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NEW GENERIC NAMES PROPOSED IN THE PRESENT VOLUME.

I.—The Malacostraca of Natal,

by the

Rev. T. R. R. Stebbing, M.A., F.R.S., F.L.S., F.Z.S.

With Plates I–VI.

THE naturalists of Natal are essaying in these "Annals" to give special prominence to the fauna of their own district, instead of leaving it to be merged, or submerged, in the comprehensive but rather indefinite denomination of "South African." While still engaged in discussing the Malacostraca for the whole region, I could not but feel that difficulty might arise from my accepting Mr. Chubb's invitation to treat of the same group in this limited area. Some overlapping would be only too likely to occur among details of one subject in two contemporary channels of publication. On the other hand, the risk of needless repetition would be increased rather than diminished by the employment of two independent authors. Moreover, under present circumstances, not only may students welcome a two-fold opportunity for publishing the results of prolonged research, but editors may be equally pleased at dividing the responsibility.

Two of the species dealt with in the present report are introduced as new, but both have very near relations already known. Less gratitude perhaps is due to the patrons of new species than to those who supply information about forms which have been named without effective description or adequate illustration.

To Mr. H. W. Bell Marley especial acknowledgment should be made of his skill and enthusiasm as a collector. He has shown himself a worthy successor of Dr. Ferdinand Krauss, the highly distinguished pioneer in this field of investigation. The Durban Museum collection has also been enriched by the exertions of its assistants, Messrs. D. R. Boyce and A. L. Bevis, besides others whose names will occur as future opportunity serves.

BRACHYURA GENUINA.

Tribe OXYRRHYNCHA.

Family MAMAIIDÆ.

Annals of the Durban Museum, Vol. II, part I, issued 28th December, 1917.

Genus SCHIZOPHRYS, White.

For this family and genus see Ann. S. Afr. Mus., vol. vi, pp. 290, 292, 1910.

Schizophrys asper (Milne-Edwards).

1834. *Mithrax asper*, Milne-Edwards, Hist. Nat. Crust., vol. i, p. 320.

1838. *M. quadridentatus*, McLeay, Annulosa of S. Africa, p. 58.

1839. *Maja (Dione) affinis*, de Haan, Crust. Japonica, decas quarta, p. 94, pl. G.
M. (Mithrax) dichotoma, Latr., pl. 22, figs. 4.

1852. *Mithrax asper*, Dana, U.S. Expl. Exp., vol. xiii, p. 97, pl. 2, figs. 4a, b.

1867. *M. spinifrons*, A. Milne-Edwards, Ann. Soc. Entom. France, vol. vii, p. 263.

1884. *Schizophrys aspera*, Miers, Crust. Alert, p. 197.

1886. *S. a.*, Miers, Rep. Voy. Challenger, vol. xvii, pt. 49, p. 67.

1895. *S. a.*, Alcock, J. Asiat, Soc. Bengal, vol. lxiv, p. 243 (with synonymy).

1898. *S. a.*, Alcock. Illustr. Investigator, pl. 35, figs. 1, 1a.

1910. *S. a.*, Stebbing, Ann. S. Afr. Mus., vol. vi, p. 292.

A female specimen from Durban, collected by Mr. Bell Marley, has a carapace 28 mm. broad with median length of 30 mm., the surface covered with tubercles large and small and setose. The two-branched horns of the rostrum have each a tooth on the inner margin, not indicated either by de Haan, Dana or Alcock, but Miers mentions that "the variety *spinifrons*, A. M.-Edwards" is "characterized by possessing an accessory spinule on each rostral spine." This small spine or tooth above at the base of the inner branch appears to have been the only specific distinction of *spinifrons* from *asper*. The greatest breadth of the female pleon is 17 mm., which is just exceeded by the length of the smooth slender hand and thumb of the cheliped, the movable finger being 6 mm. long.

Should *Schizophrys spinifrons* be upheld as a distinct species, that should be the name of the Durban specimen.

In *Schizophrys dama* (Herbst) the rostral horns are three-branched, but the third branch or tooth is on the outer side as shown in Herbst's figure and in Alcock's Illustrations of the 'Investigator', Crust, pl. xxxv, figs. 2, 2a, 1898, although Miss Rathburn, Pr. Zool. Soc., 1914, p. 663, writing of "the second or posterior spine on the outer margin of the rostral horn," by some oversight or misprint adds that "it is not shown in the 'Investigator' figure."

Family PARTHENOPIDÆ.

For this tribe and family see Ann. S. Afr. Mus., vol. vi, pt. 4, pp. 283, 292; 1910.

Genus PLATYLAMBRUS, Stimpson.

1871. *Platylambrus*, Stimpson, Bull. Mus. Comp. Zool., vol. ii, p. 129 (Rathbun).

1873. *P.*, A. Milne-Edwards, Crust. Mexique, p. 146.

1895. *P.* (Subgen), Alcock, J. Asiat. Soc. Bengal, vol. lxiv, pt. 2, pp. 259, 261.

1901. *P.*, M. J. Rathbun, U.S. Fish. Comm. for 1900, vol. ii, p. 79.

For this genus (or subgenus of *Lambrus*) Miss Rathbun gives the characters, "Carapace strongly carinated or tuberculated, broadly triangular (considerably broader than long), with rounded sides and a broad but sharp-pointed projecting rostrum; no postocular constriction. Chelipeds with arm and hand straight, sharply trigonal, the edges of these joints, as also outer edge of carpus, being very sharply and stoutly serrated."

In assigning species authors have overlooked or ignored the fact that Herbst uniformly prints *Cancer pransor*, not *prensor* (see Krabben und Krebse, vol. ii, p. 170, pl. 41, fig. 3, 1796, and, with improved definition, vol. iii, pt. 3, p. 33, 1803). On the latter occasion he identifies with it *Parthenope regina*, Fabricius, Suppl. Ent. Syst. p. 353, 1798. Also the species of late years called *Platylambrus carinatus* was instituted by Milne-Edwards as *Lambrus carenatus* (Hist. Nat. Crust., vol. i, p. 358, 1834) and this spelling is retained by his son Alphonse Milne-Edwards in the Crust. Mem., p. 147, 1873.

Platylambrus quemvis, sp. nov. Plate I.

The present species is nearly allied to the other members of the genus, without fitting any of them. From *P. pransor* it is distinguished by wanting the great spine of the infra-orbital lobe; from *P. carenatus* by not having "the single, and very high and sharply cut carina on either branchial region" (Alcock), as well as differences in the hind border of the carapace; from *P. holdsworthii* (Miers) by not having a dentate edge to the fourth joint of the ambulatory legs; from *P. serratus* (Milne-Edwards) by less proportionate width of carapace and the presence of two large teeth behind that which terminates the antero-lateral border; from *P. validus*, de Haan, by the strong

transverse ridges of the pleon, and from de Haan's *P. laciniatus* by differences in the chelipeds.

A deep longitudinal boat-shaped furrow leads from the rostrum to the first of three successive uplifted tubercles, the last of which is in a line with the outstanding process ending the antero-lateral margin. This process is preceded by a convex row of seven tubercles. On the branchial regions irregular rows of tubercles are directed towards the process above-mentioned, and towards the following somewhat smaller process of the postero-lateral margin. A third process is much smaller than the two preceding, but much larger than any which follow. The carapace thus shows much resemblance to that of *Lambrus tumidus*, Lanchester, 1900.

The hand of the cheliped shows near agreement with that which Miss Rathbun describes for *P. serratus*, "outer margin cut into triangular, sharp teeth, of which nine, alternately large and small, are on the hand, teeth of inner margin smaller and more numerous (15 or 16 on the hand)." From the latter carina in our specimen, separated by a deep groove but parallel with it, is a third irregularly toothed, while between the two margins which agree with Miss Rathbun's description runs a series of very small tubercles along the top of the very slightly raised surface. The small ambulatory limbs have little spaced tubercles on the fourth and fifth joints, and like the carapace, pleon, and chelipeds are moderately setose. The pleopods are long and slender. The third segment of the pleon is the widest, slightly wider than the second. The telson has a single dorsal tubercle.

In the mandibles the third joint of the palp is the longest. In the first maxillæ the first joint of the palp is remarkably broad, with a second joint subequal in length but much narrower, tipped with two short spines. The third maxillipeds have the third joint long and broad, with tuberculate edges and a surface row of tubercles near the outer margin; the fourth joint is nearly as broad but much shorter, and has the short palp inserted in a notch of its distal margin.

The carapace of the specimen, a female, measures 15 mm. in length by 20 mm. in breadth. As preserved, the ambulatory limbs are banded with red. The general colour of the living animal recorded by Mr. Bell Marley was "pale stone grey."

Locality. Rock-pool, Durban Bay.

Tribe CYCLOMETOPA.

See Ann. S. Afr. Mus., vol. vi, p. 293, 1910.

Family POTAMONIDÆ.

See reference above.

Genus POTAMONAUTES, McLeay, 1838.

See reference above.

Potamonautes depressus (Krauss).

See the same reference, p. 294.

The specimen which I refer to this species agrees very closely with the description given by Krauss, allowance being made for its being a female, whereas his specimen was a male. The carapace is depressed, the transverse very finely denticulate line behind the front measuring 20 mm., the somewhat emarginate front sloping to a width of 7 mm. at its distal border. The left chela has long slender fingers, denticulate on the confronting margins; those of the considerably larger right chela being like them in this respect, the fingers closing together, not leaving a wide gap as in the male. The colour of the preserved specimen is dark orange on the carapace, orange and pale yellowish on the chelipeds, much of the ambulatory limbs being red.

Locality: Mr. Bell Marley writes that he dug out this crab from a hole in a bank at Eshowe bush, 1,800 feet above sea level. He adds "I think it must be insectivorous by some remains I saw of crickets, etc."

Family XANTHIDÆ.

See Ann. S. Afr. Mus., vol. vi, p. 296, 1910,

Genus LIOMERA, Dana.

1851. *Liomera*, Dana, Sillimans J. Sci. & Arts, Ser. 2, vol. xii, p. 124.
1898. *L.*, Alcock, J. Asiat. Soc. Bengal, vol. 67, pt. 2, pp. 72, 87.
1907. *L.*, Stimpson, Smithson. Misc. Coll., vol. 49, p. 38.

Liomera cinctimanus (White).

1846. *Carpilius cinctimanus*, White, Ann. Nat. Hist. (this unpaged reference given by White could not be traced).

1847. *C. c.*, White, Crust. in Brit. Mus., p. 14.

1847. *C. c.*, Jukes' Voy. H.M.S. *Fly*, App. 8, vol. ii, p. 336, pl. 2, fig. 3.

1850. *C. c.*, Adams & White, Zool. Samarang. Crust, p. 37, pl. 7, fig. 4.

