THE CRUSTACEA OF FUNAFUTI.

By THOMAS WHITELEGGE,

Zoologist, Australian Museum.

[VI.]

THE CRUSTACEA.

By Thomas Whitelegge.

The Collection consists of over three hundred specimens, representing sixty-two species, five of which are herein described as new. The various tribes are represented as follows:—

	Species.
Cyclometopa	24
Catometopa	7
Oxystomata	1
Anomura	19
Macrura	7
Stomatopoda	1
Isopoda	1
Epicaridea...	1
Cirripedia	1

The species regarded as new have been described as fully as possible, and include one each of *Pilumnus*, *Diogenes*, *Porcellana*, *Betæus*, and a very interesting Epicarid of the genus *Athelgue*, which was found on a Hermit Crab—*Aniculus typicus*.

I have also added such notes as would tend to aid in the identification of some of the lesser known species, and of any variations or departures from the typical forms. Among the rarer species noticed may be mentioned *Xanthodes nitidulus*, Dana; *Carpilodes margaritatus*, M. Edw.; *Actaeodes speciosa*, Dana; *Pseudoozius caystrus*, Ads. & White; *Tetralia cavimana*, Heller; *Geograpsus crinipes*, Dana; *Harpilius miersii*, De Mann; *Cirolana latistylis*, Dana, and *Lithotrya nicobarica*, Reinhardt.

The *Geograpsus crinipes* appears to be a strictly terrestrial form, breathing air direct by means of the hair-lined pores situated between the bases of the third and fourth pairs of legs, as in the genus *Ocypoda*. As far as I can ascertain, this is the first instance of a Grapsoid Crab living wholly on dry land.

Mr. C. Hedley has kindly supplied the following field notes on the Crustacea:—

"The dominent note in the life of a coral atoll, as expressed by the Funafuti fauna, struck me as the abundance and ubiquity of Crustacea. The Avifauna were but sea fowl, the indigenous Mammalia but rats, the Reptilia only a stray scink and gecko,

while insects and land mollusca, usually so profuse in tropical latitudes, were barely represented. Into the vacant places swarmed Crustacea. Not an inch of the atoll world is secure from them. The *Cœnobita* wander across from shore to shore and dispute any stray edibles with the rats. Some crabs even take up their residence in the tree tops of Pandanus, while, as everybody knows, *Birgus* is as much at home on a palm bole as a squirrel on an oak. As I believe, and have endeavoured to demonstrate (pp. 22, 23, *ante*), that the coconut is foreign to the native flora, and of comparatively recent introduction from abroad, it follows that the taste for this nut has been acquired in historical times by *Birgus*, whose original food was probably Pandanus fruit.

"Human habitations are not even secure from crabs. Often while quietly reading or writing, especially at night, have I seen crabs, for instance *Ocypoda ceratophthalma*, steal warily across the floor towards some attractive food. Deterred for the moment by a missile or an exclamation, they would recommence like any impertinent mouse their pertinaceous efforts when attention lulled. One impudent intruder established himself in a burrow under my very bunk.

"Active as they are during the day, it is at night that the land crabs hold high carnival. A traveller has thus described his experience of his first night on an atoll* :—'It was fortunate that we had provided ourselves with lights, or we might have imagined our habitation to be occupied by every noxious reptile. As far as the fading daylight had shown us, the Island appeared covered with rough pebbles of coral. Imagine our surprise on lying down to sleep, to find that all these imaginary pebbles had become endowed with animation. A dull crackling, or rather rustling, noise seemed to pervade the air, earth and sea, and so disagreeably near to us, that I started up to ascertain the cause. Judge of my astonishment, when I perceived the numerous rough looking pebbles all alive, moving about briskly upon the floor of our hut, and crawling over our mats in all directions. A little nearer inspection discovered them to be shells of a species of perrywinkle of all sizes, each being occupied by a kind of hermit crab, projecting his rough and ugly looking claws from the orifice of the shell. I went outside, and found the entire surface of the Island in motion. The moon enabled us to see that not only on the ground, but even on the trunks of the trees, on the roofs of the huts, and every place to which their claws could gain access, there were these creatures to be found.'

"On the beaches the Crustacea were everywhere abundant, particular species possessing each their special zone. About high tide mark on the windward shore promenaded *Grapsus maculatus*,

* Webster—Last Cruise of the "Wanderer," n.d., p. 55.

a crowd of which scattered before the footsteps of a visitor, and sought refuge under loose coral blocks or in deep pools. Rolling over a slab of dead coral rock anywhere between tide marks exposed the haunt of a little community of *Petrolisthes dentata* and *Leiolophus planissimus*. Intercepted in their efforts to escape, these would flatten themselves down to the surface of the stone so closely that the collector's fingers with difficulty grasped them. The deeper rock-pools at the border of the reef-flat, the chief home of *Salarius*, were usually tenanted by a few *Calcinus elegans*, whose brilliant red, blue, and white claws distinguished it as the dandy of the company. This species is never found out of the range of rough waves. The extreme windward portion of the reef left dry at low tide was but rarely attainable; *Aniculus*, whose bristly claws usually protruded from a stolen *Turbo* shell, was a distinctive feature of this zone. In the honey-combed pits of the nullipore mounds that breasted the surf, cowered *Daira perlata*. The close resemblance of colour and contour to the surrounding rock, rendered this crab difficult to detect, and when seen the creature's powers of adherence and the sweep of the Pacific rollers rendered it as difficult to seize.

"The mangrove swamp was very barren of Crustacea compared to the usual population of such places. One quite missed the droll little *Gelasmus*, waving his big claw in defiance. After gathering coconuts, the natives usually husk them on the spot and throw the discarded husks in a pile to decay. These stacks of rotting husks are prolific collecting grounds for Invertebrata in general, and the favourite shelter in day time for *Birgus* and *Cardisoma*, the latter of which also burrowed in soft muddy places."

BRACHYURA.

Tribe CYCLOMETOPA.

ATERGATIS FLORIDUS, *Rumph.*

Atergatis floridus (Rumph.), Dana, Crust. U.S. Explor. Exped., i., p. 159, pl. vii., fig. 4.

Fourteen specimens of this very common species were obtained on the outer reef at low tide line.

ACTÆA RUGATA, *Adams & White.*

Actæa rugata, Adams & White, Voy. "Samarang," Crust., 1848, p. 43, pl. viii., fig. 5.

One half-grown example, the colour being well preserved. The upper surface of the carapace presents three reddish and four white longitudinal lines, disposed as follows: a median red line extending from the front to the first post abdominal segment,

where it bifurcates and is continued on the second. The two lateral red bands commence at the external orbital angles, and by slight curves extend to the commencement of the postero-lateral borders; the external white lines are confined to the antero-lateral lobes; the inner pair of white lines commences at the orbital borders and is continued to the posterior margin of the carapace.

The cardiac region appears to the unaided eye as if it had a median groove, but on closer inspection with a lens it is seen that this appearance is due to the deeper shade of red rather than to a depression.

The hairs on the carapace are yellowish, the longer ones forming fringes around the bases of the lobules, and the shorter ones at the bases of the granules.

Length of carapace ..... 8mm.
Breadth of carapace.....10mm.

XANTHODES LAMARCKII, *M. Edw.*

Xanthodes lamarckii, M. Edw. Hist. Nat. Crust., i., p. 391; Nouv. Arch. Mus., ix., p. 200, pl. vii., fig. 3; *X. granosomanus*, Dana, Crust. U.S. Explor. Exped., i., p. 175, pl. viii., fig. 10*a*.

