

McNeill, F. 1926

Dr. Schmitt.


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DIVISION OF CRUSTACEA

THE BIOLOGY OF NORTH-WEST ISLET, CAPRICORN GROUP.

(J). CRUSTACEA.

By FRANK A. MCNEILL, Zoologist at the Australian Museum.

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(Plate xli.; and Text-figs. 1-2.)

CARDED 1929.

In the last issue of the *Australian Zoologist* (Vol. iv., 1926, 248) attention was drawn to the fact that the section dealing with the Crustacea collected on North-west Islet by members of the Royal Zoological Society who visited the Capricorn Group in November to December, 1925, was unfortunately omitted from the associated articles treating with the general zoology, etc.

We owe our first knowledge of the Crustacea of the Capricorn Group to the efforts of Grant and McCulloch, who published an account of the Decapoda in 1906 (1). Since that date no systematic list has appeared, and only three references to species occurring in the Group have been published, viz.: *Clibanarius taeniatus* (H. M. Edw.), recorded for the second time by McCulloch (2) from Masthead Island, and *Chlorodiella niger* (Forskäl) and *Trapezia cymodoce* (Herbst), recorded by Rathbun (3) from North-west Islet. It is the purpose of this paper to supplement the work of Grant and McCulloch, but it must be pointed out, however, that in many cases records for the Group appear for the second time, but an effort has been made to amplify the facts already known concerning them. On the other hand, quite a number of species are recorded for the first time, some of which constitute new records for the Queensland coast and Australia.

The islands of the Capricorn Group are reef-girt like many of similar construction along the coast of Queensland. They are termed pseudo-atolls, and their general geography has been well treated by Hedley (4), Grant and McCulloch (*loc. cit.*, 1906) and Musgrave (5).

My thanks are due to Dr. Mary J. Rathbun and Dr. Waldo Schmitt, of the U.S. Nat. Museum, and H. M. Hale, of the South Australian Museum, for assistance in the determination of a few of the more obscure species of the Decapoda. The latter gentleman, Mr. W. H. Baker, of Adelaide, South Australia, and Dr. Chas. Chilton, of Christchurch, New Zealand, have determined the few species of Isopoda obtained by the expedition.

In dealing with the various species of the collection, original references are quoted, together with others selected for their value as aids in the determination of individual species.

It was mainly due to the enthusiasm of the late Miss E. Chase, B.Sc., Demonstrator in Zoology, University of Sydney, and Mr. G. P. Whitley, of the Australian Museum, that such a fine collection was secured.

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- (1). *Proc. Linn. Soc. N.S. Wales*, xxxi. 1906, 2.
 - (2). *Rec. Austr. Mus.* ix., 1913, 349, pl. xi., fig. 1.
 - (3). *Biol. Res. F.I.S. "Endeavour,"* v., 1923, 108 and 129.
 - (4). *Proc. Linn. Soc. N.S. Wales*, xxxi., 1906, 453.
 - (5). *Australian Zoologist*, iv., 1926, 199-209, pls. xxv.-xxix.

Class CRUSTACEA.
 Subclass MALACOSTRACA.
 Order DECAPODA.
 Suborder NATANTIA.
 Tribe CARIDES.
 Family PONTONIIDAE.
 Genus PERICLIMENES Costa.
 Subgenus ANCYLOCARIS Schenkel.

PERICLIMENES (ANCYLOCARIS) SPINIFERUS.

Periclimenes petithouarsi, var. *spinifera*, de Man, Abhandl. Senck. Naturf. Ges., xxv., 1902, 824 (Amboina and Ternate).

Periclimenes (Ancylocaris) spiniferus Kemp, Records Indian Mus., xxiv., ii., 1922, 195 (and synonymy).

With some little hesitation I refer to this species an ovigerous female specimen 16.5 mm. long, which has the second legs missing. The chela of the first leg is as shown in Borradaile's figure (6), but it is only half as long as the carpus, whereas Borradaile (7) shows it as being about two-thirds as long as the carpus.

No previous record of the occurrence of the species in Australian waters appears to have been published.

Locality.—In pool on reef, North-west Islet, Capricorn Group, Queensland.

PERICLIMENES (ANCYLOCARIS) ELEGANS VAR. DUBIUS.

Periclimenes (Falciger) dubius Borradaile, Ann. Mag. Nat. Hist. (8), xv., 1915, 211.

Periclimenes (Ancylocaris) elegans Paulson, var. *dubius* Kemp, Records Indian Mus., xxiv., ii., 1922, 218.

A male specimen of this small species of shrimp was collected in a pool on the reef. It measures 7.5 mm. from the tip of the rostrum to the end of the carapace and agrees perfectly with Kemp's description and figure.

Another male specimen of the species measuring 9.5 mm. in length is from the same source, but has the second legs missing and can only doubtfully be referred to the variety *dubius* as above.

The present record constitutes an addition to the Australian coastal fauna.

Locality.—North-west Islet, Capricorn Group, Queensland.

Genus PONTONIA Latreille.

PONTONIA TRIDACNAE.

Conchodytes tridacnae Peters, Mon. Ber. Acad. Wiss. Berlin, 1852, 594 (Ibo, East Africa).

Pontonia (Conchodytes) tridacnae Miers, Zool. H.M.S. "Alert," 1884, 290.

Pontonia tridacnae Ortmann, Zool. Jahrb., Syst., v., 1890, 509. *Idem*, Henderson Trans. Linn. Soc. London, Zool. (2), v., 1893, 438.

An unique ovigerous female specimen about 19 mm. long is identified as this species. It agrees very well with Dana's figure (referred to by Miers, *loc. cit.*) in that the chelae are similar in form and proportion; this character was commented upon by Miers.

(6) Trans. Linn. Soc. London, xvii., 2nd ser. Zool., 1917, pl. lii., f. 1k.

(7) *Loc. cit.*, f. 1a.

Unfortunately no data are obtainable concerning the host of the specimen which appears to have been captured swimming freely in a pool on the reef. Exhaustive inquiries failed to elicit further details from the collectors, and in view of the fact that Mier's specimens also were not associated with any host, it would appear that the species is not as sedentary a commensal as some of its allies.

Locality.—North-west Islet, Capricorn Group, Queensland.

Family HIPPOLYTIDAE.

Genus SPIRONTOCARIS Spence Bate.

SPIRONTOCARIS MARMORATA.

Palaemon marmoratus Olivier, Encycl. Méth. Hist. Nat., Insectes, viii., 1811, 665; atlas, xxiv., 1818, pl. 319, fig. 3.

Hippolyte gibberosus Haswell, Cat. Austr. Crust., 1882, 185. *Idem*, Whitelegge, Australian Museum Memoir, iii., 2, 1897, 146.

Hippolyte gibberosa Ortmann, Zool. Jahrb., Syst., v., 1890, 497.

Hippolyte marmorata Ortmann, *Tom. cit.*, 497, pl. xxxvi., fig. 18.

Spirontocaris marmorata Rathbun, Bull. U.S. Fish. Comm., xxiii., 3, 1903 (1906), 913 (synonymy).