1852. *Liomera lata*, Dana, U.S. Expl. Exp., vol. xiii, p. 161, pl. 7, fig. 6a–d.

1893. *Carpilodes cinctimanus*, Henderson, Tr. Linn. Soc. London, ser. 2, vol. v, pt. 10, p. 354.

1907. *Liomera lata*, Stimpson, Smithson. Misc. Coll., p. 38 (with footnote correction to *Liomera cinctimana* by the editor, Miss M. J. Rathbun).

Several other references, but not the earliest, are supplied by Alcock. The dark band on the palm of the chelipeds, to which the specific name refers, is absent from the figure supplied by Dana, as it is from our Durban specimen. Henderson explains that it is sometimes absent from young specimens. The account given by Mr. Bell Marley of the freshly captured example, found beneath large stones, describes the colour as "bright red, edges of carapace white, claws and legs banded with two shades of red." To this it may be added that the fingers of the chelipeds are brownish-black with white tips, while the narrow fingers of the ambulatory legs are in the proximal half red, the distal half white, with the margins horn-coloured, in near agreement with Henderson's account.

The third maxillipeds have the fourth joint not half as long as the third, quadrangular, broader than long.

The pleon of the female is seven-segmented, narrow, the first segment the widest, the seventh the longest, with apex very obtuse. The carapace of Mr. Bell Marley's specimen is 21 mm. wide, 12 mm. long. A larger female example obtained by Mr. D. R. Boyce has a width of 37·5 mm. and length 22 mm.

Genus ATERGATIS, de Haan.

See Ann. S. Afr. Mus., vol. vi, pt. 4, p. 296, 1910.

For *Lophactæa picta*, A. Milne-Edwards, 1869, see M.-Edw. Le Bouvier, Crust. Décap. Travailleur et Talisman, p. 101, pl. 1, figs. 7–11, pl. 17, figs. 8–12, 1900 (seemingly identical with the following species).

*Atergatis floridus (Linn). Plate II.

Under the reference given above to the Annals of the South African Museum it will be seen that I have there accepted Miss Rathbun's ruling that this species should be called *A. ocyroe* (Herbst). That, I suppose, takes it for granted that Montagu's *Cancer floridus* is identical with the species so named by Linnaeus. But if we accept de Haan's opinion that the Linnean species is the same as the *Cancer floridus* of Rumph, then that highly appropriate name will anticipate Herbst's *ocyroe*. Rumph regards it as equivalent to the Malay vernacular name Cattam Bonga, that is, Flower-crab, so called because it has the most beautiful carapace that there is, as if it were bestrewn with flowers.

When the several figures and descriptions referred to this species are compared, the differences, whether due to natural variation or some other cause, make its identification rather perplexing.

In defining the genus, Alcock says that the front of the carapace has "its edge shaped like cupid's bow (*i.e.*, not bilobed)." But Herbst gives "fronte subtruncata medio sulcata," which agrees with our specimen. This specimen attracted attention by the elegant symmetry of the markings, dark brown on an orange ground as preserved, but according to Mr. Bell Marley in the fresh state the ground is greenish-yellow with dark claret markings. Herbst observes that what gives the details of the pattern an extremely beautiful appearance is that each blotch and spot is surrounded by a fine white line. This is the case in the Natal specimen, though I have not known how to show it in the black and white drawing, nor has Herbst done so in his coloured figure. It is difficult to believe that Dana's species (U.S. Expl. Exp., vol. xiii, p. 159, pl. 7, fig. 4) can belong here with "colour deep green, passing into and covered with a network of white or yellowish-white." He is himself doubtful on the point. Stimpson says that living specimens from Loo Choo "are of a dark yellowish-brown color above, with reticulating cream-colored blotches."

In the specimen from Natal, on the gastric region a central spot is prettily surrounded by six similar spots. The middle of the carapace is occupied by a large artistic design, followed by an ovate blotch, the rest of the pattern being only in a general way symmetrical. But the

* Mr. Bell Marley has called my attention to a mistake in the colour-description of *Atergatis roseus*, volume i, p. 437. The colours referred to under *Eurycarcinus natalensis*, p. 436, rightly belong to *Atergatis roseus*, and those referred to under the latter belong to another species. [Editor].

pleon, distinctly seven-jointed and rather narrow in the female, the limbs and the third maxillipeds, carry on the scheme of coloration by numerous spots variously disposed. The fingers of the equal chelipeds are very dark with white teeth; those of the walking legs are coated above and below with a dark felt which leaves bare a curved unguis; the three preceding joints are smooth, broad, and sharp-edged.

The three-jointed palp of the mandible by its colour contrasts with the whiteness of the trunk. The inner plate of the first maxilla is very narrow. The fourth joint of the third maxillipeds is less than half the length of the third, but distally slightly broader.

Carapace 29 mm. broad by 21 mm. long.

Mr. Bell Marley recording this specimen from Isipingo Beach, near Durban, notes that it burrows in sand very quickly.

Genus XANTHO, Leach.

1814. *Xantho*, Leach, Edinburgh Encyclopædia, vol. vii, p. 430.

Xantho hydrophilus (Herbst).

1790. *Cancer hydrophilus*, Herbst, Krabben und Krebse, vol. i, pt. 8, p. 266, pl. 21, fig. 124.

I have already discussed the synonymy of this species in the Ann. S. Afr. Mus., vol. vi, pt. 1, p. 7, 1908. See also vol. vi, pt. 4, p. 297, 1910.

Now I have to acknowledge a specimen obtained by Mr. Bell Marley, which is nearly of the same size as that figured by Herbst, and also exhibits remarkable agreement with it in coloration, having a large red blotch on the gastric region, with the rest of the carapace uniformly light, described by Mr. Bell Marley as white in the living state. The specimen is a male, with the third, fourth and fifth segments of the pleon coalesced, but their limits well defined.

Xantho quinquedentatus, Krauss.

1843. *Xantho 5-dentatus*, Krauss, Südafrik, Crust., p. 30, pl. 1, fig. 3, *a–c*.

A prettily marked specimen agrees well with the figure and description given by Krauss. It is, however, a female laden with eggs which, as preserved, are a bright red. The width of the carapace at the penultimate tooth is 20 mm., the median length 13 mm. Krauss gives, apparently for the male, breadth 7·2 lines, length 5·3 lines. The

hindmost tooth of the antero-lateral margin is very small and less prominent than the penultimate. The fingers of the chelipeds are dark with white tips, but so far differing from Krauss's account that they are not sharp.

Miers notes this species doubtfully as a synonym of *Leptodius exaratus* (Milne-Edwards). Mr. Bell Marley sends it from Durban, where also it has been taken by Mr. D. R. Boyce.

Genus PILUMNUS, Leach.

Pilumnus xanthoides, Krauss, 1843.

See Ann. S. Afr. Mus., vol. vi, p. 301, 1910, and vol. xv, p. 57, 1915.

This species has been already recorded as taken at Durban by Mr. H. W. Bell Marley. It has been taken in the same locality by Mr. D. R. Boyce. The large pad of felt on the outer side of the large hands of the chelipeds is a notable feature. The ambulatory limbs are very short; the two anterior teeth of the antero-lateral margins of the carapace are very obtuse.

Family PORTUNIDÆ.

Genus SCYLLA, de Haan, 1833.

Scylla serratus (Forskal), 1775.

For this family, genus, and species, see Ann. S. Afr. Mus., vol. vi, pp. 305, 308; 1910.

Mr. Bell Marley has favoured me with a large male specimen from Durban Bay, and describes the colouring as "blackish-green, with brown and white markings and spots."

Tribe CATOMETOPA.

See Ann. S. Afr. Mus., vol. vi, pt. 4, p. 312, 1910.

Family GRAPSIDÆ.

Genus SESARMA, Say, 1817.

For the family and genus see Ann. S. Afr. Mus., vol. vi, pt. 4, pp. 316, 320; 1910.

Sesarma quadratus (Fabricius), 1798.

See reference as above, p. 321.

Two female specimens carrying numerous ova were obtained by Mr. D. R. Boyce in Durban Bay.

Sesarma tetragonus* (Fabricius), 1798.

See reference as above, p. 321.

The length and breadth of a female specimen measured between the antero-lateral angles and from front to posterior margin were just equal, 30 mm., the breadth of the sinuous front from orbit to orbit being 18 mm. The sharp tooth behind the antero-lateral projects a little beyond it, thus at that point making the breadth of the carapace slightly greater than its length. The pleon of the female is very broad, reaching 25 mm. in the third and fourth segments, but the telson abruptly diminishes to a width of 5 mm., equal to its length.

Locality. The specimen was taken in Durban Bay by Mr. D. R. Boyce.

Genus PARASESARMA, de Man.

1895. *Parasesarma* (Subgen), de Man, Zool. Jahrb., vol. ix.
1897. *P.*, Rathbun, Pr. Biol. Soc. Washington, vol. xi, p. 90.
1916. *P.*, Tesch, Zool. Med. Mus. Leiden, pt. 3, pp. 127, 235.

Parasesarma catenatus (Ortmann).

1897. *Sesarma catenata*, Ortmann, Zool. Jahrb., vol. x, p. 334, pl. 17, fig. 9, a, b.
1905. *Sesarma catenatum*, Stebbing, Mar. Invest. S. Afr., vol. iv, p. 44 (S.A. Crust., pt. 3).
1910. *S. c.*, Stebbing, Ann. S. Afr. Mus., vol. vi, p. 322, (S.A. Crust, pt. 5).
1916. *Sesarma (Parasesarma) catenata*, Tesch. Zool. Med. Mus. Leiden, pt. 3, pp. 141, 220.

This species I have already discussed at some length in 1905. Characters for distinguishing *Parasesarma* from the other subdivisions of the old genus *Sesarma* are supplied in Dr. Tesch's elaborate treatise.

The specimen now examined was collected by Mr. H. W. Bell

* Misprinted *tetragonum*, in vol. i, p. 438. [Editor].

Marley at Durban. The wide gape between the fingers of the chelæ is extensively occupied by dense fringes of hair. The male telson is longer than broad.

Genus PERCNON, Gistel, 1848.

See Ann. S. Afr. Mus., vol. vi, p. 324, 1910.

Percnon planissimus (Herbst).

See reference given above.

Specimens of this species have been obtained from Durban Bay by Mr. D. R. Boyce, and also by Mr. Bell Marley who describes the colouring as "chocolate, legs banded yellow, green lines on back and legs."

Family OCYPODIDÆ.

See Ann. S. Afr. Mus., vol. vi, pt. 4, p. 325, 1910.

Genus OCYPODE, Fabricius.

See Ann. S. Afr. Mus., vol. vi, p. 325, 1910.

Ocypode urvillei, Guérin.

1830–1838. *Ocypode urvillii* (on plate), Guérin, Voy. Coquille, pl. 1, fig. 1, *Ocipode urvillei* (in the later text), Zool. vol. ii, pt. 2, p. 9.

