of telson 50 millim.; length from orbital margin to posterior margin of carap. 15.5.

XXIII. Genus *ALPHEUS*, Fabr.32. *Alpheus gracilipes*?, Stimpson.

Alpheus gracilipes, Stm. Proc. Ac. Nat. Sci. Philad. p. 100 (1860); Sp. Bate, 'Challenger' Macrura, p. 561, pl. ci. fig. 3 (1888); Ortmann, *op. cit.* v. p. 488 (1891).

Distr. Zanzibar, S.W. Japan, Tahiti, Samoa, Bass Strait.
No. CCXXII. *Hab.* Singapore.

A male. The chelipedes are lost, so that I cannot be quite certain of its identity with Stimpson's species.

Dim.: Base of rostrum to posterior margin of carap. 5·25 millim.; base of rostrum to tip of telson 13·5.

XXIV. Genus PALÆMON, Fabr.

33. *Palæmon carcinus*, var. *Lamarrei*, M.-Edw.

Palæmon Lamarrei, M.-Edw. Hist. Nat. Crust. t. ii. p. 397 (1837); de Haan, Crust. Jap. p. 171 (1839); Ortmann, t. c. p. 701, pl. xlvii. fig. 2 (1891).

Palæmon carcinus, Hend. Trans. Linn. Soc., 2nd ser. Zool. vol. v. p. 441 (1893).

Distr. India, Malay Archipelago, Ecuador, Amazon.

No. XXVII. *Hab.* Kuching, freshwater.

Dental formula $\frac{1}{0}$, and there is a wide gap between teeth 8-9 above. The rostrum exceeds the scaphocerite by one fourth of its own length, while the second pair of pereopods exceeds the scaphocerite by half the carpus and the hand. The carpus and hand are covered with minute teeth at moderately wide intervals.

Dim.: Orbital margin to posterior margin of carap. 36·5 millim.; length of second pair of legs 105, of merus 18, of carpus 25, of palm and fingers 42.

XXV. Genus PENÆUS, Fabr.

34. *Penæus velutinus*, Dana.

Penæus velutinus, Dana, U.S. Expl. Exp., Crust. p. 604, pl. xl. fig. 4 (1852); Sp. Bate. Chall. Macr. p. 253, pl. xxxiii. fig. 1 (1888); Ortmann, t. c. p. 452, pl. xxxvi. fig. 6 (1891); Henderson, Trans. Linn. Soc., 2nd ser. Zool. vol. v. p. 449 (1893).

Distr. Red Sea, Mauritius, Malay Archipelago, India, Japan, N. & W. Australia, Sandwich Is.

No. CXXX. *Hab.* Singapore.

A male. The tip of the telson is broken off in this specimen, but there is no doubt that it belongs to this species; the form of the male appendage is very characteristic. Dental formula $\frac{2}{2}$; the peduncle of the antennules just reaches the tip of the scaphocerite.

Dim.: Length from orbital margin to posterior margin of carap. 9·5 millim.

35. *Penæus indicus*, M.-Edw.

Penæus indicus, M.-Edw. Hist. Nat. Crust. t. ii. p. 415 (1837);

Sp. Bate, Chall. Macr. p. 248, pl. xxxiii. fig. 2 (1888); Hend. Trans. Linn. Soc., 2nd ser. Zool. vol. v. p. 447 (1893).

Penæus merguiensis, de Man, Merg. Crust. p. 237, pl. xviii. fig. 8 (1888).

Distr. India and Malay Archipelago.

No. LXXV. *Hab.* Buntal.

A female. Dental formula $\frac{8}{4}$; rostrum just overreaches the scaphocerite. The first tooth is situated behind the level of the hepatic spine; antennular peduncle shorter than scaphocerite.

This specimen is certainly identical with Dr. de Man's species; but I do not separate it from *P. indicus* because, on a comparison of some examples of the latter in the Museum collection with two of Dr. de Man's specimens and my own, I find them essentially similar in all respects but two—the proximal half of the rostrum is raised into a very prominent crest and its first tooth is situate *behind* the hepatic spine. The first of these distinctions is certainly a very obvious one and very striking; the second less so. It is hard to decide whether these characters are of specific importance; for myself, should a larger series demonstrate their constancy, I should still be inclined to consider *P. merguiense* as a variety only, though a well-marked one, of *P. indicus*.

Dim.: Orbital margin to posterior margin of carap. 17 millim.

STOMATOPODA.

XXVI. Genus *SQUILLA*, Fabr.

36. *Squilla scorpio*, Latr.

Squilla scorpio, Latr. Encycl. Méth. x. p. 472 (1825); Miers, Ann. & Mag. Nat. Hist. ser. 5, vol. v. p. 18, pl. ii. fig. 7 (1880); Hend. Trans. Linn. Soc., 2nd ser. Zool. vol. v. p. 453 (1893).

Distr. Madras, Singapore, N. Australia, Shanghai.

No. VII. *Hab.* Buntal.

A young female. Length about $2\frac{1}{2}$ inches.

37. *Squilla raphidea*, Fabr.

Squilla raphidea, Fabr. Ent. Syst. Suppl. p. 416 (1798); Miers, Ann. & Mag. Nat. Hist. ser. 5, vol. v. p. 27 (1880).

Squilla harpax, de Haan, Crust. Jap. p. 222, pl. li. fig. 1 (1839).

Distr. Zanzibar, Madras, Indian Ocean, Mergui Is., Singapore, Borneo, China, Japan.

No. XIII. *Hab.* Moratabas.

A female. Length about $4\frac{3}{4}$ inches.

ISOPODA.

XXVII. Genus NEROCILA, Leach.

38. *Nerocila depressa*, M.-Edw. (Pl. XII. fig. 5.)