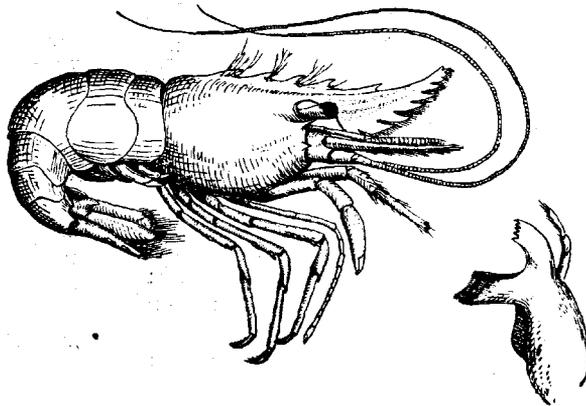


Fig. 1. *Spirontocaris marmorata*.

Side view (slightly enlarged) and mandible (enlarged), from a pen drawing by the late F. E. Grant. The original was presumably from Masthead Island, in the Capricorn Group, Queensland, where the artist made an extensive collection.

Two males (measuring 16.5 and 21 mm. from the tip of the rostrum to the end of the carapace) and two ovigerous females (19 and 20 mm. long) of this typical reef shrimp were secured in pools on the reef at North-west Islet. Another ovigerous female example (19 mm. long) was collected under similar circumstances on Wilson Islet, during a day's excursion from the main base.

The present record appears to be the first definite one for the species in Australian waters.

The sketch of the species reproduced here is from the pen of the late F. E. Grant and dated 1905. It shows all the main characteristics of the form and will facilitate identification.

Locality.—Capricorn Group, Queensland.

Family CRANGONIDAE [= ALPHEIDAE *olim*].

Genus CRANGON [= ALPHEUS *olim*] Weber.

CRANGON [= ALPHEUS *olim*] EDWARDSII.

Athanasus edwardsii Audouin, Explic. Planches de Savigny, Description de l'Egypte, Atlas, 1809, pl. x., fig. 2.

Crangon edwardsii Rathbun, Proc. Zool. Soc. London, 1914, 3, 654 (and synonymy quoted).

Three ovigerous females 9 to 16 mm. long, measured from the tip of the rostrum to the end of the carapace. Secured under loose dead coral blocks on the reef, where they were common.

This species has a wide range along the eastern Australian coast line.

Locality.—North-west Islet, Capricorn Group, Queensland.

Tribe STENOPIDEA.

Family STENOPIDEA.

Genus STENOPUS Latreille.

STENOPUS ROBUSTUS.

Stenopus robustus Borradaile, Trans. Linn. Soc. London, xiii., ii., 2nd ser. Zoology, 1910, 260, pl. 16, fig. 4.

One juvenile example with limbs missing measures 6 mm. from the tip of the rostrum to the end of the carapace. Another damaged specimen secured with the above is about the same size, and is now in the United States National Museum collection. Both specimens were kindly identified for me by Dr. Waldo Schmitt, of the abovenamed Institution. They are undoubtedly correctly referred to *S. robustus*, as the identification was helped out by a further complete specimen of the species (8.5 mm. as above) from Port Jackson, which was examined in conjunction with the damaged material.

It appears that the above records represent the first mention of the species from Australian waters; the type locality is Chagos Archipelago, and I know of no further reference to the species in literature.

The species is obviously a tropical one and the New South Wales record is most interesting, as proving the existence of the strong south flowing current (Notonectian) which brings the larvae of several Decapod wanderers to these shores.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Suborder REPTANTIA.

Tribe PALINURA.

Family PALINURIDAE.

Genus PALINURUS Fabricius.

PALINURUS VERSICOLOR.

Palinurus versicolor Latreille, Annal. du Mus. d'Hist. Nat. Paris, 3, 1804, 394. de Man, Abh. Senck. Naturf. Ges., xxv., 3, 1902, 760 (and synonymy).

One large male 13½ inches long, including telson, was speared in the shallow water of the lagoon.

The very striking colour-marking of this form makes it at once recognisable as the species recorded and figured by de Haan (in Siebold's Fauna Japonica, Crust., v., 1841, 159, pls. xliii. and xliiv., fig. 2) under the name "*Palinurus fasciatus* Fabr.," which is included as a synonym of *P. versicolor* by de Man in the work quoted above. The absence of a complete set of literature prevents me

from checking the identity further, but if the nomenclature has undergone any changes since de Man's paper was written I can be certain that the species here recorded will be easily recognised.

In the "Narrative of North-west Islet," Mr. A. Musgrave discusses the capture of the above specimen under the name *P. fasciatus*, supplementing his remarks by a fine photograph (Australian Zoologist, iv., 1926, 205, pl. xxvii., fig. 3).

The species has apparently not been recorded before from Australian waters. In the collection of the Australian Museum there are other much smaller specimens from Murray Island, Torres Strait: Malo, New Hebrides: Furona Id., S.W. coast of Ysabel, British Solomons.

Locality.—North-west Islet, Capricorn Group, Queensland.

Tribe ANOMURA.

Family PAGURIDAE.

Genus DARDANUS Paulson.

DARDANUS DEFORMIS.

Pagurus deformis H. M. Edw., Ann. Sci. Nat. (2), vi., 1836, 272, pl. xiii., fig. 4.
Idem, Henderson, "Challenger," Zool., xxvii., 1888, Anomura, 57 (and references).

The two examples of this well known species in the collection have their genital apertures at the base of the third legs (8); the major hands measure eight by fourteen mm. and eighteen by twenty-six mm.

Miers in 1880 (9) expressed some doubt as to the distinctness of *D. pedunculatus* (Herbst) (10) and the present species of H. M. Edwards. It is difficult to recognise any likeness between the figures supplied by these authors, but Rathbun (11) has associated them under the former name. I have not seen any published reasons for this action, and, not having been able to come to a decision myself, have refrained from using Herbst's name in the present instance.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

DARDANUS MEGISTOS.

Cancer megistos Herbst, Naturg. d. Krabben u. Krebse, iii., 4, 1804, 23, pl. 61, fig. 1.

Pagurus megistos Stebbing, Crust. South Africa, iv., 1908, 21 (and synonymy).

Pagurus punctulatus Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 37.

This widely distributed and strikingly coloured Indo-Pacific species is represented by one male and four females; the length of the major hand ranges from 14.5 to 50 mm. The largest specimen is a female, the hand measurement of which exceeds that of the next in size (a male) by 23 mm. In an account of North-west Islet, which appeared in last issue of the Australian Zoologist, Musgrave refers to the above species and illustrates his remarks by a photograph (12).

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

(8). See Borradaile P.Z.S. Lond., 1898, iii., 460.

(9). Ann. Mag., Nat. Hist. (5), v., 1880, 374.

(10). Naturg. d. Krabben u. Krebse, iii. 4, 1804, 25, pl. 61, fig. 2.

(11). Smith. Misc. Coll., xlix., No. 1717, 1907, 204.

(12). Australian Zoologist, iv., 1926, 205, pl. xxvii. fig. 4.

Genus CALCINUS Dana.

CALCINUS LATENS.

Calcinus latens Randall, Journ. Acad. Nat. Sci. Philad., 1839, p. 135 (fide Dana 1852, and Stimpson 1907). Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 34 (and synonymy). Stimpson, Smith. Misc. Colls., xlix., No. 1717, 1907, 208.