There are five examples of this species—three males and two females: the post abdomen in the latter is fringed with long hairs.

XANTHODES NITIDULUS, *Dana.*

Xanthodes nitidulus, Dana, Crust. U.S. Explor. Exped., i., p. 177, pl. viii., fig. 11, *a*, *b*, *c*.

A solitary female of this rare and beautiful species was collected.

It presents several important characters not mentioned in the original description by Dana. The carapace is smooth, shining, and minutely punctate; when viewed with a lens it is seen to be covered with a uniform but microscopic granulation. On the chelipedes and ambulatory legs the granules tend to become seriate and form reticulating lines with smooth spaces between.

On the sub-hepatic and pterygostomial regions the granules are larger and visible to the unaided eye, more especially along the line defining the regions, and extending from below the basal joint of the external antennæ to below the second antero-lateral spine.

The chelipedes are equal; the ischium is hairy and granulose, on its anterior edge, at its distal extremity, is a low tooth bounded by a transverse groove.

The external surface of the merus is smooth and convex; the anterior granular; the internal concave, adapted to the shape of

the carapace, and its margins fringed with hairs; a compressed tooth exists near the distal end of the upper margin, which is separated by a groove from a similar but smaller tooth at the extremity. The carpus has two blunt teeth on its inner distal angle, the lower and smaller one granular at the base. The impression mentioned by Dana on its upper surface is more like Y reversed than V.

The fingers are acute, crossed at the tips and in contact throughout when closed; they are blackish-brown with white points.

The ambulatory legs are fringed above with long yellow hairs. The upper edges of the merus joints are acute to within a short distance of the distal extremity. The hairs on the carpal, propodal and tarsal joints are shorter than those on the meral.

The carapace and limbs are marbled with flesh-colour, red, and orange.

Length of carapace, 28mm.; breadth (posterior pair of lateral spines included), 44mm.

Obtained on the edge of the outer reef amongst the Nullipores.

ZOZYMUS ÆNEUS, *Dana.*

Zozymus æneus, Dana, Crust. U.S. Explor. Exped., i., p. 192, pl. x., fig. 3.

One male of this very common species, obtained amongst the nullipores on the outer reef.

DAIRA PERLATA, *Herbst.*

Daira perlata (Herbst.), Dana, Crust. U.S. Explor. Exped., i., p. 204, pl. x., fig. 14.

One adult female, found in the honeycomb crevices of the nullipore mounds on the outer reef.

ETISUS LÆVIMANUS, *Randall.*

Etisus lævimanus (Randall), Dana, Crust. U.S. Explor. Exped., i., p. 185, pl. x., fig. 1*a*.

One adult male.

ETISODES CÆLATUS, *Dana.*

Etisodes cælatus, Dana, Crust. U.S. Explor. Exped., i., p. 188, pl. ix., fig. 4.

Two immature males.

CARPILODES MARGARITATUS, *M. Edw.*

Carpilodes margaritatus, M. Edw., Nouv. Arch. Mus., ix., p. 182, pl. v., fig. 2.

One half-grown male of this pretty little species is in the collection.

The specimen agrees well with the description and figure, excepting the chelipedes; the slight difference may be sexual (the sex of the the type is not stated).

The black colour of the immobile finger extends a short distance on the palm; there are also indications of two faint longitudinal ridges, one in a line with the upper border of the immobile finger and the other opposite the space between the fingers.

This species is also found in New Caledonia.

PILUMNUS VESTITUS, *Haswell.*

Pilumnus vestitus, Haswell, Cat. Austr Mus., v., Crust., p. 68, 1882; Miers, in Chall. Rep.—Zool., xvii., p. 159, pl. xiv., fig. 3.

There is one small male in the collection.

As Dr. De Mann in his Crustacea of the Mergui Archipelago* remarks that a more exact knowledge of this species is desirable, I venture to give a few of the characters which may aid in its future identification, derived from the examination of specimens obtained in Port Jackson. The frontal, gastric, cardiac, and postero-lateral regions of the carapace are smooth, appearing punctate only when the hairs are removed, each hair arising from a small depression, more especially on the posterior portion of the pterygostomial region which is minutely and closely punctate, as is also the posterior lateral sides and the hinder margin of the carapace.

The slightly elevated line marking the posterior border of the carapace is granulose, the line is continued on each side as far as the insertion of the chelipedes but the granules are much smaller and closer.

The lobes of the front and the external halves of the upper orbital borders are more or less granulose, the lower orbital border with from eight to twelve subspiniform granules. The lower internal and the external angles are distinctly spinose. A sub-hepatic spine is also present.

The first and second antero-lateral teeth are a little compressed at the base; they are punctate and granular on their external aspect; the third tooth is without granules; each tooth ends in a conical horny point.

On the upper surface of the carapace, near the antero-lateral teeth are situated a few horny spines and numerous subspiniform granules which extend towards the gastric and cardiac regions.

In some large male examples, the first and second teeth have each an accessory spine behind.

The chelipedes are unequal, the right being the largest.

* Journ. Linn. Soc.—Zool., xx., 1888, p. 65.

The merus is armed on its upper distal border with two spines separated by a groove; there are also two spiniform granules posterior to these, about the middle.

The carpus has five more or less distinct rows of spines on its outer and upper surface; four of the rows form a reversed V within a V, the larger V interrupted at its base near the articulation with the hand. The fifth row occupies the upper margin and consists of from four to six spines.

On the external surface of the palm there are three or four rows of spines, sometimes incomplete.

The mobile finger is sulcate near its base, and has three rows of subspiniform granules; in the right chelipede of the male the granules are scattered.

The lower border and internal surface of the large hand are smooth; the left chelipede in both male and female has the lower border granulose, and there is a longitudinal line of from four to six granules on the inner median surface of the palm.

The upper edges of the merus of the first three pairs of ambulatory legs are armed with three spines, two of which are curved and situated about the middle; the third is straight, and projects at the distal extremity. The lower margins have a few spiniform granules. The carpal joints of the first and second pairs of legs are armed above with five spines, four of which are equal in size and apart; they are confined to the proximal two-thirds of the upper edge; the fifth spine is at the distal extremity.

External to the spines on the crest of the carpus on the posterior upper surface are situated four similar spines not extending beyond the proximal half of the joint. These spines are bounded below by a shallow longitudinal groove which is quite smooth and shining. Both merus and carpus of the fourth pair of legs are without spines, excepting those at the distal extremities.

Length of carapace of		male	17mm.
Breadth	,,	male	23mm.
Length	,,	female	14mm.
Breadth	,,	female	19mm.

PILUMNUS PRUNOSUS, sp. nov.

(Plate vi., fig. 1, *a*, *b*.)

The carapace is transversely and longitudinally convex; both it and the legs are clothed with a short down and stiff yellowish brown hairs. The antero-lateral margins are longer than the postero-lateral. The surface of the carapace is smooth; if the hairs are removed the surface appears punctate, the pits being the depressions from which the hairs originate; regions scarcely perceptible.

The front is declivous, thin, smooth, and consisting of two rounded lobes separated by a median notch, from which a shallow groove extends to the epigastric region. Laterally the lobes are separated from the internal orbital angles by a very slight sinus and a pair of granules, the outer of which is the largest.

Front, upper and lower orbital margins defined by a narrow continuous line, several shades lighter in colour than the adjacent parts; a similar line exists on the margins of the episternum and of the post-abdomen.