1837. *Ocypoda urvillii*, Milne-Edwards, Hist. Nat. Crust., vol. ii, p. 49.

1842–1853. *Ocypoda pallidula*, Hombron and Jacquinot, Voy. Astrolabr and Zélée, pl. 6, fig. 1, a.

1852–1855. *O. p.*, Dana. U.S. Expl. Exp., vol. xiii, p. 324, pl, 20, fig. 1, a–c.

1897. *Ocypoda urvillei*, Ortmann, Zool. Jahrb., vol. x, pp. 360, 366, pl. 17, fig. 10.

The Durban specimen, which seems to me to answer the figures and description above cited, has a breadth of carapace between the anterior angles of 14 mm., with a length of about 11 mm. The stout eyes have a very small distal process carrying a setule. The surface of the carapace is finely granular, as is that of the large cheliped on the left,

of which the fourth joint has a dentate margin, the grooved fingers have the opposing margins serrate and the tips pointed, and the upper and lower margins of the hand serrate. The ambulatory legs have the scale-like markings noted by Guérin.

The specimen, a male, was obtained by Mr. T. H. Dale.

Genus MACROPHTHALMUS, Latreille.

1829. *Macrophthalmus*, Latreille, Le Règne Animal, vol. iv, p. 44.
1835. *M.*, de Haan, Crust. Japonica, decas 2, pp. 26, 54.
1852. *M.*, Milne-Edwards, Ann. Sci. Nat. ser. 3, vol. xviii, pp. 155–159.
1852. *M.*, Dana, U.S. Expl. Exp., vol. xiii, p. 312.
1858. *M.*, Stimpson, Pr. Ac. Sci. Philad, vol. x, p. 96 (42).
1867. *M.*, A. Milne-Edwards, Ann. Soc. Entom. France, vol. vii, p. 285.
1887. *M.*, de Man, J. Linn. Soc. London, vol. xxii, pt. 2, p. 122.
1894. *M.*, Ortmann, Zool. Jahrb., vol. vii, p. 744–747.
1900. *M.*, Alcock, J. Asiat. Soc. Bengal, vol. lxix, pt. 2, p. 375.
1902. *M.*, de Man, Abh. Senekenb. Naturf. Ges. vol. xxv, p. 492.
1903. *M.*, Borradaile, Mald, Laccadive Crust., vol. i, pt. 4, p. 433.
1906. *M.*, Laurie, Rep. Pearl Fishery, p. 427.
1906. *M.*, M. J. Rathbun, U.S. Fish Comm. for 1903, pt. 3, p. 334.
1910. *M.*, M. J. Rathbun, Bull. Mus. Com. Zool., vol. lii, p. 306.
1913. *M.*, M. J. Rathbun, Pr. U.S. Mus., vol. xliv, p. 618.
1914. *M.*, M. J. Rathbun, Pr. U.S. Mus., vol. xlvii, p. 82.
1915. *M.*, Kemp, Mem. Ind. Mus., vol. v, p. 228.

Several other references may be gleaned from the above by anyone in a position to give a clear synopsis of this interesting genus. The shape of the carapace with the arrangement of the three antero-lateral teeth and the relative length of the ocular peduncles offer trustworthy characters. The fringing and coating of various parts with setæ are perhaps not so much to be depended on. The difficulties of the subject are illustrated by the fact that Alcock makes *M. inermis*, A. Milne-Edwards, a synonym of *M. convexus*, Stimpson, while Miss Rathbun considers them quite distinct.

Macrophthalmus grandidierii, A. Milne-Edwards. Plate III.

1867. *Macrophthalmus grandidierii*, A. Milne-Edwards, Ann. Soc. Entom. France, vol. vii, p. 285.

1868. *M. g.*, A. Milne-Edwards, Arch. Mus. d'Hist. Nat. Paris, vol. iv, p. 84, pl. 20, figs. 8–11 (Rathbun).

1914. *M. brevis* (Herbst), M. J. Rathbun, Pr. U.S. Mus. vol. xlvii, p. 83.

1916. *M. grandidieri*, Tesch, Zool. Med. Mus. Leiden, vol. i, pp. 150, 153, 166, pl. 6, figs. 3a, b.

The present specimen agrees so closely with the description given by A. Milne-Edwards in 1867 for his species from Zanzibar that it must, I think, be conspecific. Miss Rathbun, however, in instituting *M. sandakani*, a new species from Borneo, makes *M. grandidierii* a synonym of *M. brevis* (Herbst), relying, it seems, largely on the fact that the Borneo species has "three granulated tubercles in a longitudinal row on the branchial region." It is true that such a series is not mentioned by Herbst, but his figure (pl. 60, fig. 4) appears definitely though rudely to indicate its presence. The Zanzibar specimen is expressly declared to be entirely smooth, thus agreeing with our own in being only microscopically punctate. There are other difficulties, as Herbst says that the movable finger has a strong tooth on the middle of the inner margin, though his figure does not show it, and he neither mentions nor figures the broad tooth-like elevation with granulate margin on the middle of the thumb, which is seen in our specimen and no doubt answers to the "large conical tooth" described by Milne-Edwards. That author makes no allusion to Herbst's species, but names de Haan's *M. dilatatus* among the many from which he discriminates *M. grandidierii*.

Between the first antero-lateral teeth the carapace from Durban measures 23 mm., but 25 mm. between the apices of the larger second teeth which overlap the first. The small third pair of teeth were invisible until the thick fringe of setæ was removed. To the rear not far from the margin occurs a small pimple on the right side only. The median length is 10 mm. in a straight line, without regard to the downward slope of the inter-orbital front and that towards the hind margin. The carapace agrees with Herbst's description of *M. brevis* in having on the front half on both sides (two transverse) fold-like elevations and depressions, but his further remark, that the middle of the carapace has considerable elevations, the hinder of which is granular, does not apply. The lower margin of the orbit for some distance from the inter-orbital front is tuberculate and visible in dorsal aspect, but becomes smooth and disappears as it slopes towards the first antero-lateral tooth, which the eye in repose just outstrips, without reaching the large second tooth.

The great disparity between the length and breadth of the carapace may account for some strange features in the mouth-organs, the great breadth of the third joint in the third maxillipeds and of the outer plate in the first maxillæ, but especially the obstinate folding over of the massive terminal part of the endopod in the first maxillipeds. The vibratory lamina of the second maxillæ is normal, which only needs mention, because it is omitted in de Haan's figures of the mouth-organs of this genus.

The hands of the chelipeds are long and strong, with a regular line of granulations on the outer surface, a large strip of the inner being felted, with a pearly tubercle near the wrist; the movable finger has at the base a tooth covered by the felt which conceals its depressed inner border.

Locality: Durban. The specimen was obtained by Mr. Bell Marley. Specimens collected by Mr. A. L. Bevis have since been sent me by Mr. Chubb.

Genus UCA, Leach.

1814. *Uca*, Leach, Edinb. Encycl., vol. vii, p. 430.
1908. *Uca*, Stebbing, S. Afr. Crust., pt. 3 p. 39 (with synonymy).
1900. *Uca*, M. J. Rathbun, Pr. Washington Ac. Sci., vol. ii, p. 134.
1900. *Uca*, M. J. Rathbun, American Naturalist, vol. xxxiv, no. 403, p. 585.
1901. *Uca*, M. J. Rathbun, U.S. Fish. Comm. for 1900, vol. ii, p. 6.
1902. *Uca*, M. J. Rathbun, Pr. Washington Ac. Sci., vol. iv, p. 275.
1904. *Uca*, M. J. Rathbun, Crust. N.W. America (Harriman Exp.), p. 190.
1910. *Uca*, M. J. Rathbun, Men. Ac. Roy. Danemark, ser. 7, vol. v, p. 322.
1910. *Uca*, M. J. Rathbun, Bull. Mus. Comp. Zool., vol. lii, p. 305.
1910. *Uca*, M. J. Rathbun, Pr. U.S. Mus., vol. xxxviii, p. 550.
1913. *Uca*, M. J. Rathbun, Pr. U.S. Mus., vol. xliv, p. 615.
1914. *Uca*, M. J. Rathbun, Pr. U.S. Mus., vol. xlvii, p. 126.
1914. *Uca*, M. J. Rathbun, Pr. Zool. Soc. London, p. 661.
1914. *Uca*, A. S. Pearse, Smithsonian Report for 1913, p. 415 (Habits of Fiddler Crabs).
1907. *Gelasimus*, Stimpson, Smithson. Misc. Coll., vol. xlix, p. 104.
1915. *G.*, Kemp. Mem. Ind. Mus., vol. v, p. 221.

After all the pains devoted to this genus by de Man, Ortmann, Alcock, Miss Rathbun, and others, an unenviable task awaits the investigator qualified and willing to examine the claims of its numerous nominal species. After noting "The common practice of using the larger cheliped of the male for the discrimination of the species," with the caution that this organ is apt to change greatly with advancing age, the indefatigable Alcock, adds, "I must also confess here that the synonymy of species has defied me." With this confession, as will be seen, I can heartily sympathize.

The mouth-organs show one or two peculiarities to which attention may be directed. The mandibles are comparatively small, with the third joint of the palp rather long. The first maxillæ have the inner plate of unusual size, broader than long, much broader than the outer plate, the rounded summit surmounted by stiff spines of which the central are the longest. I suspect that de Haan's figure represents only the thick basal portion of this plate, as in my first dissection I found it broken precisely in that manner. The two-jointed palp is weak. The second maxillæ have the large chitinous bow, from which the two lower plates are produced, closely fringed with very long setæ. The vibratory lamina, omitted by de Haan, is very fragile. In the first maxilliped the large joint is flat-topped, the rest of the endopod long and folded. In the second maxillipeds the long fourth joint, besides the fringe of long setæ, has, on the distal portion a special armature of setæ varying in length but with little saucer-like tips suggestive of some adhesive function. In the species figured the terminal joint has a similar apical group, but this if present was inconspicuous in our *U. arcuatus*. The third maxillipeds are well known for the great size of the third joint, nearly as broad as long, and about three times as long as the fourth joint.

The stomach of *Uca bellator* (Adams and White) is described by Nauck in his dissertation, "Das Kaugezust der Brachyuren," p. 21.

Uca arcuatus (de Haan).

1835. *Ocypode (Gelasimus) arcuata*, de Haan, Crust. Japon, decas 2, pp. 26, 53, pl. 7, fig. 2, ♂, and pl. B (mouth-organs).

1852. *Gelasimus arcuatus*, Milne-Edwards, Ann. Sci. Nat., ser. 3, zool., vol. xviii, p. 146, pl. 3, figs. 8, 8a.

1905. *Uca arcuata*, Stebbing, S. Afr. Crust., pt. 3, p. 40 (with synonymy).