One male and one ovigerous female approximately 25 and 30 mm. in length
Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Family AXIIDAE.

Genus AXIUS Leach.

Subgenus NEAXIUS Borradaile.

AXIUS (NEAXIUS) PLECTRORHYNCHUS.

Axius plectrorhynchus Strahl, Monatsberichte der kön. preuss. Akad. der Wissenschaften, Berlin, 1861 (1862), 1060, and figs. 2-4 and 11 on plate opposite p. 1072; and Ann. Mag. Nat. Hist., 3rd ser., ix., 1862, 387. Miers, Zoology H.M.S. "Alert," 1884, 282. Fulton and Grant, Proc. Roy. Soc. Victoria, xiv. (n. ser.), 1902, 60, pl. v., fig. 7-8.

Axius (Neaxius) plectrorhynchus de Man, "Siboga" Expd., Monogr. xxxix. a⁵, Decapoda, pt. vi.—Axiidae, 1925, 12-13.

One small female, measuring 6 mm. from the tip of the rostrum to the end of the carapace, agrees perfectly with Strahl's description and figures. It was kindly identified for me by Dr. Waldo Schmitt.

Miers was the first to record this species from the Queensland coast when he somewhat hesitatingly described an incomplete specimen about 1½ inches long secured at Port Molle during the "Alert" Expedition. The present record verifies the occurrence of the species in Queensland, but Miers' timidity is to be admired, seeing that his specimen lacked chelae (fide notes made by the late F. E. Grant on the specimen in the British Museum) and was discovered at a locality greatly removed from Luzon in the Philippines (the type locality of *A. (N.) plectrorhynchus*); a comparison of Miers' description and the abovementioned notes by Grant with Strahl's description and figures satisfies me that the Port Molle specimen is correctly identified.

Since Miers' record of the species, Fulton and Grant have recognised it from Victoria, and there are several specimens in the Australian Museum from South Australia.

Variation.—In a species having such a huge range as *A. (N.) plectrorhynchus* one must expect a certain amount of variation, as exemplified in the Soldier Crab (*Mictyris longicarpus*) recently dealt with by me in the Records of the Australian Museum. Fulton and Grant have already referred to the variable number of rostral teeth on the series examined by them and this feature is particularly noticeable in the southern Australian specimens before me, some of which are two inches long. Strahl's figure shows a disposition of the rostral spines which allows of a bifurcate rostral extremity, thus agreeing with the small specimen I have from Queensland, and apparently also with Miers' specimen from Port Molle which is said to have five or six teeth on each side of the rostrum. In the southern Australian specimens, however, the rostrum may have a well defined median tooth, or three of equal length at the extremity which gives the structure a tricuspid appearance; Fulton and Grant figured the former condition of the rostrum, and made no comment about the bifurcate extremity as depicted by

Strahl for the reason that they obviously overlooked that author's figures. In some small southern Australian examples, also, the rostrum is much more flattened and not markedly hollowed or concave above as in Strahl's figure, or the small Queensland specimen before me. All major characters are consistent, however, and it would be impossible to my mind to separate the species into varieties, as the variation noted above may occur in any one series of the species from southern Australian waters, a fact already recorded by Fulton and Grant.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Family CALLIANASSIDAE.

Genus UPOGEBIA Leach.

UPOGEBIA SIMSONI.

Gebia simsoni Thomson, Proc. Roy. Soc. Tasmania, 1892, 49, pl. i., figs. 3-5.

Upogebia simsoni Fulton and Grant, Proc. Roy. Soc. Vic., xiv. (n. ser.), 1902, 61, pl. v., figs. 5-6.

One female specimen measuring 5.5 mm. from the tip of the rostrum to the end of the carapace was identified for me by Dr. Waldo Schmitt, of the United States National Museum, who states (*in lit.*): "This specimen seems to upset Borradaile's subgeneric revision of *Upogebia* (Ann. Mag. Nat. Hist., 7th ser., xii., 1903, p. 542), for though the 'thumb' is distinctly shorter than the movable finger I can find no trace of the 'small sharp tooth on the fore edge of the carapace over the antenna.' Moreover, 'the two branches of the last limb' though 'broad and stout,' are longer than the telson, which is not admitted in the generic definition of *Upogebia* as it stands at present."

The species appears to have been only previously recognised from the east coast of Tasmania (Thomson—type locality) and Flinders, Western Port, Victoria (Fulton and Grant). The present record is a notable extension to the range of the species, and an addition to the Decapod fauna of Queensland.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Family GALATHEIDAE.

Genus GALATHEA Fabricius.

GALATHEA PUSILLA.

Galathea pusilla Henderson, Ann. Mag. Nat. Hist. (5), xvi., 1885, p. 407.

Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 43 and 49, pl. iv., figs. 5, 5a (with references).

One example measuring 11 mm. from the tip of the rostrum to the end of the telson is definitely identified as this species. Although the chelae and most of the legs are missing from the specimen, it is easily identified with the aid of Grant and McCulloch's key, which provides characters for the rostrum and the outer maxillipedes only.

Locality.—North-west Islet, Capricorn Group, Queensland; from pool on reef.

Family PORCELLANIDAE.

Genus PETROLISTHES Stimpson.

PETROLISTHES LAMARCKI.

Pisidia lamarckii Leach, Diet. Sci. Nat., xviii., 1820, 54.

Petrolisthes lamarcki Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 38.

Two males and one ovigerous female (7 to 8 mm. across the carapace) from North-west Islet, and one male (8 mm. across the carapace) from Wilson Islet. All the specimens were collected under dead coral blocks on the respective reefs.

Locality.—Capricorn Group, Queensland.

Tribe BRACHYURA.
Subtribe OXYSTOMATA.
Family CALAPPIDAE.
Genus CALAPPA Fabricius.
CALAPPA HEPATICA.

Cancer hepaticus Linnaeus, Syst. Nat., ed. xii., vol. i., pt. ii., 1767, p. 1048.
Calappa hepatica Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 24.

Three adult males 66 to 80.5 mm. wide were collected on a sandy bottom in the reef shallows.

This species is very common on the Queensland coast, and the following observations on its habits were made by the late Allan R. McCulloch:—"Occurs everywhere in sandy flats into which it burrows rapidly, rising the legs to push away the sand so that it seems to sink into it backwards almost without effort. Meantime the chelipeds are held in a defensive attitude until nearly covered, when they are drawn up against the body as the crab disappears from view. The creature is merely covered, however, and a slight disturbance will hunt it out to repeat the manoeuvre a few yards away."

Locality.—North-west Islet, Capricorn Group, Queensland.

Subtribe BRACHYGNATHA.
Superfamily OXYRHYNCHA.
Family MAJIDAE.
Subfamily ACANTHONYCHINAE.
Genus MENAETHIUS H. M. Edwards.
MENAETHIUS MONOCEROS.

Pisa monoceros Latreille, Encyclop. Methodique, x., 1825, 139.
Menaethius monoceros Calman, Trans. Linn. Soc. London, viii., 2nd ser., Zool., 1900, 34. *Idem*, Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 32. *Idem*, Balss, Archiv für Naturg. 90, Abt. A., 5 heft, 1924, 27 (with references).

A series of five specimens (7 to 13.5 mm. wide) of this typical coral reef species was secured; this includes one adult of both sexes and three juvenile males.