The upper orbital borders are smooth, the internal angle rounded; the external marked by a wide sinus and a small spine. The lower orbital border distantly granulose, four of the inner granules tending to become spiniform, the second one much larger than the others; a narrow hiatus exists at the infero-external angle.

The suborbital surface, apart from the margin, is smooth externally, a narrow band of granules extend from the base of the inter-orbital to the external and first antero-lateral spines.

The sub-hepatic spine is absent, its place is occupied by three or four small rounded granules.

First and second antero-lateral spines compressed, the third round and broad at the base. Each spine terminates in an acute point. In the female the external orbital spine has a small accessory spine at its base.

The outer antennæ are fairly long and reach to the first antero-lateral spine; the basal joint is almost in contact with the descending process of the front; it narrows distally and is twice as long as broad; penultimate shorter and stouter than the ultimate; the latter and the distal half of the former can be seen from above, projecting beyond the external angle of the front.

The chelipedes are unequal, the right the larger. Merus and carpus equal in length, the former trigonous and smooth excepting the margins. The inferior angle has a row of about nine granules, the four proximal forming a curved line towards the antero-internal angle. The short anterior angle has two granules, the distal one subspiniform. The superior margin is armed with two or three subspiniform granules and two acute spines distally, which are separated by a well-defined groove. The carpus is clothed with long hairs and subspiniform but seldom acute tubercles; there is an impressed line near its articulation with the hand, and a spine on its inner margin.

The subspiniform granules on the hand are seriate and consist of seven longitudinal rows; the lower border is granulose near the base of the finger; proximally it is smooth in the male, but granular and hairy throughout in the female. On the outer surface of the palm are four rows, the lowest in line with the third

denticle of the finger, the next in line with the basal denticle, the third opposite the space between the fingers, and the fourth in a line with base of the mobile finger. Between the first and second rows, and opposite the middle tooth of the immobile finger, is situated a short line of three granules; one of these granules is on the finger. On the upper surface are situated two rows, one extending from a notch above the articulation of the middle finger to the articulatory boss where the hand joins the carpus, the other opposite to the superior base of the mobile finger. The crest has four or five spiniform granules, which are similar to those on the rest of the palm. The inner surface of the palm is convex, with a few small granules near the centre and several long hairs. Hand, with the lower border of palm, twice as long as the upper (immobile finger excluded) and as broad distally as the carpus is long. The immobile fingers are bent downwards, faintly sulcate, deeper coloured in their distal halves only; armed with six denticles, the three proximal ones a little larger than the distal. The mobile fingers are faintly denticulate on their edges; they are granulose above at the base, but elsewhere the surface is smooth.

The merus joints of the ambulatory legs are compressed and sharp edged above, rounded below and smooth, excepting the last pair which are finely granulose below, as are also the ischium joints distally. There is a well marked transverse groove near their distal end.

The carpus joints are armed with two rows of spinules, the superior one consisting of six or seven spines, somewhat equidistant but unequal in size. The second row is situated on the median posterior surface, and consists of four or five spiniform granules. On the propodal joints, in a line with the latter, are also five similar spinules. At the distal ends of the propodal joints of the first pair there are three spines superiorly and two laterally; in the succeeding pairs they are indicated by granules. Tarsi shorter than than the preceding joints, fringed above and below with long hairs and terminating in a slightly curved horny point.

The post abdomen is smooth, shining, and distantly punctate, its edges fringed with long hairs in the female, and with very short ones in the male. The terminal segment in the latter does not extend beyond the articular nodules of the first joints of the chelipedes; if a line is drawn from one nodule to the other across the sternum, it would pass clear of the tip of the seventh joint. This character appears to be important, and may be of use in separating the species of this most difficult genus into groups.

I have examined most of the males in the Museum Collection, the results are as follows:—in twelve males of *Pilumnus rufopunctatus* and in the type of *P. monilifera* the seventh segment

just reaches the line above-mentioned, in one male each of *P. glaberrimus* and of *P. cursor* and in twelve males of *P. fissifrons*, the terminal joint extends a little beyond the line. Whilst in thirty-one males of *P. vestitus*, five of *P. tere-regina*, and five of *P. vespertilio*, the seventh joint extends over the line from $1\frac{1}{2}$ to 2mm. The specimens examined include large and small of all ages, the character appears to be a constant one as far as the material in hand shows, whether it is so in other species of the genus remains to be seen, by the examination of a larger series of specimens.

The carapace is plum coloured with the cardiac region and posterior margin reddish-brown, the chelipedes are ornamented with orange-coloured spiniform granules. The ambulatory legs and under surface of the body similar to but grayer than the carapace. The chelipedes are a shade lighter, the mobile fingers dark reddish-brown with the base pale and of the same tint as the palm, the immobile fingers darker coloured in their distal half only.

Length of carapace of male.....10mm.
Breadth „ „ (spines included) 15mm.
Length of carapace of female .....$8\frac{1}{2}$mm.
Breadth „ „ .....12mm.

Seven males and one female.

Actæodes speciosa, *Dana.*

Actæodes speciosa, Dana, Crust. U.S. Explor. Exped., i., pl. xi., fig. 4*a*.

Three small males somewhat doubtfully referred to this species. The blackish-brown colouration of the fingers extends on the lower border and the exterior surface of the palm for a considerable distance. The body and ambulatory legs are yellowish-white.

Phymodius monticulosus, *Dana.*

Phymodius monticulosus, Dana, Crust. U.S. Explor. Exped., i., p. 206, pl. xi., fig. 9.

There are four males and two females in the collection.

Pseudozius caystrus, *Adams & White.*

Pseudozius caystrus, Adams & White, Voy. "Samarang," Crust., p. 42, pl. ix., fig. 2.

Fourteen specimens.

The "*Ozius* sp." in Haswell's Cat. Austr. Mus., v., Crust., p. 68, No. 108, is identical with this species. There are specimens in the Museum from Tasmania, Solomon Islands, Holborn Island, Woodlark Island, and Port Denison.

LEPTODIUS EXARATUS, *M. Edw.*

Leptodius exaratus, M. Edw., Hist. Nat. Crust., i., p. 402; Dana, Crust. U. S. Explor. Exped., i., p. 207.

Five specimens of this widely distributed species. Found under stones on the outer reef at low tide.

LEPTODIUS SANGUINEUS, *M. Edw.*

Leptodius sanguineus, M. Edw., Hist. Nat. Crust., i., p. 404; Dana, Crust. U.S. Explor. Exped., i., p. 207, pl. xi., fig. 11.

Three examples—two males and one female.

RUPPELLIA ANNULIPES, *M. Edw.*

Ruppellia annulipes (M. Edw.), Dana, Crust. U.S. Explor. Exped., i., p. 346, pl. xiv., fig. 4.

One small male which agrees with Dana's figure as to colouration and structural characters generally.

ERIPHIA SCABRICULA, *Dana.*

Eriphia scabricula, Dana, Crust. U.S. Explor. Exped., i., p. 247, pl. xiv., fig. 5*a*.

Five specimens—three males and two females.

The carapace is mottled with brown spots; the legs are transversely banded with the same colour; when viewed with a lens the brown pigment is seen to form reticulating lines.

ERIPHIA LÆVIMANA, *Latr.*

Eriphia lævimana (Latr.), Dana, Crust. U.S. Explor. Exped., i., p. 249, pl. xiv., fig. 7, *a*, *b*, *c*.

Five adult specimens—three males and two females with ova. Found on the lagoon shore between tide-marks on sandy flats.

TRAPEZIA CYMODOCE, *Herbst.*

Trapezia cymodoce (Herbst.), Dana, Crust. U.S. Explor. Exped., i., p. 257, pl. xv., fig. 5.