To these references I should be inclined to add *Gelasimus vocans*, Milne-Edwards, in the work above cited, p. 145, pl. 3, fig. 4, which

exhibits a large chela just like one received from Durban in connection with the species now under consideration. Milne-Edwards gives the reference to Herbst for this *Cancer vocans minor?* as plate 1, fig. 1, instead of fig. 10. Figures 1–7 on Herbst's first plate illustrate his quotation from Réaumur. His figure of *C. v. minor* does not show a very narrow front. The specimens from Durban here referred to de Haan's species have the narrow front combined with a massive chela, which is evidently variable in details of structure, one of the specimens showing the remarkable widening of the apex of the fixed finger which Milne-Edwards has figured for his *U. vocans*. Apparently there is a similar development in *U. cultrimanus* (Adams and White).

Uca lacteus (de Haan). Plate IV.

1835. *Ocypode (Gelasimus) lactea*, de Haan, Crust. Japon. decas 2, pp. 26, 54, pl. 15, fig. 5.

1910. *Uca lactea*, Stebbing, Ann. S. Afr. Mus., vol. vi, pt. 4, p. 327.

Here the comparatively broad front is deflected to its apex without intermediate constriction. When dealing with the single specimen from Durban Bay sent me by Mr. Bell Marley I was tempted to name a new species by the armature of the fingers in the great left cheliped. But other specimens, some of rather larger size, collected by Mr. Boyce, and subsequently received from Mr. Chubb, showed that no dependence could be placed on these minute characters. In de Haan's figure the immovable finger projects beyond the movable, but that I take to be a casual variation.

Uca annulipes (Milne-Edwards).

1837. *Gelasimus annulipes*, Milne-Edwards, Hist. Nat. Crust., vol. ii, p. 55, *G. lasima annulipes*, in expl. pl. 18, figs. 10–13.

1887. *G. a.*, de Man, J. Linn. Soc. London, vol. xxii, no. 137, p. 118, pl. 8, figs. 5–7.

1897. *Uca annulipes*, Ortmann, Zool. Jahrb., vol. x, p. 354.

1900. *Gelasimus annulipes*, Alcock, J. Asiat. Soc. Bengal, vol. lxix, pt. 2, pp. 352, 353 (with synonymy).

1912. *G. a.*, A. S. Pearse, Philippine J. Sci., vol. vii, p. 113 (habits).

1915. *G. a.*, Kemp, Mem. Ind. Mus., vol. v, p. 221.

In this species de Man says, "The inferior orbital margin is simple in the male; but in the female it is bordered, at the bottom of the orbits, by an accessory row of small acute granules, close and parallel

to it, thus resembling *G. forceps*, Milne-Edwards. This character was hitherto unknown." Alcock also says, "in the female only there is a short row of granules inside of and parallel with the lower border of the orbit."

Numerous specimens have been obtained by Mr. D. R. Boyce and Mr. H. W. Bell Marley at Durban. The latter assiduous collector has noted the colouring of various specimens; in the male, carapace black with dots and lines, large claw on the right orange and white; carapace black and white, legs paler, large claw missing; carapace black with pale blue dots, eyes pale grey, large claw on right vermilion and white; carapace nearly all blue, large claw on left, bright red, other legs red and black; in the female, carapace black and blue with margin of white, legs red and marked dark; carapace black with red; carapace mottled brown, legs brown and black; carapace black and blue with grey.

Genus DOTILLA, Stimpsom.

1858. *Dotilla*, Stimpson, Pr. Ac. Philad., vol. x, p. 98 (44).

1900. *D.*, Alcock, J. Asiat. Soc. Bengal, vol. lxix, p. 363 (with synonymy).

1903. *D.*, Nobili, Bull. Mus. Torino, vol. xviii, no. 447, p. 22, and no. 452, p. 20.

1907. *D.*, Stimpson, Smithson. Misc. Coll., vol. xlix, p. 101.

1914. *D.*, Rathbun, Pr. U.S. Mus., vol. xlvii, p. 83.

1915. *D.*, Kemp, Mem. Ind. Mus., vol. v, p. 222.

1915. *D.*, R. D. Laurie, J. Linn. Soc. London, vol. xxxi, pp. 407, 467.

In the illustrated edition of the Règne Animal, figures 3, 3a and 3b, on pl. 18, profess to be copied from Savigny's Egypte, Crust. pl. 4, fig. 4. In fact they are from his pl. 1, fig. 3. De Haan in 1833, when defining *Doto* as a subgenus of *Ocypode*, used a preoccupied name, and from want of specimens was forced, as he explains, to borrow the characters from the figures given by Savigny on the plate which he quotes correctly. Hence de Haan's figures of the mouth-organs have no independent value. In Savigny's beautiful drawings the palp of the mandible is rather indefinite, as though the artist could not make up his mind whether it was two-jointed or three-jointed. In the species here dealt with it is not even two-jointed, and folds closely down upon the cutting edge of the membranaceous trunk.

Dotilla clepsydra, sp. nov. Plate V.

The name *clepsydra* is chosen to denote the agreement between this species and Alcock's *D. clepsydradactylus* in regard to the chelipeds, of which he writes, "The fingers are much longer than the palm; in the adult male they are extremely slender, and each has a large tooth arranged so that when the tips of the fingers are closely opposed these two teeth meet and leave an hour-glass-shaped space between the closed fingers" (loc. cit., p. 367). The second sentence is emphasized by italics and agrees with fig. 2 on pl. 63, Illustr. Zool. Investigator, published in 1902. On further testing the agreement, however, I found that it did not extend to the fourth joint of the chelipeds, since Alcock states that in his species they "have no spine on the arm." By spine is evidently intended the proximal tooth or process which Dr. de Man finds in the adult male of the typical species *D. sulcatus* (Forskål), though wanting in the female (Zool. Engebn. in Nederland. Ost. Indien, vol. ii, p. 311, 1892). On a character variable between the two sexes of the same species reliance could scarcely be placed for distinction between species and species, if it stood alone. This is not the case here. In the Durban specimen the surface of the carapace agrees more nearly with Alcock's *D. affinis*, especially in respect of the large distal area, a triangle with convex sides and the base rectilinear; and, besides differences in the tympana, the fingers of the ambulatory limbs show a marked divergence, being here all nearly of the same size, while in Alcock's species those of the fifth peræopods are much longer than those of preceding pairs.

As is well known, the third maxillipeds in this genus have a boat-like bulge, formed by the large third joint and larger fourth, the latter almost concealing the last three setose joints, and helping to conceal the slender exopod which is devoid of a flagellum. The close packing of other mouth-organs within the boat adds something to the difficulty of their disentanglement.

In the mandibles the very large single-jointed palp by its curvature and notching implies a small basal joint coalesced; it carries long feathered setæ on its outer margin proximally, followed by rows of unequally short setæ of minutely battledoor shape. Similar setæ of various sizes occur also on the large middle lamina of the second maxilla, and fringing the terminal joints of the second maxillipeds. The part which seems to represent the three terminal joints in question is broader than either of the two preceding joints and a little longer than both combined; this compact mass has an oblique line perhaps marking the area of the finger.

The carapace of the larger specimen measured about 8·5 mm. in length, by 12 mm. in breadth.

Locality: Durban Bay, collected by Mr. D. R. Boyce.

Tribe OXYSTOMATA.

Family CALAPPIDÆ.

Genus CALAPPA, Fabricius, 1798.

For the tribe, family, and genus, see Ann. S. Afr. Mus., vol. vi, pt. 4, p. 333, 1910.

Calappa spinosissimus, Milne-Edwards.

1837. *Calappa spinosissimus*, Milne-Edwards, Hist. Nat. Crust., vol. ii, p. 106.

1896, *C. s.*, Alcock, J. Asiat. Soc. Bengal, vol. lxv, p. 144.

Alcock distinguishes this species from *C. hepaticus* (Linn.) chiefly by "the teeth on the antero-lateral border of the clypeiform expansions" being "in the form of sharp upcurved spines," by the presence of three spines on the postero-lateral border of those expansions, and by some of the tubercles on the outer surface of the palm in the chelipeds having sharp spinous points. All these characters are present in the smaller specimens procured by Mr. Bell Marley in Durban Bay. He notes as to one that the colour was "greyish, legs yellow, slightly coral-spotted," of another that it was "darker, only without spots," and that the specimens were obtained "near water's edge, among empty shells, in sandy depressions." One of the specimens had a carapace about 17 mm. long, by 27 mm. broad, in another the measurements were 15 by 23 mm., thus considerably less than the length of 15 lines recorded by Milne-Edwards. But a specimen found "among rocks," "dark grey, legs yellow," is about 32 mm. long by 41 mm. broad. That it has no sharp spines on the cheliped may be due to attrition.

MACRURA ANOMALA.

Tribe PAGURIDEA.

Family PAGURIDÆ.

For this tribe and family see Ann. S. Afr. Mus., vol. vi, pt. 4, pp. 349, 350; 1910.

Genus PAGURUS, Fabricius, *sensu restricto.*

Reference as above.

Pagurus euopsis,* Dana.

1852. *Pagurus euopsis*, Dana, U.S. Expl. Exp., vol. xiii, p. 452, pl. 28, figs. 6, a–c.

1905. *P. e.*, Alcock. Indian Decap. Crust., pt. 2 fasc 1, pp. 80, 86, pl. 9, fig. 2 (with synonymy).

Two specimens from Durban, sent me by Mr. Bell Marley, agree well with the figures and descriptions of this species furnished by Dana and Alcock. Both authors call attention to the character that "the joints of the distal half of the antennal flagellum have the antero-internal angle produced." Also both mention the broad maroon stripe across the merus and carpus of the second and third peræopods, which appears to be very persistent in spirit. Dana remarks that the chelipeds are only "moderately unequal," and Alcock points out that this is the case "especially in the female" a remark not specially confirmed by the Durban female specimen, which Mr. Bell Marley informs me inhabited the shell of *Lotorium olearium*. In the male specimen the very hirsute left chela is much darker than the right. Of one large specimen Mr. Bell Marley notes its springing in and out of the covering shell when alarmed, and that the pleon was "banded deep red."

Pagurus deformis, Milne Edwards.

1836. *Pagurus deformis*, Milne-Edwards, Ann. Sci. Nat., ser. 2, vol. vi, p. 272, pl. 14, fig. 2 (Alcock), pl. 13, fig. 14 (M.E. in next reference), pl. 13, fig. 4 (Miers).

1837. *P. d.*, Milne-Edwards, Hist. Nat. Crust., vol. ii, p. 222.

1874. *P. d.*, Miers, Zool. Erebus and Terror, Crust., p. 3 (with *Pagurus caripes* on pl. 2, fig. 3, the plate of much earlier date but hitherto unpublished).

1905, *P. d.*, Alcock, Indian Decap. Crust., pt. 2, fasc. 1, pp. 81, 88, pl. 9, fig. 4 (with synonymy).