Locality.—Reef at North-west Islet, Capricorn Group, Queensland.

Subfamily MAJINAE.
Genus TIARINIA Dana.
TIARINIA GRACILIS.

Tiarinia gracilis Dana, U.S. Explor. Exped., Crust. 1, 1852, 111, pl. 3, figs. 6a-d.
Idem, de Man, Abh. Senck. Naturf. Ges., xxv., 3, 1902, 674.

? *Tiarinia depressa* Stimpson, Smith. Misc. Coll., xlix., No. 1717, 1907, 12, pl. iii., fig. 2.

One ovigerous female with carapace 11 mm. long (including rostrum) and 7.5 mm. wide.

The specimen has been submitted to Dr. Rathbun, who considers it to be referable to the above species, although she states (*in lit.*) that "the tubercles are much less strong than usual." Dr. Rathbun also suggests that *T. depressa* Stimpson is a synonym of *T. gracilis* Dana, a statement I am inclined to accept. Unfortunately, however, there is no possibility of examining Stimpson's type material, as it was destroyed by fire in 1871 (see *loc. cit.*, 1907, 3) and any conclusions, therefore, must be based solely on his description and figure.

Loc.—North-west Islet, Capricorn Group, Queensland.

Superfamily BRACHYRHYNCHA.

Family PORTUNIDAE.

Genus THALAMITA Latreille.

THALAMITA ADMETE.

Cancer admete Herbst, Natur. d. Krabben u. Krebse, 3, pt. 3, 1803, 40, pl. 57, fig. 1.

Thalamita admete Rathbun, Mem. Mus. Comp. Zool., xxxv., No. 2, 1907, 63 (and references).

In all, three specimens of this species were collected—two females measuring 13 and 16.5 mm. across the carapace and one male measuring 31 mm.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

THALAMITA STIMPSONI.

Thalamita stimpsoni A. M. Edwards, Arch. Mus. Paris, x., 1861, 362, 367, pl. xxxv., fig. 4. Acock, Journ. Asiat. Soc. Bengal (n. ser.), lxxviii., 2, No. 1, 1899, 73, 79 (with references).

Two adult female examples with carapaces 45 and 52.5 mm. wide.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Genus CAPHYRA Guérin.

CAPHYRA LAEVIS.

Caphyra laevis A. M. Edwards, Nouv. Arch. Mus. Paris, ix., 1873, 173, pl. iv., fig. 2. Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 18.

Two ovigerous females, 16 mm. wide.

Though hitherto considered to be rare, this species apparently may be obtained fairly plentifully by combing one's fingers gently through the polyps of colonies of the Aleyonarian coral *Xenia*. With a pale bluish white carapace and legs marked longitudinally with darker bands to resemble its host, this little crab lives secure from its enemies, protected by the armed tentacles of the *Xenia*, and doubtless securing a plentiful supply of food in the way of small worms, etc., paralyzed by the stinging cells of its host.

This curious commensalism obviously explains the modification of the dactyls of the swimming legs for anchorage purposes.

Locality.—In a pool on the reef, North-west Islet, Capricorn Group, Queensland.

CAPHYRA ROTUNDIFRONS.

Camtonyx rotundifrons A. M. Edwards, Nouv. Arch. Mus. Paris, v., 1869, 156, pl. vii., figs. 11-12.

Caphyra rotundifrons Calman, Trans. Linn. Soc. London, viii., 2nd ser., Zool., 1900, 20.

One female example measuring 9 mm. across the carapace.

This species was originally described from New Caledonia and it has been recorded from "Torres Straits" by Calman (*loc. cit.*), but the present record ap-

pears to be the first definite one of its occurrence on the Australian coast. It is no doubt a commensal like the previous species, but unfortunately no information is available concerning its habits.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Family XANTHIDAE.

Genus PILUMNUS Leach.

PILUMNUS SPINICARPUS.

Pilumnus hirsutus Haswell, Cat. Austr. Crust., 1882, 69 (not *P. hirsutus* of Stimpson).

Pilumnus spinicarpus Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 15, pl. i., fig. 2, 2a (and synonymy). *Idem*, Rathbun, Biol. Res. "Endeavour," v., 3, 1923, 123.

One ovigerous female example measuring 15 mm. across the widest part of the carapace (including spines).

Synonymy.—Several recent acquisitions at the Australian Museum have been recognised as Haswell's *P. hirsutus*, but it was realised that his description did not fit either Stimpson's or Rathbun's (13) remarks, nor specimens in the Australian Museum, correctly identified by the latter author from the collections made by the F.I.S. "Endeavour." Unfortunately, the specimens on which Haswell based his record of *P. hirsutus* cannot be traced, and the opportunity to decisively solve the problem is lost. There can be no doubt, however, that Haswell's record was based on examples of Grant and McCulloch's *P. spinicarpus*, probably of larger size than the type material. The fact that Haswell records the presence of three to four spines on the merus of the legs is sufficient evidence alone to associate his description with *P. spinicarpus*, and the presence in the Australian Museum collection of a specimen of *P. spinicarpus* from the same locality (Holbourne Island, Queensland) as Haswell's record of "*P. hirsutus*" strengthens this belief; numerous specimens of *P. spinicarpus* are in the Australian Museum from many Queensland localities, thus indicating that it is a reef species of rather common occurrence.

Grant and McCulloch have already associated Haswell's *P. cursor* with their *P. spinicarpus*, an action with which I am in perfect accord after an examination of Haswell's specimens from Port Molle, Queensland.

Whitelegge's mention of *P. cursor* in 1897 (14) was based on Haswell's *P. cursor* (nec. A. M. Edwards).

It seems surprising that Haswell should have identified as separate species two batches of the same form. The only way to account for this is that his *P. hirsutus* material was larger in size than his specimens of *P. cursor*; he was evidently deceived by the growth variation that is noticeable on the examination of any large series of *P. spinicarpus*. Haswell was responsible for many anomalies in his work in the Catalogue of Australian Crustacea, but we must remember that he was the pioneer of systematic Australian Carcinology, and not judge him too harshly on what in his day was a monumental work.

Variation.—In large specimens of *P. spinicarpus* (there is one male before me 22 mm. wide) the frontal lobes are a little more produced and strongly serrated, a small area of the carapace behind the antero-lateral spines is clearly granular and the marginal spines are very well developed, particularly one at

(13). For references see Rathbun, Biol. Res. F.I.S. "Endeavour," v. 3, 1923, 122, pl. xxviii.

(14). Whitelegge, Austr. Mus. Mem., iii., 2, 1897, 136.

the outer angle of each orbit and the one immediately below it on each antero-lateral margin. Also, the spines of the sub-orbital margins are very distinct; at the inner angle of each orbit there may also be present a small well developed spine, and in the largest specimen examined the spines are more numerous on the merus of the legs than described by Grant and McCulloch. The foregoing characters are not noticeable on many other smaller specimens, including the types which are quite obviously undeveloped examples of the species. Haswell noted that he recognised what he considered a variety of his *P. hirsutus* (nec Stimpson) which had the tubercles of the hands less numerous and less prominent. This character is noticeable in several examples before me from Port Denison, but it is in a male specimen from Port Darwin that the variation reaches its most advanced stage. This example cannot be separated from *P. spinicarpus* in major characters, but the carpus of each cheliped is covered with only very small widely separated tubercles above, and the larger hand is quite smooth, except where three to four minute tubercles occur. Above, at its articulation with the carpus, the smaller hand is sparsely granular, being quite smooth elsewhere. Such deviation from the typical form is not unknown among other eastern Queensland Decapods whose range extends northward around the Australian coast, and I refrain from giving the above variety a name until it is possible to examine a much larger series of the species from the intermediate localities of its range.