Eight specimens, mostly immature. Obtained from pools at low water on the lagoon shore.

TRAPEZIA FERRUGINEA, *Latr.*

Trapezia ferruginea (Latr.), Dana, Crust. U.S. Explor. Exped., i., p. 260, pl. xvi., fig. 1.

Four specimens obtained from a depth of forty fathoms.

TETRALIA CAVIMANA, *Heller*.

Tetralia cavimana, Heller., Sitzb. K. Akad. Wiss. Wien., xliii., p. 353, taf. iii., figs. 24, 25.

One adult female.

The characteristic depression, near the proximal end of the palm, is well defined in the larger hand (the right), and clothed with hairs, the more elongate of which appear to be confined to the margin of the depression; there are also a few similar hairs present on the distal end of the carpus.

THALAMITA INTEGRA, *Dana*.

Thalamita integra, Dana, Crust. U.S. Explor. Exped., i., p. 281, pl. xvii., fig. 6.

Five specimens—four males and one female with ova.

THALAMITA ADMETE, *Herbst*.

Thalamita admete (Herbst.), Dana, Crust. U.S. Explor. Exped., i., p. 281, pl. xvii., fig. 5.

Seven males and seven females, two bearing ova.

Tribe CATOMETOPA.

CARDISOMA HIRTIPES, *Dana*.

Cardisoma hirtipes, Dana, Crust. U.S. Explor. Exped., i., p. 376, pl. xxiv., fig. 2.

Thirteen specimens. Native name "Keibea."

OCYPODA CERATOPHTHALMA, *Pallas*.

Ocypoda ceratophthalma (Pallas), Miers, Ann. & Mag. Nat. Hist. (5), x., p. 379, pl. xvii., fig. 1.

Six specimens—four adult males and two immature females.

GELASIMUS TETRAGONON, *Herbst*.

Gelasimus tetragonon (Herbst.), M. Edw., Hist. Nat. Crust., ii., p. 52; Ann. Sci. Nat. (3), xviii., p. 147, pl. iii., fig. 9.

Two males and one female.

The granulation of the merus joints of the ambulatory legs differs considerably in the two sexes. In the male the lower edges of the merus joints are finely granular, the space between and also the posterior lateral surface is punctate and very distantly granulose. In the female the inferior edges of the last two pairs of legs are almost denticulate, the posterior surface and the proximal half of the lower are very closely granulate, on the upper posterior surface the granules are transversely seriate.

METOPOGRAPSUS MESSOR, *Forsk.*

Metopograpsus messor (Forsk.), M. Edw., Ann. Sci. Nat. (3), xix., p. 165.

Three small males.

GRAPSUS MACULATUS, *Catesby.*

Grapsus maculatus (Catesby), M. Edw., Ann. Sci. Nat. (3), xx., p. 167, pl. vi., fig. 1.

Four adult females.

One of the specimens has both the distal extremities of the merus joints of the last pair of legs denticulate. Very common amongst the rocks about high-tide mark on the outer reef, but never observed in the calmer waters of the lagoon.

GEOGRAPSUS CRINIPES, *Dana.*

Geograpsus crinipes, Dana, Crust. U.S. Explor. Exped., i., p. 341, pl. xxi., fig. 6.

Two adult females.

The bases of the second and third ambulatory legs are furnished with fringes of hairs, as in *Ocypoda*, but they are longer and much finer than those usually found in members of that genus. Mr. C. Hedley informs me that the specimens occurred in association with *Cenobita* and *Cardisoma*, at a distance from the sea, among broken coral blocks shaded by palms and other vegetation. This appears to be a highly interesting instance of adaptation to terrestrial conditions, not only as to breathing by means of the hair-clothed apertures between the bases of the second and third pairs of legs, but also in colour which is a dirty yellowish-white, and seems well suited to harmonize with the tint of the coral fragments amongst which it lives. The left chelipede is slightly the larger, the fingers when closed have a large gap at the base, the fingers of the smaller hand almost meet throughout when closed.

LEIOLOPHUS PLANISSIMUS, *Herbst.*

Leiolophus planissimus (Herbst.), Miers, Ann. & Mag. Nat. Hist. (5), i., p. 153.

Two specimens—one male and one female.

This species occurred under stones in company with *Petrolisthes dentatus*, at low water mark.

Tribe OXYSTOMATA.

CALAPPA HEPATICA, *Linn.*

Calappa hepatica, Linn., Syst. Nat. ed. xii., p. 1048, 1766.

One adult female.

Tribe ANOMURA.

CRYPTODROMIA JAPONICA, *Henderson.*

Cryptodromia japonica, Henderson, Chall. Rep. Zool., xxvii., p. 6, pl. i., fig. 2.

Two specimens—one male and one female.

The examples agree fairly well with the description and figure given by Henderson, the hairs on the carapace are more abundant, and the ill defined tubercle mentioned as occurring at the posterior end of the medium groove leading to between the lateral rostral teeth is absent. The hairs on the body and limbs are plumose in their distal halves only, whilst the hairs on *C. lateralis* are plumose throughout, but the branchlets are much shorter than those on the hairs of *C. japonica*.

REMIPES TESTUDINARIUS, *Latr.*

Remipes testudinarius (Latr.), M. Edw., Hist. Nat. Crust., ii., p. 406, pl. xxi., figs. 14-15.

Five specimens—two males and three females with ova. Found on the sandy shore of the lagoon.

BIRGUS LATRO, *Linn.*

Birgus latro (Linn.), Dana, Crust. U.S. Explor. Exped., i., p. 474, pl. xxx., fig. 5.

Four half grown examples and one young specimen 25mm. long, which does not differ materially from the adult, except in size and colour; the carapace and abdominal plates are pale yellow, the ambulatory legs are a warm brown, the carpus and hand are yellowish-white with the spines brown. The colour generally is very similar to that of some of the young of *Cenobita rugosa*.

CENOBITA OLIVIERI, *Owen.*

Cenobita olivieri, Owen, Voy. "Blossom," Zool. Crust., p. 84.

Two specimens in the shells of *Turbo setosus*, Gmelin. Native name, "Ounga Koula."

CENOBITA CLYPEATA, *M. Edw.*

Cenobita clypeata, M. Edw., Hist. Nat. Crust., ii., p. 239.

Two specimens inhabiting the same kind of shell as the preceding species. Native name, "Ounga Ouri."

CENOBITA RUGOSA, *M. Edw.*

Cenobita rugosa, M. Edw., Hist. Nat. Crust., ii., p. 241; Dana, Crust. U.S. Explor. Exped., i., p. 471, pl. xxx., fig. 1.

Seven examples, inhabiting the following species of shells:—*Planaxis sulcatus*, Lam., *Vertagus lineatus*, Brug., *Triton pilearis*,

Linn., *T. gemmatus*, Reeve, *Ranella granifera*, Lam., and *Natica mamilla*, Linn. Obtained about high water mark on the sandy beaches; very abundant.

DIOGENES PALLESCENS, sp. nov.

(Plate vi., fig. 2, *a*, *b*, *c*.)

The carapace is transversely convex anteriorly, the median anterior region is smooth and is bounded on each side by several low spinulose elevations.

The antero-lateral margin is armed with eight spinules, the first one situated a very short distance from the external lobe of the front; immediately posterior to this spine is situated an accessory spine not quite in the same line; the second one is over the base of the antenna, the remaining six are situated on the lateral margin. The carapace is slightly tomentose behind the cervical groove.