The specimen from Durban, for which I am indebted to Mr. Bell Marley, was occupying a land shell (*Livinicia kraussii*) he informs me. It agrees well with the description of the species given by Milne-Edwards. The eyes are short and stout, widest at the cornea. The

* Misprinted *enopsis*, vol. i, p. 439. [Editor].

large left chela has the character on which Alcock lays stress, "the inner edge of the upper surface of its dactylus forms an upstanding crenulated crest," and the second and third peræopods are even more characteristic by their difference from those on the right, in that the upper margins of the last two joints form sharp ridges, by which especially in the third pair their sides to the rear show a deep furrow, while dorsally they are flattened.

A specimen of this species from the same locality has been obtained by Mr. D. R. Boyce.

PAGURUS VARIPES, Heller.

1861. *Pagurus varipes*, Heller, Sbe. K. Akad. Wien, vol. xliv, p. 244, pl. 1, pl. 2, figs. 2, 3.

1905. *P. v.*, Alcock, Indian Decap. Crust., pt. 2, fasc. 1, pp. 81, 90, pl. 9, fig. 7 (with synonymy).

A female specimen from the Durban Museum answers well to Heller's description and figures of this species, in regard to the eyes, the markings of the carapace which he describes in detail, the quadrate sixth segment of the pleon with its median longitudinal furrow, and the armature of the large left cheliped. The second and third peræopods on the left are without the sharp-edged flat-topped character of the two terminal joints so conspicuous in *P. deformis*, but the third peræopod has the lateral carina and groove as shown for those joints in Heller's pl. 2, fig. 3.

PAGURUS MEGISTOS (Herbst).

See Ann. S. Afr. Mus., vol. vi, p. 21, 1908.

A small specimen of this handsome species was collected by Mr. D. R. Boyce from Durban Bay. The *Strombus* in which it was lodged only yielded for examination the chelipeds and ambulatory limbs.

GENUS DIOGENES, Dana.

See Ann. S. Afr. Mus., vol. vi, p. 353, 1910.

DIOGENES COSTATUS, Henderson.

1893. *Diogenes costatus*, Henderson, Tr. Linn. Soc. London, ser. 3, vol. v, p. 418, pl. 39, figs. 7, 8.

1905. *D. c.*, Alcock, Indian Decap. Crust., pt. 2, pp. 61, 70, pl. 6, figs. 7, 7a.

1908. *D. c.*, Stebbing, Ann. S. Afr. Mus., vol. vi, pt. 1, p. 24.

Small specimens occupying shells of *Natica mamilla*, collected from Durban Bay by Mr. A. L. Bevis and Mr. D. R. Boyce, are in near agreement with the available accounts of this species. But while Henderson writes that the ophthalmic scales have "merely two or three spinules towards the apex," I find the distal margin fringed with six teeth in a very small specimen. The large left cheliped has all the borders of its fourth joint serrated, as noted by Alcock, but neither author shows the great comparative length of the laterally grooved fingers in the second and third peræopods, a feature attracting attention in our specimens, along with the close pad on the convex border of the preceding joint, especially noticeable in the limbs of the left side. Faint longitudinal streaks of red have been retained on these legs.

Genus CLIBANARIUS, Dana, 1852.

See Ann. S. Afr. Mus., vol. vi, pt. 4, p. 352, 1910.

Clibanarius virescens (Krauss).

See Reference above given.

Specimens of this little species, obtained by Mr. Dale in Durban Bay, have been submitted to me by Mr. Chubb. They fully agree with the description given by Krauss, except for some alterations of colour, the blues and greens having no doubt faded, but the cross-band and dark apex of the fingers are still conspicuous in the second and third peræopods.

Clibanarius longitarsus (de Haan).

1849. *Pagurus longitarsus*, de Haan, Crust. Japon, Decas., 7, p. 211, pl. 50, fig. 3.

1852. *Clibanarius longitarsis*, Dana, U.S. Expl. Exp., vol. xiii, p. 464.

1888. *C. l.*, de Man, Arch. Naturg., vol. liii, p. 441.

1899. *Clibanarius longitarsus*, Nobili, Ann. Mus. Genoa, ser. 2, vol. 20, p. 492 (20),

1905. *Clibanarius longitarsis*, Alcock, Indian Decap. Crust., pt. 2, fasc. 1, p. 158 (with synonymy).

Round this species cluster others, such as *C. striolatus*, Dana, and *C. padavensis*, de Man, with bewildering proximity. This makes it difficult to guarantee any particular name without illustrative figures, which it is not just now convenient to offer.

The specimen from Durban Bay, specially examined from several obtained by Mr. D. R. Boyce, has the rostral apex abruptly acute, the ocular scales near together, ending in two unequal points, eye-stalks 5 mm. long, slightly swollen at either end, the cornea one-tenth of the total length. The chelipeds are subequal, with short fifth joint and the fourth much longer and very broad. The second and third peræopods have long tarsi (seventh joint) with dark tips, and the pale stripe with coloured borders on the last three joints, as shown in de Haan's figure.

Among features probably of no specific value may be mentioned, the strong spine on the palp of the first maxilla, the angularly produced end of the large vibratory lamina of the second maxilla and the narrowly produced apex of its endopod, the abruptly narrow terminal to the broad exopod in the first maxilliped, the remarkably powerful exopod in the second maxilliped compared with the rather short endopod, and the still more powerful exopod in the third maxilliped, where however the endopod is also long and strong. In both the second and third pairs the fourth joint is longer than the third. The endopods of the third pair are contiguous at their bases.

In the pleon there are unequally biramose appendages on the left side pertaining to the second, third, fourth, and fifth segments, those of the third and fourth being slightly longer than the preceding pleopod but very greatly larger than that which follows.

Family CŒNOBITIDÆ.

1852. *Cœnobitidæ*, Dana, U.S. Expl. Exp., vol. xiii, pp. 432, 435.

1905. *C.*, Alcock, Indian Decap. Crust., pt. 2, fasc. 1, p. 138 (with synonymy).

Genus CŒNOBITA, Latreille.

1825. "*Cénobite*," Latreille, Faun. Nat. Règne Animal, p. 277 (the generic name only in French).

1829. *Cœnobita*, Latreille, Règne Animal, vol. iv, p. 77.

1905. *C.*, Alcock, Indian Decap. Crust., pt. 2, p. 139 (with very numerous references, but all under *Cœnobita*, though Milne-Edwards, Krauss, and Dana agree in using the inaccurate form *Cenobita*.

Cœnobita cavipes, Stimpson.

1858. *Cenobita cavipes*, Stimpson, Pr. Ac. Sci. Philad., p. 245 (83).

1862. *Cenobita violascens*, Heller, Verl. Zool. Ges. Wien, vol. xii, p. 524.

1865. *C. v.*, Heller, Crust. Novara, p. 82, pl. 7, fig. 1.

1900. *Cœnobita cavipes*, Nobili, Ann. Mus. Genov., Ser. 2, vol. xx, p. 495 (23).

1902. *C. c.*, de Man, Abh. Senck. Nat. Ges., vol. xxiv, p. 743, pl. 24, fig. 46.

1905. *C. c.*, Alcock, Indian Decap. Crust., pt. 2, p. 146, pl. 14, fig. 1 (with synonymy).

The Durban specimen has the characters which Alcock selects for distinguishing this species from others in the Indian group of the genus ; the acicle fused with the second joint of the second antennæ ; eye-stalks strongly compressed ; a brush of hairs on the inner surface of the palm in both chelæ ; no stridulating mechanism on the palm of the left chela, coxæ of the fifth peræopods little produced. As to this last point Alcock says that the coxæ "are hardly more prominent in the male than they are in the female." Appearances justify the expectation.

For identification of this species the great size suggested *C. clypeatus*, but there it is only the right chela that has the brush of hairs and the ophthalmic scales have the free edge serrulate or crenulate, whereas here they are simple, acute. Next, a large dark patch on the outer surface of the palm in the left chela suggested *C. rugosus*, but that chela has a stridulating mechanism which is here wanting, and Nobili has already noticed that the brown patch of colour is common to the two species.

The length of the carapace in the middle line is 39 mm. Alcock gives that of a large female as 31 mm., for *C. rugosus*. He says that a carapace 30 mm. long was comparatively rare, and that of the largest egg-laden famale in the Indian Museum was only 24 mm. long. The left chela of the Durban specimen has the length and breadth of the palm equal, 26 mm. The third peræopod on the left has the finger strongly ridged on the concave side, which is not the case with the corresponding finger on the right.

The specimen was collected in Durban Bay by Mr. D. R. Boyce.

Tribe HIPPIDEA.

Family HIPPIDÆ.

See Ann. S. Afr. Mus., vol. vi, pt. 4, p. 366, 1910.

Genus EMERITA, Meuschen, 1778.

See under the preceding reference. The specimen there named *Emerita emeritus* should probably be transferred to the following species.

Emerita asiaticus (Milne-Edwards).

1837. *Hippa asiatica*, Milne-Edwards, Hist. Nat. Crust., vol, ii, p. 209.

1878. *H. a.*, Miers, J. Linn. Soc. London, vol. xiv., no. 76, p. 325, pl. 5, fig. 11.

1903. *H. a.*, Nobili, Bull. Mus. Torino, vol. xviii, no. 452, p. 16.

1907. *H. a.*, Nobili, Ann. Sci. Nat., ser. 9, Zool., vol. iv, p. 143.

1912. *H. a.*, Lenz. Arkiv. for Zoologi, vol. vii, no. 29, p. 5.

For this species Milne-Edwards gives a confused reference to Herbst, the difficulty being caused by the fact that Herbst in describing his *Cancer emeritus* refers it to plate 22, fig. 4, while on the plate itself it is fig. 3, which answers to his description.

The small specimen collected by Mr. A. L. Bevis, and the very large one, with carapace 35 mm. long, obtained by Mr. D. R. Boyce, alike have the terminal joint of the first peræopod as described by Nobili, lanceolate, with acute apex and denticulate margins. They agree too with the descriptions of the three spines on the second antennæ, of which the median is much the largest, and the antero-internal lobe on the fourth (meral) joint of the third maxillipeds is broadly rounded, practically though not verbally in agreement with the description by Miers. The carapace is very convex, as Miers and Nobili say, though in the Durban specimens scarcely to be called very narrow. The second antennæ by their flagella agree much better with the figure given by Miers for *E. emeritus*, than with that for *E. asiaticus*.

Locality: Durban Bay.

Family ALBUNEIDÆ.

1904. *Albuneidæ*, Benedict, Pr. U. S. Mus., vol. xxvii, p. 621, (ref. overlooked in 1914).

Genus ALBUNEA, Fabricius.

1904. *Albunea*, Benedict, Pr. U.S. Mus., vol. xxvii, p. 623.