There are specimens in the Australian Museum from—Off Pine Peak, Queensland (dredged), and N.N.E. of Bowen, Queensland, 16 fathoms—F.I.S. "Endeavour"; Masthead Island, Capricorn Group, Queensland (type locality); Port Molle, Queensland (*P. cursor* Haswell, nec. A. M. Edwards); Cairns Reef, off Cooktown, Queensland; Port Denison, Queensland; Holbourne Island, Queensland (same loc. as *P. hirsutus* Haswell, nec. Stimpson); Hayman Island, Whitsunday Group, Queensland; Port Darwin, North Australia (variety).

Locality.—Reef at North-west Islet, Capricorn Group, Queensland.

Genus CHLORODOPSIS A. M. Edwards.

CHLORODOPSIS PILUMNOIDES.

Chlorodius pilumnoides Adams and White, Zool. H.M.S. "Samarang," Crust., pt. 2, 1849, 41, pl. ix., fig. 3.

Chlorodopsis pilumnoides Rathbun, Biol. Res. F.I.S. "Endeavour," v., 3, 1923, 108.

Two male examples 12 to 12.5 mm. wide are clearly identical with this species; they agree well with Adams and White's description and figure.

Only one previous record of the species from the Queensland coast appears to have been published—that of Dr. Mary J. Rathbun (*loc. cit.*). This was based on a very small example (5.3 mm. wide) from off Cape Capricorn, Queensland, in thirteen fathoms. The present identification of an adult verifies the occurrence of the species.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Genus ERIPHIA Latreille.

ERIPHIA SEBANA.

Cancer sebanus Shaw, in Shaw and Nodder, Nat. Misc., xv., 1803, pl. 591.

Eriphia laevimana Grant and McCulloch, Proc. Linn. Soc. N.S.W., xxxi., 1906, 14.

Eriphia sebana Rathbun, Mem. Mus. Comp. Zool., xxxv., 2, 1907, 57.

Six specimens (2 males and 4 females) measuring 47 to 56 mm. across the carapace.

This is a very common species on the reefs of the Queensland coast.

Locality.—North-west Islet, Capricorn Group, Queensland.

Genus ETISUS H. M. Edwards.

ETISUS LAEVIMANUS.

Etisus laevimanus Randall, Journ. Acad. Nat. Sci. Philad., viii., 1839, p. 115.

Idem, Miers, Zool. "Alert," 1884, 217. *Idem*, Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxxvii., pt. 2, No. 1, 1898, 129, 131 (and synonymy). *Idem*, Calman, Trans. Linn. Soc. London, viii., 2nd ser., Zool., 1900, 7.

One male 64 mm. across the widest part of the carapace.

This is a widely distributed and common reef crab of the Queensland coast.

Locality.—North-west Islet, Capricorn Group, Queensland.

Genus ETISODES Dana.

ETISODES ELECTRA.

Cancer electra Herbst, Naturg. d. Krabben u. Krebse, 3, ii., 1801, 34, pl. li., fig. 6

Etisodes electra Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxxvii., 2, No. 1, 1898, 133 (and synonymy). *Idem*, Rathbun, Bull. U.S. Fish. Comm., xxiii., for 1903, pt. iii., 1906, 851, pl. ix., fig. 7. *Idem*, Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 10.

One male and one female measuring respectively 10.5 and 15.5 mm. across the widest part of the carapace. This species is not uncommon on the reefs of the Queensland coast.

Locality.—North-west Islet, Capricorn Group, Queensland.

Genus CHLORODIELLA Rathbun.

CHLORODIELLA NIGER.

Cancer niger Forskal, Deser. Anim., 1775, p. 89.

Chlorodius niger Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxxvii., 2, No. 1, 1898, 160. *Idem*, Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 12.

Chlorodiella niger Rathbun, Bull. U.S. Fish. Comm., xxiii., for 1903, pt. iii., 1906, 857. *Idem*, Rathbun, Biol. Res. F.I.S. "Endeavour," v., 3, 1923, 108.

Four males—two adults measuring 13 and 19 mm. across the carapace, one young male measuring 11 mm., and one juvenile 5 mm. There are very definite spines on the antero-lateral margins of the young in this species, but as growth proceeds these degenerate into lobes which may be very obtuse.

An exceptionally common species on the Queensland coast.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

CHLORODIELLA LAEVISSIMA.

Chlorodius laevisimus Dana, Proc. Acad. Nat. Sci. Philad., 1852, 80; and U.S. Expl. Expd., Crust. 1, 1852, 215, pl. xii., fig. 4a-g. *Idem*, Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 12.

Chlorodiella laevisima Rathbun, Bull. U.S. Fish. Comm., xxiii., for 1903, pt. iii., 1906, 857.

Five specimens (two males and three females) range from 6 to 8.5 mm. across the carapace, and are exactly similar to those in the Australian Museum recorded under the same name from Masthead Island in the Capricorn Group by Grant and McCulloch.

The examples are somewhat hesitatingly referred here, however, for the above authors have noted that their specimens differ a little from *C. laevissima* as originally described by Dana from the Hawaiian Islands in being sparingly areolate and having a noticeable tuft of felted hairs at the base of the fingers of the major chelipeds. The Queensland specimens in the Australian Museum collection which are identified as *C. laevissima* are easily distinguishable from the allied *C. niger* of Forskal, but this is apparently not so with the form Rathbun examined and determined as Dana's *C. laevissima* from the Hawaiian Islands (type locality). Rathbun states that "The line is not sharply drawn between" the two species occurring in these islands and they can only be separated on the following characters—"C. laevissima has an orange reddish colour, while *C. niger* is brownish. Adult *C. niger* has the carapace finely granulate under the lens. Adult *C. laevissima* has the central part of the dorsum smooth; young specimens of both are much smoother." Rathbun discredits the value of the arching of the fingers as a distinguishing character, thus opposing the views expressed by Dana and Alcock. Several of the specimens before me have been stored since capture in a medium of glycerine and water and exhibit the orange reddish colour noted by Rathbun. Each ambulatory limb, however, has in addition one or two transverse rows of reddish spots which are consistent in all of the Queensland specimens examined by me, both the present series and previous batches from other localities. All have the central part of the dorsum smooth; the anterior part is finely granular under the lens, this character being no doubt the one which inspired Grant and McCulloch's remark—"the carapace is sparingly areolate."

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Genus PLATYPODIA Bell.

PLATYPODIA ANAGLYPTA.

Atergatis anaglyptus Heller, Abhandl. zool.-bot. Gesell. Wien, 1861, 6; and S.B. Ak. Wien, xliii., 312, pl. ii. figs. 11-12.

Lophactaea anaglypta Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 9.