The front is three-lobed, the median lobe rounded, the lateral lobes angular but not acute.

The ophthalmic scales triangular, each with three small spinules and a few setæ at their distal extremities. The rostriform process is entire, acicular, and projecting but a very short distance beyond the eye scales.

The ocular peduncles are equal in length to the peduncles of the internal antennæ. The peduncles of the external antennæ are about two-thirds the length of the eye stalks. The antennal acicle is short, scarcely exceeding the distal extremity of the penultimate joint, it is armed with three spines distally and one at its base. The second exposed joints of the external antennæ are armed with a spine at their extero-distal angles.

The left chelipede has the meral and carpal joints sub-equal in length, the former trigonus, with the angles spinulose, the latter armed on its superior margin with five curved spines, its upper and external surface with a few spiniform granules, the distal extremity is also similarly but more distinctly spinulose.

The lower border of the hand—finger included—is as long as the merus and carpus combined, the breadth of the hand at its distal end exceeds half the length of the lower border and finger.

The proximal external surface of the palm is convex and angular, with three or four spines in a line on the angle and two or three at a short distance above. The lower border of the palm and of the immobile finger is closely granulate, the crest of the hand is armed with from seven to nine small curved spines, exterior to which are a few granules, whilst the distal portion of the palm opposite the base of the mobile finger is smooth and punctate.

The inner surface of the palm is smooth, punctate, and presents a series of transverse, loop-like reticulations, the reticulæ are more or less visible on the inner surfaces of the three preceding joints.

The upper surface of the mobile finger is closely studded with small bead-like granules, the inner and outer surfaces are punctate, the lower edge has three denticles near the base.

The spinulation of the right chelipede is similar to that of the left, except that the spines are larger, the angular convexity on the proximal part of the palm is also present.

The ischium joint of first ambulatory leg of the left side is short, and not more than half the length of the same joint of the second leg. The merus of the first leg is compressed and somewhat acutely edged above and below, the lower edge is armed with six curved spines, situated close together about midway between the distal and proximal extremities. The merus of the second leg is shorter and less compressed than the merus of the first leg, moreover it is not spinose on its lower border.

The carpal joints of the first and second legs are about equal in length, they are each armed above with two spines one distal and the other proximal. The propodal joints are slightly curved, that of the first leg a little shorter than that of the second.

The tarsus is almost as long in the first, quite as long in the second, as carpus and propodus combined, it is slightly curved, sparsely fringed with long hairs, and terminates in a minute horny point.

The carapace and ambulatory legs are white, the larger chelipede has a slight reddish tint which is more intense on the merus and carpus than on the hand.

The legs are clothed with long yellowish hairs, which are often in tufts, especially on the fingers of the chelæ.

The hairs on the carapace, last two pairs of legs, and the proximal halves of the first three pairs are plumose, whilst those on the distal halves of the latter are simple and unbranched.

Total length of largest specimen.....25mm.
Length of carapace .... 6mm.
Length of first ambulatory leg (left side).....12mm.
Length of left chelipede ..... 9mm.
Length of right chelipede.....5½mm.

Seven specimens in the shells of *Vertagus lineatus*.

PAGURUS FABIMANUS, *Dana*.

Pagurus fabimanus, Dana, Crust. U.S. Explor. Exped., i., p. 454, pl. xxviii., fig. 7, *a*, *b*, *c*, *d*, *e*.

One specimen in the shell of *Strombus urceus*, Linn.

PAGURUS GUTTATUS, *Olivier.*

Pagurus guttatus (Olivier), Dana, Crust. U.S. Explor. Exped., i., p. 451, pl. xxxviii., fig. 3, *a*, *b*.

Four specimens of this fairly common species inhabiting the shells of *Pterocerus chiragra*, Linn., and *Strombus urceus*, Linn.

CLIBANARIUS VIRESCENS, *Dana.*

Clibanarius virescens, Dana, Crust. U. S. Explor. Exped., i., p. 466, pl. xxix., fig. 6, *a*, *b*.

One specimen in the shell of *Triton gemmatus*, Reeve.

CLIBANARIUS CRUENTATUS, *M. Edw.*

Clibanarius cruentatus, M. Edw., Ann. Sci. Nat., (3), x., 1848, p. 62 ; Filhol, Mission de l' Ile Campbell, 1885, p. 424, pl. xlii., fig. 4.

Two specimens in the shells of *Purpura armigera*, Chemn.

The so-called yellowish-white spots characteristic of this species are blister-like in appearance, being everywhere more or less raised above the rest of the surface. On the carapace and ambulatory legs they appear to be chitinous, and are easily perforated with a needle point, whilst the dark red parts adjacent require considerable pressure before the needle can be forced through. On exposed situations subject to friction, such as the joints of the legs, they become worn down level with the rest of the surface, they then present an abraded aspect, being closely punctate and devoid of the glossy surface common to the yellowish-white blisters and the dark red calcareous portions of the body and legs.

CALCINUS ELEGANS, *M. Edw.*

Calcinus elegans, M. Edw., Ann. Sci. Nat. (2), vi., p. 278, pl. xiii., fig. 2.

Eight examples inhabiting the following species of shells :— *Turbo setosus*, Gmelin, *Ricinula horrida*, Lam., *Mitra literata*, Lam., *Harpa minor*, *Lam.*, and *Conus sponsalis*, Chemn. Abundant in pools on the outer reef.

CALCINUS GAIMARDI, *M. Edw.*

Calcinus gaimardi, M. Edw., Ann. des Sci. Nat., 3rd Ser., x., p. 63, 1848 ; Dana, Crust. U.S. Explor. Exped., i., p. 457, pl. xxviii., fig. 9.

One specimen in the shell of *Harpa minor*, Lam.

CALCINUS LATENS, *Randall.*

Calcinus latens (Randall), Dana, Crust. U.S. Explor. Exped., i., p. 459, pl. xxviii., fig. 11.

Twelve examples in the shells of *Vertagus lineatus*, Brug., and *Strombus urceus*, Linn.

CALCINUS TIBICEN, *Herbst.*

Calcinus tibicen (Herbst.), Dana, Crust. U.S. Explor. Exped., i., p. 457; Cuvier, Reg. Anim., 1849, pl. xliv., fig. 3.

Four specimens in the shells of *Vertagus cedo-nulli*, Sowb., *Triton pilearius*, Linn.; *Peristerna nassatula*, Lam., and *Cylindra dactylus*, Linn.

ANICULUS TYPICUS, *Fabr.*

Aniculus typicus (Fabr.), Dana, Crust. U.S. Explor. Exped., i., p. 461, pl. xxix., fig. 1.

Four specimens in the shells of *Turbo setosus*, Gmel.

PETROLISTHES DENTATUS, *M. Edw.*

Petrolisthes dentatus, M. Edw., Hist. Nat. Crust., ii., p. 251, 1837; De Mann, Arch. f. Nat., p. 409, pl. xii., fig. 7, 1887.

Sixteen specimens. Obtained under stones at low tide on the outer reef.

PETROLISTHES HASWELLI, *Miers.*

Petrolisthes haswelli, Miers, "Alert" Report, p. 69, pl. xxix., fig. *a*.

Four specimens.

PETROLISTHES SPECIOSA, *Dana.*

Petrolisthes speciosa, Dana, Crust. U.S. Explor. Exped., i., p. 417, pl. 26, fig. 8.

Six specimens.

PORCELLANA SOLLASI, sp. nov.

(Plate vii., fig. 3, *a*.)