Albunea guerinii, Lucas.

1914. *Albunea guerinii*, Stebbing, Tr. R. Soc. Edin., vol. L, pt. 2, p. 281.

For references regarding the family, genus, and species, see the Transactions above noted. The specimen now under consideration was collected in Durban Bay by Captain Fraser. The teeth on the frontal margin number ten on the left and thirteen on the right. This shows that dependence can be placed on this armature for specific distinction only with some reserve or caution.

MACRURA GENUINA.

Family RHYNCHOCINETIDÆ.

1890. *Rhynchocinetidæ*, Ortmann, Zool. Jahrb., vol. v, p. 459.
1907. *R.*, Borradaile, Ann. Nat. Hist., ser. 7, vol. xix, pp. 467, 472.

Rhynchocinetes, Milne-Edwards.

1837. *Rhynchocinetes*, Milne-Edwards, Ann. Sci. Nat., ser. 2, vol. vii, p. 165.
1837. *R.*, Milne-Edwards, Hist. Nat. Crust., vol, ii, p. 382.
1849. *R.*, Nicolet, in Gay. Hist. Chile. Zool., vol. iii, p. 215.
1852. *R.*, Dana, U.S. Expl. Exp., vol. xiii, p. 534.
1860. *R.*, Stimpson, Pr. Ac. Sci. Philad., vol. xii, p. 105 (36).
1876. *R.*, Miers, Catal. Crust. of New Zealand, p. 77.
1882. *R.*, Haswell, Catal. Austral. Crust., p. 179.
1890. *R.*, Ortmann, Zool. Jahrb., vol. v, pp. 459, 507.
1909. *R.*, McCulloch, Rec. Austral. Mus., vol. vii, no. 4, p. 310.

Milne-Edwaads placed this genus in his tribe of Palémoniens, Dana in the *Alpheinæ*, a subfamily of his *Palæmonidæ*; Miers, followed by Haswell, assigned it to the *Crangonidæ*; Borradaile groups it with the *Alpheidæ*, *Hippolytidæ*, and *Palæmonidæ* in his "superfamily" *Palæmonoida*.

RHYNCHOCINETES TYPUS, Milne-Edwards. Plate VI.

1837. *Rhynchocinetes typus*, Milne-Edwards, Ann. Sci. Nat., ser. 2, vol. vii, p. 165, pl. 4.

1837. *R. t.*, Milne-Edwards, Hist. Nat. Crust., vol. ii, p. 383.

1849. *R. t.*, Nicolet, Hist. Chile. Zool., vol. iii, p. 216, atlas, pl. 1, figs. 7, 7 a–d.

1852. *Rhynchocinetes typicus*, Dana, U.S. Expl. Exp., vol. xiii, p. 568, pl. 36, figs. 7 a–d.

1871. *Rhynchocinetes typus*, Cunningham, Tr. Linn. Soc. London, vol. xxvii, p. 497.

1876. *R. t.*, Miers, Catal. Crust. N.Z., p. 77.

1882. *R. t.*, Haswell, Catal. Austral. Crust., p. 180.

1890. *R. t.*, Ortmann, Zool. Jahrb., vol. v, p. 507, pl. 37, fig. 7d, f–i.

1909. *R. t.*, McCulloch and Rathbun, Rec. Austral. Mus., vol. vii, p. 312.

1910. *R. t.*, Rathbun, Pr. U.S. Mus., vol. xxxviii, p. 562, pl. 52, fig. 2.

Cunningham remarks of this species that "it is an exceedingly beautiful creature when alive, the body and legs being elegantly mottled and banded with various shades of red and brown." This is in agreement with Nicolet's account of the colour, and with the African specimens. Of Stimpson's *R. rugulosus*, McCulloch says "it is very beautifully marked when alive with streaks and dots of a bright blue colour on a darker ground." In spirit the difference of hue would cease to be distinctive, but *R. typus* seems to have none of that rugosity on which Stimpson relied in instituting his species. Miers, therefore, is not likely, as McCulloch supposes, to have confused the two species. In dealing, however, with the specific differences in this genus there are some pitfalls. Thus Dana says "it is important to observe, that the external maxillipeds are very much more elongate in the male than in the female, being in the former as long as the body." So also in the two specimens from Durban, the uropods of the larger specimen are decidedly longer than the telson, whereas this is not the case in the smaller. Also in the smaller, the second peræopod reaches beyond the first, while in the larger the reverse is the case. As will be seen by the figures, the first peræopods differ much in the two specimens, although in their striking colour pattern they were an excellent match.

Mr. Bell Marley found this strongly humped species on sociable terms with *Leander affinis* and *Stenopus hispidus*, among stones likely to protect it from predaceous fishes but not from marauding crabs.

STOMATOPODA.

Family SQUILLIDÆ.

Genus SQUILLA, Fabricius, 1793.

For this classification see Ann. S. Afr. Mus., vol. vi, pt. 4, pp. 404, 405, 1910.

Squilla nepa, Latreille.

See Ann. S. Afr. Mus., vol. vi, pt. 1, p. 44, 1908.

A smaller specimen, about 75 mm. in length, has been collected by Mr. R. A. Hunter.

Genus GONODACTYLUS, Latreille.

See Ann. S. Afr. Mus., vol. vi, pt. 4, p. 406, 1910. And references.

1894. *Gonodactylus*, Bigelow, Pr. U.S. Mus., vol. xvii, p. 492.

1913. *G.*, Kemp, Tr. Linn. Soc. London, Ser. 2, vol. x, pt. 8, pp. 145, 155, pl. 9, fig. 107.

Gonodactylus chiragra (Fabricius).

See reference as above.

In Mr. Bell Marley's specimen from Durban, the carapace from the apex of the rostrum to the hind margin is 13 mm. long, from the hind margin of the carapace to extremity of fifth pleon segment the length is about 28 mm., and thence to a point between the distal lobes of the telson about 10 mm., making at full stretch a total length of two inches. In the uropods the long first joint of the exopod has its outer margin fringed with eleven spines, successively larger to the rear.

Mr. Bell Marley describes the colour as violet black, with dark red about the tail; legs and antennæ orange; the raptorial claws bright violet about the folding place. He notes that the animal is very active and makes defensive use of its tail.

AMPHIPODA.

Tribe CYAMIDEA.

Family CYAMIDÆ.

Genus CYAMUS, Latreille, 1796.

Cyamus boopis, Lütken, 1873.

See, for the order, tribe, family, genus, and species, Ann. S. Afr. Mus., vol. vi, pp. 447, 464, 471, 473; 1910.

Many specimens of this species have been obtained by Mr. E. C. Chubb from the humpback whale at Durban.

INDEX.

Explanation of Plates I–VI,

Illustrating paper by the Rev. T. R. R. Stebbing on
"The Malacostraca of Natal."

Plate I.

Platylambrus quemvis, sp. nov.

n.s. Lines indicating natural size of carapace figured below in dorsal aspect.

prp. 1, prp. 5. Distal portion of a cheliped and the fifth peræopod to the same scale of enlargement.

m., mxp. 1, 2, 3. Mandible, first, second, and third maxilliped, on a uniform scale of enlargement.

mx. 1, mx. 2. First and second maxillæ, more enlarged than the preceding mouth-parts; inner plate of mx. 1, detached.

Pl. Pleon in dorsal view.

Plate II.

Atergatis floridus (Linn.).

n.s. Lines indicating natural size of carapace, enlarged above in dorsal aspect.

m. Mandible, seen from inner, upper surface, enlarged to the same scale as the other mouth-organs.

mx. 1, mxp. 1, 2, 3. First maxilla, first, second, and third maxillipeds.

prp. 1, prp. 2. A cheliped and an ambulatory leg, figured of the natural size, with the seventh joint of the latter much magnified.

Plate III.

Macrophthalmus grandidierii. A. Milne-Edwards.

n.s. Carapace, with first peræopod attached, in dorsal view, of the natural size. The upper, right-hand portion of the same magnified.

Pl., plp. Dorsal view of the pleon, and one of the male pleopods.

m., m., mx. 1, mxp. 1, 2, 3. The two mandibles, first maxilla, first and second maxillipeds incomplete, and third maxilliped.

prp. 1, prp. 1. First peræopod natural size, hand in oblique position, and hand magnified, showing the outer surface, with a small portion of inner surface, showing the pearly tooth.

prp. 4. Fourth peræopod, natural size.

Plate IV.

Uca lacteus (de Haan).

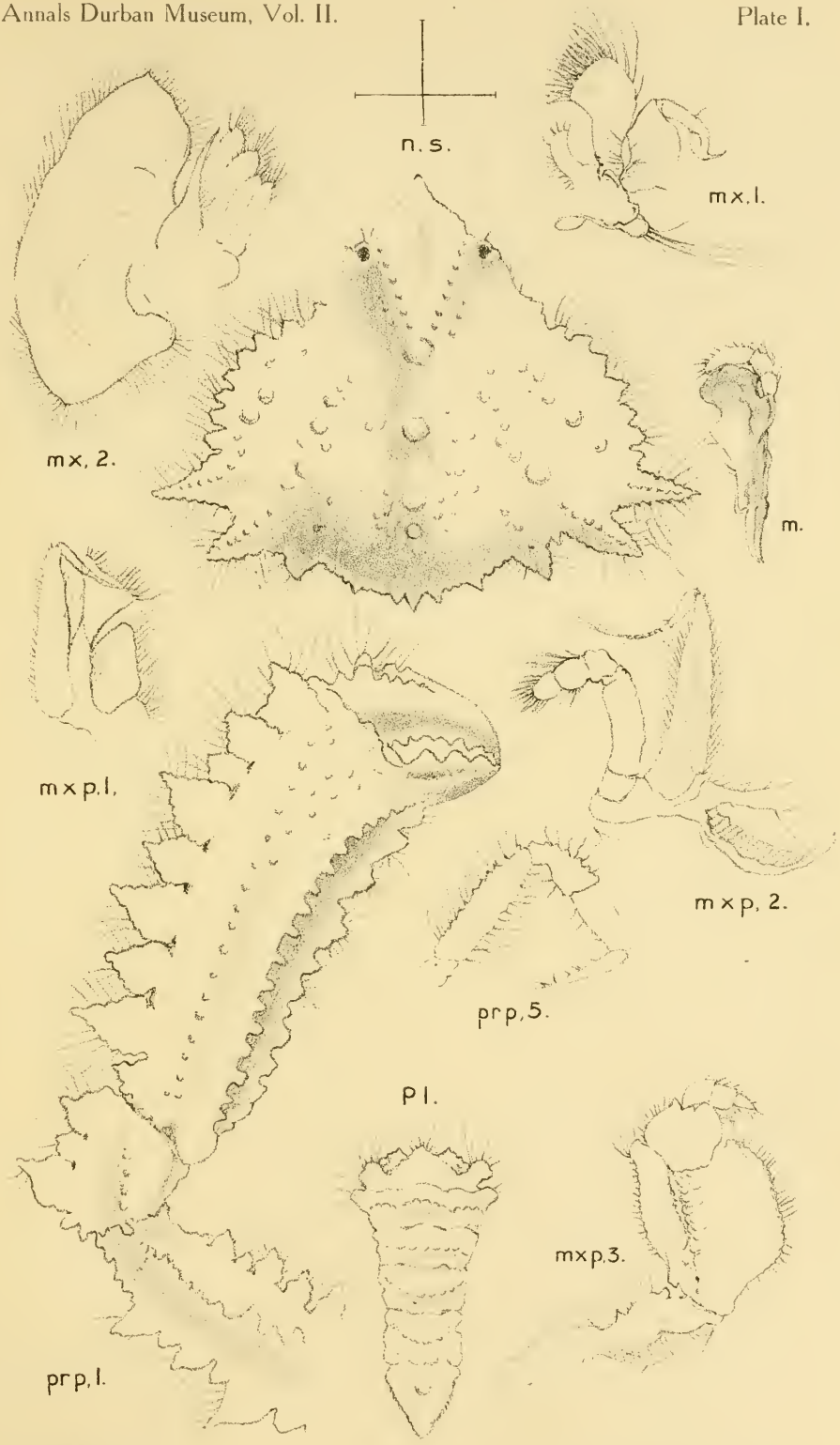
n.s. Dorsal view of the specimen, natural size, with first, fourth, and fifth peræopods attached.