Platyrodia anaglypta Rathbun, Mem. Mus. Comp. Zool., xxxv., No. 2, 1907, 38.

One juvenile female and one half-grown male measuring 9 and 13 mm. across the carapace. Not uncommon on several islands off the Queensland coast.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Genus PHYMODIUS A. M. Edwards.

PHYMODIUS UNGULATUS.

Chlorodius ungulatus H. M. Edwards, Hist. Nat. Crust., i., 1834, 400, pl. 16, figs. 6-8.

Phymodius ungulatus Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxvii., pt. 2, No. 1, 1898, 162. *Idem*, Calman, Trans. Linn. Soc. London, viii., 1, 2nd ser. Zool., 1900, 11. *Idem*, Rathbun, Mem. Mus. Comp. Zool., xxxv., No. 2, 1907 46, pls. 3 and 4 (and synonymy).

A series of five specimens (3 males and 2 females) measuring from 11 to 25 mm. across the carapace are without doubt referable to the above species, although only the three smaller ones have the sculpture sharply defined, fitting more closely the description given by Alcock. The "pustule-like tubercles" referred to by that author are much more evident in the female and juvenile examples of this species, but it is unnecessary here to enlarge on variation, as Rathbun (*loc. cit.*) has already treated the subject very fully.

A very common form on the Queensland coast—large series occur in almost every collection from the area.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Genus *CARPILIUS* Leach (in Desmarest).

CARPILIUS MACULATUS.

(Pl. xli.)

Cancer maculatus Linnaeus, Syst. Nat., xii., edit. i., pt. 2, 1767, 1042.

Carpilius maculatus Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxvii., 2, No. 1, 1898, 79. *Idem*, McCulloch and McNeill, Rec. Austr. Mus., xiv., 1, 1923, 54.

One male specimen of record size. The carapace is 140 mm. wide and the major hand 88 mm. long (measured with the fingers closed). The present record is the first of a live specimen from Australian waters. McCulloch and myself recorded the species for the first time in 1923 (*loc. cit.*); this was based on a dried carapace and hand found washed up on the reef at Holbourne Island, Queensland.

From recent verbal reports I am led to understand that the species is not as rare on the Queensland coast as the present records tend to indicate.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

CARPILIUS CONVEXUS.

Cancer convexus Forskal, Deser. Anim., 1775, 88.

Carpilius convexus Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxvii., pt. 2, No. 1, 1898, 79, 80 (and synonymy). *Idem*, Calman, Trans. Linn. Soc. London, viii., 1, 2nd ser. Zool., 1900, 4.

A large male example 79.5 mm. across the carapace.

This appears to be the first time the species has been recognised from the Queensland coast, where it is not uncommon on many of the islands off the mainland. Calman records it (1900 *loc. cit.*) from Murray Island, Torres Strait.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Genus *ATERGATIS* de Haan.

ATERGATIS OCYROE.

Cancer ocyroe Herbst, Naturg. d. Krabben u. Krebse, iii., 2, 1801, 20, pl. liv. fig. 2.

Atergatis floridus Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxvii., 2, No. 1, 1898, 95, 98. *Idem*, Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 9.

Atergatis ocyroea Rathbun, Mem. Mus. Comp. Zool., xxxv., No. 2, 1907, 37 (and synonymy).

Four male examples, comprised of three adults measuring 35 to 50 mm. across the carapace and one juvenile measuring 11 mm.

This is one of the most conspicuous Decapod forms on the coral reefs of the Indo-Pacific Oceans.

Locality.—North-west Islet, Capricorn Group, Queensland.

Genus *ACTAEA* de Haan.

ACTAEA TOMENTOSA.

Zozymus tomentosus H. M. Edwards, Hist. Nat. Crust., i., 1834, 385.

Actaea tomentosa Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxvii., 2, No. 1, 1898, 138, 140.

One half-grown male measuring 17.5 mm. across the carapace. Well known from the Queensland coast and a common inhabitant of the Oriental Region.

Locality.—North-west Islet, Capricorn Group, Queensland.

Genus LEPTODIUS A. M. Edwards.

LEPTODIUS SANGUINEUS.

Chlorodius sanguineus H. M. Edwards, Hist. Nat. Crust., i., 1834, 402.

Xantho (Leptodius) sanguineus Alcock, Journ. Asiat. Soc. Bengal, lxxvii., 2, No. 1, 1898, 119 (and synonymy).

Leptodius sanguineus Rathbun, Bull. U.S. Fish. Comm., xxiii., for 1903 (1906), 847.

One female example measuring 23.5 mm. across the carapace.

The species is common on the Queensland coast.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Genus XANTHO Leach.

XANTHO CRASSIMANUS.

Xantho crassimanus A. M. Edwards, Ann. Soc. Entom. France, vii. (4), 1867, 267.

Xantho (Leptodius) crassimanus Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxxvii., pt. 2, No. 1, 1898, 118, 120.

Xantho crassimanus Rathbun, Bull. U.S. Fish. Comm., xxiii., for 1903 (1906), 847.

One female example measuring 17 mm. across the carapace.

Well distributed in Queensland waters.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Genus XANTHIAS Rathbun.

XANTHIAS ATROMANUS.

Xanthodes atromanus Haswell, Proc. Linn. Soc. N.S. Wales, yi., 1882, 542; and Cat. Austr. Crust., 1882, 49, pl. i., fig. 1. *Idem*, Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 12.

Xanthias atromanus Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxii., 1907, 151. *Idem*, Rathbun, Proc. Zool. Soc. London, 1914, 659.

One male and one ovigerous female measuring respectively 15 and 10 mm. across the carapace. Although originally described from Port Jackson in New South Wales, this is a typical reef species of the Queensland coast. It has a remarkable range of colour variation.

Locality.—North-west Islet, Capricorn Group, Queensland.

XANTHIAS LAMARCKII.

Xantho lamarckii H. M. Edwards, Hist. Nat. Crust., i., 1834, 391.

Xanthodes lamarckii Calman, Trans. Linn. Soc. London, viii., 1, 2nd ser., Zool., 1900, 11 (and synonymy). *Idem*, Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 12.

Xanthias lamarckii Rathbun, Bull. U.S. Fish. Comm., xxiii., for 1903, pt. iii., 1906, 854.

One adult male measuring 15 mm. across the carapace.

A striking reef species with a finely granulated carapace. Occurs with the preceding species, but is not so common.

Locality.—North-west Islet, Capricorn Group, Queensland.

Genus CYMO de Haan.

CYMO ANDREOSSYI.

Pilumnus ? *andreossyi* Audouin, in Savigny's Descr. de l'Egypte, Crust., 1825, 86, pl. v., fig. 5.

Cancer (*Cymo*) *andreossiji* de Haan, in Siebold's Fauna Japonica, Crust. 1. 1833, 22.

Cymo andreossyi Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxvii., 2, No. 1, 1898, 173.

One male specimen 12 mm. wide with a Rhizocephalid parasite attached under the abdomen.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Genus TRAPEZIA Latreille.

TRAPEZIA CYMODOCE.

Cancer cymodoce Herbst, Naturg. d. Krabben u. Krebse, iii., 2, 1801, 22, pl. li., fig. 5.

Grapsillus cymodoce Rathbun, Bull. U.S. Fish. Comm., xxiii., for 1903 (1906), 865, pl. xi., fig. 6.