The carapace is as broad as long, shining, and transversely striate, the striæ are prominent anteriorly and gradually diminish towards the extremities of the postero-lateral borders, the cardiac region is smooth. Front straight when viewed from above, when seen from the frontal aspect it is depressed at the sides and in the centre, where there exists a small notch.

The upper orbital border is smooth, rounded at the inner, and with an acute spine at the outer angle. Antero-lateral margin with five oblique striæ, the first short, compressed and toothlike, fourth and fifth much longer and extending towards the gastric region. The antipenultimate joints of the antennæ are half as long as the penultimate, and about as long as the ultimate, the former with two small spines on its inner margin, and the latter with two spines at its distal extremity. The flagellum is naked and is as long as the larger chelipede.

The external maxillipes have the ischium and merus joints obliquely striate, the latter with a prominent internal lobe near its proximal end, the former is subquadrate and slightly convex on its inner edge.

The chelipedes in the male are unequal, the left slightly the larger. The merus has a transverse ridge rather nearer to the distal end than the proximal, on the distal edge there are three or four flattened granules. The antero-internal extremity with a compressed denticulate lobe.

The carpus is armed on its inner border with four compressed compound spines, the proximal large, the other three forming a diminishing series. Each tooth or spine branching and bearing several accessory spinules.

The superior and external surfaces are ornamented with peculiar hooked spines, which are broad, flattened, and minutely denticulate at their apices, very few are single pointed, they are apically curved, and their tips are directed towards the distal end. The under surface is smooth, the infero-internal angle has a few small compressed granules near its base. The hooked spines are at least their own diameter apart and irregularly disposed.

The lower border of the hand is straight, the upper forms almost a right angle with the mobile finger. The spines on the lower and external surfaces of the palm are similar to but smaller than those on the carpus, the upper surface has a few flat granules and the crest is smooth.

The mobile finger has two rows of sub-imbricated spines, which when viewed in profile with a lens gives it a serrate appearance.

The two lower rows of spines of the palm are continued to the extremity of the immobile finger. The internal surface of the palm is convex and obliquely striate, especially on the lower portion, striæ are also present on inner surface of the immobile finger, the mobile finger has a pair of denticles near its base, and a small hooked spine at its extremity, which is opposed to a similar spine at the tip of the immobile finger.

The merus joints of the ambulatory legs are transversely striate on their posterior surfaces, the upper edge of the merus has from four to six minute spinules, the distal one large.

The carpus is armed above with eight spines in two rows, of a similar kind to those on the carpus of the chelipedes, *i.e.*, flattened, curved, and minutely denticulate at the summit, the distal being long and considerably overlapping the base of the propodus. The length of inferior margin of the carpus scarcely exceeds the transverse diameter of the merus.

The posterior surface of the propodus is crossed by four or five oblique striæ, the upper edge is armed like the preceding joint

but the distal spines are smaller. The dactylus is robust, about half the length of the propodus, and ending distally in a curved horny point, the lower edge having three or four horny spinules.

The carapace and chelipedes are white, glossy and shining. The ambulatory legs have the carpus and propodus coloured red

One male and one female with ova.

Length of carapace of		female	2½mm.
Breadth	,,	female	2½mm.
Length	,,	male	3 mm.
Breadth	,,	male	3 mm.
Total length of larger chelipede			8½mm.

Named in honour of Prof. W. J. Sollas, LL.D., F.R.S.

Tribe MACRURA.

IBACUS ANTARCTICUS, *Rumph.*

Ibacus antarcticus (Rumph.), M. Edw., Hist. Nat. Crust., ii., p. 287.

One adult female purchased from the natives, who called it "Tappa Tappa."

PALINURUS GUTTATUS, *Latr.*

Palinurus guttatus (Latr.), M. Edw., Hist. Nat. Crust., ii., p. 297, pl. xxiii., fig. 1.

One adult male. Native name, "Oula."

This species lives in burrows on the sandy portions of the lagoon, and is much used by the natives as food.

HIPPOLYTE GIBBEROSUS, *M. Edw.*

Hippolyte gibberosus (M. Edw.), Dana, Crust. U.S. Explor. Exped., i., p. 565, pl. xxxvi., fig. 4.

One female with ova, the dorsal spines on the carapace are furnished with hairs similar to those between the spines of the upper and lower margins of the rostrum.

ALPHEUS EDWARDSII, *Audouin.*

Alpheus edwardsii (Audouin), Dana, Crust. U.S. Explor. Exped., i., p. 542, pl. xxxiv., fig. 2.

Five specimens.

ALPHEUS LÆVIS, *Randall.*

Alpheus lævis (Randall), Dana, Crust. U.S. Explor. Exped., i., p. 556, pl. xxx., fig. 8.

One specimen.

BETÆUS MINUTUS, sp. nov.

(Plate vii., fig. 4, *a*, *b*.)

The carapace and abdomen is slightly compressed, smooth, and shining. Front with a short rostrum, which is broad at the base and acute at the apex. On each side of the base is situated a shallow sinus, bounded externally by a minute denticle.

The antero-lateral frontal margin is straight from the internal denticle to the outer angle, which is slightly produced. The inferior margin of the branchial walls forms a gentle curve from the front to the rounded posterior angle.

The peduncles of the first antennæ are stout and a little longer than the peduncles of the second. The first joint is gibbous in the middle internally, it is longer than the second, and nearly twice as long as the last, the lanceolate basal scale slightly exceeds the extremity of the first joint. The flagella are ciliated and subequal, the inner with a short lobe bordered by six tufts of filaments. The peduncles of the second antennæ as long as the scale, the latter is internally ciliate and externally armed with a short spine near the distal end, which however falls short of the foliate apex.

The last joint of the peduncle is very long and equal to the external margin of the scale, the joint bearing the antennal scale has a spine on its inner distal extremity. The chelæ of the first pair of legs are equal. The ischium and merus are subtrigonal, the former slightly longer than the carpus, the latter as long as the carpus and the hand combined (fingers excluded). The carpus is obconical with the distal edge smooth and even. The palm of the hand is a little compressed, swollen in the middle and as long as the mobile finger. An ill-defined longitudinal line extends from the base of the immobile finger along the palm, fading away a short distance from the proximal end.

The fingers are sub-equal, a little curved, meeting along their edges when closed, and furnished with a few tufts of hairs at their extremities. The carpus of the second pair of legs is five-jointed, the first is the longest, the third and fifth are equal, whilst the fourth is the shortest.

The propodal joints of the fifth pair of legs more elongate than those of the third and fourth.

The dactyli are short and slightly curved at their extremities.

The telson is somewhat cunate, shorter than the uropoda, with two spines on each side close to the margin, and four at the truncated extremity, the inner pair of which are much the longest.

The inner ramus of the caudal appendages is much narrower than the outer, the latter with a broad scale-like spine at the base, and three at the outer distal extremity, the median one is

large, slightly curved and inserted close to the outer and smallest of the spines.

The inner branch of the pleopoda in the female has a short club-shaped process, situated on the margin in the middle or at a short distance below.

The legs are slightly hairy, when alive the specimens were of a reddish-sand colour, in spirit the posterior two-thirds of the carapace is scarlet, the abdominal segments are also tinted on the upper surface with the same colour.

About fifty specimens were obtained under stones and in sponges in the mangrove swamp.

Length of largest specimen from the tip of the rostrum to extremity of telson .....14mm.
Length of external antennæ.....15mm.
Length of chelipedes..... ..... 6mm.
Length of hand and fingers.....2½mm.
Length of fifth leg.....7½mm.