m. Mandible from the inner side.

mx. 1, mx. 2, mxp. 1, 2, 3. First and second maxillæ, first, second, and third maxillipeds. These and the mandible magnified to a uniform scale.

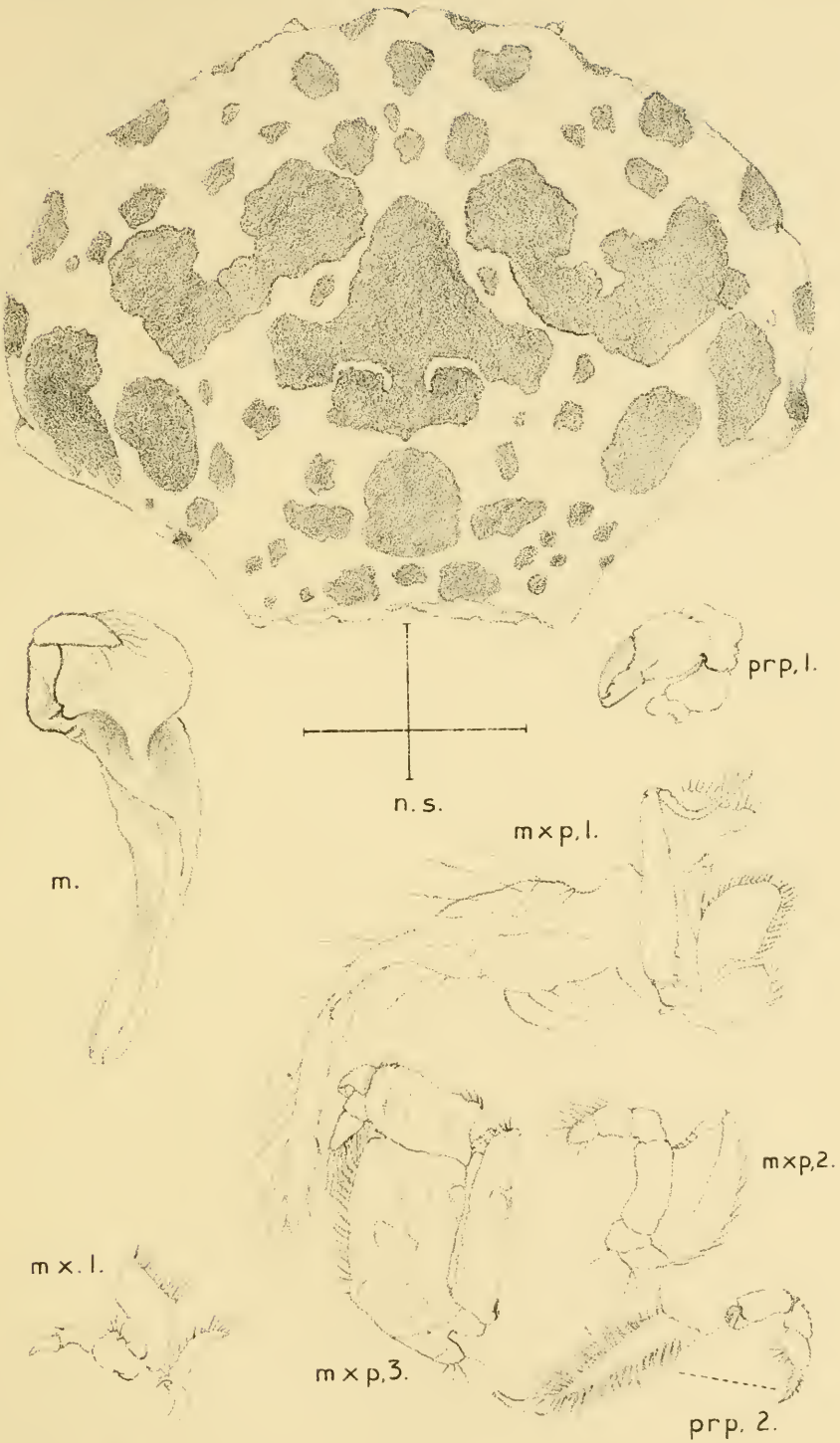
mxp. 2, sp. Some spines of the second maxilliped on the fourth and seventh joints much more highly magnified.

prp. 1. First peræopod, showing the outer surface of the chela and the inner surface of its palm, with the tips of the fingers more highly magnified.



T. R. R. Stebbing del. John Singleton & Sons lith.

PLATYLAMBRUS QUEMVIS, sp. nov.



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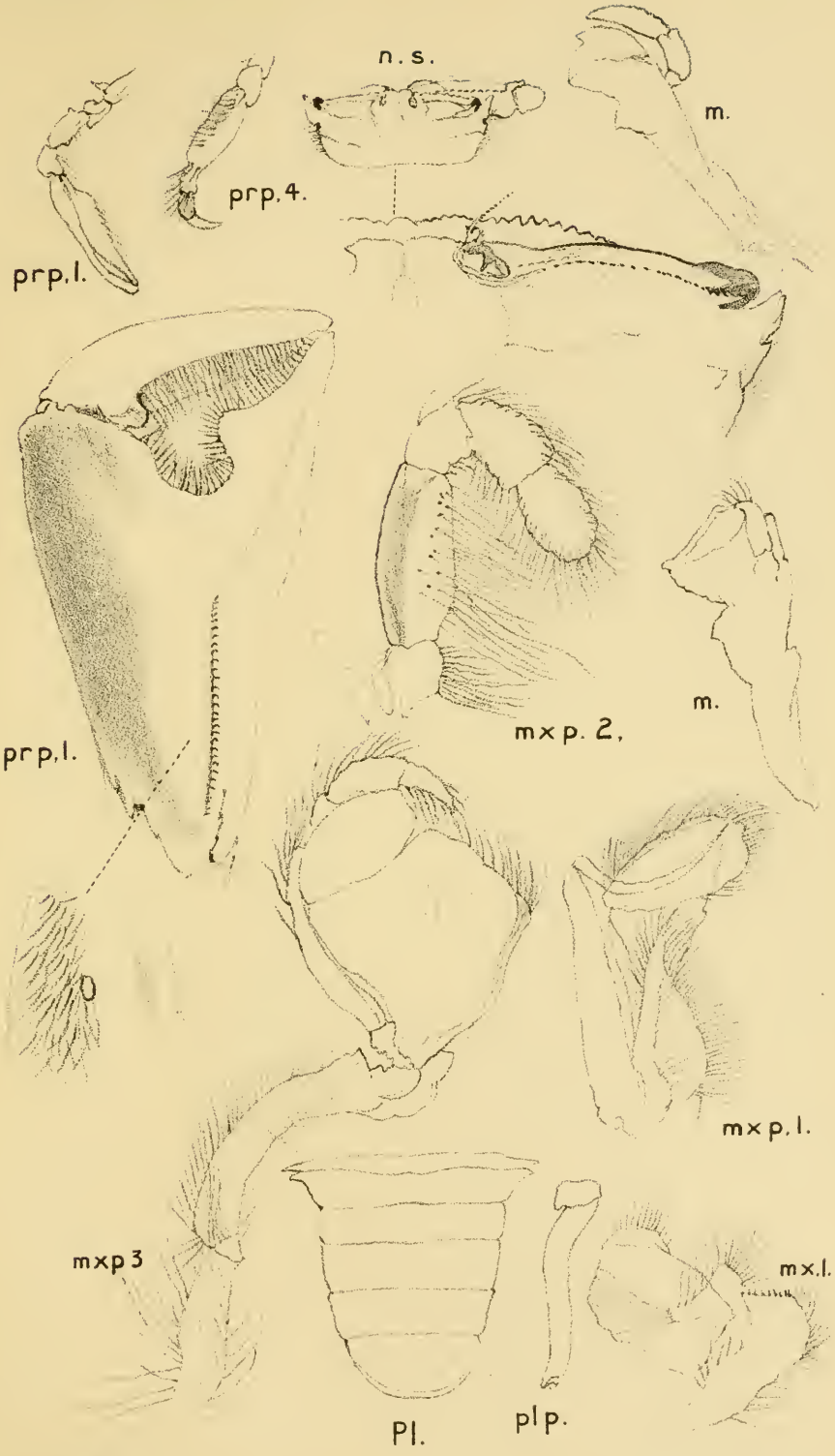
ATERGATIS FLORIDUS (Linn.).