Trapezia cymodoce Rathbun, Mem. Mus. Comp. Zool., xxxv., 2, 1907, 58, 59. *Idem*, Biol. Res. F.I.S. "Endeavour," v., 3, 1923, 129.

Four males and two females (14 to 19 mm. wide) of this characteristic and widely distributed coral infesting species.

The males have the fine furry pubescence of the outer palm confined to the upper half, while in the females it extends lower.

Locality.—North-west Islet, Capricorn Group, Queensland.

TRAPEZIA DIGITALIS.

Trapezia digitalis Latreille, Encyclop. Methodique, x., 1825, 696. *Idem*, Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxvii., 2, No. 1, 1898, 218, 222.

Grapsillus digitalis Rathbun, Bull. U.S. Fish. Comm., xxiii., for 1903 (1906), 866.

One ovigerous female measuring 10 mm. across the carapace (including lateral spines). Unfortunately the chela are missing from the specimen, but it is referred without much doubt to this species.

The species of the genus *Trapezia* are most complex, and Dr. Mary J. Rathbun's aid was sought in the determination of the above incomplete specimen, representing a species hitherto unrecognised in Australian waters. The specimen is small and has the lateral spines pointed, while the antero-lateral spines at the outer angles of the orbits are projected sideways. These characters are also noticeable in four smaller specimens (about the same size and smaller than the above example) of a series of six before me from Ysabel, British Solomon Islands. The two largest specimens of this lot, however, have blunt lateral spines, and the antero-lateral spines are projected forwards. All but the two largest specimens have their legs spotted proximally, and longitudinally lined distally. There is also a well defined patch across the carapace between the eyes which reaches backwards from the front to half the distance across the width of the eyes. Dr. Rathbun states (*in lit.*) that none of the United States National Museum specimens of *T. digitalis* "show spots on the legs if they originally had them." Apparently her examples of the species are uniformly coloured like the two largest specimens before me, which were devoid of any colour-marking when collected.

Genus PSEUDOZIUS Dana.

PSEUDOZIUS DISPAR.

Pseudozius dispar Dana, U.S. Explor. Expd., Crust. 1, 1852, 235, pl. xiii., fig. 9.
Idem, Calman, Trans. Linn. Soc. London, viii., 1, 2nd ser. Zoology, 1900, 14
 (and synonymy).

One young male and one ovigerous female measuring respectively 10.5 and 11 mm. across the carapace.

This small dainty light red species appears to have not been recognised further south in the eastern Pacific than New Caledonia, from whence it was described by A. M. Edwards as *Pilumnus nitidus* in 1873.

A group of conspicuous granules is present on the proximal half of the outer palm of the larger hand of the male specimen before me, a character which is variable in the species; this group of granules may be larger in individuals of smaller size or may be entirely absent in slightly larger specimens irrespective of sex, as proved by the examination of a series of six examples in the Australian Museum collection from New Caledonia. The granulation of the outer palm of the smaller hand appears to be constant in the species.

Locality.—North-west Islet, Capricorn Group, Queensland; on reef.

Genus PILUMNUS Leach.

PILUMNUS CAERULESCENS.

Pilumnus caerulescens A. Milne Edwards, Nouv. Arch. Mus. Paris, ix., 1873, 242, pl. ix., fig. 3. *Idem*, Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxvii., 2, No. 1, 1898, 191, 196. *Idem*, Rathbun, Proc. Zool. Soc. London, 1914, 660 (with references).

One male, two females (the smaller ovigerous). The male specimen is the smallest of the series, and measures 6.5 mm. across the carapace (including spines). The ovigerous female is a little larger than the male, being 8 mm. wide. The remaining female is 11 mm. wide. A fourth specimen is now in the collection of the United States National Museum.

The acquisition of the above examples is most interesting, as there is every reason to accept them as A. M. Edwards' species, which was originally described from New Caledonia. On not being able to refer the specimens to any known Australian species of the genus *Pilumnus*, I sought the kindly help of Dr. Mary J. Rathbun in their determination. Very few specimens have been referred to *P. caerulescens* since it was originally described. Alcock (*loc. cit.*) doubtfully records it from the Andamans, while Dr. Rathbun recognised, with a query, another specimen from Siam; the last author also recorded what she considered a variety of the species from the Monte Bello Islands, N.-W. Australia. The present record is from a locality much nearer New Caledonia (type locality) than any of the above, and as so many Decapods are common to both of the areas indicated, there appears to be little doubt that the specimens before me are true *P. caerulescens*.

The figure of the species given by A. M. Edwards is poor, and it is not unreasonable to accept the tooth shown next to the orbital tooth as being really suborbital; Alcock (*loc. cit.*) has already indicated this in his description. A. Milne Edwards remarks that the areolation evident in this species is unusual for a *Pilumnus*.

On account of the obscurity of *P. caerulescens* it was my intention to fully describe and figure the material before me, but the specimens were returned from Dr. Rathbun in America too late to give effect to my desire; I hope to do this most important work at a later date.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland; from cavities in dead coral blocks.

There is another male specimen (12 mm. wide) in the Australian Museum collection from Port Denison, Queensland, which is also considered referable to the above species. Yet another example of about the same size from Saddleback Island, Queensland, was retained by Dr. Rathbun for the United States National Museum.

Family OCYPODIDAE.

Genus OCYPODE Fabricius.

OCYPODE CERATOPHTHALMA.

Cancer ceratophthalmus Pallas, Spicilegia Zool., ix., 1772, 83, pl. v., figs. 7-8.

Ocypoda ceratophthalma Alcock, Journ. Asiat. Soc. Bengal (n. ser.), lxix., 2, No. 3, 1900, 345 (and synonymy). *Idem*, Grant and McCulloch, Proc. Linn. Soc. N.S. Wales, xxxi., 1906, 20.

One male and one female, measuring respectively 36 and 38 mm. across the widest part of the carapace.

This widely distributed Indo-Pacific beach infesting species occurred commonly at North-west Islet, and has been recorded as common on Masthead Island nearby (*loc. cit.*, 1906).

Locality.—Capricorn Group, Queensland.

Family MICTYRIDAE Dana.

Genus MICTYRIS Latreille.

MICTYRIS LONGICARPUS.

Mictyris longicarpus Latreille, Genera Crust. et Insect., i., 1806, 40 and 41. *Idem*, McNeill, Rec. Austr. Museum, xv., 1, 1926, 102, pl. ix., and text fig. 1 (and synonymy).

An unique juvenile male example 8 mm. wide.

The occurrence of this species is unusual, as the prevailing conditions of the locality are very different to those of the mainland or mainland islands where *Mictyris* lives on the inter-tidal muddy-sand flats. I learn that there is a small quantity of silt present amongst the coral sand close inshore at North-west Islet, and it is possible that the area would sustain an occasional larva of the species which might be accidentally washed ashore. No further specimens came under the notice of the collectors during their stay of two weeks on the Islet.

Locality.—North-west Islet, Capricorn Group, Queensland.

Order STOMATOPODA.

Family SQUILLIDAE.

Genus GONODACTYLUS Latreille.

GONODACTYLUS CHIRAGRA.

Squilla chiragra Fabricius, Species Insectorum, i., 1781, 515.