Nerocila depressa, M.-Edw. Hist. Nat. Crust. t. iii. p. 254, pl. xxxi. fig. 17 (1839); Schiödte & Meinert, Naturhist. Tidsskrift, Krøyer, Raek. iii. Bd. 13, p. 15, pl. i. figs. 10-11.

Distr. Penang, Zamboango, Amoy.

No. XXIX. *Hab.* Buntal.

A female.

The figure given by Schiödte and Meinert exaggerates, I think, the relative proportions of the telson, which appears to be too short for its breadth (*vide* text, p. 16, where the proportions are given as 8 : 7). The exterior branch of the uropods, which is long and styliform, is pigmented with black, and this pigmentation is continued up along the sides of the abdomen, though it fades away on the sides of the thorax.

Dim. : Greatest length 17.5 millim., greatest breadth 11; breadth of telson 3.5, length of telson 4.25.

EXPLANATION OF PLATE XII.

Fig. 1. *Goniosoma rosæum*. Antero-lateral border showing reduplicated first tooth.

Fig. 2. *Potamon tridentatum*, var. *incertum*. Antero-lateral border.

Fig. 3. *Potamon bidiense*.

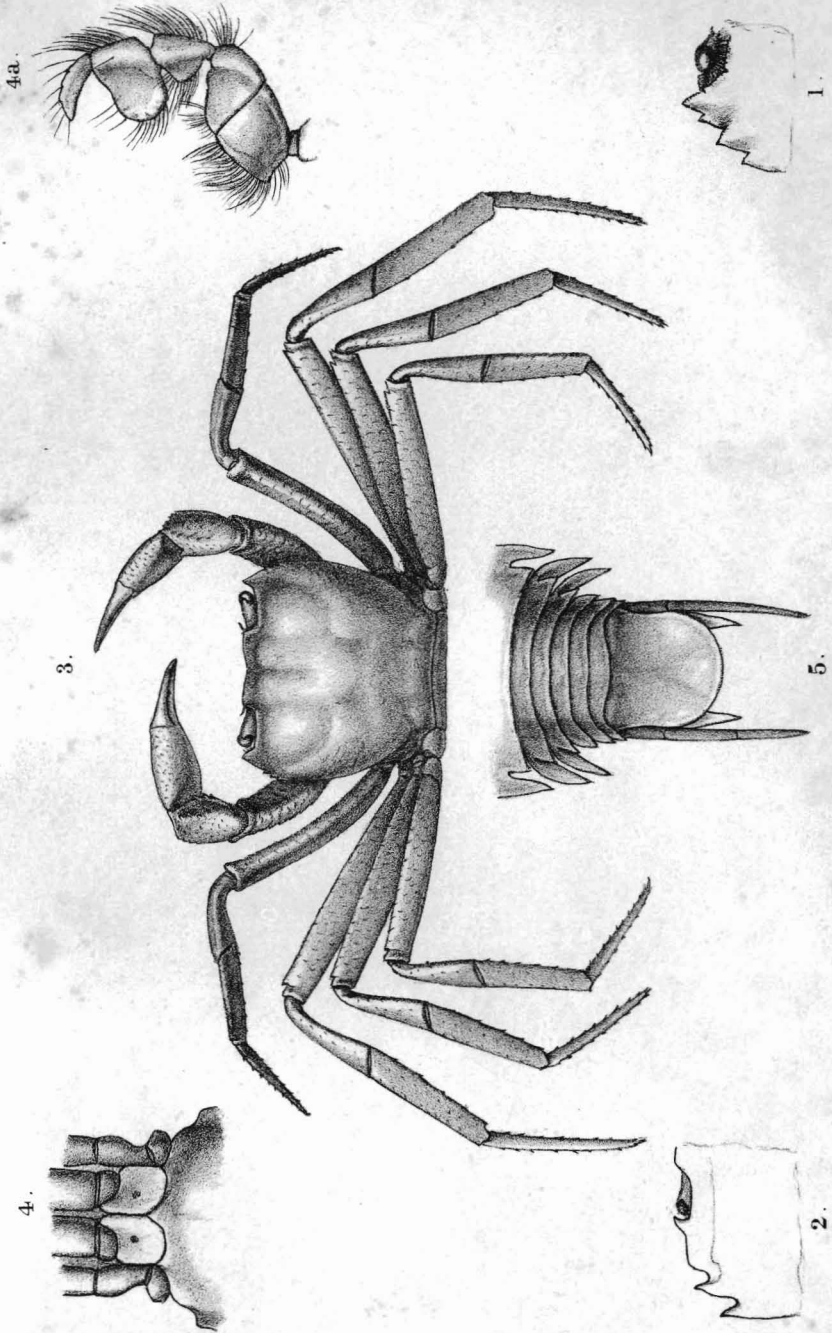
Fig. 4. *Callianassa Martensi*. Frontal region and eyes. 4a. Third maxillipede.

Fig. 5. *Nerocila depressa*. Abdomen and telson.

XXXV.—On new Species of Histeridæ and Notices of others.
By G. LEWIS, F.L.S.

[Plate X.]

THIS is the eighteenth paper of a series on the *Histeridæ* published in this Magazine, and in these various memoirs I have described about 360 new species, and in other publications, during the same period, I have noticed 150 more. In and between the years 1884 and 1897 Herr J. Schmidt described about 230 species, and after the year 1868, the date of the Munich Catalogue, Marseul described about 185, Mr. L. Casey 48, and other authors about 157 species. These figures represent in all 1130 species, which, with those of the Munich Catalogue, 1151, bring the present number of species recognized up to 2281. I have a new Catalogue in MS. which I hope to publish shortly after a few points of synonymy



CRUSTACEA FROM SARAWAK MUSEUM.