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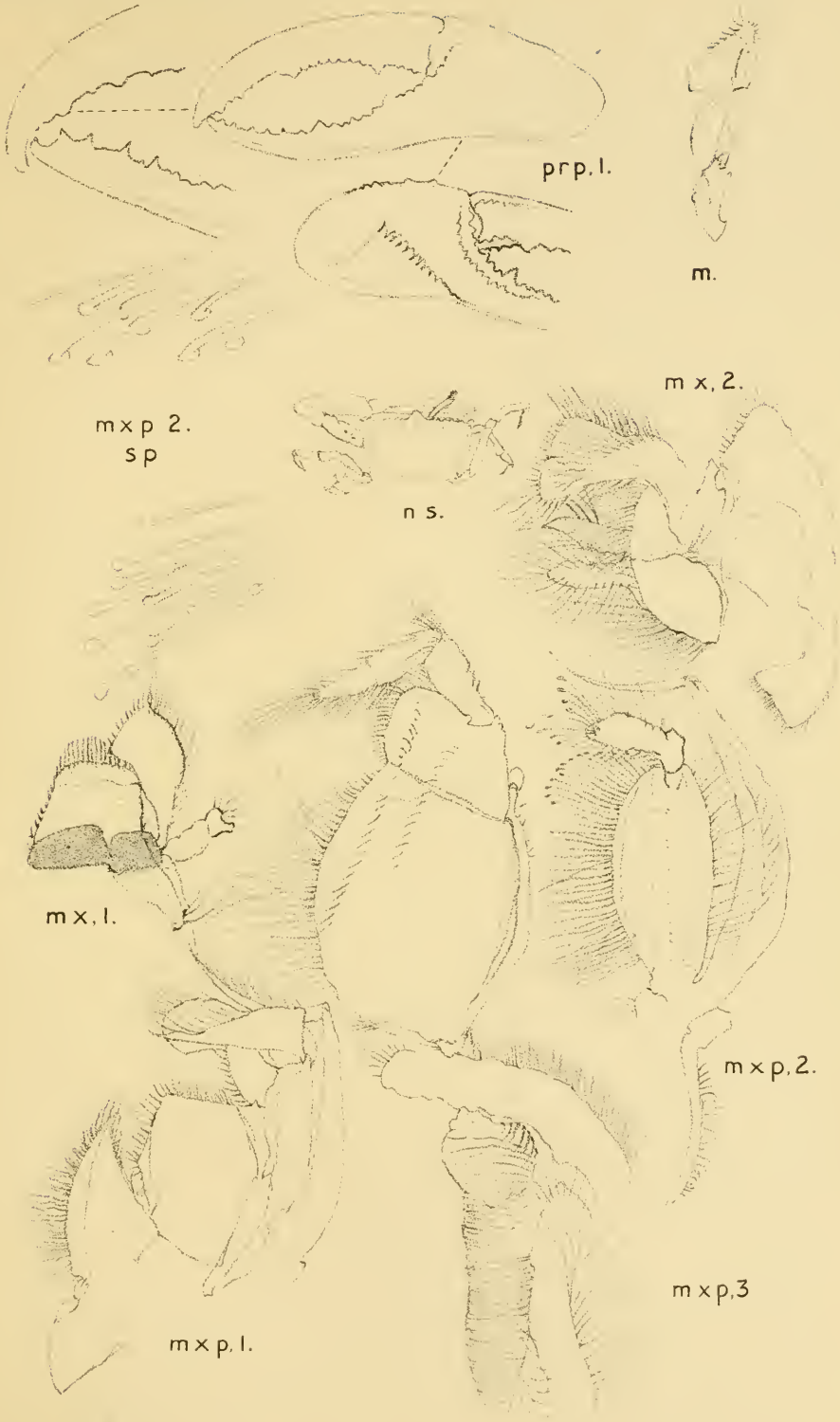
MACROPHTHALMUS GRANDIDIERII, A. Milne-Edwards.



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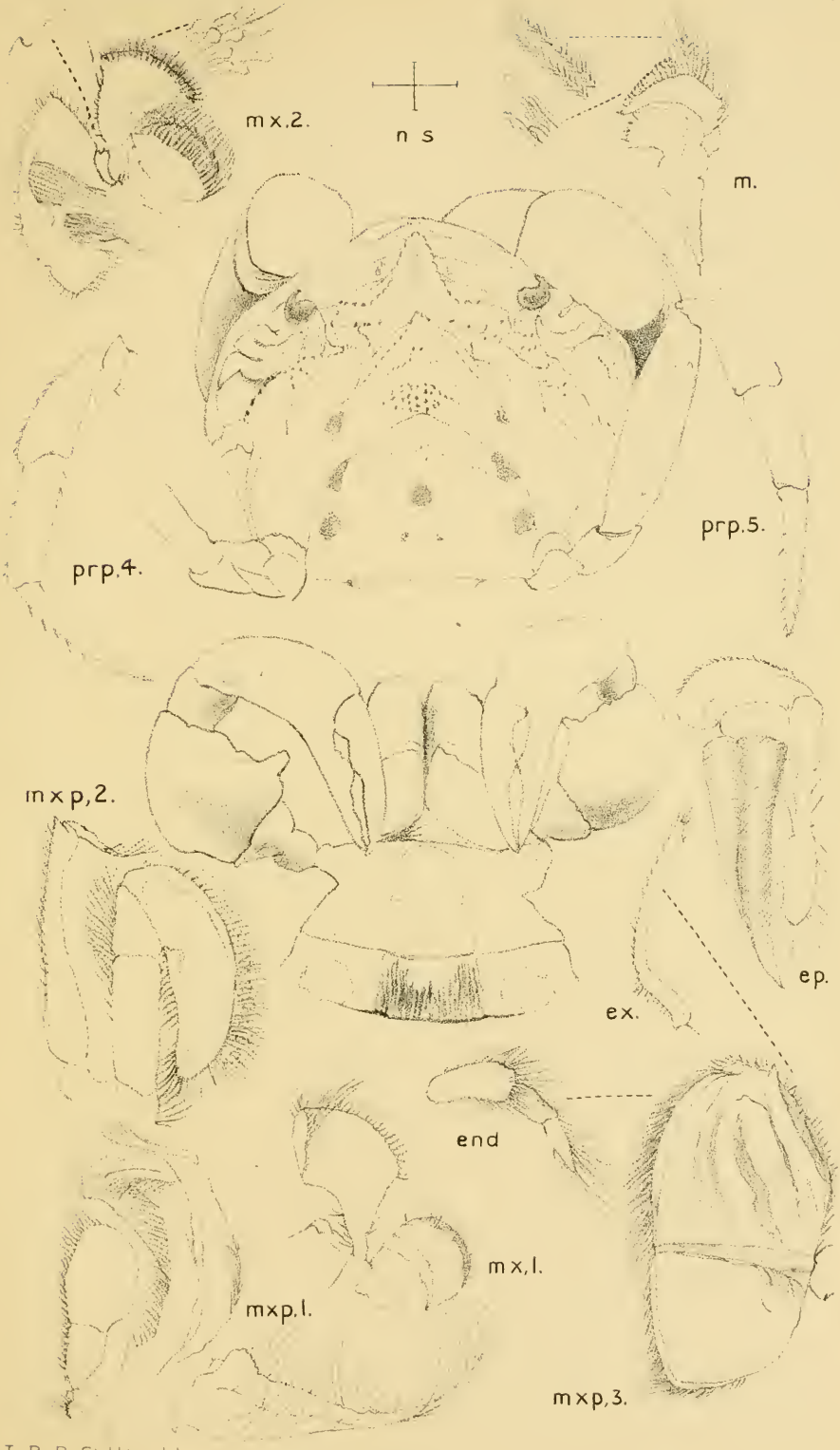
UCA LACTEUS (de Haan).



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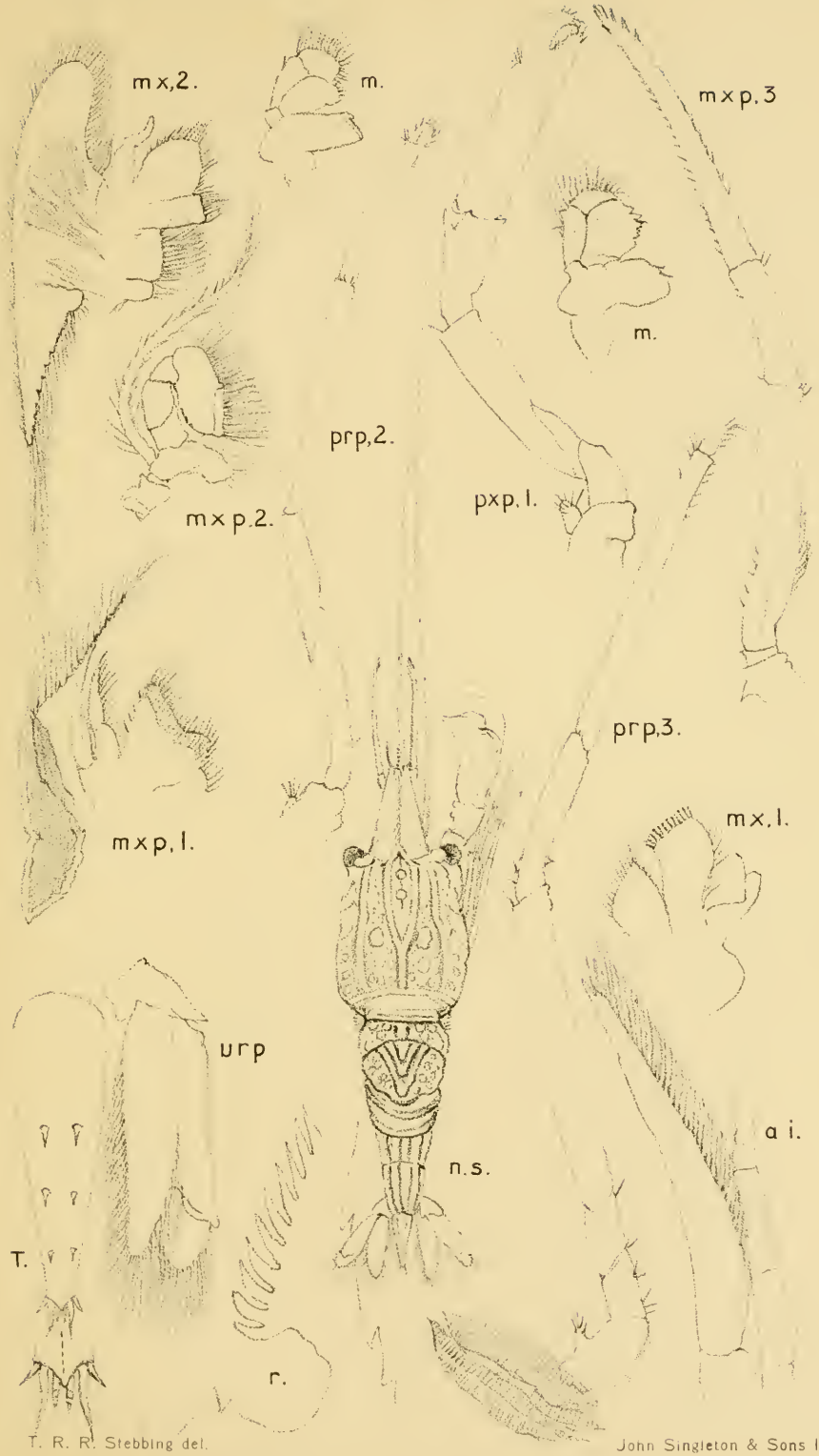
DOTILLA CLEPSYDRA, sp. nov.



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RHYNCHOCINETES TYPUS, A. Milne-Edwards.