Gonodactylus chiragra Kemp, Mem. Indian Mus., iv., 1, 1913, 147, 150, 155, pl. ix., fig. 107, and text figs. 1-2 (and synonymy).

Four examples measuring 40-91 mm. from the tip of the rostrum to the end of the telson. The largest specimen is identified as var. *platysoma*.

Not uncommon off the coast of Queensland.

Locality.—North-west Islet, Capricorn Group, Queensland.

GONODACTYLUS GLABROUS.

Gonodactylus glabrous Brooks, Voy. H.M.S. "Challenger," xvi., Stomatopoda, 1886, 62, pl. xiv., fig. 5, pl. xv., figs. 7-9. *Idem*, Kemp, Mem. Indian Museum, iv., 1, 1913, 148, 150, 167, 197, pl. ix., fig. 113 (and synonymy).

Sixteen specimens measuring 20-53 mm. from the tip of the rostrum to the end of the telson.

Although this species appears to be very common on the coast of eastern Queensland, it has not been recorded from further south than Sir C. Hardy's Island, N.-E. Australia—see Henderson, Trans. Linn. Soc. London, v., 10, 2nd ser., Zoology, 1893, 454 (as *G. glaber*).

Further study of the Stomatopoda of Queensland will probably show that this species is more common on the coast than *G. chiragra*.

Locality.—North-west Islet, Capricorn Group, Queensland; on reef.

GONODACTYLUS STOLIURUS.

(Fig. 2.)

Protosquilla stoliura Müller, Verhandl. Naturf. Ges. Basal, viii., 1886, 477, pl. iv., fig. 2.

Gonodactylus stoliurus Kemp, Mem. Indian Mus., iv., 1, 1913, 149, 184 (and synonymy).

One juvenile example, measuring 20 mm. from the tip of the rostrum to the end of the telson, which agrees in all important characters with Kemp's description and the characters enumerated in his key to the species of *Gonodactylus*. The median rostral spine, however, reaches a little further than the "base of the eye stalks," and the innermost of the distal teeth of the telson are undeveloped and not very conspicuous, there being only three distinct teeth on each side.

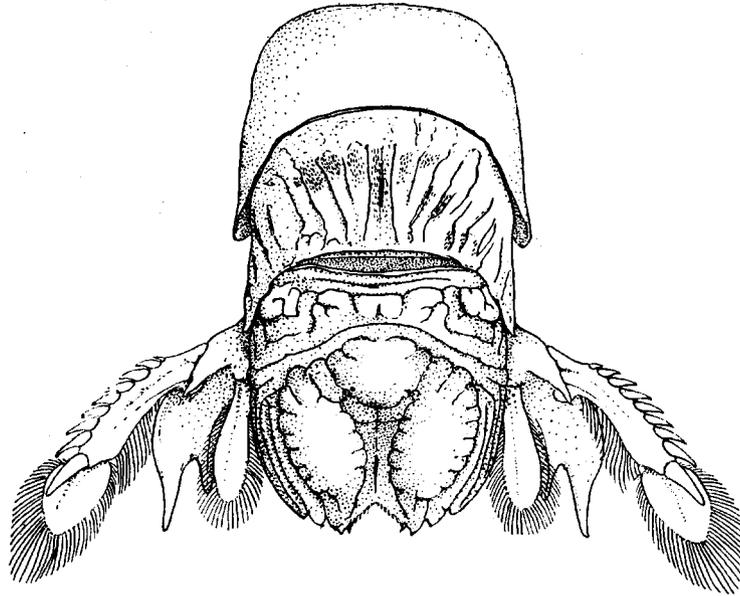


Fig. 2. *Gonodactylus stoliurus* Müller.

Last two abdominal somites, telson and uropods in dorsal view of a juvenile example 20 mm. long. (G. P. Whitley, *del.*).

Further evidence of immaturity lies in the fact that there are only nine spines instead of "ten or eleven" on the external margin of "the basal segment of the exopod."

The species has not previously been recognised from Australian waters.

Thanks are due to Mr. G. P. Whitley for the production of the original of the fine text-figure illustrating my remarks on this species.

Colour.—Uniform chocolate brown, which has not changed since preservation.

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Order ISOPODA.

Suborder FLABELLIFERA. Family CYMOTHOIDAE.

CYMOTHOA INDICA.

Cymothoa indica Schioedte and Meinert, Naturh. Tidsskr. (3), xiv., 1884, 250, pl. viii., figs. 1-4.

This species has not been previously noted in Australian waters; it occurs on our north-western and north-eastern coasts and is more fully dealt with by Hale (15) in a paper appearing about the same time as this present contribution.

Locality.—North-west Islet, Capricorn Group, Queensland; "from pectoral fin of *Mugil* sp." (G. P. Whitley).

Obs.—The above identification and note by H. M. Hale.

Family SPHAEROMIDAE.

CYMODOCE BIDENTATA, var.

Cymodocea bidentata Haswell, Cat. Austr. Crustacea, 1882, 291.

Two examples (male and female) of a variety with the uropods a little longer and the anterior portion of the pleon considerably shorter than in typical examples, but similarly sculptured. The specimens measure 5 and 8 mm. (measured to end of telson).

Locality.—Reef, North-west Islet, Capricorn Group, Queensland.

Obs.—The above note and identification by W. H. Baker, South Australia.

Suborder GNATHIDEA.

Family GNATHIIDAE.

GNATHIA sp.

A series of *Praniza* larvae taken from the gill of a Blind Shark (*Chiloscyllum punctatum*). Immature specimens of these curious isopods are not uncommon in the gills of rays and sharks captured off the Queensland coast.

Locality.—North-west Islet, Capricorn Group, Queensland.

Obs.—The above note and identification by H. M. Hale.

Suborder ONISCOIDEA.

Family ONISCIDAE.

METOPONORTHUS PRUINOSUS.

Porcellio pruinosus Brandt, Consp. monogr. Crust. Isop. terrestr., 19, ? year, fig. 21.

Metoponorthus pruinosus G. O. Sars, Crust. Norway, ii., 1898, 184, pl. lxxx., fig. 2 (with synonymy).

This is an European species which has accidentally been introduced by man into nearly all parts of the world. By some, it is now placed under the genus *Porcellionides*, or rather this is the name they prefer to use.

Locality.—Wilson Islet, Capricorn Group, Queensland (G. P. Whitley):

Obs.—The above note and identification by Dr. Chas. Chilton.

Subclass CIRRIPIEDIA.

Order THORACICA.

Suborder BALANOMORPHA.

Family BALANIDAE.

Subfamily CHELONIBIINAE.

Genus CHELONIBIA Leach.

CHELONIBIA TESTUDINARIA.

Pilsbry, Bull. U.S. Nat. Museum, Washington, 93, 1916, 264, pl. 62, figs. 1-4 (and synonymy).

One example, 28 x 37 mm., was taken from the carapace of a turtle (*Chelone mydas*).

Locality.—North-west Islet, Capricorn Group, Queensland.

(15). Trans. Roy. Soc. S. Austr., xix., 1926, 212, text fig. 8



Carpilius maculatus Linn.

A male specimen of record size, 140 mm. wide, from North-west Islet,
Capricorn Group, Queensland.

Photograph by A. Musgrave.