HARPILIUS MIERSI, *De Mann.*

Harpilius miersi, De Mann, Journ. Linn. Soc., Zool., xxii., p. 274, pl. xvii., figs. 6-10.

Two females somewhat doubtfully referred to De Mann's species.

The specimens seem to differ slightly from the type as figured by the author.

The rostrum is five or rather seven toothed if the terminal and inferior teeth are included, they occupy the same relative positions to each other as those on the rostrum figured by De Mann. The small processes of the frontal margin between the insertion of the external antennæ and the eye-stalks can scarcely be termed spinose, they consist of thin projections of the frontal margin of the carapace.

The colour of the specimens preserved in formol when received was a light cream with bluish spots, similar to Dana's figure of *Œdipus superbus*, the spots were uniformly distributed over the whole body and appendages.

Total length of largest specimen 25mm., rostrum and telson included.

Tribe STOMATOPODA.

GONODACTYLUS CHIRAGRA, *Fabr.*

Gonodactylus chiragra (Fabr.), Dana, Crust. U.S. Explor. Exped., i., p. 623, pl. xli., fig. 5.

One specimen.

Tribe ISOPODA.

CIROLANA LATYSTYLIS, *Dana.*

Cirolana latystylis, Dana, Crust. U.S. Explor. Exped., ii., p. 772, pl. li., fig. 6.

Twelve examples of this rare species were obtained on sponges in sandy pools.

Tribe EPICARIDEA.

ATHELGUE ANICULI, sp. nov.

(Plate vii., fig. 5, *a*, *b*, *c*.)

Body oval, twice as long as broad, slightly transversely convex above and depressed below.

Upper antennæ short, with two exposed joints and a short flagellum, surmounted by a pencil of setæ, the last joint equal in length to the third joint of the outer antennæ; the latter with four joints, the first short, broad and boss-like, the second stout, elongate and equal to the last, which is rather slender, third joint a little longer than broad, the flagellum is slightly longer than the breadth of the last joint and ends in a tuft of hairs.

Immediately posterior to the upper antennæ is situated a transverse lip-like process (the frontal edge of the cephalon) which extends to between the bases of the second antennæ and of the first pair of legs. Eyes not discernible.

The cephalic shield is separated from the frontal margin by a slight groove, its anterior edge is almost straight, the antero-lateral angles are oblique and in contact with the bases of the first pair of legs, the posterior margin is evenly rounded.

The segments of the peræon are rather indistinct ventrally, but well marked dorsally, the first segment scarcely visible behind and almost in contact with the cephalic shield, the second much longer than the first, the third and fourth equal; fifth and sixth a little longer and broader than the preceding pair, seventh equal in length but considerably narrower than the sixth.

On the posterior margins of each segment there are a pair of flat triangular teeth, directed towards the pleon, they form two longitudinal rows, and are situated nearer the bases of the legs than the median line of the body, the first and last pairs are small, the intermediate pairs subequal.

The legs are curved over towards the dorsal surface, and—excepting the first pair—are equal in length, the first five are equidistant, a rather wide space exists between the fifth and sixth. The short basal joints are tumid, and have a short lobe which is acute in the last three pairs, second joints of the fifth,

sixth and seventh legs, have a bead-shaped elevation on the posterior surface a little below the middle; third joints shorter than the second, and in all the legs more or less produced and lobate at the infero-distal extremities; fourth joints short, the fifth bent over and opposable to the distal lobe of the third joint, sixth joint minute, triangular, and opposed to a projection of the propodus.

The first and second segments of the pleon are as long but not quite so broad as the last segment of the peræon, the fourth is about half the size of the third, fifth and sixth very short and subcylindrical, the latter terminating abruptly, and bearing a pair of minute lanceolate appendages.

The pleopoda are inserted on the margins of the pleon. They are pedunculate and consist of sixteen foliate plates; the first joint is about twice as long as broad, the outer and inner rami are situated at its distal extremity, the inner ramus is obovate and almost sessile, the outer with a peduncle as long or longer than the basal joint, the lamina is subfalcate with an even curve on the outer margin, its inner straight distally and lobate proximally; the fourth outer ramus is a little shorter than the peræon.

The first pair of marsupial plates is folded in front of the head so as to produce a kind of funnel, consisting of two spout-shaped lobes; posteriorly on the ventral surface they are produced and form a pair of subfalcate blades, which are evidently of a vibratory character and seem well adapted to drive a current of water through the brood pouch.

There are five pairs of functional marsupial plates, the second pair overlaps the falcate prolongations of the first pair, the posterior ciliate margins of the last and largest pair do not extend beyond the terminal segment of the peræon.

The colour of the peræon above and below, and of the lower surface of the pleon is light salmon yellow, the legs and the peduncles of the pleopods are yellowish-white, the pleopodal rami are opaque-white, with a few translucent lines radiating from the midrib; the anterior and posterior marsupial plates are somewhat opaque, the intermediate plates are translucent.

As the specific name implies, the host of this Epicarid is *Aniculus typicus*, which hermit crab invariably occupied the shell of *Turbo setosus*, Gmelin, and was never seen except at low water, on the edge of the outer reef most exposed to the surf, where it was rather rare. This most interesting parasite—the only one procured by the Expedition—was accidently discovered on the anterior surface of the abdomen, near the hinder margin of the carapace. The host was drowned in fresh water, and when dead was found somewhat exserted from its shell, exposing

the epicarid to view. In one of the bottles was a specimen of what might possibly be the male of this species, but which is too much damaged for accurate description, and it is doubtful whether it really belongs to the *Athelgue*.

Total length	22mm.
Breadth	8mm.
Length of cephalon and peræon	11mm.
Length of pleon	6mm.
Breadth „	5mm.
Length of outer ramus of third and fourth pleopods, peduncle included	9mm.

CIRRIPEDIA.

LITHOTRYA NICOBARICA, *Reinhardt.*

Lithotrya nicobarica (Reinhardt), Darwin, Mon. Cirripedia, i., p. 359, pl. viii., fig. 2.

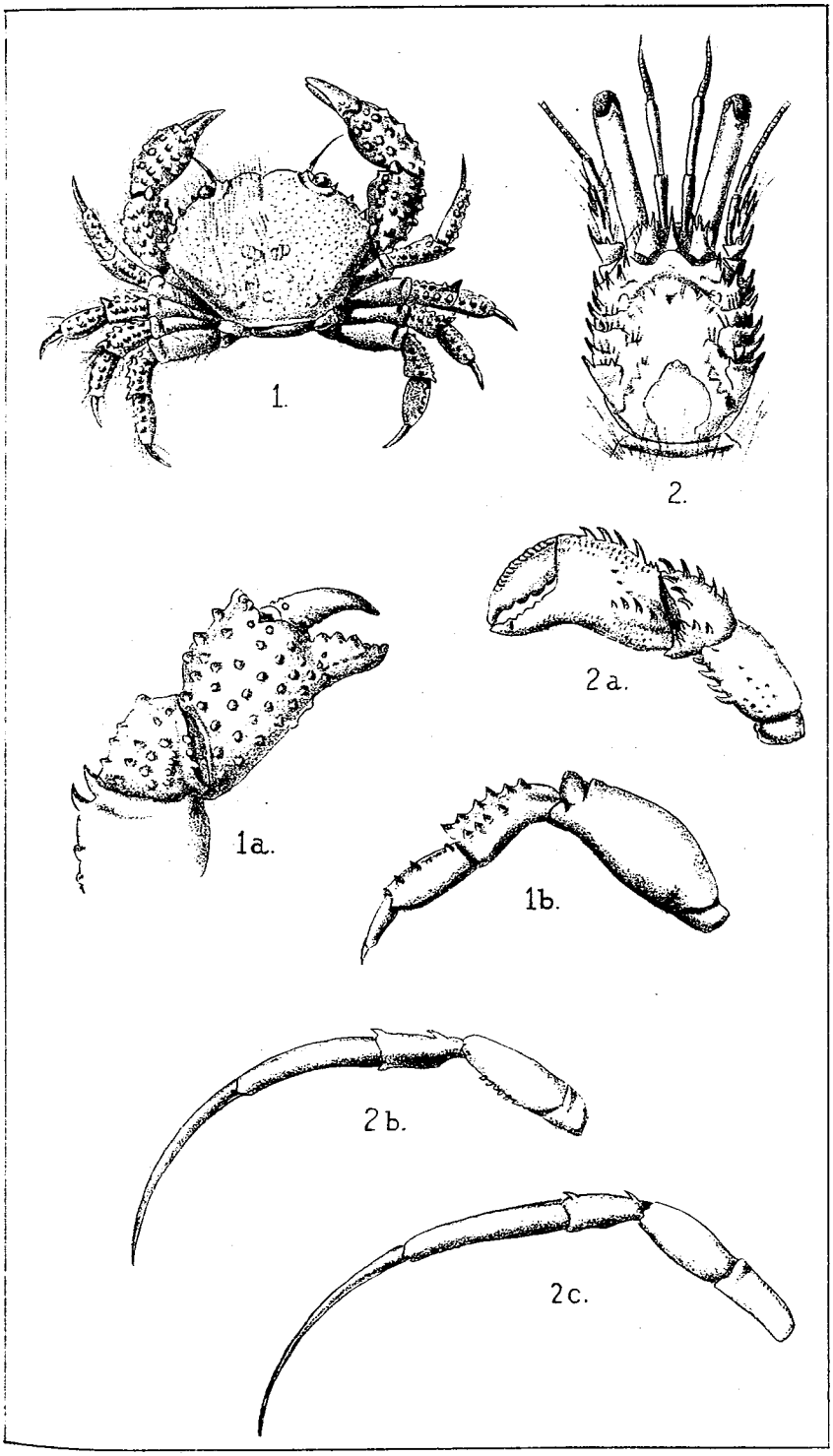
Three specimens, the largest measures 64mm. in the total length, the smallest 22mm.

Found in crevices under large blocks of coral.

I owe the accompanying illustrations to my colleague, Mr. Edgar R. Waite, from whose careful drawings they were reproduced by lithography.

EXPLANATION OF PLATE VI.

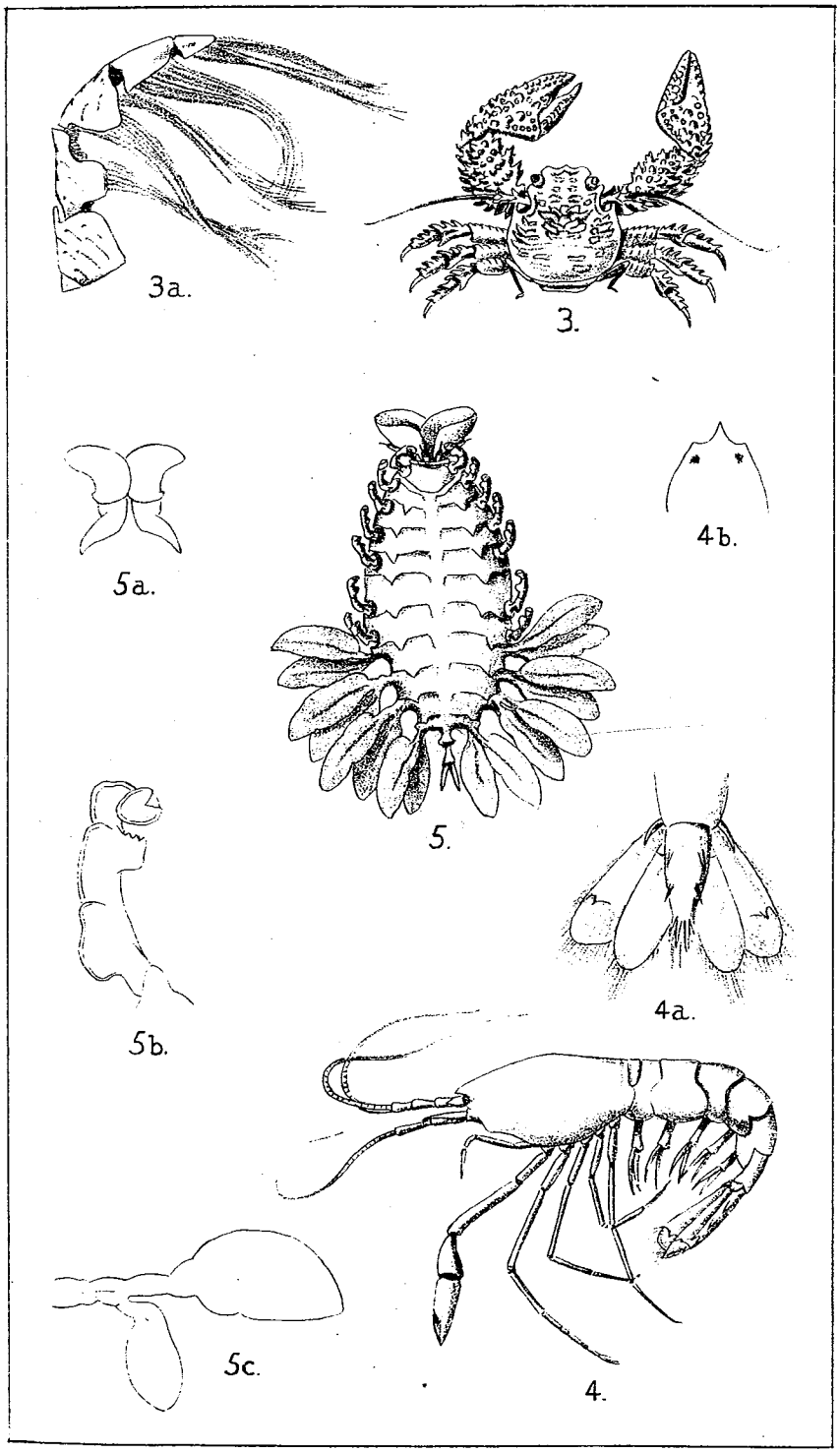
Fig. 1. *Pilumnus prunosus.* x 2.
„ 1*a*. „ „ right chelipede. x 3.
„ 1*b*. „ „ first left leg. x 4.
„ 2. *Diogenes pallescens.* x 8.
„ 2*a*. „ „ left chelipede. x 5.
„ 2*b*. „ „ first left leg. x 6.
„ 2*c*. „ „ second left leg. x 6.



EDGAR R. WAITE, Del

EXPLANATION OF PLATE VII.

Fig. 3. *Porcellana sollasi.* x 6.
„ 3*a*. „ „ right external maxillipede. x 10.
„ 4. *Betæus minutus.* x 5.
„ 4*a*. „ „ telson and uropods. x 8.
„ 4*b*. „ „ rostrum.
„ 5. *Athelgue aniculi.* x 3.
„ 5*a*. „ „ vibratory appendages. x 3.
„ 5*b*. „ „ sixth leg. x 10.
„ 5*c*. „ „ third pleopod. x 4.



EDGAR R. WAITE, Del.